



Workshop Manual
Golf Variant 2007 ➤
Golf Variant 2010 ➤
Jetta 2005 ➤
Jetta 2011 ➤

6-speed automatic gearbox 09G

Edition 04.2010





List of Workshop Manual Repair Groups

Repair Group

- 00 - Technical data
- 32 - Torque converter
- 37 - Controls, housing
- 38 - Gears, control
- 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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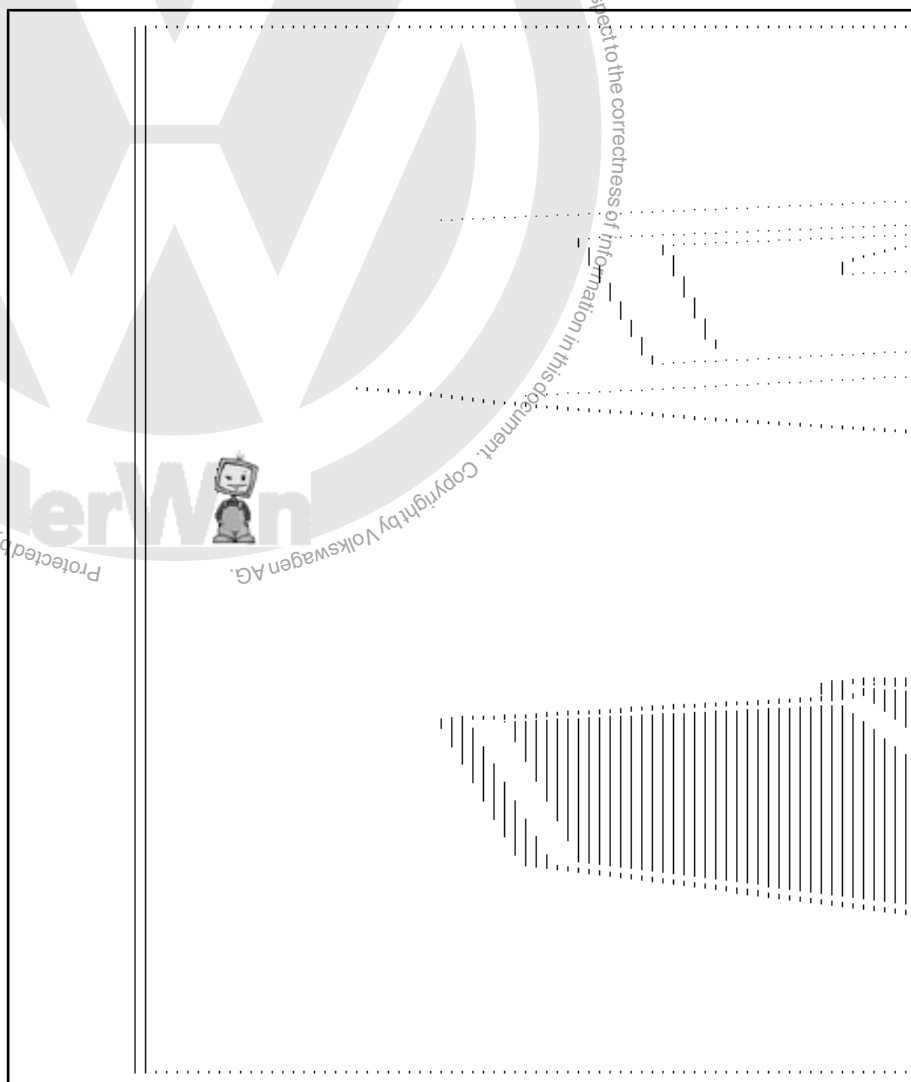
00 – Technical data

1 Suggestions and criticism, general repair notes

1.1 Suggestions and criticism of this workshop manual

This workshop manual was made for you. It should support you and be an aid to you. If you use ⇒ ELSA, you can send us suggestions, "praise and criticism" from anywhere in the world.

- You can do this by clicking the ⇒ Feedback button at the top in the menu bar.



You will not always receive a reply from Volkswagen but your message will always be read. We make great effort to implement your suggestions for the workshop manuals.



1.2 General repair notes

To ensure flawless and successful gearbox repairs, the greatest care and cleanliness as well as the use of good and proper tools are essential. Obviously, the basic rules for safety also apply during repair work.

A number of generally valid instructions applicable for the various repair procedures - which were formerly repeated a number of times at numerous places in the workshop manual - are summarised here. They apply to this workshop manual.

1.3 Gearbox

The "6-speed automatic gearbox 09G" has six hydraulically actuated forward gears. When the torque converter lock-up clutch closes, 2nd, 3rd, 4th, 5th and 6th gears become mechanically driven gears by eliminating torque converter slip.

1.4 Torque converter

The torque converter is equipped with a lock-up clutch. The lock-up clutch locks up depending on load and speed. The 2nd, 3rd, 4th, 5th and 6th gears can be driven mechanically (without slip).

1.5 ATF

The ATF is filled for life. The ATF need not be changed during a service.

Use only ATF which has been ordered as a part from the ⇒ Electronic parts catalogue "ETKA".

The ATF levels in the planetary gearbox and final drive are checked and topped up together.

1.6 Automatic gearbox control unit -J217- with ⇒ fuzzy logic

The gear change point, which is dependent on the driving situation and driving resistance, is determined automatically.

Advantages:

- Gear changes will be fuel-consumption orientated.
- Maximum engine output is always available.
- Individual adaptation of gear change points in all driving situations.
- Gear change points are infinitely variable.

1.7 Control units in vehicle

The installation locations of all vehicle control units and other useful information can also be found in ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

1.8 Information on "09G gearbox"

Design and function of gearbox

- ◆ ⇒ Multimedia training, Automatic gearbox 09G
- ◆ ⇒ Self-study programme No. 291 ; Automatic gearbox 09G

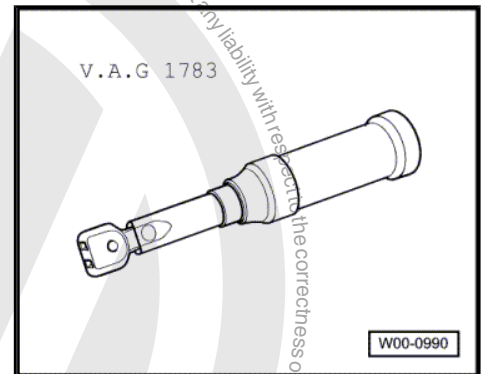
1.9 Tools

A summary of the special tools and workshop equipment used in the workshop manual precedes each repair procedure and can be found in "Special tools/Workshop equipment" binder.



