



Workshop Manual

Arteon 2018 ➤ , Passat 2015 ➤ ,
Passat Variant 2015 ➤ , Tiguan 2016 ➤ ,
Tiguan RUS 2017 ➤

7-speed dual clutch gearbox 0DL

Edition 04.2017





List of Workshop Manual Repair Groups

Repair Group

- 00 - Technical data
- 30 - Clutch
- 34 - Controls, housing
- 35 - Gears, shafts
- 39 - Final drive - differential

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



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00 – Technical data

1 Safety information

(VRL010260; Edition 04.2017)

⇒ [“1.1 General safety provisions”, page 1](#)

⇒ [“1.2 Safety measures when working on vehicles with a start/stop system”, page 2](#)

⇒ [“1.3 Notes on tow-starting/towing”, page 2](#)

⇒ [“1.4 Safety precautions when using testers and measuring instruments during a road test”, page 2](#)

1.1 General safety provisions

To prevent personal injury and material damage to the vehicle, observe the following:



WARNING

Risk of injury and accident by accidental engagement of gear while engine is running.

- ◆ *Before working on vehicle with engine running, move selector lever into position “P” and apply handbrake.*

To prevent personal injury and damage to or destruction of electrical and electronic components, observe the following:

- ◆ Connect and disconnect measuring and testing devices only with the ignition switched off.



Caution

To prevent damage to the electronic components when disconnecting the battery:

- ◆ *Observe the necessary measures when disconnecting the battery.*
- ◆ *Disconnect battery only after the ignition has been switched off.*

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and reconnecting battery .



1.2 Safety measures when working on vehicles with a start/stop system

Observe the following when working on vehicles with a start/stop system:



WARNING

Injury hazard as a result of automatic engine start in vehicles with start/stop system.

- ◆ *In vehicles with the start/stop system activated (identifiable by an indication in the dash panel insert) the engine can start automatically if required.*
- ◆ *When working on the vehicle, always make sure that the start-stop system is deactivated (switch off the ignition; switch the ignition on again if necessary).*

1.3 Notes on tow-starting/towing



Caution

Danger of irreparable damage to gearbox.

- ◆ *If the vehicle must be towed, the selector lever must be in the "N" position, and the vehicle must be towed at a speed no greater than 50 km/h and for a distance not exceeding 50 km.*



Note

It is not possible to tow-start the engine, e.g. if the battery is too flat or the starter is not functioning.

1.4 Safety precautions when using testers and measuring instruments during a road test

Observe the following if test and measuring equipment is required during a road test:



WARNING

Risk of accident due to distraction and inadequate securing of test and measuring equipment.

Danger as a result of activation of front passenger airbag in event of an accident.

- *Operation of test and measuring equipment while driving results in distraction.*
- *Greater injury hazard as a result of unsecured test and measuring equipment.*
- ◆ *Always strap in place test and measuring equipment on rear seat and have a 2nd person sitting on the rear seat to operate them.*



Please note the following to avoid personal injury and damage to, or destruction of, electrical and electronic components:

- ◆ Connect and disconnect measuring and testing devices only with the ignition switched off.



Caution

To prevent damage to the electronic components when disconnecting the battery:

- ◆ ***Observe the necessary measures when disconnecting the battery.***
- ◆ ***Disconnect battery only after the ignition has been switched off.***

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and reconnecting battery .

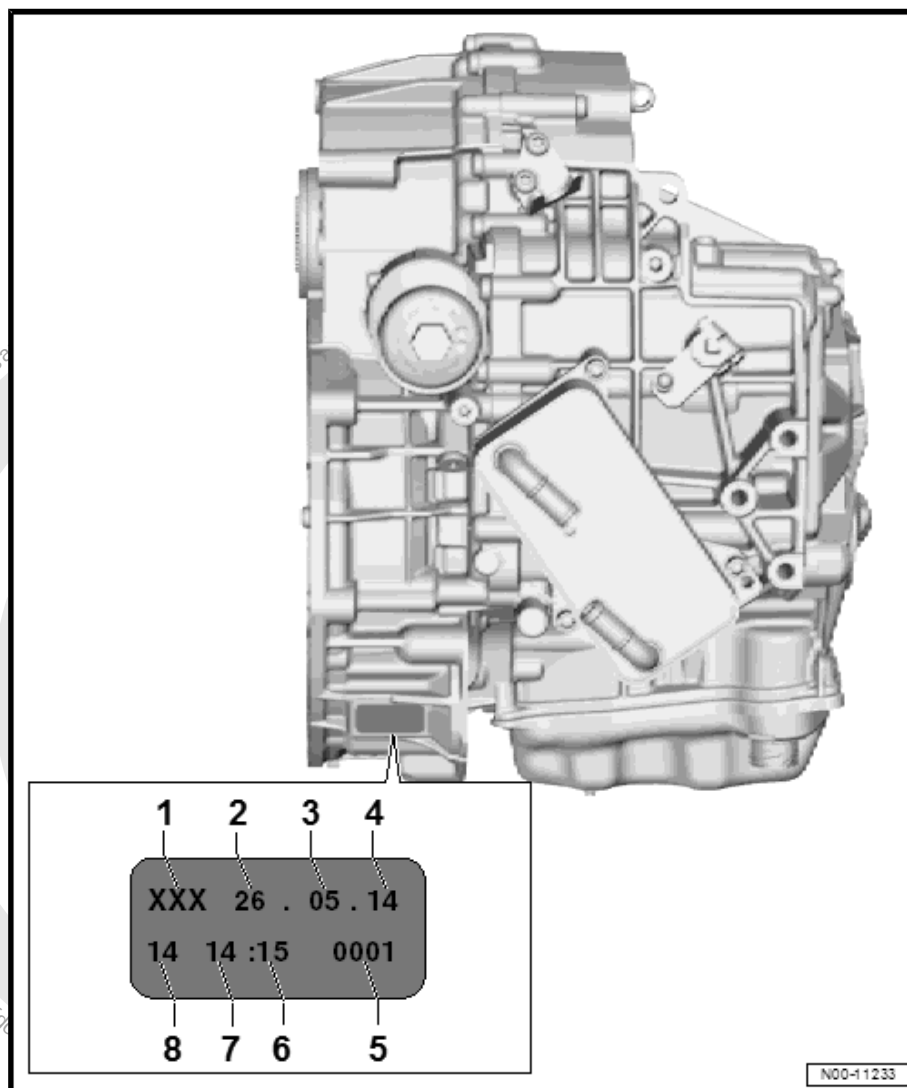


2 Identification

2.1 Gearbox identification

The gearbox code can be found on top of the gearbox, near the starter.

- 1 - Gearbox code
- 2 - Day of production
- 3 - Month of production
- 4 - Year of production
- 5 - Serial number
- 6 - Minute of production
- 7 - Hour of production
- 8 - Factory



Note

The gearbox code is also indicated on the vehicle data stickers.



3 Repair notes

⇒ ["3.1 General information", page 5](#)

⇒ ["3.2 Rules for cleanliness", page 5](#)

⇒ ["3.3 General repair instructions", page 6](#)

⇒ ["3.4 Gaskets and seals", page 7](#)

⇒ ["3.5 Nuts and bolts", page 7](#)

3.1 General information

Gearbox

- ◆ The torque of the engine is transmitted via the flywheel to the dual clutch gearbox. The flywheel and the dual clutch are joined together by a toothed connection. Together they take on the function of the dual-mass flywheel.
- ◆ The gearbox is structured like a manual gearbox. Through opposed hydraulic actuation of the dual clutch, it is operated like an automatic gearbox. In other words, the gears are engaged automatically or manually via the Tiptronic system. There is no clutch pedal.

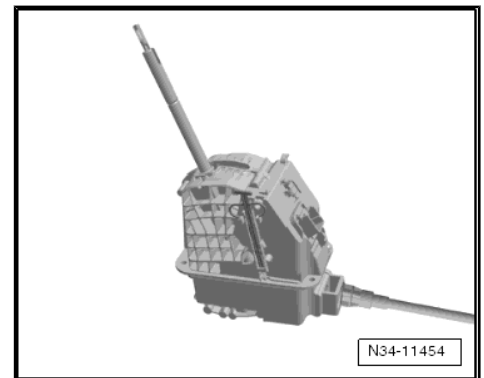
Selector mechanism

The feedback for the gearbox concerning the selector lever position is not transferred by mechanical means via the selector lever cable and the multifunction switch (gear sensor) any more, as is the case for the automatic gearbox. The information concerning selector lever positions or shifting operations are transferred to the gearbox control unit via a separate control unit in the selector mechanism and the CAN data bus. That is, gears are shifted without any mechanical cables being involved. Only for selector lever position "P" the parking lock is engaged mechanically via the selector lever cable.

Gear change point variations for gradients

An additional gear change map automatically selects gear changes for gradients dependent upon accelerator pedal position and driving speed.

- Gear change map for extreme uphill stretches is matched to engine output.
- Gear change map for extreme downhill stretches is matched to the braking effect of the engine.
- If a gear is selected directly via the Tiptronic system, it is also possible to use the braking effect of the engine in a specific gear, e.g. when driving down a slope with a trailer attached.



3.2 Rules for cleanliness

- ◆ First thoroughly clean connecting points and surrounding areas and then loosen bolts.
- ◆ Seal open lines and connections immediately using clean plugs or sealing caps from engine bung set - VAS 6122- .
- ◆ Place removed parts on a clean surface and cover them to prevent them from getting dirty. Use sheeting and paper for this purpose. Use lint-free cloths only.
- ◆ Make sure that no dirt can enter an »open« gearbox.
- ◆ Install only clean parts; do not remove Genuine parts from packaging until immediately before installing.



- ◆ If repair work cannot be performed immediately, cover opened parts carefully.
- ◆ Protect disconnected electrical connectors from dirt and water, and only reconnect them in dry condition.

3.3 General repair instructions

To ensure flawless and successful gearbox repairs, the greatest care and cleanliness as well as the use of good and proper tools are essential. Also note the basic rules on safety when performing repair procedures.

A number of general notes on the individual repair procedures, which can otherwise be found in the relevant sections of the manual, are summarised here. They apply for this particular workshop manual.

Guided fault-finding, vehicle self-diagnosis and test instruments

- ◆ Before performing repairs to the gearbox, determine the cause of the fault as accurately as possible ⇒ Vehicle diagnostic tester, Guided Fault Finding, Vehicle Self-Diagnosis or Test Instruments.

Special tool

For a complete list of special tools used in this workshop manual, see ⇒ "Workshop equipment and special tools" .

Gearbox

Always make sure that no dirt can enter an »open« gearbox. In particular, dirt entering an »exposed« mechatronic unit for dual clutch gearbox - J743- and/or oil pump can lead to gearbox failure.

- ◆ If gearbox covers have been unbolted or gearbox has no fluid, do not run engine or tow vehicle.
- ◆ First thoroughly clean connecting points and surrounding areas and then loosen bolts.
- ◆ When installing the gearbox, ensure that dowel sleeves between the engine and gearbox are correctly located.

Locking devices

- ◆ Do not overstretch retaining rings.
- ◆ Always renew retaining rings which have been damaged or overstretched.
- ◆ Retaining rings must locate properly in grooves.

Dual clutch gearbox oil

The oil quality is of critical importance for the function of the gearbox.

Shake oil bottle before opening.

Do not mix additives in oil. Do not fill any other oil.

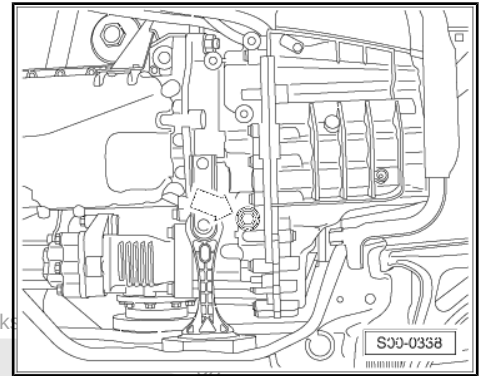
Oil which has been drained out cannot be filled again.





Oil drain and inspection plug

A plastic overflow pipe (with 8 mm hexagon socket head) is located behind this plug -arrow-. Its length determines the oil level in the gearbox.



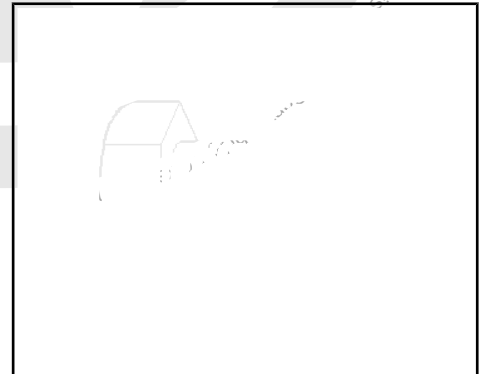
3.4 Gaskets and seals

- ◆ Renew O-rings, seals and gaskets.
- ◆ After removing gaskets and seals, always inspect contact surface of housing or shaft for burrs resulting from removal or for other signs of damage.
- ◆ Before installing seals, lightly oil outer diameter and half-fill space between sealing lips -arrow- with sealing grease - G 052 128 A1- .
- ◆ The open side of the oil seals faces toward the side with fluid filling.
- ◆ Only use dual clutch gearbox oil. Other lubricants will cause problems in function.
- ◆ Coat O-rings with dual clutch gearbox oil to prevent pinching of rings during assembly.
- ◆ After renewing gaskets, O-rings and seals, check oil level in gearbox and top up if necessary ➔ [page 162](#) .



3.5 Nuts and bolts

- ◆ Loosen and tighten securing bolts and securing nut for covers and housings diagonally.
- ◆ Specified torques given are for unoled nuts, bolts and screws.
- ◆ Clean threads of bolts which are to be installed with locking fluid using a wire brush. Then insert bolts with locking fluid - AMV 185 101 A1- .
- ◆ Use a thread chaser to clear residual locking fluid from all threaded holes into which self-locking bolts are to be screwed. Otherwise there is a danger of bolts shearing when subsequently being removed.
- ◆ Check pitch of thread, to ensure correct thread chaser is used to clean threads and to ensure the threads are not damaged.
- ◆ Always renew self-locking bolts and nuts.





4 Technical data

4.1 Allocation gearbox - engine

4.1.1 Passat 2015 ► , Passat Estate 2015 ►

Take account of the gearbox code if spare parts are required for a repair.

Dual clutch gearbox 0DL, all-wheel drive		
Codes	QAX, RCG, SDR	QBB, SDM
Engine	2.0 l - 176 kW TDI	2.0 l - 162 kW TSI

4.1.2 Tiguan 2016 ►

Take account of the gearbox code if spare parts are required for a repair.

Dual clutch gearbox 0DL, all-wheel drive				
Codes	QAY, RPN, SDK	QAY, SDK	QBB, RPL, RPP, SDN	QBA, RPM
Engine	2.0 l - 105, 110 kW TDI	2.0 l - 130, 140 kW TDI	2.0 l - 132, 162 kW TSI	2.0 l - 176 kW TDI

Dual clutch gearbox 0DL, front-wheel drive		
Codes	QAZ, RPK	
Engine	2.0 l - 110 kW TDI	

4.1.3 Arteon 2018 ►

Take account of the gearbox code if spare parts are required for a repair.

Dual clutch gearbox 0DL, all-wheel drive		
Codes	RWU	
Engine	2.0 l - 176 kW TDI	

4.2 Capacities

Capacity	Dual clutch gearbox 0DL
Initial filling	7.0 l ± 0.1 l
Changing ♦ Change interval: ⇒ Maintenance manual and/or ⇒ service tables "ELSA"	approx. 5.5 litres
Lubricant	Dual clutch gearbox oil

The oil is available as a replacement part; part no. ⇒ Electronic parts catalogue (ETKA) .

Further information in the part number designates the container size.



Capacity	Front bevel box
Capacity of bevel box 0A6 ⇒ page 34	0.9 l
Capacity of bevel box 0CP ⇒ page 34	0.75 l
Changing	Filled for life, no change
Lubricant	Gear oil

The oil is available as a replacement part; part no. ⇒ Electronic parts catalogue (ETKA) .

Further information in the part number designates the container size.



5 Electrical components

5.1 Overview of fitting locations - electrical components

1 - Mechatronic unit for dual clutch gearbox - J743-

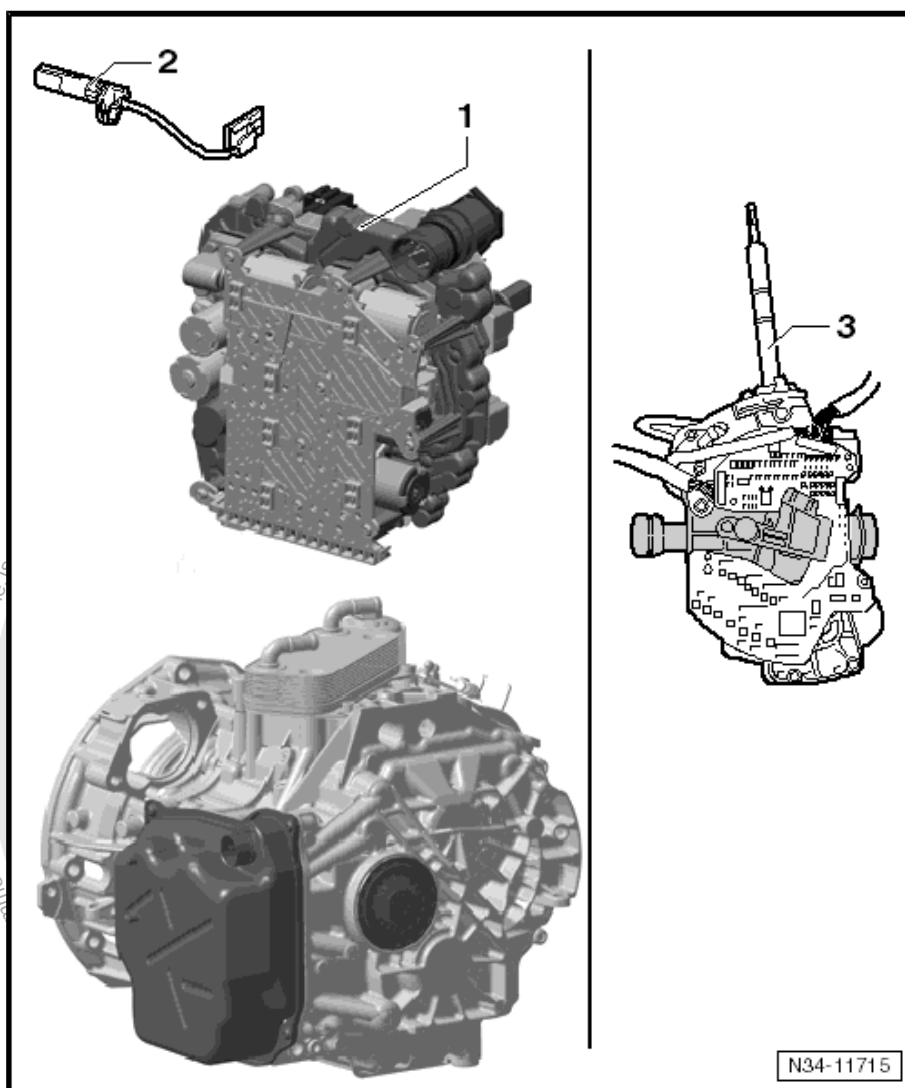
- ❑ Removing and installing
⇒ [page 26](#)

2 - Gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509-

- ❑ Both senders are combined in one component and can be renewed together only.
- ❑ Removing and installing
⇒ [page 32](#)
- ❑ Before removal of the sender, the mechatronic unit for dual clutch gearbox - J743- must be removed ⇒ [page 26](#).
- ❑ Discontinued as of gearbox date 06/15

3 - Selector lever - E313-

- ❑ With selector lever sensors control unit - J587-, selector lever lock solenoid - N110- and selector lever locked in position P switch - F319-
- ❑ The components are integrated into the printed circuit of the selector mechanism and cannot be renewed separately
- ❑ Checking ⇒ vehicle diagnostic tester
- ❑ Removing and installing selector mechanism ⇒ [page 71](#)





30 – Clutch

1 Clutch

⇒ [“1.1 Assembly overview - dual clutch”, page 11](#)

⇒ [“1.2 Removing and installing clutch end cover”, page 12](#)

⇒ [“1.3 Removing dual clutch”, page 15](#)

⇒ [“1.4 Installing dual clutch”, page 18](#)

1.1 Assembly overview - dual clutch

Replacement parts

1 - Retaining ring for dual clutch end cover

- ☐ Renew after removal

2 - Retaining ring for dual clutch

- ☐ Renew after removal

3 - Retaining ring for drive plate

4 - Dual clutch



Caution

The drive plate has to remain engaged between the teeth of the outer plate carrier.

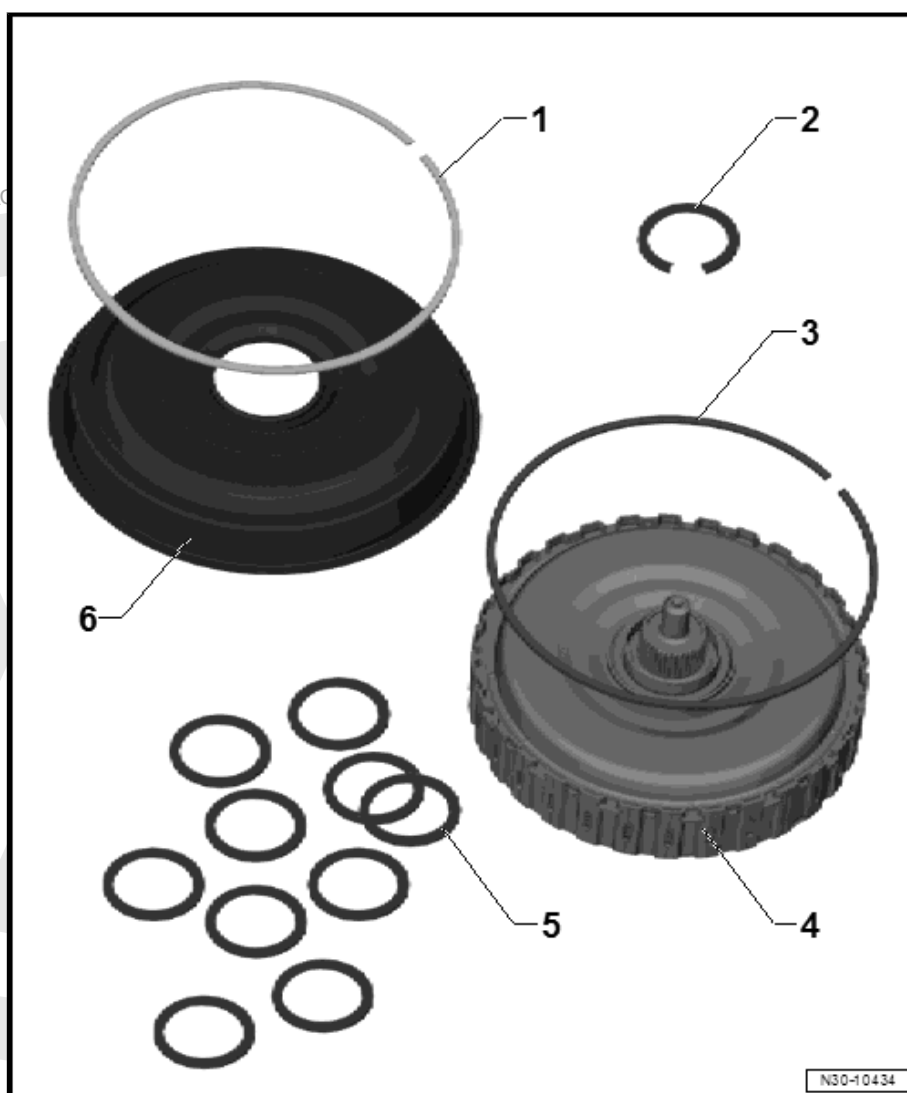
If the drive plate detaches, the plates in the dual clutch can shift. It may then not be possible to adjust the clutch correctly when it is installed.

5 - Shims

- ☐ 10 shims having different »thicknesses«. They are sized in 0.05 mm increments.
- ☐ Thickness of spacer ring must be determined when installing dual clutch.

6 - Dual clutch end cover

- ☐ Renew after removal





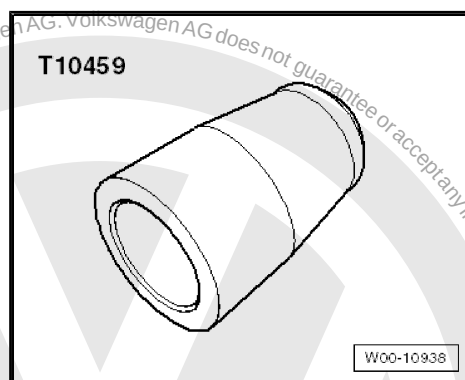
Caution

- ◆ *This figure is intended only to provide an overview of the components. The dual clutch must not be dismantled because all the plates have been balanced relative to each other.*
- ◆ *If the drive plate is detached, the plates in the dual clutch can shift, and consequently it may not be possible to adjust the clutch correctly when it is installed.*

1.2 Removing and installing clutch end cover

Special tools and workshop equipment required

- ◆ Clean assembly sleeve - T10459- before using. Do not use a scratched sleeve.



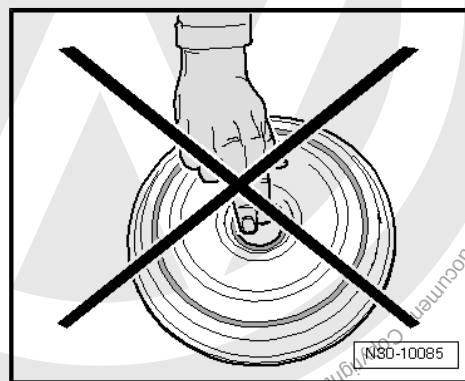
Brief description

The cover is held in its seat by a retaining ring. After the retaining ring has been removed, the cover can be levered out of its seat. Cover and retaining ring must always be renewed. Never install a new cover with a hammer and never oil the centre seal or touch it with a hand! However, if this should happen, the cover is certain to leak!

Removing

The gearbox must be removed for work on cover.

- Drain gear oil ⇒ [page 164](#) .
- Remove gearbox ⇒ [page 89](#) .
- Secure gearbox to assembly stand ⇒ [page 157](#) .



Often, doubts arise as to whether the filter must be renewed or not.

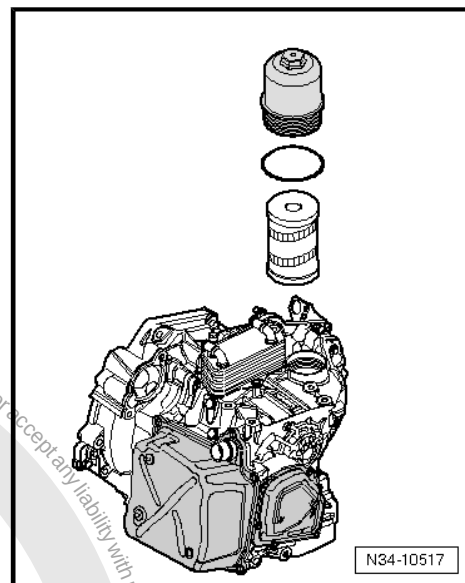


Note

It is not always necessary to change the oil filter ⇒ [page 159](#) .



- Remove filter if necessary ⇒ [page 159](#) .



- Lever out retaining ring -2- of clutch end cover using screwdriver -1- -arrow- and remove.

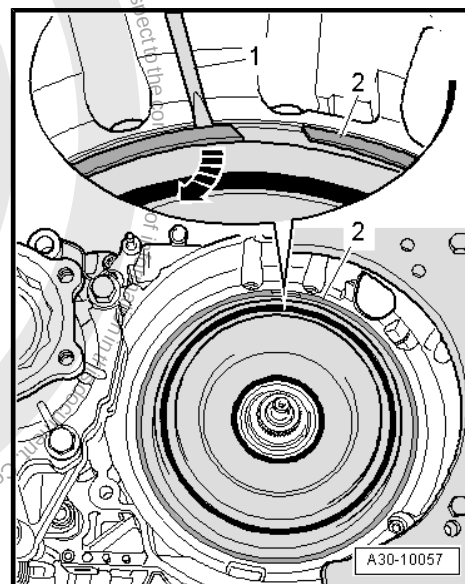
Cover can be levered out with a screwdriver.



Note

The removed cover and retaining may not be installed again.

Install only a »new« cover.



Installing

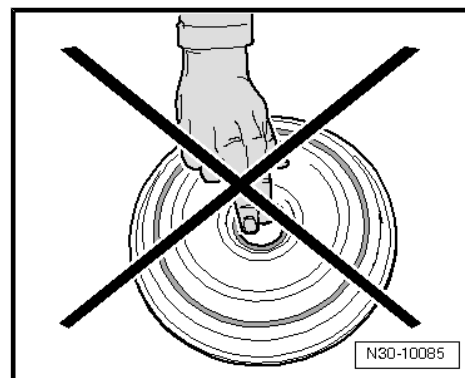


Caution

Cover and retaining ring must always be renewed.

Never grasp a new cover in centre seal. The centre hole of the cover must not be touched, oiled or brought into contact with other materials. Leaks will result.

Never install new covers with a hammer!



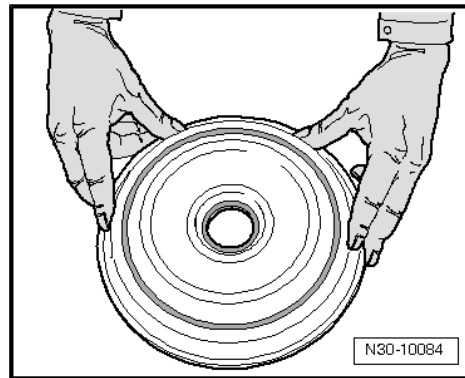


- Only handle cover as shown -in this picture-.



Note

There must be no stickers on the inside of the cover. If, however, stickers are present, remove them carefully.

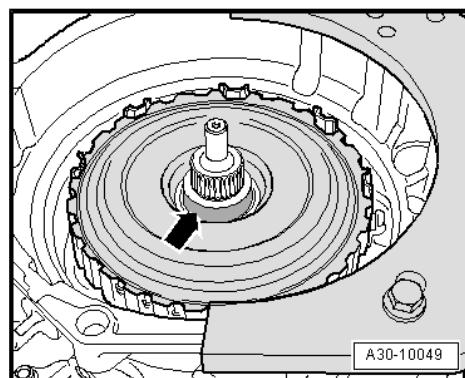


- The running surface on the end of the shaft of the clutch -arrow- must be free of oil and dry.
- If necessary, thoroughly clean running surface.



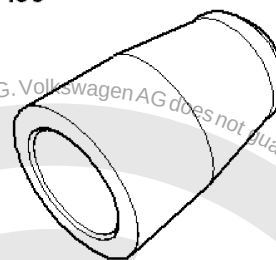
WARNING

The centre seal of the new cover must be »preformed« before installing:



- Clean assembly sleeve - T10459- "before using". Do not use a scratched sleeve.
- Set sleeve on a flat surface.

T10459

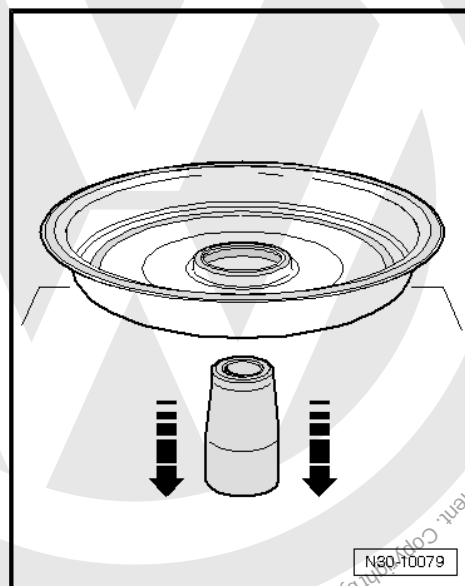


- Guide cover horizontally and evenly over entire sleeve -as shown in this figure-. This will bring the sealing lip into installation position.
- Remove sleeve upwards out of cover and set sleeve on end of clutch shaft.
- Moisten outer seal of cover with oil.



Caution

Moisten only the outer seal of the cover with oil. Oiling the inner seal will always cause leaks.



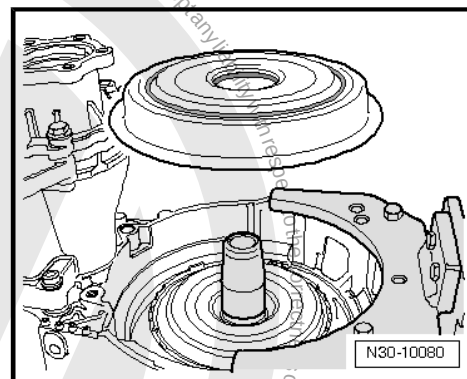


- Guide cover horizontally over sleeve and press evenly onto its seat.



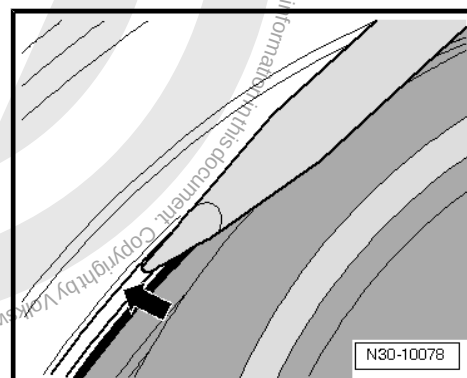
Caution

Work carefully. Any sort of blow to the cover is certain to cause leaks.



It is possible to lever cover carefully into its seat with a -screwdriver- until »new« retaining ring can be installed.

- Install new retaining ring.

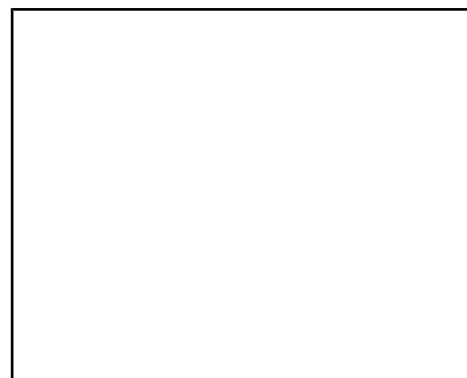


- Do not remove bush until retaining ring is installed.
- Installing gearbox ➔ [page 146](#)
- Top up gear oil ➔ [page 164](#) .



WARNING

Do not start engine if there is no oil in gearbox.



1.3 Removing dual clutch

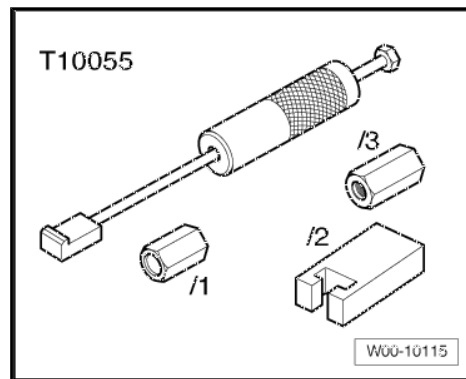
Special tools and workshop equipment required

- ◆ 2 x hooks - 3438-





◆ Puller - T10055-



◆ Puller - T10525-



Brief description

- The axial play of the clutch is readjusted during installation procedure.
- To remove or install clutch, gearbox must be securely attached to an assembly stand in vertical position ➔ [page 157](#) . Only this way is it possible later to adjust axial play of the clutch without error.

Removing

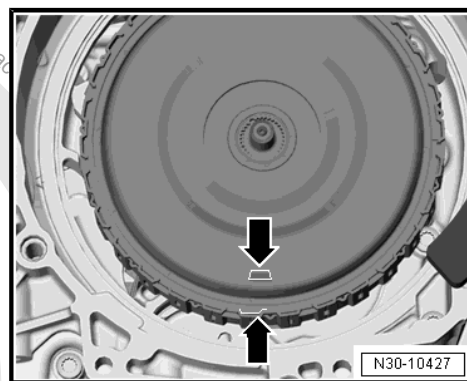
- Remove clutch end cover ➔ [page 12](#) .

Important! Installation location of drive plate

- Check that marking on drive plate -arrow- aligns with the marking on the outer plate carrier.

If there is no marking:

- Mark installation position of drive plate relative to periphery of outer plate carrier with permanent marker, as shown in illustration.
- During installation, drive plate must always be repositioned at marked position.

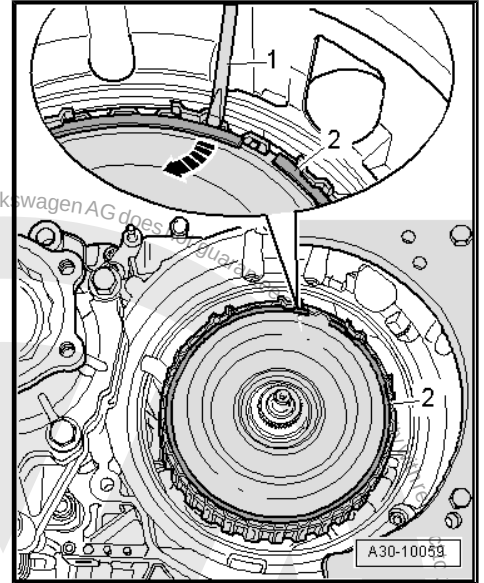


Note

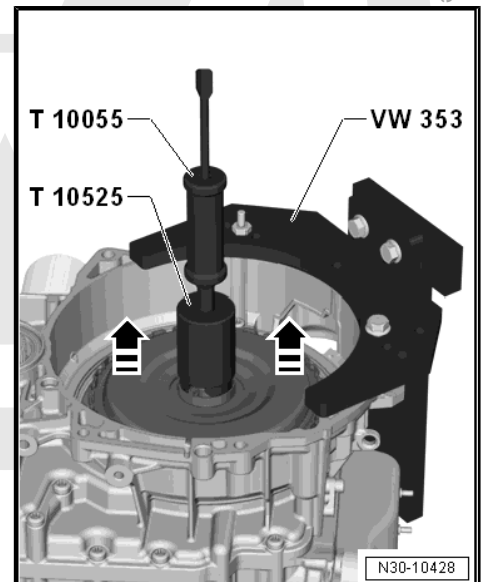
The retaining ring is renewed together with the clutch. If the clutch which is removed is reinstalled, the securing ring is to be used again as well.



- Lever out retaining ring -2- of drive plate using screwdriver -1- -arrow-.



- Apply puller - T10525- together with puller - T10055- on splines and carefully pull drive plate off its seat -arrows-.

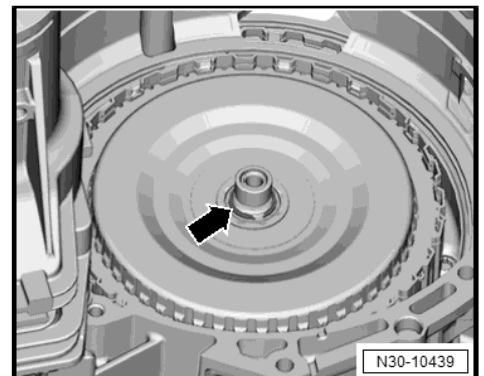


- Remove retaining ring -arrow- and save it for now.



Note

Do not dispose of the retaining ring yet because it will be needed to measure axial clearance.



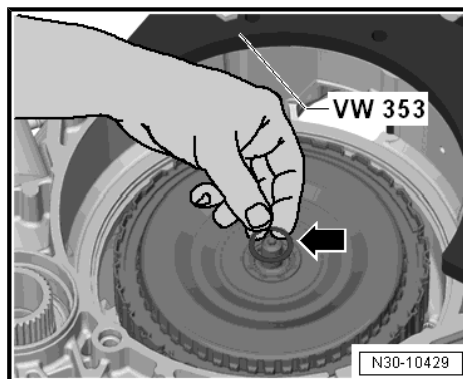


- Remove shim -arrow-.

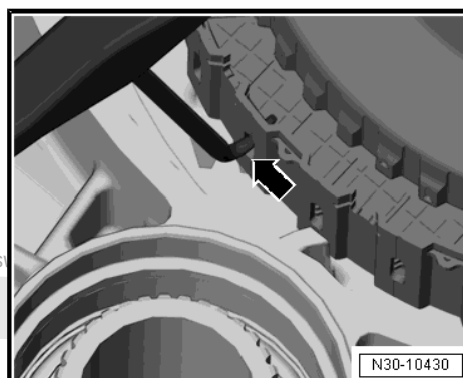


Caution

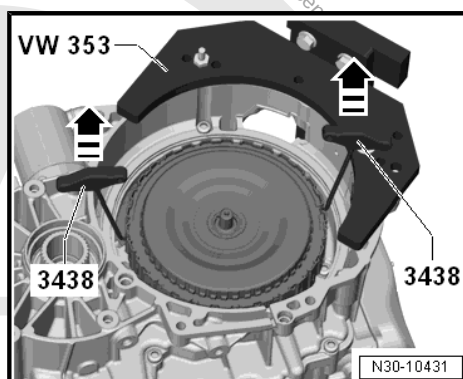
Carefully remove the dual clutch. Take care that no parts fall out. Therefore, do not turn the clutch over!



- Engage 2 hooks - 3438- on opposite sides of clutch -arrow-.



- Remove dual clutch using hooks - 3438- .



1.4 Installing dual clutch

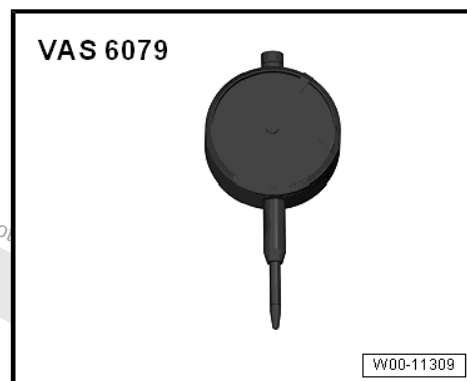
Special tools and workshop equipment required

- ♦ Universal dial gauge holder - VW 387-





◆ Dial gauge - VAS 6079-



◆ Retaining pins - T10524-



◆ Drift sleeve - 40-21-



Caution

- ◆ *The drive plate has to remain engaged between the teeth of the outer plate carrier.*
- ◆ *If the drive plate detaches, the plates in the dual clutch can shift. It may then not be possible to adjust the clutch correctly when it is installed.*
- ◆ *Do not lift (not even slightly) or remove plate carrier! The plates could turn.*

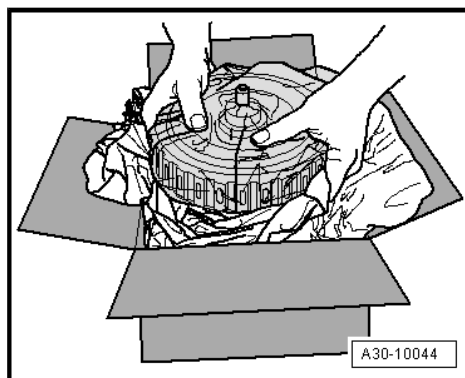
Brief description

- To remove or install the clutch, the gearbox must be securely attached to an assembly stand in vertical position.
- The large plate carrier goes through all plates inside the clutch. It must not slip out of the lowest plate.

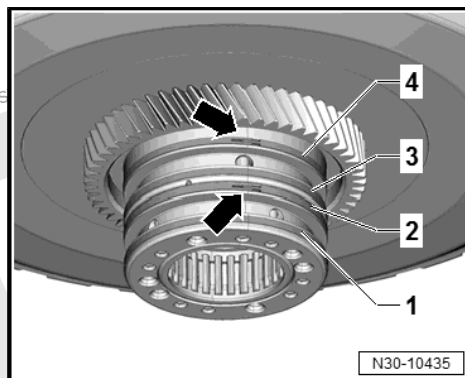


Installing

- Take great care when removing the dual clutch from its package.
- Turn piston rings by hand. They must move freely and must not bind.

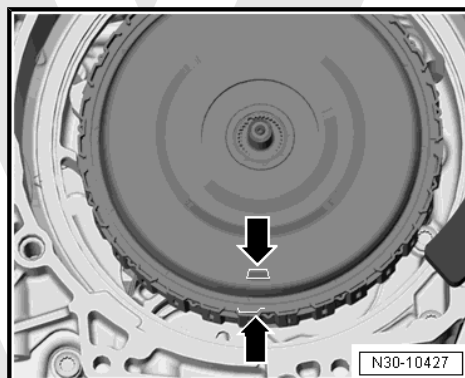


- Ensure that piston rings -1-, -2-, -3- and -4- are seated correctly. The ring butts -arrows- of piston rings -1- and -3- should align.
- The ring butts -arrows- of piston rings -2- and -4- should align and be offset 180° to the ring butts of piston rings -1- and -3-.



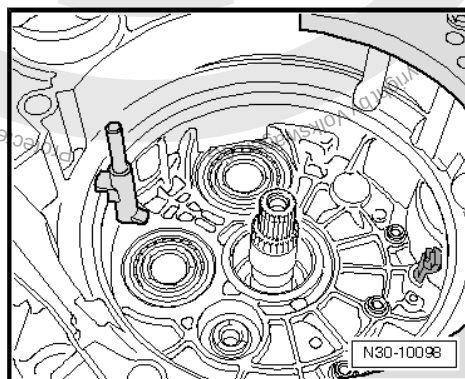
Important! Position of drive plate

- Before installing, check if there is a marking -arrow- on dual clutch.
- If there is no marking, use a permanent marker to make a colour marking on the drive plate and one on the outer plate carrier.



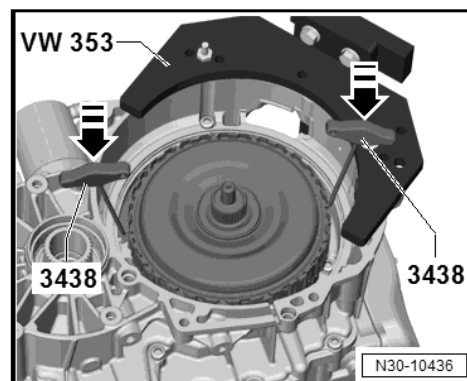
- Insert retaining pin - T10524- .

The retaining pin - T10524- should be held by a second mechanic while the dual clutch is being inserted.





- Carefully insert -dual clutch-, ensuring it does not fall.
- If necessary, insert clutch by turning slightly.

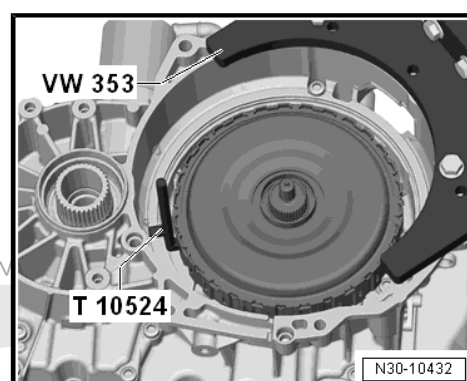


The dual clutch is properly fitted if there is almost no play in the retaining pin - T10524- .



Note

- ◆ *The retaining pin remains inserted until the clutch end cover is installed.*
- ◆ *The dual clutch must now not be rotated any more, as this can shift the position of the retaining pin - T10524- .*

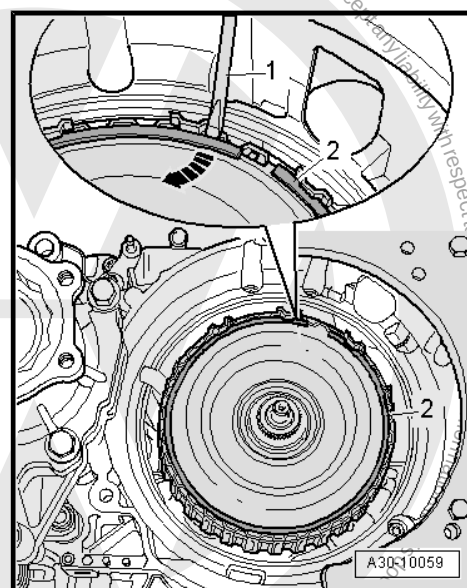


- Lever out retaining ring -2- of drive plate using screwdriver -1- -arrow-.



Note

This retaining ring will be used again. Do not dispose of it.





- Apply puller - T10525- together with puller - T10055- on splines and carefully pull drive plate off its seat -arrows-.



Note

The retaining pin - T10524- must be held by a second mechanic while pulling off.

- Carefully remove drive plate from dual clutch -arrows- and place it on one side.



Caution

Do not lift (not even slightly) or remove plate carrier! The plates could turn.

Determining shim for dual clutch:

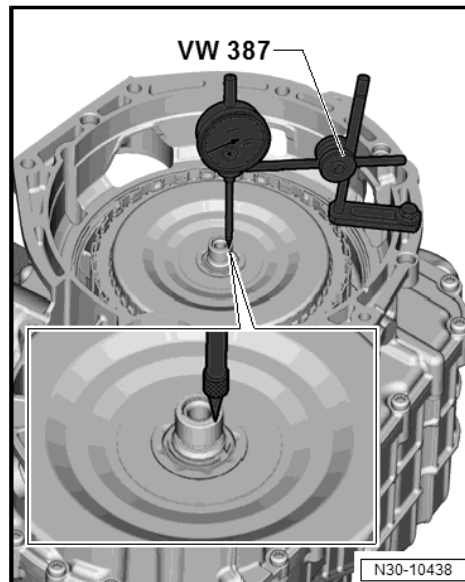
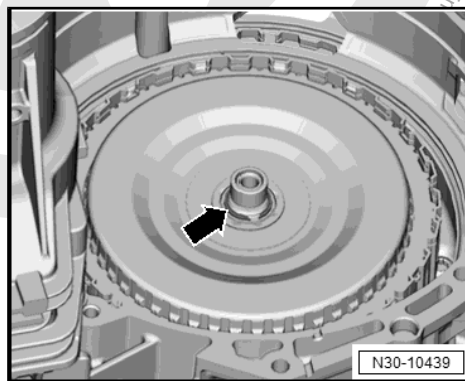
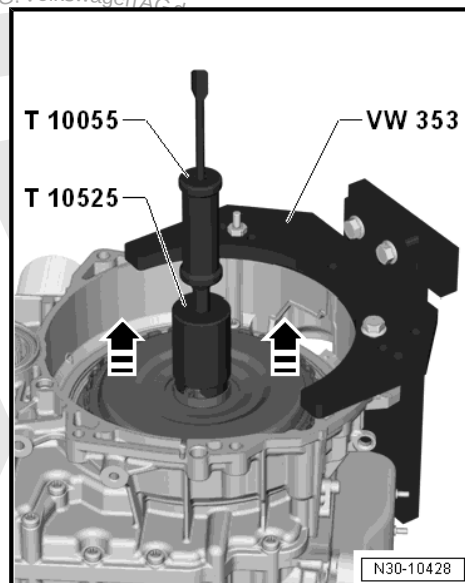
- The retaining pin - T10524- remains installed!
- Temporarily install "old" retaining ring -arrow-.

Before this ring is finally disposed of, 3 measurements must be made.

First measurement (axial play of shaft)

- Screw universal dial gauge - VW 387- to gearbox flange.

- Set -tip of dial gauge- on input shaft.
- Set -dial gauge- to 0 with preload.





- Lift dual clutch with force -in direction of arrow- to stop using hooks - 3438- and note measurement.
- Call this value “A”.



Note

This value will be needed later for the check measurement so save value “A” until the last measurement has been performed.

Second measurement

- The retaining pin - T10524- remains installed!
- Set tip of dial gauge -on hub of large plate carrier-.



Note

Tip must not sit on retaining ring.

- Set -dial gauge- to 0 with preload again.
- Lift dual clutch with force to stop and note measurement.
- Call this value “B”.

Now calculate which shim must be fitted:

- Use this formula:
Value “B” minus value “A” minus 0.11 = thickness of shim to be fitted.

- Note result.

The shims are sized in 0.05 mm increments.

- Measure the shims and determine which one is closest to the result.



WARNING

Always use the next-largest shim, never the next-smallest.

Example:

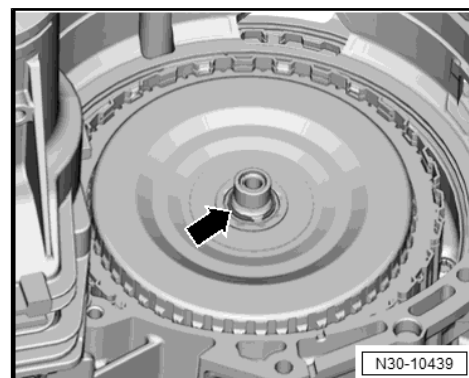
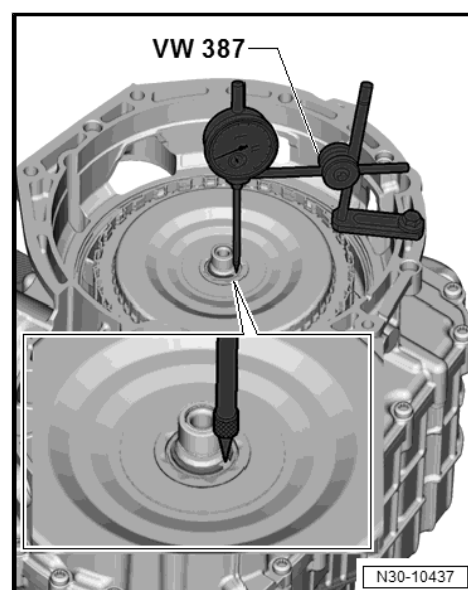
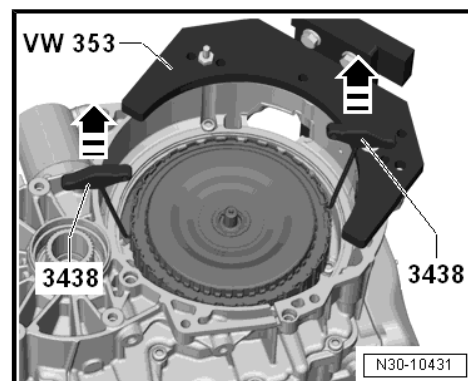
Calculated dimension for shim	New shim
1.28 mm	1.3 mm
1.26 mm	1.3 mm

- Remove old retaining ring -arrow-.



Note

Do not dispose of ring yet; it will be needed once more.



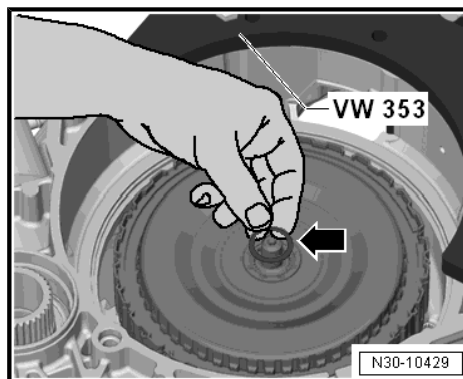


- Fit calculated shim.

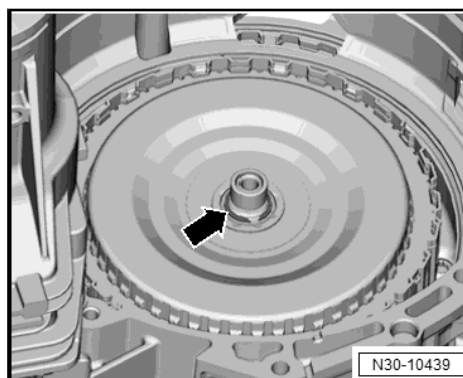
Third measurement (check measurement)

To make sure that the shim is correct, a test measurement must still be carried out. Proceed as follows:

- The retaining pin - T10524- remains installed!



- Install old retaining ring -arrow- once more.



- Set tip of dial gauge -on hub of large plate carrier-.



Note

Set the tip of the dial gauge on the shim -1-.

- Set -dial gauge- to 0 with preload again.
- Lift dual clutch with force to stop and note measurement.
- Call this value "C".

Now calculate which shim must finally be fitted:

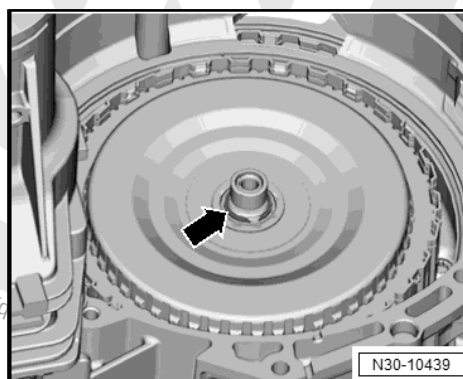
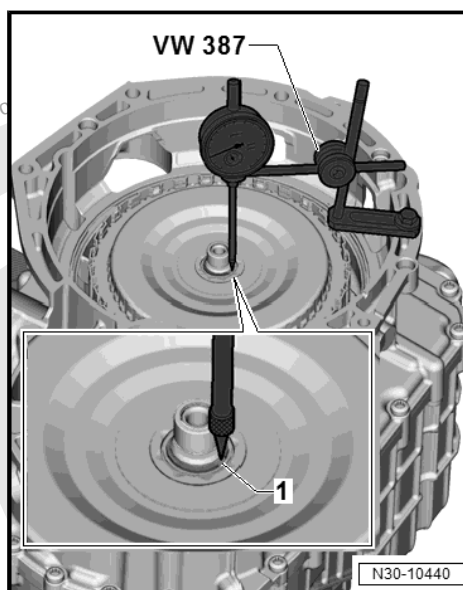
- Use this formula:

Value "C" minus value "A" = specification

This specification must lie between 0.05 and 0.12 mm.

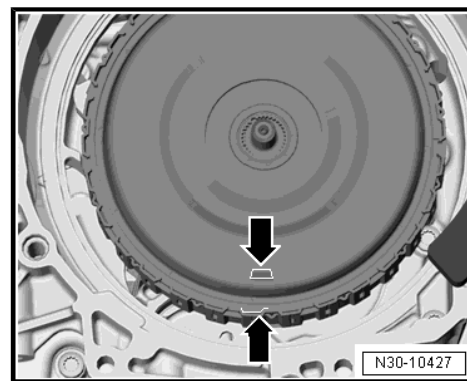
If the specification is not attained, then achieve the specification by fitting a thicker or thinner shim.

- Install new retaining ring -arrow-.





- Fit drive plate into dual clutch.
- When installing, check if marking on drive plate is aligned with marking on outer plate carrier -arrows-. If the markings were subsequently made, align these.
- A second mechanic must hold retaining pin - T10524- in its place and press outwards slightly.
- Carefully drive the drive plate onto its seat using press tool - 40-21- and a plastic hammer.
- Install drive plate retaining ring.
- Starting at the opening, press retaining ring in clockwise direction into its fitting position.
- The retaining ring must be fully engaged.
- Use screwdriver to check that retaining ring is correctly seated and engaged.
- Now remove retaining pin - T10524- from between dual clutch and housing.
- Install clutch end cover ➔ [page 12](#) .





34 – Controls, housing

1 Mechatronic unit

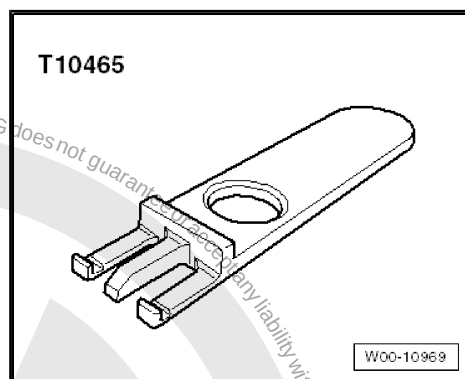
⇒ [“1.1 Removing and installing mechatronic unit for dual clutch gearbox J743 \(gearbox installed\)”, page 26](#)

⇒ [“1.2 Removing and installing gearbox input speed sender G182 and oil temperature sender in multi-plate clutch G509 up to gearbox date 05/15”, page 32](#)

1.1 Removing and installing mechatronic unit for dual clutch gearbox - J743- (gearbox installed)

Special tools and workshop equipment required

- ◆ Up to gearbox date 05/15 release tool - T10465-



- ◆ Torque wrench - V.A.G 1331-



Always make sure that no dirt can enter an »open« gearbox.

