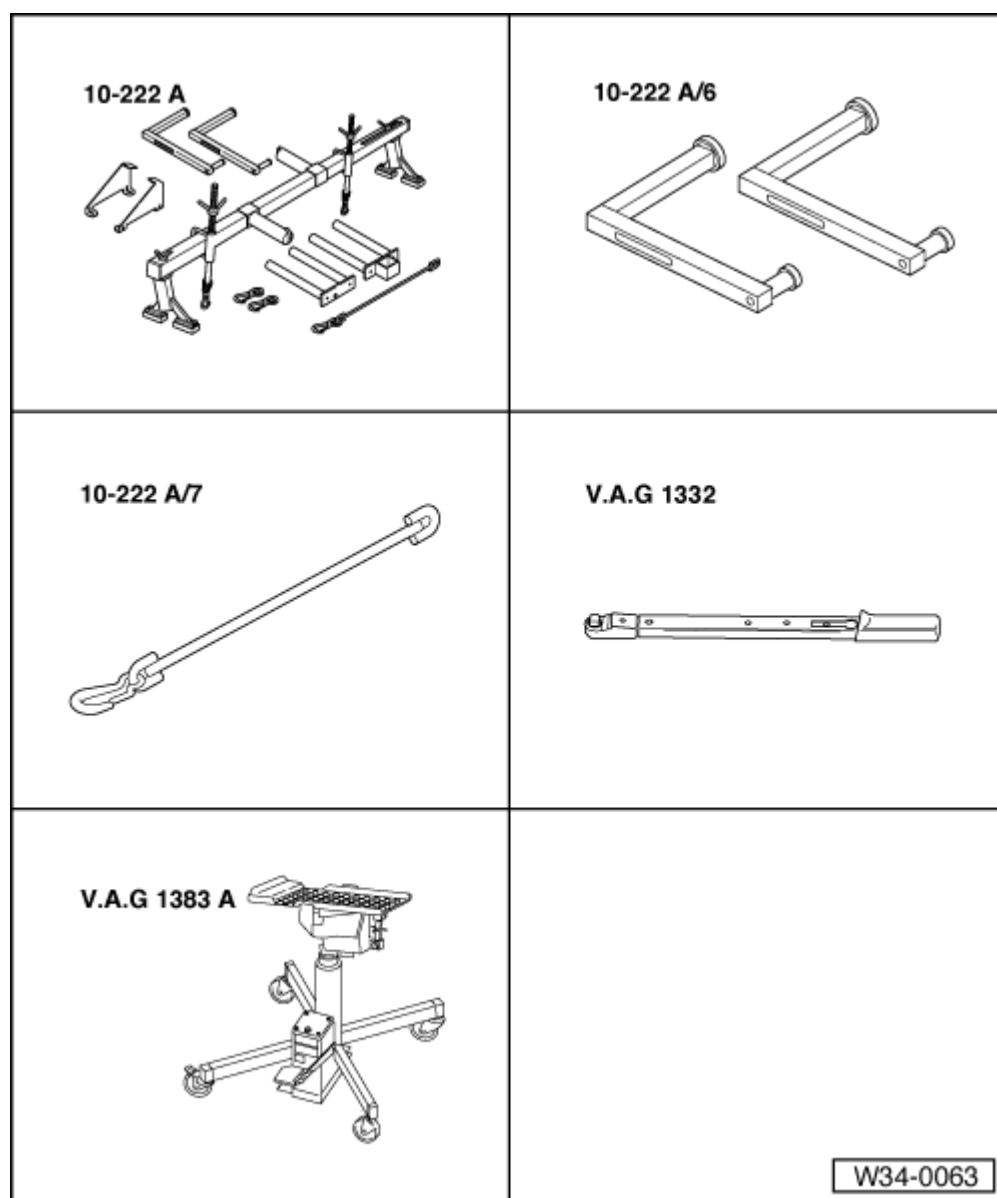


Removing and installing gearbox and bevel box

Removing and installing gearbox and bevel box

Special tools, workshop equipment, test and measuring appliances and aux. items required

- 10-222 A Support
- 10-222 A/6 Supports
- 10-222 A/7 Special hook
- V.A.G 1332 Torque wrench
- V.A.G 1383 A Engine/gearbox jack



Special tools, workshop equipment, test and measuring appliances and aux. items required

- 3094 Hose clamps
- 3257 Socket, 27 mm AF
- 3282 Gearbox support
- 3282/23 Adjustment plate
- 3336 Gearbox lifting beam

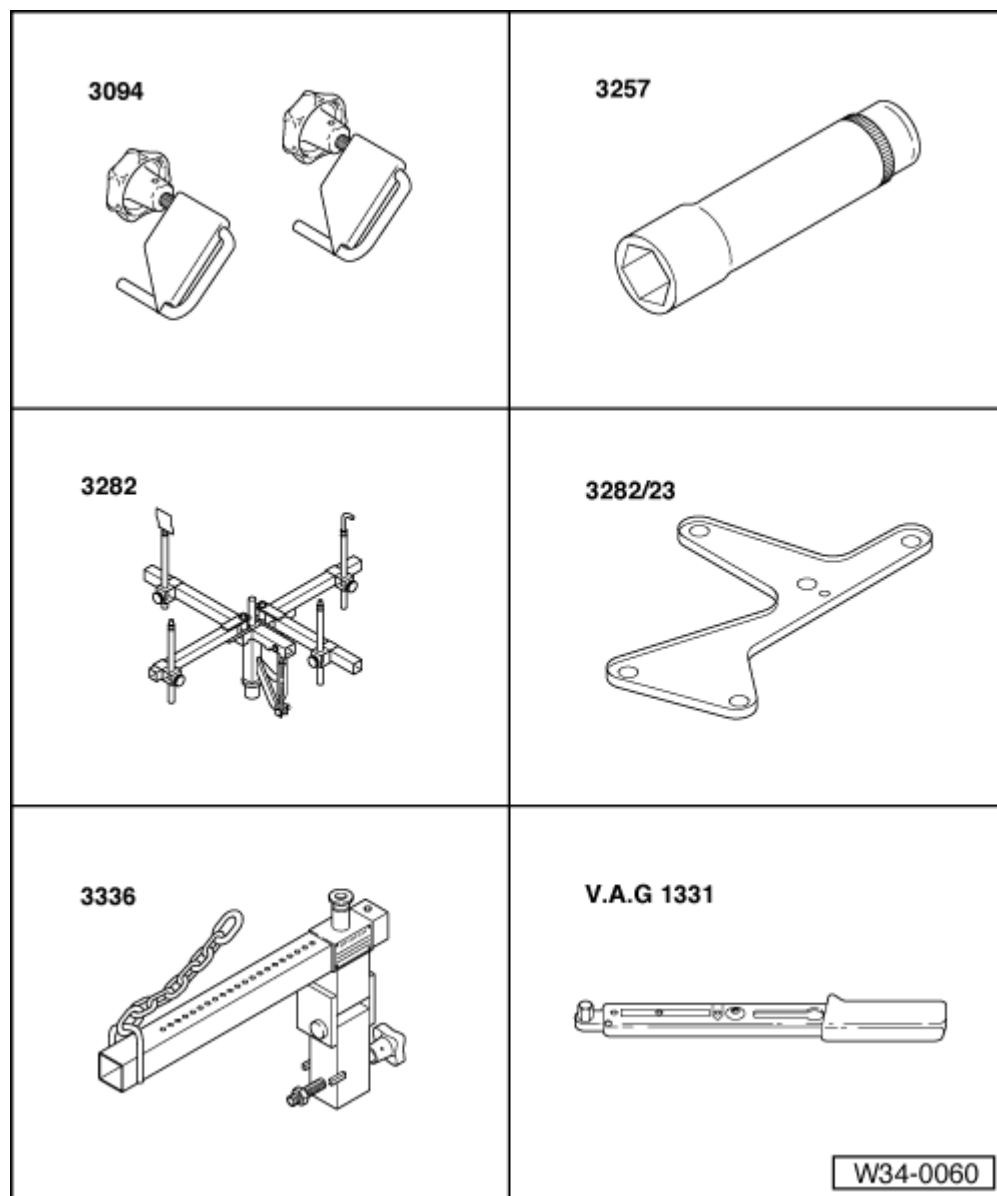
- V.A.G 1331
Torque wrench

Additional information

- Workshop Manual Transporter 1991 □, Axles, steering, suspension from January 1996
- Workshop Manual Transporter 1991 □, Electrical system
- Workshop Manual Transporter 1991 □, 5-Cyl. diesel engine, mechanics