The catalogue is also available on ➤ CD-ROM and can be ordered the usual way from Bertelsmann.

Uncertainty often occurs with smaller bolts having low tightening forces. Torque wrench 2...10 Nm -V.A.G 1783- can be used with these bolts.

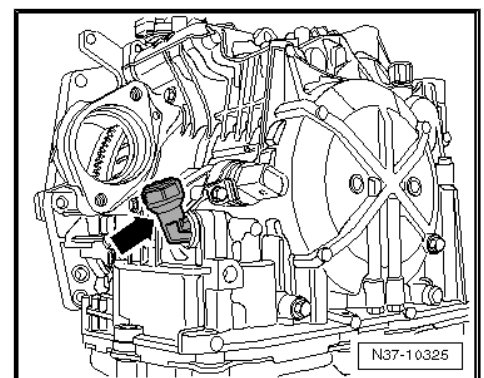


1.10 Gearbox

- ◆ 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.
- ◆ Place removed parts on a clean surface. Cover parts to prevent soiling. Use plastic sheeting and paper. Use lint-free cloths only!
- ◆ Install only clean parts; do not remove new parts from packaging until immediately before installing.
- ◆ If repair work cannot be performed immediately, carefully cover or seal components.
- ◆ With gearbox removed, secure torque converter against falling out.

Gearboxes with and without filler pipe

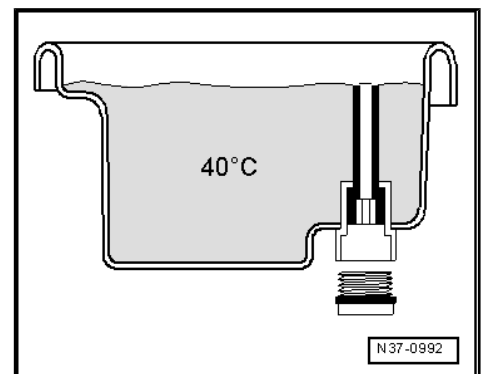
Here is an "example" with a filler pipe as it is installed in "older" gearboxes. This pipe has been discontinued.



This "old" filler opening with the red cap is not needed because ATF can be drained or filled as required through the bottom hole. The "height" of this tube determines the level of the ATF.

The tube must be removed to drain the fluid.

- ◆ After installation, check the ATF level and top up ➤ [page 77](#).
- ◆ Capacities ➤ [page 7](#).





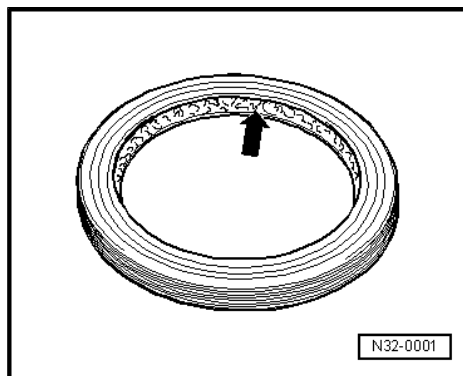
1.11 Gaskets, seals and oil

- ◆ Always renew O-rings, seals and gaskets.
- ◆ Before installing a radial oil seal, coat sealing lips and area between them with sealing grease -G 052 128- .
- ◆ Open side of oil seal faces oil.
- ◆ After installing, check ATF level.



Caution

Be careful when working with oil. Dispose of drained oil according to regulations. Remember: one drop of oil will contaminate 1,000 litres of water.



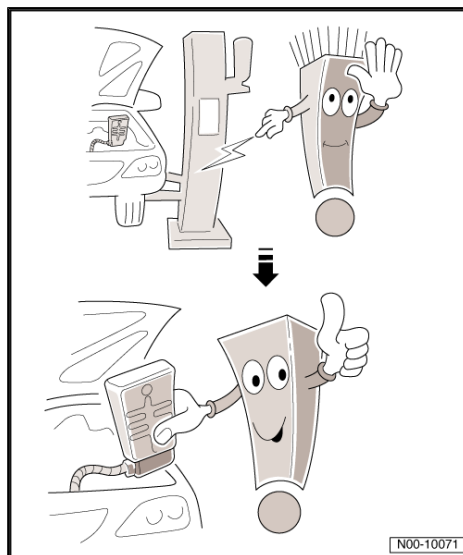
1.12 Nuts and bolts

- ◆ Loosen and tighten securing bolts and securing nut for covers and housings diagonally.
- ◆ Torque settings are specified for uncoiled bolts and nuts.
- ◆ Threads of bolts secured with locking fluid must be cleaned with a wire brush. Then insert bolts with locking fluid AMV 185 100 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.
- ◆ Always renew self-locking bolts and nuts.

1.13 Electrical components

You have probably at some time received an electrical shock when touching a metal object. This is due to the electrostatic charge of the human body. This charge can disturb the function of electrical components of the gearbox and of the selector mechanism.

- Before beginning work on electrical components, touch an earthed object, for example a water pipe or lifting platform. Do not touch connectors or “open” electronic components directly.



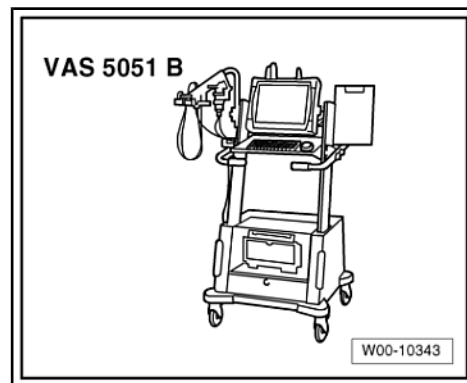


1.14 Guided fault finding, vehicle self-diagnosis and testing

Before making repairs to the automatic gearbox, determine the cause of the fault as precisely as possible with the aid of "guided fault finding".

Guided fault finding is carried out using the vehicle diagnosis, testing and information system -VAS 5051B- ➔ [page 11](#) .