In particular, dirt entering an »exposed« mechatronic unit for dual clutch gearbox - J743- can lead to gearbox failure.

Please also refer to the notes on the oil filter change regarding »dirty oil« ⇒ [page 159](#) .

Remove mechatronic unit.

- Move selector lever to position “P”.
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .



Note

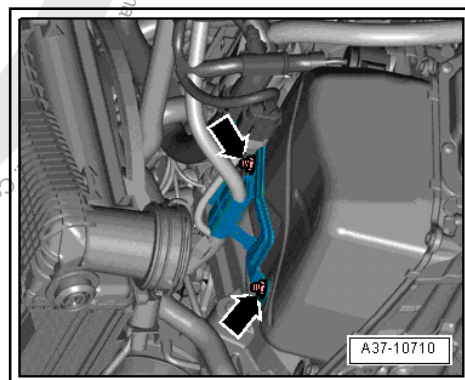
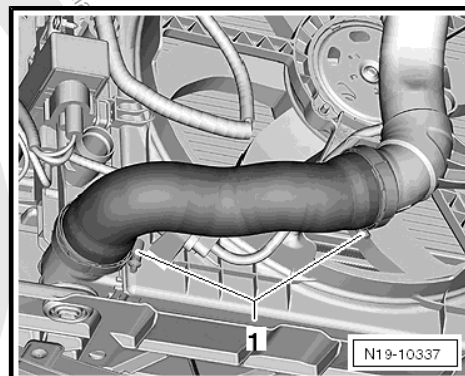
It is possible that parts having nothing to do with the mechatronic unit must be removed. This depends on the vehicle's equipment. This will create enough space to remove the mechatronic unit.

Vehicles with petrol engine

- Remove connecting hose between charge air cooler and charge air pipe ➔ Rep. gr. 21 ; Charge air system; Assembly overview - charge air system .

Continued for all vehicles

- Remove electrical wiring and retainer from front of sump -arrows- (2 x M6 nuts).
- Raise wiring in area of sump and secure it.
- Place used oil collection and extraction unit - V.A.G 1782- below gearbox.
- Drain oil ➔ [page 164](#)

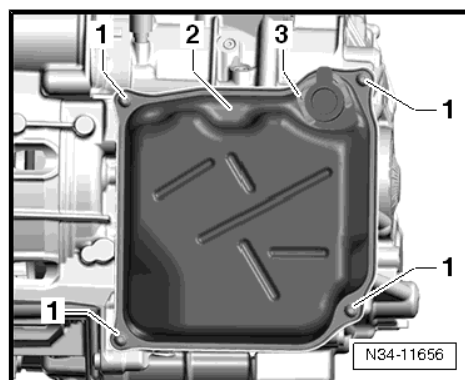


- Remove securing clip -3-.
- Unscrew bolts -1- diagonally and remove.
- Remove cover -2- with seal.



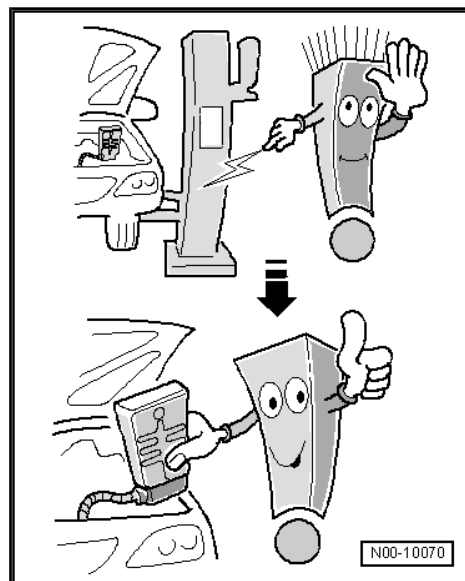
Note

Always renew bolts, securing clips and the cover with seal.





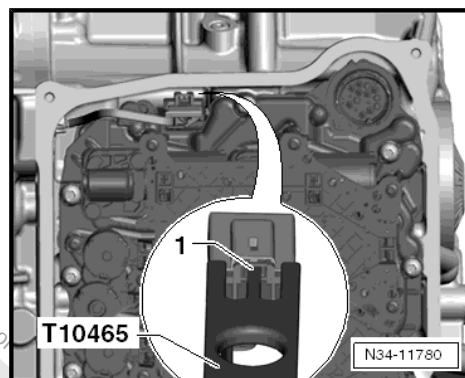
Before touching mechatronic unit, touch an earthed object again.



To gearbox date 05/15

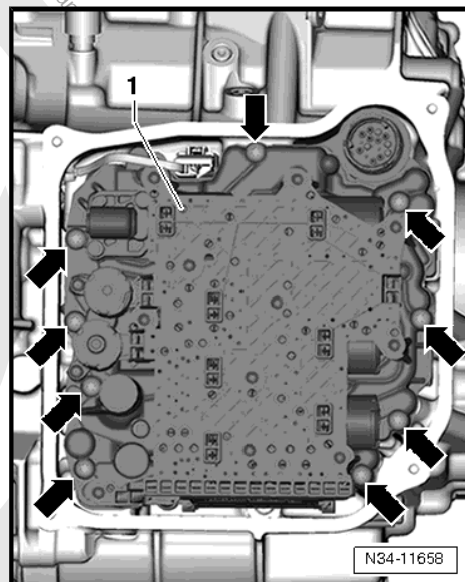
- Release connector -1- of gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509- using release tool - T10465- .

Continuation for all:



- Remove bolts -arrows- diagonally.

All 9 bolts have same length and are not allowed to be reused.



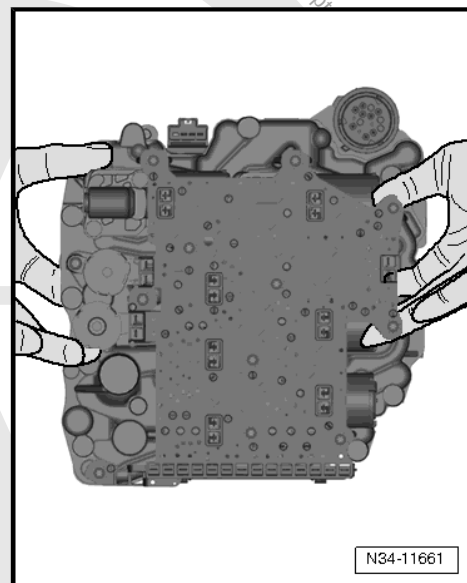


- Remove mechatronic unit -1- carefully.



Caution

- *Lift or put down mechatronic unit only on housing and on solenoid valves.*



Lay mechatronic unit to side properly.

- Put down mechatronic unit so that sensors -arrows- are pointing upwards.

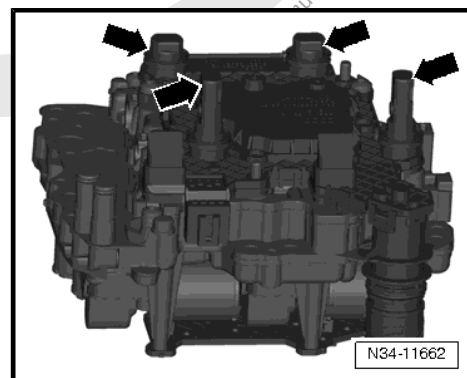
Install mechatronic unit.

Install in reverse order of removal. During this procedure, observe the following:



WARNING

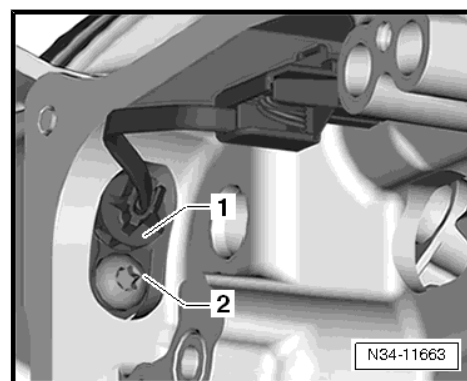
Before installing the mechatronic unit, clean the sealing surface on the gearbox housing thoroughly without using cleaning agents. Always make sure that no dirt can get into the inside.



To gearbox date 05/15

- Before installation, check that »sender« -1- is installed
⇒ [page 32](#) .

Continuation for all:





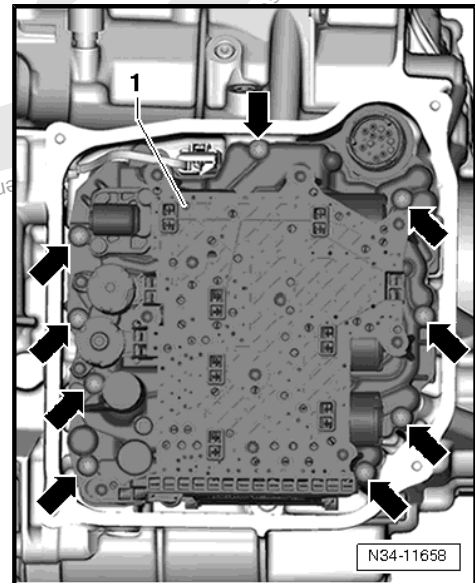
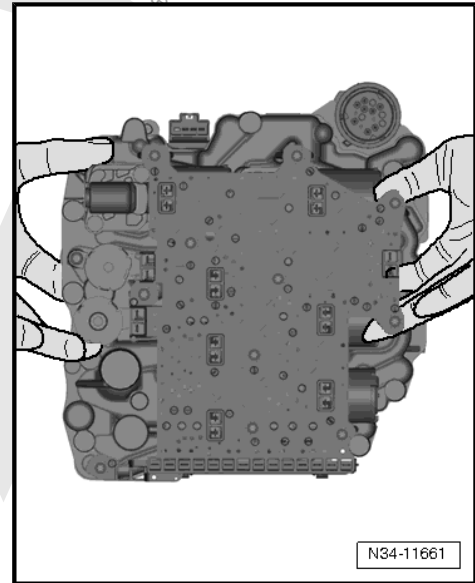
Before touching mechatronic unit, touch an earthed object again.



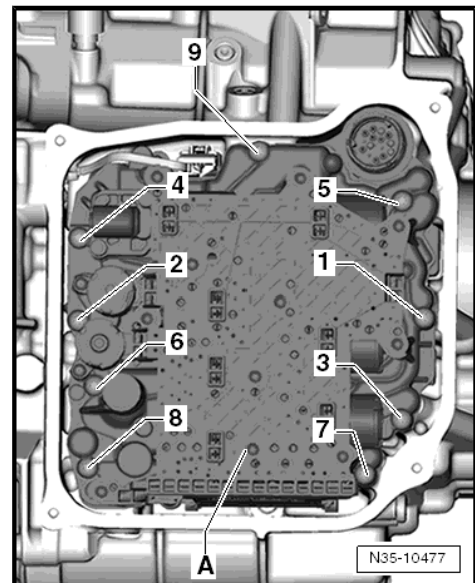
Caution

- *Lift or put down mechatronic unit only on housing and on solenoid valves.*

- Carefully insert mechatronic unit -1- into gearbox.
- Screw in new bolts -arrows- diagonally until finger-tight.



- Tighten bolts in specified sequence to 8 Nm + 45°.





To gearbox date 05/15

- Push on connector -1- and engage.
- After this, check that fastener -2- is not damaged.



Caution

Work with great care. The fastener of the connector -2- can break. If this has happened, the connector will no longer hold and the damaged part, e.g. mechatronic unit for dual clutch gearbox - J743- must be renewed.

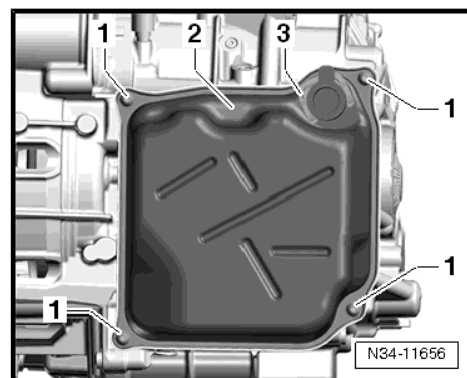
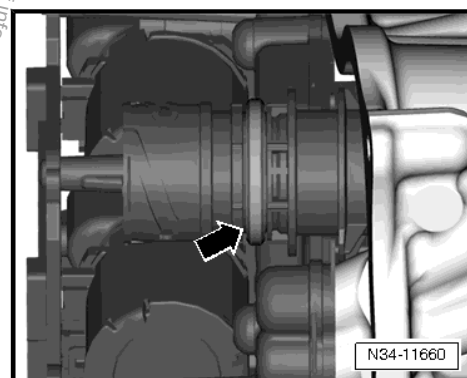
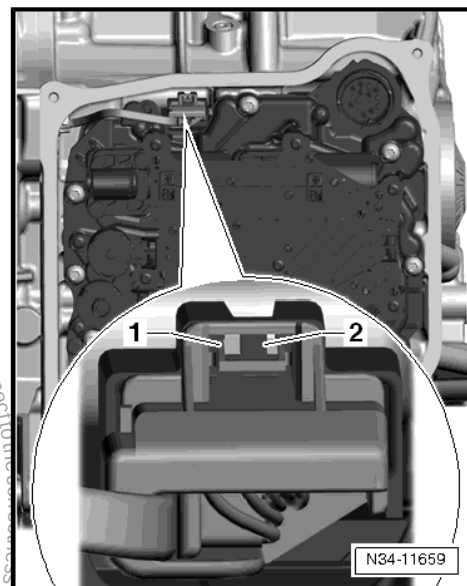
Continuation for all:

- Renew seal -arrow-.

A new mechatronic unit already has a new oil seal.

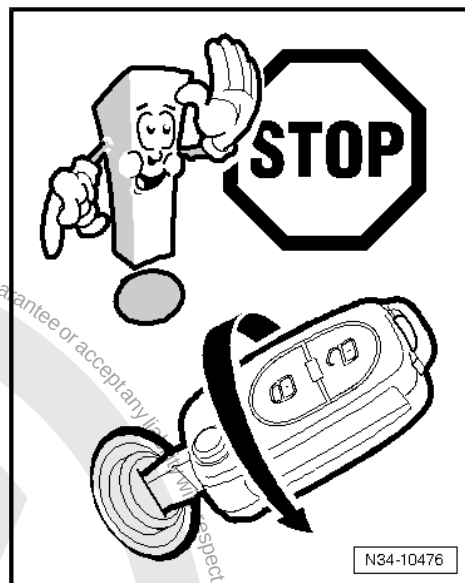
- Moisten seal with oil.

- Set new cover with seal -2- in place and tighten with new bolts -1- diagonally in several stages to 10 Nm + 45°.
- Install new securing clip -3-.
- Attach wire retainer to cover and tighten nuts to 10 Nm.
- Push on connector for mechatronic unit for dual clutch gearbox - J743- and engage lock by turning.





- Do not start engine!
- Fill with oil ⇒ [page 164](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview – noise insulation .
- Conduct basic adjustment of mechatronic unit for dual clutch gearbox - J743- .



1.2 Removing and installing gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509- up to gearbox date 05/15



Note

- ♦ *As of gearbox date 06/15, the gearbox input speed sender - G182- and the oil temperature sender in multi-plate clutch - G509- have been discontinued.*
- ♦ *If a sender is fitted, a sender must be reinstalled after it has been removed.*
- ♦ *The following procedure applies only to gearboxes in which a sender is fitted.*

Brief description

Both senders are combined in one component and can be renewed together only. They are in the gearbox near the multi-clutch. Before removal, the mechatronic unit for dual clutch gearbox - J743- must be removed.

Removing

- Remove mechatronic unit for dual clutch gearbox - J743- ⇒ [page 26](#) .

Do not pull on line!

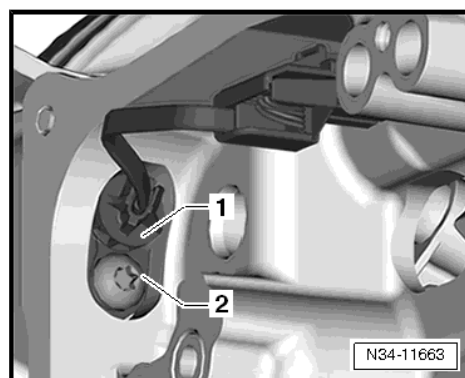
- Unscrew and remove bolt -2- and pull out sender -1-.

Installing

Install in reverse order of removal. During this procedure, observe the following:

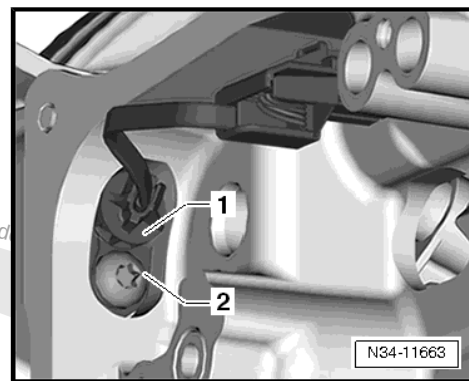
Reinstall »old« sender only if:

- The sender has no defect
- The cable was not pulled on when it was removed
- Moisten sender with dual clutch gearbox oil and install.





- Tighten bolt -2- to 10 Nm.
- Install mechatronic unit for dual clutch gearbox - J743-
⇒ [page 26](#) .



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2 Bevel box

⇒ [“2.1 Distinguishing between different types of bevel boxes”, page 34](#)

⇒ [“2.2 Removing and installing bevel box”, page 35](#)

⇒ [“2.3 Detaching bevel box from gearbox - gearbox removed”, page 57](#)

2.1 Distinguishing between different types of bevel boxes

The bevel box installed in the vehicle could be “0A6” or “0CP”.

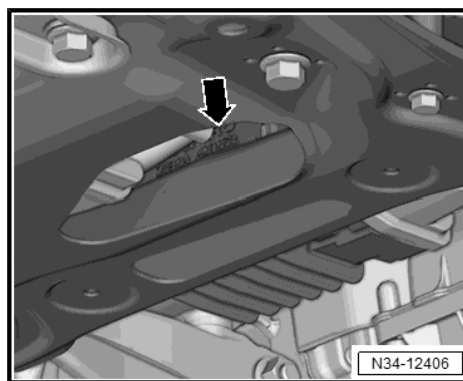
Bevel boxes can be identified by means of the following:

Distinguishing feature with bevel box installed:

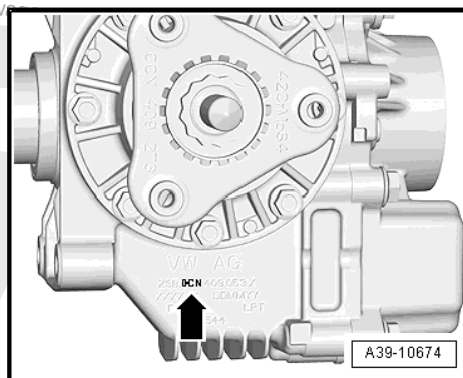
Determine version of bevel box by recess -arrow- in right area of subframe.

Remove following components if necessary:

- Noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .
- Centre underbody cladding ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding; Removing and installing underbody cladding .



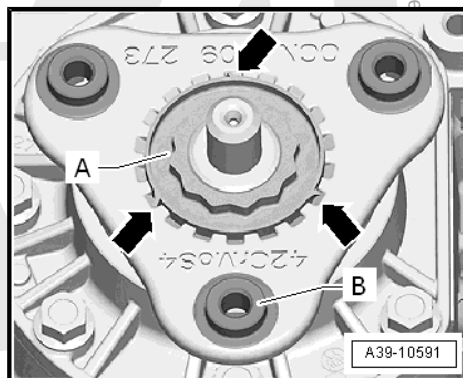
Area denoted by -arrow- is marked with “0A6” or “0CP”



Additional distinguishing feature with bevel box removed:

Output flange on bevel box “0A6” is secured with a nut -A- ⇒ Assembly overview - bevel box, “0A6” ⇒ [page 186](#) .

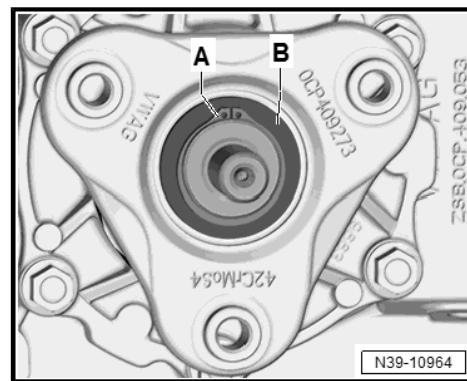
Disregard -B- and -arrows-.





Output flange on bevel box "0CP" is secured with a retaining ring
-A- ⇒ Assembly overview - bevel box, "0CP" ⇒ [page 188](#) .

Located behind retaining ring -A- is a washer -B-.



2.2 Removing and installing bevel box

⇒ ["2.2.1 Removing and installing bevel box, Passat 2015 ►, Passat Estate 2015 ►, Tiguan 2016 ►, Arteon 2018 ► vehicles with 2.0 I - 176 kW TDI and bi-turbocharger", page 35](#)

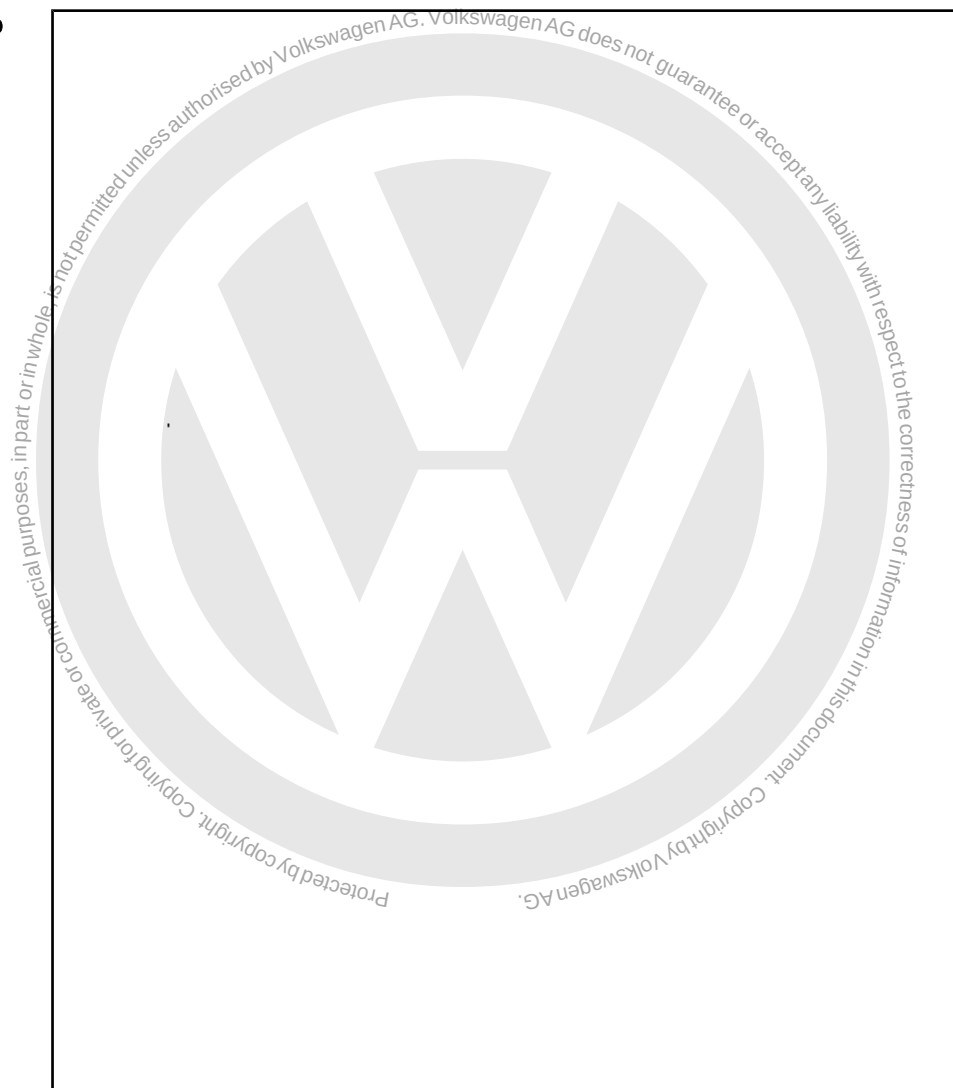
⇒ ["2.2.2 Removing and installing bevel box, Passat 2015 ►, Passat Estate 2015 ►, vehicles with petrol engine", page 40](#)

⇒ ["2.2.3 Removing and installing bevel box, Tiguan 2016 ►", page 48](#)

2.2.1 Removing and installing bevel box, Passat 2015 ►, Passat Estate 2015 ►, Tiguan 2016 ►, Arteon 2018 ► vehicles with 2.0 I - 176 kW TDI and bi-turbocharger



Special tools and workshop equipment required



- ◆ Multi-purpose tool - VW 771-
- ◆ Hexagon key extension, 8 mm - 3247-
- ◆ Supplementary set for engine and gearbox support - VW 540/1 B-
- ◆ Puller - T 10472-

Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.



Note

After loosening centre bolt, do not lower vehicle to ground again.



The right drive shaft will be removed in a later step.

- Do not loosen the front flange bolt -arrow- more than 90° while the vehicle is still standing on its wheels, or the wheel bearing will be damaged. ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



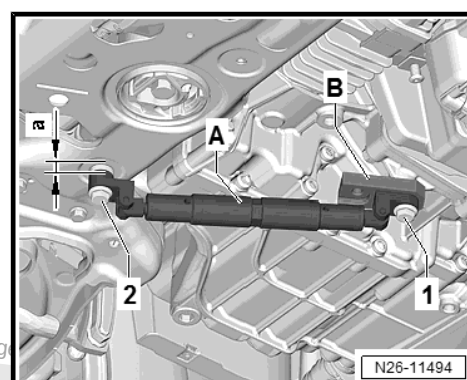
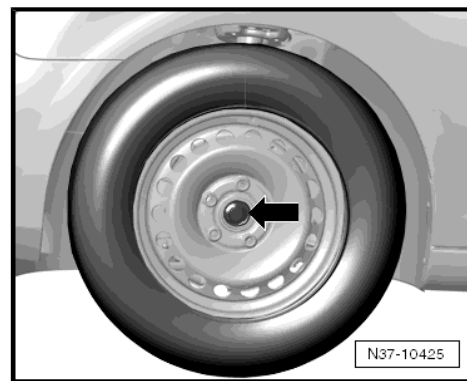
Note

So that the propshaft can be turned later in order to loosen it:

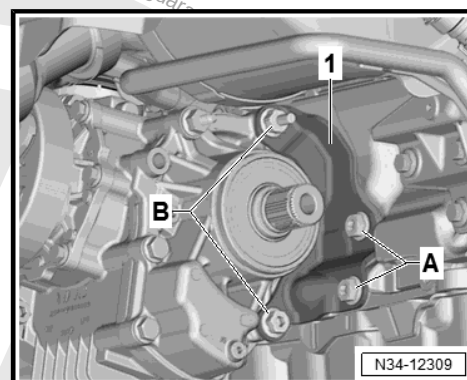
- Move selector lever to »N« position.
- Remove exhaust gas recirculation cooler ⇒ Rep. gr. 26 ; Exhaust gas recirculation; Removing and installing exhaust gas recirculation cooler .

The engine support - T10533- -A- remains in the forward position after the cooler has been removed. This makes it easier to remove the bevel box later.

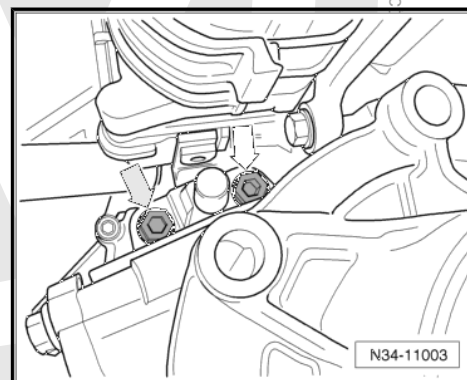
- Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



- Unscrew bolts -A and B-, and remove gearbox carrier -1- for bevel box.



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

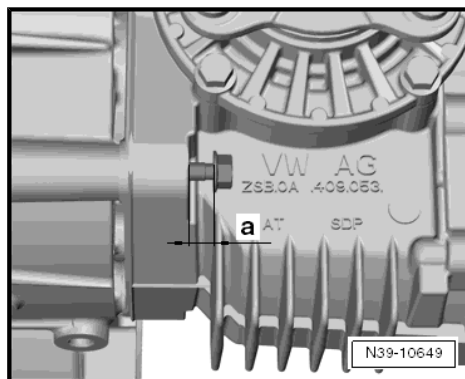




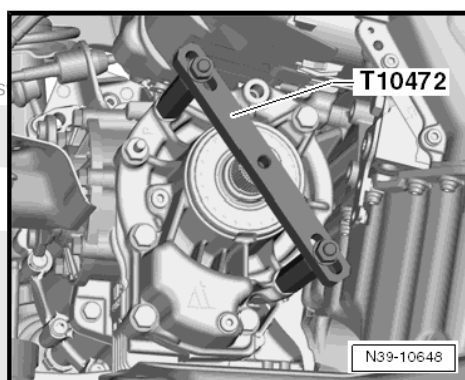
- Loosen lower securing bolts securing bevel box to gearbox and unscrew only as far as dimension -a-.

Dimension -a- = 15 mm.

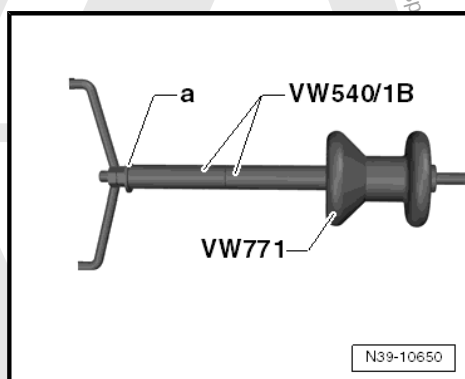
This prevents the bevel box from falling down immediately when loosened using multi-purpose tool - VW 771- .



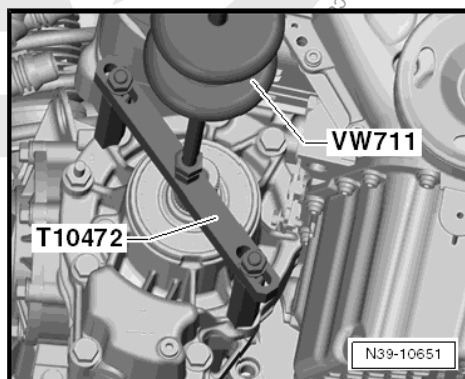
- Fit puller - T 10472- to bevel box.



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



- Bolt multi-purpose tool - VW 771- onto puller - T10472- and loosen bevel box from gearbox.
- Remove multi-purpose tool - VW 771- and puller - T10472- from bevel box.





- Unscrew lower securing bolts -arrows- and remove bevel box.

Installing

When installing, note the following:

- Grease splines of differential with grease for clutch plate splines - G 000 100- .
- Install new retaining ring -arrow A- and new O-ring -arrow B- on right stub shaft.
- Insert bevel box and press against gearbox as far as it will go.



Note

Turn stub shaft if spline position is unfavourable (bevel box cannot be pressed to stop against gearbox).

- If splines are correctly positioned and shafts are centred, then bevel box will slide to stop against gearbox.



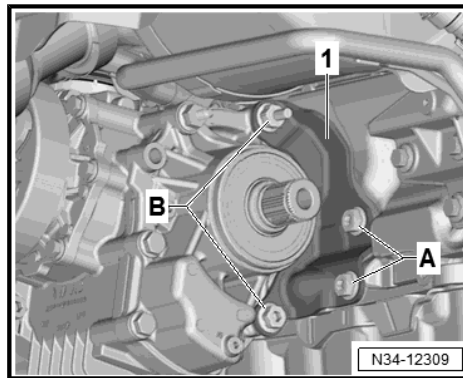
Caution

To ensure that the retaining ring of the stub shaft engages properly in the differential bevel gear, strike the face of the spline stub with a plastic hammer. Do not pull bevel box forcefully against gearbox by turning securing bolts. Damage to gearbox or bevel box could result.

- Screw on bevel box with new bolts -arrows- until finger-tight, then tighten. Specified torque: ➔ [page 88](#) .



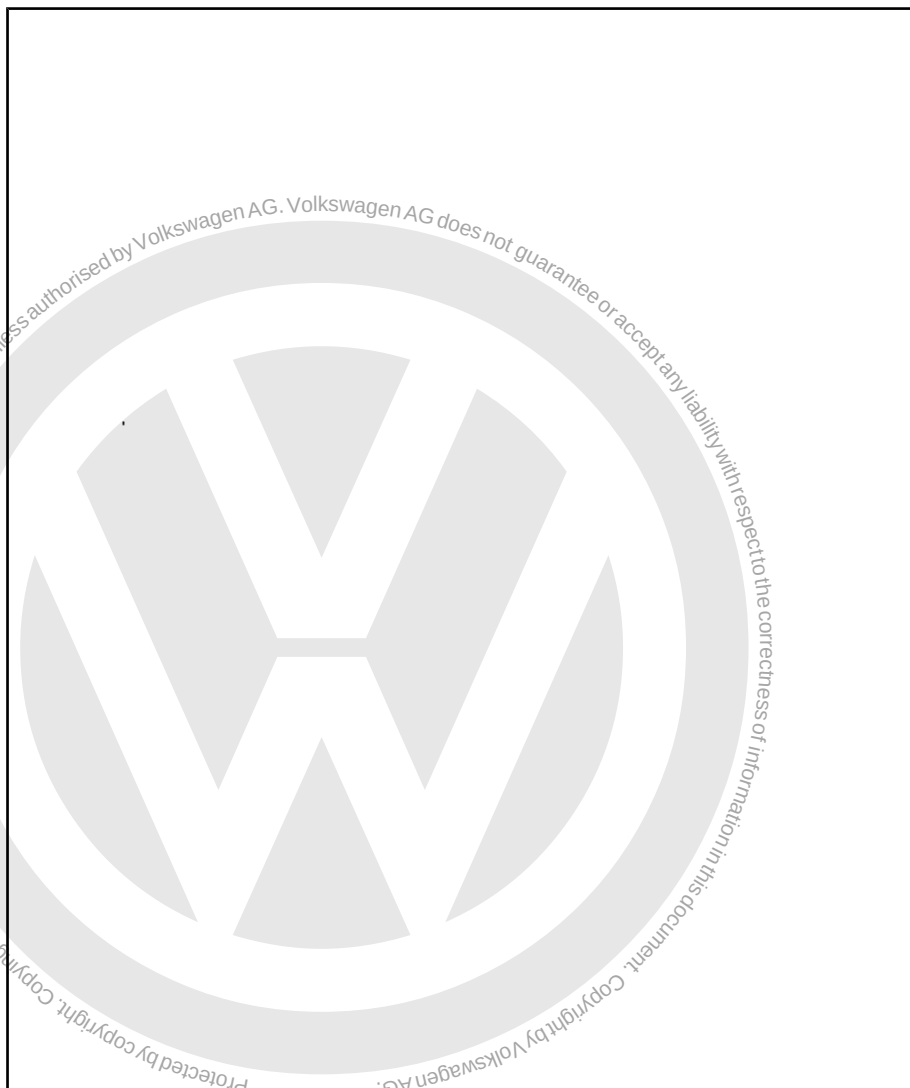
- Unbolt gearbox carrier for bevel box. Observe installation location and tightening sequence of bolts ⇒ [page 88](#) .
- Install exhaust gas recirculation cooler ⇒ Rep. gr. 26 ; Exhaust gas recirculation system; Removing and installing exhaust gas recirculation cooler .
- Install right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Check gear oil in bevel box ⇒ [page 170](#) .
- Following installation, check oil level in gearbox ⇒ [page 162](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .



Specified torques: ⇒ [page 88](#)

2.2.2 Removing and installing bevel box, Passat 2015 ►, Passat Estate 2015 ►, vehicles with petrol engine

Special tools and workshop equipment required



- ◆ Multi-purpose tool - VW 771-
- ◆ Hexagon key extension, 8 mm - 3247-



- ◆ Supplementary set for engine and gearbox support - VW 540/1

B-

- ◆ Puller - T 10472-

- ◆ Counter-hold tool - T10172A-

T10172A



W00-11665

- ◆ Engine support - T10533-

T10533



W00-11613

Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.



Note

After loosening centre bolt, do not lower vehicle to ground again.

The right drive shaft will be removed in a later step.

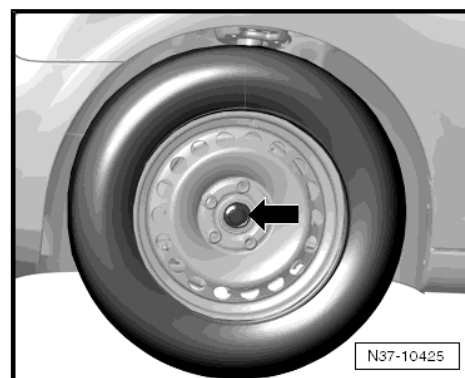
- Do not loosen the front flange bolt -arrow- more than 90° while the vehicle is still standing on its wheels, or the wheel bearing will be damaged. ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Note

So that the propshaft can be turned later in order to loosen it:

- Move selector lever to »N« position.
- Remove noise insulation below engine and gearbox. ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation



N37-10425



- Disconnect connector -1- from oil level and oil temperature sender - G266- .
- Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



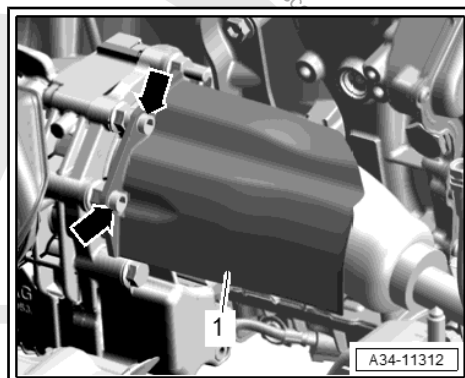
- Remove drive shaft heat shield -1- if present, from bevel box (-arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .



Caution

Risk of damage to decoupling element.

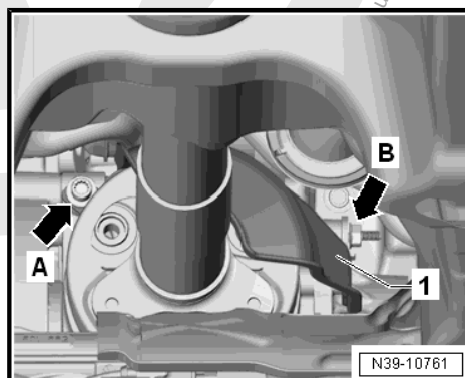
- ♦ **Observe ⇒ Rep. gr. 26 ; Emission control; Assembly overview - emission control .**



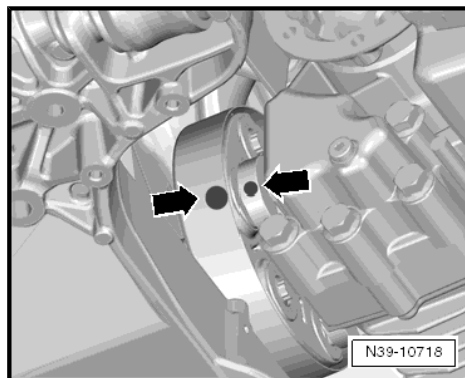
- Remove front exhaust system from engine, raise it and tie it in place ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencer .

If fitted, remove heat shield for propshaft.

- Unscrew bolts -A- and -B- from bevel box, and remove heat shield -1-.

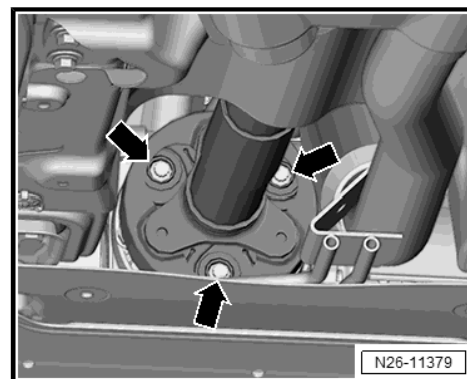


- Mark position of propshaft with flexible coupling relative to output shaft of bevel box -arrows-.





- Unbolt front propshaft from bevel box -arrows-.

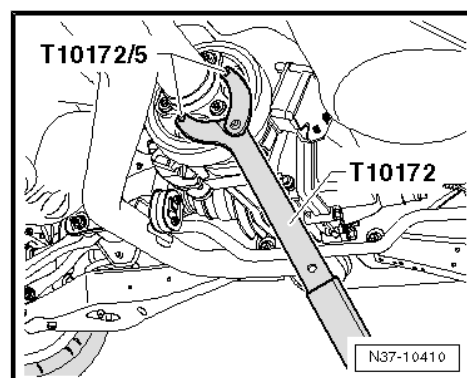


- If necessary, counterhold at rear final drive when loosening or tightening propshaft.

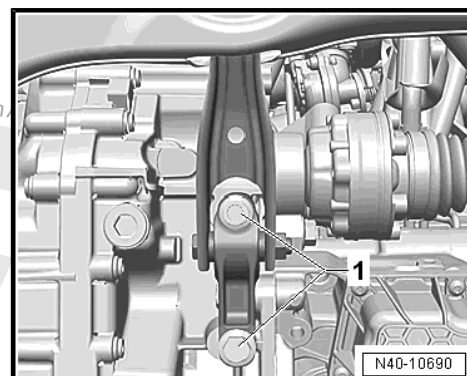


Note

To loosen »next« bolt, turn propshaft further by turning rear wheels at same time.



- Unscrew pendulum support bolts -1- from gearbox.
- Place a cloth on subframe to avoid damaging paint of propshaft when it is placed on subframe.

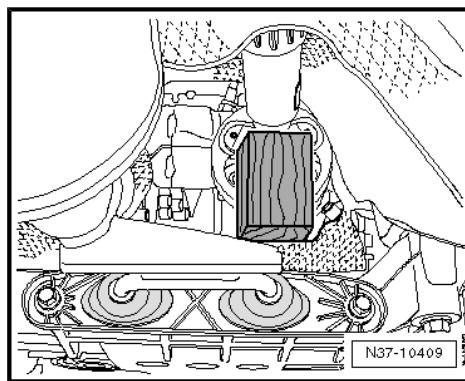


- Push front propshaft back to stop. Make sure not to damage seal -arrow- in centring bush.





- Guide propshaft upwards into tunnel, and use a suitable piece of wood to support it on subframe.

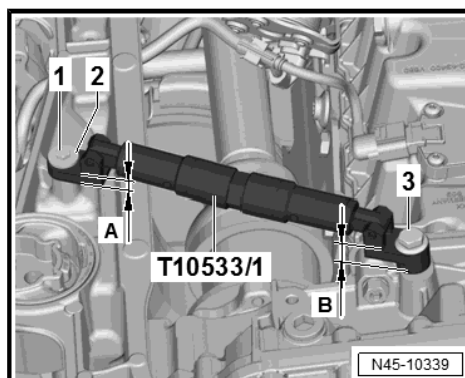


- Set up engine support - T10533- as shown in figure and tighten bolts hand-tight.
- -A- thin end
- -B- thick end

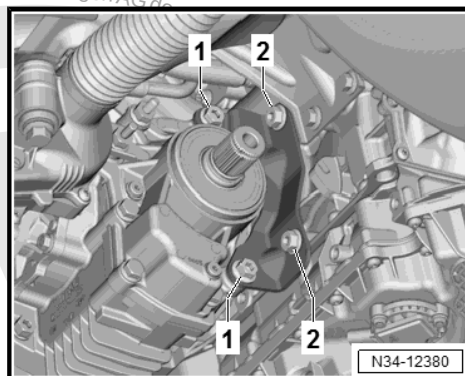
Bolt -3- = original pendulum support bolt

- Screw an M 8 x 30 mm bolt -1- with a washer -2- into threaded hole for noise insulation.

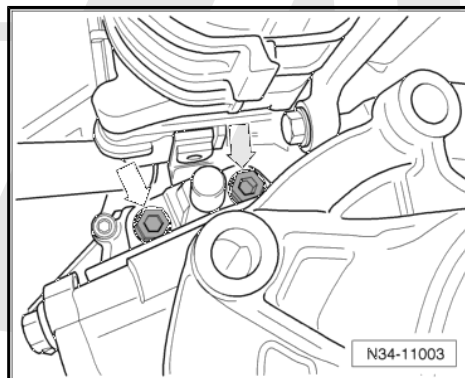
It may be necessary to push the gearbox forwards slightly in order to attach the engine support - T10533- .



- Force engine/gearbox as far forwards as possible by turning spindle of engine support - T10533- . Avoid collisions between components and radiator cowl.
- Unbolt gearbox carrier.
- Unscrew bolts -1- and -2-, and remove carrier from bevel box.



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

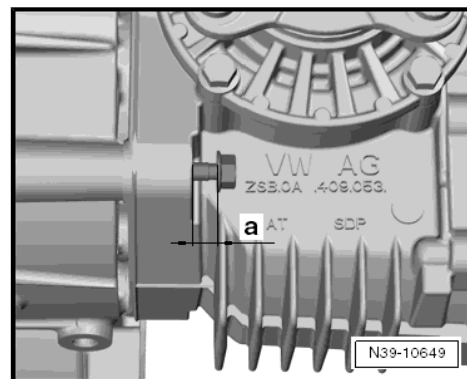




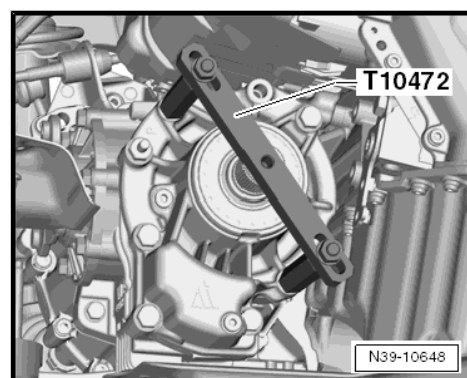
- Loosen lower securing bolts securing bevel box to gearbox and unscrew only as far as dimension -a-.

Dimension -a- = 15 mm.

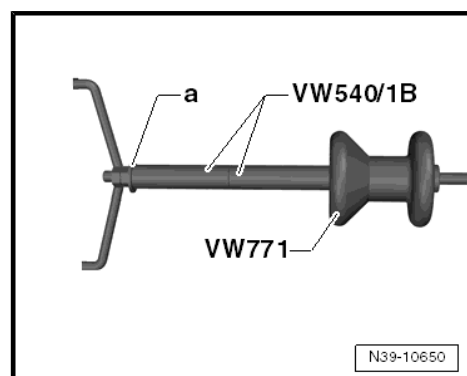
This prevents the bevel box from falling down immediately when loosened using multi-purpose tool - VW 771- .



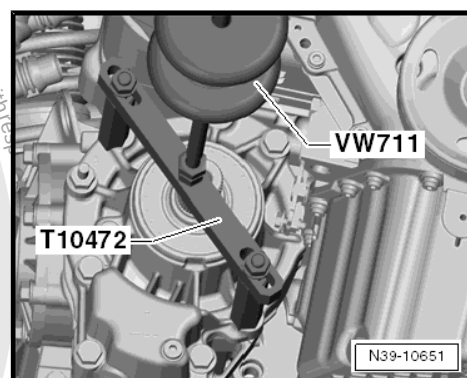
- Fit puller - T 10472- to bevel box.



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



- Bolt multi-purpose tool - VW 771- onto puller - T10472- and loosen bevel box from gearbox.
- Remove multi-purpose tool - VW 771- and puller - T10472- from bevel box.





- Unscrew lower securing bolts -arrows- and remove bevel box.

Installing

When installing, note the following:

- Grease splines of differential with grease for clutch plate splines - G 000 100- .
- Install new retaining ring -arrow A- and new O-ring -arrow B- on right stub shaft.
- Insert bevel box and press against gearbox as far as it will go.



Note

Turn stub shaft if spline position is unfavourable (bevel box cannot be pressed to stop against gearbox).

- If splines are correctly positioned and shafts are centred, then bevel box will slide to stop against gearbox.



Caution

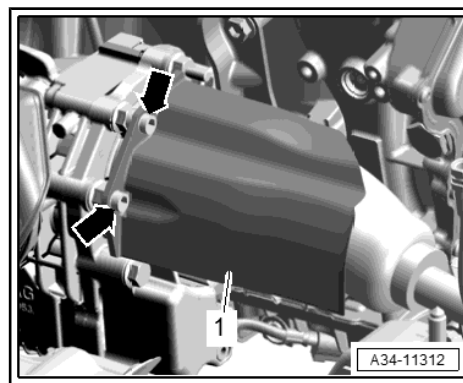
To ensure that the retaining ring of the stub shaft engages properly in the differential bevel gear, strike the face of the spline stub with a plastic hammer. Do not pull bevel box forcefully against gearbox by turning securing bolts. Damage to gearbox or bevel box could result.

- Screw on bevel box with new bolts -arrows- until finger-tight, then tighten. Specified torque: ➤ [page 88](#) .
- Install gearbox carrier. Observe installation location and tightening sequence of bolts ➤ [page 88](#) .





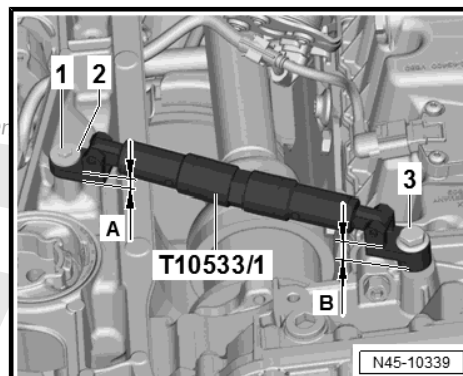
- Mount drive shaft heat shield -1-, if present, on bevel box (-arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .
- Fit propshaft on bevel box.



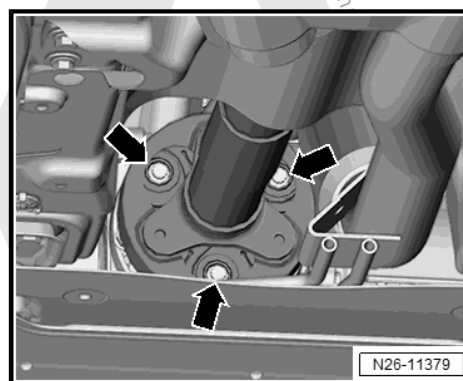
Note

When removing and installing the bevel box, do not damage the seal in the propshaft flange -arrow-. Renew propshaft if damaged.

- Join bevel box and propshaft by turning spindle of engine support - T10533- .
- Remove engine support - T10533- .

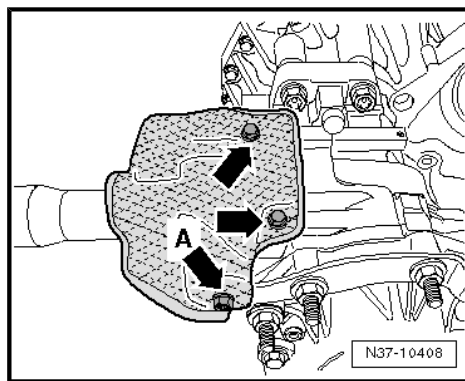


- Bolt propshaft to bevel box -arrows- ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- If present, install heat shield for propshaft.

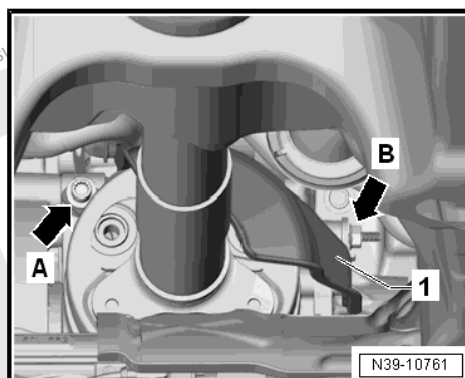




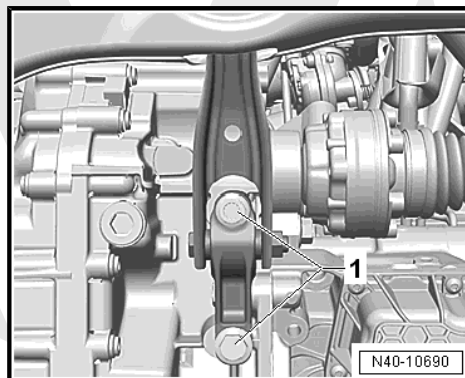
Version 1:



Version 2:



- Secure pendulum support to gearbox using new bolts -1-. Specified torque: ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings
- Install right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install parts of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencers .
- Check gear oil in bevel box ⇒ [page 170](#) .
- Following installation, check oil level in gearbox ⇒ [page 162](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .



Specified torques: ⇒ [page 88](#)

2.2.3 Removing and installing bevel box, Tiguan 2016 ►



Note

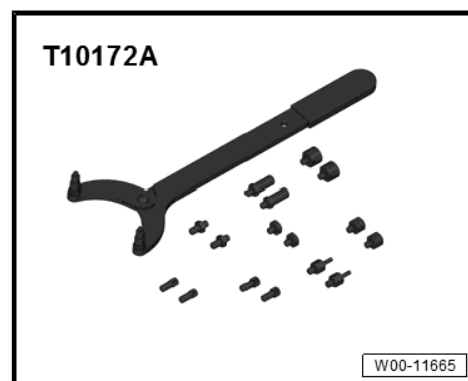
The following procedure does not apply to vehicles with bi-turbocharger.

Removing and installing bevel box - vehicles with 2.0 l - 176 kW TDI engine and bi-turbocharger ⇒ [page 35](#)



Special tools and workshop equipment required

- ◆ Multi-purpose tool - VW 771-
- ◆ Hexagon key extension, 8 mm - 3247-
- ◆ Supplementary set for engine and gearbox support - VW 540/1 B-
- ◆ Puller - T 10472-
- ◆ Counter-hold tool - T10172A-





♦ Engine support - T10533-



Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.



Note

After loosening centre bolt, do not lower vehicle to ground again.

The right drive shaft will be removed in a later step.

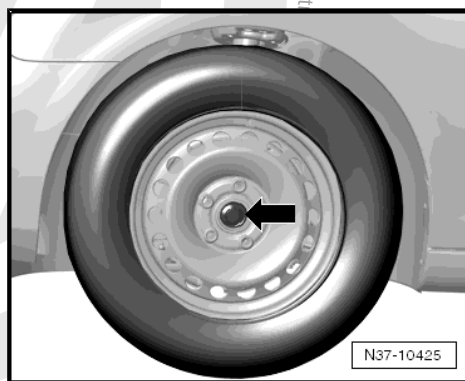
- Do not loosen the front flange bolt -arrow- more than 90° while the vehicle is still standing on its wheels, or the wheel bearing will be damaged. ➤ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Note

So that the propshaft can be turned later in order to loosen it:

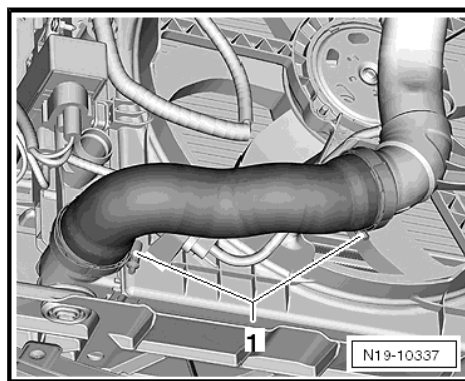
- Move selector lever to »N« position.
- Remove noise insulation below engine and gearbox. ➤ General body repairs, exterior; Rep. gr. 66 ; Noise insulation



Vehicles with petrol engine:

- Remove connecting hose between charge air cooler and charge air pipe ➤ Rep. gr. 21 ; Charge air system; Assembly overview - charge air system .

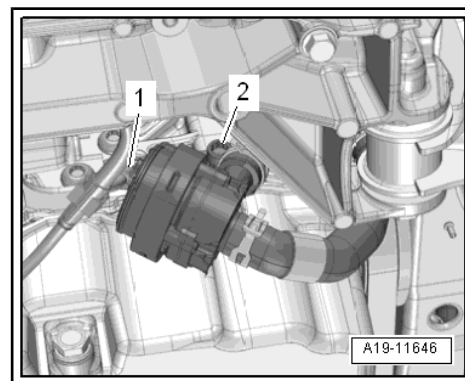
Vehicles with diesel engine:





- Disconnect connector -1-.
- Unscrew bolt -2- and push auxiliary pump for heating - V488- to right side. Do not disconnect any lines ⇒ Rep. gr. 19 ; Coolant pump, regulation of cooling system; Assembly overview - electric coolant pump .

Continued for all vehicles:



- Disconnect connector -1- from oil level and oil temperature sender - G266- .
- Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

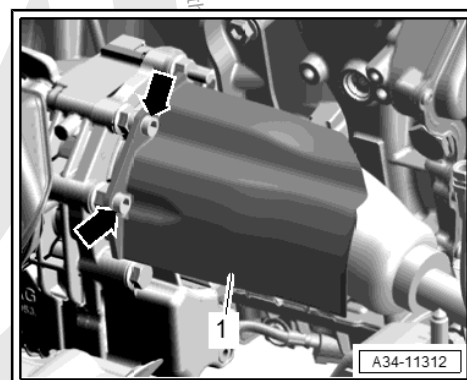


- Remove drive shaft heat shield -1-, if present, from bevel box (-arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .

⚠ Caution

Risk of damage to decoupling element.

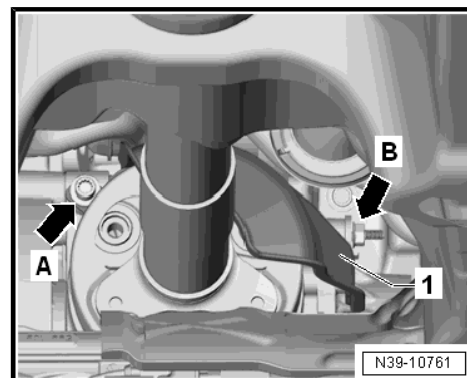
◆ ***Observe ⇒ Rep. gr. 26 ; Emission control; Assembly overview - emission control .***



- Remove front exhaust system from engine, raise it and tie it in place ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencer .

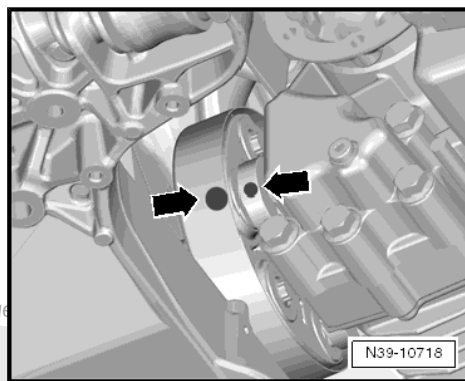
If fitted, remove heat shield for propshaft.

- Unscrew bolts -A- and -B- from bevel box, and remove heat shield -1-.

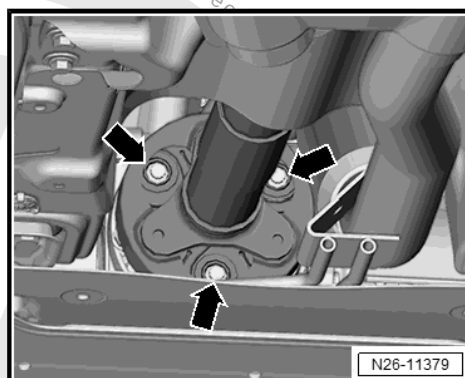




- Mark position of propshaft with flexible coupling relative to output shaft of bevel box -arrows-.