Removing

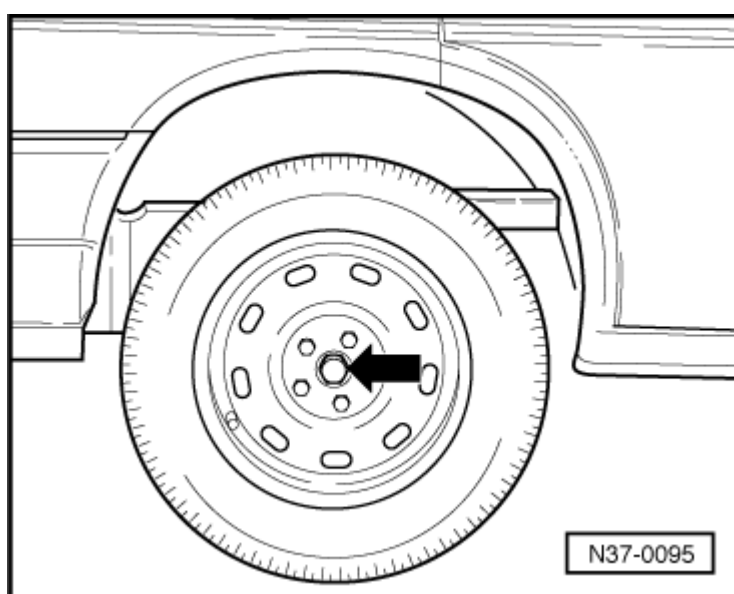
- Obtain radio code on vehicles with coded radio.



- With the ignition switched off disconnect the battery earth strap (in engine compartment and if fitted, under driver's side).

=> [Electrical system; Repair group 27; Battery; Removing and installing battery](#)

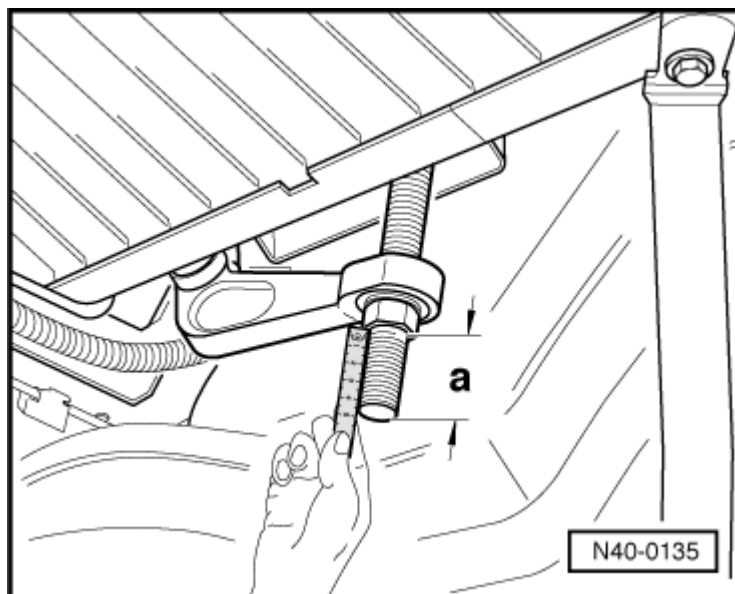
- → With the vehicle standing on its wheels loosen left and right-hand drive shaft/wheel hub bolt and left and right-hand wheel securing bolts.
- Raise vehicle.
- Remove noise insulation tray below engine/gearbox.
- Remove noise insulation tray from gearbox, if part of original



equipment.

- Drain gearbox oil from gearbox and bevel box.
- → Measure distance from nut face to end of torsion bar threaded rod -a- and note.
- Relieve tension on torsion bar with special tool 3257.

=> [Axles, steering, suspension from January 1996; Repair group 40; I - Removing and installing subframe, anti-roll bar, torsion bar, wishbone, shock absorber; Removing, installing and adjusting torsion bar.](#)

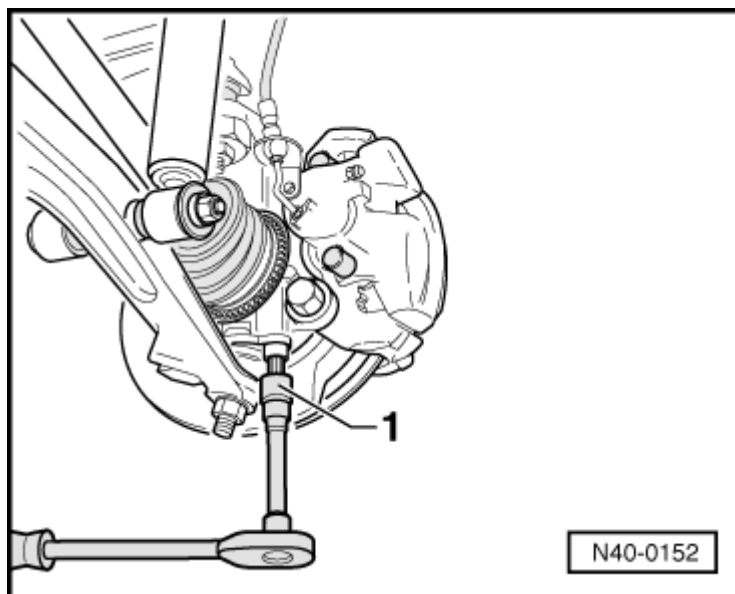


- Remove bolt for left and right-hand shock absorber/anti-roll bar coupling rod.
- Disconnect left- and right-hand drive shafts at flanges.
- Remove front wheels.
- → Separate bolted connection between wheel bearing housing and lower swivel joint.

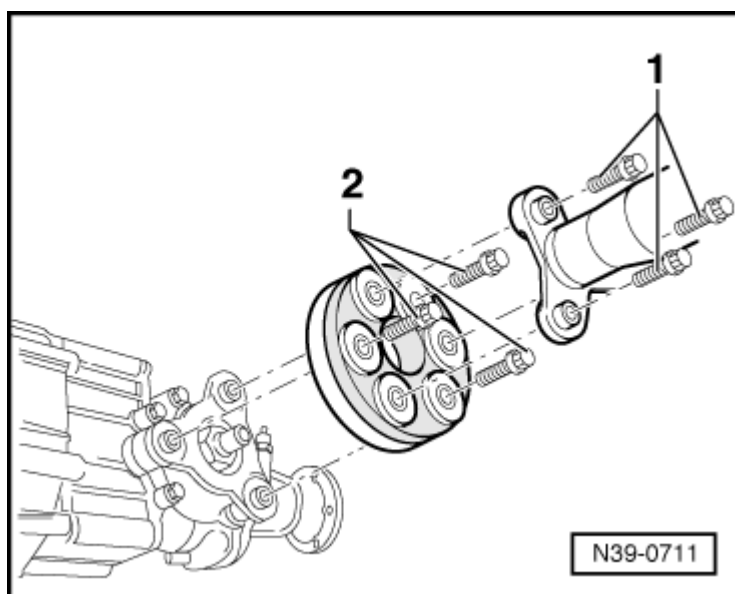
1 - 14 mm AF multi-point socket bit, e.g. Hazet 990

- Remove front exhaust pipe.

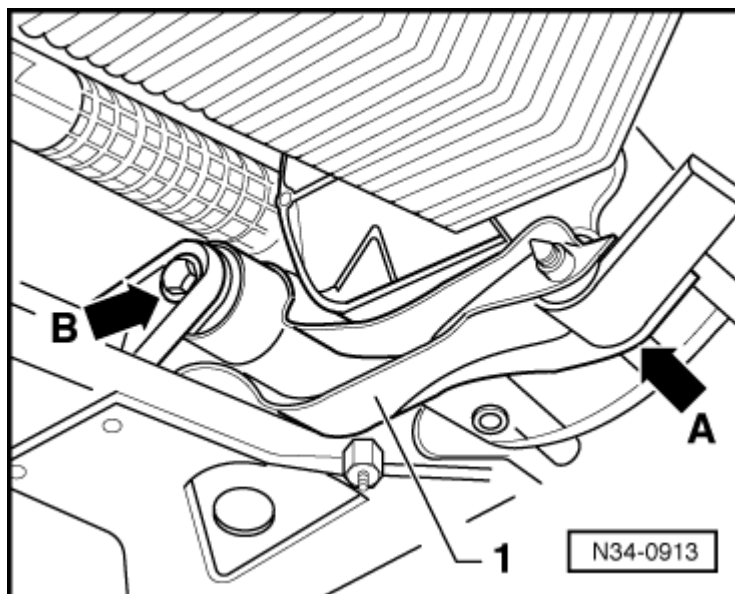
=> [5-Cyl. Diesel engine, Mechanics; Repair group 26; Removing and installing parts of exhaust system](#)