The guided functions will guide you to the ATF temperature in the shortest way possible ➔ [page 11](#) .





2 Gearbox identification

"6-speed automatic gearbox 09G" is fitted in Jetta 2005 ▶, Bora 2006 ▶, Golf Variant 2007 ▶, Jetta Wagon 2008 ▶ and Jetta 2011.

The allocation of the gearbox to the vehicles can be found here:

Codes, gearbox allocation, ratios ⇒ [page 8](#) .

2.1 Gearbox codes

Code letters -arrow-

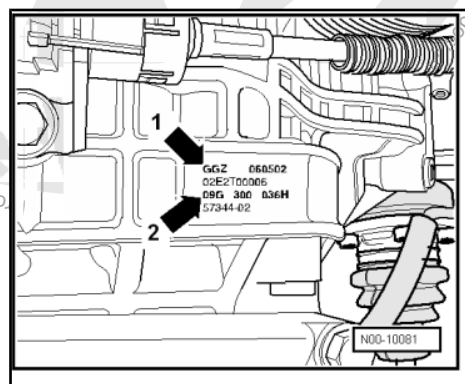
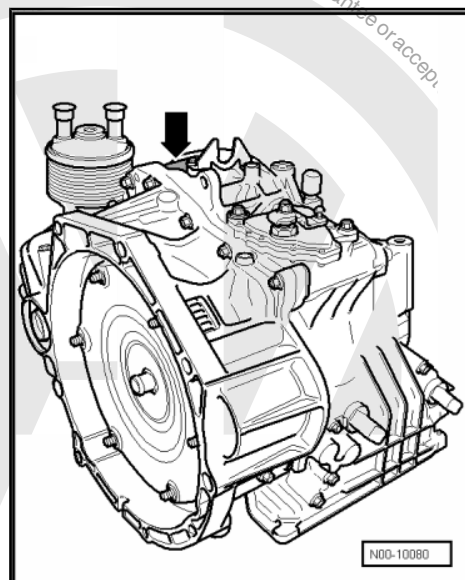
Code letters -arrow 1-

"6-speed automatic gearbox 09G" -arrow 2-

Example:

| GGZ | 08 | 05 | 02 |
|------------------------|-----|-------|-------------------------------|
| | | | |
| Identification code | Day | Month | Year -2002- of manufacture |

The gearbox code also appears on the vehicle identification plates.





3 Capacities

3.1 Planetary gearbox and final drive

| Capacities | "6-speed automatic gearbox 09G" |
|-----------------|--|
| Initial filling | approx. 7.0 l |
| Change | Filled for life no change |
| Lubricant | ATF is available as a part. Therefore, the part number for it can be found in the ⇒ Electronic parts catalogue "ETKA". |





4 Codes, gearbox allocation, ratios ➤

If Genuine parts are required for a repair, always refer to the gearbox code.

| "Automatic gearbox 09G" | | | | | |
|-------------------------|---------------------|---------------|----------------------|----------------------------|----------------|
| Identification code | "HFS", "HTN", "JTY" | "MAM" | "HFT", "HTP", "JUH" | "HDN", "HFU", "HRM", "JUJ" | "KGL" |
| Engine | 1.6 l - 75 kW | 2.0 l - 85 kW | 2.0 l - 110 kW (FSI) | 2.5 l - 110 kW | 2.5 l - 125 kW |



32 – Torque converter

1 Torque converter

1.1 Identification of torque converter

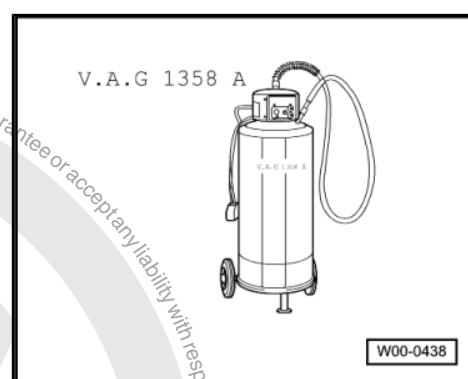
There are various torque converters. They are identified by codes.

Torque converter/gearbox allocation ⇒ Replacement parts catalogue ⇒ ETKA

1.2 Draining torque converter

Special tools and workshop equipment required

- ◆ -V.A.G 1358 A- Oil extraction unit

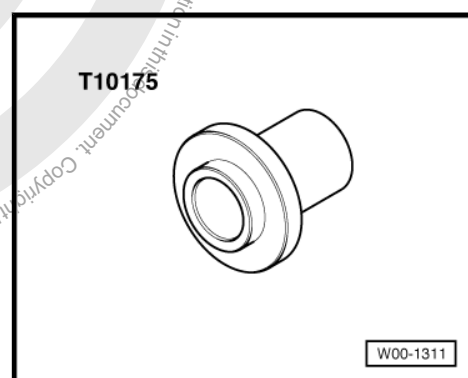


- ◆ -V.A.G 1358 A/1- Oil extraction probe
- Extract ATF from torque converter using -V.A.G 1358 A- and probe -V.A.G 1358 A/1- .

1.3 Removing and installing torque converter oil seal

Special tools and workshop equipment required

- ◆ Thrust piece -T10175-





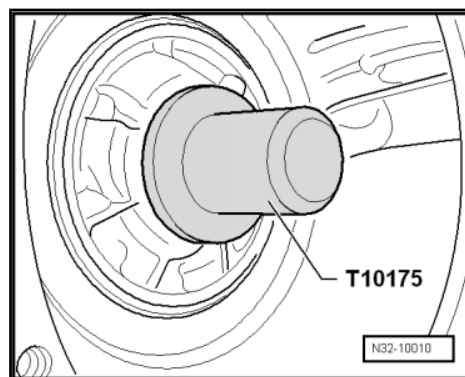
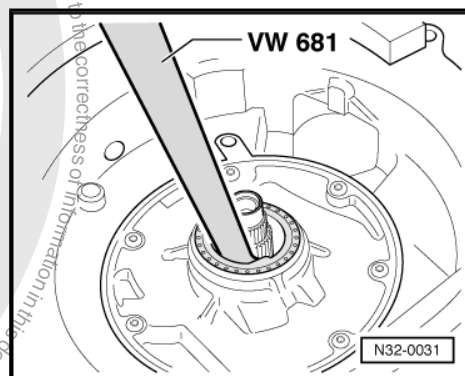
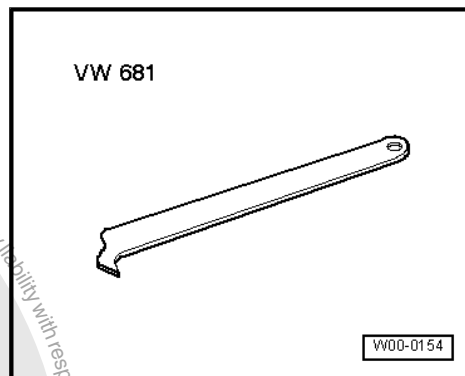
◆ Oil seal extractor lever -VW 681-

Removing

Pry out seal with lever -VW 681- .