- Unbolt front propshaft from bevel box -arrows-.

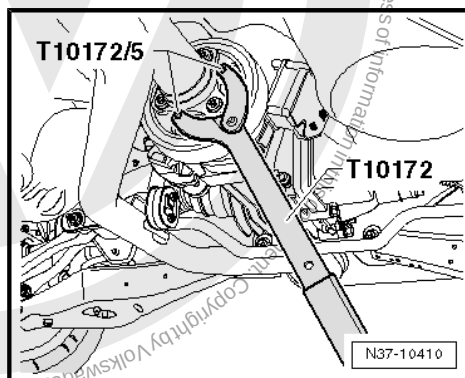


- If necessary, counterhold at rear final drive when loosening or tightening propshaft.

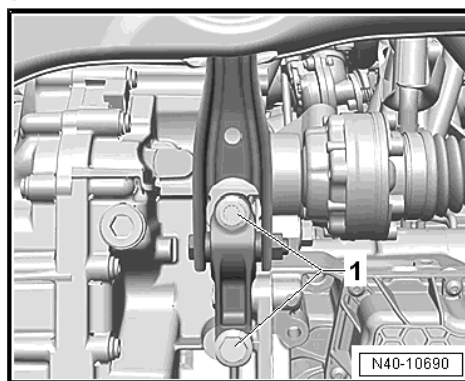


Note

To loosen »next« bolt, turn propshaft further by turning rear wheels at same time.



- Unscrew pendulum support bolts -1- from gearbox.
- Place a cloth on subframe to avoid damaging paint of propshaft when it is placed on subframe.





- Push front propshaft back to stop. Make sure not to damage seal -arrow- in centring bush.
- Place front propshaft on heat shield or on subframe as appropriate.



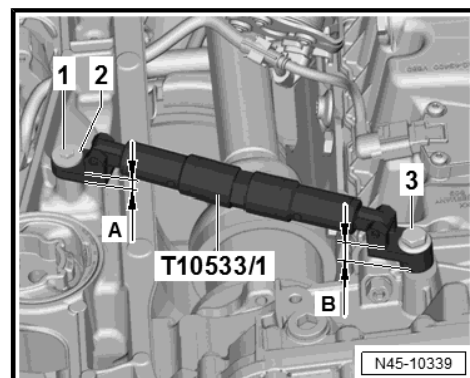
- Set up engine support - T10533- as shown in figure and tighten bolts hand-tight.
- -A- thin end
- -B- thick end

Bolt -3- = original pendulum support bolt

- Screw an M 8 x 30 mm bolt -1- with a washer -2- into threaded hole for noise insulation.

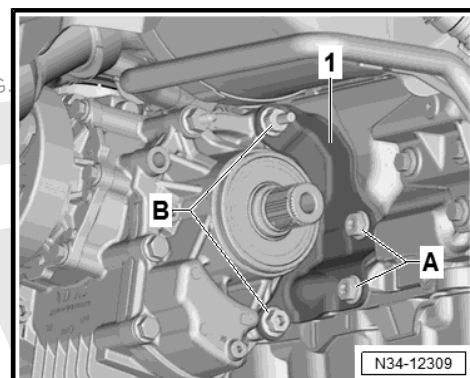
It may be necessary to push the gearbox forwards slightly in order to attach the engine support - T10533- .

- Force engine/gearbox as far forwards as possible by turning spindle of engine support - T10533- . Avoid collisions between components and radiator cowl.
- Unbolt gearbox carrier for bevel box.



Diesel engine:

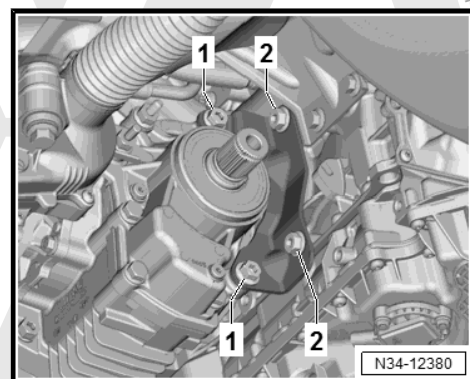
- Unscrew bolts -A and B-, and remove gearbox carrier -1- for bevel box.



Petrol engine:

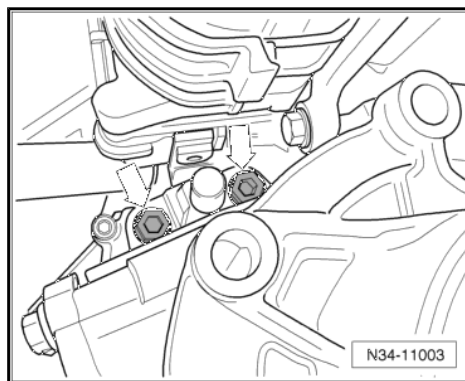
- Unscrew bolts -1- and -2-, and remove carrier from bevel box.

Continuation for all:





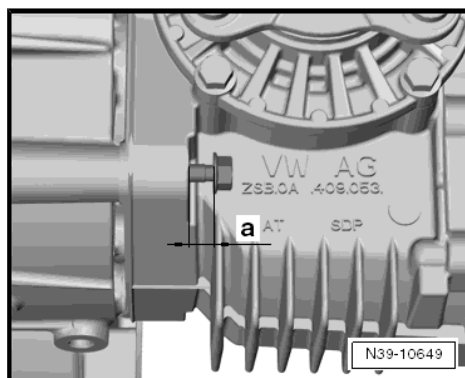
- Remove upper securing bolts -arrows- securing bevel box to gearbox.



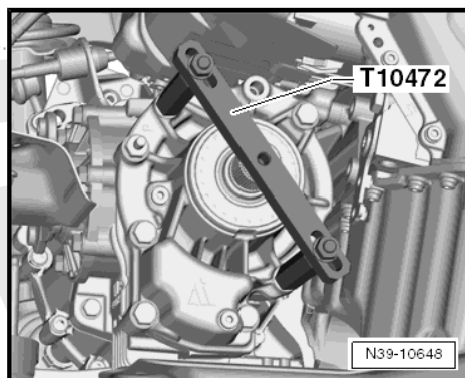
- Loosen lower securing bolts securing bevel box to gearbox and unscrew only as far as dimension -a-.

Dimension -a- = 15 mm.

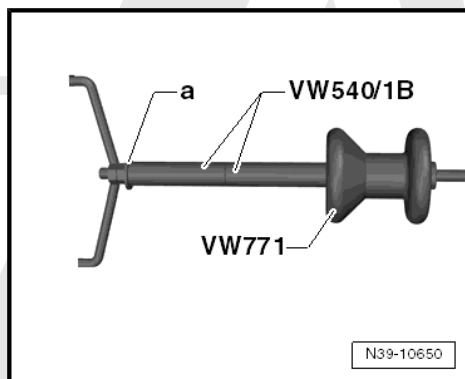
This prevents the bevel box from falling down immediately when loosened using multi-purpose tool - VW 771- .



- Fit puller - T 10472- to bevel box.

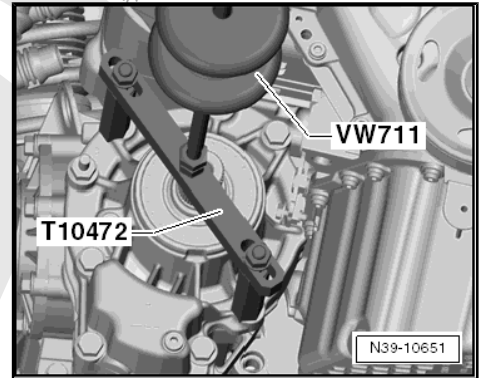


- Prepare multi-purpose tool - VW 771- with a washer -a- and 2 sleeves from the supplementary set for engine and gearbox support - VW 540/1 B- as shown in the illustration.





- Bolt multi-purpose tool - VW 771- onto puller - T10472- and loosen bevel box from gearbox.
- Remove multi-purpose tool - VW 771- and puller - T10472- from bevel box.



- Unscrew lower securing bolts -arrows- and remove bevel box.

Installing

When installing, note the following:

- Grease splines of differential with grease for clutch plate splines - G 000 100- .
- Install new retaining ring -arrow A- and new O-ring -arrow B- on right stub shaft.
- Insert bevel box and press against gearbox as far as it will go.



Note

Turn stub shaft if spline position is unfavourable (bevel box cannot be pressed to stop against gearbox).

- If splines are correctly positioned and shafts are centred, then bevel box will slide to stop against gearbox.



Caution

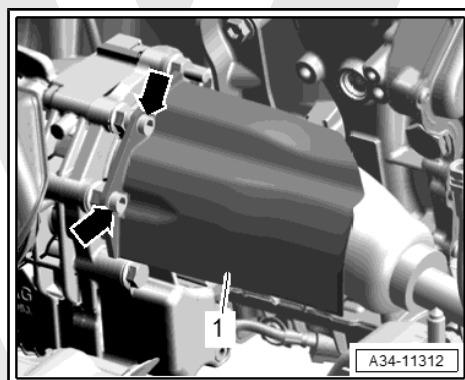
To ensure that the retaining ring of the stub shaft engages properly in the differential gear, strike the face of the spline stub with a plastic hammer. Do not pull bevel box forcefully against gearbox by turning securing bolts. Damage to gearbox or bevel box could result.



- Screw on bevel box with new bolts -arrows- until finger-tight, then tighten. Specified torque: ➤ [page 88](#) .
- Unbolt gearbox carrier for bevel box. Observe installation location and tightening sequence of bolts ➤ [page 88](#) .

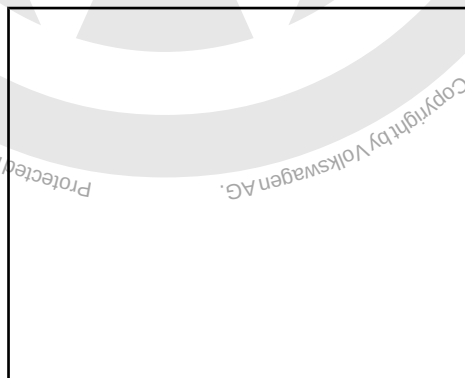


- Mount drive shaft heat shield -1-, if present, on bevel box (-arrows-) ➤ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .
- Fit propshaft on bevel box.

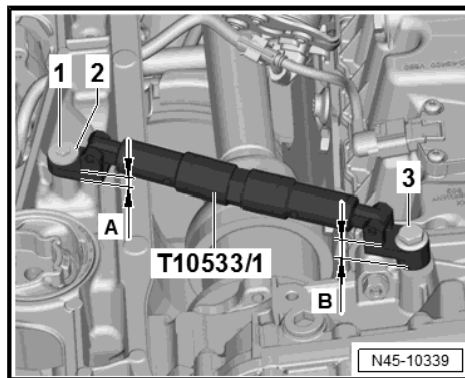


Note

When removing and installing the bevel box, do not damage the seal in the propshaft flange -arrow-. Renew propshaft if damaged.

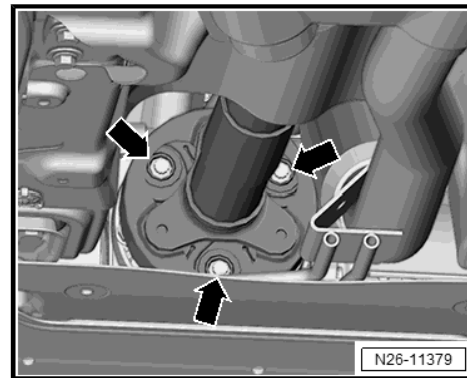


- Join bevel box and propshaft by turning spindle of engine support - T10533- . Take note of seal in propshaft flange when doing this.
- Remove engine support - T10533- .

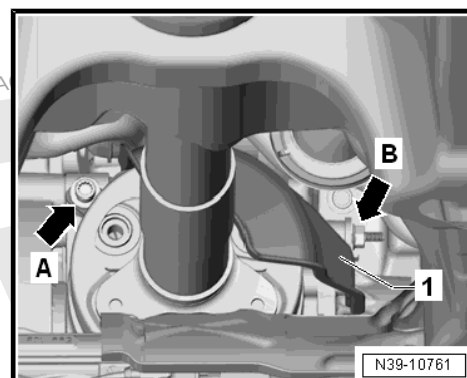




- Bolt propshaft to bevel box -arrows- ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- If present, install heat shield for propshaft.



- Secure pendulum support to gearbox using new bolts -1-. Specified torque: ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings .
- Install right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install parts of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/ silencers .

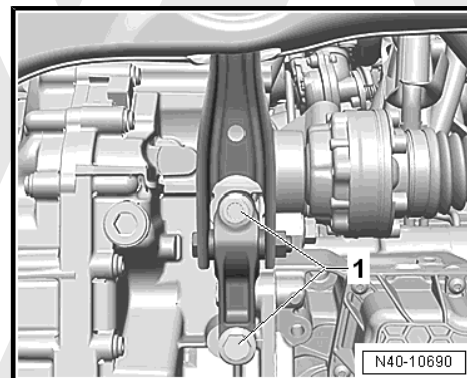
Continue installation in reverse order of removal.

- Check gear oil in bevel box ⇒ [page 170](#) .
- Following installation, check oil level in gearbox ⇒ [page 162](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .

Specified torques: ⇒ [page 88](#)

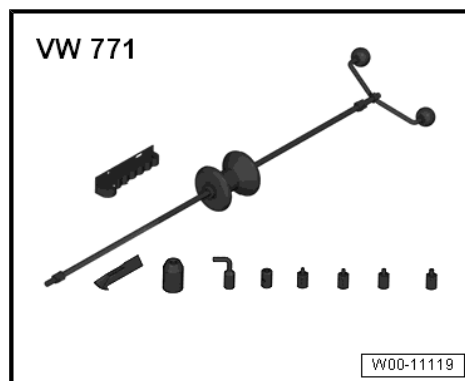
2.3 Detaching bevel box from gearbox - gearbox removed

Special tools and workshop equipment required





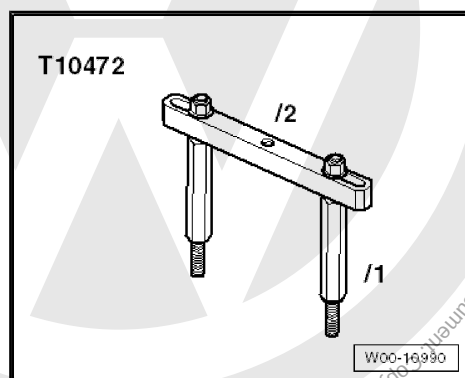
- ◆ Multi-purpose tool - VW 771-



- ◆ Hexagon key extension, 8 mm - 3247-



- ◆ Puller - T 10472-

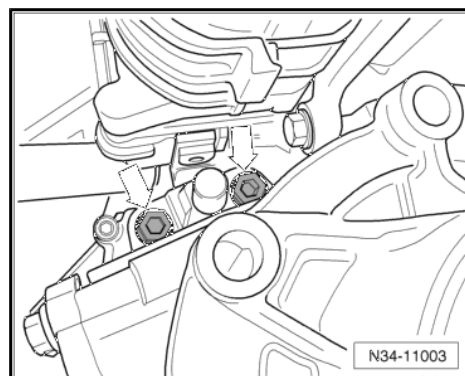


Removing

- Remove gearbox with bevel box ⇒ [page 89](#) .
- Secure gearbox with bevel box to assembly stand
⇒ [page 157](#) .

In the following illustrations the bevel box is shown in installed condition.

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

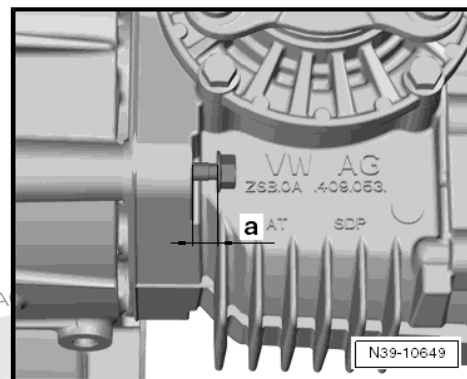




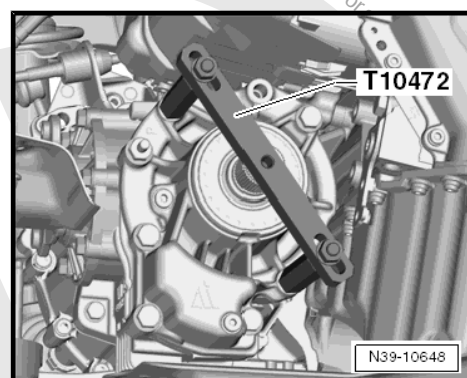
- Loosen lower securing bolts securing bevel box to gearbox and unscrew only as far as dimension -a-.

Dimension -a- = 15 mm.

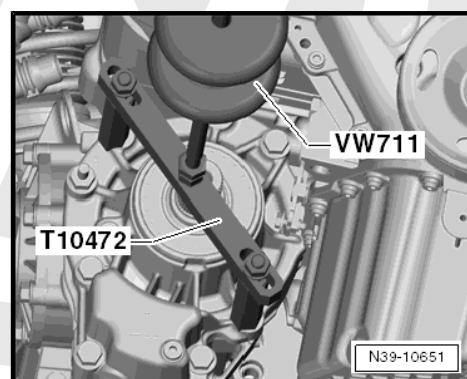
This prevents the bevel box from falling down immediately when loosened using multi-purpose tool - VW 771- .



- Fit puller - T 10472- to bevel box.



- Bolt multi-purpose tool - VW 771- onto puller T10472 and loosen bevel box from gearbox.



- Unscrew lower securing bolts -arrows- and remove bevel box.

Installing

When installing, note the following:





- Grease splines of differential with grease for clutch plate splines - G 000 100- .
- Install new retaining ring -arrow A- and new O-ring -arrow B- on right stub shaft.
- Insert bevel box and press against gearbox.



Note

Turn stub shaft if spline position is unfavourable (bevel box cannot be pressed to stop against gearbox).

- If splines are correctly positioned and shafts are centred, then bevel box will slide against contact surface on gearbox.



Caution

Retaining ring on stub shaft must engage correctly in differential bevel gear. If retaining ring is not engaged, there is a risk that stub shaft might move outwards.

Also, bevel box is not allowed to be bolted onto gearbox forcefully. Damage to gearbox or bevel box could result in both cases.

- To ensure that the retaining ring engages properly in the differential bevel gear, strike the face of the spline stub several times with a plastic hammer (weight 1000 - 2000 g).
- Screw on bevel box with new bolts -arrows- until finger-tight, then tighten. Specified torque: ➤ [page 88](#) .
- Installing gearbox ➤ [page 146](#)
- After installing gearbox, check oil level and top up ➤ [page 162](#) .



3 Selector mechanism

⇒ [“3.1 Assembly overview - selector mechanism”, page 61](#)

⇒ [“3.2 Emergency release from position P”, page 64](#)

⇒ [“3.3 Removing and installing selector lever handle”, page 65](#)

⇒ [“3.4 Moving push button in the handle to installation position”, page 70](#)

⇒ [“3.5 Removing and installing selector mechanism”, page 71](#)

⇒ [“3.6 Removing and installing selector lever cable”, page 78](#)

⇒ [“3.7 Checking selector mechanism”, page 83](#)

⇒ [“3.8 Checking and adjusting selector lever cable”, page 83](#)

⇒ [“3.9 Renewing oil seal for selector shaft”, page 85](#)

3.1 Assembly overview - selector mechanism

⇒ [“3.1.1 Assembly overview- selector mechanism, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►”, page 61](#)

⇒ [“3.1.2 Assembly overview- selector mechanism, Tiguan 2016 ►”, page 63](#)

3.1.1 Assembly overview- selector mechanism, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►





1 - Handle with selector cover

- ☐ Do not remove handle without reason. For emergency release, only the cover needs to be unclipped ⇒ [page 64](#).
- ☐ Removing and installing ⇒ [page 65](#)

2 - Bolt

- ☐ Qty. 4
- ☐ 8 Nm

3 - Selector mechanism

- ☐ With integrated selector lever sensor control unit - J587- with selector lever - E313- , Tiptronic switch - F189- , switch for selector lever locked in P - F319- and selector lever lock solenoid - N110-
- ☐ Removing and installing ⇒ [page 71](#)

4 - Selector lever cable

- ☐ Selector lever cable is not greased
- ☐ Removing and installing ⇒ [page 78](#)
- ☐ Checking ⇒ [page 83](#)
- ☐ Adjusting ⇒ [page 83](#)

5 - Securing clip

- ☐ Renew after removal

6 - Hexagon flange nut

- ☐ Qty. 4
- ☐ 8 Nm

7 - Selector housing

8 - Cover

- ☐ Renew after removal

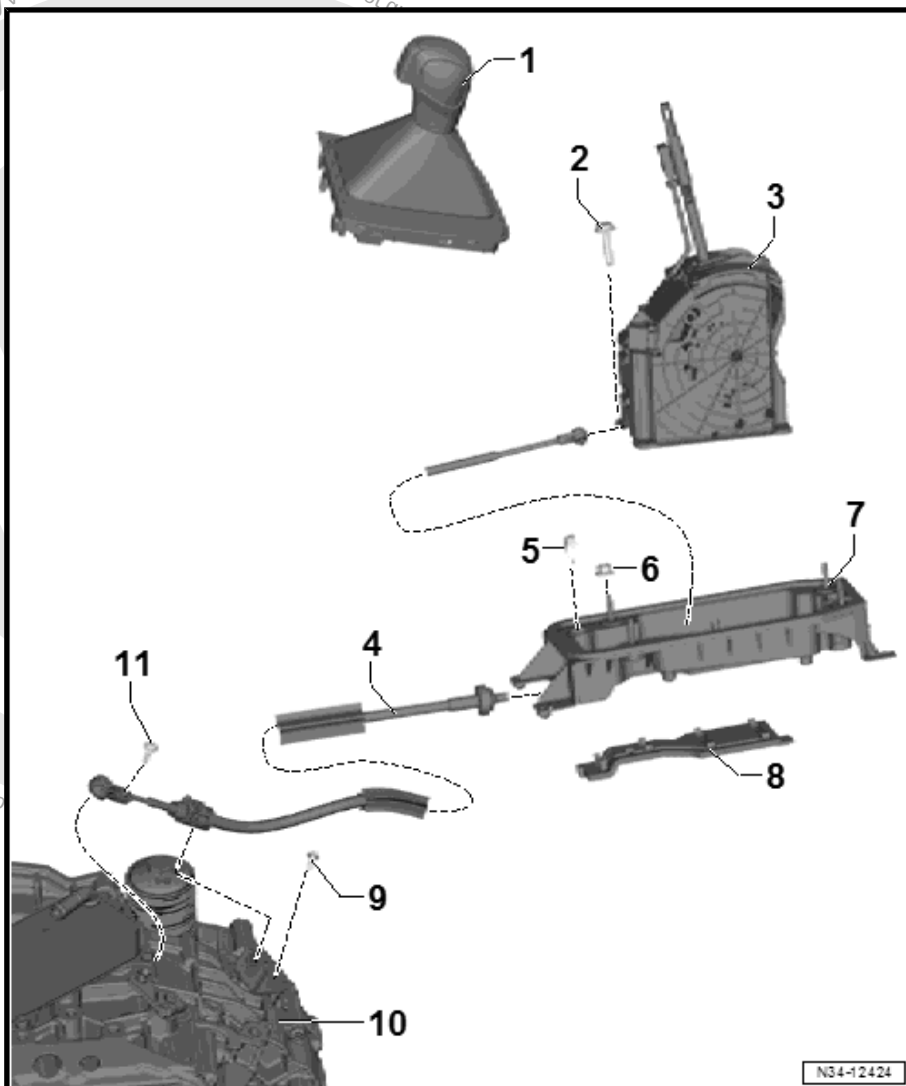
9 - Bolt

- ☐ Renew after removal
- ☐ For selector cable support bracket to gearbox
- ☐ Qty. 2
- ☐ 20 Nm + 90°

10 - Gearbox

11 - Bolt

- ☐ Adjuster screw for selector lever cable
- ☐ 13 Nm





3.1.2 Assembly overview- selector mechanism, Tiguan 2016 ►

1 - Handle with selector cover

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

2 - Selector mechanism

- ☐ With integrated selector lever sensor control unit - J587- with selector lever - E313- , Tiptronic switch - F189- , switch for selector lever locked in P - F319- and selector lever lock solenoid - N110-
- ☐ Removing and installing
⇒ [page 71](#)

3 - Bolt

- ☐ Qty. 4
- ☐ 8 Nm

4 - Plug

5 - Hexagon flange nut

- ☐ Qty. 4
- ☐ 8 Nm

6 - Selector housing

7 - Gearbox

8 - Bolt

- ☐ Always renew after removing.
- ☐ For selector cable support bracket to gearbox
- ☐ Qty. 2
- ☐ 20 Nm + 90°

9 - Bolt

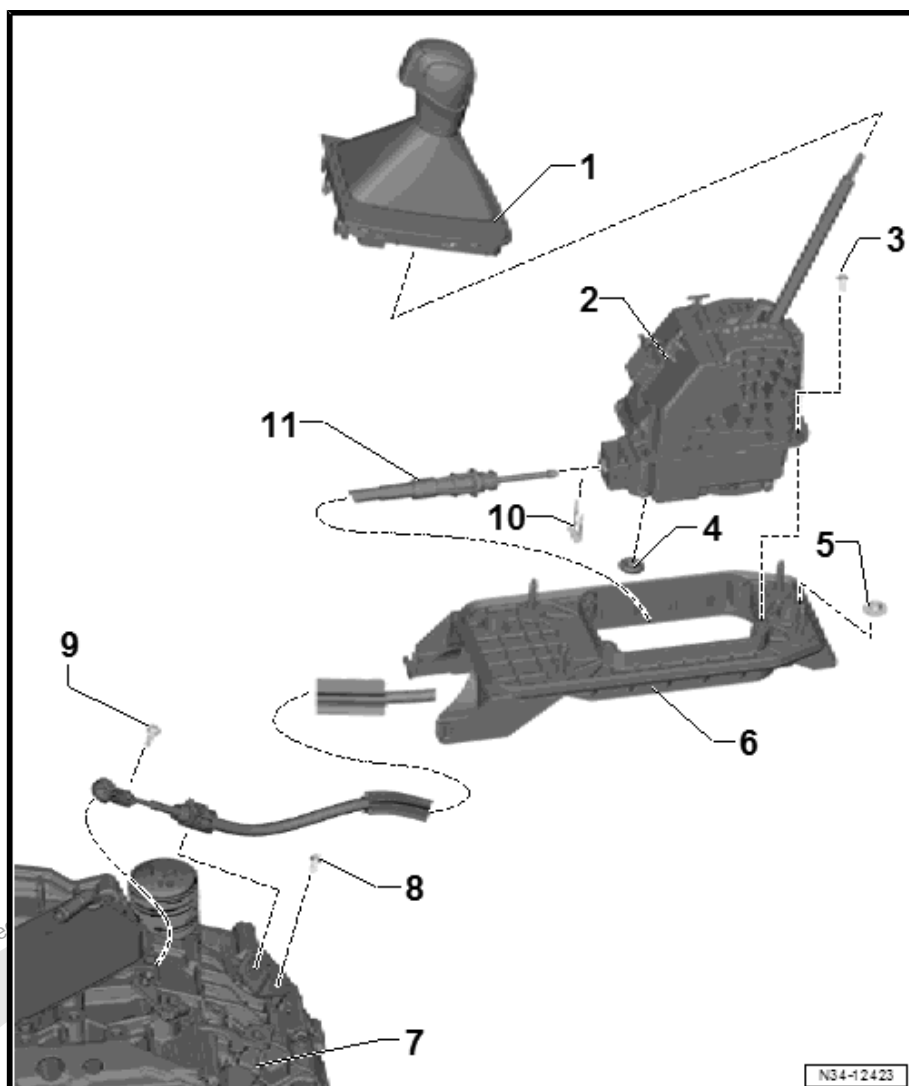
- ☐ Adjuster screw for selector lever cable
- ☐ 13 Nm

10 - Securing clip

- ☐ Always renew after removing.
- ☐ Installation position: offset side points forwards towards front end.

11 - Selector lever cable

- ☐ Selector lever cable is not greased
- ☐ Removing and installing ⇒ [page 80](#)
- ☐ Checking and adjusting ⇒ [page 83](#)





3.2 Emergency release from position P

⇒ [“3.2.1 Emergency release from position P, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►”, page 64](#)

⇒ [“3.2.2 Emergency release from position P, Tiguan 2016 ►”, page 64](#)

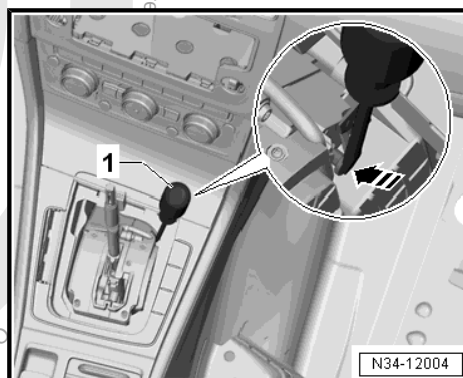
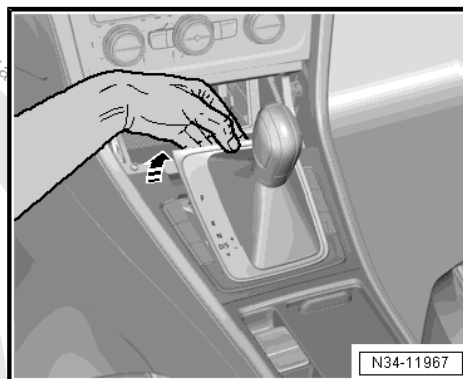
3.2.1 Emergency release from position P, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►

Do not remove handle

- Depress brake pedal or set handbrake.
- Open lid of storage compartment.
- Grasp under selector lever cover with one hand, and unclip cover by pulling it upwards.
- Push selector cover to one side.

- Using a screw driver, from right side, press yellow plastic part and hold in this position.

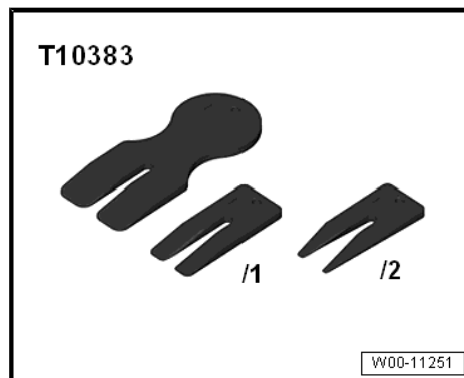
Selector lever can now be moved from position »P«.



3.2.2 Emergency release from position P, Tiguan 2016 ►

Special tools and workshop equipment required

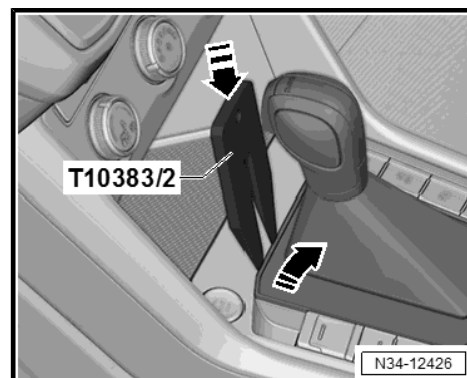
- ◆ -T10383/2-





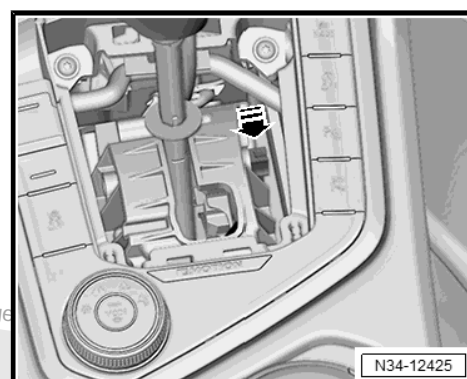
Do not remove handle

- Depress brake pedal or set handbrake.
- Fit wedge - T10383/2- at front between centre console and selector cover, and lever selector cover off centre console by carefully pushing wedge downwards.
- Push selector cover to one side.



- Push yellow plastic lever backwards in direction of arrow and hold in this position.

Selector lever can now be moved from position »P«.



3.3 Removing and installing selector lever handle

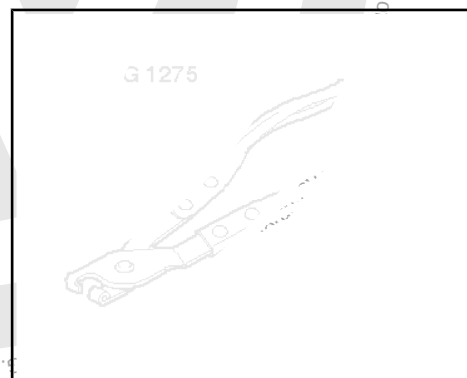
⇒ [“3.3.1 Removing and installing selector lever handle, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►”, page 65](#)

⇒ [“3.3.2 Removing and installing selector lever handle, Tiguan 2016 ►”, page 67](#)

3.3.1 Removing and installing selector lever handle, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►

Special tools and workshop equipment required

- ◆ Hose clip pliers - V.A.G 1275-



Brief description

Handle is removed together with selector cover.

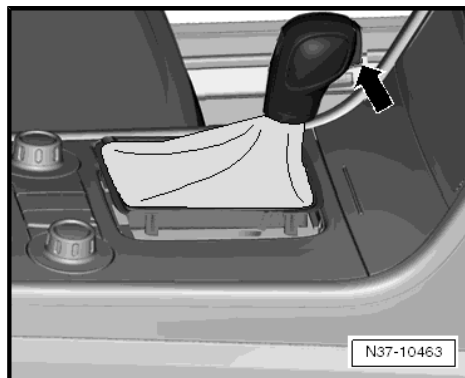


Removing

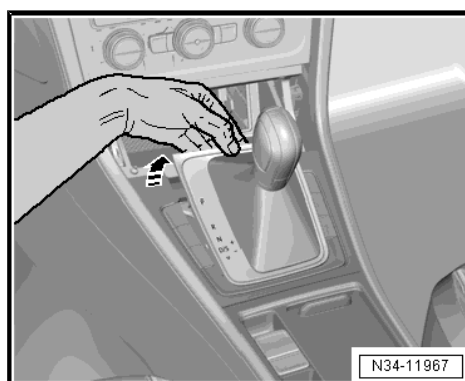
- Shift selector lever to position “D”.

The push button -arrow- does not need to be pulled out by hand. Push button engages automatically in installation position when handle is pulled off.

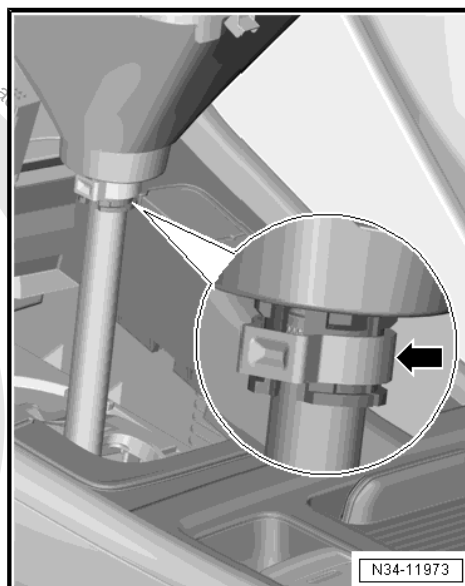
- Open lid of storage compartment.



- Grasp under selector lever cover with one hand, and unclip cover by pulling it upwards.
- Disconnect electrical connector.



- Cut open clamp -arrow- under boot using side cutters.
- Pull handle upwards off selector lever without pressing push button.



Note

Do not press button again after removal as it will no longer be possible to install the handle.

Installing

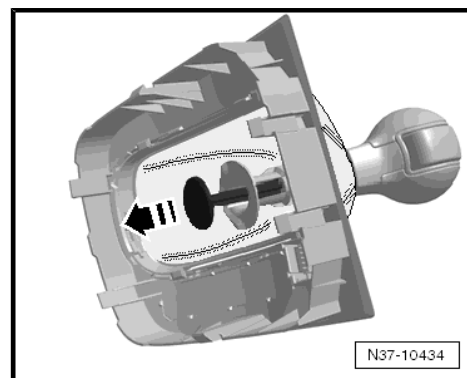
Install in reverse order of removal, observing the following:

- Selector lever is in position “D”.



Note

- ◆ There is a chance that the button could be pressed into the handle. Never install a handle with the button pressed in.
- ◆ Move push button to installation position ➔ [page 70](#).
- ◆ New handle is supplied with installation guard. Do not remove guard until just before installing. To remove, pull out -in direction of arrow-.



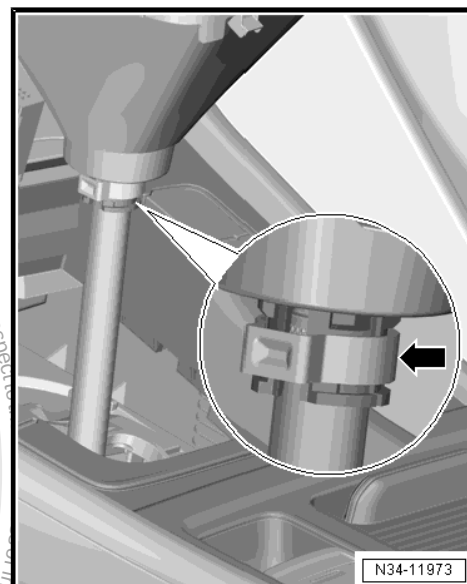
- Push on handle with new clamp -arrow- to stop. Do not tighten clamp yet.
- Press push button after installation.



Note

If not installed correctly, the button remains inserted in the handle after being pressed. If this happens, pull handle off again and move push button to installation position again ➔ [page 70](#). Then fit the handle again.

- If the press button moves back to its start position, the clamp can be tightened using the hose clip pliers - V.A.G 1275- .
- Connect electrical connector.
- Clip cover in position.



3.3.2 Removing and installing selector lever handle, Tiguan 2016 ➤

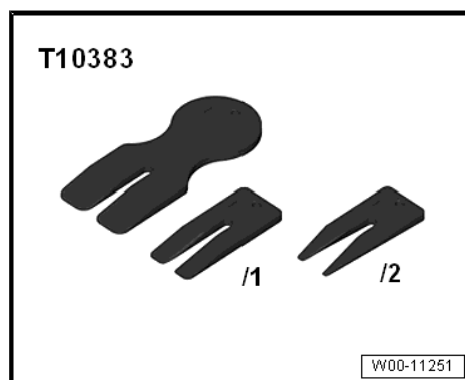
Special tools and workshop equipment required



- ◆ Hose clip pliers - V.A.G 1275-



- ◆ -T10383/2-



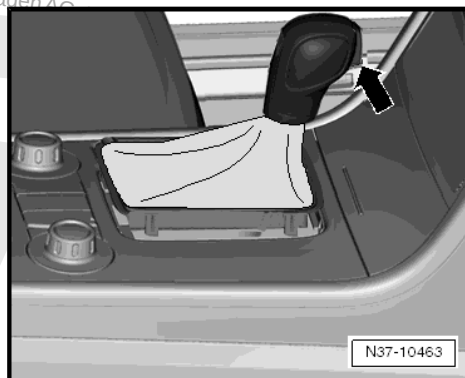
Brief description

Handle is removed together with selector cover.

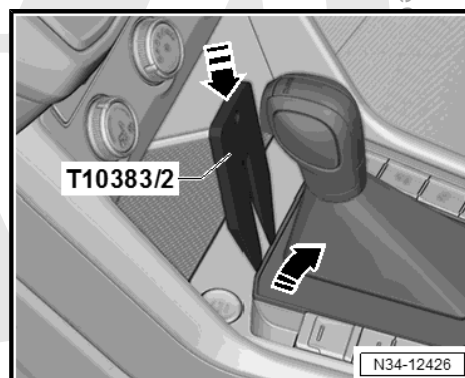
Removing

- Shift selector lever to position "D".

The push button -arrow- does not need to be pulled out by hand. Push button engages automatically in installation position when handle is pulled off.



- Fit wedge - T10383/2- at front between centre console and selector cover, and lever selector cover off centre console by carefully pushing wedge downwards.
- Disconnect electrical connector.





- Cut open clamp -arrow- under boot using side cutters.
- Pull handle upwards off selector lever without pressing push button.



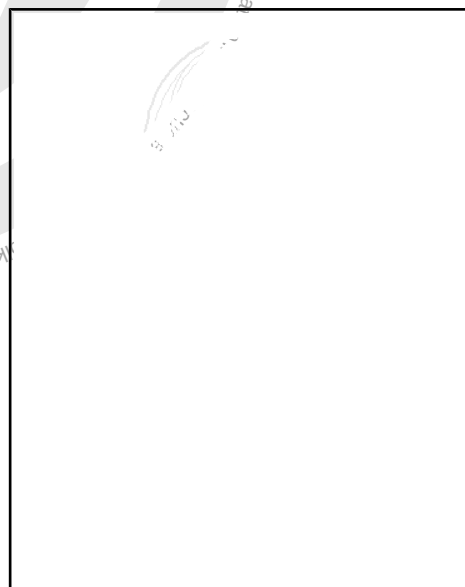
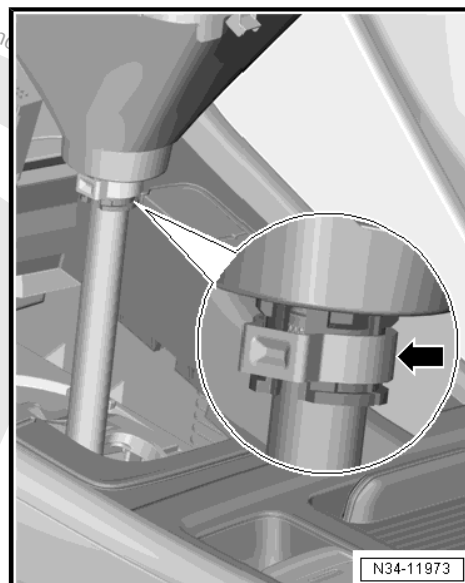
Note

Do not press button again after removal as it will no longer be possible to install the handle.

Installing

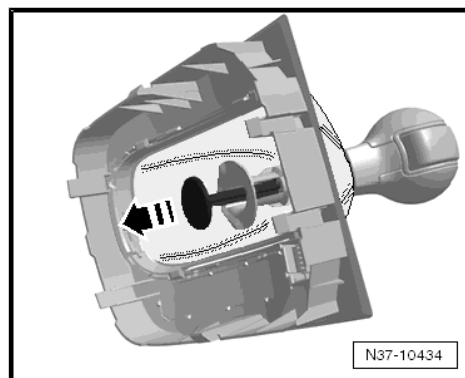
Install in reverse order of removal, observing the following:

- Selector lever is in position "D".



Note

- ◆ *There is a chance that the button could be pressed into the handle. Never install a handle with the button pressed in.*
- ◆ *Move push button to installation position ➔ [page 70](#).*
- ◆ *New handle is supplied with installation guard. Do not remove guard until just before installing. To remove, pull out -in direction of arrow-.*





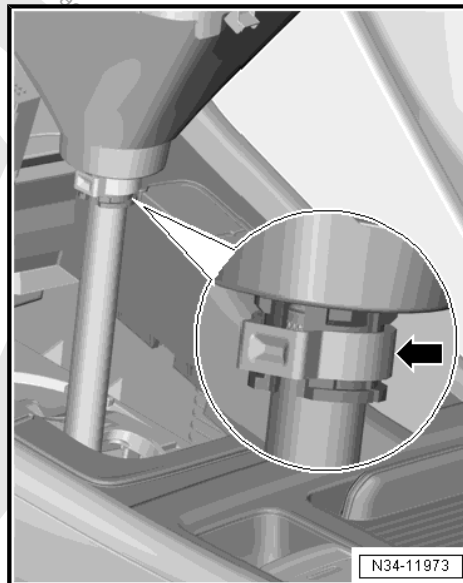
- Push on handle with new clamp -arrow- to stop. Do not tighten clamp yet.
- Press push button after installation.



Note

If not installed correctly, the button remains inserted in the handle after being pressed. If this happens, pull handle off again and move push button to installation position again ⇒ [page 70](#) . Then fit the handle again.

- If the press button moves back to its start position, the clamp can be tightened using the hose clip pliers - V.A.G 1275- .
- Connect electrical connector.
- Clip cover in position.



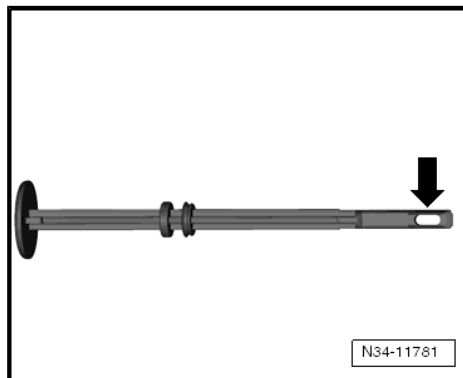
3.4 Moving push button in the handle to installation position

If the button was pressed by mistake, the installation position can be restored.

There are 2 ways of moving the push button into the installation position, »with« and »without« installation guard. Both of them are described here.

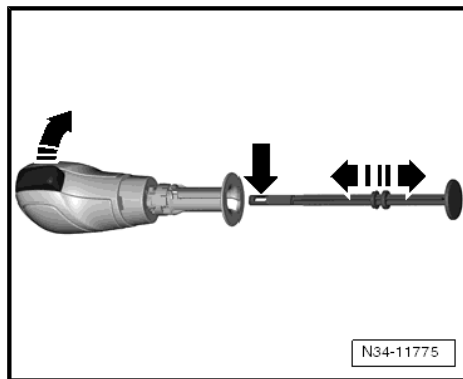
Place handle »with« installation guard in installation position:

When using the installation guard, make sure that it has an eyelet -arrow- at the front. Other types of installation guard are not suitable.



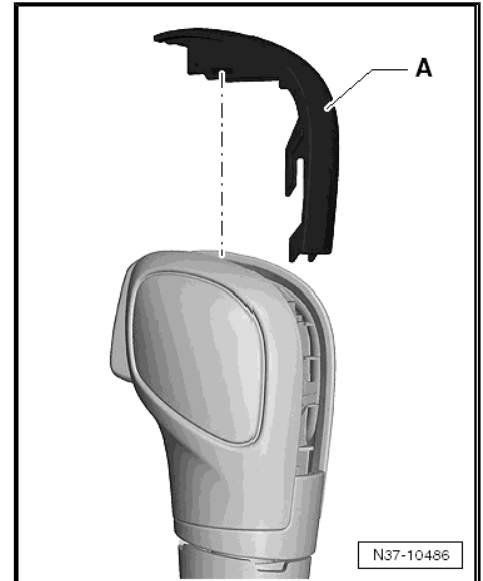
- Holding down push button, completely push in installation guard with eyelet -arrow- until installation guard engages, then release push button. When the installation guard is pulled out, the push button engages in the installation position.

Place handle »without« installation guard in installation position:





- Carefully unclip handle trim -A- upwards.



- Using e.g. a screwdriver press small lever -1- for pull rod into groove -2-. This action presses the push button -3- back into installation position.

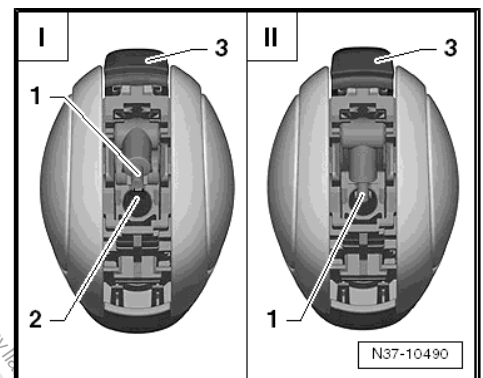
-I- = button pressed in

-II- = button in installation position



Note

- ◆ Press the lever only into the groove and no further.
- ◆ Do not clip the handle trim onto selector mechanism until the handle has been fitted. This makes it possible to check whether the small lever engages in the pull rod when the button is pressed.



3.5 Removing and installing selector mechanism

⇒ ["3.5.1 Removing and installing selector mechanism with selector lever cable", page 71](#)

⇒ ["3.5.2 Removing and installing selector mechanism without selector lever cable, Passat 2015 ➤, Passat Estate 2015 ➤, Arteon 2018 ➤", page 73](#)

⇒ ["3.5.3 Removing and installing selector mechanism without selector lever cable, Tiguan 2016 ➤", page 75](#)

3.5.1 Removing and installing selector mechanism with selector lever cable

Brief description

In the interior, the centre console must be removed.

The heat shield beneath the vehicle must be removed.

Removing

- Remove selector lever handle ⇒ [page 65](#) .
- Remove centre console with securing bracket ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Assembly overview - centre console .



- Remove footwell air duct ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct; Assembly overview - air routing and air distribution in passenger compartment .
- Separate electrical connector from selector mechanism to vehicle wiring harness.
- Remove air filter housing.

Passat, Tiguan with diesel engine

- ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Tiguan with petrol engine

- ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Continuation for all:

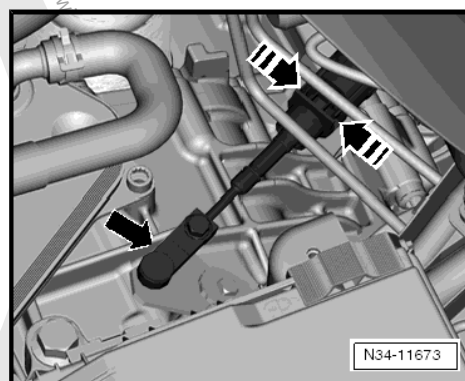
- Pry selector lever cable -arrow- off lever using an open-ended spanner.



Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Remove propshaft on all-wheel drive model ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Install centre tunnel heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield.





- If fitted, remove bracket -A-.
- Remove nuts -arrows- inside vehicle.
- Remove selector mechanism -B- together with selector lever cable and selector housing downwards.

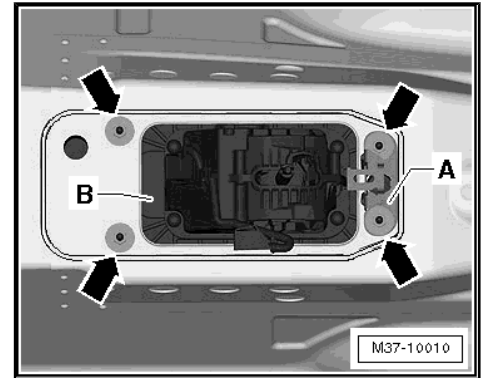
Installing

Install in reverse order of removal. During this procedure, observe the following:



Note

- ◆ Do not bend or kink gear selector cable.
- ◆ Do not grease selector lever cable.
- ◆ Following installation of selector mechanism, selector lever cable must be checked for ease of movement and be adjusted.



- Install heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .
- Install propshaft on all-wheel drive model ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Install footwell air duct ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct; Assembly overview - air routing and air distribution in passenger compartment .
- Install centre console securing bracket and centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Assembly overview - centre console .
- Install selector lever handle ⇒ [page 65](#) .
- Adjust selector lever cable ⇒ [page 83](#) .
- Check selector mechanism ⇒ [page 83](#) .
- Install air filter housing.

Passat, Tiguan with diesel engine

- ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Tiguan with petrol engine

- ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Specified torques

- ◆ Selector housing to body
⇒ ["3.1 Assembly overview - selector mechanism", page 61](#)

3.5.2 Removing and installing selector mechanism without selector lever cable, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►

Brief description

In the interior, the centre console must be removed.

The heat shield beneath the vehicle must be removed.



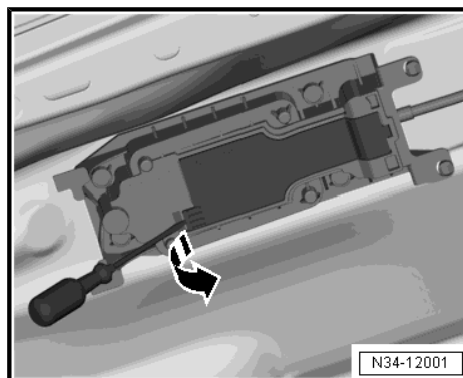
Removing

- Remove selector lever handle ⇒ [page 65](#) .
- Remove centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .
- Remove centre console vent ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct; Assembly overview - air routing and air distribution in passenger compartment .
- Remove mounting bracket for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .
- Separate electrical connector from selector mechanism to vehicle wiring harness.
- Shift selector lever on selector mechanism to position “N”.
- Install centre tunnel heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .
- Using a screwdriver lever the cover off from under the selector mechanism -arrow-.

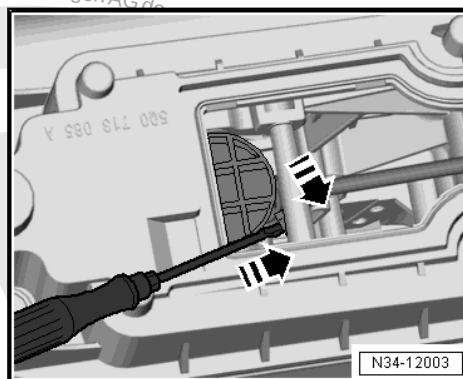


Note

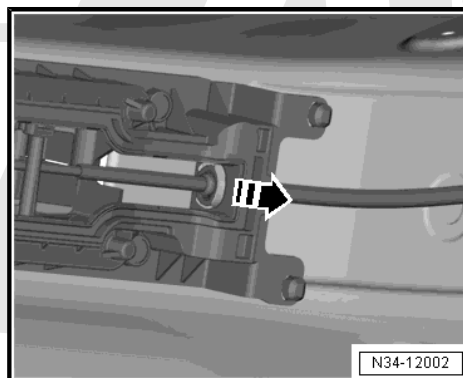
It is not permissible to reuse the cover. Always renew after removing.



- Release the cable as shown with a screwdriver, and pull off from the selector lever -arrows-.



- Remove securing clip -arrow-. Always renew securing clip.
- Pull selector lever cable out of selector mechanism.





- If fitted, remove bracket -A-.
- Remove nuts -arrows- inside vehicle.
- Remove selector mechanism -B- together with selector housing downwards.

Installing

Install in reverse order of removal. During this procedure, observe the following:



Note

- ◆ *Do not bend or kink gear selector cable.*
- ◆ *Do not grease selector lever cable.*
- ◆ *Following installation of selector mechanism, selector lever cable must be checked for ease of movement and be adjusted.*

Selector lever on selector mechanism must be set to position "N".

- Insert cable into selector mechanism, attach to selector lever and fit new securing clip.
- Install heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .
- Install mounting bracket ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .
- Install centre console vent ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct; Assembly overview - air routing and air distribution in passenger compartment .
- Install centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .
- Install selector lever handle ⇒ [page 65](#) .
- Adjust selector lever cable ⇒ [page 83](#) .
- Check selector mechanism ⇒ [page 83](#) .

Specified torques

- ◆ Selector housing to body ⇒ [page 61](#)

3.5.3 Removing and installing selector mechanism without selector lever cable, Tiguan 2016 ►

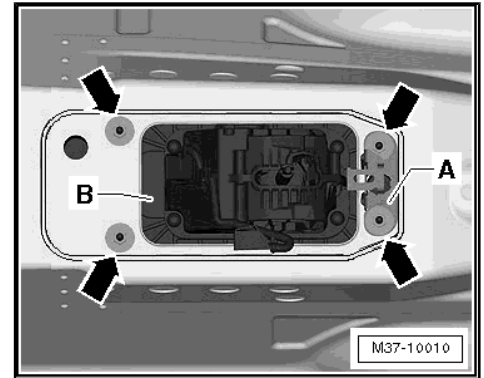
Brief description

In the interior, the centre console must be removed.

The heat shield beneath the vehicle must be removed.

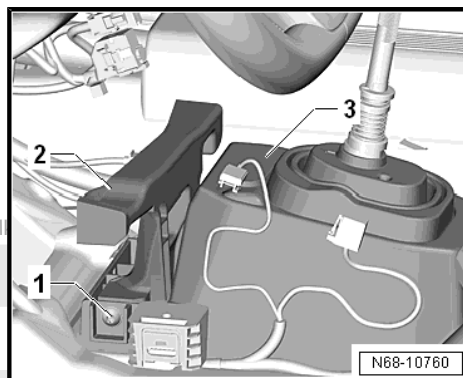
Removing

- Remove selector lever handle ⇒ [page 65](#) .
- Remove centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .

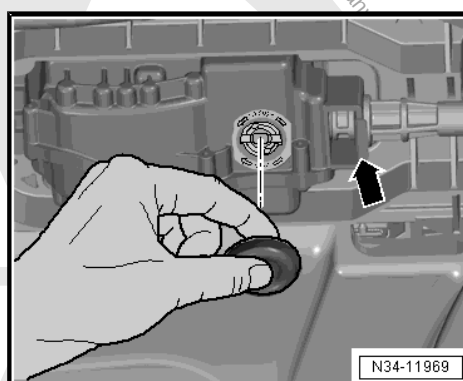




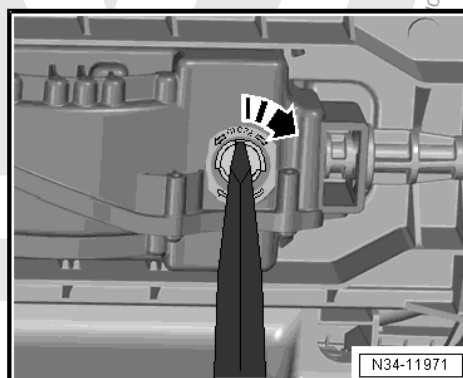
- If fitted, remove footwell air duct ➔ Heating, air conditioning; Rep. gr. 87 ; Air duct; Assembly overview - air routing and air distribution in passenger compartment .
- If fitted, remove mounting bracket -2-. To do this, unscrew bolts -1- on right and left.
- Separate electrical connector from selector mechanism to vehicle wiring harness.
- Shift selector lever on selector mechanism to position "N". Only in this position the selector lever cable can be released.
- Install centre tunnel heat shield below selector mechanism ➔ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .



- Remove plug and securing clip -arrow-.
Always renew securing clip.



- Fit a large screwdriver in grooves of locking element and turn it 90° in direction of arrow.
- Pull selector lever cable out of selector mechanism.





- If fitted, remove bracket -A-.
- Remove nuts -arrows- inside vehicle.
- Remove selector mechanism -B- together with selector housing downwards.