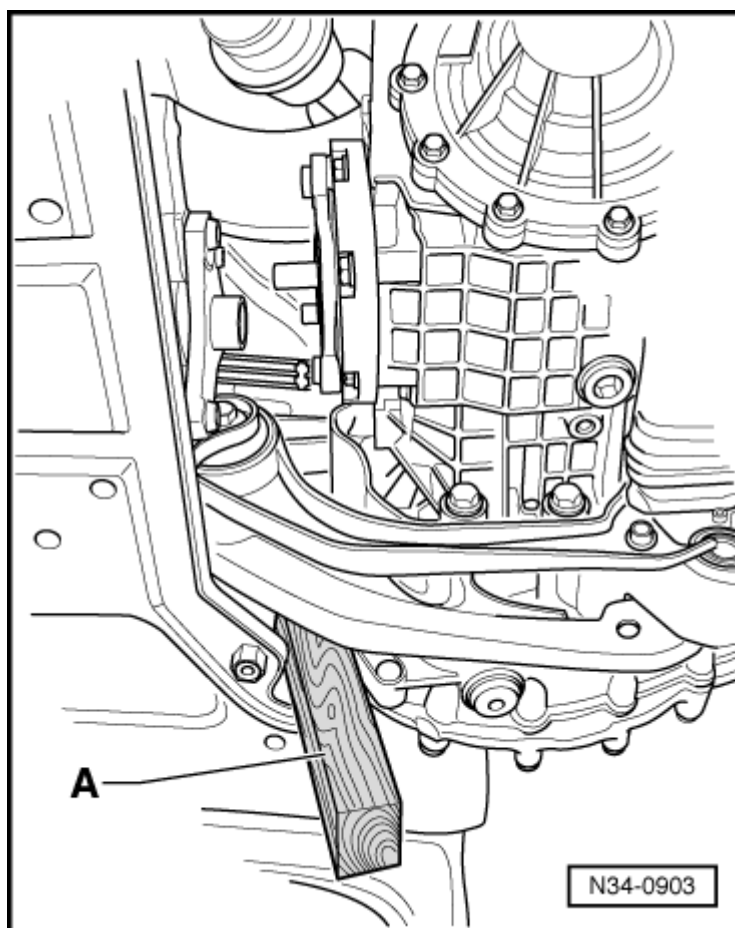
- Mark position of propshaft and flexible coupling to one another and to bevel box flange.
- → Remove bolts -1- between front propshaft and flexible coupling.



- Pull connector off speedometer sender.
- → Remove pendulum support -1-; to do this, remove bolts -arrow A- and -arrow B-.



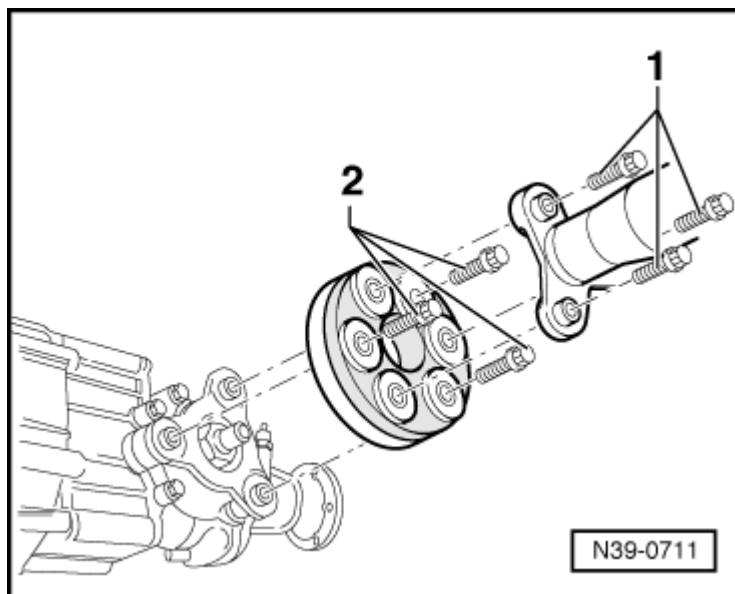
- → Push engine/gearbox assembly forward and wedge a piece of wood -A-, approx. 40 x 40 mm, between subframe and manual gearbox.
- Push shock absorbers completely together.
- Remove left and right drive shafts.



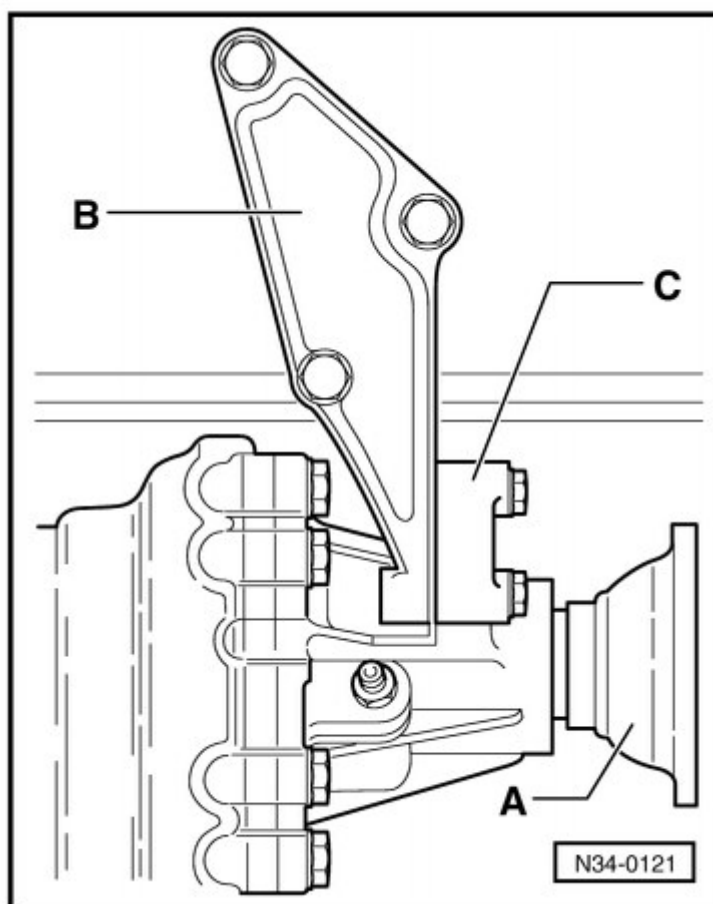
- → Remove bolts -2- and separate flexible joint/heat shield from bevel box output flange.

Note:

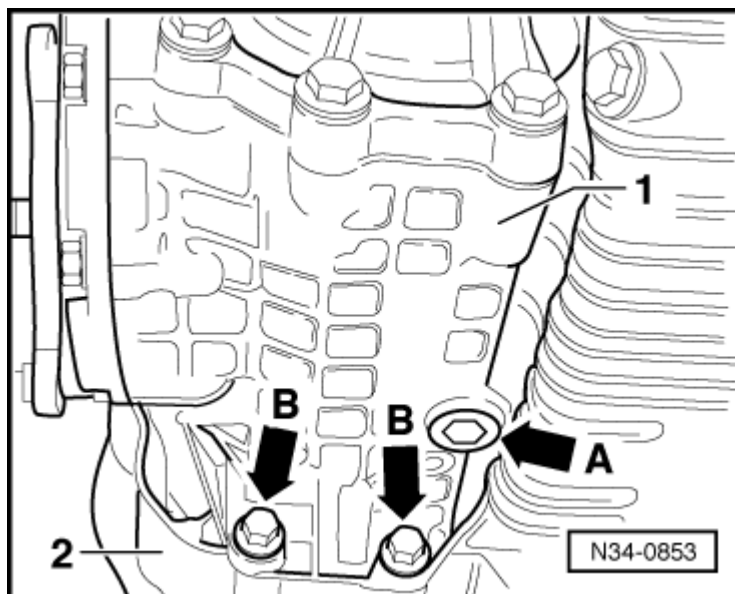
When removing and installing the gearbox do not damage the seal/centralizing sleeve in the propshaft flange.



- → Drive output shaft drive flange -A- out from locking device in differential using a synthetic head hammer.
- The output shaft drive flange can also be pulled out with bolt M 10, as described on => Page [34-121](#), Fig. N34-0239.
- Remove gearbox carrier -B- from engine and bevel box -C-.