Installing

- Drive in seal flush thrust piece -T10175-



1.4 Installing torque converter

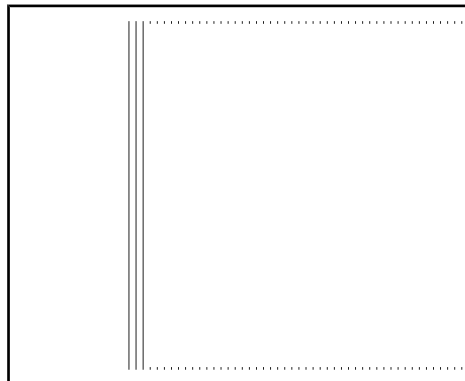
- Carefully push on torque converter hub via oil seal to first stop.
- Turn torque converter towards gearbox using light pressure until notch in hub -arrow- engages in follower of pump gear and torque converter can be felt to slip in place.

The torque converter is properly inserted when it can easily be turned by hand and is seated equally deep in gearbox around the entire circumference.



Caution

If engine and gearbox are brought together with force because the torque converter is improperly fitted, both gearbox and torque converter will be damaged.





37 – Controls, housing

1 Connecting “tester”

Volkswagen offers various devices such as

- ◆ Vehicle diagnosis, testing and information system -VAS 5051-
- ◆ Vehicle diagnosis, testing and information system -VAS 5051B-
- ◆ Tester -VAS 5051/11A-
- ◆ Vehicle diagnosis and service information system -VAS 5052-
- ◆ Diagnostic system -VAS 5053-

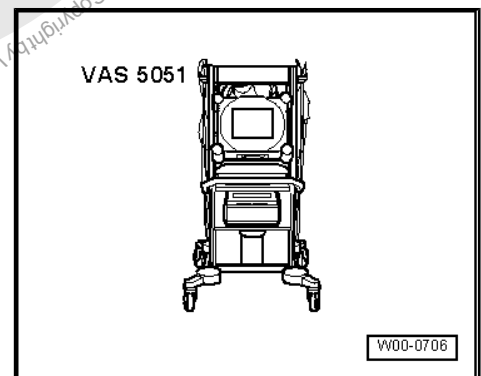
The operation of these “devices” is described in the respective user's manuals.

The following description refers to the vehicle diagnosis, testing and information system -VAS 5051- ➔ [page 11](#) .

1.1 Connecting vehicle diagnosis, testing and information system -VAS 5051-

Special tools and workshop equipment required

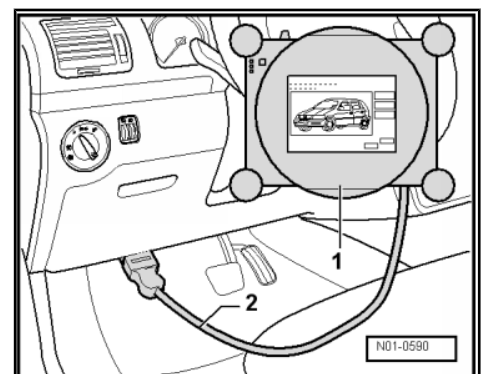
- ◆ Vehicle diagnosis, testing and information system -VAS 5051-



WARNING

- ◆ *During a road test, always secure testing and measuring equipment on the back seat.*
- ◆ *These devices may be operated only by a passenger during a test drive.*

- Push connector of diagnosis cable -VAS 5051/1- -2- or -VAS 5051/3- onto diagnosis connection.





- Switch on “tester” -arrow-.

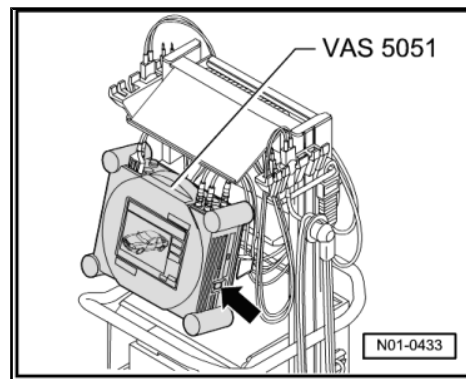
The “tester” is ready for use when it is possible to choose between the buttons **Guided functions** and **Guided fault finding** on the “right” of the screen.

Depending on equipment and version of the tester, other functions may be “displayed” such as:

- ◆ **ElsaWin**
- ◆ **Testing**
- ◆ **Self-diagnosis**

The “tester” is now ready for use.

- Switch on ignition.
- Touch a button on the screen to start the desired function.





2 Electrical and electronic components and their locations

1 - Control unit for automatic gearbox -J217-

- ☐ The control unit transmits and receives data from the ⇒ data bus.
- ☐ Installation location in Jetta 2005 ▶ , Bora 2006 ▶ , Golf Variant 2007 ▶ , Jetta Wagon 2008 ▶ ⇒ [page 14](#)
- ☐ Installation location in Jetta 2011 ▶ with 2.0 l - 85 kW engine ⇒ [page 15](#).
- ☐ Installation location in Jetta 2011 ▶ with 2.5 l - 125 kW engine ⇒ [page 15](#).
- ☐ Can be checked using "guided fault finding" of -VAS 5051-

2 - Engine control unit

- ☐ The control unit transmits and receives data from the data bus
- ☐ Location and removing and installing ⇒ Rep. Gr. 23 for the respective engine code letter ⇒ Rep. Gr. 24 for the respective engine code letter

3 - Multifunction switch -F125-

- ☐ Location ⇒ [page 15](#)
- ☐ Can be checked using "guided fault finding" of -VAS 5051-
- ☐ Removing, installing and adjusting ⇒ [page 18](#).