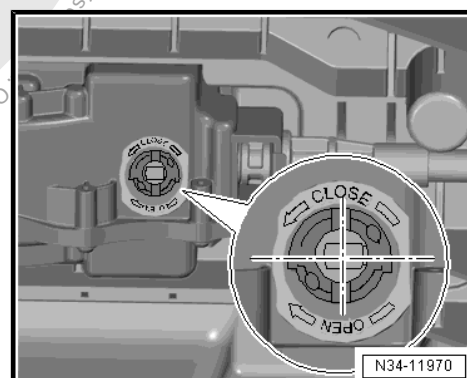
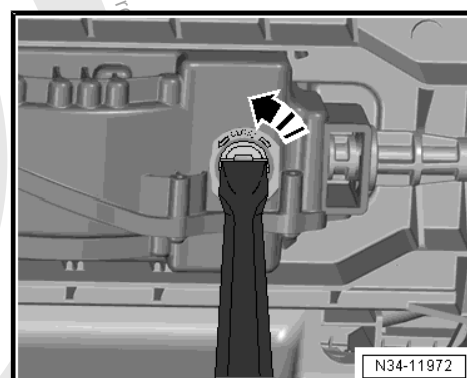
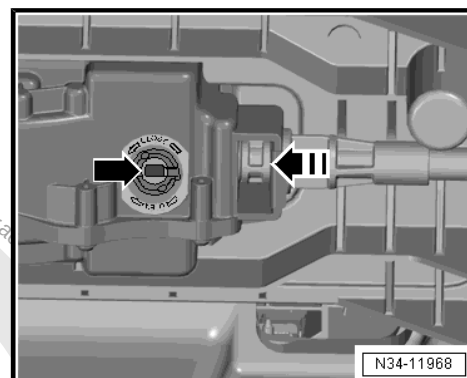
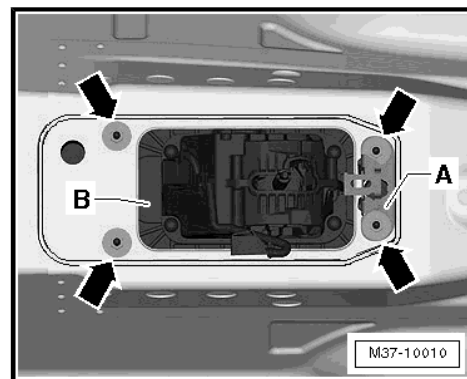
Installing

Install in reverse order of removal. During this procedure, observe the following:



Note

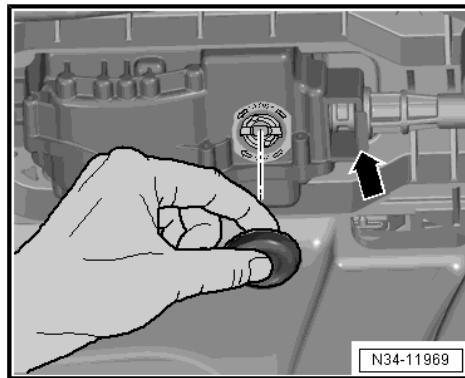
- ◆ *Do not bend or kink gear selector cable.*
- ◆ *Do not grease selector lever cable.*
- ◆ *Following installation of selector mechanism, selector lever cable must be checked for ease of movement and be adjusted.*
- Selector lever on selector mechanism must be set to position "N". Only in this position the selector lever cable can be engaged.
- Insert selector lever cable into selector mechanism until it is visible in locking mechanism -arrow-.



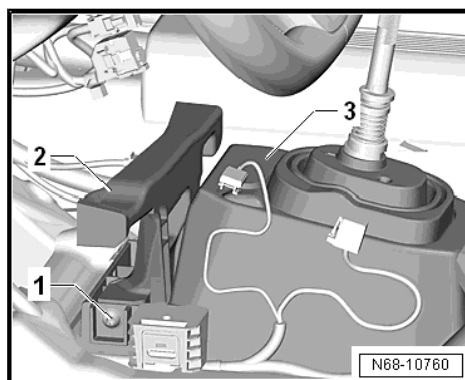
- With a large screwdriver, turn locking element 90° in direction of arrow.
- The selector lever cable is properly engaged when the grooves in the locking element are at right angles to the selector lever cable.



- Install new securing clip -arrow- and insert plug.
- Install heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .



- If previously removed, install mounting bracket -2- ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .
- If featured, install footwell air duct ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct; Assembly overview - air routing and air distribution in passenger compartment .
- Install centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .
- Install selector lever handle ⇒ [page 65](#) .
- Adjust selector lever cable ⇒ [page 83](#) .
- Check selector mechanism ⇒ [page 83](#) .



Specified torques

- ◆ Selector housing to body ⇒ [page 63](#)

3.6 Removing and installing selector lever cable

⇒ [“3.6.1 Removing and installing selector lever cable, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►”, page 78](#)

⇒ [“3.6.2 Removing and installing selector lever cable, Tiguan 2016 ►”, page 80](#)

3.6.1 Removing and installing selector lever cable, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►

Removing

Diesel engine

- Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing



Continuation for all:

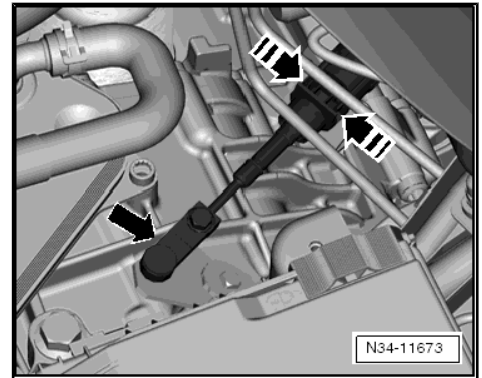
- Pry selector lever cable -arrow- off lever using an open-ended spanner.



Caution

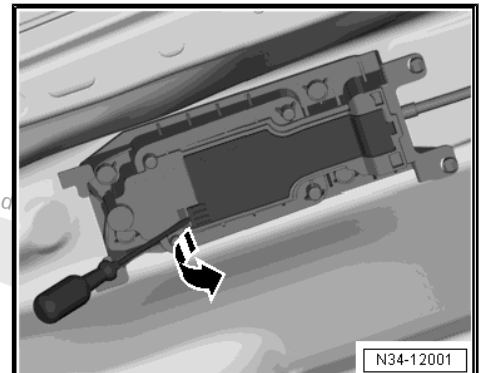
Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Shift selector lever on selector mechanism to position “N”. Only in this position the selector lever cable can be released.
- Remove parts of ⇒ exhaust system; Rep. gr. 26 .
- Remove propshaft on all-wheel drive model ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Install centre tunnel heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .
- Using a screwdriver lever the cover off from under the selector mechanism -arrow-.

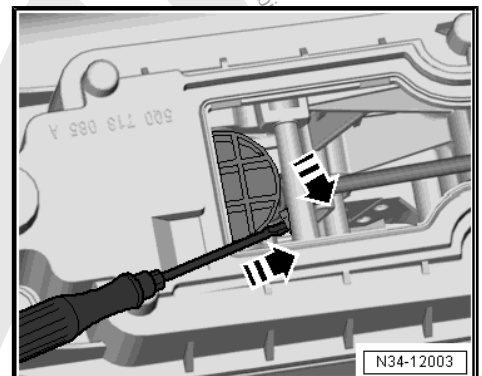


Note

It is not permissible to reuse the cover. Always renew after removing.



- Release the cable as shown with a screwdriver, and pull off from the selector lever -arrows-.





- Remove securing clip -arrow-.

Always renew securing clip.

- Pull cable out of selector mechanism and remove.

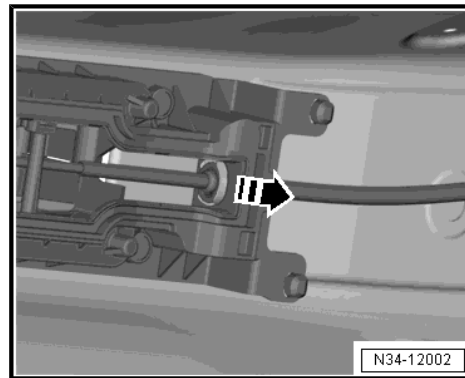
Installing

Install in reverse order of removal. During this procedure, observe the following:



Note

- ◆ *Do not bend or kink gear selector cable.*
- ◆ *Do not grease selector lever cable.*
- ◆ *Following installation, selector lever cable must be checked for ease of movement and be adjusted.*
- Selector lever on selector mechanism must be set to position "N".
- Install heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .
- Install propshaft on all-wheel drive model ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Check and adjust selector lever cable ⇒ [page 83](#) .
- Check selector mechanism ⇒ [page 83](#) .



Diesel engine:

- Install air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

Continue installation in reverse order of removal.

3.6.2 Removing and installing selector lever cable, Tiguan 2016 ►

Removing

Diesel engine

- ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Vehicles with petrol engine

- ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing



Continuation for all:

- Pry selector lever cable -arrow- off lever using an open-ended spanner.

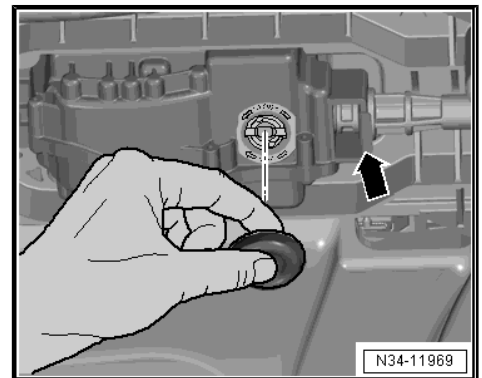
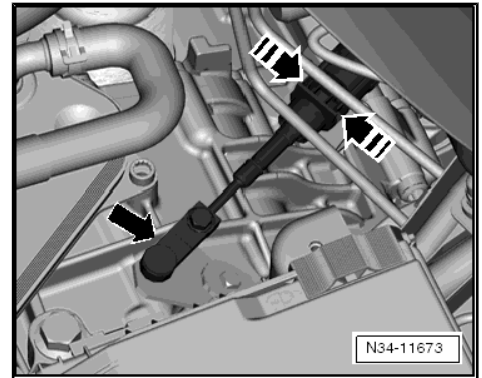


Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Shift selector lever on selector mechanism to position “N”. Only in this position the selector lever cable can be released.
- Remove propshaft on all-wheel drive model ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Install centre tunnel heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/ extensions; Removing and installing floor heat shield .
- Remove plug and securing clip -arrow-.

Always renew securing clip.



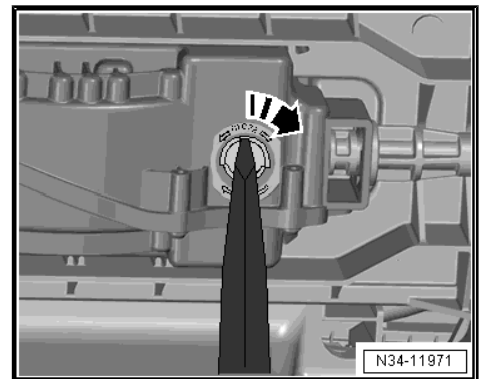
- Fit a large screwdriver in grooves of locking element and turn it 90° in direction of arrow.
- Pull cable out of selector mechanism and remove.

Installing



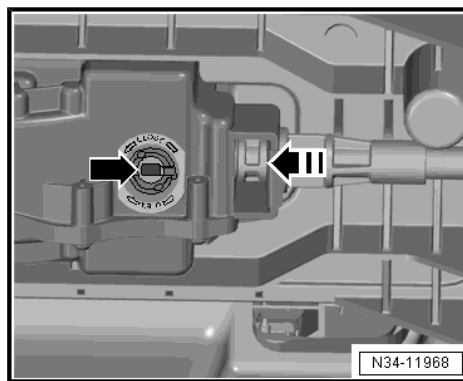
Note

- ◆ Do not bend or kink gear selector cable.
- ◆ Do not grease selector lever cable.
- ◆ Ensure that selector lever cable moves freely after installing.
- Selector lever on selector mechanism must be set to position “N”. Only in this position the selector lever cable can be engaged.

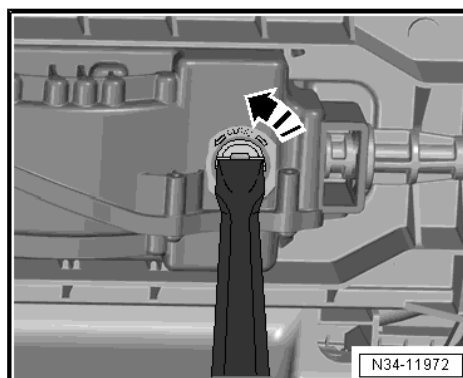




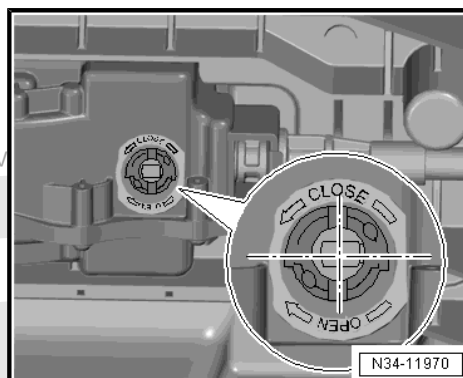
- Insert selector lever cable into selector mechanism until it is visible in locking mechanism -arrow-.



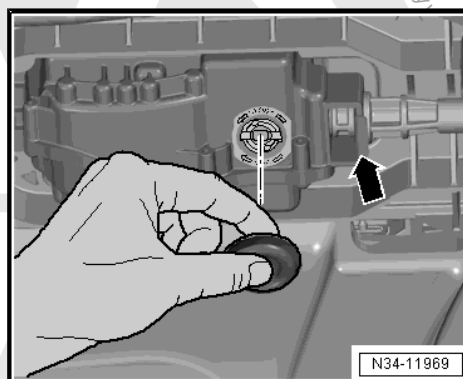
- With a large screwdriver, turn locking element 90° in direction of arrow.



- The selector lever cable is properly engaged when the grooves in the locking element are at right angles to the selector lever cable.



- Install new securing clip -arrow- and insert plug.
- Install heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Mouldings/trims/extensions; Removing and installing floor heat shield .
- Install propshaft on all-wheel drive model ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Check and adjust selector lever cable ⇒ [page 83](#) .
- Check selector mechanism ⇒ [page 83](#) .
- Install air filter housing.



Diesel engine

- ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Vehicles with petrol engine

- ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Continue installation in reverse order of removal.



3.7 Checking selector mechanism

The starter must not operate in the selector lever positions "R", "D" and "S" and in the Tiptronic position.

On right-hand drive vehicles, the starter must operate in selector lever positions "P" and "N" only when the button in the selector lever handle is not pressed.

Above 5 km/h:

When the selector lever is shifted to "N", the selector lever lock solenoid must not lock the selector lever. Selector lever can be shifted back into a driving range.

Below 5 km/h:

When the selector lever is shifted to "N", the selector lever lock solenoid must lock the selector lever only after approx. 1 second. Selector lever cannot be shifted out of "N" position until brake pedal is depressed.

Selector lever in "P" position and ignition switched on

- Brake pedal not depressed:

Selector lever is locked and cannot be shifted out of "P" position when the button is pressed. Solenoid for selector lever lock blocks selector lever.

- Brake pedal is depressed:

Solenoid for selector lever lock releases selector lever. It is possible to shift into a driving gear. Slowly shift selector lever from "P" through to "S", checking whether selector lever position in dash panel insert corresponds to selector lever position.

Selector lever in "N" position and ignition switched on

- Brake pedal not depressed:

Selector lever is locked and cannot be shifted out of "N" position with the push button pressed. Solenoid for selector lever lock blocks selector lever.

- Brake pedal is depressed:

Solenoid for selector lever lock releases selector lever. It is possible to shift into a driving gear.

Selector lever in position "Tiptronic"

- Shift selector lever into Tiptronic gate.

The illumination of the "D" symbol in the selector mechanism cover must go out. "+" and "-" symbols must light up.

When the selector lever is shifted into the Tiptronic gate, the selector lever position display in the dash panel insert must change from "P R N D S" to "6 5 4 3 2 1".

Ignition and light switched on

The respective symbol in the shift mechanism cover lights up.

Selector lever position indicator

Simultaneous illumination of all selector lever position display segments indicates gearbox emergency running mode.

3.8 Checking and adjusting selector lever cable

Special tools and workshop equipment required



- ◆ Torque wrench - V.A.G 1331-



Brief description

Selector lever cable must be removed from gearbox so that its ease of movement can be checked. Put removed end down so it does not rub against anything.

Then the selector lever must be moved and after that, the Bowden cable must be reattached to the gearbox.

Then the selector lever cable must be adjusted.

Do not grease connections of cable!

Always adjust selector lever cable if the following applies:

- ◆ The selector lever cable has been removed from the gearbox.
- ◆ The engine and/or gearbox has been removed and installed.
- ◆ Parts of the assembly mounting have been removed and installed.
- ◆ The cable itself or the selector mechanism has been removed and installed.
- ◆ The position of the engine and gearbox is shifted, for example to install it free of tension.

Check

- Switch selector lever to »P« position.
- Remove air filter housing.

Diesel engine

- ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Tiguan with petrol engine

- ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing



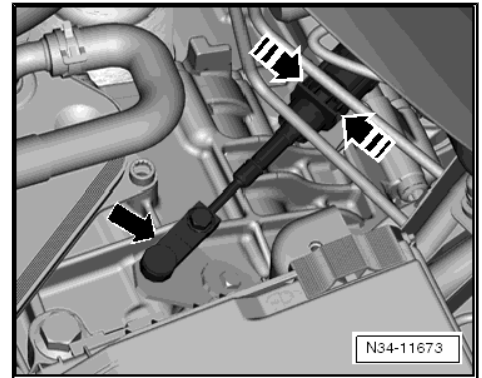
Continuation for all:

- Pry selector lever cable -arrow- off lever using an open-ended spanner.



Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.



- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Shift selector lever several times from position »P« to »S« and back to »P«.
- Selector lever must move easily.
- Reinstall cable.
- Then adjust selector lever cable.

Adjusting

- Move selector lever in vehicle to "P" position.
- Selector shaft on gearbox is also in position "P". To check, push lever opposite to driving direction to rear stop.



Note

Raise vehicle, to be sure that the gearbox is in "P" (parking lock engaged). It should not be possible to turn both front wheels together in the same direction.

- Loosen bolt -2- of the Bowden cable -1-.
- Gently push knob of selector lever forwards and backwards but under no circumstances must you shift out of "P".
- Tighten bolt -2- to 15 Nm.

This completes the adjustment.

- Install air filter housing.

Diesel engine

- ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Tiguan with petrol engine

- ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

3.9 Renewing oil seal for selector shaft

Brief description

The seal can be renewed only with the gearbox removed.

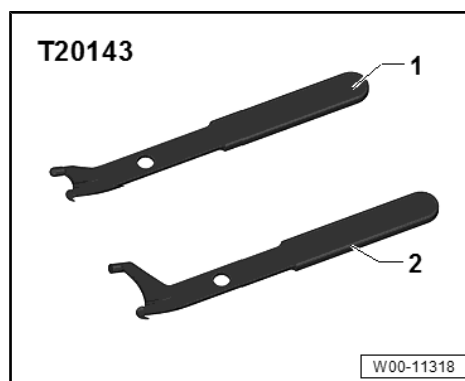
Special tools and workshop equipment required



◆ Tube - VW 423-

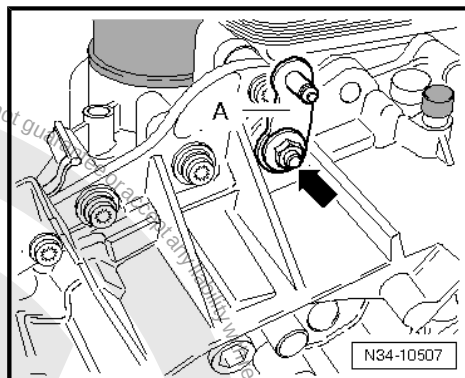


◆ Extractor hook - T20143-

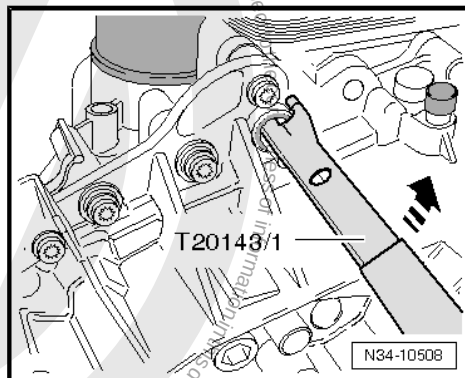


◆ Not illustrated: Torque wrench - V.A.G 1331-

- Remove gearbox ➔ [page 89](#) .
- Remove selector lever cable from gearbox ➔ [page 71](#) .
- Unscrew securing nut -arrow- and carefully pull gearbox selector lever -A- off selector shaft.

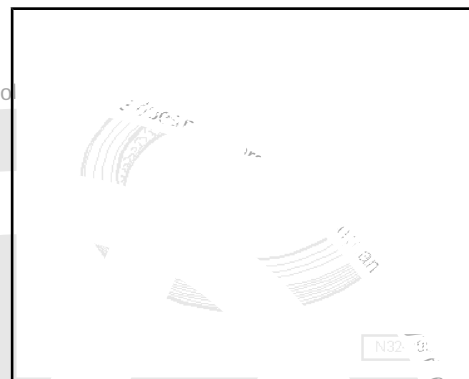


- Pry seal out -in direction of arrow-.
- Lightly oil outer circumference of new oil seal.

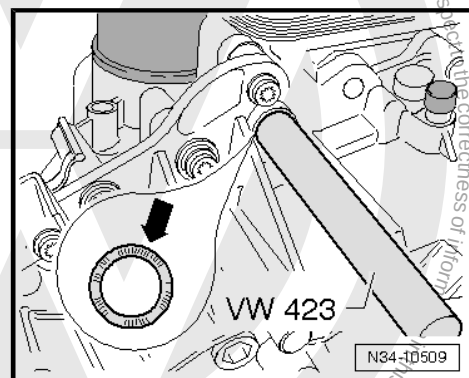




- Fill space between sealing lip and dust lip -arrow- with sealing grease - G 052 128 A1- .



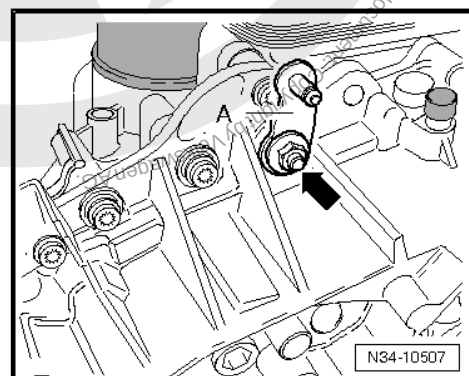
- Drive new seal in onto limit stop. Do not cant oil seal in the process.
- Closed side of oil seal -arrow- points towards tube - VW 423- .



- Install gearbox selector lever -A-, and tighten new nut -arrow-. Specified torque: ➔ [Item 21 \(page 153\)](#) .

Gearbox selector lever fits on splines in only one position

- Install gearbox ➔ [page 146](#) .
- Install and adjust selector lever cable on gearbox ➔ [page 83](#) .





4 Removing and installing gearbox

⇒ "4.1 Specified torques for gearbox", page 88

⇒ "4.2 Removing gearbox", page 89

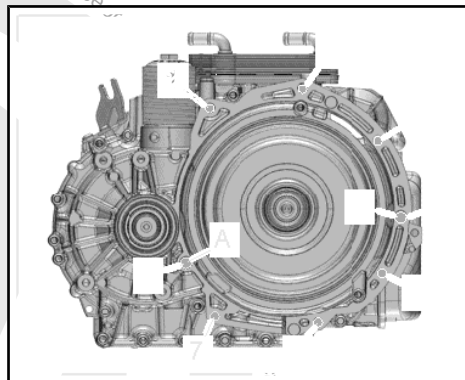
⇒ "4.3 Installing gearbox", page 146

⇒ "2.3 Detaching bevel box from gearbox - gearbox removed", page 57

4.1 Specified torques for gearbox

⇒ "4.1.1 Gearbox carrier to engine and bevel box", page 88

Item	Bolt	Nm
1, 2, 3	M12x55	80 • With insert tool T10179 or T10509: »65 Nm«
4	M12x65	80
5, 6, 7	M10x50	40
8	M12x70	80
A	Dowel sleeves for centring	



Component	Nm
Assembly mountings to gearbox (renew bolts after each removal)	60 Nm + turn 90° further
Earth strap to assembly mounting	25
Heat shield for right drive shaft to bevel box	20
Propshaft to bevel box	⇒ Rep. gr. 39 ; Propshaft; Assembly overview - propshaft

Bevel box to gearbox 40 Nm + 90° further
♦ Renew bolts after re-moving.

4.1.1 Gearbox carrier to engine and bevel box

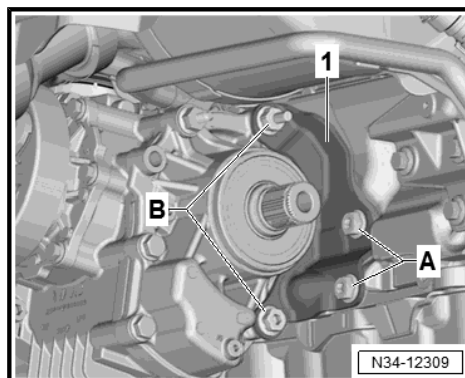
Installation location and tightening sequence:

Diesel engine

Item	Bolt
A	M10 x 21
B	M10 x 45

Sequence	Bolts	Specified torque
1)	-A- and -B-	Screw in to contact by hand
2)	Tighten -A-	40 Nm
3)	Tighten -B-	40 Nm

Petrol engine

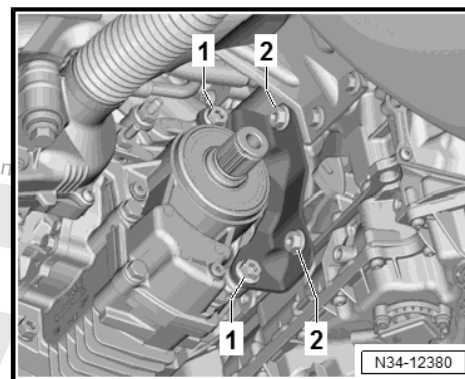




Installation location and tightening sequence:

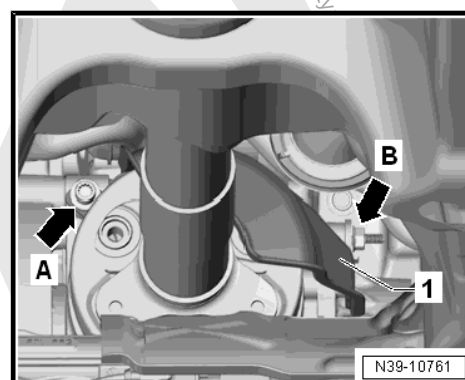
Item	Bolt
1	M10 x 21
2	M10 x 45

Sequence	Bolts	Specified torque
1)	-1- and -2-	Screw in to contact by hand
2)	Tighten -2-	40 Nm
3)	Tighten -1-	40 Nm



Heat shield for propshaft

- ◆ Bolt -A-: 20 Nm
- ◆ Bolt -B-: 40 Nm



4.2 Removing gearbox

⇒ [“4.2.1 Removing gearbox, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►, vehicles with 2.0 I - 176 kW TDI and bi-turbo-charger”, page 89](#)

⇒ [“4.2.2 Removing gearbox, Passat 2015 ►, Passat Estate 2015 ►, vehicles with petrol engine”, page 100](#)

⇒ [“4.2.3 Removing gearbox, Tiguan 2016 ► vehicles with 2.0 I - 105 kW, 110 kW, 130 kW, 140 kW diesel engine, all-wheel drive”, page 111](#)

⇒ [“4.2.4 Removing gearbox, Tiguan 2016 ►, vehicles with petrol engine, all-wheel drive”, page 120](#)

⇒ [“4.2.5 Removing gearbox, Tiguan 2016 ►, vehicles with diesel engine, front-wheel drive”, page 130](#)

⇒ [“4.2.6 Removing gearbox, Tiguan 2016 ►, vehicles with 2.0 I - 176 kW TDI”, page 137](#)

4.2.1 Removing gearbox, Passat 2015 ►, Passat Estate 2015 ►, Arteon 2018 ►, vehicles with 2.0 I - 176 kW TDI and bi-turbocharger

Brief description

The gearbox is removed downwards together with the bevel box.
»From above«

The battery, air filter and starter are removed. The coolant hoses must be clamped off. Support engine and gearbox before left subframe mounting is unbolted.

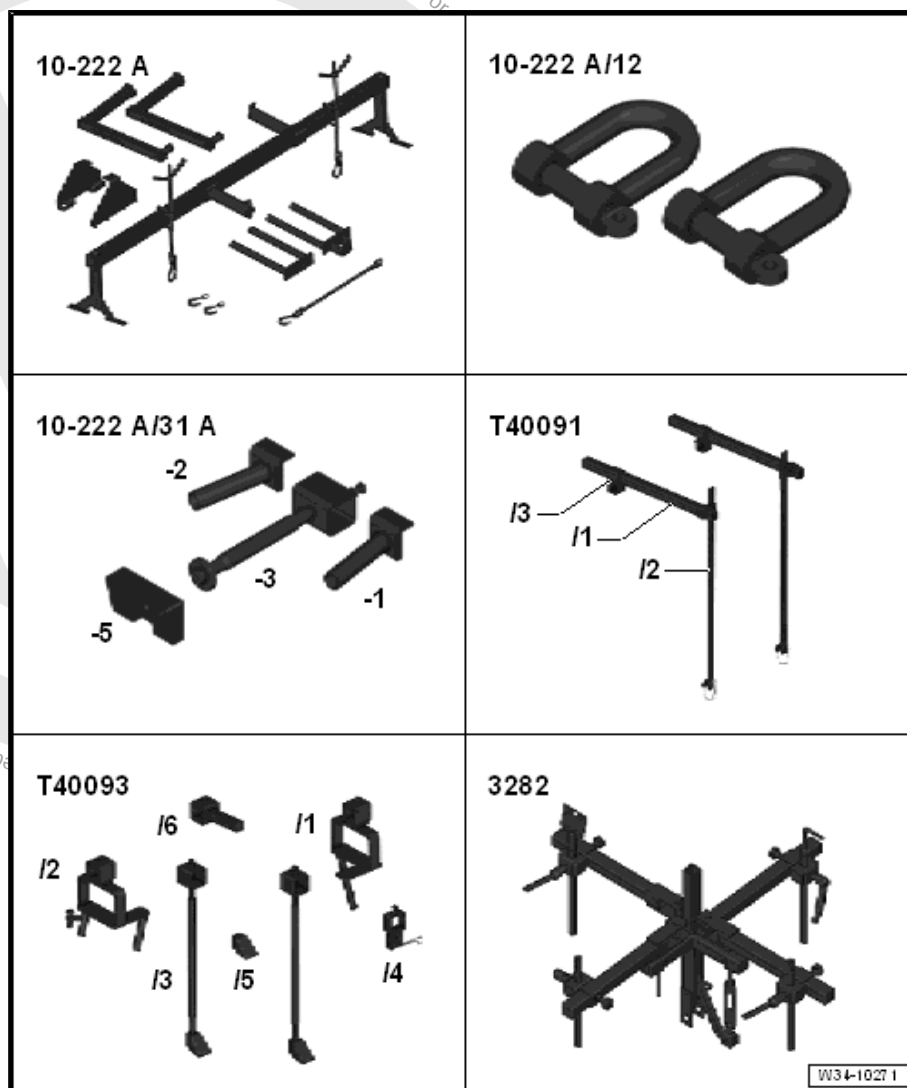
»From below«

The -subframe- is removed together with -pendulum support- and -both suspension links-.



Both drive shafts are disconnected from gearbox and left installed in wheel bearing housings. They are only swivelled to one side and left on vehicle.

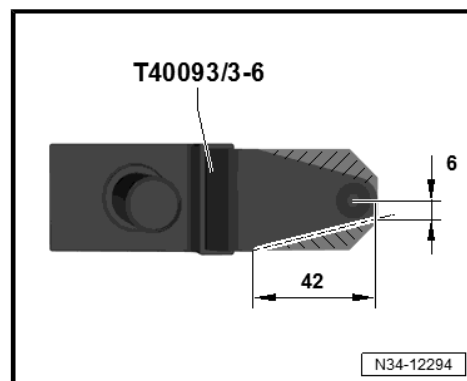
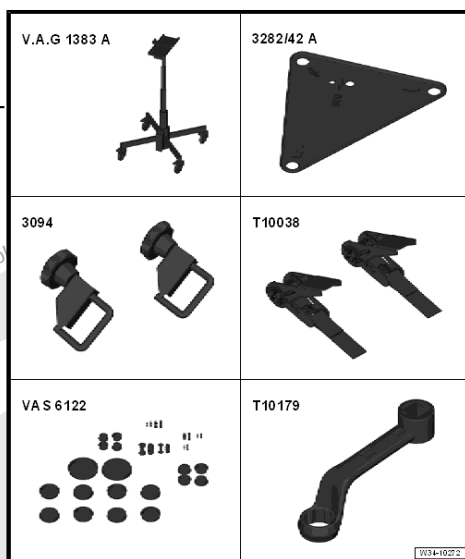
Special tools and workshop equipment required



- ◆ Support - 10-222A-
- ◆ Shackle - 10 - 222 A /12-
- ◆ Support - 10 - 222 A /31-
- ◆ Engine support, basic set - T40091-
- ◆ Engine support supplement set - T40093-
- ◆ Gearbox support - 3282-



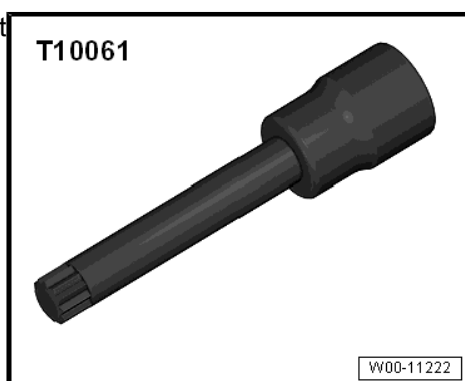
- ◆ Engine and gearbox jack - V.A.G 1383 A-
or engine and gearbox jack - VAS 6931-



- ◆ Adjustment plate - 3282/42 A-
- ◆ Hose clamps to 25 mm - 3094-
- ◆ Tensioning strap - T10038-
- ◆ Set of plugs for engine - VAS 6122-
- ◆ Insert tool, 18 mm - T10179-
- ◆ Insert tool, 18 mm - T10509-

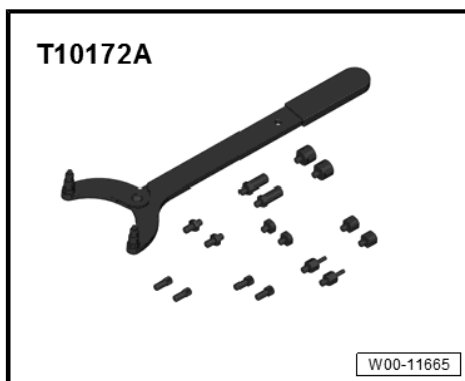


- ◆ Socket, multi-point bit XZN 14 - T10061-





- ◆ Counter-hold tool - T10172A-



- ◆ Support bridge - T10323-



- ◆ Adapter - T40093/3-6- : qty. 2
(check and modify as necessary
⇒ [page 92](#))



- ◆ or adapter - T40093/3-6A- : qty. 2

Check adapters - T40093/3-6- and modify as necessary

- If necessary, cut off the marked area.
- Round off front edges.
- Protect adapter against corrosion.
- Then, mark adapters - T40093/3-6- as - T40093/3-6A- .

At a later point, support bracket - 10-222 A- will be fitted onto longitudinal members with adapters - T40093/3-6A- .



- To prevent damage to the longitudinal members, wrap the front section of the adapters, T40093/3-6A- with textile-reinforced adhesive tape ⇒ Electronic parts catalogue (ETKA chemical substances) .

Removing:

Raise vehicle. All 4 supports of lifting platform must be at same height.



Note

So that the propshaft can be turned later in order to loosen it:

- Move selector lever to »N« position.
- Remove complete air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

Battery in engine compartment

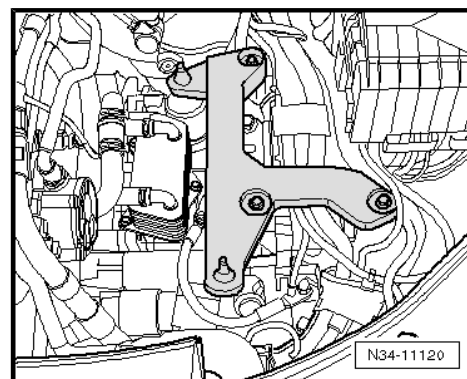
- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

Battery in luggage compartment

- Remove air filter housing bracket ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

The bracket is similar to the one shown.

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





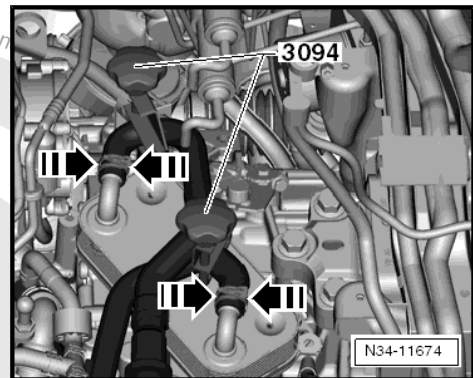
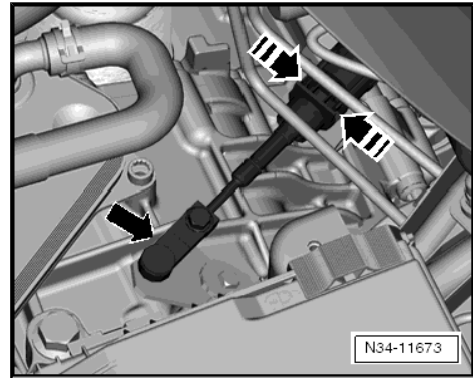
- Pry selector lever cable off selector shaft lever -arrow- using an open-ended spanner.



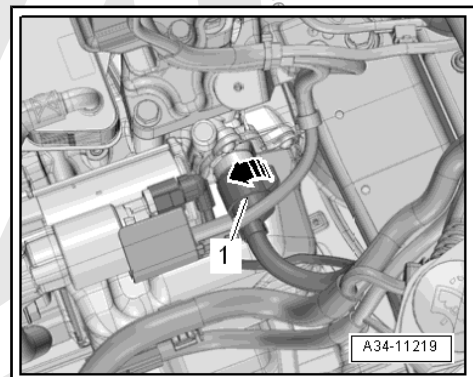
Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

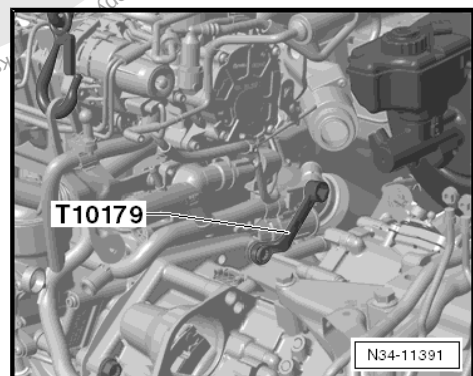
- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
- Seal connecting necks of gear oil cooler using suitable plugs from engine bung set - VAS 6122- .



- Disconnect connector -1- for mechatronic unit for dual clutch gearbox - J743- . To do this, turn rotary locking mechanism anti-clockwise -arrow-.
- Remove charge air pipe ⇒ Rep. gr. 21 ; Charge air system; Assembly overview - charge air system .



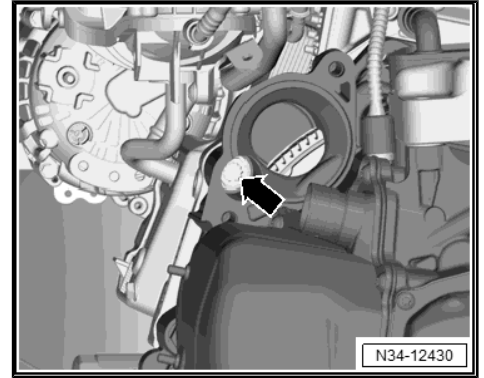
- Unscrew upper engine/gearbox connecting bolts using insert tool 18 mm - T10179- or insert tool 18 mm - T10509- .





A bolt is located in the starter motor hole -arrow-. This bolt can be removed using socket - T10061- .

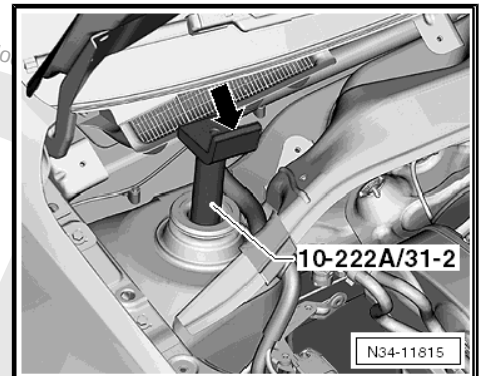
- If there are hose and cable connections in area of engine support eyes for support bracket - 10-222A- , remove these now.
- Remove wiper arms ⇒ Electrical system; Rep. gr. 92 ; Wind-screen wiper system; Removing and installing wiper arms .
- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50 ; Plenum chamber cover; Removing and installing plenum chamber cover .
- If there are hose and cable connections in area of engine support eyes for support bracket - 10-222A- , remove these now.



- Install support bracket - 10-222 A- as follows:

Required material:

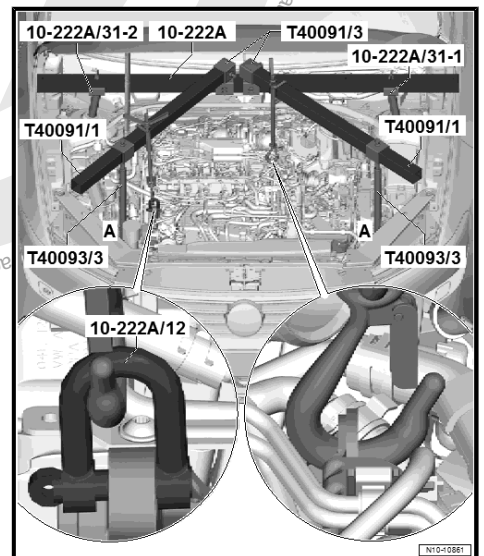
- ◆ Adapter - 10 - 222 A /31-1-
- ◆ Adapter - 10 - 222 A /31-2-
- ◆ Connector - T40091/3-
- ◆ Square tube - T40091/1-
- ◆ Spindle from engine support supplement set - T40093 /3-
- ◆ Adapter - T40093/3-6- : qty. 2 (check and modify as necessary ⇒ [page 92](#))
- ◆ or adapter - T40093/3-6A- : qty. 2
- Detach cover caps on bolted connections for suspension struts (front).
- Fit adapter - 10 - 222 A /31-1- and adapter - 10 - 222 A /31-2- -A- onto suspension strut mountings.



The webs -arrow- must face towards front end.

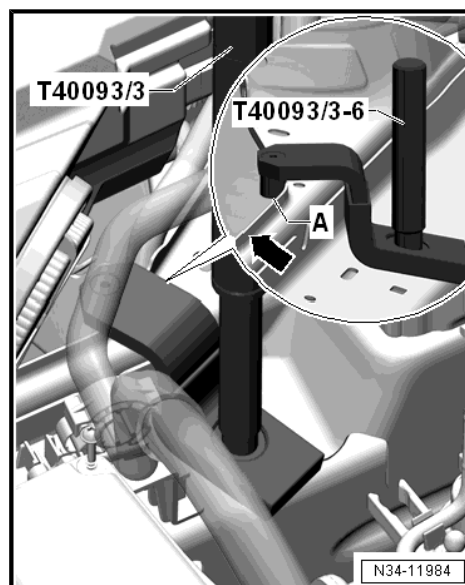
- Slide connector - T40091/3- onto support bracket - 10-222 A- .
- Bolt support bracket - 10-222 A- to adapter - 10 - 222 A /31-1- and to adapter - 10 - 222 A /31-2- .

-A- = adapter - T40093/3-6A- (⇒ next figure)

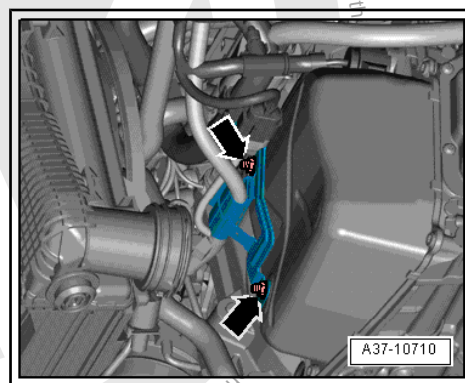
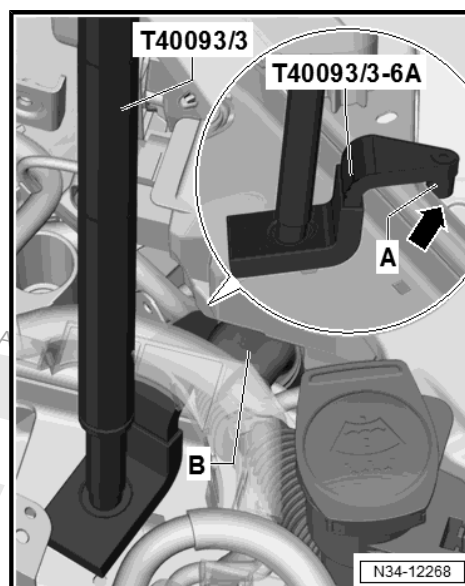




- Remove fuel filter and lay to side. Do not open pipe/hose system ⇒ Rep. gr. 20 ; Fuel filter; Assembly overview - fuel filter .
- Place adapters - T40093/3-6A- onto both longitudinal members (illustration shows right longitudinal member).
- If necessary, carefully unclip any pipes for air conditioning system in front area. Do not disconnect pipe/hose system ⇒ Heating, air conditioning; Rep. gr. 87 ; Refrigerant circuit; System overview - refrigerant circuit .



- Position adapter - T40093/3-6A- on left longitudinal member directly behind filler pipe for washer fluid reservoir.
- Each of the adapters - T40093/3-6A- locks with pin -A- behind the web of the longitudinal member -arrow-.
- Screw on spindle from engine support supplement set - T40093 /3- , connect it via square tube - T40091/1- to engine support bracket - 10-222 A- and fasten connection (⇒ previous fig.).
- The square tube - T40091/1- must be flush with the connecting piece - T40091/3- and the engine support supplement set - T40093 /3- (⇒ previous figure).
- Then attach spindles to engine support eyes.
- Take up weight of engine/gearbox assembly and support bracket on spindles .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .
- Remove lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - front wheel housing liner .
- Remove electrical wiring and retainers from sump at front -arrows-.
- Raise wiring in area of sump and secure it.



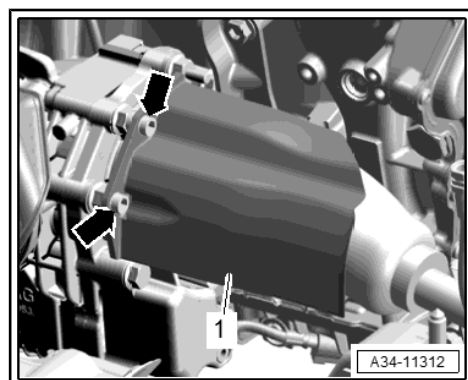


- Disconnect connector -1- from oil level and oil temperature sender - G266- .

Remove subframe. ⇒ Rep. gr. 40 ; Subframe; Assembly over-view - subframe

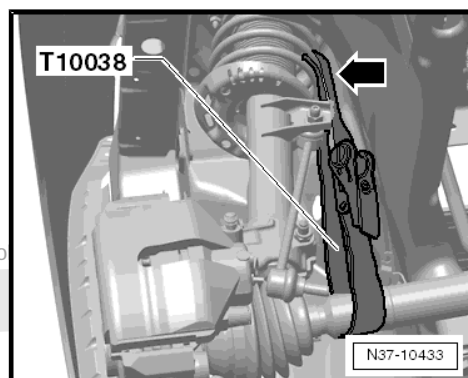


- Remove drive shaft heat shield -1-, if present, from bevel box (-arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .
- Disconnect both drive shafts from gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft: Removing and installing drive shafts .

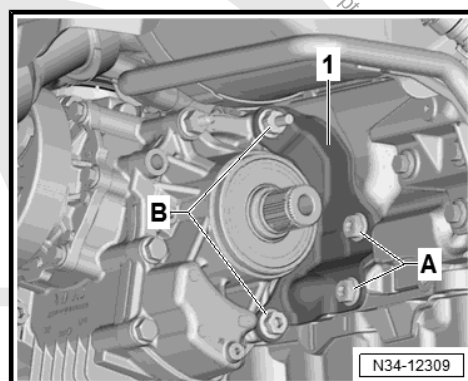


Secure both drive shafts to suspension struts using tensioning straps - T10038- .

The surface protection of the shafts must not be damaged.

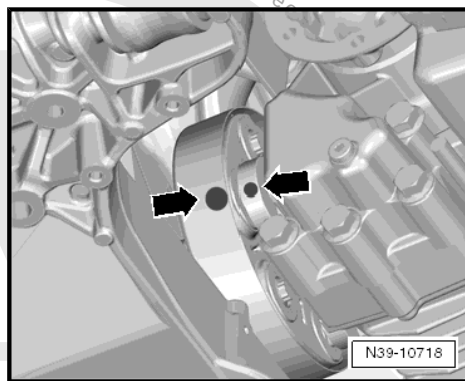


- Unscrew bolts -A and B-, and remove gearbox carrier for bevel box.

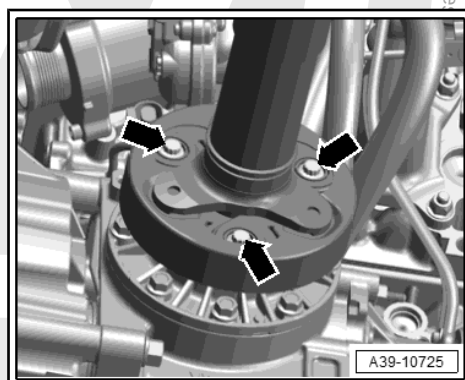




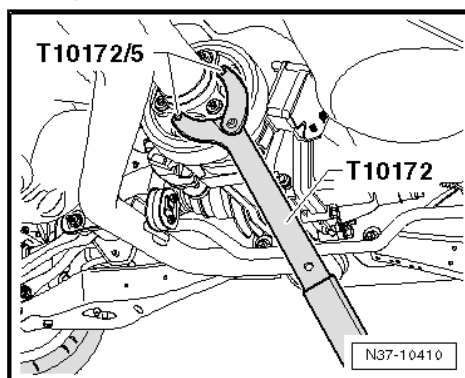
- Mark position of propshaft with flexible coupling relative to output shaft of bevel box -arrows-.



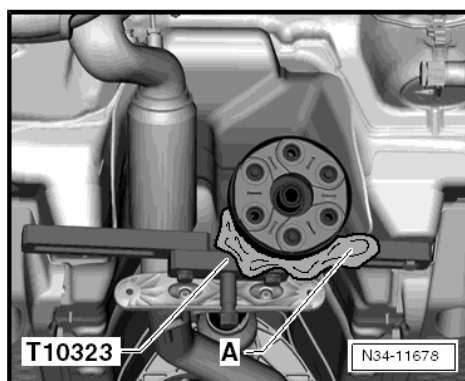
- Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- If necessary, counterhold at rear final drive when loosening or tightening propshaft.



- Secure support - T10323- with a bolt on inside rear threaded hole for subframe.
- A securing bolt from the subframe is suitable for this.
- Place cloth -A- on support and put propshaft on that.





Note

- ◆ *When removing and installing, do not damage seal in the propshaft flange -arrow-.*
- ◆ *Renew propshaft if damaged. ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft*
- ◆ *All parts of propshaft which have been marked relative to each other must be reinstalled in the same positions.*

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

- Remove all but one »easily accessible« connecting bolt between engine and gearbox

- Remove securing bolts -arrows- of assembly mounting for engine ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings .

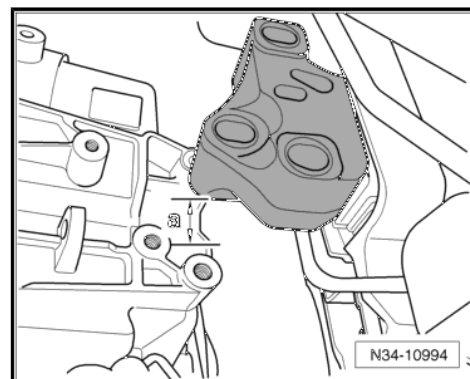
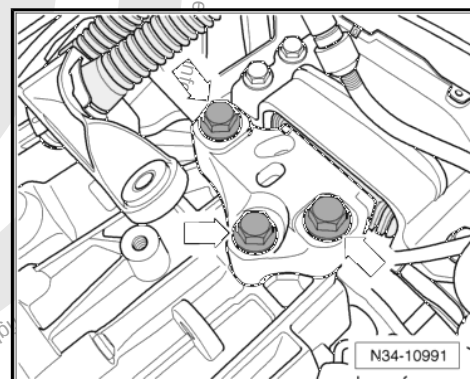
- Remove securing bolts -arrows- of assembly mounting for gearbox

- Then use spindles of support bracket - 10 - 222 A- to lower engine/gearbox »only« on gearbox side as far as dimension -a-.

Dimension -a- = about 110mm

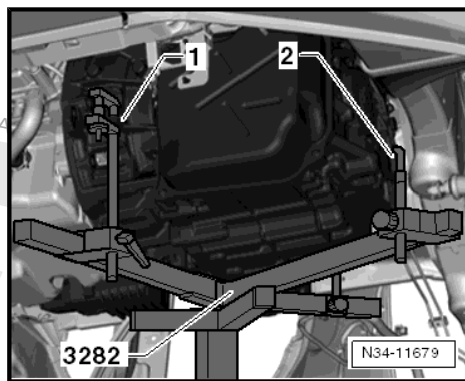
The gearbox is separated from the engine in this position.

- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - 3282- under gearbox.

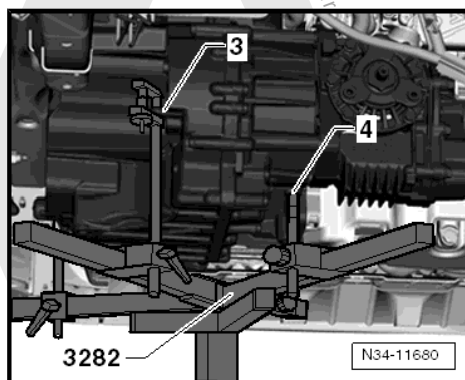




- Mount safety support -1- and hook -2- on gearbox as shown.



- Mount safety support -3- and pin -4- on gearbox as shown.
- Remove »last« connecting bolt between engine and gearbox.
- Push gearbox off engine and lower it carefully, ensuring »clearance« to other components.



Transporting gearbox ⇒ [page 151](#) .

Secure gearbox to assembly stand ⇒ [page 157](#) .

Install gearbox ⇒ [page 146](#) .

4.2.2 Removing gearbox, Passat 2015 ►, Passat Estate 2015 ►, vehicles with petrol engine

Brief description

The gearbox is removed downwards separately.

»From above«

The battery is disconnected and, if located in engine compartment, removed. The air filter and starter are removed. The engine and gearbox must be supported before the left subframe mounting is removed.

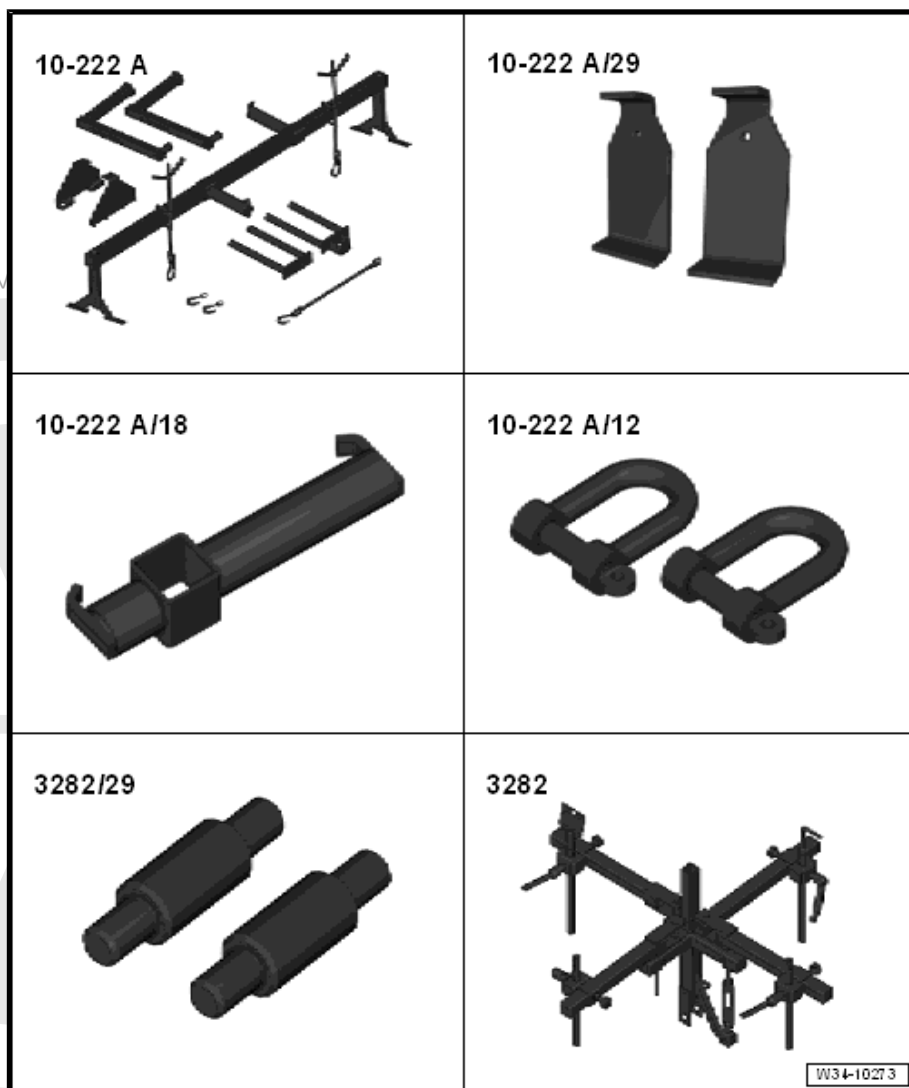
»From below«

-Subframe- is removed together with -pendulum support- and -both suspension links-.

Both drive shafts are disconnected from gearbox and left installed in wheel bearing housings. They are only swivelled to one side and left on vehicle.



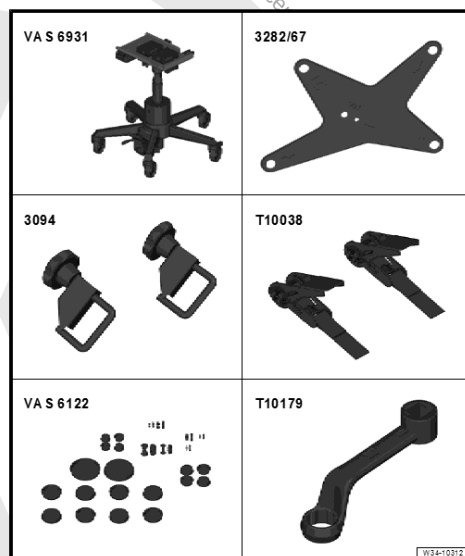
Special tools and workshop equipment required



- ◆ Support - 10 - 222 A-
- ◆ Adapter - 10 - 222 A /29-
- ◆ Adapter - 10 - 222 A /18-
- ◆ Shackle - 10 - 222 A /12- qty. 2
- ◆ Pin - 3282/29-
- ◆ Gearbox support - 3282-
- ◆ Engine and gearbox jack - V.A.G 1383 A- or engine and gear-box jack - VAS 6931-
- ◆ Adjustment plate - 3282/67-
- ◆ Hose clamps to 25 mm - 3094-
- ◆ Tensioning strap - T10038-
- ◆ Set of plugs for engine - VAS 6122-



- ◆ Insert tool, 18 mm - T10179-





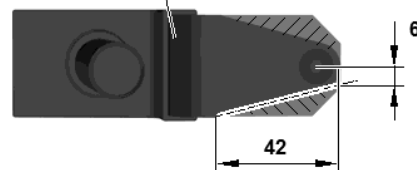
- ◆ Socket, multi-point bit XZN 14 - T10061-

T10061



VW00-11222

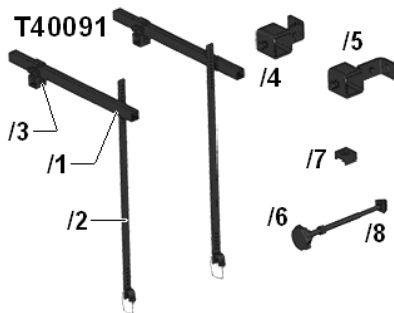
T40093/3-6



N34-12294

- ◆ Square tube - T40091/1- , qty. 2

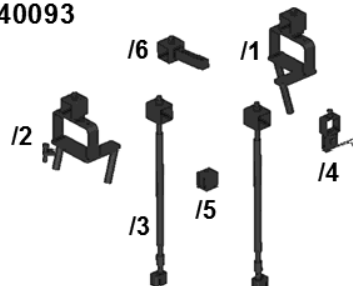
T40091



VW00-11213

- ◆ Connecting piece - T40091/3- , qty. 2
- ◆ Spindle - T40093 /3- from engine support supplementary set - T40093- , qty. 2

T40093



VW00-11219

- ◆ Adapter - T40093/3-6- : qty. 2 (check and modify as necessary [⇒ page 104](#))

T40093/3-6



VW00-11297

- ◆ or adapter - T40093/3-6A- : qty. 2



Check adapters - T40093/3-6- and modify as necessary

- If necessary, cut off the marked area.
- Round off front edges.
- Protect adapter against corrosion.
- Then, mark adapters
 - T40093/3-6- as -
 - T40093/3-6A- .