- → Remove the four bevel box/gearbox connecting bolts (arrows B, two further bolts hidden).
- Press bevel box -1- off gearbox -2- (direction of arrow).
- Guide bevel box out between subframe and sump, when doing this ensure that the drive flange/output shaft cannot fall out.

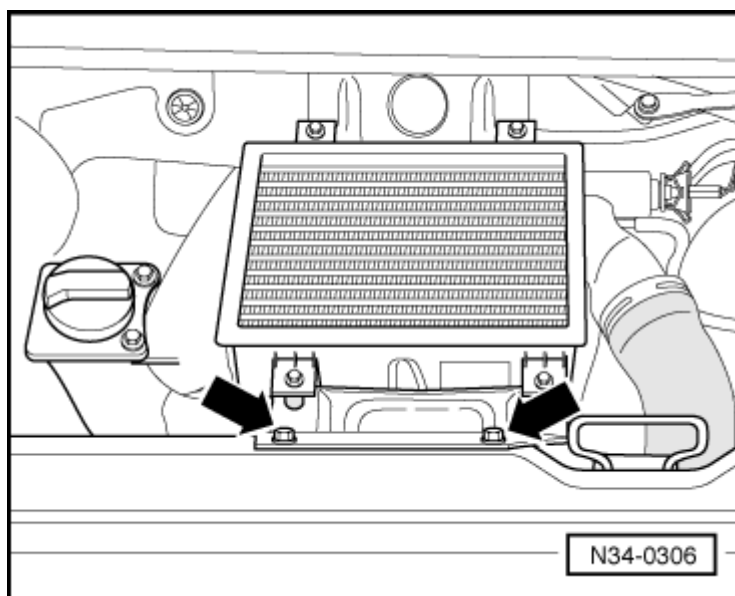


- → Remove charge air cooler from lock carrier (arrows) if fitted.
- Remove earth strap from gearbox and mounting bracket.
- Remove all electrical connections from gearbox and starter motor.

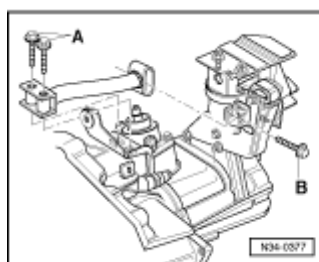
[=> Electrical system; Repair group 27; Starter motor; Removing and installing starter motor](#)

- Remove starter.

[=> Electrical system; Repair group 27; Starter motor; Removing and installing starter motor](#)



- → Remove transverse support after removing bolts on selector mounting bracket -A- and bolt on left-hand gearbox support -B-.

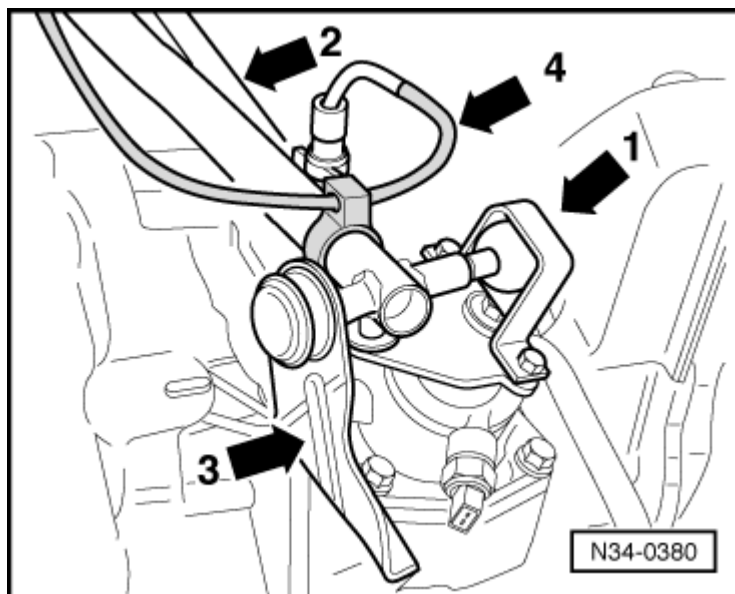


→ Remove selector mechanism from gearbox as follows:

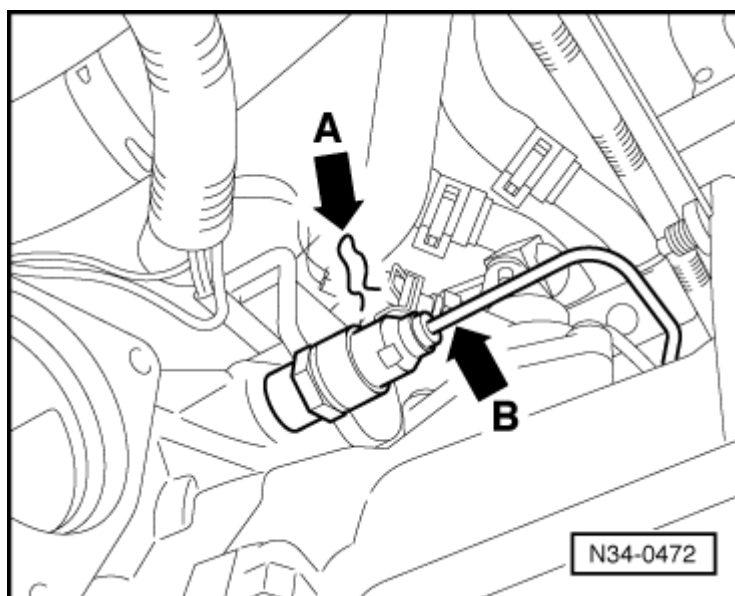
- Pull connector off reversing light switch.
- Remove swivel head (arrow 1).

The rear bolt is accessible from wheel housing.

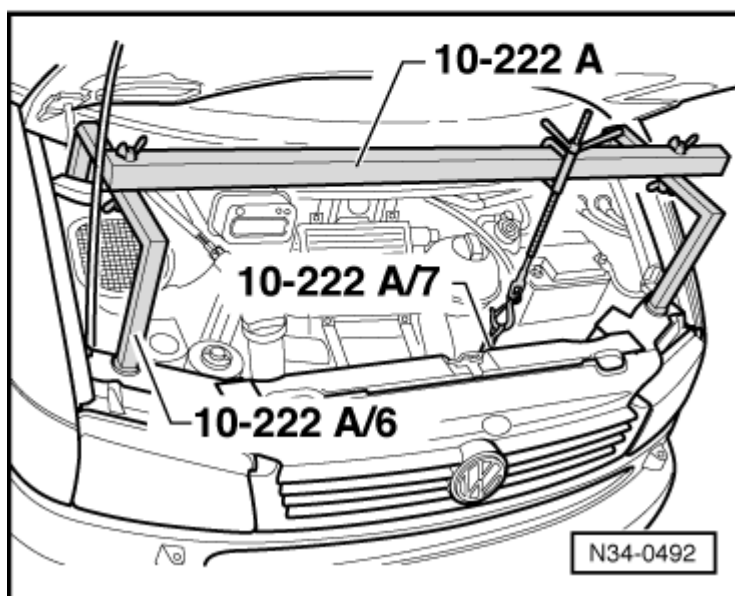
- Lever front selector rod off gearbox selector lever (arrow 2).
- Unbolt mounting bracket with gate rod (arrow 3).
- Unclip reverse gear lock cable (arrow 4) from gearbox, if part of original equipment.
- Tie-up selector and gate rods.
- Clamp off brake fluid reservoir hose to master cylinder with hose clamp 3094.



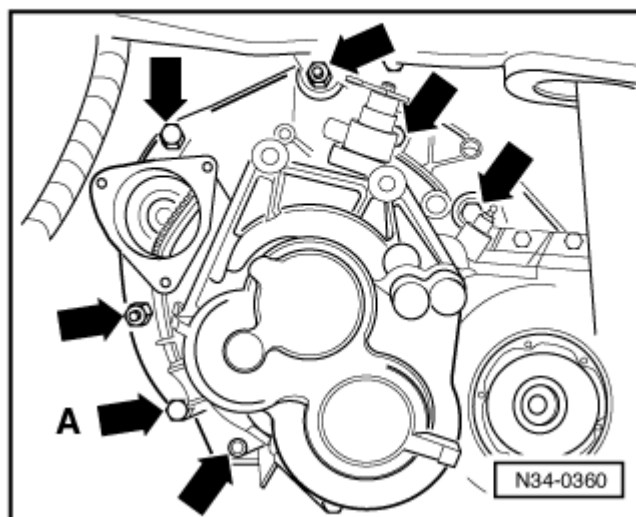
- → Lever clip (arrow -A-) for hose/metal pipe out from slave cylinder, pull pipe (arrow -B-) out and seal with plug.
- Remove auxiliary heater end pipe, if fitted.