4 - Valve body

- ☐ Location ⇒ [page 15](#)
- ☐ Components can be checked using "guided fault finding" of -VAS 5051-
- ☐ Allocation ⇒ Electronic parts catalogue "ETKA"

5 - Wiring harness, 8-pin

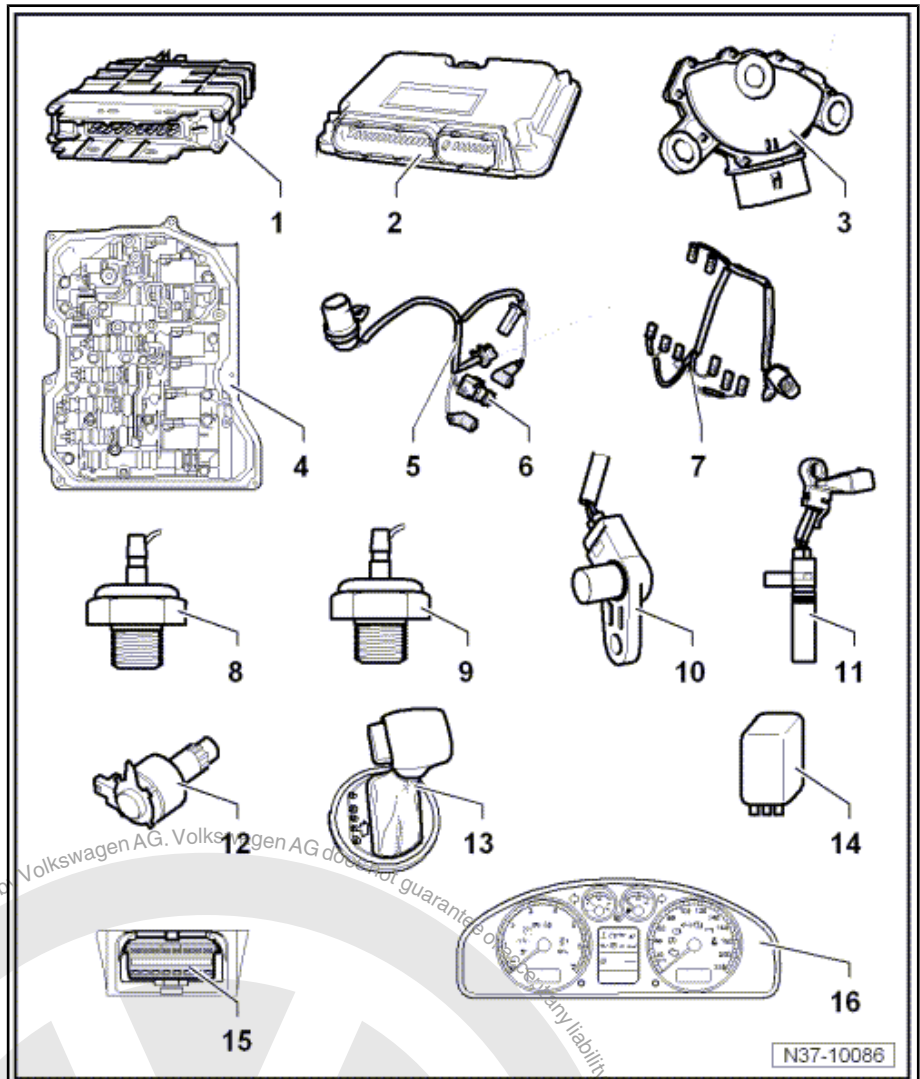
- ☐ For senders
- ☐ With gearbox oil temperature sender -G93-
- ☐ Location ⇒ [page 16](#)
- ☐ Removing and installing ⇒ [page 105](#)
- ☐ Allocation ⇒ Electronic parts catalogue "ETKA"

6 - Gearbox oil temperature sender -G93-

- ☐ Location ⇒ [page 16](#)
- ☐ Can be checked using "guided fault finding" of -VAS 5051-

7 - Wiring harness, 14-pin

- ☐ For solenoid valves





- ☐ Location ➤ [page 16](#)
- ☐ Removing and installing ➤ [page 103](#)
- ☐ Allocation ➤ Electronic parts catalogue "ETKA"

8 - Hydraulic pressure sender 1 for automatic gearbox -G193-

- ☐ Not installed in all gearboxes
- ☐ Allocation ➤ Electronic parts catalogue "ETKA"
- ☐ Location ➤ [page 16](#)

9 - Hydraulic pressure sender 2 for automatic gearbox -G194-

- ☐ Not installed in all gearboxes
- ☐ Allocation ➤ Electronic parts catalogue "ETKA"
- ☐ Location ➤ [page 16](#)

10 - Gearbox input speed sender -G182-

- ☐ Location ➤ [page 17](#)
- ☐ Removing and installing ➤ [page 106](#)
- ☐ Can be checked using "guided fault finding" of -VAS 5051-

11 - Gearbox output speed sender -G195-

- ☐ Location ➤ [page 17](#)
- ☐ Removing and installing ➤ [page 107](#)
- ☐ Can be checked using "guided fault finding" of -VAS 5051-

12 - Selector lever lock solenoid -N110-

- ☐ Location: selector lever lock solenoid is located in the selector mechanism.
- ☐ Can be checked using "guided fault finding" of -VAS 5051-

13 - Tiptronic switch -F189-

- ☐ Location ➤ [page 17](#)
- ☐ Can be checked using "guided fault finding" of -VAS 5051-

14 - Terminal 50 voltage supply relay -J682-

- ☐ In E box in engine compartment ➤ Current flow diagrams, Electrical fault finding and Fitting locations.

15 - Diagnostic connection

- ☐ Location ➤ [page 17](#)

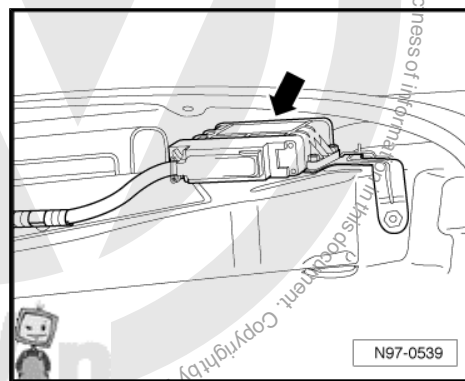
16 - Selector lever position display -Y6-

- ☐ Location ➤ [page 17](#)
- ☐ Removing and installing ➤ Electrical system; Rep. Gr. 90 ; Gauges, instruments; Dash panel insert .