At a later point, support bracket - 10-222 A- will be fitted onto longitudinal members with adapters - T40093/3-6A- .

- To prevent damage to the longitudinal members, wrap the front section of the adapters - T40093/3-6A- with textile-reinforced adhesive tape ⇒ Electronic parts catalogue (ETKA chemical substances) .

Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Move selector lever to position »P«.
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

Battery in engine compartment

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

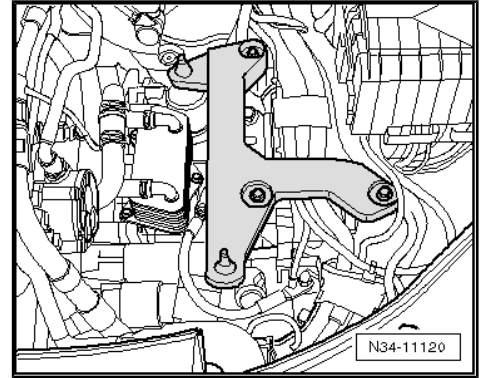
Battery in luggage compartment

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and reconnecting battery .





- Remove air filter housing and bracket located beneath ⇒ Rep. gr. 24 ; Air filter; Assembly overview - air filter housing .

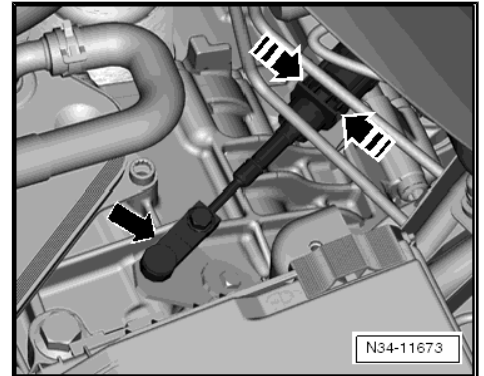


- Pry selector lever cable off selector shaft lever -arrow- using an open-ended spanner.



Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

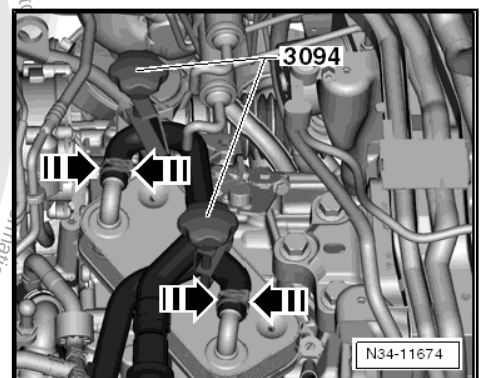


- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Remove charge air pipe ⇒ Rep. gr. 21 ; Charge air system; Assembly overview - charge air system
- Lay lint-free cloths on gear oil cooler and gearbox to catch escaping coolant.



Note

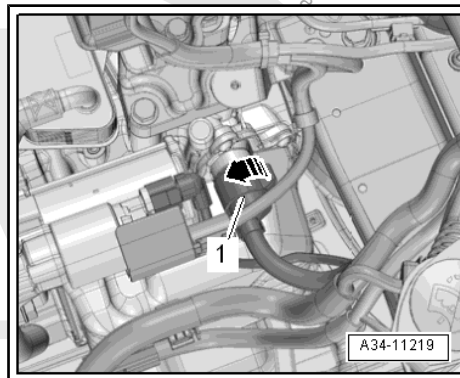
- ◆ ***On a warm engine, the cooling system is under high pressure.***
- ◆ ***Before pulling off the coolant hoses, cover the cap on the coolant expansion tank with a cloth and open carefully.***
- Clamp off coolant hoses using hose clamps, up to 25 mm in diameter - 3094- , and detach them.
- Seal connecting necks of gear oil cooler using suitable plugs from engine bung set - VAS 6122- .



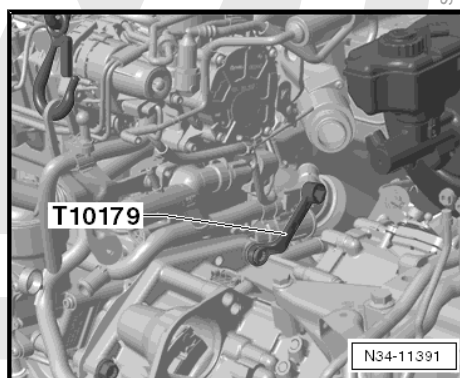


- Disconnect connector -1- for mechatronic unit for dual clutch gearbox - J743- . To do this, turn rotary locking mechanism anti-clockwise -arrow-.
- Remove starter -A- ➔ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter.

It is advisable to remove the lower bolt first.



- Unscrew all upper bolts securing engine to gearbox.



A bolt is located in the starter motor hole -arrow-. This bolt can be removed using socket - T10061- .

- If there are hose and cable connections in area of engine support eyes for support bracket - 10-222A- , remove these now.
- Install support bracket - 10-222 A- as follows:

Required material:

- ◆ Adapter - 10 - 222 A /18-
- ◆ Shackle - 10 - 222 A /12- : qty 2 (required if spindles of support bracket cannot be hooked into lifting eyes of engine).
- ◆ Adapter - 10 - 222 A /29- , qty. 2
- ◆ Square tube - T40091/1- , qty. 2
- ◆ Connecting piece - T40091/3- , qty. 2
- ◆ Spindles - T40093 /3- qty 2
- ◆ Adapter - T40093/3-6- : qty. 2 (check and modify as necessary ➔ [page 104](#))
- ◆ or adapter - T40093/3-6A- : qty. 2

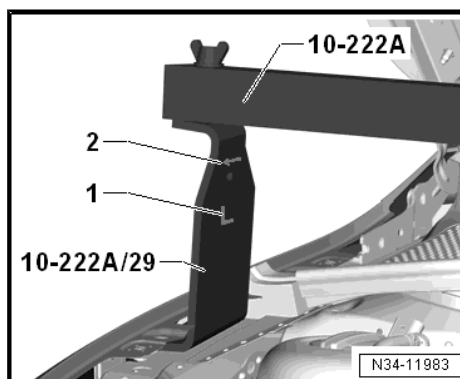
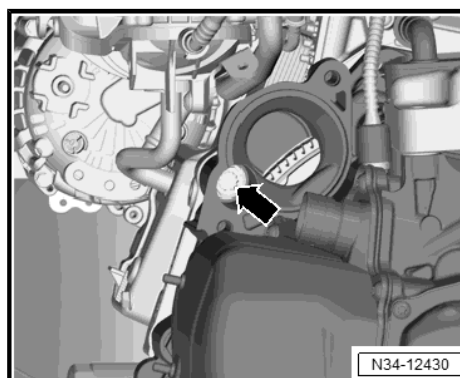
- On both sides of vehicle, insert adapters - 10 - 222 A /29- between wing mounting flange and sheet metal for mounting wing underneath it.

◆ Installation position:

“L” = -1- adapter is to be used on “right” side of vehicle (adapter engages in recess of wing).

“R” (not shown in figure) adapter is to be inserted on “left” side of vehicle.

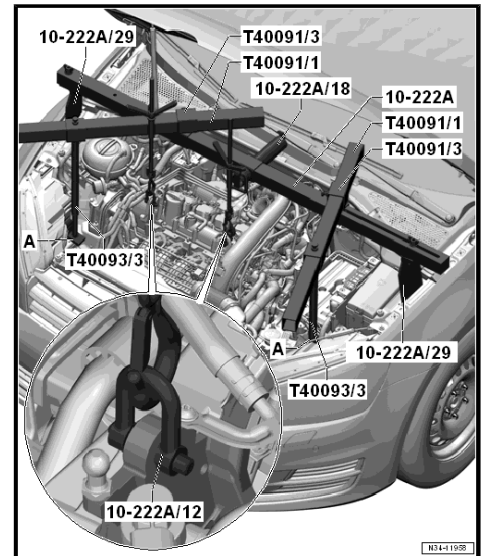
Arrow -2- always points in direction of travel.



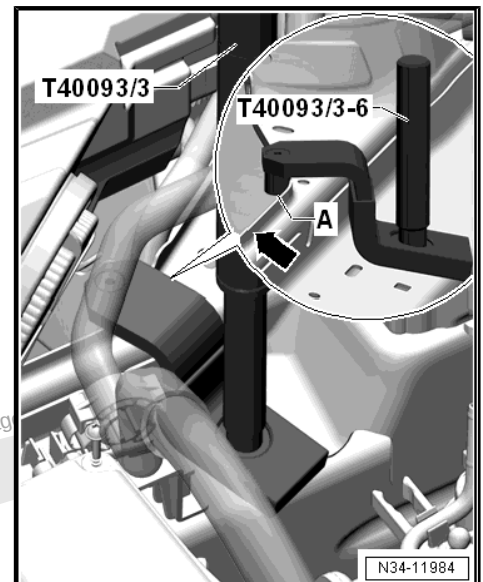


- Push adapter - 10 - 222 A /18- and two connecting pieces - T40091/3- onto support bracket - 10-222 A- .
- Secure support bracket - 10-222 A- to adapters - 10 - 222 A / 29- .

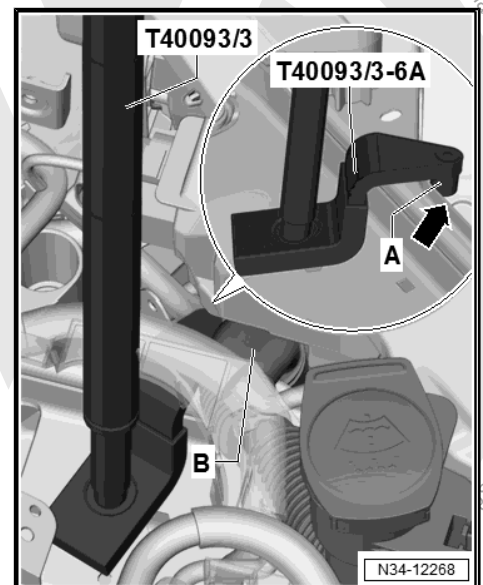
-A- = adapter - T40093/3-6A- (⇒ next figure)



- If present, pull off wires in front area of web on both longitudinal members -arrow-. Do not disconnect pipe/hose system.
- Place adapters - T40093/3-6A- onto both longitudinal members (illustration shows right longitudinal member).
- If necessary, carefully unclip any pipes for air conditioning system in front area. Do not disconnect pipe/hose system ⇒ Heating, air conditioning; Rep. gr. 87 ; Refrigerant circuit; System overview - refrigerant circuit .

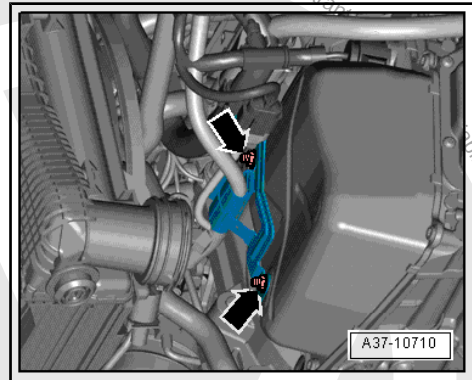


- Position adapter - T40093/3-6A- on left longitudinal member directly behind filler pipe for washer fluid reservoir.
- Each of the adapters - T40093/3-6A- locks with pin -A- behind the web of the longitudinal member -arrow-.
- Screw in spindles - T40093 /3- .
- Connect spindles - T40093 /3- via square tubes - T40091/1- to engine support bracket - 10-222 A- and tighten (⇒ previous illustration).
- Then attach spindles to engine support eyes.
- Take up weight of engine/gearbox assembly and support bracket on spindles .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .
- Remove lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - front wheel housing liner .

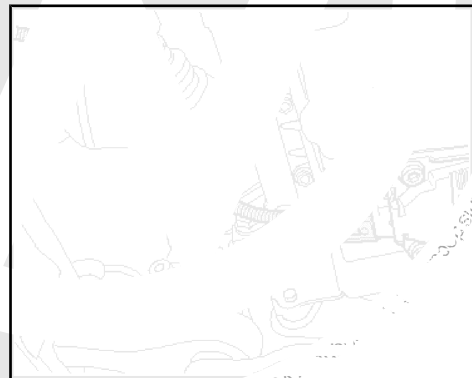




- Remove electrical wiring and retainers from sump at front -arrows-.
- Raise wiring in area of sump and secure it.

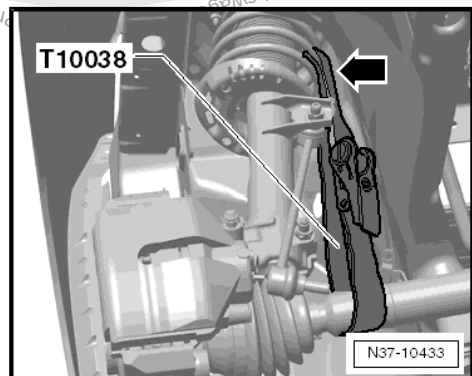


- Disconnect connector -1- from oil level and oil temperature sender - G266- .
- Remove subframe ⇒ Rep. gr. 40 ; Subframe; Assembly overview - subframe .
- Unbolt drive shafts from gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .

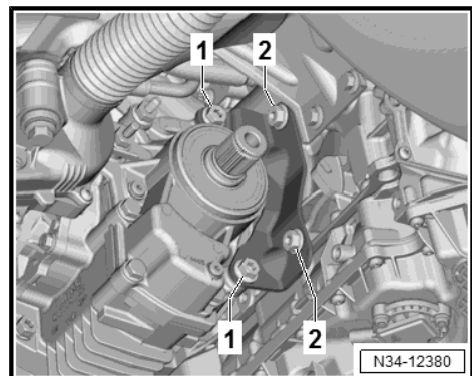


- Secure drive shaft to suspension strut with tensioning strap - T10038- .

The surface protection of the shafts must not be damaged.

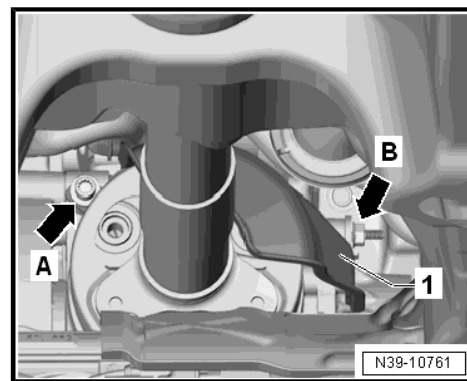


- Unscrew bolts -1- and -2-, and remove gearbox carrier from bevel box.

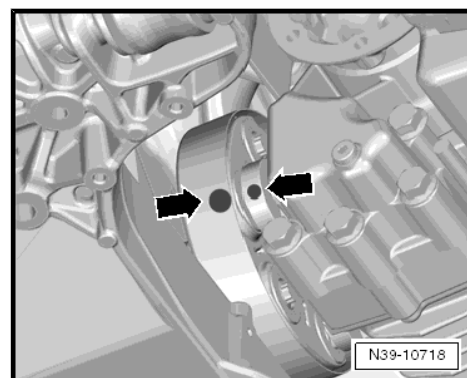




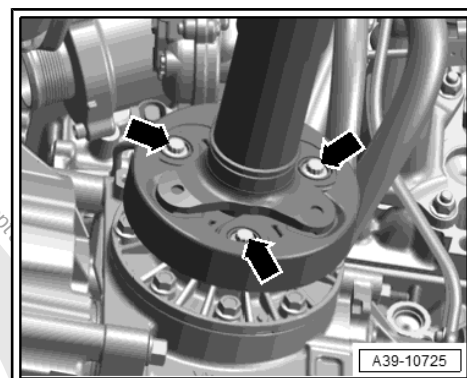
- Unscrew bolts -A- and -B- from bevel box and remove heat shield -1-.



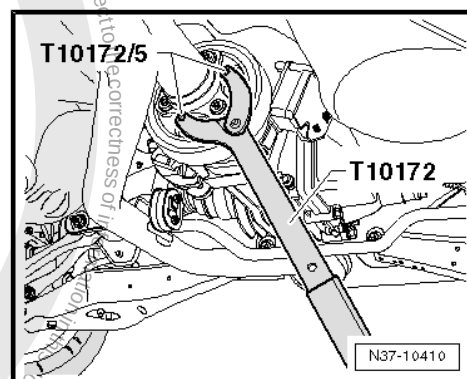
- Mark position of propshaft with flexible coupling relative to output shaft of bevel box -arrows-.



- Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- If necessary, counterhold at rear final drive when loosening or tightening propshaft.

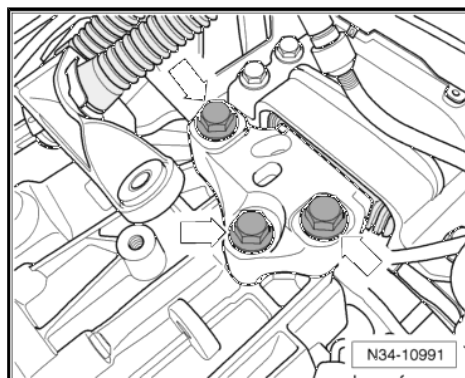




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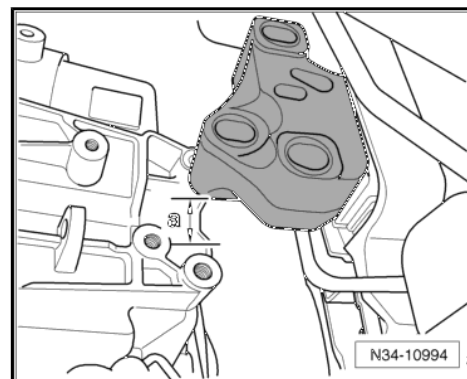


- Then use spindles of support bracket - 10 - 222 A- to lower engine/gearbox »only« on gearbox side as far as dimension -a-.

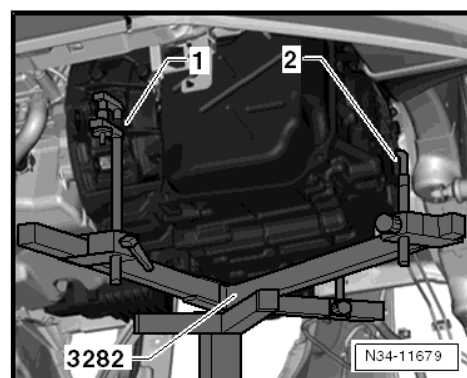
Dimension -a- = about 110mm

The gearbox is separated from the engine in this position.

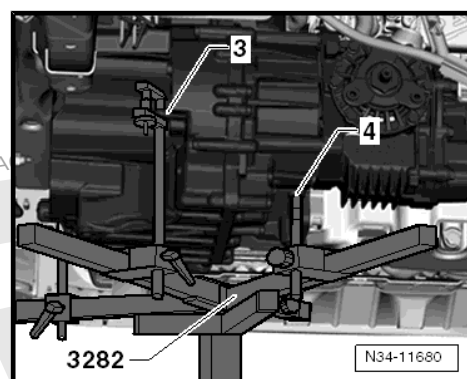
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - 3282- under gearbox.



- Mount safety support -1- and hook -2- on gearbox as shown.



- Mount safety support -3- and pin -4- on gearbox as shown.
- Remove »last« connecting bolt between engine and gearbox.
- Push gearbox off engine and lower it carefully, ensuring »clearance« to other components.



Note

Be careful of all lines when lowering gearbox.

Transporting gearbox ➔ [page 151](#) .

Secure gearbox to assembly stand ➔ [page 157](#) .

Install gearbox ➔ [page 146](#) .

4.2.3 Removing gearbox, Tiguan 2016 ➤ vehicles with 2.0 I - 105 kW, 110 kW, 130 kW, 140 kW diesel engine, all-wheel drive

Brief description

The gearbox is removed downwards together with the bevel box. »From above«

The battery, air filter and starter are removed. Wiring harness of steering rack is disconnected and »moved clear«. This allows it to be lowered together with subframe and steering rack. The engine and gearbox must be supported before the left and right assembly mounting is removed.

»From below«

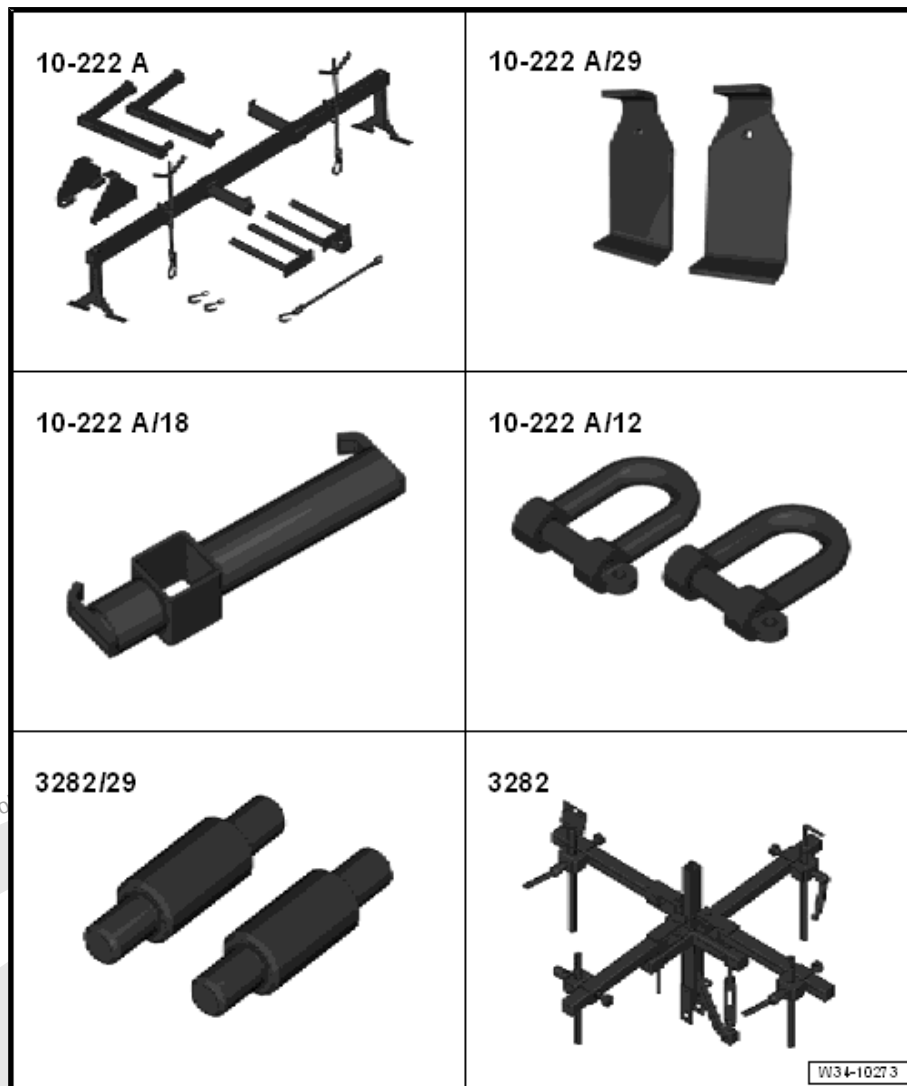
Remove noise insulation beneath engine and cover in front left wheel housing.



-Subframe- is removed together with -pendulum support- and -steering rack-.

Both drive shafts are pushed out of gearbox and left installed in wheel bearing housings. They are only swivelled to one side, but are left on vehicle.

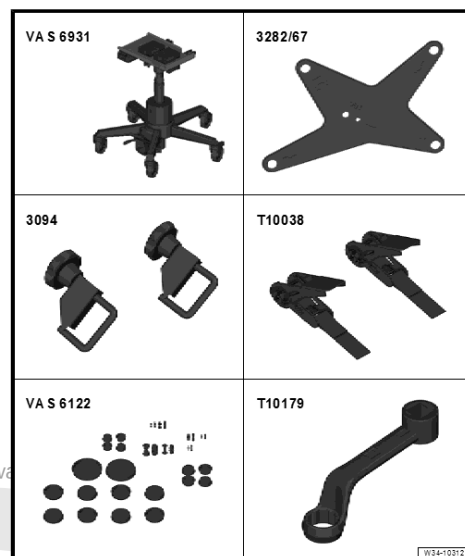
Special tools and workshop equipment required



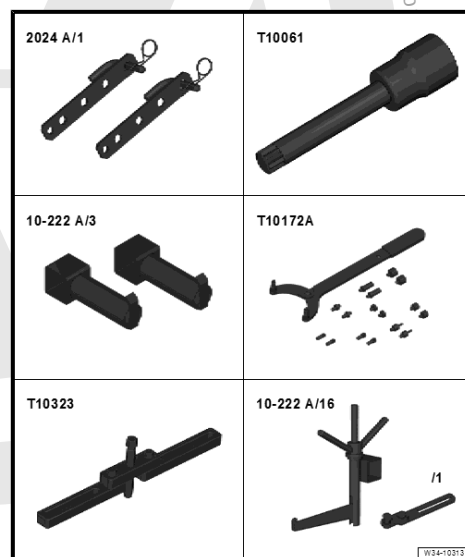
- ◆ Support - 10 - 222 A-
- ◆ Adapter - 10 - 222 A /29-
- ◆ Adapter - 10 - 222 A /18-
- ◆ Shackle - 10 - 222 A /12-
- ◆ Pin - 3282/29-
- ◆ Gearbox support - 3282-
- ◆ Engine and gearbox jack - VAS 6931-
- ◆ Adjustment plate - 3282/67-
- ◆ Hose clamps to 25 mm - 3094-
- ◆ Tensioning strap - T10038-
- ◆ Set of plugs for engine - VAS 6122-



- ◆ Insert tool, 18 mm - T10179-



- ◆ Bar - 2024 A / 1- of lifting tackle - 2024 A-
- ◆ Socket, multi-point bit XZN 14 - T10061-
- ◆ Adapter - 10 - 222 A /3-
- ◆ Counter-hold tool - T10172A-
- ◆ Support bridge - T10323-
- ◆ Adapter - 10 - 222 A /16-



Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Switch selector lever to »P« position.
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing
- Remove battery with 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 .



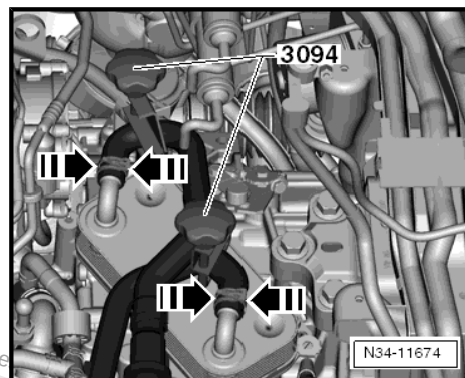
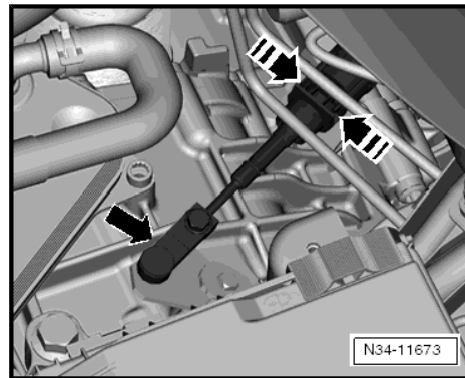
- Pry selector lever cable off selector shaft lever -arrow- using an open-ended spanner.



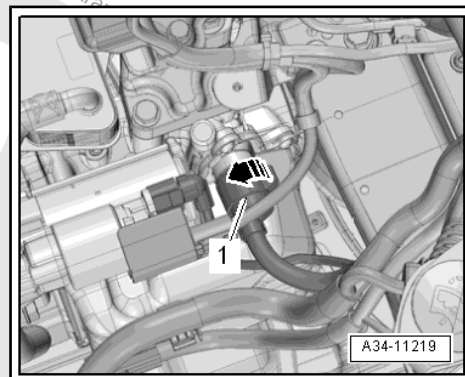
Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

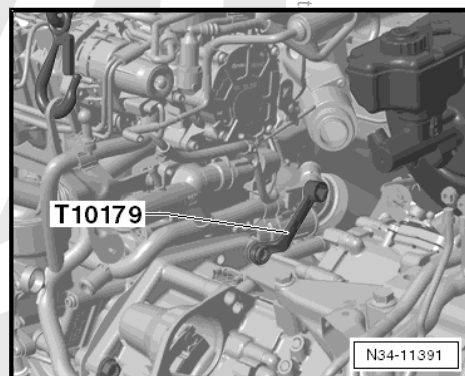
- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
- Seal connecting necks of gear oil cooler using suitable plugs from engine bung set - VAS 6122- .



- Disconnect connector -1- for mechatronic unit for dual clutch gearbox - J743- . To do this, turn rotary locking mechanism anti-clockwise -arrow-.
- Remove charge air line. ➔ Rep. gr. 21 ; Charge air system; Assembly overview -charge air system



- Remove upper engine/gearbox connecting bolts.





A bolt is located in the starter motor hole -arrow-. This bolt can be removed using socket - T10061- .

- If there are hose and cable connections in area of engine support eyes for support bracket - 10 - 222 A- , remove these now.
- Remove gas strut of bonnet from bottom ball-head pin and prop up bonnet using workshop means ⇒ General body repairs, exterior; Rep. gr. 55 ; Bonnet; Removing and installing gas strut .
- Mount support bracket - 10-222 A- :

Required material:

- ◆ Adapter - 10 - 222 A /3-
- ◆ Adapter - 10 - 222 A /18-
- ◆ Shackle - 10 - 222 A /12-
- ◆ Adapter - 10 - 222 A /29- , qty. 2
- ◆ Adapter - 10-222A/16-
- ◆ Hook extension - 2024 A / 1-
- ◆ Bracket - T10346-
- ◆ Bracket - T10346/1-
- ◆ Flange bolt M6 x 40

- On both sides of vehicle, insert adapters - 10 - 222 A /29- between wing mounting flange and sheet metal for mounting wing underneath it.

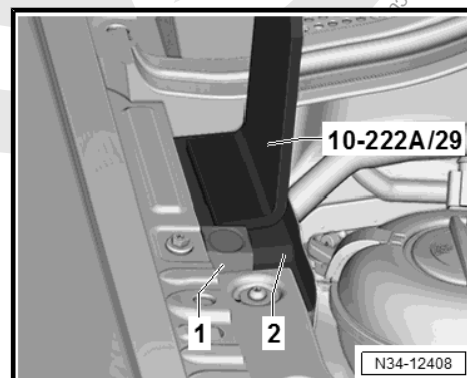
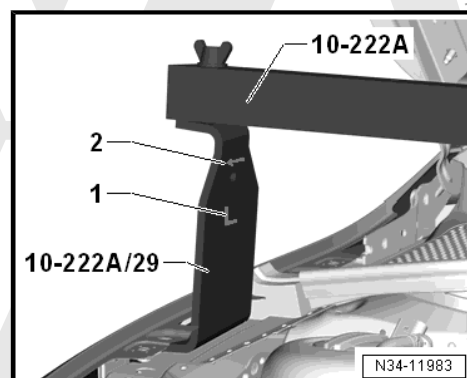
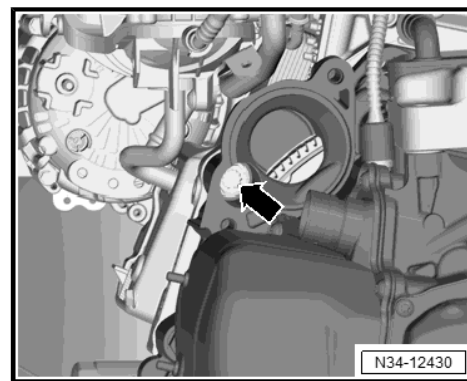
◆ Installation position:

"L" = -1-, adapter is inserted on "right" side of vehicle

"R" (not shown in illustration), adapter is to be inserted on "left" side of vehicle

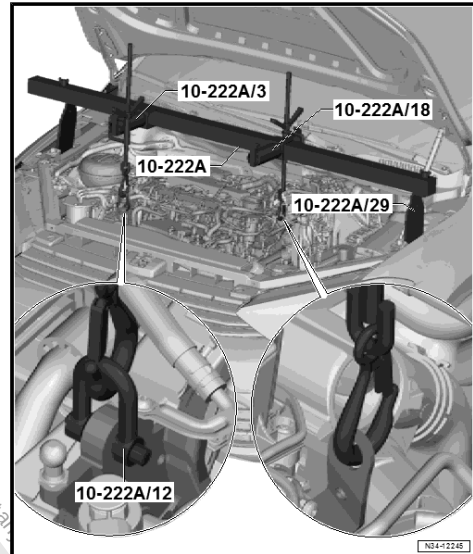
Arrow -2- always points in direction of travel.

Position adapters - 10-222A/29- behind console -1- next to shoulder -2- in each case.





- First, slide adapter - 10-222A/16- onto left side of support bracket ⇒ [page 116](#) .
- Adapter - 10-222A/16- serves to secure support bracket during subsequent work routine.
- Once support bracket is complete, adapter - 10-222A/16- is located between adapter - 10 - 222 A /18- and left adapter - 10 - 222 A /29- .
- Push adapter - 10 - 222 A /18- and adapter - 10 - 222 A /3- onto support bracket - 10-222 A- .



Secure support bracket - 10-222 A- as shown

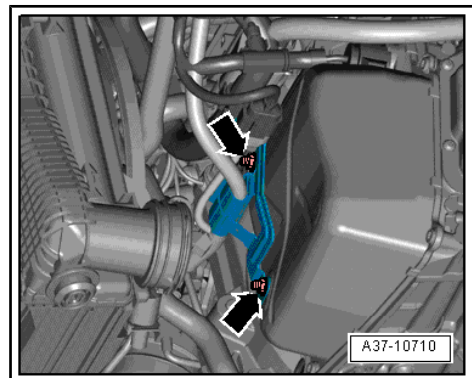
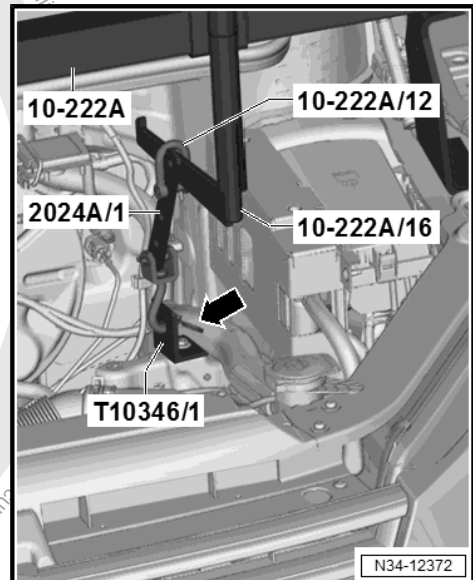
- Bolt bracket - T10346- or -T10346/1- to rear left mounting hole for battery tray.
- To do this, use a collar bolt M6 x 40 or a securing bolt for battery tray.



Note

Attach shackle - 10 - 222 A /12- to uppermost hole of fish plate - 2024 A / 1- .

- Secure bar - 2024 A / 1- with locating pin -arrow-.
- Then attach spindles to engine support eyes.
- Take up weight of engine/gearbox assembly and support bracket on spindles .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Remove lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - front wheel housing liner .
- Remove electrical wiring and retainers from sump at front -arrows-.
- Raise wiring in area of sump and secure it.



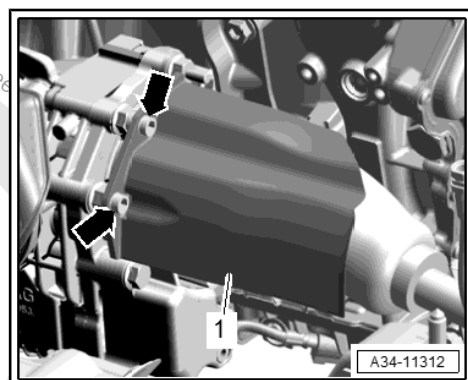


- Disconnect connector -1- from oil level and oil temperature sender - G266- .

Remove subframe. ⇒ Rep. gr. 40 ; Subframe; Assembly over-view - subframe

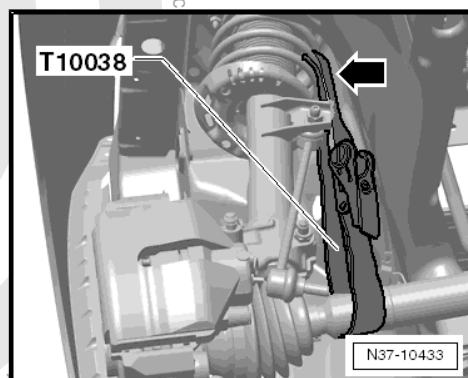


- Remove drive shaft heat shield -1-, if present, from bevel box (-arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .
- Disconnect both drive shafts from gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft: Removing and installing drive shafts .

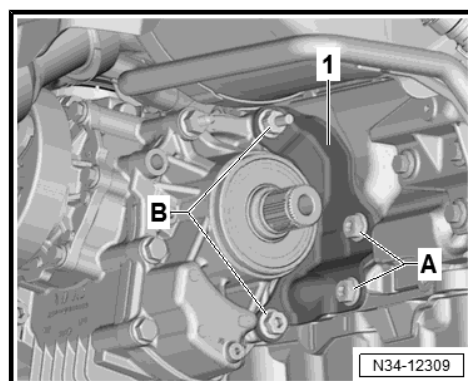


Secure both drive shafts to suspension struts using tensioning straps - T10038- .

The surface protection of the shafts must not be damaged.

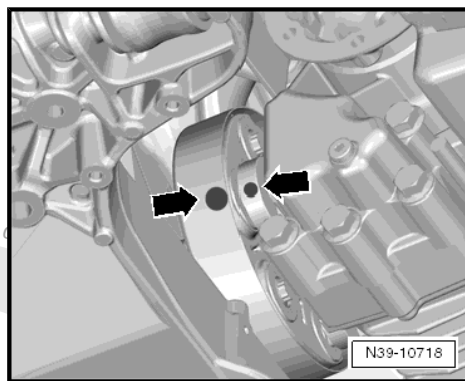


- Unscrew bolts -A and B-, and remove gearbox carrier for bevel box.

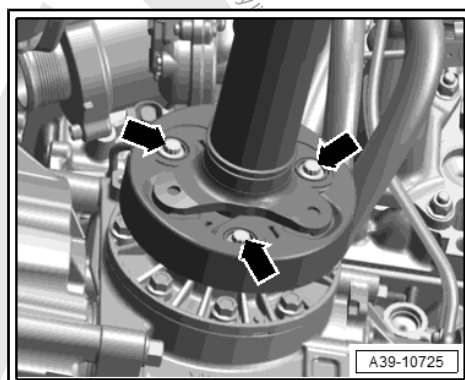




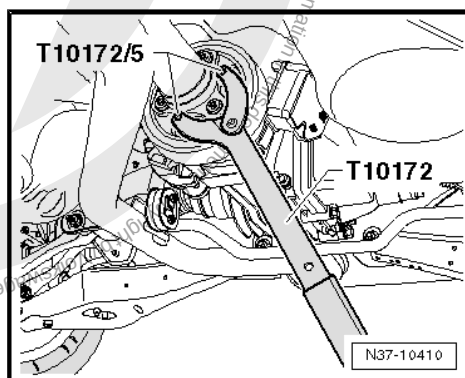
- Mark position of propshaft with flexible coupling relative to output shaft of bevel box -arrows-.



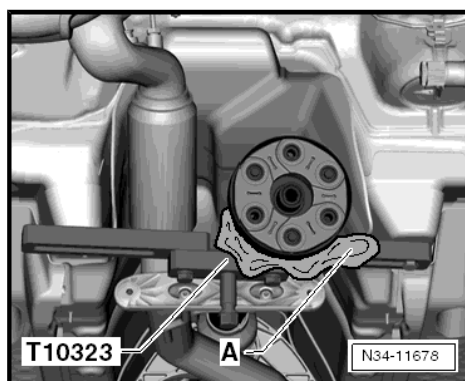
- Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- If necessary, counterhold at rear final drive when loosening or tightening propshaft.



- Secure support - T10323- with a bolt on inside rear threaded hole for subframe.
- A securing bolt from the subframe is suitable for this.
- Place cloth -A- on support and put propshaft on that.





Note

- ◆ When removing and installing, do not damage seal in the propshaft flange -arrow-.
- ◆ Renew propshaft if damaged. ⇒ Rep. gr. 39 : Propshaft; Removing and installing propshaft.
- ◆ All parts of propshaft which have been marked relative to each other must be reinstalled in the same positions.

- Remove all but one »easily accessible« connecting bolt between engine and gearbox.
- Remove securing bolts -arrows- of assembly mounting for engine ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings .

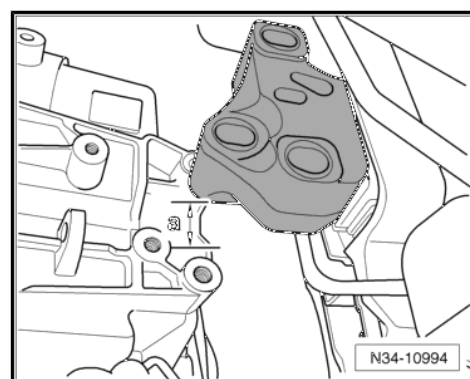
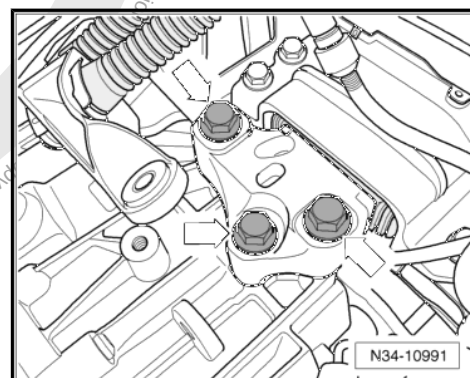
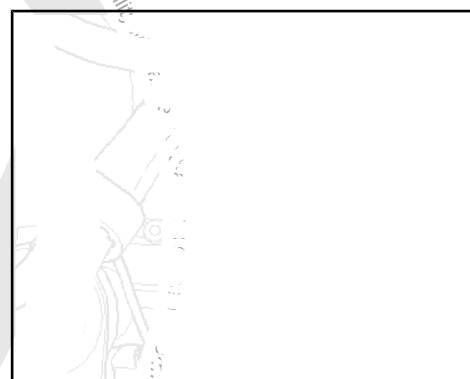
- Remove securing bolts -arrows- of assembly mounting for gearbox.

- Then use spindles of support bracket - 10 - 222 A- to lower engine/gearbox »only« on gearbox side as far as dimension -a-.

Dimension -a- = about 110mm

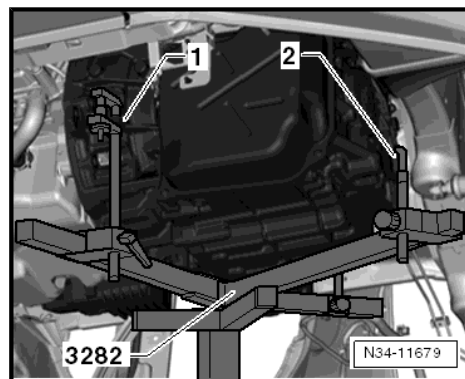
The gearbox is separated from the engine in this position.

- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - 3282- under gearbox.

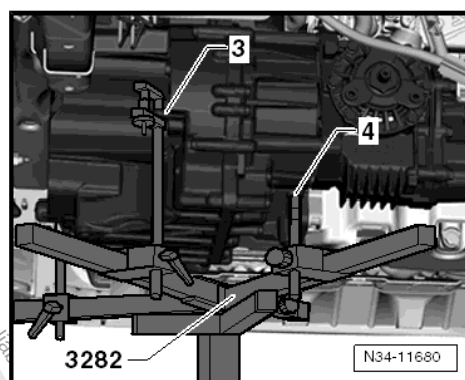




- Mount safety support -1- and hook -2- on gearbox as shown.



- Mount safety support -3- and pin -4- on gearbox as shown.
- Remove »last« connecting bolt between engine and gearbox.
- Push gearbox off engine and lower it carefully, ensuring »clearance« to other components.



Transporting gearbox ⇒ [page 151](#) .

Secure gearbox to assembly stand ⇒ [page 157](#) .

Install gearbox ⇒ [page 146](#) .

4.2.4 Removing gearbox, Tiguan 2016 ►, vehicles with petrol engine, all-wheel drive

Brief description

The gearbox is removed downwards separately.

»From above«

The battery is disconnected and, if located in engine compartment, removed. The air filter and starter are removed. The engine and gearbox must be supported before the left subframe mounting is removed.

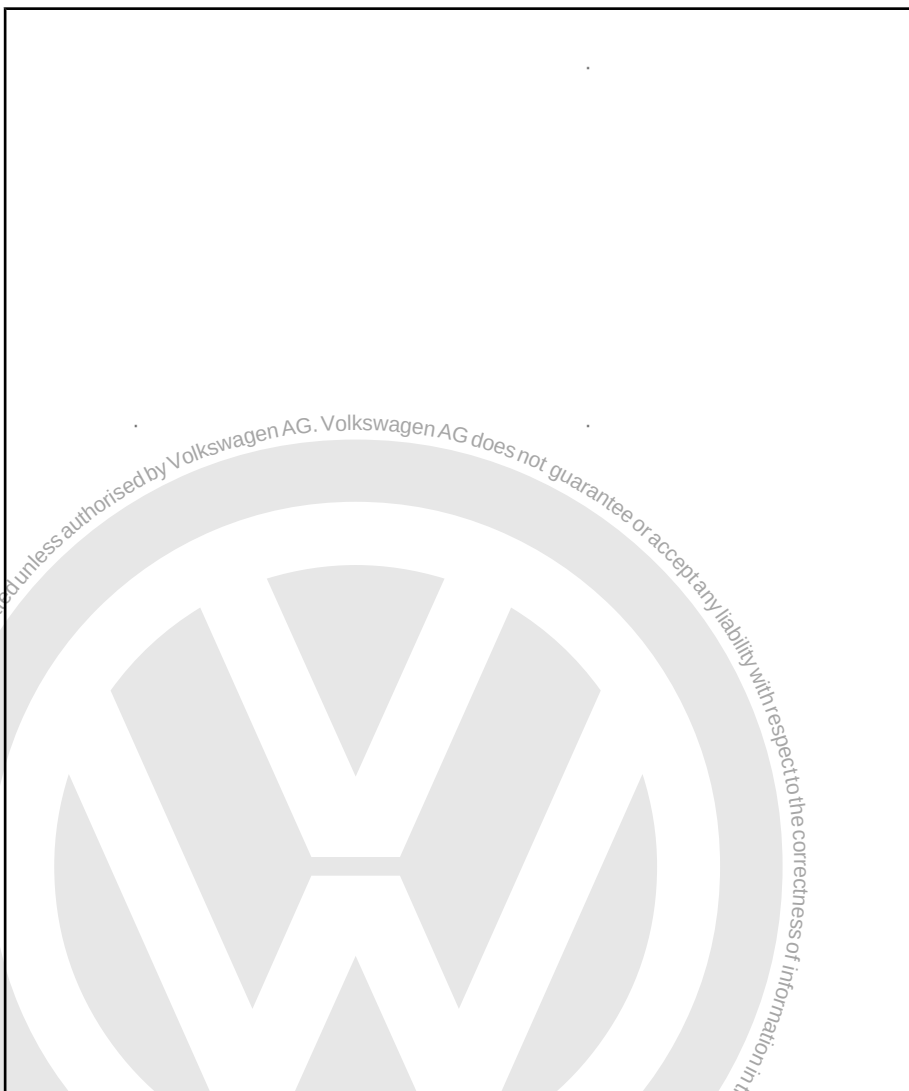
»From below«

-Subframe- is removed together with -pendulum support- and -both suspension links-.

Both drive shafts are disconnected from gearbox and left installed in wheel bearing housings. They are only swivelled to one side and left on vehicle.



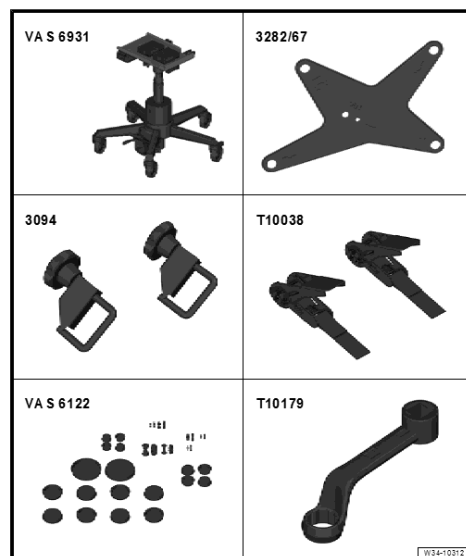
Special tools and workshop equipment required



- ◆ Support - 10 - 222 A-
- ◆ Hook - 10-222A/10-
- ◆ Adapter - 10-222A/28-
- ◆ Adapter - 10-222A/28-2-
- ◆ Adapter - 10 - 222 A /29- , qty. 2
- ◆ 2 × -T40091/1- and -T40091/3- from engine support basic set - T40091-
- ◆ 2 × swivel joints - T40093/3- from engine support supplementary set - T40093-
- ◆ Engine and gearbox jack - VAS 6931-
- ◆ Adjustment plate - 3282/67-
- ◆ Hose clamps to 25 mm - 3094-
- ◆ Tensioning strap - T10038-
- ◆ Set of plugs for engine - VAS 6122-



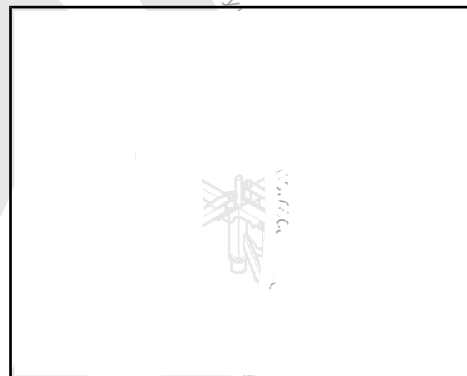
- ◆ Insert tool, 18 mm - T10179-



- ◆ Shackle - 10 - 222 A /12-



- ◆ Gearbox support - 3282-



- ◆ Pin - 3282/29-





Removing

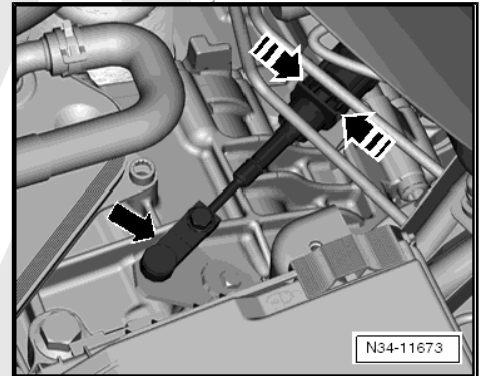
- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Move selector lever to position »R«.
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray
- Remove air filter housing ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing
- Pry selector lever cable off selector shaft lever -arrow- using an open-ended spanner.



Caution

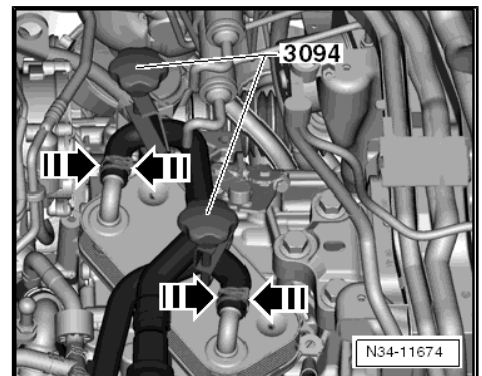
Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Remove charge air pipe with charge air hose ⇒ Rep. gr. 21 ; Charge air system; Assembly overview - charge air system .
- Lay lint-free cloths on gear oil cooler and gearbox to catch escaping coolant.



Note

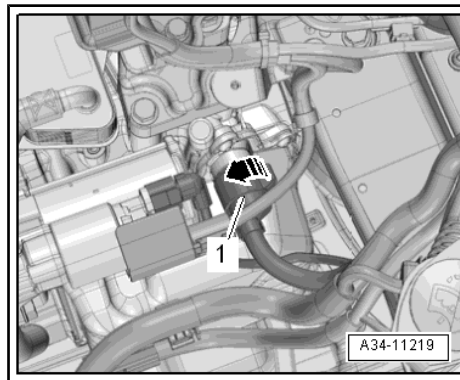
- ◆ *On a warm engine, the cooling system is under high pressure.*
- ◆ *Before pulling off the coolant hoses, cover the cap on the coolant expansion tank with a cloth and open carefully.*
- Clamp off coolant hoses using hose clamps, up to 25 mm in diameter - 3094- , and detach them.
- Seal connecting necks of gear oil cooler using suitable plugs from engine bung set - VAS 6122- .



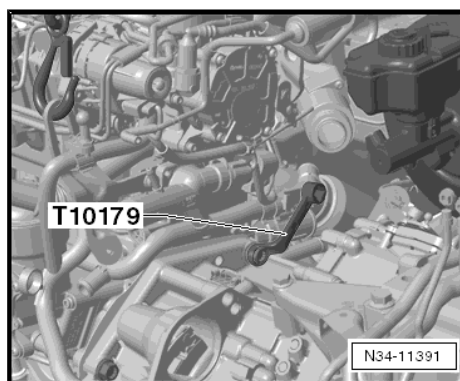


- Disconnect connector -1- for mechatronic unit for dual clutch gearbox - J743- . To do this, turn rotary locking mechanism anti-clockwise -arrow-.
- Remove starter -A- ➔ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

It is advisable to remove the lower bolt first.



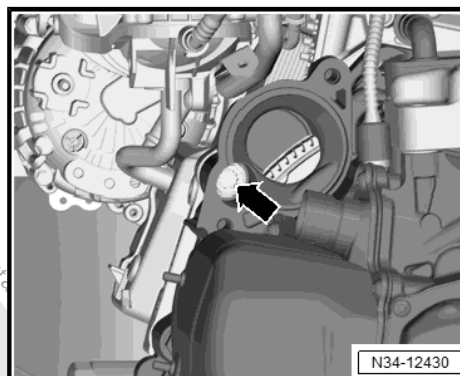
- Unscrew all upper bolts securing engine to gearbox.



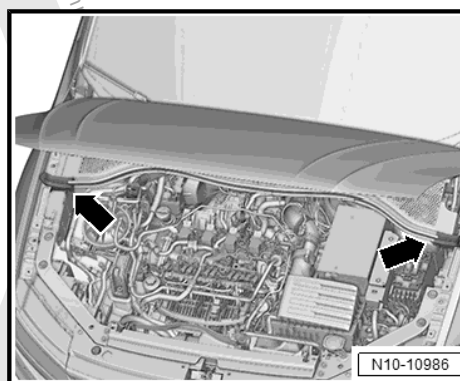
A bolt is located in the starter motor hole -arrow-. This bolt can be removed using socket - T10061- .

Supporting engine

- If there are hose and cable connections in area of engine support eyes for support bracket - 10-222A- , remove these now.



- Remove foam elements -arrows- on left and right for plenum chamber seal.





- On both sides of vehicle, insert adapters - 10 - 222 A /29- between wing and mounting plate for wing located underneath.

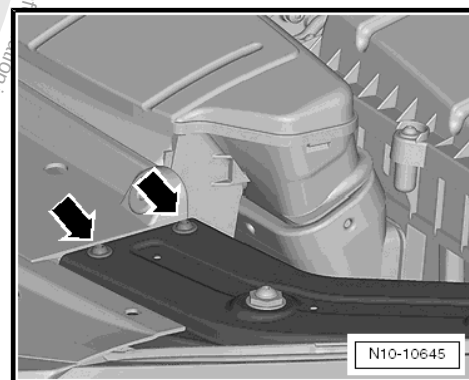
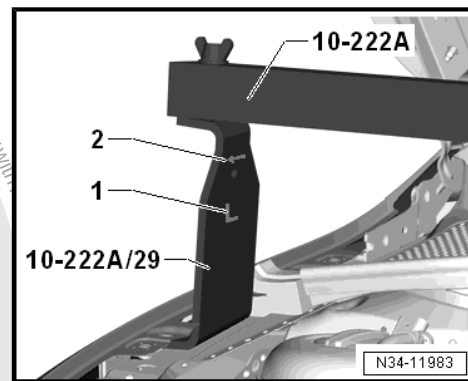
◆ Installation position:

“L” = -1-, adapter is inserted on “right” side of vehicle

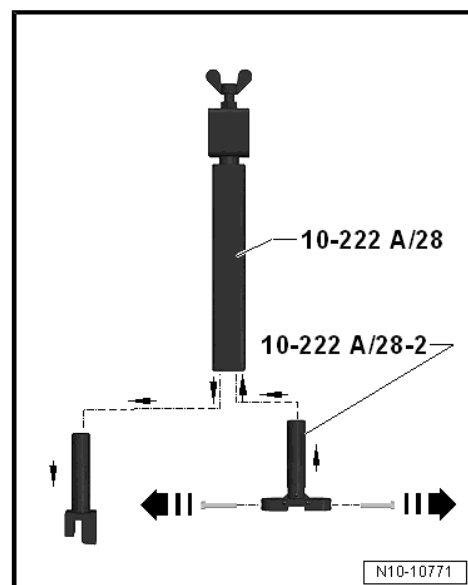
“R” (not shown in illustration), adapter is to be inserted on “left” side of vehicle

Arrow -2- always points in direction of travel.

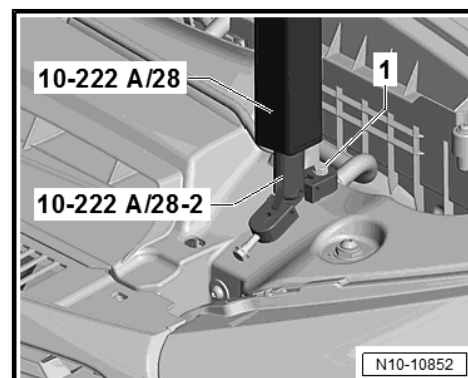
- Push 2 swivel joints - T40091/3- onto support bracket - 10-222 A- .
- Secure support bracket - 10-222 A- to adapters - 10 - 222 A / 29- .
- Unscrew bolts -arrows- for lock carrier bracket on left and right.