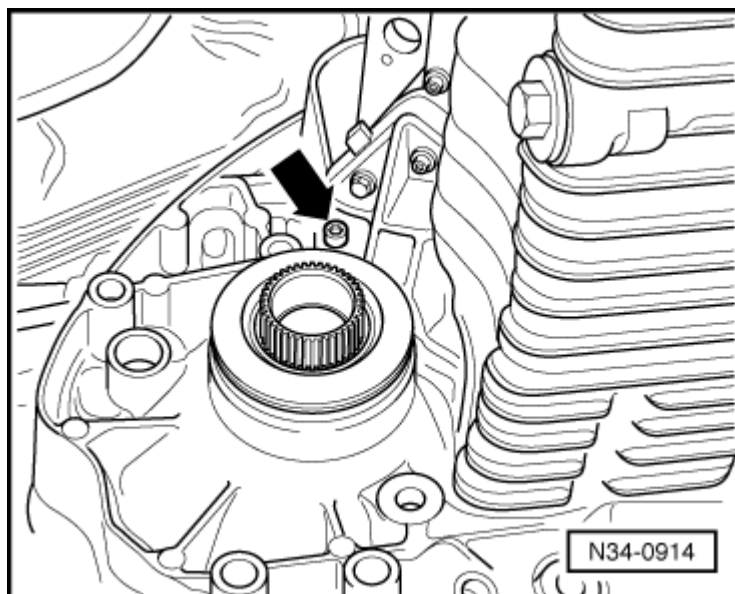
- → Fit support device 10-222A in conjunction with hooks 10-222 A/6.
- Hook additional hook 10-222 A/7 in bracket on engine.
- Pretension engine/gearbox assembly on the spindles.



- → Remove engine/gearbox connecting bolts (arrows) except for bolt (arrow a), also remove flywheel small cover plate.



- → Remove engine/gearbox bolt (arrow).



- → Support gearbox, left, with gearbox jack V.A.G 1383 A.

A - Trolley jack insert

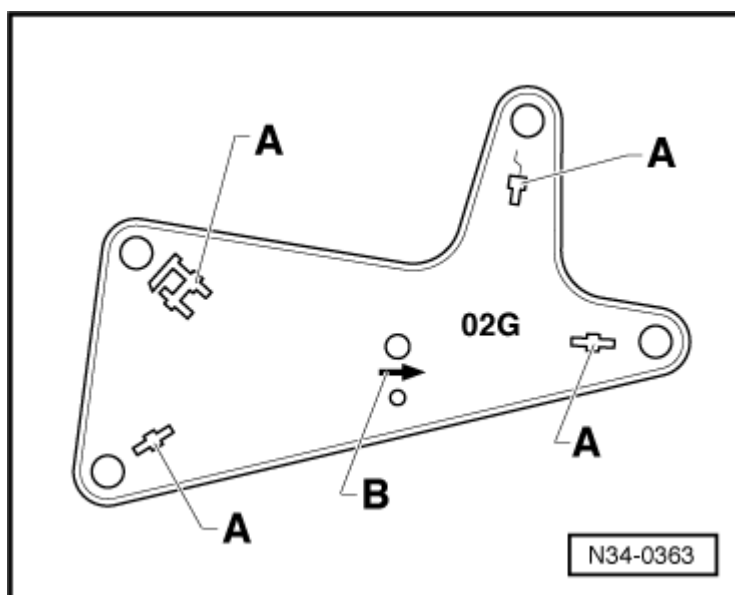
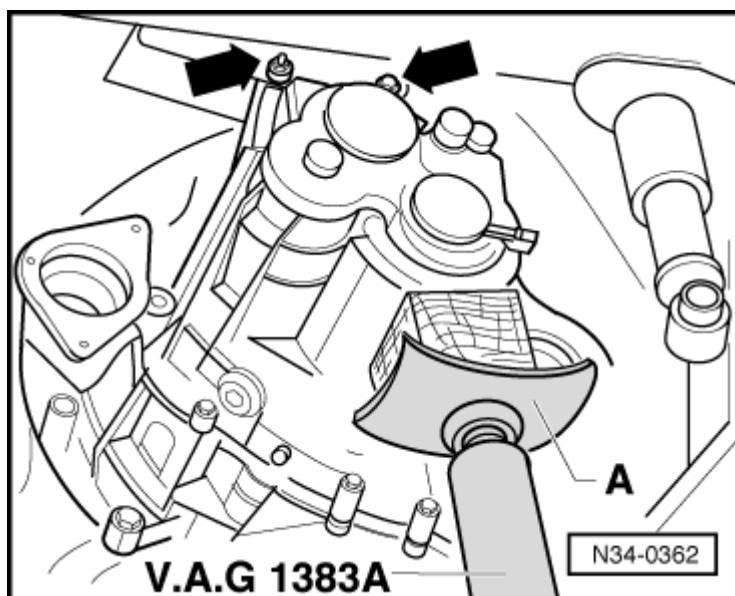
- Unbolt left-hand gearbox support (arrows) on gearbox.
- Carefully lower gearbox.

The gearbox will swing forwards when lowering.

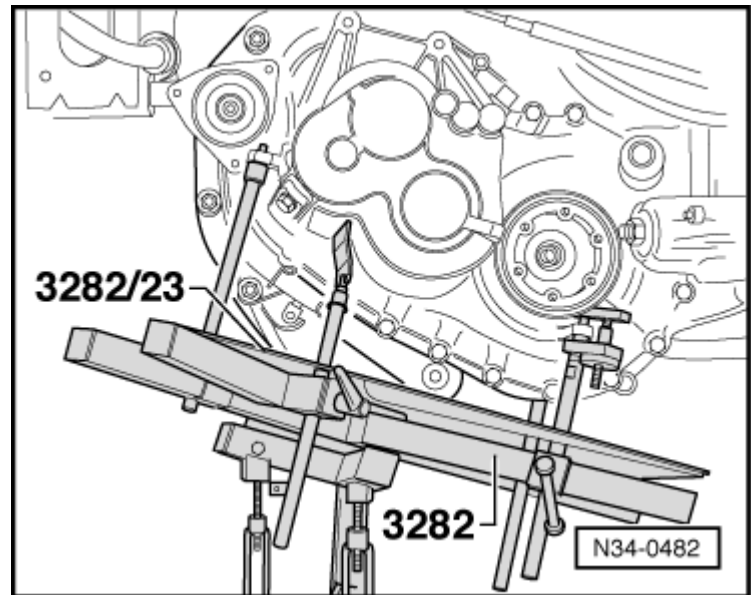
- Assemble gearbox jack V.A.G 1383A with gearbox support 3282, adjustment plate 3282/23 for "02G" gearbox and support elements as follows:

- Place adjustment plate 3282/23 on gearbox support 3282. (Adjustment plate only fits in one position).

- Align arms of gearbox support according to holes in adjustment plate.
- → Bolt on support elements -A-, as illustrated, on adjustment plate.

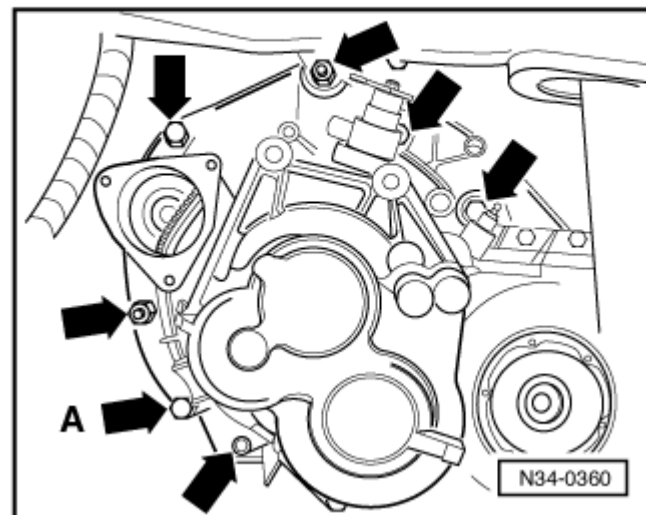


- → Place gearbox jack with gearbox support under vehicle, arrow symbol -B-(=>Illustration N34-0363 on previous illustration) on adjustment plate points to front of vehicle.
- Align adjustment plate parallel to gearbox and lock safety supports on gearbox.