Automatic gearbox control unit -J217- -arrow- in Jetta 2005 ➤ , Bora 2006 ➤ , Golf Variant 2007 ➤ , Jetta Wagon 2008 ➤

Location: control unit is located in front left wheel housing.

- Wheel housing liner must be removed for removing and installing.

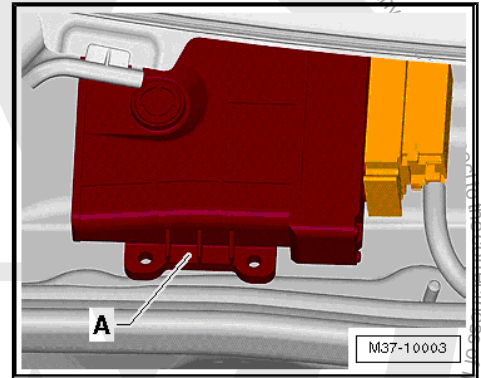




Automatic gearbox control unit -J217- -A- in Jetta 2011 > with 2.0 I - 85 kW engine

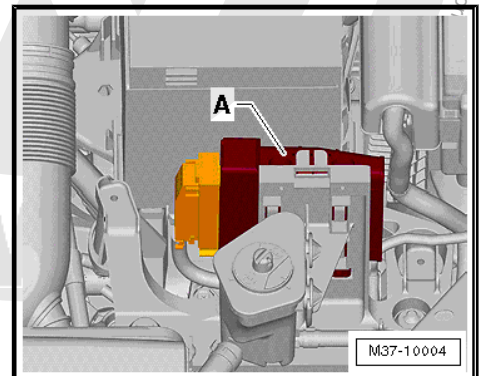
Location: control unit is located in plenum chamber on right.

- Plenum chamber cover must be removed for removal and installation ⇒ Rep. Gr. 50 ; Plenum chamber cover; Removing and installing plenum chamber cover .



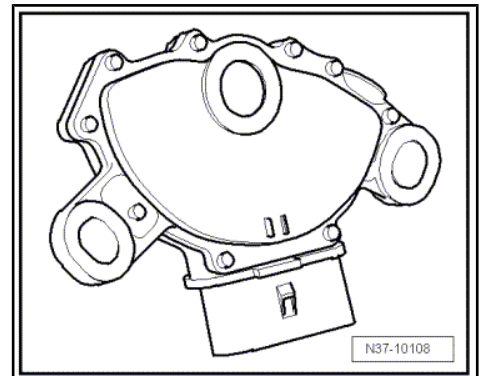
Automatic gearbox control unit -J217- -A- in Jetta 2011 > with 2.5 I - 125 kW engine

Location: control unit is located in front left of engine compartment next to battery.



Multifunction switch -F125-

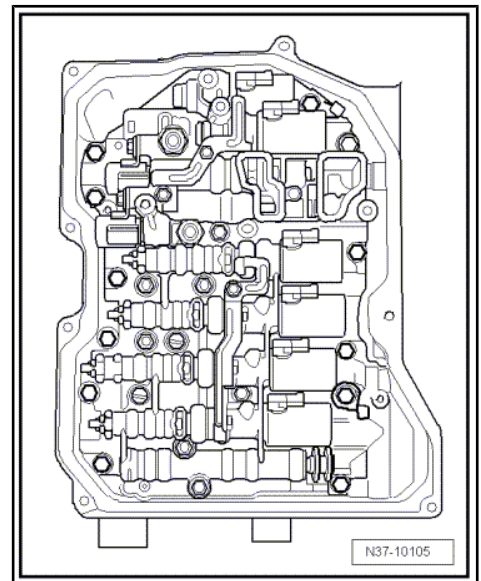
Location: multifunction switch is located on top of the gearbox.



Valve body

Location: valve body is bolted to underside of gearbox housing and covered by pan.

Solenoid valves -N88- , -N89- , -N90- , -N91- , -N92- , -N93- , -N282- and -N283- are attached to valve body.

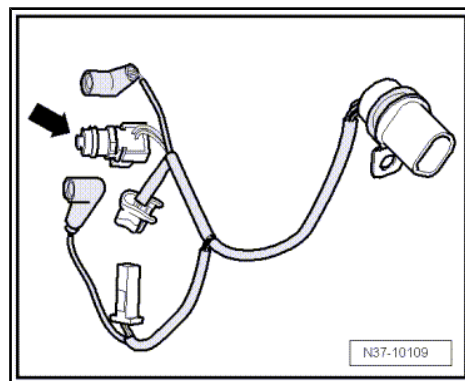




Wiring harness, 8-pin

- ◆ Wiring harness for senders
- ◆ With integrated gearbox oil temperature sender -G93-
-arrow-

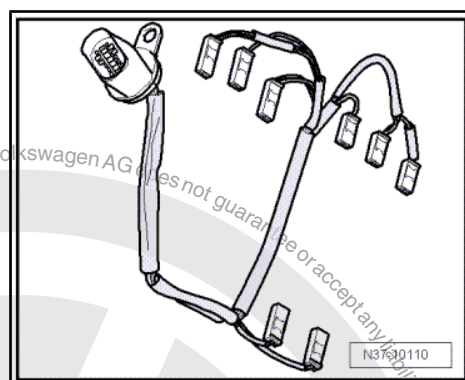
Location: wiring harness is attached to valve body in gearbox.



Wiring harness, 14-pin

- ◆ Wiring harness for solenoid valves.

Location: wiring harness is attached to valve body in gearbox.