- Unscrew lower supports from adapters - 10 - 222 A /28- and replace them with adapters -10-222 A /28-2- .
- Unscrew bolts -arrows- for securing support bracket to lock carrier from adapter - 10-222 A /28-2- .

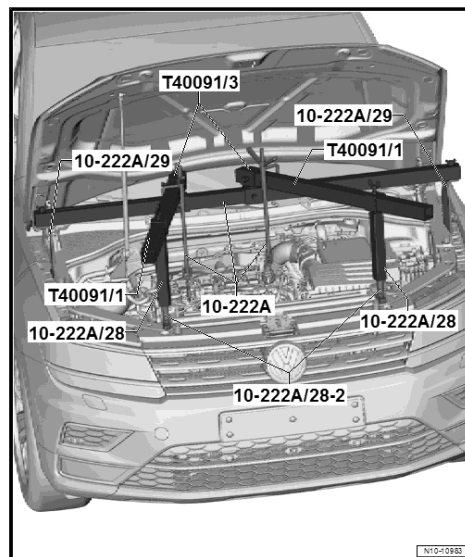


- Bolt adapter - 10-222 A /28-2- to lock carrier using securing bolt -1-. Specified torque: 8 Nm

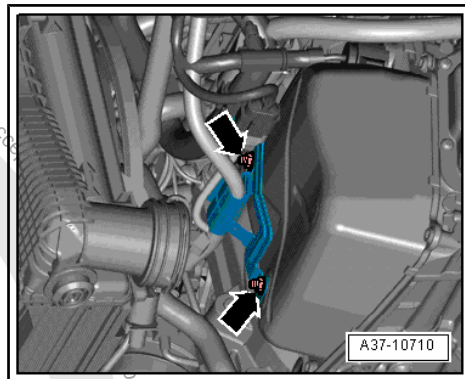




- Set-up square tubes - T40091/1- with one spindle each as shown.
- Engage spindles in support eyes of engine. Use shackle - 10-222 A /12- if necessary.
- Take up weight of engine/gearbox assembly using spindles .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .
- Remove lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - front wheel housing liner .



- Remove electrical wiring and retainers from sump at front -arrows-.
- Raise wiring in area of sump and secure it.

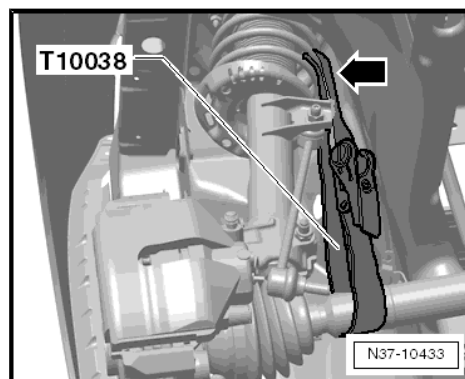


- Disconnect connector -1- from oil level and oil temperature sender - G266- .
- Remove subframe ⇒ Rep. gr. 40 ; Subframe; Assembly overview - subframe .
- Unbolt drive shafts from gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .



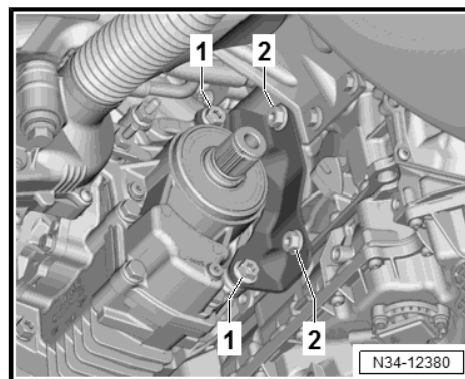
- Secure drive shaft to suspension strut with tensioning strap T10038- .

The surface protection of the shafts must not be damaged.

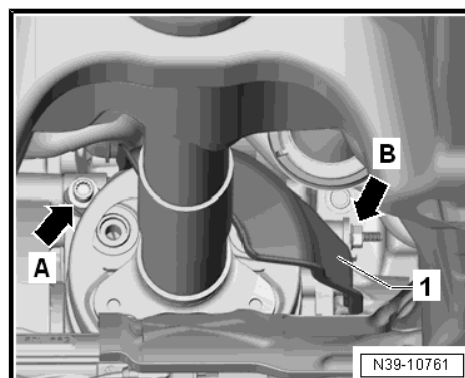




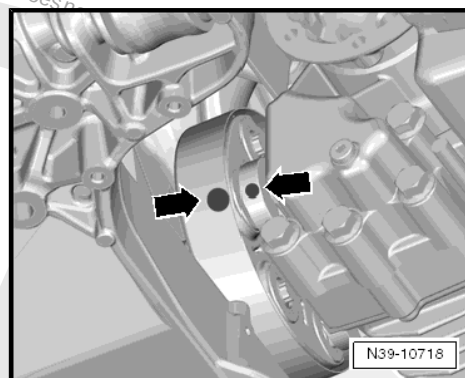
- Unscrew bolts -1- and -2-, and remove gearbox carrier from bevel box.



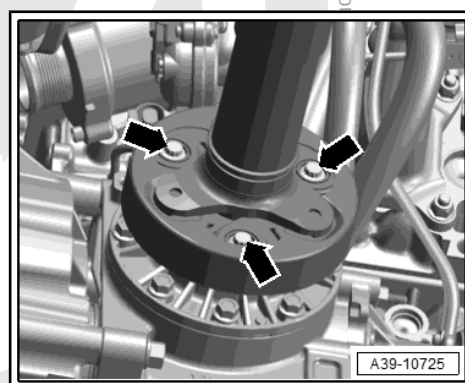
- Unscrew bolts -A- and -B- from bevel box and remove heat shield -1-.



- Mark position of propshaft with flexible coupling relative to output shaft of bevel box -arrows-

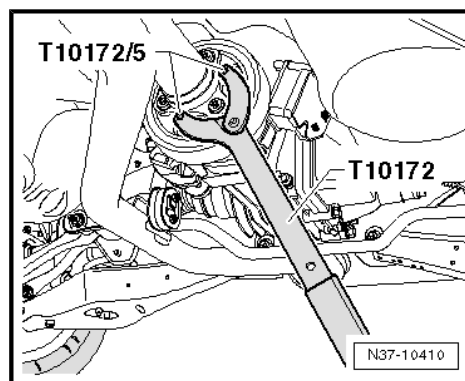


- Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .

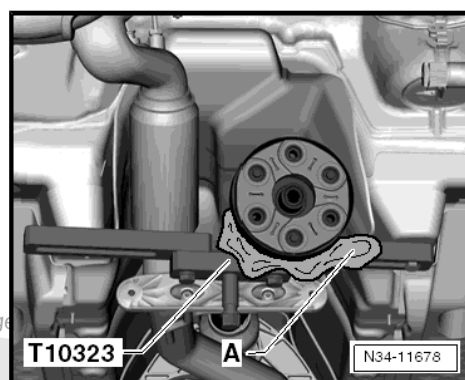




- If necessary, counterhold at rear final drive when loosening or tightening propshaft.

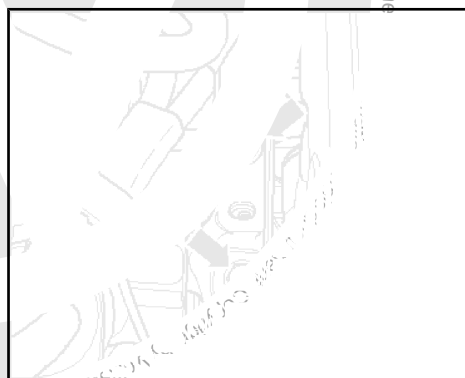


- Secure support - T10323- with a bolt on inside rear threaded hole for subframe.
- A securing bolt from the subframe is suitable for this.
- Place cloth -A- on support and put propshaft on that.



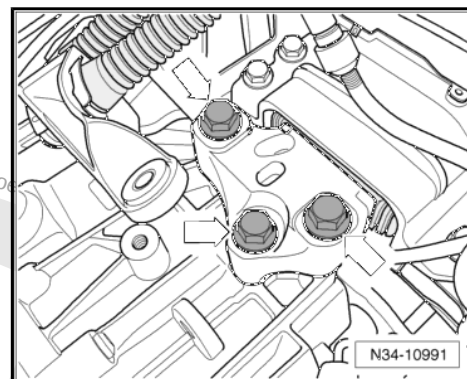
Note

- ◆ *When removing and installing, do not damage seal in the propshaft flange -arrow-.*
 - ◆ *Renew propshaft if damaged. ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft*
 - ◆ *All parts of propshaft which have been marked relative to each other must be reinstalled in the same positions.*
- Remove securing bolts -arrows- of assembly mounting for engine ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings .





- Remove securing bolts -arrows- of assembly mounting for gearbox.

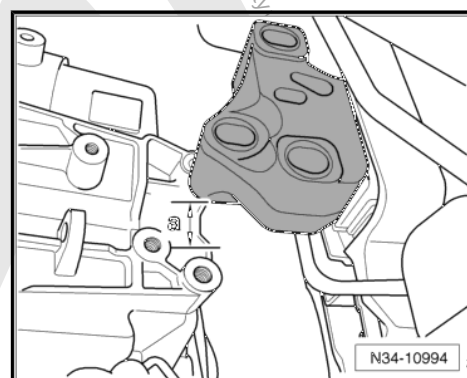


- Then use spindles of support bracket - 10 - 222 A- to lower engine/gearbox »only« on gearbox side as far as dimension -a-.

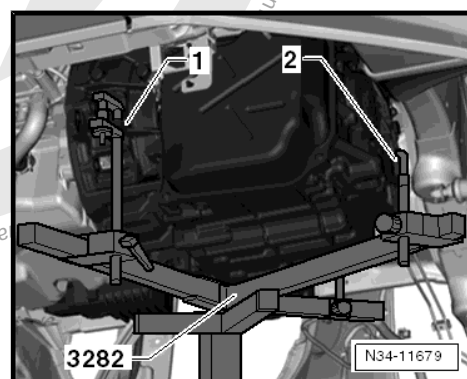
Dimension -a- = about 110mm

The gearbox is separated from the engine in this position.

- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - 3282- under gearbox.



- Mount safety support -1- and hook -2- on gearbox as shown.



- Mount safety support -3- and pin -4- on gearbox as shown.
- Remove »last« connecting bolt between engine and gearbox.
- Push gearbox off engine and lower it carefully, ensuring »clearance« to other components.



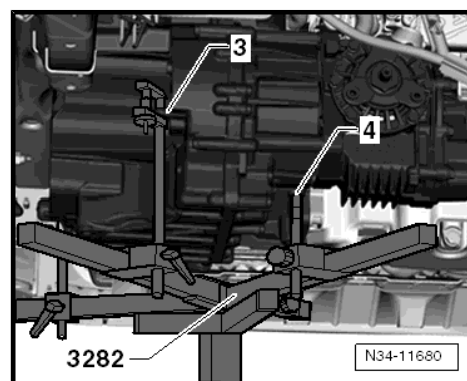
Note

Be careful of all lines when lowering gearbox.

Transporting gearbox ➔ [page 151](#) .

Secure gearbox to assembly stand ➔ [page 157](#) .

Install gearbox ➔ [page 146](#) .





4.2.5 Removing gearbox, Tiguan 2016 ►, vehicles with diesel engine, front-wheel drive

Brief description

The gearbox is removed downwards separately. The engine remains in the vehicle.

Battery, battery carrier and air cleaner housing are removed »from above«. Engine and gearbox must then be supported so that left and right assembly mounting can be detached.

»From below«

Remove noise insulation beneath engine and cover in front left wheel housing.

-Subframe- is removed together with -pendulum support- and -steering rack-.

Both drive shafts are pushed out of gearbox and left installed in wheel bearing housings. They are only swivelled to one side, but are left on vehicle.

Special tools and workshop equipment required

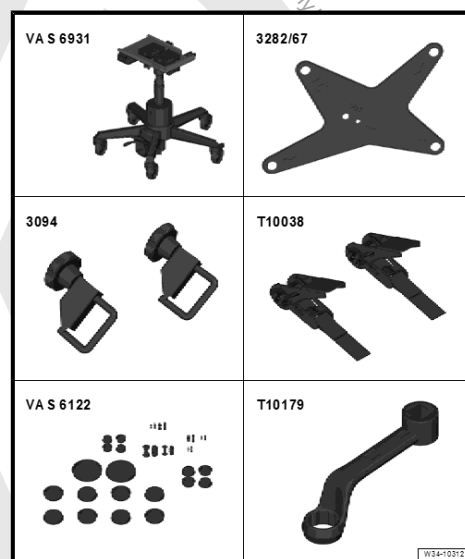
10-222 A 	10-222 A/29
10-222 A/18 	10-222 A/12
3282/29 	3282

W34-10273

◆ Support - 10 - 222 A-



- ◆ Adapter - 10 - 222 A /29-
- ◆ Adapter - 10 - 222 A /18-
- ◆ Shackle - 10 - 222 A /12-
- ◆ Pin - 3282/29-
- ◆ Gearbox support - 3282-
- ◆ Engine and gearbox jack - VAS 6931-
- ◆ Adjustment plate - 3282/67-
- ◆ Hose clamps to 25 mm - 3094-
- ◆ Tensioning strap - T10038-
- ◆ Set of plugs for engine - VAS 6122-
- ◆ Insert tool, 18 mm - T10179-

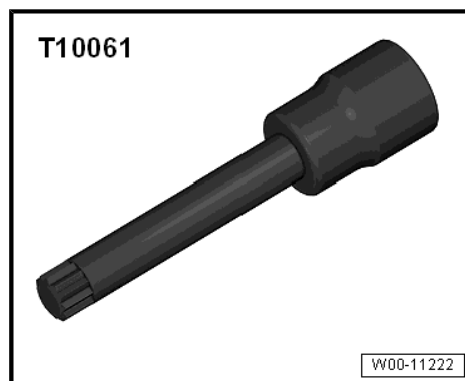


- ◆ Bar - 2024 A / 1- of lifting tackle - 2024 A-





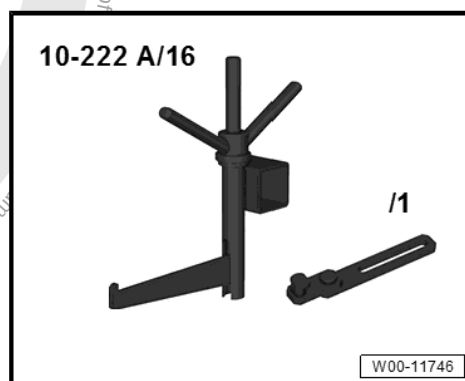
- ◆ Socket, multi-point bit XZN 14 - T10061-



- ◆ Adapter 10 - 222 A /3-



- ◆ Adapter - 10 - 222 A /16-



Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Switch selector lever to »P« position.
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing
- Remove battery with 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 .



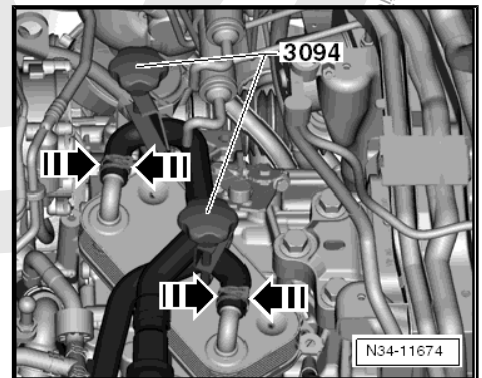
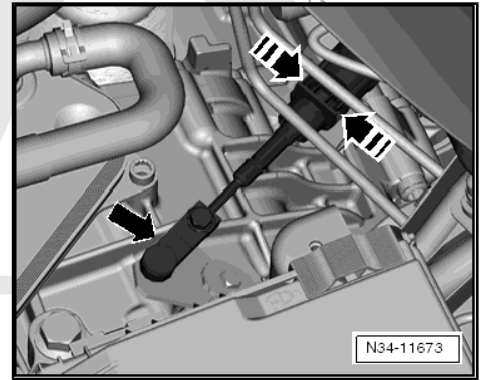
- Pry selector lever cable off selector shaft lever -arrow- using an open-ended spanner.



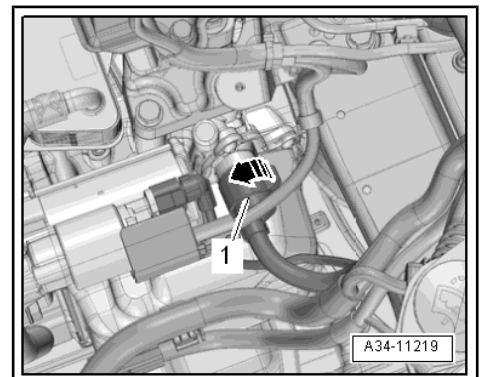
Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

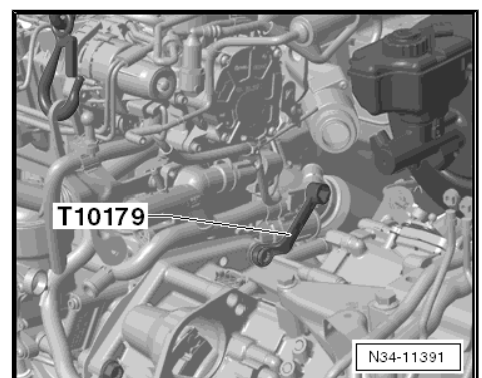
- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
- Seal connecting necks of gear oil cooler using suitable plugs from engine bung set - VAS 6122-



- Disconnect connector -1- for mechatronic unit for dual clutch gearbox - J743- . To do this, turn rotary locking mechanism anti-clockwise -arrow-.
- Remove charge air line. ⇒ Rep. gr. 21 ; Charge air system; Assembly overview - charge air system



- Remove upper engine/gearbox connecting bolts.





A bolt is located in the starter motor hole -arrow-. This bolt can be removed using socket - T10061- .

- If there are hose and cable connections in area of engine support eyes for support bracket - 10 - 222 A- , remove these now.
- Remove gas strut of bonnet from bottom ball-head pin and prop up bonnet using workshop means ⇒ General body repairs, exterior; Rep. gr. 55 ; Bonnet; Removing and installing gas strut .
- Mount support bracket - 10-222 A- :

Required material:

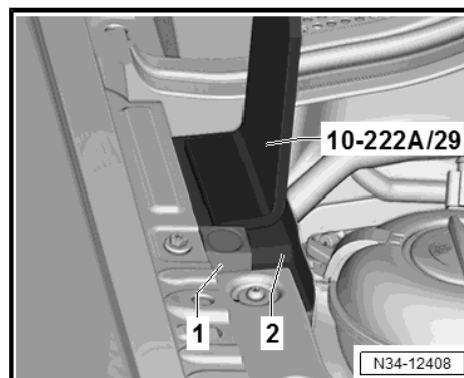
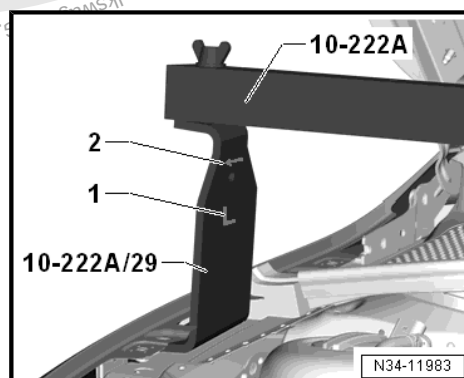
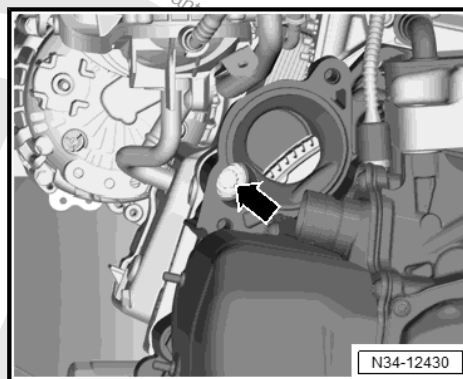
- ◆ Adapter - 10 - 222 A /3-
 - ◆ Adapter - 10 - 222 A /18-
 - ◆ Shackle - 10 - 222 A /12-
 - ◆ Adapter - 10 - 222 A /29- qty. 2
 - ◆ Adapter - 10-222A/16-
 - ◆ Hook extension - 2024 A / 1-
 - ◆ Bracket - T10346-
 - ◆ Bracket - T10346/1-
 - ◆ Flange bolt M6 x 40
- On both sides of vehicle, insert adapters - 10 - 222 A /29- between wing mounting flange and sheet metal for mounting wing underneath it.
 - ◆ Installation position:

"L" = -1-, adapter is inserted on "right" side of vehicle

"R" (not shown in illustration), adapter is to be inserted on "left" side of vehicle

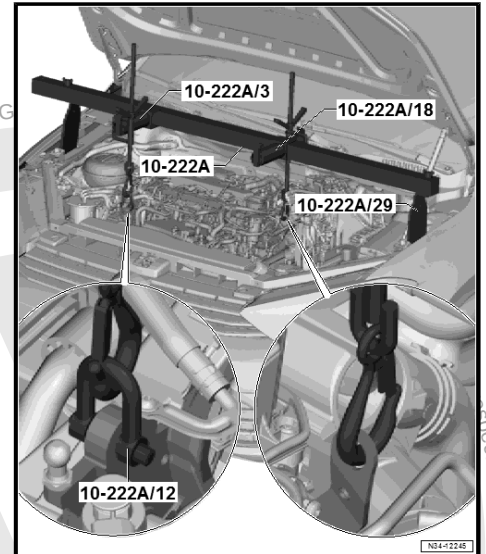
Arrow -2- always points in direction of travel.

Position adapters - 10-222A/29- behind console -1- next to shoulder -2- in each case.





- First, slide adapter - 10-222A/16- onto left side of support bracket ➤ [page 135](#) .
- Adapter - 10-222A/16- serves to secure support bracket during subsequent work routine.
- Once support bracket is complete, adapter - 10-222A/16- is located between adapter - 10 - 222 A /18- and left adapter - 10 - 222 A /29- .
- Push adapter - 10 - 222 A /18- and adapter - 10 - 222 A /3- onto support bracket - 10-222 A- .



Secure support bracket - 10-222 A- as shown

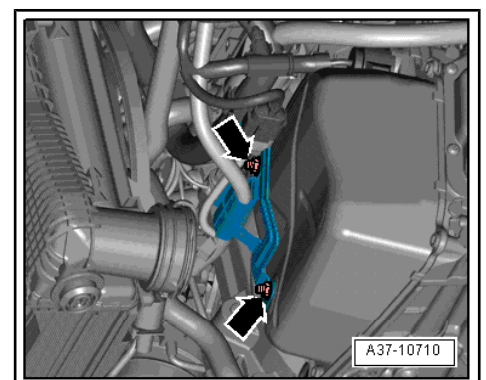
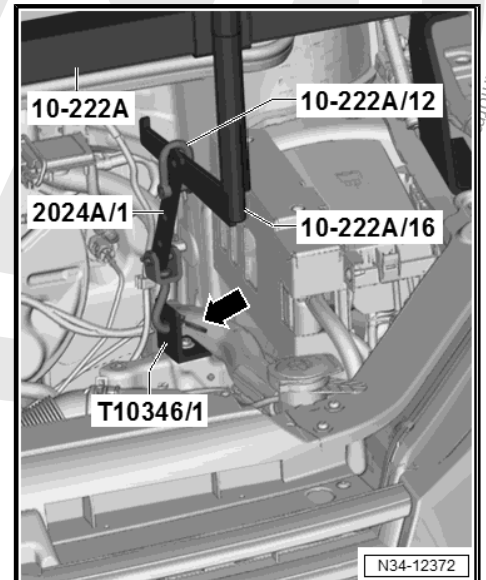
- Bolt bracket - T10346- or -T10346/1- to rear left mounting hole for battery tray.
- To do this, use a collar bolt M6 x 40 or a securing bolt for battery tray.



Note

Attach shackle - 10 - 222 A /12- to uppermost hole of fish plate - 2024 A / 1- .

- Secure bar - 2024 A / 1- with locating pin -arrow-.
- Then attach spindles to engine support eyes.
- Take up weight of engine/gearbox assembly and support bracket on spindles .
- Remove noise insulation ➤ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Remove lower part of front left wheel housing liner ➤ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - front wheel housing liner .
- Remove electrical wiring and retainers from sump at front -arrows-.
- Raise wiring in area of sump and secure it.





- Disconnect connector -1- from oil level and oil temperature sender - G266- .
- Remove subframe. ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Assembly overview - subframe
- Disconnect both drive shafts from gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft: Removing and installing drive shafts .

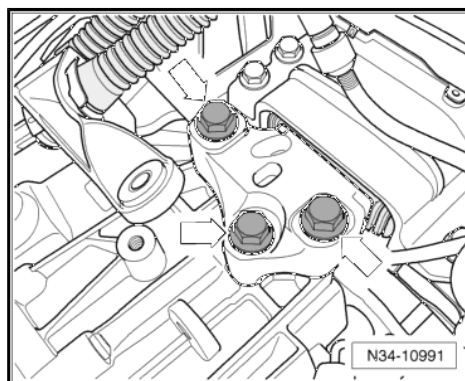
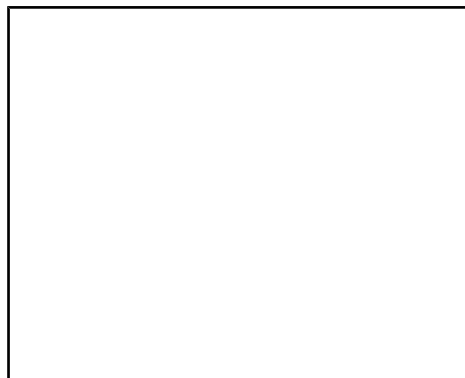
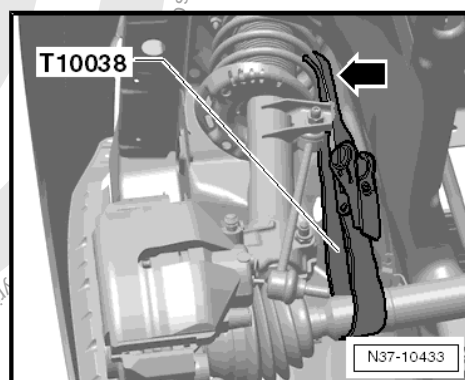
Secure both drive shafts to suspension struts using tensioning straps - T10038- .

The surface protection of the shafts must not be damaged.

- Remove all but one »easily accessible« connecting bolt between engine and gearbox.

- Remove securing bolts -arrows- of assembly mounting for engine ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings .

- Remove securing bolts -arrows- of assembly mounting for gearbox.





- Then use spindles of support bracket - 10 - 222 A- to lower engine/gearbox »only« on gearbox side as far as dimension -a-.

Dimension -a- = about 110mm

The gearbox is separated from the engine in this position.

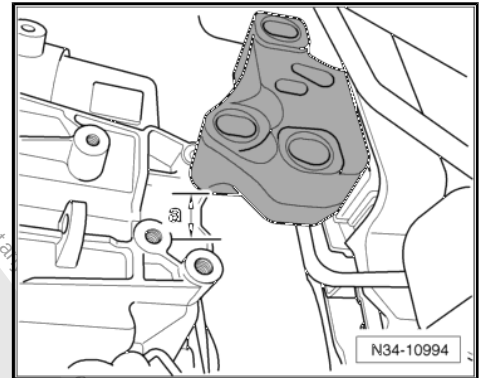
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - 3282- under gearbox.



Note

The following diagrams show the gearbox in the all-wheel drive version. The procedure for supporting the weight of the gearbox is the same as that for front-wheel drive.

- Mount safety support -1- and hook -2- on gearbox as shown.

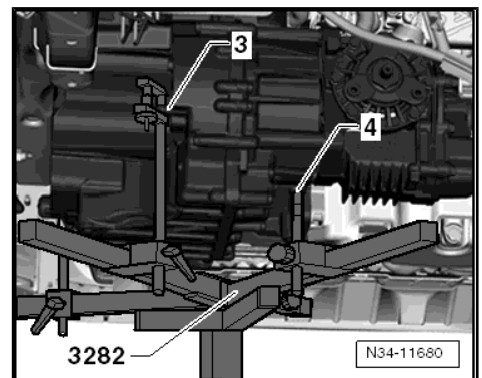
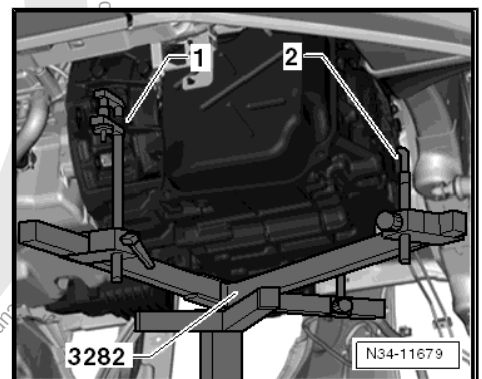


- Mount safety support -3- and pin -4- on gearbox as shown.
- Remove »last« connecting bolt between engine and gearbox.
- Push gearbox off engine and lower it carefully, ensuring »clearance« to other components.

Transporting gearbox ⇒ [page 151](#) .

Secure gearbox to assembly stand ⇒ [page 157](#) .

Install gearbox ⇒ [page 146](#) .



4.2.6 Removing gearbox, Tiguan 2016 ►, vehicles with 2.0 I - 176 kW TDI

Brief description

The gearbox is removed downwards together with the bevel box.
»From above«

The battery, air filter and starter are removed. Wiring harness of steering rack is disconnected and »moved clear«. This allows it to be lowered together with subframe and steering rack. The engine and gearbox must be supported before the left and right assembly mounting is removed.

»From below«

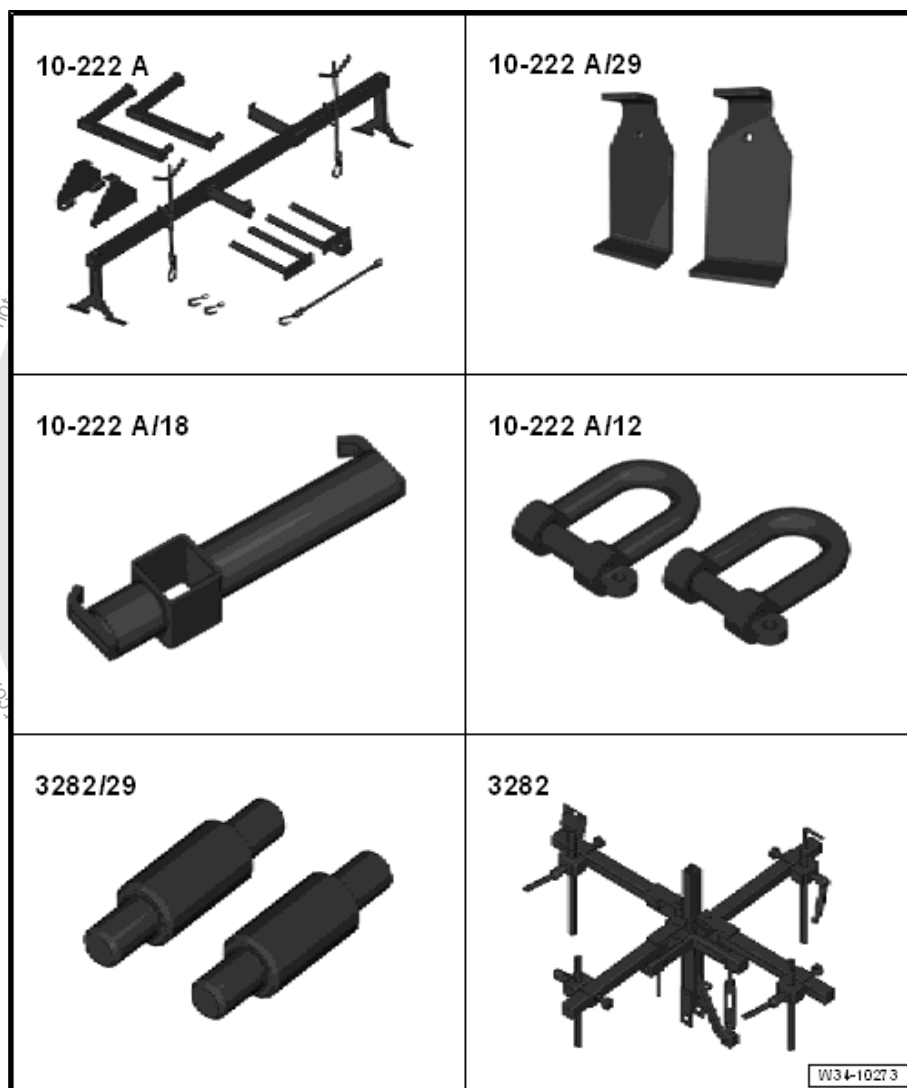
Remove noise insulation beneath engine and cover in front left wheel housing.

-Subframe- is removed together with -pendulum support- and -steering rack-.



Both drive shafts are pushed out of gearbox and left installed in wheel bearing housings. They are only swivelled to one side, but are left on vehicle.

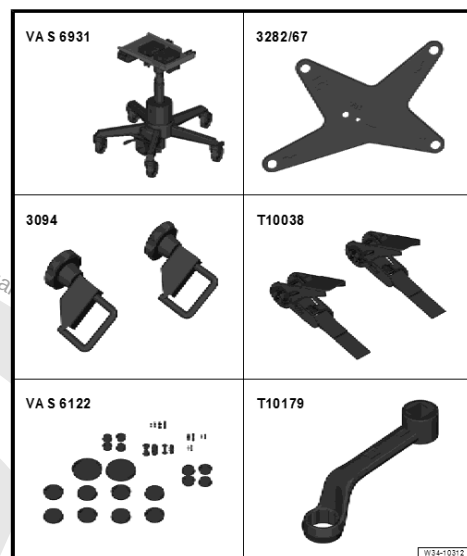
Special tools and workshop equipment required



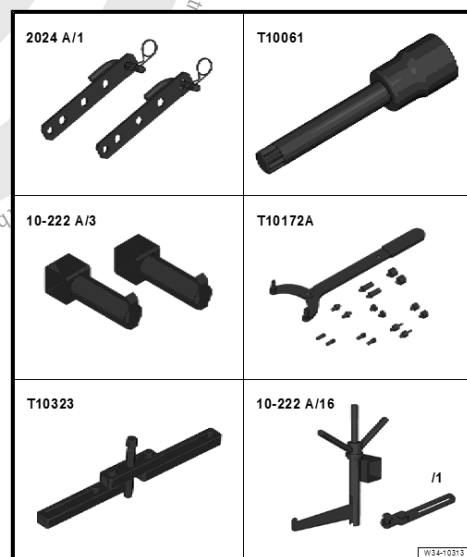
- ◆ Support - 10 - 222 A-
- ◆ Adapter - 10 - 222 A /29-
- ◆ Adapter - 10 - 222 A /18-
- ◆ Shackle - 10 - 222 A /12-
- ◆ Pin - 3282/29-
- ◆ Gearbox support - 3282-
- ◆ Engine and gearbox jack - VAS 6931-
- ◆ Adjustment plate - 3282/67-
- ◆ Hose clamps to 25 mm - 3094-
- ◆ Tensioning strap - T10038-
- ◆ Set of plugs for engine - VAS 6122-



- ◆ Insert tool, 18 mm - T10179-



- ◆ Bar - 2024 A / 1- of lifting tackle - 2024 A-
- ◆ Socket, multi-point bit XZN 14 - T10061-
- ◆ Adapter -10 - 222 A /3-
- ◆ Counter-hold tool - T10172A-
- ◆ Support bridge - T10323-
- ◆ Adapter - 10 - 222 A /16-



Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Switch selector lever to »P« position.
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing
- Remove battery with 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 .



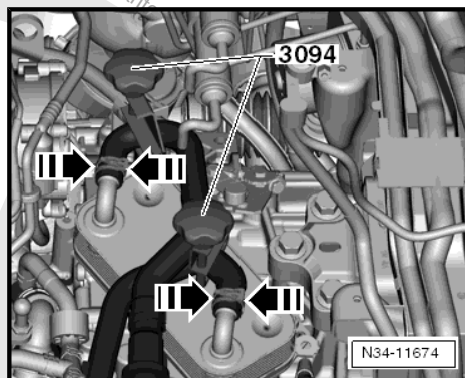
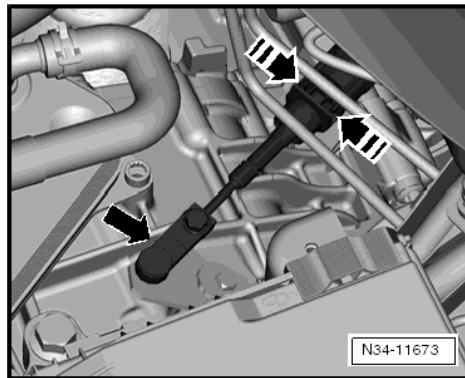
- Pry selector lever cable off selector shaft lever -arrow- using an open-ended spanner.



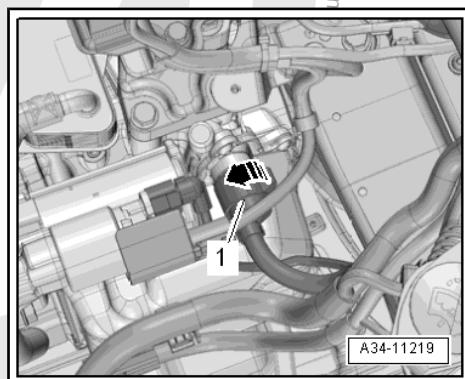
Caution

Locks on selector lever cable break off very easily. If a locking lug has broken off, complete selector mechanism with selector lever cable must be renewed.

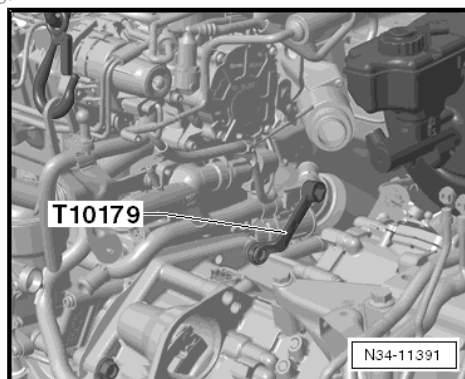
- Carefully push locking mechanisms of selector lever cable together -arrows- and remove selector lever cable upwards out of cable support bracket.
- Do not bend or kink cable.
- Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
- Seal connecting necks of gear oil cooler using suitable plugs from engine bung set - VAS 6122- .



- Disconnect connector -1- for mechatronic unit for dual clutch gearbox - J743- . To do this, turn rotary locking mechanism anti-clockwise -arrow-.
- Remove charge air line. ➔ Rep. gr. 21 ; Charge air system; Assembly overview - charge air system



- Remove upper engine/gearbox connecting bolts.





A bolt is located in the starter motor hole -arrow-. This bolt can be removed using socket - T10061- .

- If there are hose and cable connections in area of engine support eyes for support bracket - 10 - 222 A- , remove these now.
- Remove gas strut of bonnet from bottom ball-head pin and prop up bonnet using workshop means ⇒ General body repairs, exterior; Rep. gr. 55 ; Bonnet; Removing and installing gas strut .
- Mount support bracket - 10-222 A- :

Required material:

- ◆ Adapter - 10 - 222 A /3-
- ◆ Adapter - 10 - 222 A /18-
- ◆ Shackle - 10 - 222 A /12-
- ◆ Adapter - 10 - 222 A /29- , qty. 2
- ◆ Adapter - 10-222A/16-
- ◆ Hook extension - 2024 A / 1-
- ◆ Bracket - T10346-
- ◆ Bracket - T10346/1-
- ◆ Flange bolt M6 x 40

- On both sides of vehicle, insert adapters - 10 - 222 A /29- between wing mounting flange and sheet metal for mounting wing underneath it.

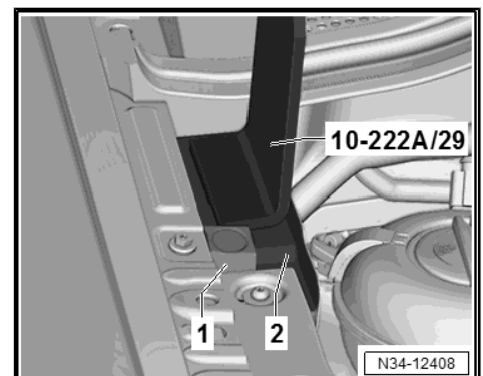
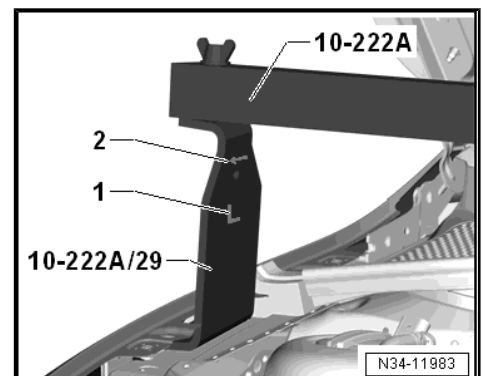
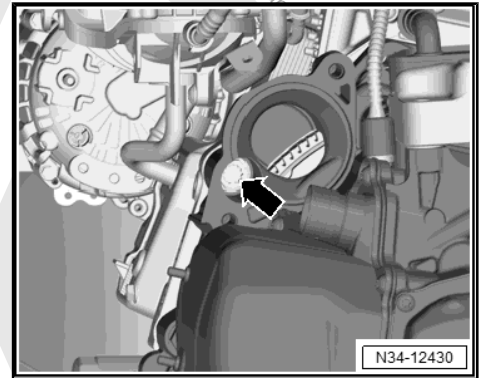
◆ Installation position:

"L" = -1-, adapter is inserted on "right" side of vehicle

"R" (not shown in illustration), adapter is to be inserted on "left" side of vehicle

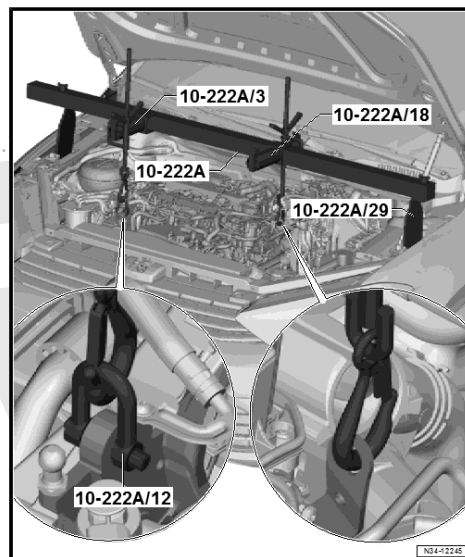
Arrow -2- always points in direction of travel.

Position adapters - 10-222A/29- behind console -1- next to shoulder -2- in each case.





- First, slide adapter - 10-222A/16- onto left side of support bracket ⇒ [page 116](#) .
- Adapter - 10-222A/16- serves to secure support bracket during subsequent work routine.
- Once support bracket is complete, adapter - 10-222A/16- is located between adapter - 10 - 222 A /18- and left adapter - 10 - 222 A /29- .
- Push adapter - 10 - 222 A /18- and adapter - 10 - 222 A /3- onto support bracket - 10-222 A- .



Secure support bracket - 10-222 A- as shown

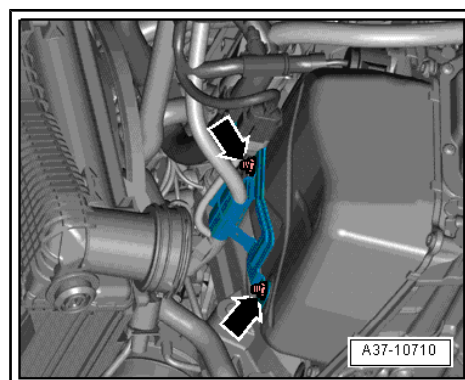
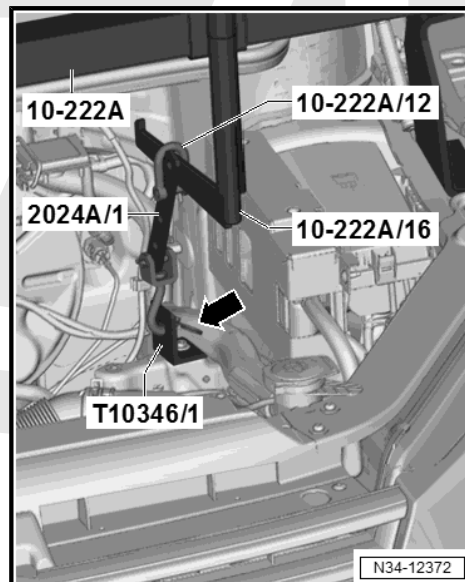
- Bolt bracket - T10346- or -T10346/1- to rear left mounting hole for battery tray.
- To do this, use a collar bolt M6 x 40 or a securing bolt for battery tray.



Note

Attach shackle - 10 - 222 A /12- to uppermost hole of fish plate - 2024 A / 1- .

- Secure bar - 2024 A / 1- with locating pin -arrow-.
- Then attach spindles to engine support eyes.
- Take up weight of engine/gearbox assembly and support bracket on spindles .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .
- Remove lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - front wheel housing liner .
- Remove electrical wiring and retainers from sump at front -arrows-.
- Raise wiring in area of sump and secure it.



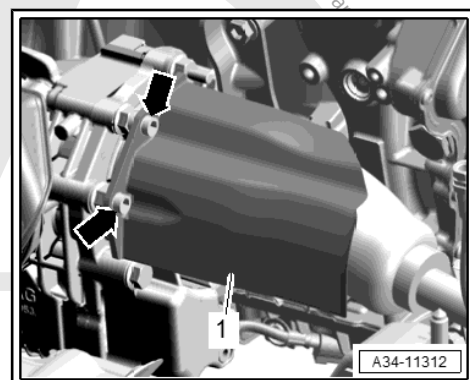


- Disconnect connector -1- from oil level and oil temperature sender - G266- .

Remove subframe. ⇒ Rep. gr. 40 ; Subframe; Assembly over-view - subframe

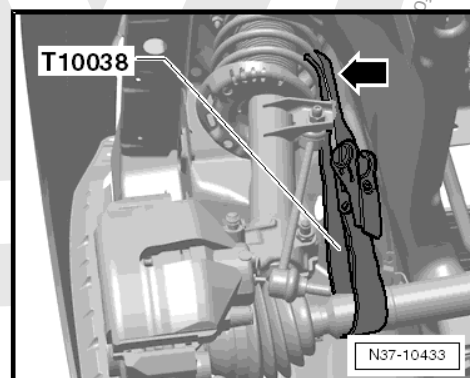


- Remove drive shaft heat shield -1-, if present, from bevel box (-arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .
- Disconnect both drive shafts from gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft: Removing and installing drive shafts .

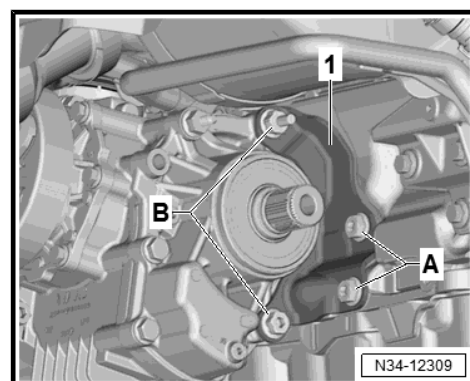


Secure both drive shafts to suspension struts using tensioning straps - T10038- .

The surface protection of the shafts must not be damaged.

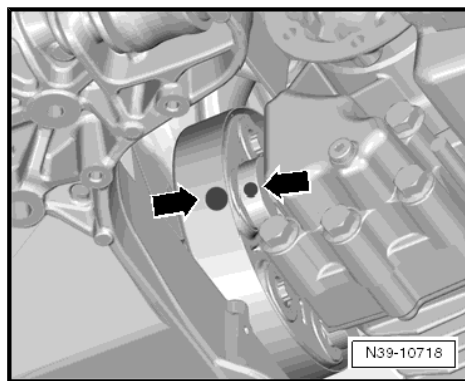


- Unscrew bolts -A and B-, and remove gearbox carrier for bevel box.

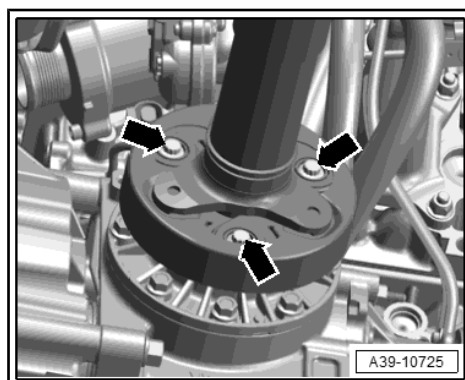




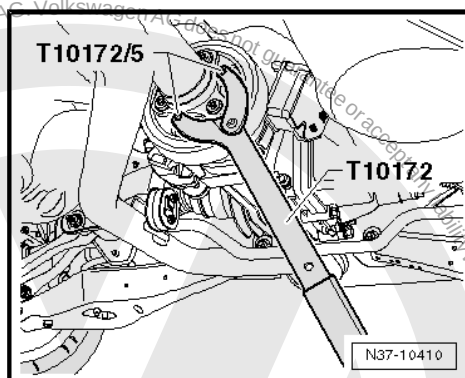
- Mark position of propshaft with flexible coupling relative to output shaft of bevel box -arrows-.



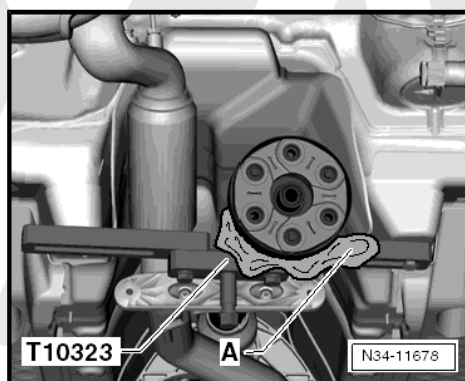
- Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- If necessary, counterhold at rear final drive when loosening or tightening propshaft.



- Secure support - T10323- with a bolt on inside rear threaded hole for subframe.
- A securing bolt from the subframe is suitable for this.
- Place cloth -A- on support and put propshaft on that.





Note

- ◆ *When removing and installing, do not damage seal in the propshaft flange -arrow-.*
- ◆ *Renew propshaft if damaged. ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft.*
- ◆ *All parts of propshaft which have been marked relative to each other must be reinstalled in the same positions.*

- Remove exhaust gas recirculation cooler ⇒ Rep. gr. 26 ; Exhaust gas recirculation; Removing and installing exhaust gas recirculation cooler.
- Remove all but one »easily accessible« connecting bolt between engine and gearbox.
- Remove securing bolts -arrows- of assembly mounting for engine ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings .

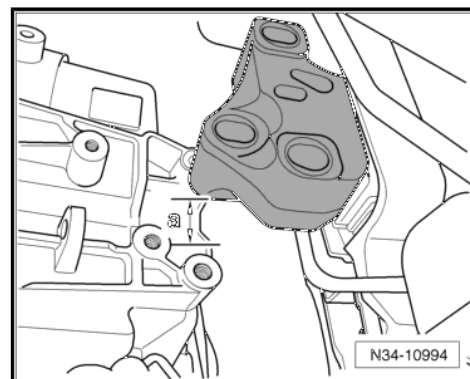
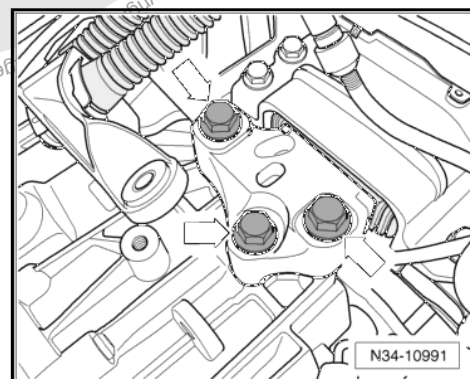
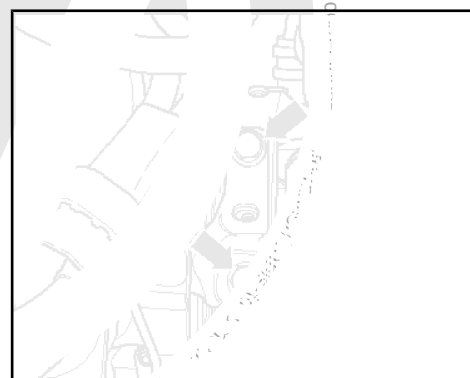
- Remove securing bolts -arrows- of assembly mounting for gearbox.

- Then use spindles of support bracket - 10 - 222 A- to lower engine/gearbox »only« on gearbox side as far as dimension -a-.

Dimension -a- = about 110mm

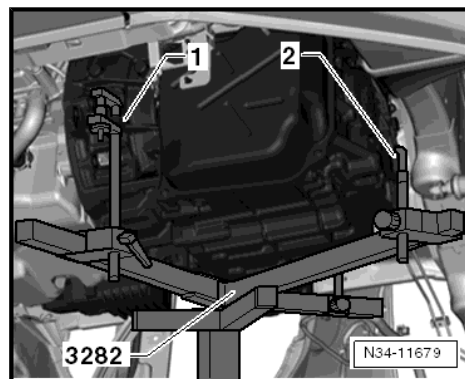
The gearbox is separated from the engine in this position.

- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - 3282- under gearbox.





- Mount safety support -1- and hook -2- on gearbox as shown.

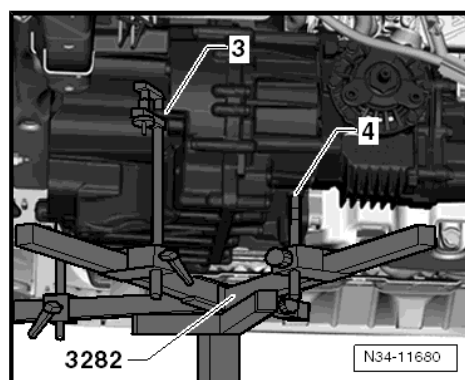


- Mount safety support -3- and pin -4- on gearbox as shown.
- Remove »last« connecting bolt between engine and gearbox.
- Push gearbox off engine and lower it carefully, ensuring »clearance« to other components.

Transporting gearbox ⇒ [page 151](#) .

Secure gearbox to assembly stand ⇒ [page 157](#) .

Install gearbox ⇒ [page 146](#) .



4.3 Installing gearbox

Install in the reverse order of removal observing the following:





- Renew needle bearing in crankshaft ⇒ Rep. gr. 13 ; Crankshaft; Renewing needle bearing in crankshaft .



Note

If the needle bearing in the crankshaft is damaged, the gears cannot be selected properly any more because the clutch is supported on this bearing.

- Lightly grease journal and splines on gearbox.
- Check for proper seating of both dowel sleeves between engine and gearbox.
- Check for proper seating of intermediate plate.

It must be possible to guide the engine and gearbox together by hand until the engine flange and gearbox flange make contact all around.

- If necessary, readjust gearbox support until engine and gearbox are »aligned with each other«.
- Turn crankshaft slightly if necessary.

Install gearbox, taking care not to pinch any lines.

- Tighten gearbox to engine.
- Install starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .
- If engine and gearbox were removed, install them ⇒ Rep. gr. 10 ; Removing and installing engine; Installing engine

Pay attention to selector lever cable when installing. Guide cable as soon as possible into cable support bracket.

- Install subframe. ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Assembly overview - subframe
- Install drive shafts ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shafts .
- Adjust selector lever cable ⇒ [page 83](#) .
- Check coolant level ⇒ Rep. gr. 19 ; Cooling system, coolant; Draining and filling coolant .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

Specified torques: ⇒ [page 88](#)



5 Assembly mountings

⇒ ["5.1 Assembly overview - assembly mountings", page 148](#)

5.1 Assembly overview - assembly mountings

1 - Bolt

- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

2 - Engine support

- ☐ ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

3 - Engine mounting

- ☐ ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

4 - Bolt

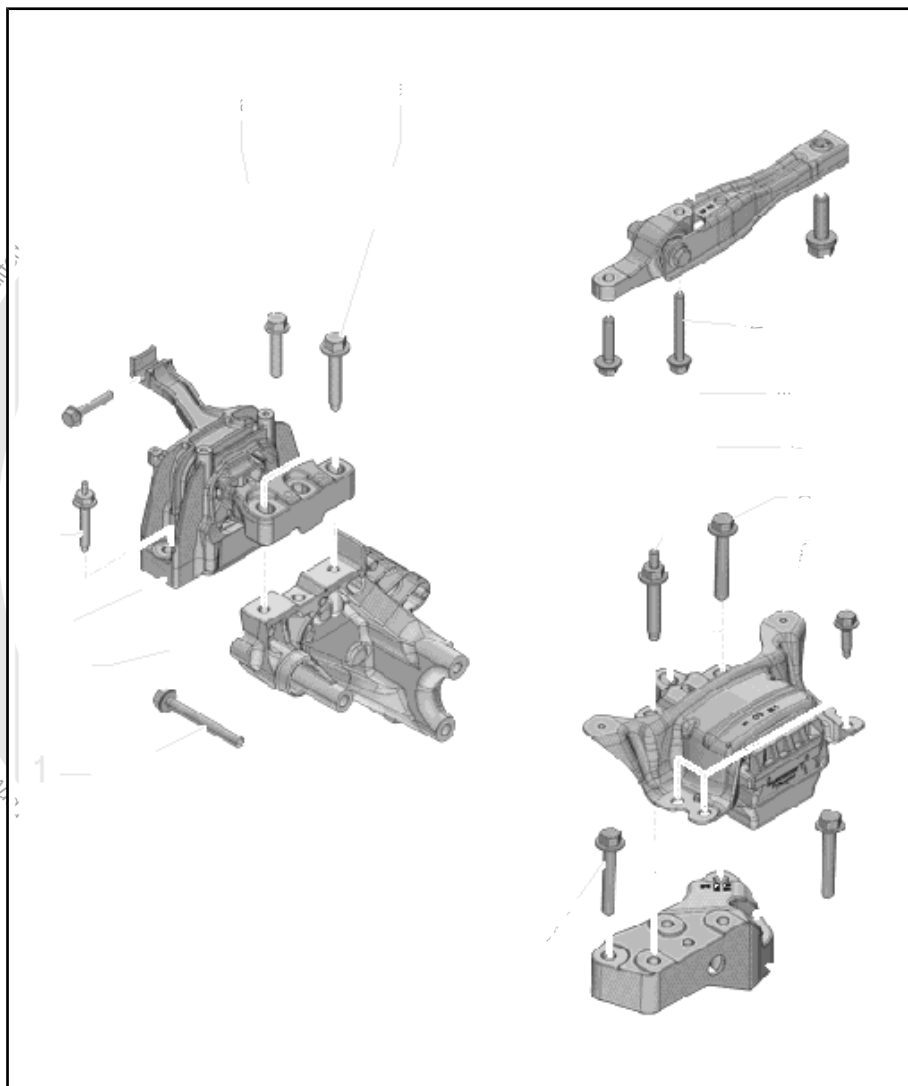
- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

5 - Bolt

- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

6 - Bolt

- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings



7 - Bolt

- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

8 - Pendulum support

9 - Bolt

- ☐ For pendulum support to subframe
- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

10 - Bolt

- ☐ For pendulum support to gearbox
- ☐ Gearbox with threaded insert ⇒ [page 149](#)
- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

11 - Bolt

- ☐ For pendulum support to gearbox
- ☐ Gearbox with threaded insert ⇒ [page 149](#)
- ☐ Specified torque ⇒ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings



12 - Bolt

- ☐ For securing gearbox mounting to gearbox console.
- ☐ Renew after removal
- ☐ Tightening sequence ➔ [page 150](#)
- ☐ 60 Nm +90°

13 - Bolt

- ☐ For securing gearbox mounting to gearbox console.
- ☐ Qty. 2
- ☐ Renew after removal
- ☐ Tightening sequence ➔ [page 150](#)
- ☐ 60 Nm +90°

14 - Gearbox mounting

- ☐ Check adjustment ➔ Rep. gr. 10 ; Assembly mountings; Assembly overview - checking adjustment of assembly mountings
- ☐ Adjust ➔ Rep. gr. 10 ; Assembly mountings; Adjusting assembly mountings

15 - Bolt

- ☐ Gearbox mounting to body
- ☐ Specified torque ➔ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings

16 - Bolt

- ☐ For securing gearbox console to gearbox.
- ☐ Renew after removal
- ☐ Tightening sequence ➔ [page 150](#)
- ☐ 40 Nm +90°

17 - Gearbox bracket

- ☐ Illustration does not correspond to version in vehicle.