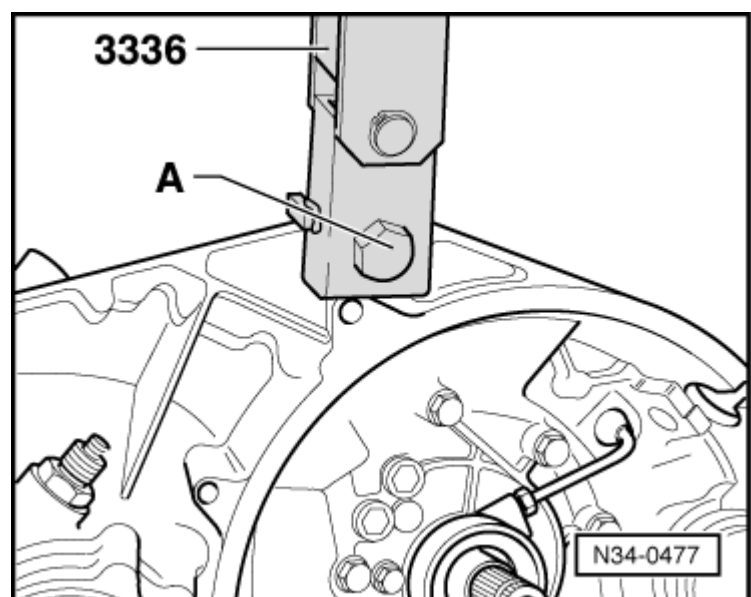
- → Remove engine/gearbox securing bolts (arrow A).
- Press gearbox off engine and remove flywheel cover plate.
- Carefully lower gearbox and swing out.
- Constantly correct the gearbox position via the gearbox jack spindles.

Transporting the gearbox



Special tool 3336 may be used in conjunction with bolt -A- M10 x 120 and nut M10 to transport the gearbox without bevel box and also when setting up gearbox mounting 3282.

- → Bolt gearbox lifting device 3336 to clutch housing.



- → Set support beam on sliding piece with locking pin (arrow).

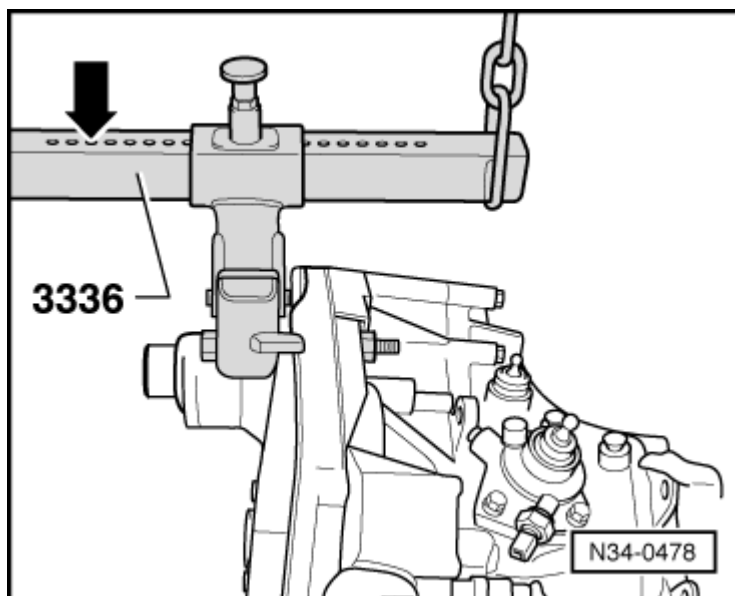
No. of holes visible = 7

- Take gearbox out with workshop crane and gearbox lifting device 3336.

Installing

- Clean input shaft splines and lightly grease with G000 100 grease.

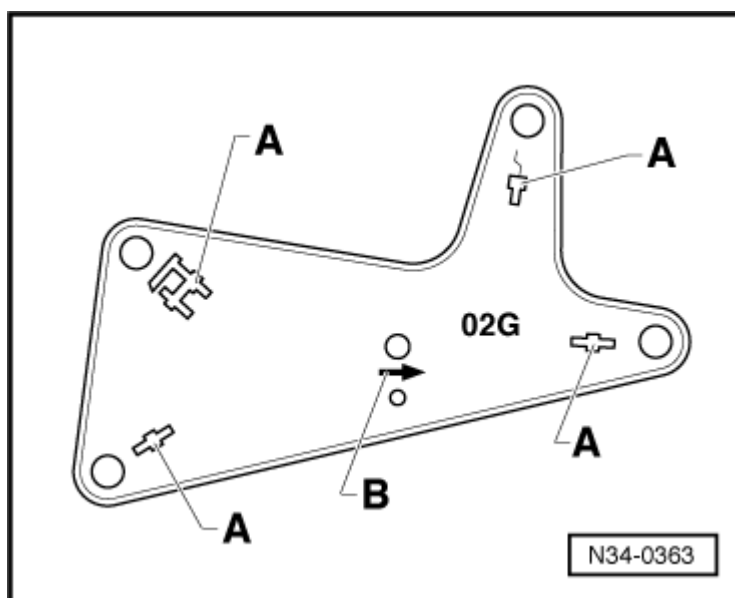
The clutch plate must be able to slide lightly to and fro on the input shaft.



- Check whether dowel sleeves for aligning engine/gearbox are fitted in cylinder block, install if necessary.
- When replacing the gearbox, transfer the gear selector lever to the new assembly gearbox and separate the bevel box from gearbox.
- Assemble gearbox jack V.A.G 1383A with gearbox support 3282, adjustment plate 3282/23 for "02G" gearbox and support elements as follows:

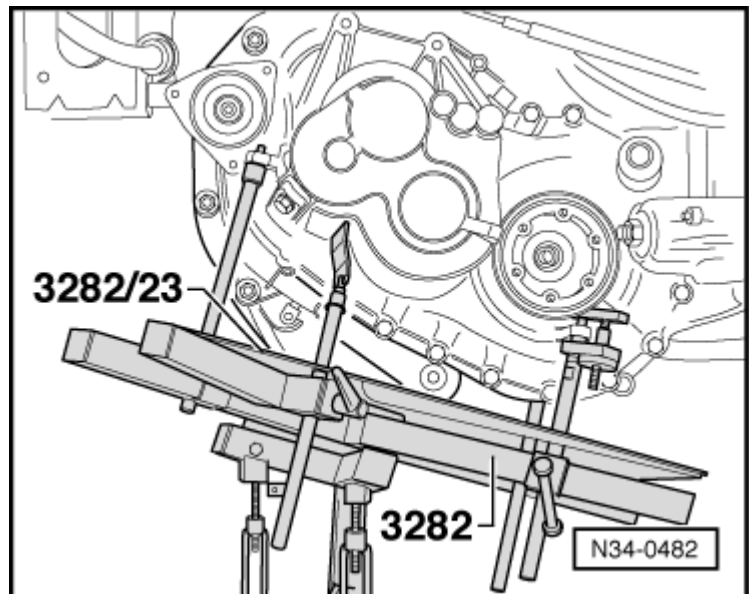
- Place adjustment plate 3282/23 on gearbox support 3282. (Adjustment plate only fits in one position).
- Align arms of gearbox support according to holes in adjustment plate.
- → Bolt on support elements -A-, as illustrated, on adjustment plate.
- Place gearbox on gearbox jack.

- Align adjustment plate and gearbox parallel with one another and lock safety supports on gearbox.

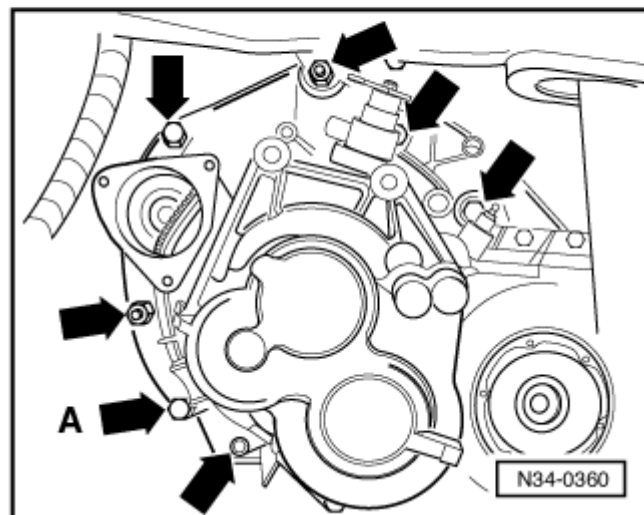


- → Place gearbox jack under vehicle, arrow symbol -B- (=> Illustration N34-0363 on previous page) on adjustment plate points to front of vehicle.
- When installing the gearbox fit flywheel cover plate.