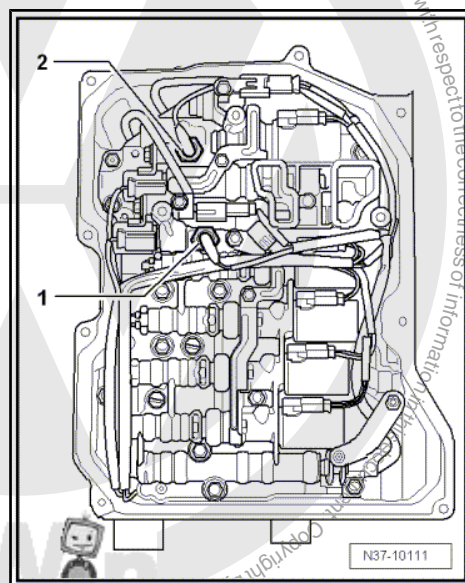


Hydraulic pressure sender 1 for automatic gearbox -G193- and hydraulic pressure sender 2 for automatic gearbox -G194-

This sender is not installed in all gearboxes.

Location:

Automatic gearbox hydraulic pressure sender 1 -G193- -1- and automatic gearbox hydraulic pressure sender 2 -G194- -2- are bolted into valve body.

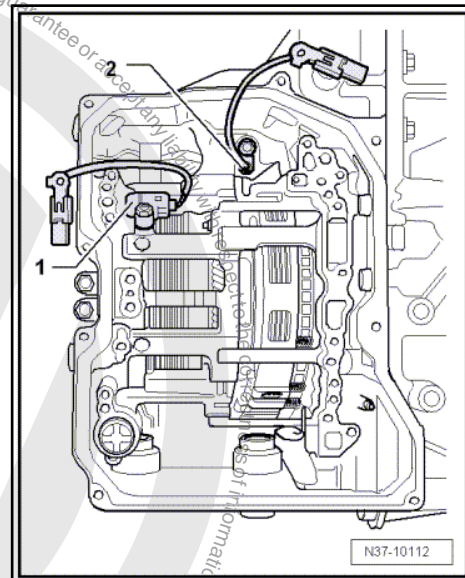




Gearbox input speed sender -G182- and gearbox output speed sender -G195-

Location: senders are installed in gearbox housing above valve body.

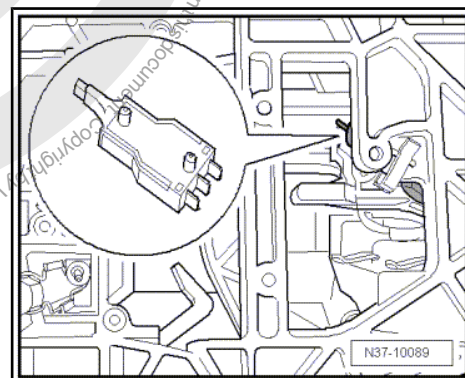
- 1 - Gearbox input speed sender -G182-
- 2 - Gearbox output speed sender -G195-



Tiptronic switch -F189-

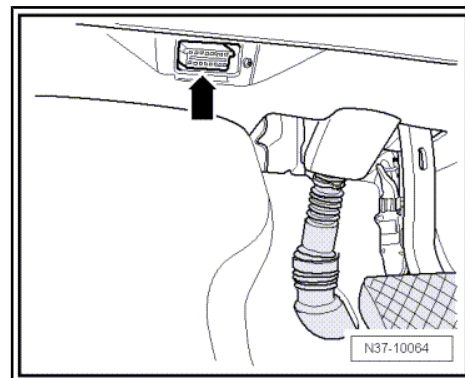
Location: Tiptronic switch is integrated into selector mechanism.

In vehicles with a multifunction steering wheel, the buttons on the steering wheel and their cable connections must also be checked.



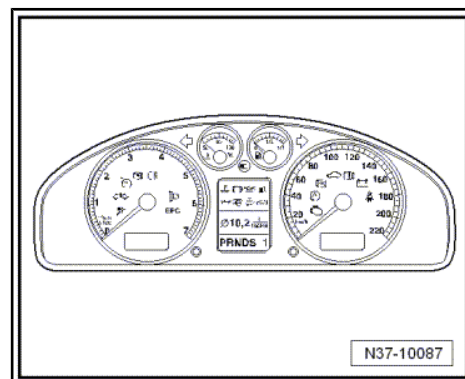
Diagnostic connection

Location: diagnosis connector -arrow- is located on left below driver storage compartment.



Selector lever position display -Y6-

Location: in dash panel insert





3 Multifunction switch -F125-

Removing multifunction switch -F125- ➔ [page 18](#)

Installing multifunction switch -F125- ➔ [page 19](#)

Adjusting multifunction switch -F125- ➔ [page 20](#)

3.1 Removing multifunction switch -F125-

Carry out procedure as follows:

- Move selector lever to position “N”.
- Switch off ignition.
- In order to remove selector lever cable from gearbox, first release cable -arrows 1- and then remove it from cable support bracket -arrow 2-.

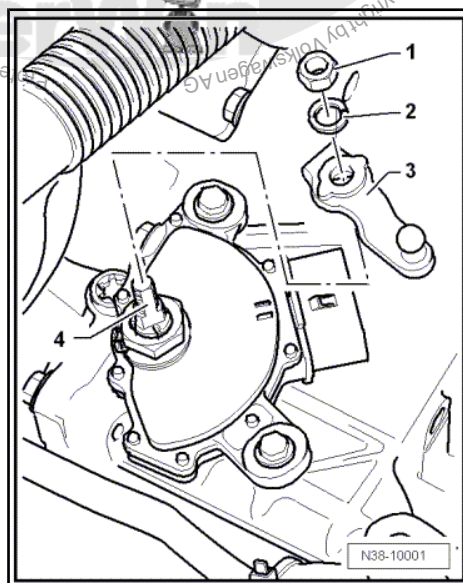
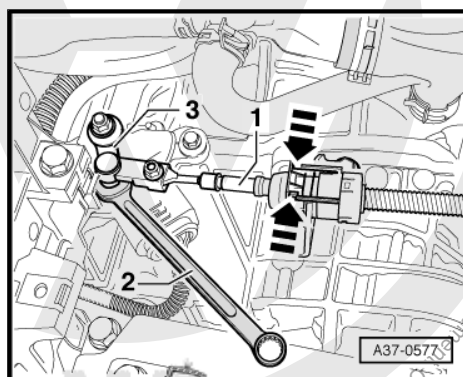
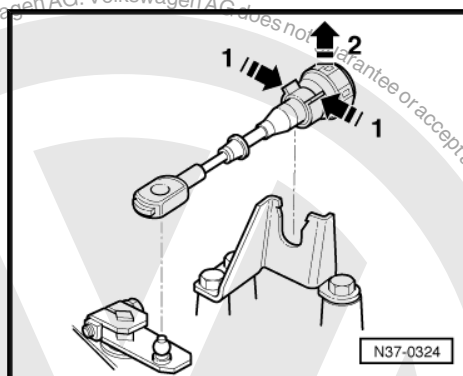


Note

- ♦ Do not use any pliers, otherwise securing tabs on cable support bracket could break off.
- ♦ Do not bend or kink selector lever cable.