18 - Bolt

- ☐ For securing gearbox console to gearbox.
- ☐ Renew after removal
- ☐ Tightening sequence ➔ [page 150](#)
- ☐ 40 Nm +90°

Gearbox with threaded insert (e.g. "Heli-Coil") for securing pendulum support.



Note

- ◆ *There are threaded inserts, e.g. "Heli-Coil" in the bolting holes for the pendulum support.*
- ◆ *Distinguishing feature: shoulder along beginning of thread -arrow-.*
- ◆ *Note appropriate securing bolts and specified torque ➔ Rep. gr. 10 ; Assembly mountings; Assembly overview - assembly mountings .*





Install left assembly mounting as follows:

- Renew all bolts -1- and -2-.
- First screw in all new bolts by hand.
- Then tighten bolts -1- of gearbox bracket -A-.
- The gearbox bracket -A- can be levered into its seat with a screwdriver while bolts -2- are being tightened.



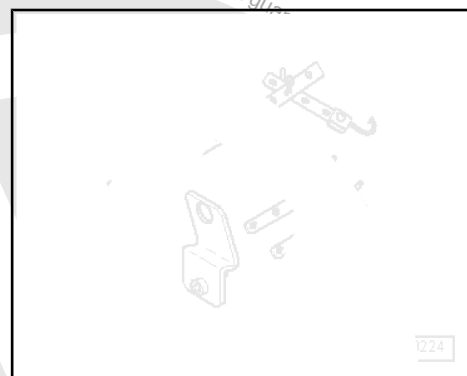


6 Transporting gearbox

Special tools and workshop equipment required

- ◆ Lifting tackle - 2024 A-

- ◆ Workshop hoist - VAS 6100-



Always secure heavy parts when transporting them.

Also remember there is oil in the gearbox. Do not turn gearbox with breathers downwards during transport or while on repair stand. Oil will run out.

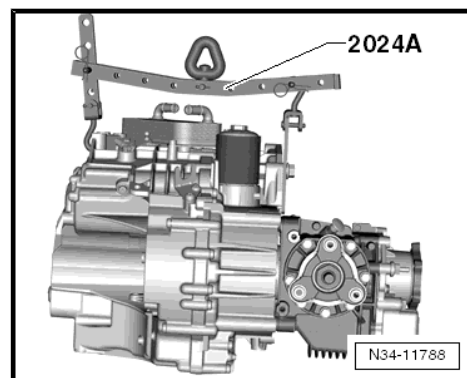


Note

If necessary, pull off breather cap and close using suitable plugs to achieve an oil-tight seal.

Transporting gearbox

Gearbox can be lifted with lifting tackle - 2024 A- .





7 Dismantling and assembling gearbox

7.1 Assembly overview gearbox

⇒ ["7.1.1 Renewing bleeder", page 154](#)

⇒ ["7.1.2 Renewing sealing cap", page 154](#)

1 - Retaining ring

- ☐ Renew

2 - Clutch end cover

- ☐ A cover which has been removed must not be installed again.
- ☐ Lubricate external seal with dual clutch gearbox oil - G 052 182 A2- before installing.
- ☐ Removing and installing ⇒ [page 12](#)

3 - Retaining ring

- ☐ Renew

4 - Shim

- ☐ Determine thickness again if a new clutch has been fitted ⇒ [page 11](#)

5 - Tapered ring

6 - Clutch

- ☐ Removing and installing ⇒ [page 11](#)

7 - Seal, right

- ☐ Removing and installing ⇒ [page 184](#)

8 - Breather pipe

- ☐ Removing and installing ⇒ [page 154](#)

9 - Breather cap

10 - Plug

11 - Seal

- ☐ Renew

12 - Gear oil cooler

- ☐ Removing and installing gear oil cooler ⇒ [page 158](#)

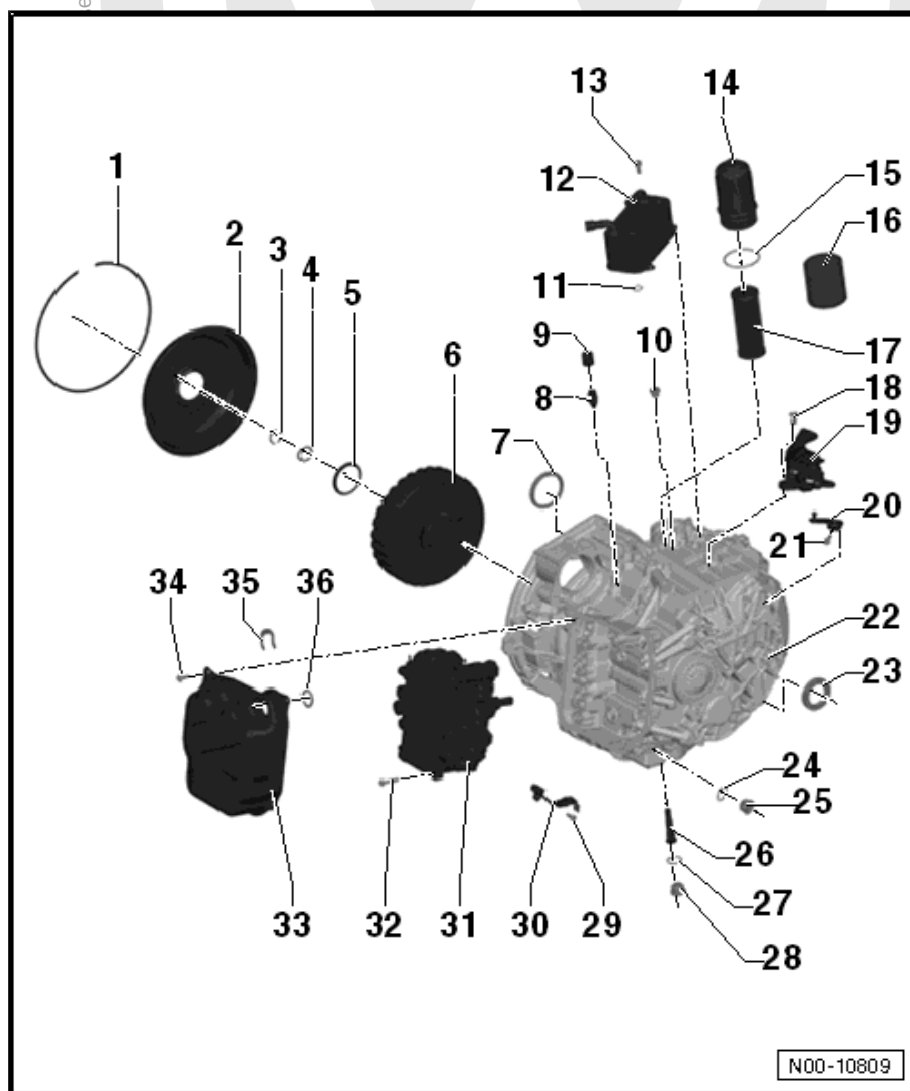
13 - Bolt, 20 Nm + 45°

- ☐ Renew

14 - Filter housing, 20 Nm

15 - Seal

- ☐ Renew





16 - Heat shield

17 - Oil filter

- ☐ Removing and installing ⇒ [page 159](#)

18 - Bolt, 5 Nm + 90°

- ☐ Renew

19 - Cable support bracket

- ☐ For selector lever cable to gearbox

20 - Gearbox selector lever

21 - Bolt, 10 Nm + 90°

- ☐ Renew

22 - Gearbox

23 - Seal, left

- ☐ Removing and installing ⇒ [page 179](#)

24 - Seal

- ☐ Renew

25 - Oil drain plug, 20 Nm

- ☐ For mechatronic unit

26 - Oil level pipe, 3 Nm



Caution

Comply with the torque setting precisely.

The oil level pipe can break between the thread and the collar.



Note

- ◆ The oil level pipe comes in different lengths and colours.
- ◆ If the oil level pipe is renewed, it is essential that the oil level pipe appropriate for the gearbox is installed ⇒ *Electronic Parts Catalogue "ETKA"*.
- ◆ Do not install the oil level pipe from another gearbox! The oil level pipe determines the oil level in the gearbox.
- ◆ Fitting a different oil level pipe can result in the oil level in the gearbox being too high or too low.

- ☐ Drain and fill oil ⇒ [page 164](#)

27 - Seal

- ☐ Renew

28 - Oil drain plug, 45 Nm

29 - Bolt, 10 Nm

30 - Gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509-

- ☐ Removing and installing ⇒ [page 32](#)



31 - Mechatronic unit for dual clutch gearbox - J743-

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

32 - Bolt, 8 Nm + 45°

- ☐ Renew

33 - Cover

- ☐ With seal
- ☐ Renew

34 - Bolt, 10 Nm + 45°

- ☐ Renew

35 - Securing clip

- ☐ Renew

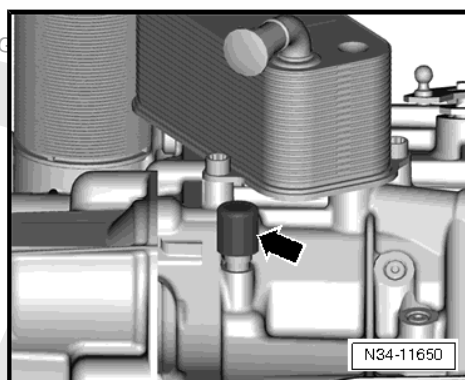
36 - Seal

- ☐ Renew

7.1.1 Renewing bleeder

Removing

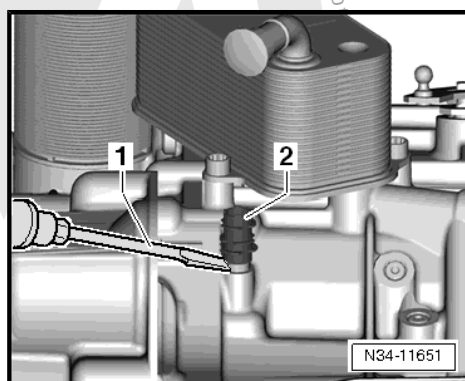
- Pull off cap -arrow- by hand.



- Insert screwdriver -1- between collar of gearbox and breather pipe -2-.
- Pry off breather pipe -2- with screwdriver -1-.

Installing

- Push on breather pipe -2- powerfully by hand. Breather pipe must be heard and felt to engage.
- Put on cap.

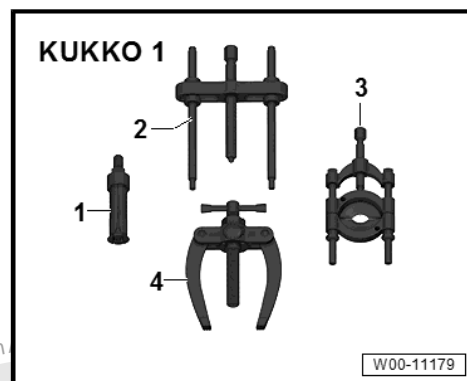


7.1.2 Renewing sealing cap

Special tools and workshop equipment required



- ◆ -1- Internal puller - Kukko 21/2-



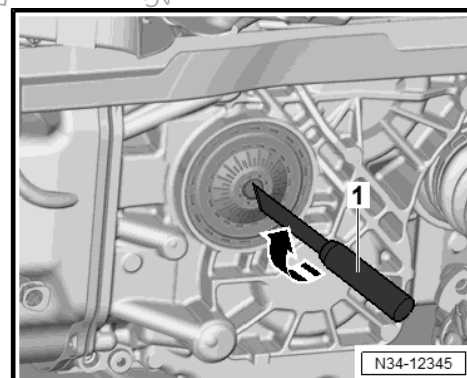
- ◆ -4- Counter support - Kukko 22/1-
- ◆ Special wrench - T40297-



- ◆ Knife, commercially available

Removing

- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Switch selector lever to »P« position.
- Remove front left wheel.
- Remove front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing front wheel housing liner .
- Pierce centre of cap with a knife -1- and remove rubber coating around it. Diameter of opening approx. 15 mm.

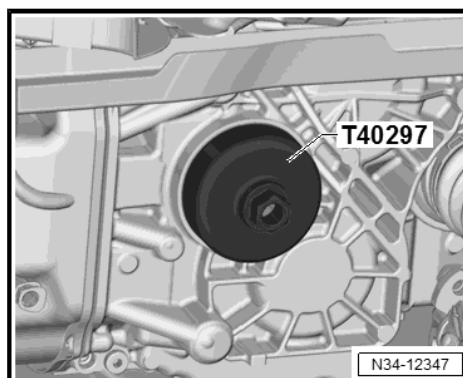
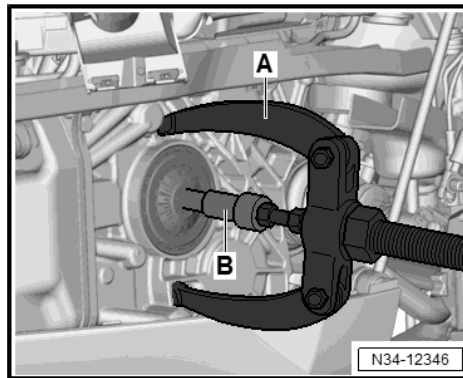




- Pull sealing cap out of gearbox housing using internal puller 14 ... 19 mm -B-, e.g. -Kukko 21/2-, and counter support -A-, e.g. -Kukko 22/1- .
- Thoroughly clean sealing surface on gearbox housing with a lint-free cloth.

Installing

- Using key - T40297- , drive new sealing cap into gearbox housing to stop. Take care not to cant sealing cap.
- Check gear oil level ➔ [page 162](#) .
- Install front left wheel housing liner ➔ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Removing and installing front wheel housing liner .
- Install front left wheel ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Changing wheels .





8 Installing to engine and gearbox support

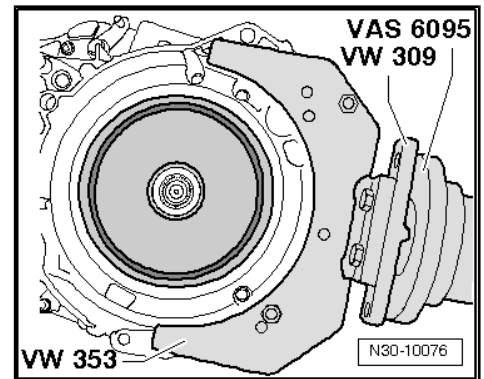
Keep in mind that there is oil in the gearbox. Do not turn gearbox with breathers downwards during transport or while on repair stand. Oil will run out.



Note

If necessary, pull off breather cap and close using suitable plugs to achieve an oil-tight seal.

Example: securing gearbox to assembly stand.





9 Gear oil circuit

9.1 Removing and installing gear oil cooler

Special tools and workshop equipment required

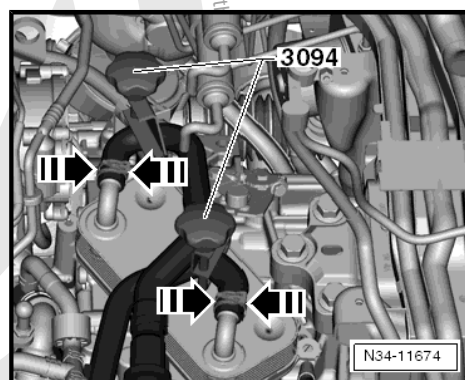
- ◆ Hose clamps to 25 mm - 3094-



- ◆ Not illustrated: Torque wrench - V.A.G 1331-

Removing

- Move selector lever to position "P".
- Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing
- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .
- Lay lint-free cloths on gear oil cooler and gearbox to catch escaping coolant.
- Clamp off coolant hoses using hose clamps -3094- and remove from cooler.





- Remove bolts -A- and remove gear oil cooler -B-.



Caution

No coolant must be allowed to drip into gearbox!

Installing

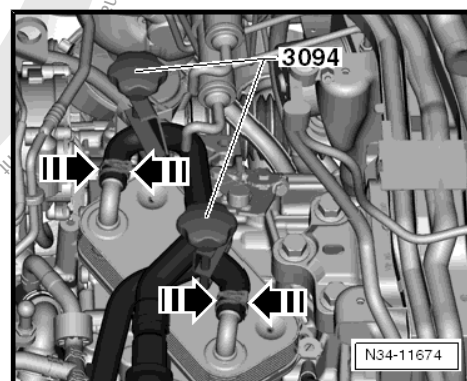
Install in reverse order of removal. During this procedure, observe the following:

- Renew O-rings -C-.
- Set gear oil cooler -B- in place. When doing this, note O-rings -C-.
- Screw in new bolts -A- and tighten to 20 Nm + 45°.

- Attach coolant hoses to gear oil cooler and remove hose clamps -3094- .

Continue installation in reverse order of removal.

- Install battery with battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .
- Install air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .
- Check coolant level and top up with coolant as needed ⇒ Rep. gr. 19 ; Cooling system, coolant; Draining and filling coolant .
- Checking and adjusting oil level ⇒ [page 162](#) .



9.2 Removing and installing gear oil filter

Oil filter change – »yes or no?«

The oil filter does not have to be changed as a matter of course.

Do not change the filter if:

- ◆ The gear oil cooler or its O-rings have been renewed and no coolant has got into the oil.



- ◆ The oil seal for the selector shaft has been renewed.
- ◆ The oil seal for the flange shaft was renewed.
- ◆ Leaking covers in the mechatronic unit, dual clutch or oil pump have been renewed.

The filter must be changed if:

- ◆ Coolant has got into the oil.
- ◆ Metal particles have been found in the oil.
- ◆ The clutch is burnt out or has a mechanical defect.



Note

Refer to general repair instructions ⇒ [page 6](#).

Removing



Note

*The gear oil filter cannot be removed with the gearbox installed.
The gearbox must be separated from the engine beforehand.*

- Removing gearbox ⇒ [page 89](#)



Note

- ◆ A residual amount of oil remains in oil filter. It runs out when filter housing is unscrewed.
- ◆ Before unscrewing the filter housing, cover the area around the oil filter with a sufficient number of cloths.

- First loosen filter housing -1- by about 7 turns.
- Wait about 10 seconds.

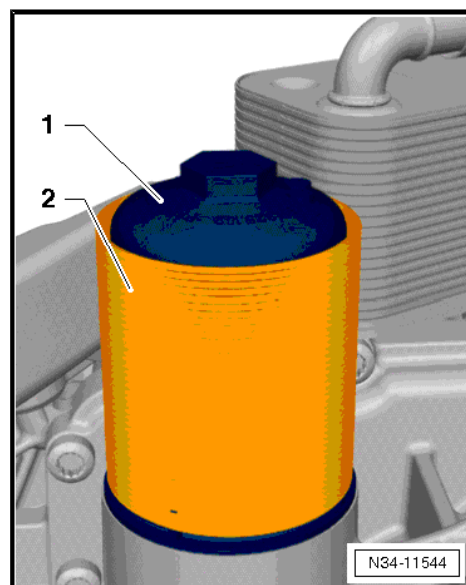
This allows the oil to flow from filter housing back into gearbox.

- Now remove filter housing with filter.
- Renew missing or damaged heat shield -2-.

Installing

Install in reverse order of removal. During this procedure, observe the following:

- Thoroughly clean oily areas on gearbox.





- Insert new oil filter with collar -arrow- downwards.
- Screw in filter housing and tighten to 20 Nm.

Continue installation in reverse order of removal.

- Installing gearbox ⇒ [page 146](#)
- Check oil level and top up ⇒ [page 162](#) .





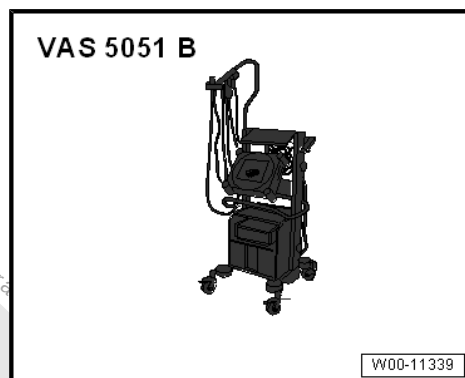
10 Gear oil

10.1 Checking gear oil level

If DSG oil must be added, use only oil listed in ⇒ Electronic parts catalogue "ETKA" .

Special tools and workshop equipment required

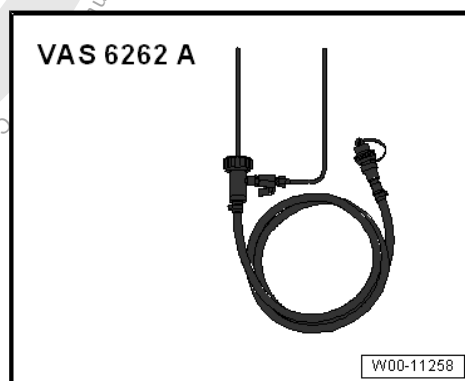
- ◆ Vehicle diagnosis, testing and information system - VAS 5051B-



- ◆ Used oil collector and extractor - V.A.G 1782-



- ◆ Adapter for oil filling - VAS 6262 A-



Conditions

- ◆ Vehicle level, all mountings of lifting platform evenly at same height
- ◆ Noise insulation removed
- ◆ Vehicle diagnosis, testing and information system - VAS 5051B- is connected.
- ◆ At start of work, oil temperature must not be above 45°C.
- ◆ Test temperature: 35 - 45°C



Check

- Connect vehicle diagnosis, testing and information system - VAS 5051B- and identify the vehicle in Guided functions.
- Select Dual clutch gearbox.
- Select Check oil level.

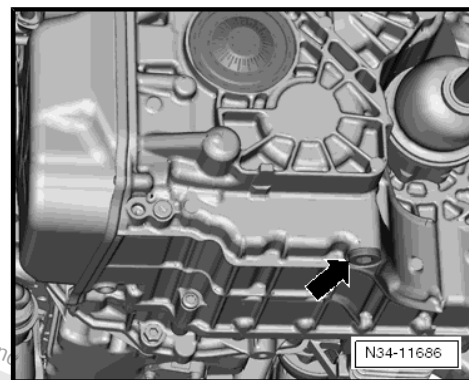


Note

If the oil temperature is above 45°C, allow the gearbox to cool down.

Engine is running at idling speed with selector lever in “P”.

- Remove oil drain plug -arrow-.



- Renew oil seal -arrow- of bolt.

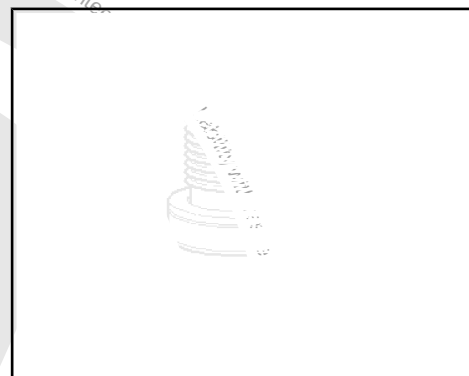


Note

Even if oil level is too low, a small amount of oil will initially run out of oil level pipe because pipe fills up during operation.

- Let surplus oil flow out.
- When excess oil has run out (when it begins only to drip), install plug with new seal.
- Top up oil if no oil flows out.

Topping up





- Before screwing adapter for oil filling - VAS 6262 A- onto oil bottle, measure length of breather pipe, dimension -a-, and shorten it as necessary.

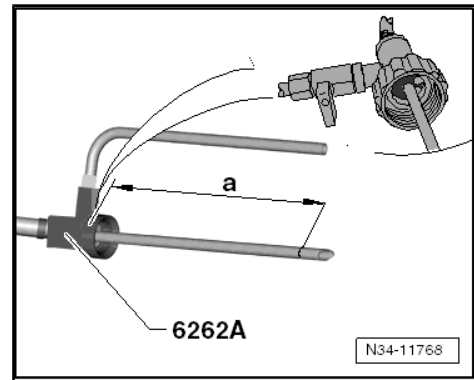
Dimension -a- = 210 mm



Note

The dimension -a- is measured from the shaft (green area in the magnifying glass) of the adapter for oil filling - VAS 6262 A- .

- Screw adapter of adapter for filling oil - VAS 6262 A- hand-tight into inspection hole.



WARNING

Shake bottles thoroughly before opening to ensure that sediment at the bottom of the bottle mixes well with the oil.

- Fill 1.0 litres of oil.
- Pull off adapter for oil filling - VAS 6262- at plug-in connector and check:

If oil now flows out of hole in adapter:

Oil does not need topping up.

- Allow surplus oil to drain out.
- When excess oil has run out (when it begins only to drip), remove adapter for filling oil - VAS 6262 A- and install plug with new seal.

If no oil drips out of inspection hole:

- If a further litre has to be added ⇒ [page 162](#).



WARNING

An oil level which is too low or too high will impair the function of the gearbox.

Torque setting for drain plug: 45 Nm

10.2 Draining and filling gear oil

If DSG oil must be added, use only oil listed in ⇒ Electronic parts catalogue "ETKA" .

Please also refer to the notes on the oil filter change regarding »dirty oil« ⇒ [page 159](#) .

Brief description

First read the oil temperature. If it is above 50°C, allow the gearbox to cool down.

With engine stopped, unscrew and remove overflow pipe and let the oil drain out. Then reinstall overflow pipe and »overfill« gearbox with oil.

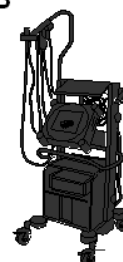
Then start engine and drain excess oil until oil level attains level of overflow pipe.

Special tools and workshop equipment required



- ◆ Vehicle diagnosis, testing and information system - VAS 5051B-

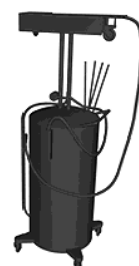
VAS 5051 B



W00-11339

- ◆ Used oil collector and extractor - V.A.G 1782-

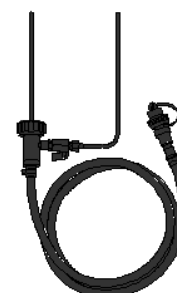
V.A.G 1782



W00-11205

- ◆ Adapter for oil filling - VAS 6262 A-

VAS 6262 A



W00-11258

Conditions

- ◆ Engine switched off
- ◆ Vehicle level, all mountings of lifting platform evenly at same height
- ◆ Noise insulation removed if previously fitted
- ◆ Selector lever at "P"
- ◆ Vehicle diagnosis, testing and information system - VAS 5051B- is connected
- ◆ At start of work, oil temperature must not be above 45 °C.

Procedure

- Comply with rules for cleanliness when working on gearbox
⇒ [page 5](#) .
- Only gear oil available as spare part is allowed to be used for dual clutch gearbox. Other oils will lead to malfunctions or failure of the gearbox ⇒ Electronic Parts Catalogue (ETKA) .



WARNING

Danger of injury from hot gear oil!

- Connect vehicle diagnosis, testing and information system - VAS 5051B- and identify the vehicle in Guided functions.
- Select Dual clutch gearbox.
- Select Check oil level.



Note

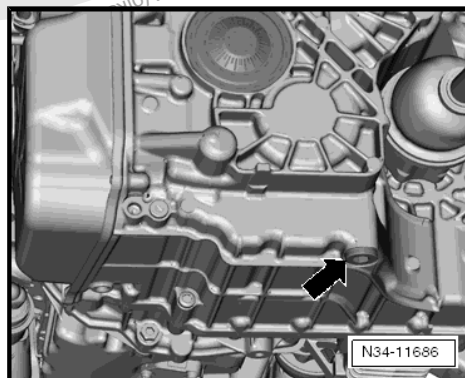
If the oil temperature is higher than 45°C, allow gearbox to cool down.



WARNING

Do not start engine if there is no oil in gearbox.

- Engine switched off - do not start engine!
- Remove oil drain plug -arrow-.



- Renew oil seal -arrow- of bolt.





- Remove oil level pipe -arrow- and allow oil to run out.

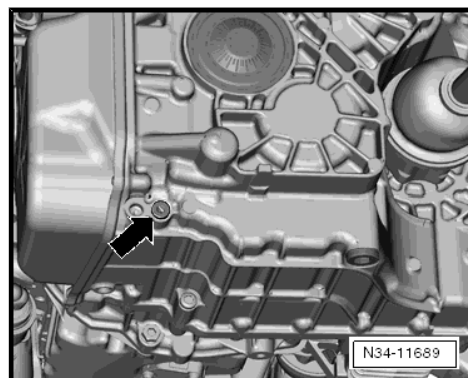


- Remove oil drain plug -arrow- from mechatronic unit.



Note

A further approx. 1.2 litres of oil will run out.



- Renew seal -arrow- and reinstall oil drain plug of mechatronic unit, tightening to 20 Nm.



Note

- ◆ Normally, there is no need to remove oil filter.
- ◆ Oil filter change "Yes or no?" ⇒ [page 159](#)



- Screw oil level pipe -arrow- in to stop and tighten to 3 Nm.





- Before screwing adapter for oil filling - VAS 6262 A- onto oil bottle, measure length of breather pipe, dimension -a-, and shorten it as necessary.

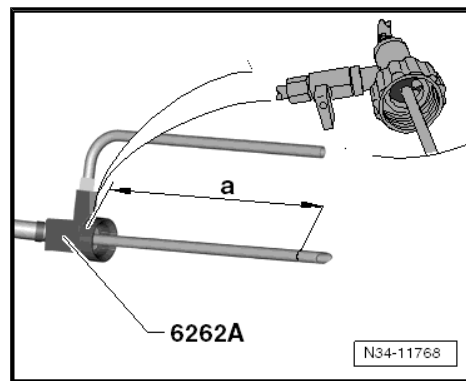
Dimension -a- = 210 mm



Note

The dimension -a- is measured from the shaft (green area in the magnifying glass) of the adapter for oil filling - VAS 6262 A- .

- Screw adapter of adapter for filling oil - VAS 6262 A- hand-tight into inspection hole.



WARNING

Shake bottles thoroughly before opening to ensure that sediment at the bottom of the bottle mixes well with the oil.

During filling, the adapter for oil filling - VAS 6262 A- and bottle must always be held higher than the gearbox.

- Fill 5.5 litres of oil.
 - When changing bottles, close tap on adapter.
 - Close tap on adapter when 5.5 litres of oil have been added to gearbox.
 - Start engine. The adapter for filling oil - VAS 6262 A- may remain connected.
 - Depress brake pedal, and select each selector lever position for about 3 seconds, then move lever back to »P«.
- Do NOT switch off engine.
- Then check oil level and top up. ➔ [page 162](#)



35 – Gears, shafts

- 1 Currently, no repairs can be made to gears and shafts





39 – Final drive - differential

1 Gear oil

⇒ ["1.1 Checking gear oil level", page 170](#)

⇒ ["1.2 Draining and filling gear oil", page 172](#)

1.1 Checking gear oil level

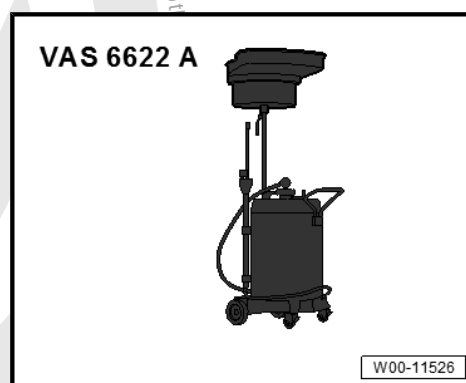
⇒ ["1.1.1 Checking gear oil level, bevel box 0A6", page 170](#)

⇒ ["1.1.2 Checking gear oil level, bevel box 0CP", page 171](#)

1.1.1 Checking gear oil level, bevel box "0A6"

Special tools and workshop equipment required

- ◆ Used oil collector and extractor - VAS 6622A-



Note

- ◆ *The bevel box is bolted to side of the gearbox and has its own oil supply.*
- ◆ *Specifications for gear oil ⇒ Electronic Parts Catalogue "ET-KA"*

Requirement

- Bevel box must be in installation position.
- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .



Caution

The following work instruction only applies to the bevel box "0A6".

- Before starting work, check which bevel box is installed
⇒ [page 34](#) .
- Put used oil collection and extraction unit - VAS 6622A- underneath.



- Unscrew oil filler plug -1-.

Renew oil filler plug after each removal.

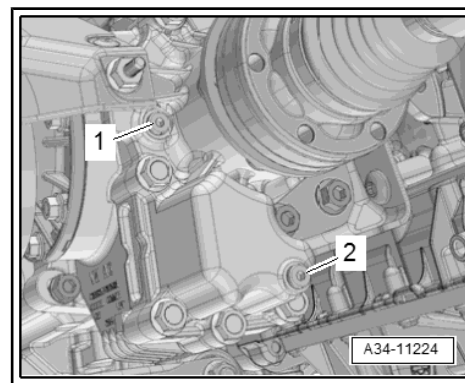
Oil level is correct when bevel box is filled to lower edge of filler hole.



Note

- ◆ *Clean bevel box thoroughly to remove any remains of the emerged oil.*
- ◆ *Disregard -item 2-.*

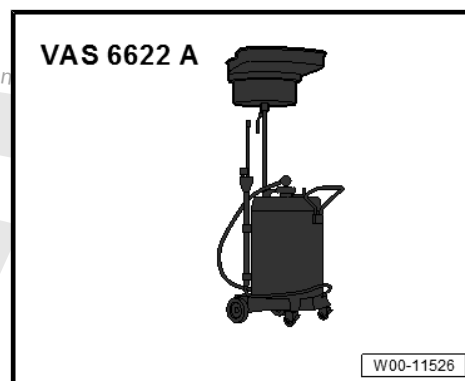
- If necessary, top up gear oil ➔ [page 172](#) .
- Screw in new oil filler plug -1-.
- Tighten bolt to specified torque ➔ [page 186](#) .



1.1.2 Checking gear oil level, bevel box "0CP"

Special tools and workshop equipment required

- ◆ Used oil collector and extractor - VAS 6622A-



Note

- ◆ *The bevel box is bolted to side of the gearbox and has its own oil supply.*
- ◆ *Specifications for gear oil ➔ Electronic Parts Catalogue "ET-KA"*

Requirement

- Bevel box must be in installation position.
- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Remove noise insulation ➔ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .



Caution

The following work instruction only applies to the bevel box "0CP".

- Before starting work, check which bevel box is installed ➔ [page 34](#) .



- Put used oil collection and extraction unit - VAS 6622A- underneath.
- Unscrew oil filler plug -1-.

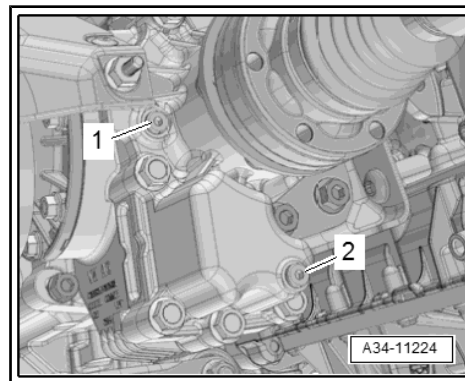
Renew oil filler plug after each removal.

- On current bevel boxes, the oil level is beneath the oil filler hole and can therefore not be checked.
- Should the oil level be up to the lower edge of the oil filler hole, extract 100 ml of gear oil ⇒ [page 175](#) .



Note

- ◆ *Clean bevel box thoroughly to remove any remains of the emerged oil.*
- ◆ *Disregard -item 2-.*
- If necessary, top up gear oil ⇒ [page 172](#) .
- Screw in new oil filler plug -1-.
- Tighten bolt to specified torque ⇒ [page 188](#) .



1.2 Draining and filling gear oil

⇒ [“1.2.1 Draining and filling gear oil, bevel box 0A6”](#), [page 172](#)

⇒ [“1.2.2 Draining and filling gear oil, bevel box 0CP”](#), [page 175](#)

1.2.1 Draining and filling gear oil, bevel box “0A6”

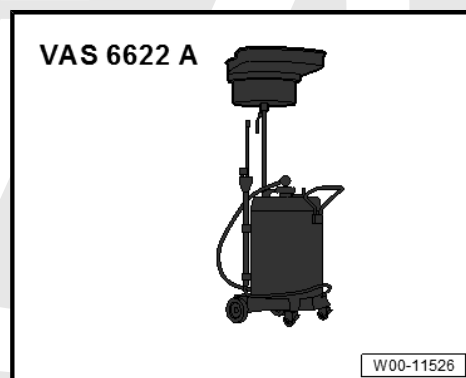


Note

- ◆ *The gear oil in the bevel box must only be drained in the event of repairs. The oil is not intended to be changed on a regular basis.*
- ◆ *Specifications for gear oil ⇒ Electronic Parts Catalogue*

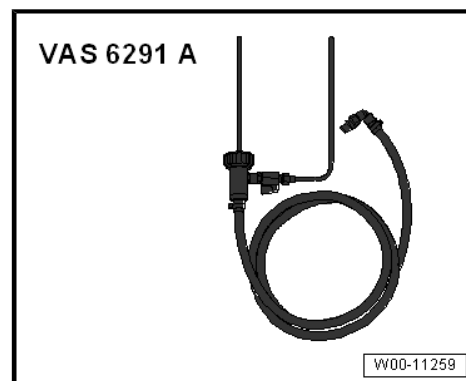
Special tools and workshop equipment required

- ◆ Used oil collector and extractor - VAS 6622A-





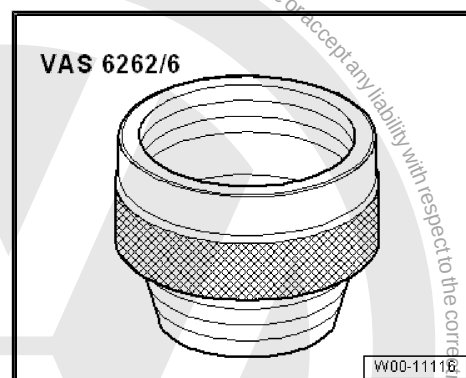
- ◆ Filling device - VAS 6291 A-



- ◆ Adapter for oil filling - VAS 6291/3-



- ◆ For some oil bottles adapter - VAS 6262/6- must be used as well.



- ◆ Not illustrated: Torque wrench - V.A.G 1331-

Requirement

- Vehicle is level.
- Raise vehicle. All 4 supports of lifting platform must be at same height.
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .
- If fitted, remove right drive shaft heat shield from bevel box -arrows- ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Caution

The following work instruction only applies to the bevel box "0A6".



- Before starting work, check which bevel box is installed
⇒ [page 34](#) .
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



WARNING

Risk of injury from hot gear oil.

- ◆ *Wear safety goggles.*
- ◆ *Wear acid-resistant gloves*

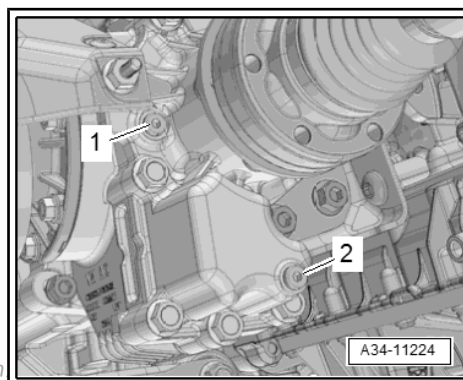
- Unscrew oil drain plug -2-, and drain gear oil.
- Screw in new oil drain plug.



Note

To collect escaping gear oil, leave used oil collection and extraction unit - VAS 6622- underneath.

- Unscrew oil filler plug -1-.



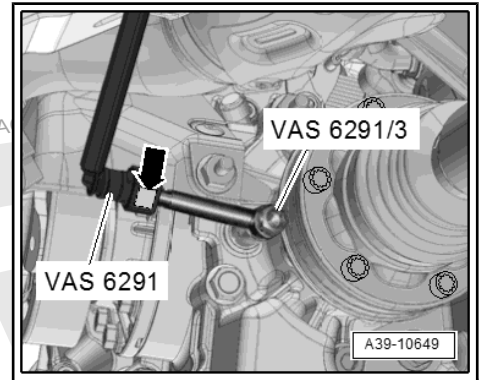


- Screw adapter for oil filling -VAS 6291/3- in to stop.
- Engage angled piece of filling device for Haldex coupling 2 - VAS 6291 A- with adapter for oil filling -VAS 6291/3- .
- Do not allow hose to sag.
- Top up with oil.



Note

- ◆ *If bevel box has been properly filled, oil runs out at adapter -A-.*
- ◆ *Continue with filling procedure if no oil has run out yet.*
- After bevel box has been properly filled, unscrew adapter - VAS 6291/2- .
- Screw in »old« oil drain plug and tighten slightly.
- Start engine, engage gear and allow gearbox to turn for approx. 2 minutes.
- Turn off engine and unscrew plug from oil filler hole.
- Check oil level, if necessary top up gear oil again to lower edge of filler hole.
- Screw in new oil filler plug.



Note

Clean bevel box thoroughly to remove any remains of the emerged oil.

- If present, install heat shield above right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview – noise insulation .

Specified torques: ⇒ [page 186](#)

1.2.2 Draining and filling gear oil, bevel box “0CP”



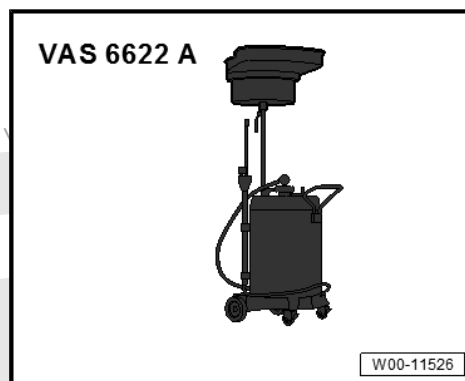
Note

- ◆ *The gear oil in the bevel box must only be drained in the event of repairs. The oil is not intended to be changed on a regular basis.*
- ◆ *Specifications for gear oil ⇒ Electronic Parts Catalogue*

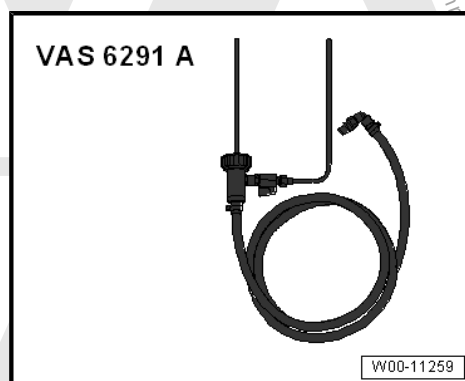
Special tools and workshop equipment required



- ◆ Used oil collector and extractor - VAS 6622A-



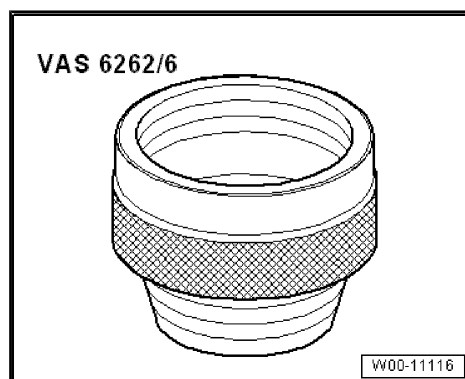
- ◆ Filling device - VAS 6291 A-



- ◆ Adapter for oil filling - VAS 6291/3-



- ◆ For some oil bottles adapter - VAS 6262/6- must be used as well.



- ◆ Not illustrated: Torque wrench - V.A.G 1331-

Requirement

- Vehicle is level.
- Raise vehicle. All 4 supports of lifting platform must be at same height.



- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .
- If fitted, remove right drive shaft heat shield from bevel box -arrows- ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Caution

The following work instruction only applies to the bevel box "0CP".

- Before starting work, check which bevel box is installed
⇒ [page 34](#) .
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



WARNING

Risk of injury from hot gear oil.

- ◆ ***Wear safety goggles.***
- ◆ ***Wear acid-resistant gloves***

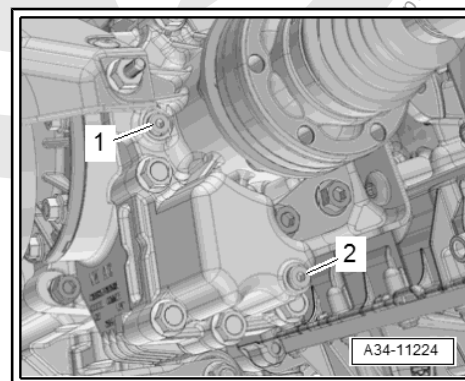
- Unscrew oil drain plug -2-, and drain gear oil.
- Screw in new oil drain plug.



Note

To collect escaping gear oil, leave used oil collection and extraction unit - VAS 6622- underneath.

- Unscrew oil filler plug -1-.



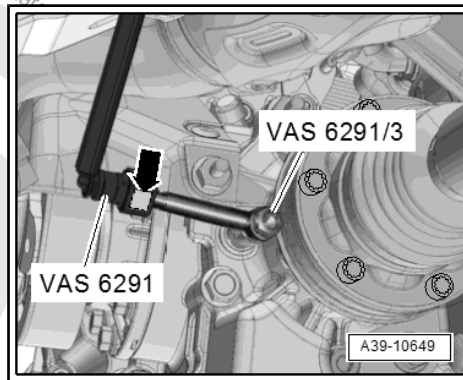


- Screw adapter for oil filling -VAS 6291/3- in to stop.
- Engage angled piece of filling device for Haldex coupling 2 - VAS 6291 A- with adapter for oil filling -VAS 6291/3- .
- Do not allow hose to sag.
- Top up with oil.



Note

- ◆ *If bevel box has been properly filled, oil will emerge from adapter for oil filling -VAS 6291/3- .*
- ◆ *Continue with filling procedure if no oil has run out yet.*
- If gear oil has emerged from adapter for oil filling - VAS 6291/3- , position oil container so that surplus oil can run back into it.
- When no more oil flows back, remove filling device for Haldex coupling 2 - VAS 6291 A- .
- Remove adapter -VAS 6291/3- .



Caution

The correct oil level is beneath the oil filler hole and cannot be checked.

If an elevated level is not rectified after filling, oil could escape through the breather while the vehicle is being driven.

The correct oil level can only be achieved by extracting 100 ml of gear oil after filling.

- Extract 100 ml of gear oil from the bevel box using a commercially available syringe with hose measuring max. Ø 6 mm.
- Screw in new oil filler plug.



Note

Clean bevel box thoroughly to remove any remains of the emerged oil.

- If present, install heat shield above right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview – noise insulation .

Specified torques: ⇒ [page 188](#)



2 Oil seals

⇒ [“2.1 Overview of fitting locations - seals”, page 179](#)

⇒ [“2.2 Renewing left oil seal”, page 179](#)

⇒ [“2.3 Renewing right oil seal”, page 182](#)

⇒ [“3.2 Renewing bevel box seals”, page 190](#)

2.1 Overview of fitting locations - seals

1 - Stub shaft O-ring

- ☐ Renew

2 - Seal right, bevel box

- ☐ Removing and installing
⇒ [page 193](#)

3 - Stub shaft

4 - Right oil seal, stub shaft

- ☐ Item can be disregarded

5 - Output shaft seal

- ☐ Removing and installing
⇒ [page 190](#)

6 - Deflector ring

- ☐ Item can be disregarded

7 - Left oil seal, stub shaft

- ☐ Removing and installing
⇒ [page 190](#)

8 - Seal left, bevel box

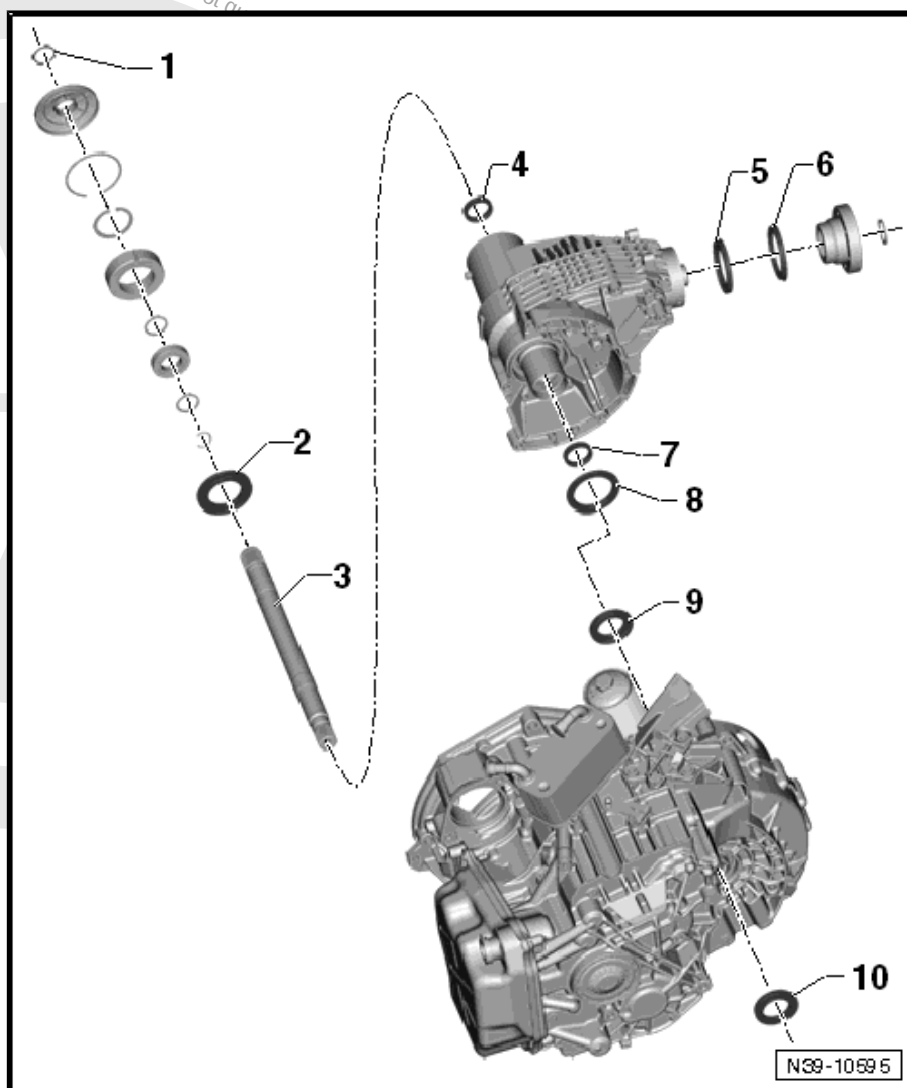
- ☐ Removing and installing
⇒ [page 190](#)

9 - Seal, right

- ☐ Removing and installing, front-wheel drive
⇒ [page 182](#)
- ☐ Removing and installing, all-wheel drive
⇒ [page 184](#)

10 - Seal, left

- ☐ Removing and installing
⇒ [page 179](#)



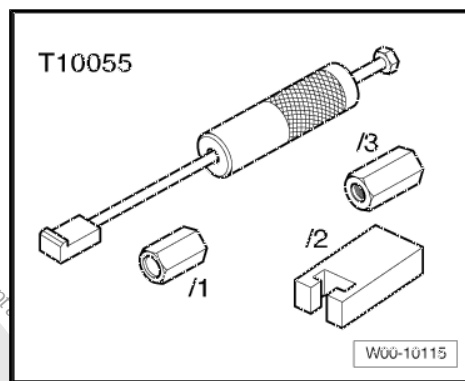
2.2 Renewing left oil seal

2.2.1 Renewing oil seal for left flange shaft

Special tools and workshop equipment required



◆ Puller - T10055-



◆ Thrust piece - T10457-



◆ Drip tray for workshop hoist - VAS 6208-



◆ Electric drill, commercially available

Removing

- Remove left drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shafts; Removing and installing drive shafts .

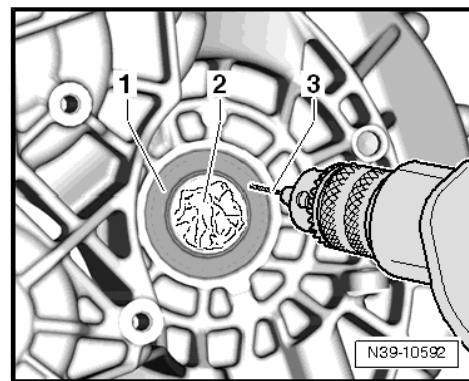


Note

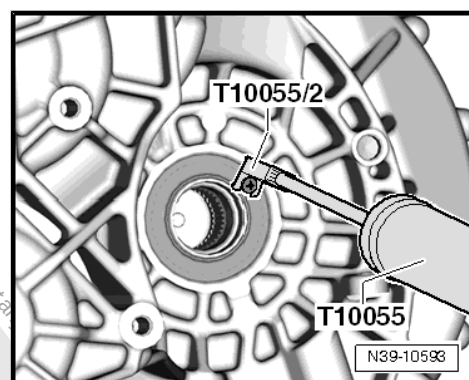
Only drill through sheet metal ring (about 3 mm), otherwise bearing located behind it might be damaged.



- Grease drill bit -3- so that metal chips adhere to it.
- Seal drive shaft aperture on transmission with a clean cloth -2-.
- Carefully drill a hole with a drill bit -3- (diameter 2 to 4 mm) into outer sheet metal ring -1- of oil seal.



- Screw a self-tapping screw, approx. 4 mm in diameter, into hole drilled in oil seal. Do not screw in sheet metal screw too far to avoid damaging bearing behind it.
- Place drip tray for workshop hoist - VAS 6208- below gearbox.
- Pull out oil seal using puller - T10055- and adapter - T10055/2- .



Make sure no metal chips get into gearbox and into opening for drive shaft. Vacuum out metal chips first if necessary.

- Carefully remove cloths and make sure that no metal chips get into gearbox.
- Carefully clean gearbox and opening for drive shaft.

If only the sheet metal ring could be pulled out, carefully lever out rest of seal with a screwdriver.

Installing

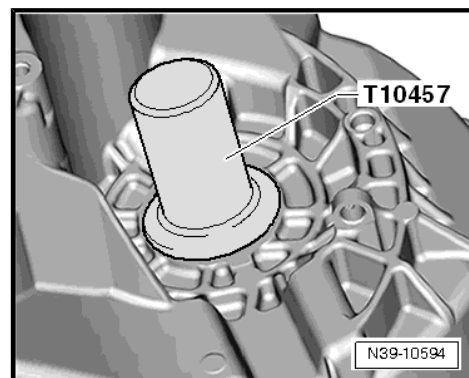
Install in reverse order of removal. During this procedure, observe the following:

Before installing the seal, apply sealing grease for oil seal - G 052 128 A1- to sealing lips and cavity, and apply oil to outer circumference.

Installation position:

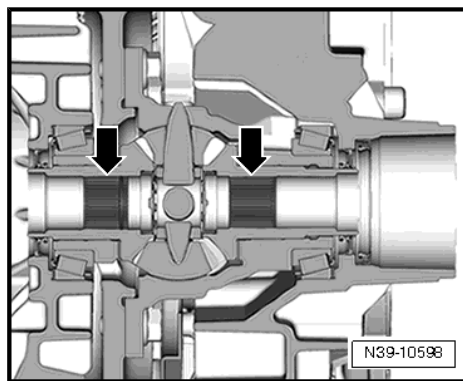
Open side of oil seal faces gearbox.

- Drive oil seal in to stop with thrust piece - T10457- . Do not cant oil seal in the process.





- Grease splines -arrow- of stub shaft with universal grease - G 060 735 A2- .
- Install left drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Check oil level and top up ⇒ [page 162](#) .



2.3 Renewing right oil seal

⇒ [“2.3.1 Renewing seal on right of gearbox, front-wheel drive vehicles”, page 182](#)

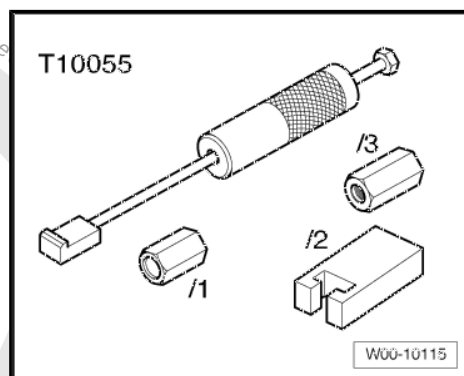
⇒ [“2.3.2 Renewing seal on right of gearbox, vehicles with all wheel drive”, page 184](#)

⇒ [“3.2.2 Renewing seal on right of bevel box”, page 193](#)

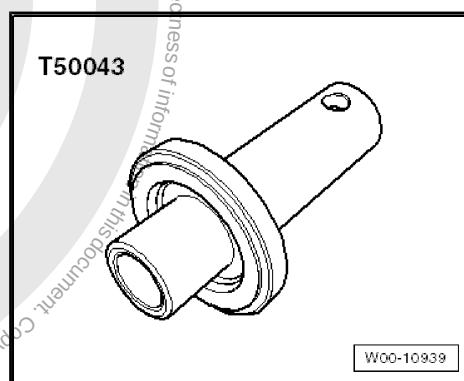
2.3.1 Renewing seal on right of gearbox, front-wheel drive vehicles

Special tools and workshop equipment required

- ◆ Puller - T10055-



- ◆ Thrust piece - T50043-



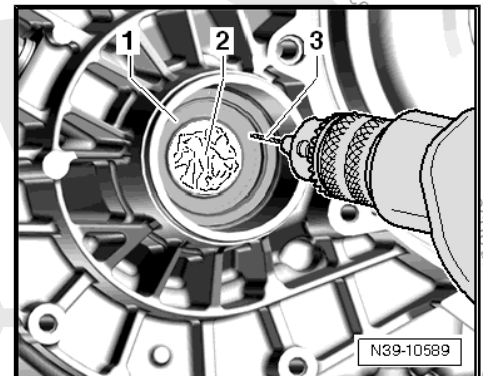
◆ Drip tray for workshop hoist - VAS 6208-



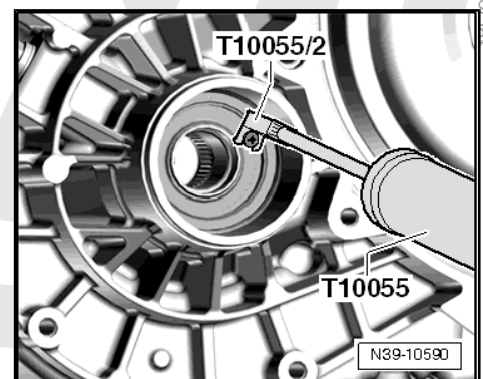
◆ Electric drill, commercially available

Removing

- Remove right drive shaft ➔ Running gear, axles, steering;
Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Grease drill bit -3- so that metal chips adhere to it.
- Drill only through sheet metal ring -1- (about 3 mm) because gearbox may otherwise be damaged.
- Seal drive shaft aperture on transmission with a clean cloth -2-.
- Carefully drill a hole with a drill bit -3- (diameter 2 to 4 mm) into outer sheet metal ring -1- of oil seal.



- Screw a self-tapping screw, approx. 4 mm in diameter, into hole drilled in oil seal. Do not screw in sheet metal screw too far to avoid damaging bearing behind it.
- Place drip tray for workshop hoist - VAS 6208- below gearbox.
- Pull out oil seal using puller - T10055- and adapter - T10055/2- .