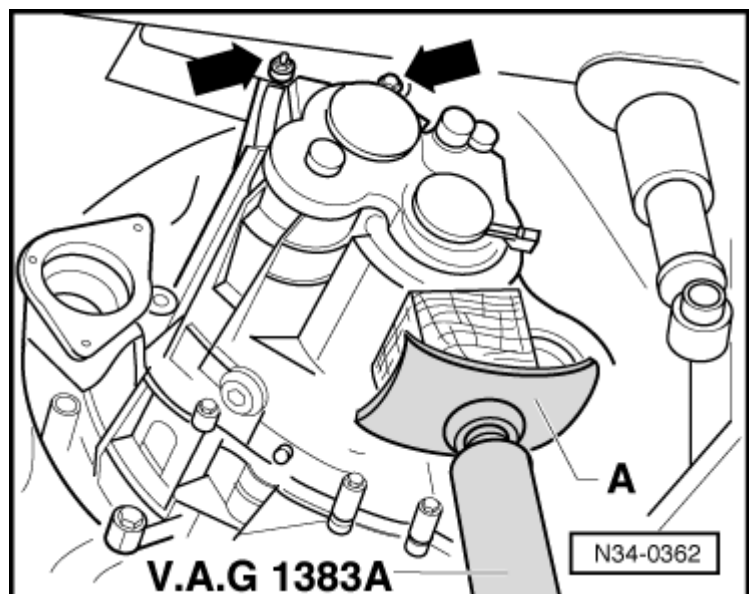
- Align gearbox to engine and install fully.



- → Fit bolts -arrows and arrow A- and tighten to torque settings => table, Page [34-96](#).
- Remove gearbox mounting 3282 from gearbox.
- Carefully raise engine with gearbox. To do this screw spindle upwards on support bar 10-222 A.



- → Fit insert -A- (from a trolley jack) to gearbox jack V.A.G 1383 A.
- Use gearbox support V.A.G 1383 A to support gearbox when installing gearbox mounting bracket.
- Tighten bolts -arrows- to 50 Nm and turn 90° further.
- Install transverse support and tighten bolts on selector mounting bracket -A- and gearbox support -B- to 30 Nm.



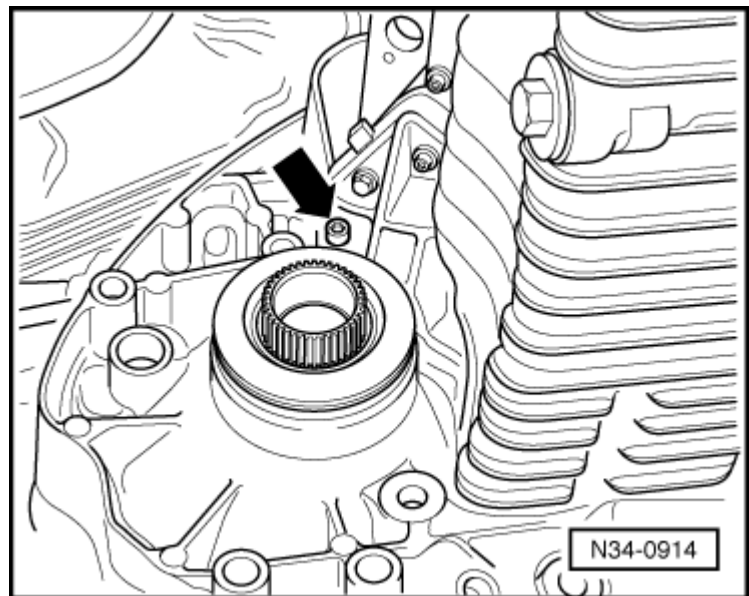
Warning!
Do not remove support until the bolts securing the left-hand gearbox mounting have been tightened to torque setting.

- → Fit engine/gearbox bolt -arrow- and tighten to torque setting => table, Page [34-96](#).
- Install starter motor/wiring.

=> Electrical system; Repair group Gr. 27; Starter motor; Removing and installing starter motor

=>

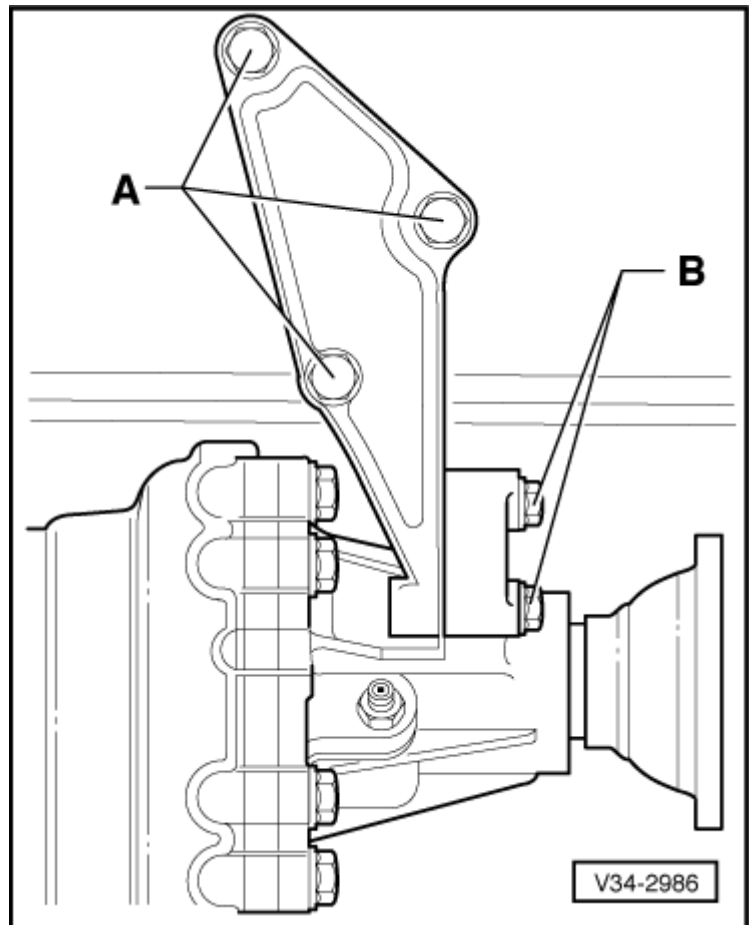
- Install bevel box => Page [34-103](#).



- → Bolt gearbox carrier to engine and bevel box => Page [34-103](#)
- Install drive shafts.

=> [Running gear, axles, steering from January 1996; Repair group 40; III - Removing and installing wheel bearing and drive shaft](#)

- Install flexible coupling, heat shield and front propshaft to gearbox => Page [39-106](#).



- Install pendulum support -1- and tighten bolts -arrow A- and -arrow B-.

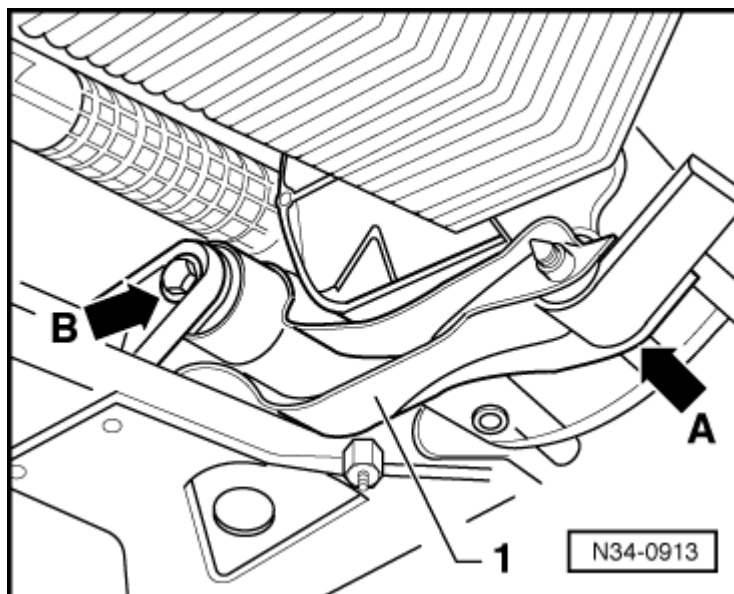
=> [Axles, steering, suspension from January 1996; Repair group 40; I - Removing and installing subframe, anti-roll bar, torsion bar, wishbone and shock absorber](#)

- Fit connector to speedometer

sender.