Note

Make sure no metal chips get into gearbox and into opening for drive shaft. Vacuum out metal chips if necessary.

- Carefully remove cloths. When doing this, make sure that no metal chips get into gearbox.
- Carefully clean gearbox and opening for drive shaft.

If only the sheet metal ring could be pulled out, carefully lever out rest of seal with a screwdriver.

Installing

Install in reverse order of removal. Observe the following:

- Apply ATF to circumference and sealing lips of oil seal.

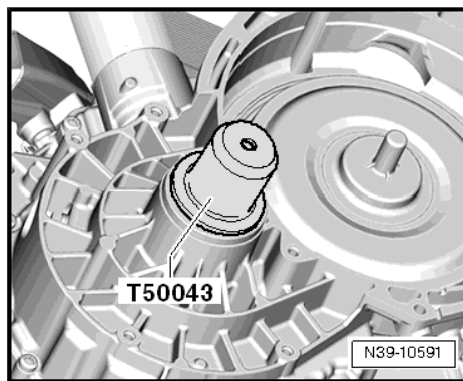
Installation position:

Open side of oil seal faces gearbox.

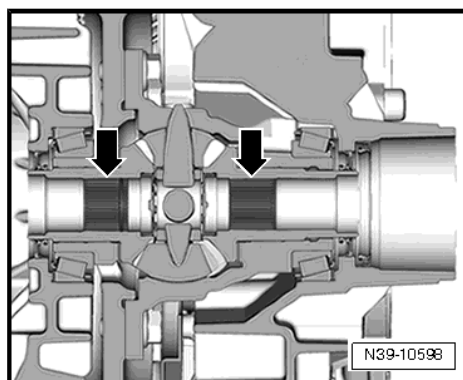
- Press oil seal in straight as far as possible by hand.



- Drive oil seal in to stop with thrust piece - T50043- . Do not cant oil seal in the process.
- Then check oil level and top up ⇒ [page 162](#) .



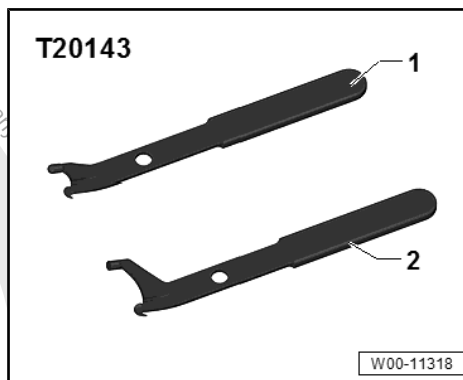
- Grease splines -arrow- of stub shaft with universal grease - G 060 735 A2- .
- Install right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



2.3.2 Renewing seal on right of gearbox, vehicles with all wheel drive

Special tools and workshop equipment required

- ♦ Extractor hooks -T20143-



- ♦ Thrust piece - T10458-

Removing

- Remove bevel box ⇒ [page 35](#) .



- Lever out seal on gearbox using puller hook - T20143/1- or - T20143/2- .

Installing

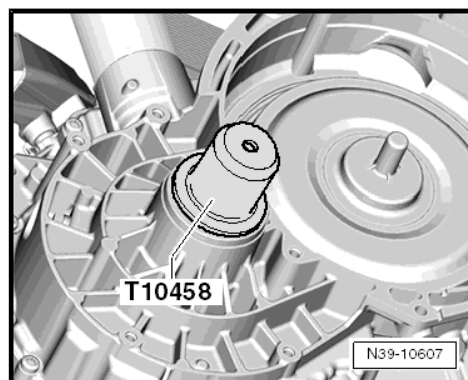
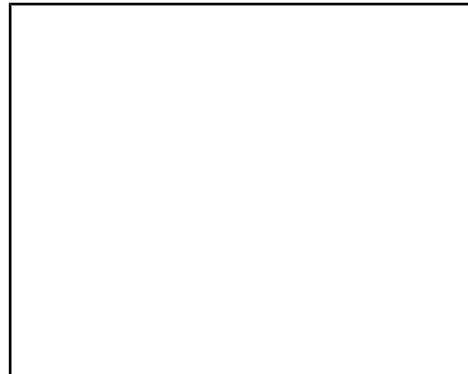
Install in reverse order of removal. During this procedure, observe the following:

Before installing the seal, apply sealing grease for oil seal - G 052 128 A1- to sealing lips and cavity, and apply oil to outer circumference.

Installation position:

Open side of oil seal faces gearbox.

- Drive oil seal in to stop with thrust piece - T10458- . Do not cant oil seal in the process.
- Install bevel box ➤ [page 35](#) .
- Check oil level and top up ➤ [page 162](#) .





3 Components of bevel box

⇒ [“3.1 Assembly overview - components of bevel box”, page 186](#)

⇒ [“3.2 Renewing bevel box seals”, page 190](#)

⇒ [“3.3 Renewing needle bearing \(polygon bearing\) for stub shaft”, page 207](#)

3.1 Assembly overview - components of bevel box

⇒ [“3.1.1 Assembly overview - components of bevel box, 0A6”, page 186](#)

⇒ [“3.1.2 Assembly overview - components of bevel box, 0CP”, page 188](#)

3.1.1 Assembly overview - components of bevel box, 0A6

(Seals, stub shaft bearing, output flange in bevel box)

1 - Seal

- ☐ Renew after removal
- ☐ Between bevel box and bevel box
- ☐ To renew, remove bevel box ⇒ [page 35](#)

2 - Seal

- ☐ Renew after removal
- ☐ Between bevel box and bevel box
- ☐ To renew, remove bevel box ⇒ [page 35](#)

3 - Plug

- ☐ Renew after removal
- ☐ With captive seal
- ☐ 15 Nm

4 - Sealing cover

- ☐ Drive in to stop with spacer tube - VW 540 1B- .

5 - Seal

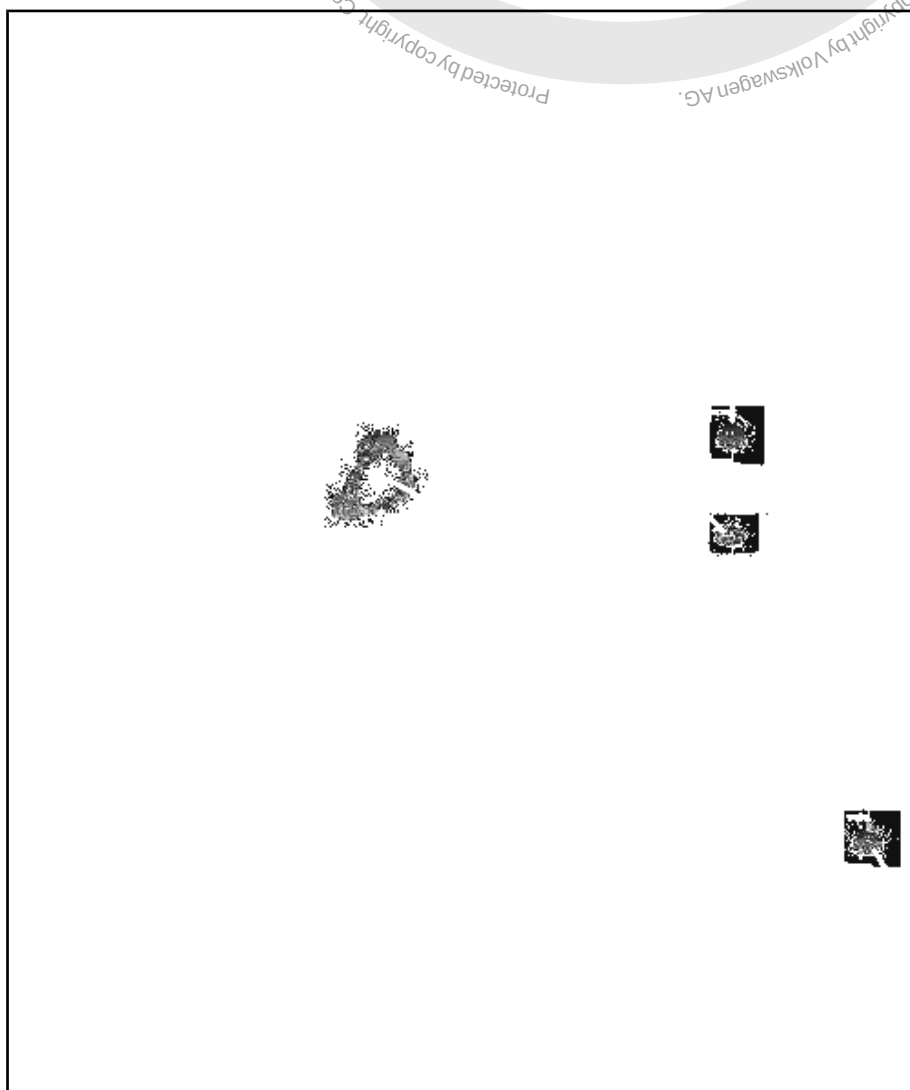
- ☐ For right stub shaft to drive shaft
- ☐ Seal can be renewed with bevel box installed
- ☐ Renewing ⇒ [page 193](#)

6 - Bevel box

- ☐ Removing and installing ⇒ [page 35](#)

7 - Cap

- ☐ To vent bevel box





8 - Breather pipe

- ☐ To vent bevel box
- ☐ Press in until stop is reached

9 - Retaining ring

- ☐ Renew after removal
- ☐ Insert in circumferential groove in stub shaft

10 - O-ring

- ☐ Renew after removal
- ☐ Insert in circumferential groove in stub shaft

11 - Right stub shaft

- ☐ To remove and install, remove bevel box ⇒ [page 35](#)
- ☐ Removing and installing ⇒ [page 207](#)

12 - Needle bearing (polygon bearing)

- ☐ Needle bearing (polygon bearing) is difficult to turn with stub shaft removed. The fact it is difficult to move does not mean that the bearing is defective. An acoustic test can only be performed with the bearings installed.
- ☐ Inspect for signs of damage to bearings, such as cracking in outer race, and renew if necessary.
- ☐ Renewing ⇒ [page 207](#)

13 - Retaining ring

- ☐ Renew after removal
- ☐ For needle roller bearing (polygon bearing)
- ☐ Insert in circumferential groove in stub shaft

14 - Hexagon nut

- ☐ Renew after removal
- ☐ Removing ⇒ [page 200](#)
- ☐ Install using locking fluid - D 000 600-
- ☐ Installing ⇒ [page 201](#)
- ☐ 480 Nm

15 - Output flange

- ☐ Removing and installing ⇒ [page 197](#)

16 - Cover

- ☐ Not fitted in all bevel boxes
- ☐ Renew after removing output flange if damaged
- ☐ Engage with output flange

17 - Seal

- ☐ Renew after removal
- ☐ For output flange
- ☐ To renew, remove bevel box ⇒ [page 35](#)

18 - Bolt

- ☐ Tighten diagonally and alternately
- ☐ 25 Nm

19 - Pinion housing

- ☐ With shaft bevel gear and inner race/tapered roller bearing
- ☐ No replacement parts available for these components
- ☐ Carefully lever off and drive in alternately
- ☐ Observe bolt holes; pinion housing fits only in one position.

20 - O-ring

- ☐ Renew after removing pinion housing



- ☐ To renew, unscrew bolts ➤ [Item 18 \(page 187\)](#) and carefully lever off pinion housing at projecting webs on outside edge
- ☐ Do not remove hexagon nut ➤ [Item 14 \(page 187\)](#) and output flange ➤ [Item 15 \(page 187\)](#)

3.1.2 Assembly overview - components of bevel box, 0CP

(Seals, stub shaft bearing, output flange in bevel box)

1 - Seal

- ☐ Renew after removal
- ☐ Between bevel box and bevel box
- ☐ To renew, remove bevel box ➤ [page 35](#)

2 - Seal

- ☐ Renew after removal
- ☐ For right stub shaft to gearbox
- ☐ To renew, remove bevel box ➤ [page 35](#)

3 - Plug

- ☐ Renew after removal
- ☐ With captive seal
- ☐ 15 Nm

4 - Seal

- ☐ For right stub shaft to drive shaft
- ☐ Seal can be renewed with bevel box installed
- ☐ Renewing ➤ [page 193](#)

5 - Bevel box

- ☐ Removing and installing ➤ [page 35](#)

6 - Breather pipe

- ☐ To vent bevel box
- ☐ Press in until stop is reached

7 - Cap

- ☐ To vent bevel box

8 - Retaining ring

- ☐ Renew after removal
- ☐ Insert in circumferential groove in stub shaft

9 - O-ring

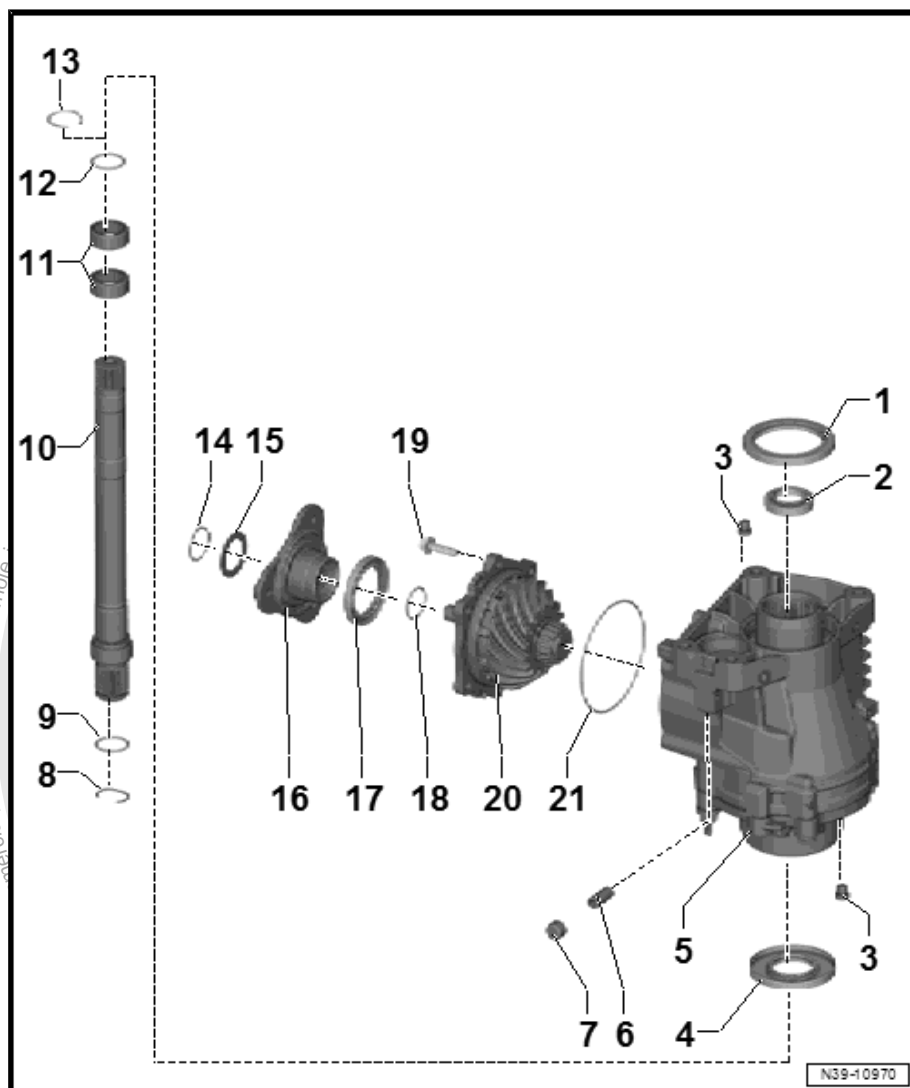
- ☐ Renew after removal
- ☐ Insert in circumferential groove in stub shaft

10 - Right stub shaft

- ☐ Removing and installing ➤ [page 207](#)

11 - Needle bearing (polygon bearing)

- ☐ Needle bearing (polygon bearing) is difficult to turn with stub shaft removed. The fact it is difficult to move does not mean that the bearing is defective. An acoustic test can only be performed with the bearings installed.





- ☐ Inspect for signs of damage to bearings, such as cracking in outer race, and renew if necessary.
- ☐ Renewing ⇒ [page 207](#)

12 - Retaining ring

- ☐ Renew after removal
- ☐ For needle roller bearing (polygon bearing)
- ☐ Insert in circumferential groove in stub shaft

13 - Retaining ring

- ☐ Renew after removal
- ☐ Insert in circumferential groove in stub shaft

14 - Retaining ring

- ☐ Renew after removal
- ☐ For output flange
- ☐ Removing and installing ⇒ [page 202](#)

15 - Shim

- ☐ For output flange

16 - Output flange

- ☐ Removing and installing ⇒ [page 202](#)

17 - Seal

- ☐ For output flange
- ☐ Renew after removing output flange
- ☐ Renewing ⇒ [page 202](#)

18 - O-ring

- ☐ For output flange
- ☐ Renew after removing output flange
- ☐ Renewing ⇒ [page 202](#)

19 - Bolt

- ☐ 38 Nm

20 - Pinion housing

- ☐ With shaft bevel gear and inner race/tapered roller bearing
- ☐ No replacement parts available for these components
- ☐ Carefully lever off and drive in alternately
- ☐ Observe bolt holes; pinion housing fits only in one position.

21 - O-ring

- ☐ Renew after removing pinion housing
- ☐ To renew, unscrew bolts and carefully lever off pinion housing at projecting webs on outside edge.
- ☐ Do not remove output flange



3.2 Renewing bevel box seals

⇒ [“3.2.1 Renewing left seal between bevel box and gearbox on bevel box”, page 190](#)

⇒ [“3.2.2 Renewing seal on right of bevel box”, page 193](#)

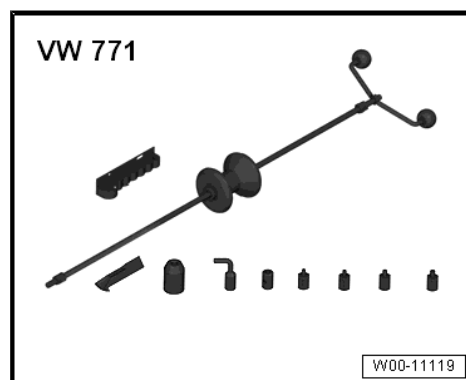
⇒ [“3.2.3 Renewing bevel box output flange seal, 0A6, bevel box removed”, page 197](#)

⇒ [“3.2.4 Renewing bevel box output flange seal, 0CP, bevel box removed”, page 202](#)

3.2.1 Renewing left seal between bevel box and gearbox on bevel box

Special tools and workshop equipment required

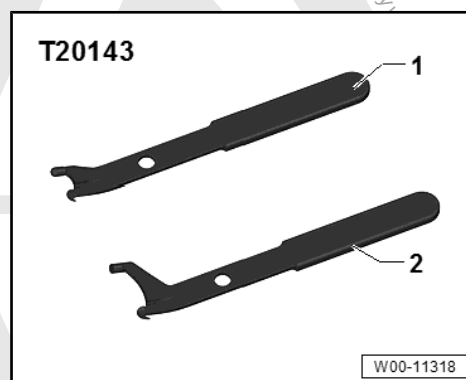
- ◆ Multi-purpose tool - VW 771-



- ◆ Multi-purpose tool - VW 771/37-

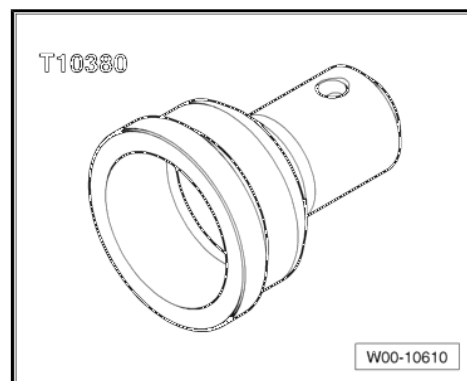


- ◆ Removal tool - T20143-

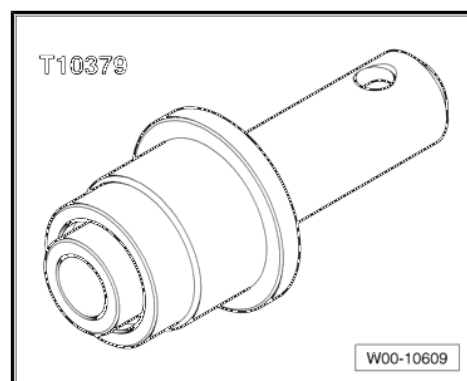




◆ Thrust piece -T10380-



◆ Thrust piece - T10379-



Note

Seals (Qty. 2) can be renewed only with bevel box removed. Always renew both seals.

Removing

- Remove bevel box ➔ [page 35](#) .

Remove »outer« seal.

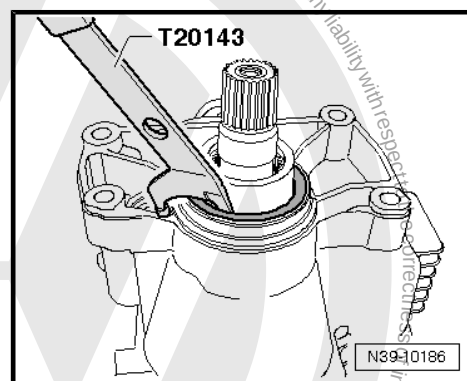
- Lever out seal using puller hook - T20143/2- .

Remove »inner« seal.



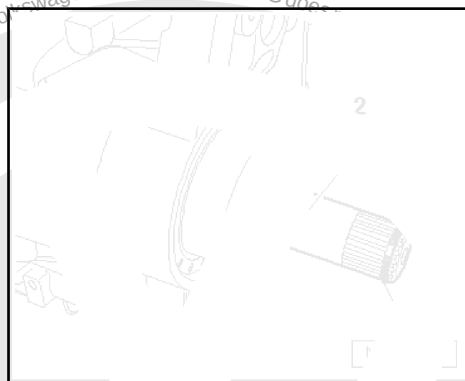
Note

So that new seal will not be damaged later on:





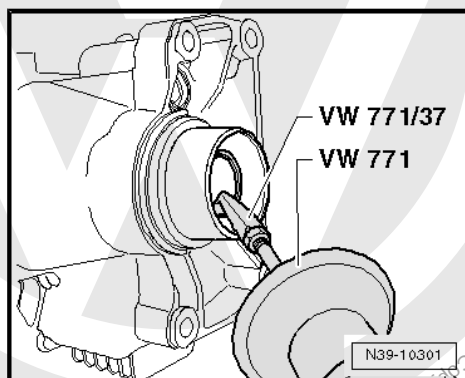
- Remove retaining ring -1- from stub shaft.
- Carefully use plastic mallet -2- to drive stub shaft out in direction of arrow.



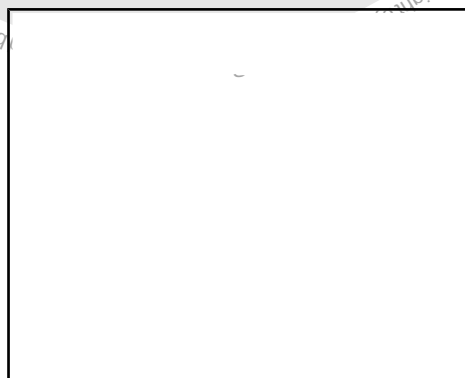
- Pull out seal for stub shaft on gearbox side.

Installing

Drive in »outer« seal.

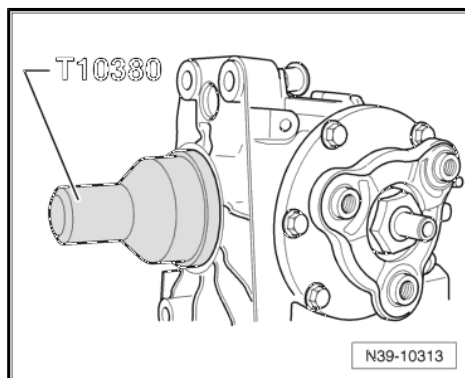


- Half-fill space between sealing lip and dust lip of new seal -arrow- with sealing grease - G 052 128 A1- .
- Lightly oil outer circumference of new oil seal.



- Drive in seal to stop.

Drive in »inner« seal.

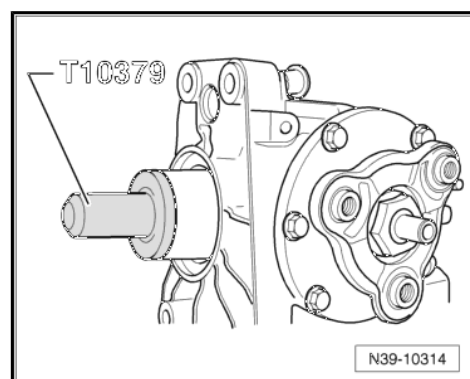




- Half-fill space between sealing lip and dust lip of new seal -arrow- with sealing grease - G 052 128 A1- .
- Lightly oil outer circumference of new oil seal.



- Drive in seal to stop.
- Carefully use plastic mallet to drive in stub shaft to stop.



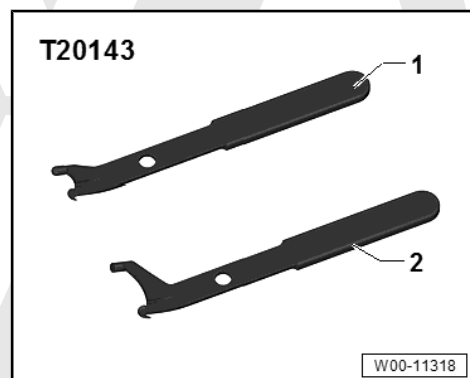
- Fit new retaining ring -1- on stub shaft.
- Install bevel box ➤ [page 35](#) .
- Check gear oil in bevel box ➤ [page 170](#) .



3.2.2 Renewing seal on right of bevel box

Special tools and workshop equipment required

- ◆ Removal tool - T20143-





- ◆ Thrust piece - T10143-



- ◆ Hub grease cap puller - VW 637/2-



- ◆ Drip tray - V.A.G 1306-



- ◆ or drip tray for workshop hoist - VAS 6208-
- ◆ Sealing grease
- ◆ Grease for splines
- ◆ Allocate grease using ⇒ Electronic parts catalogue (ETKA) .



Note

Seal can be renewed with bevel box installed.

Removing

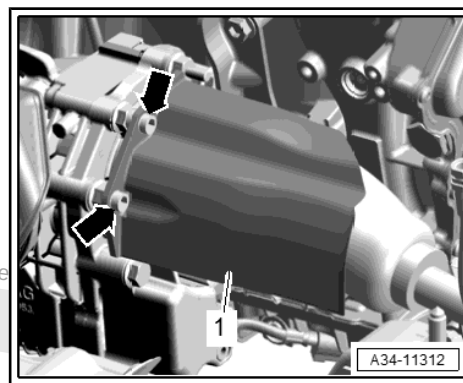
- Raise vehicle.
- Remove noise insulation beneath engine/gearbox ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .



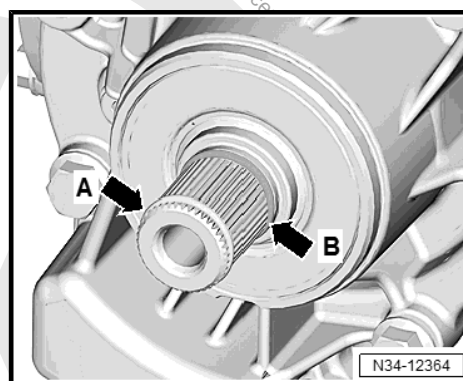
- If fitted, remove drive shaft heat shield -1- from bevel box -arrows- ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .

The right drive shaft heat shield is secured with 2 or 3 nuts ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .

- Remove right drive shaft. ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Place drip tray or used oil collection and extraction unit - V.A.G 1782- underneath.



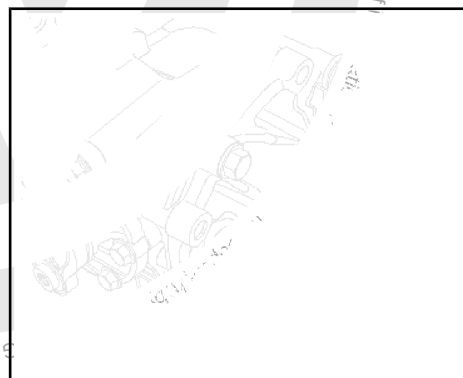
- Remove retaining ring -arrow A- and O-ring -arrow B- from stub shaft.



Note

Some bevel boxes have protective cap -arrow- installed on right. Renew protective cap each time after removing.

Pull off protective cap.

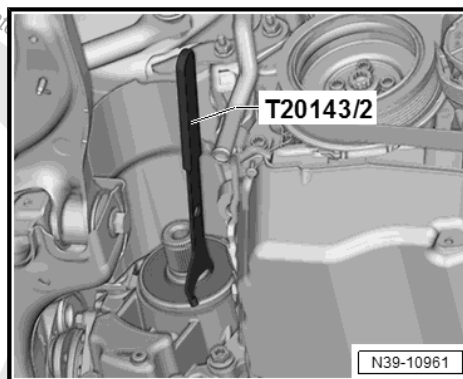


- Position hub cap puller - VW 637/2- in recess -arrow- and lever off protective cap.



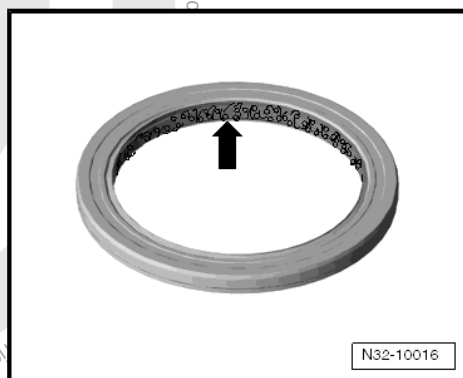


- Lever out seal.



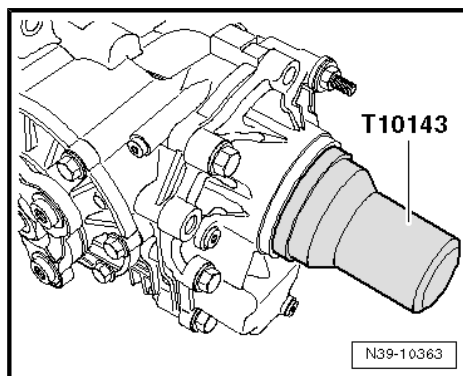
Installing

- Lightly oil outer circumference of new oil seal.
- Half-fill space between sealing lip and dust lip -arrow- with sealing grease .

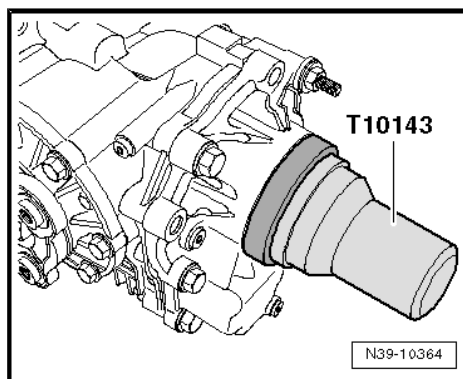


- Drive in seal to stop.
- Fit new retaining ring and new seal on stub shaft.

Bevel box with protective cap

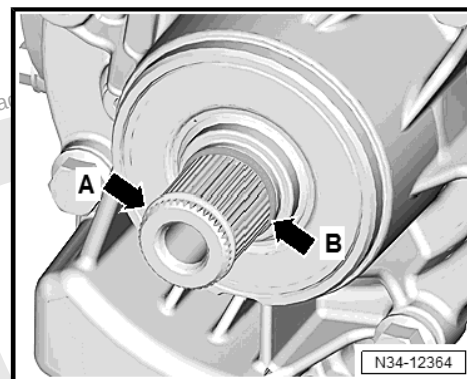


- Drive on new protective cap to stop.
- Check gear oil in bevel box ⇒ [page 170](#) .
- Then install retaining ring -arrow A- and O-ring -arrow B-.

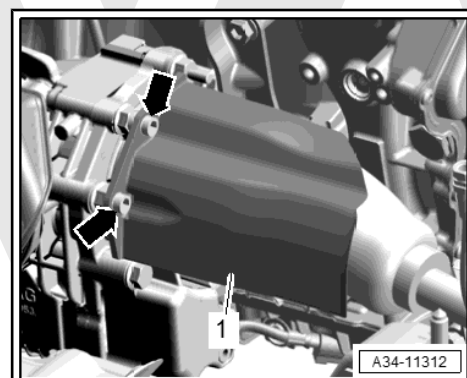




- Grease splines of stub shaft using grease for clutch plate splines .
- Install drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shafts .

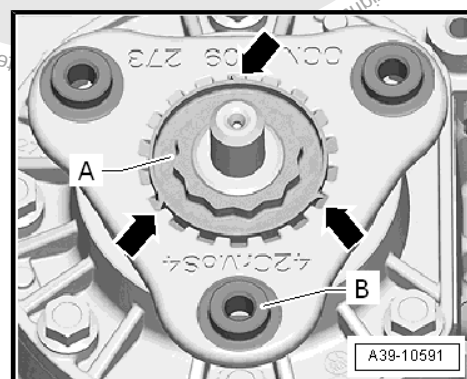


- Install heat shield -1- for drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .



3.2.3 Renewing bevel box output flange seal, 0A6, bevel box removed

The output flange is secured with a nut -A-.
Disregard -B- and -arrows-.

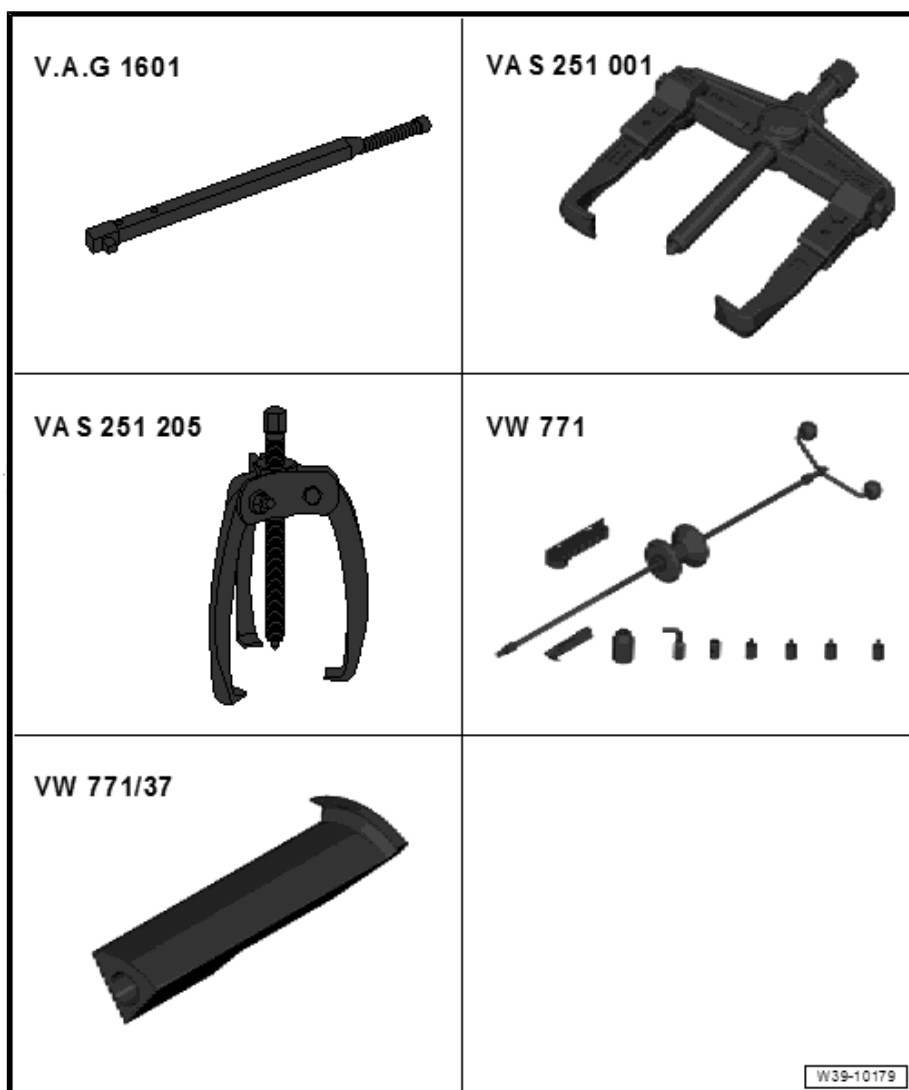




**Special tools and workshop
equipment required**

VW 313 	VW 516 
40-105 	T10049 
T10108 	

- ◆ Support clamp - VW 313-
- ◆ Tube - VW 516-
- ◆ Thrust plate - 40-105-
- ◆ Thrust piece - T10049-
- ◆ Gearbox support - T10108-
- ◆ Support plate - T10108/1-



- ◆ Torque wrench - V.A.G 1601-
- ◆ Two-arm puller - VAS 251 001- or e.g. two-arm puller - Kukko 20/10-
- ◆ Three-arm puller - VAS 251 205- or e.g. three-arm puller - Kukko 45-2-
- ◆ Multi-purpose tool - VW 771-
- ◆ Extractor hook - VW 771/37-
- ◆ Sealing grease
- ◆ Universal grease
- ◆ Allocate grease using ⇒ Electronic parts catalogue (ETKA) .
- ◆ 2 bolts M10 x 30
- ◆ 4 nuts M12 x 10



Note

The bevel box oil seal for the output flange can only be renewed with the bevel box removed.

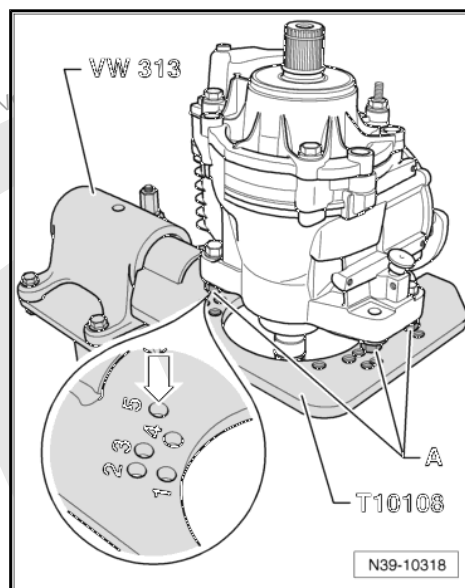
- Remove bevel box ⇒ [page 35](#) .



- Fit bevel box on gearbox support - T10108- onto hole -arrow- marked with the number -5-.

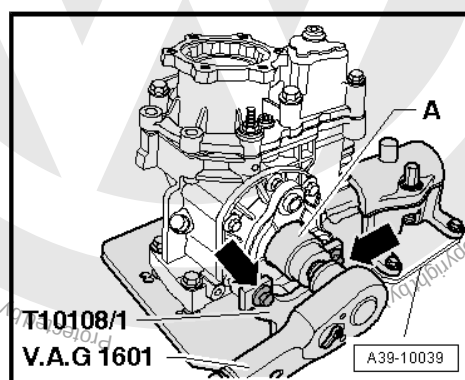
A - Lay nuts M12 x 10 (qty. 4) between bevel box and gearbox support . Nuts function as spacers.

- Then align bevel box with hole opposite and secure.
- Place container underneath.
- Drain oil from bevel box.
- Lock output flange for bevel box with stop plate T10108/1- . Screw in M10 x 30 bolts -arrows- to do this.



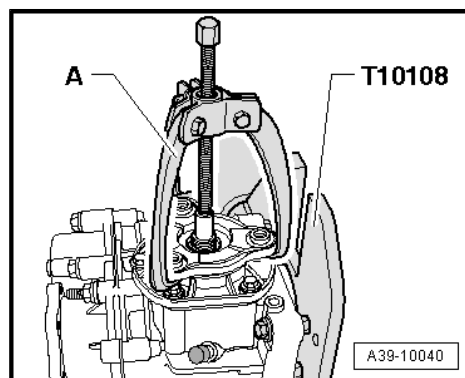
Removing hexagon nut for output flange

A - 36 mm socket for 3/4" drive

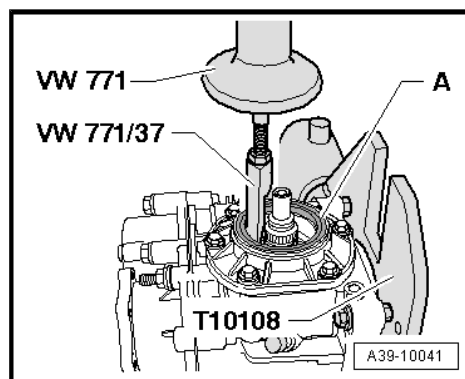


- Swing bevel box so that output flange points upwards.
- Pull output flange off shaft bevel gear of bevel box.

A - Three-arm puller - VAS 251 205- or e.g. three-arm puller - Kukko 45-2-



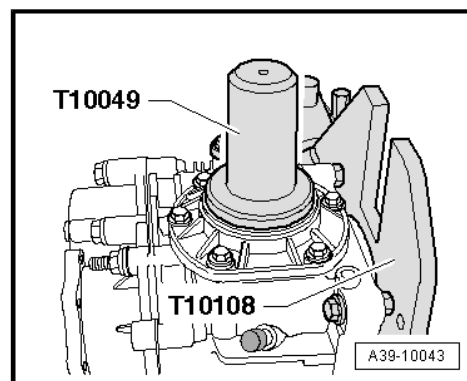
- Pull out seal -A- for output flange.
- Clean residual locking fluid from thread of shaft bevel gear.
- Clean any oil seal residue away from area on shaft bevel gear.





Installing

- Drive in new oil seal to stop using thrust piece - T10049- .
- Half-fill space between sealing lip and dust lip with sealing grease .
- Lightly lubricate splines of output shaft with universal grease .

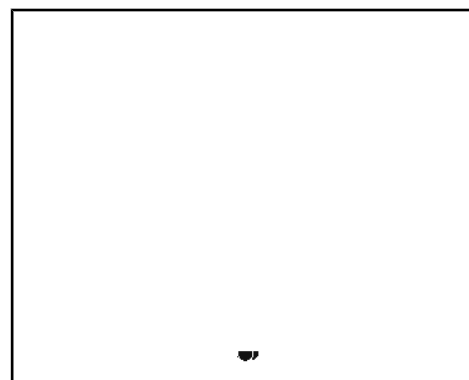


- Pull in output flange using two arm puller -A-.

A - Two-arm puller - VAS 251 001- or e.g. two-arm puller - Kukko 20/10-

Please note the following:

- Use new or nearly new puller hooks!
- The output flange must not be canted.
- Fit puller hooks as far as they will go onto underside of pinion housing.
- Take up slack on puller hooks fully with two arm puller -arrows-.
- Puller hooks should not bend outwards.
- If necessary, halt pulling process, pull off output flange again and restart pulling process.

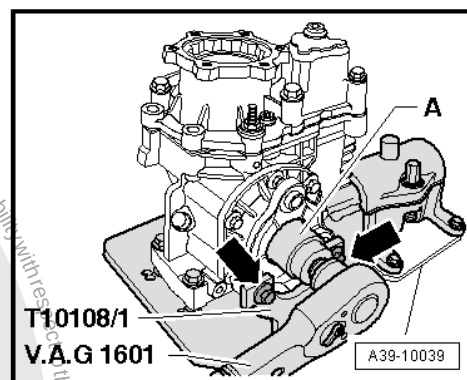


Coat thread of new hexagon nut with locking fluid D 000 600

- Tightening new hexagon nut for output flange to specified torque.

Specified torque ➔ [Item 14 \(page 187\)](#)

A - 36 mm socket for 3/4" drive





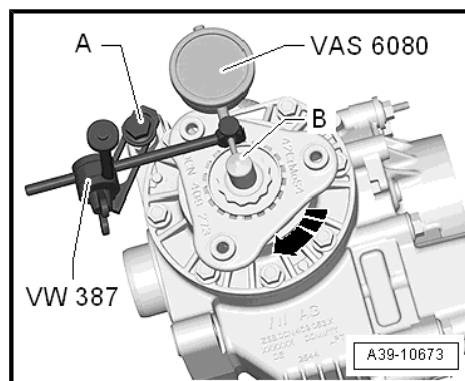
Measure radial run-out on output flange/shaft bevel gear.



Note

After the output flange nut has been tightened, the radial run-out on the centring pin of the shaft bevel gear must be checked.

- Secure measuring tools with bolt -A- (M8 x 25) on bevel box.
- Fit dial gauge - VAS 6080- on centring pin of shaft bevel gear -B- and set it to "0" with 1 mm preload.
- Turn output flange one full turn in -direction of arrow-.
- Read measured value on dial gauge.
- Max. radial run-out = 0.07 mm.
- Install bevel box ⇒ [page 35](#) .
- Check gear oil level in bevel box ⇒ [page 170](#) .



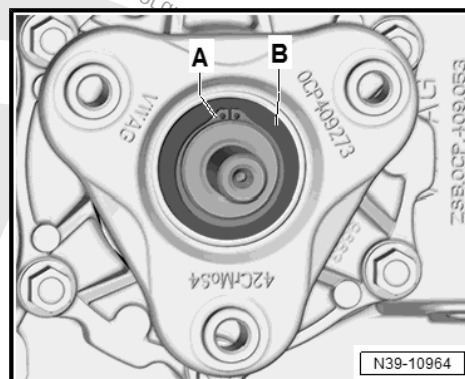
Specified torques

- ♦ ⇒ ["3.1.1 Assembly overview - components of bevel box, 0A6"](#), [page 186](#)

3.2.4 Renewing bevel box output flange seal, 0CP, bevel box removed

The output flange is secured with a retaining ring -A-.

Located behind retaining ring -A- is a washer -B-.





Special tools and workshop equipment required



- ◆ Support clamp - VW 313-
- ◆ Gearbox support - T10108-
- ◆ Three-arm puller - VAS 251 205- or e.g. three-arm puller - Kukko 45-2-
- ◆ Extractor hook - T20143-
- ◆ Locking tool - T40265-
- ◆ Drift sleeve - 40-21-
- ◆ Thrust piece - T10565-





- ◆ Drip tray - V.A.G 1306-
- ◆ or drip tray for workshop hoist - VAS 6208-
- ◆ Sealing grease
- ◆ Universal grease
- ◆ Allocate grease using ⇒ Electronic parts catalogue (ETKA) .
- ◆ 2 x bolts M10 x 30
- ◆ 4 nuts M12 x 10



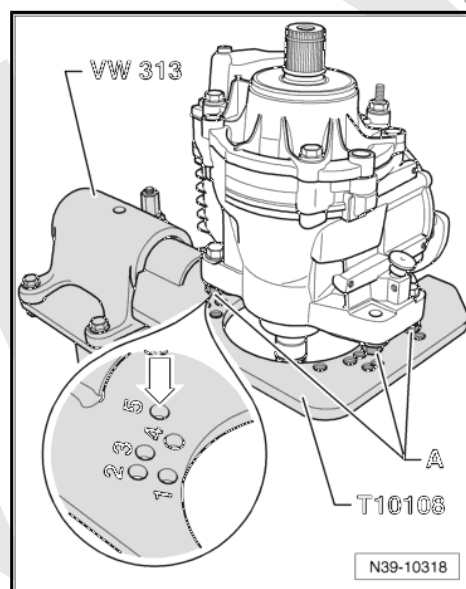
Note

The bevel box oil seal for the output flange can only be renewed with the bevel box removed.

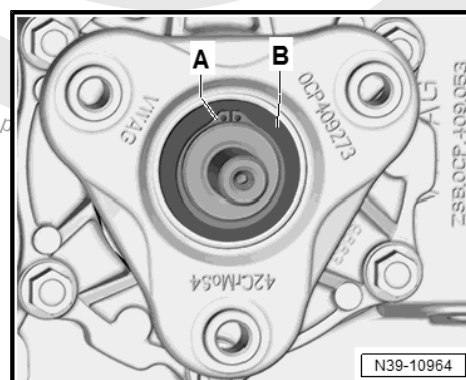
- Remove bevel box ⇒ [page 35](#) .
- Fit bevel box on gearbox support - T10108- onto hole -arrow- marked with the number -5-.

A - Lay nuts M12 x 10 (qty. 4) between bevel box and gearbox support . Nuts function as spacers.

- Then align bevel box with hole opposite and secure.
- Place container underneath.
- Drain oil from bevel box.



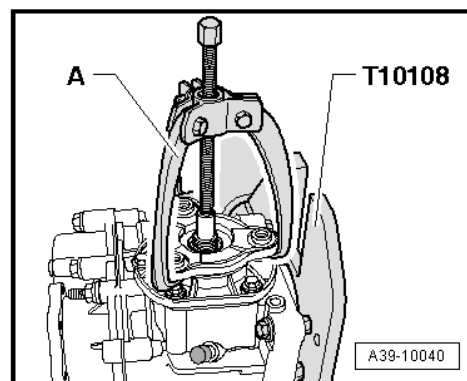
- Remove retaining ring -A- and washer -B-.



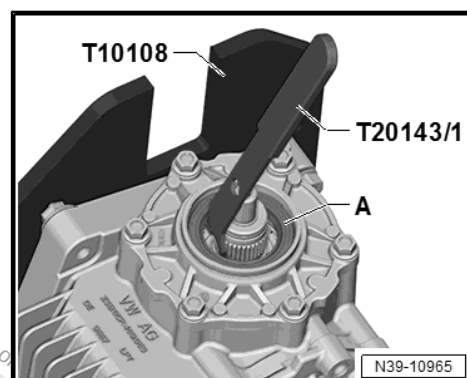


- Swing bevel box so that output flange points upwards.
- Pull output flange off shaft bevel gear of bevel box.

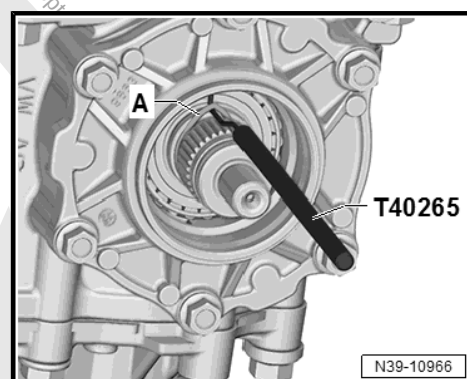
A - Three-arm puller - VAS 251 205- or e.g. three-arm puller - Kukko 45-2-



- Lever out seal -A- for output flange.
- Take care not to damage the seat for the oil seal in the housing.
- Clean any oil seal residue away from area on shaft bevel gear.

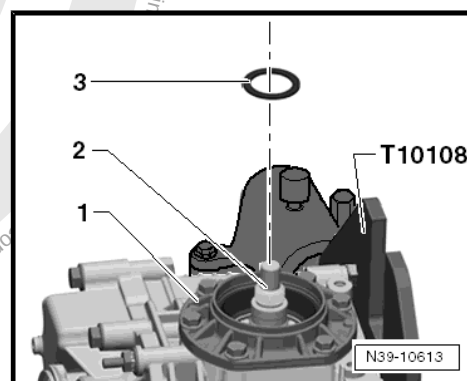


- Remove O-ring -A- from shaft.
- O-ring -A- can also be removed from shaft using a small screwdriver.



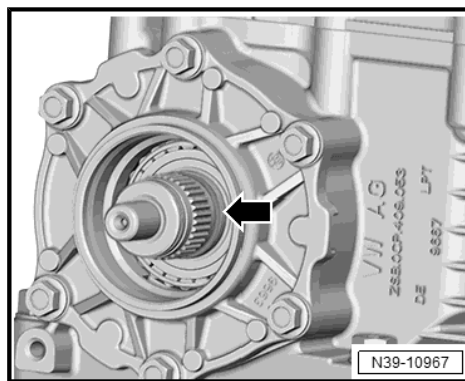
Installing

- Place new O-ring -3- on bevel gear shaft -2- in pinion housing -1-.

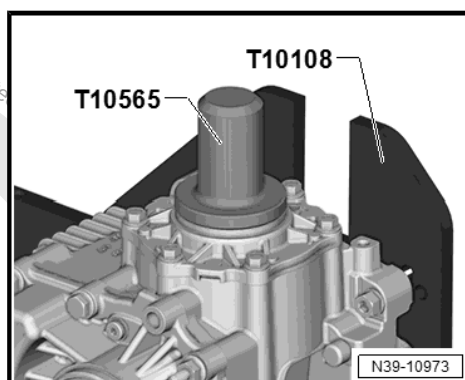




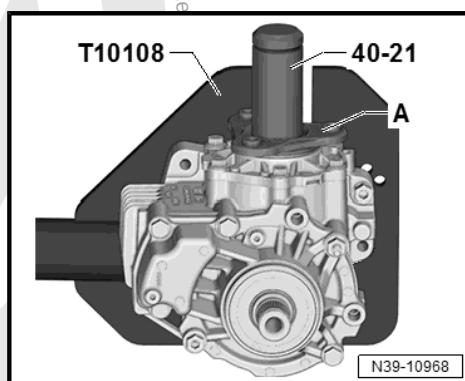
- O-ring must be located behind splines and in base of surrounding groove -arrow-.



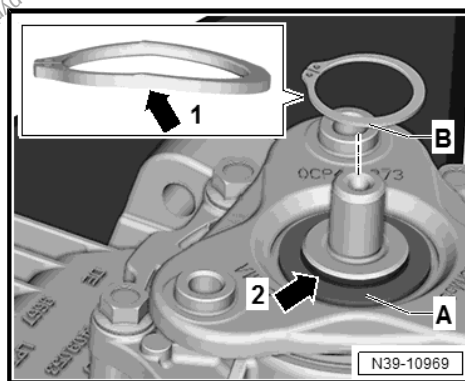
- Drive new seal in onto limit stop.
- Half-fill space between sealing lip and dust lip with sealing grease .



- Lightly lubricate splines of output shaft -A- with universal grease .
- Carefully drive output flange -A- onto shaft as far as stop using a plastic hammer.



- Fit washer -A-.
- Secure output flange in position with retaining ring -B-.
- Retaining ring -B- features an uneven contour -arrow 1-.
- Retaining ring -B- must be located in base of surrounding groove -arrow 2-.





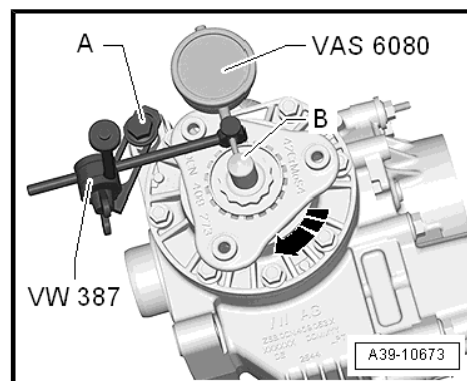
Measure radial run-out on output flange/shaft bevel gear.



Note

After securing the output flange, the radial run-out on the centring pin of the shaft bevel gear must be checked.

- Secure measuring tools with bolt -A- (M8 x 25) on bevel box.
- Fit dial gauge - VAS 6080- on centring pin of shaft bevel gear -B- and set it to "0" with 1 mm preload.
- Turn output flange one full turn in -direction of arrow-.
- Read measured value on dial gauge.
- Max. radial run-out = 0.07 mm.
- Install bevel box ⇒ [page 35](#) .
- Check gear oil level in bevel box ⇒ [page 170](#) .



Specified torques

- ◆ ⇒ ["3.1.2 Assembly overview - components of bevel box, OCP", page 188](#)

3.3 Renewing needle bearing (polygon bearing) for stub shaft





Special tools and workshop equipment required



- ◆ Thrust plate - VW 401-
- ◆ Thrust plate - VW 402-
- ◆ Press tool - VW 407-
- ◆ Press tool - VW 412-
- ◆ Assembly tool - 3253/5-
- ◆ Tensioning device - T10047-



- ◆ Torque wrench - V.A.G 1331-
- ◆ Thrust pieces for drive pinion bearing - VW 470-
- ◆ Socket and extended bit 6 mm - T10107 A-
- ◆ Counter-hold tool - T10371-
- ◆ Thrust piece - T40023-
- ◆ Splitter - VAS 251 409- , or splitter 22 ...75 mm , e.g. -Kukko 17/1-
- ◆ 2 bolts M10 x 90
- ◆ 2 x hexagon socket head bolts M12 x 80 with M12 nuts

Removing

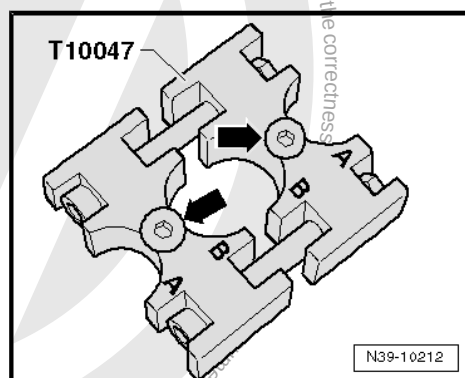
- Remove noise insulation beneath engine/gearbox ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .
- Remove bevel box ⇒ [page 35](#) .



- Remove retaining ring -1- from stub shaft.
- Carefully use plastic mallet -2- to drive stub shaft out in direction of arrow.

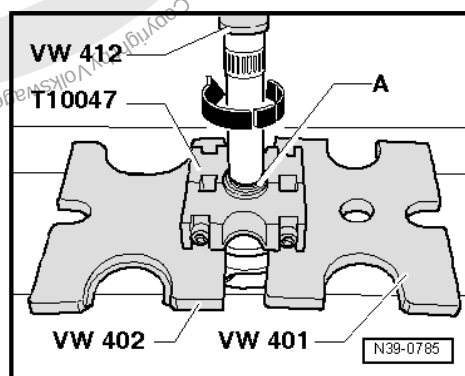


- Align both parts of tool so that marks “B” are opposite one another.
- The shoulders -arrows- must then be below the bearing.
- Now screw both halves together to stop.

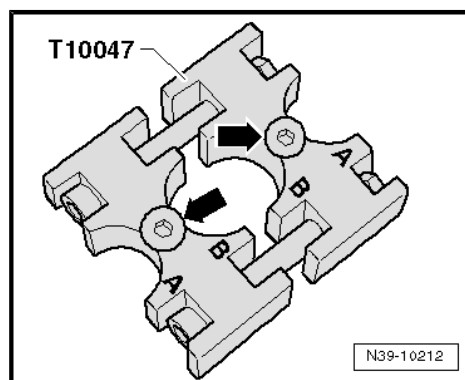


- Lever off retaining ring -A- for needle bearing.
- To avoid damage to running surface of bearing on shaft, turn shaft during pressing procedure -arrow-.

Installing

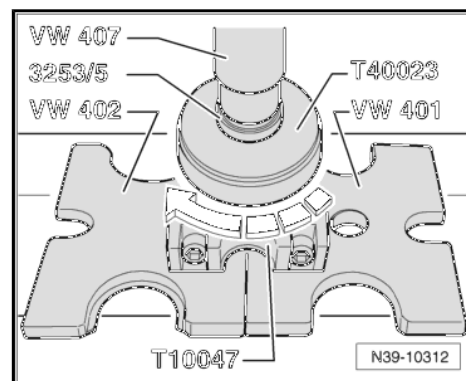


- Align both parts of tool so that marks “B” are opposite one another.





- To avoid damage to running surface of bearing on shaft, turn shaft during pressing procedure -arrow-.
- Secure needle bearing with a new retaining ring.
- Carefully use plastic mallet to drive in stub shaft to stop.



- Fit new retaining ring -1- on stub shaft.
- Install bevel box ➤ [page 35](#) .

Install in reverse order of removal, observing the following:

- Install right drive shaft ➤ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install heat shield. Specified torque ➤ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Check oil level in bevel box ➤ [page 170](#) .
- Install noise insulation ➤ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview – noise insulation .