- Fit front exhaust pipe to catalyst

=> [5-Cyl. Diesel engine, Mechanics; Repair group 26; Removing and installing parts of exhaust system](#)

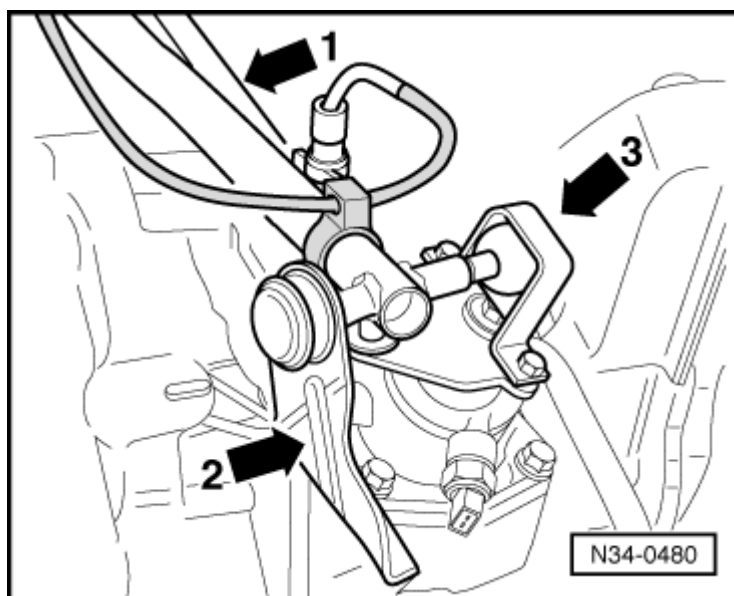


→ Install selector mechanism to gearbox as follows:

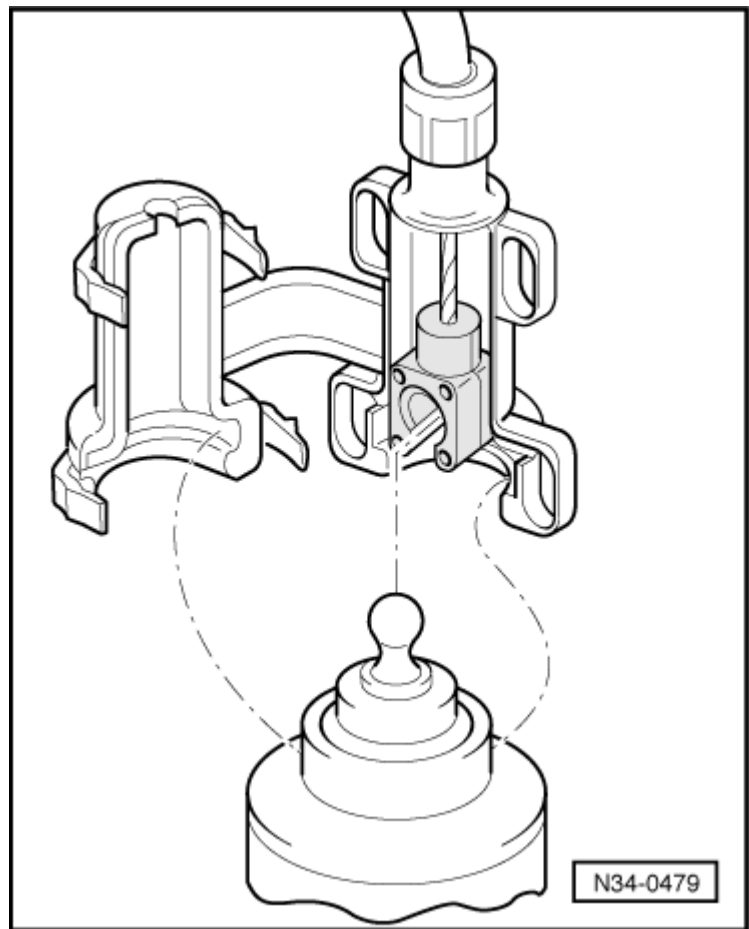
- Press front selector rod on gearbox selector lever (arrow 1).
- Tighten mounting bracket with gate rod to torque setting => Page [34-40](#), item [14](#) (arrow 2).
- Tighten fork head to torque setting => Page [34-39](#), item [8](#) (arrow 3).

The rear bolt is accessible from wheel housing.

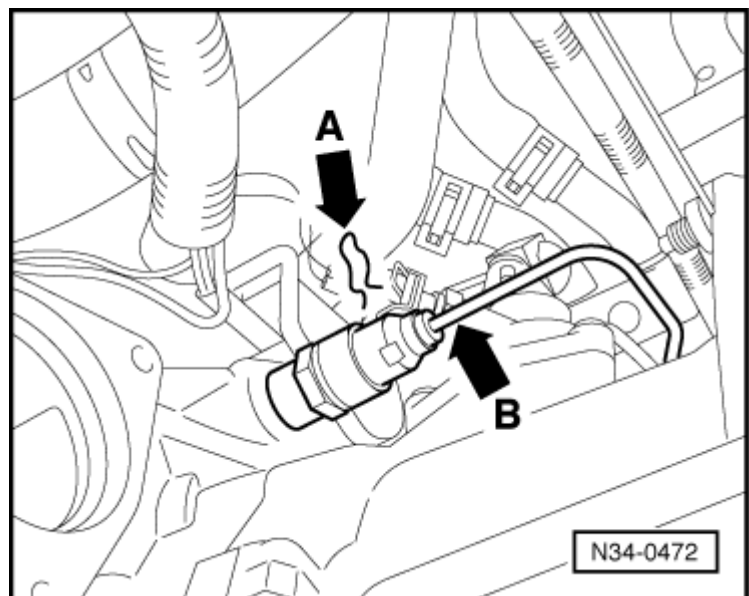
- Fit connector on reversing light switch.



- → Clip reverse gear lock cable onto gearbox, if part of original equipment.



- → Slide pipe/hose line -arrow B- into valve unit and press clamp down - arrow A-.
- Remove hose clamp 3094 from hose from reservoir.
- Bleed clutch system => Page [30-15](#).



- Checking gear oil in gearbox and bevel box =>Page [34-106](#).
- Specifications => Page [00-3](#).
- Adjust gear change mechanism => Page [34-51](#).
- Install auxiliary heater end pipe, if part of original equipment.
- Install noise insulation tray below engine/gearbox.
- Install front wheels.

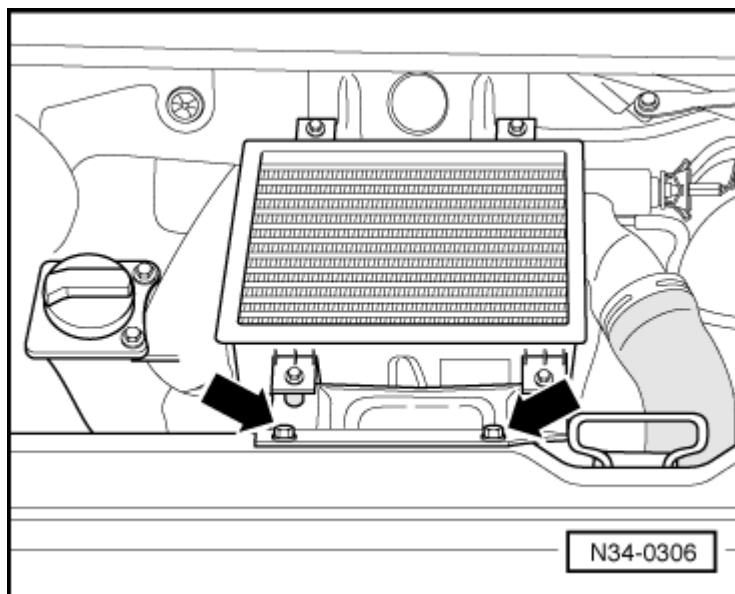
=> [Running gear, axles, steering from January 1996; Repair group 44; Wheel bolt torque settings](#)

- Install earth strap to gearbox and mounting bracket.
- → Install charge air cooler to lock carrier (arrows) if part of original equipment.

- Reconnect earth strap to battery.

Note:

Note radio coding for vehicles with coded radio.



Torque settings

→ Gearbox to 5-cylinder Diesel engine

Item	Bolt	Qty.	Nm
11)	M 12 x 60	2	80
2	M 12 x 60	1	80
3	M 12 x 60	1	80
4	M 12 x 100	1	80
5	M 12 x 130	1	80
6	M 8 x 45	1	25
72)	M 8 x 45	1	25

1) Additionally for flywheel cover plate

2) Tighten from engine side

Items A + B - Fitting sleeves