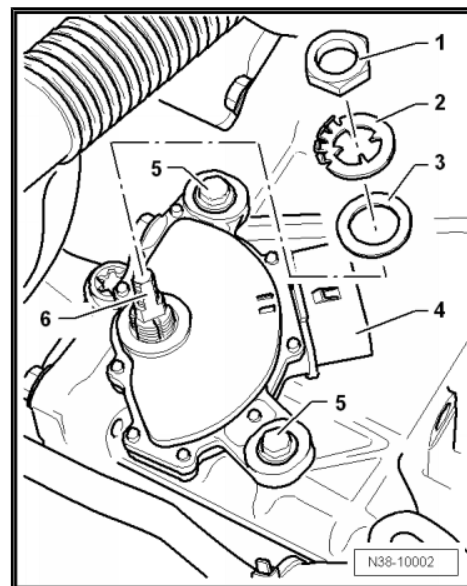
- Lever cable -1- off lever -3- using an open jaw spanner -2-.
- Pull connector off multifunction switch -F125-.

- Unscrew nut -1-.
- Remove spring ring -2- and lever -3- from selector shaft -4-.





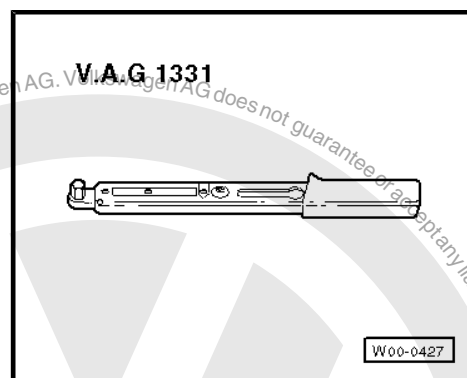
- Carefully bend back hooks of lock washer -2- using a screw-driver.
- Renew securing clip if hooks have broken off.
- Unscrew nut -1-.
- Remove bolts -5-.
- Pull multifunction switch -4-, together with washers -2- and -3-, off selector shaft -6-.



3.2 Installing multifunction switch -F125-

Special tools and workshop equipment required

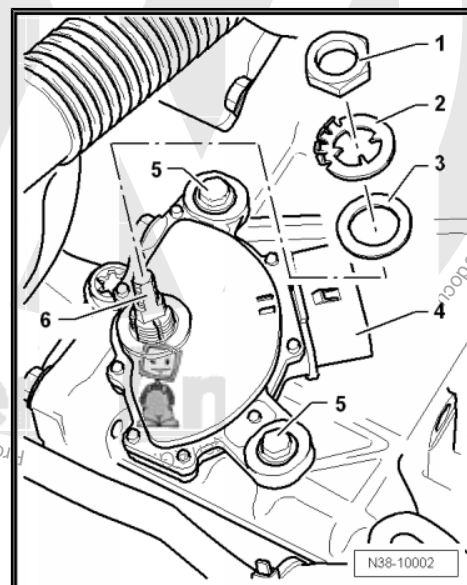
- ◆ Torque wrench -V.A.G 1331-



Carry out procedure as follows:

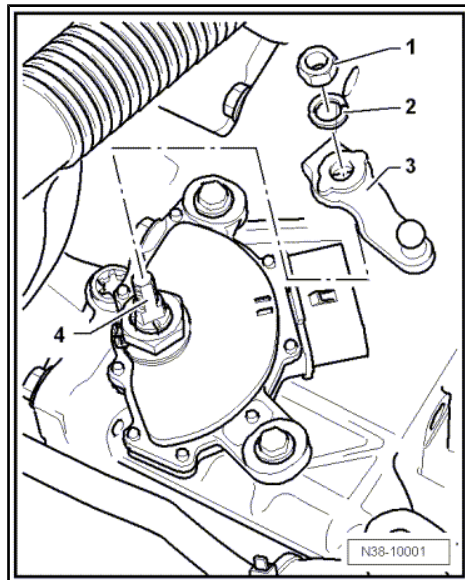
Install in the reverse order of removal, observing the following:

- Place multifunction switch -4- on selector shaft -6-.
- Tighten securing bolts -5- for multifunction switch hand-tight.
- Bend hooks of lock washer -2- back.
- Put washers -2- and -3- on selector shaft -6-.
- Install washer -2- with hooks pointing up.
- Install washer -2- with long, narrow guides in long, narrow recesses of selector shaft -6-.
- Tighten nut -1- to 7 Nm.
- Secure nut -1- by bending up hooks on lock washer -2-.
- Renew securing clip if hooks have broken off.





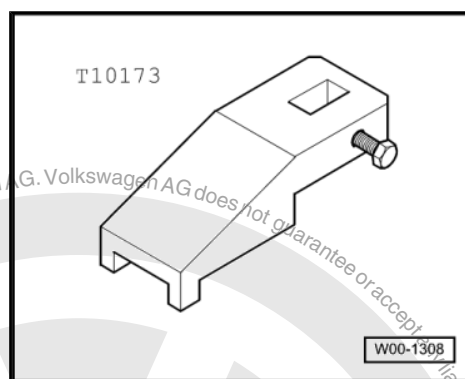
- Push lever -3- onto selector shaft -4-.
- Use lever -3- to shift gearbox to “P” position, i.e. press lever -3- back (opposite direction of travel) to stop.
- Now use lever -3- to shift gearbox to “N” position. To do this, push lever -3- two detent positions forwards in direction of travel.
- Place spring ring -2- and nut -1- on selector shaft -4-.
- Tighten nut -1- to 13 Nm.
- Check selector mechanism ⇒ [page 33](#) .



3.3 Adjusting multifunction switch -F125-

Special tools and workshop equipment required

- ◆ Setting gauge -T10173-



- Move selector lever to position “N”.
- Do not kink selector lever cable.

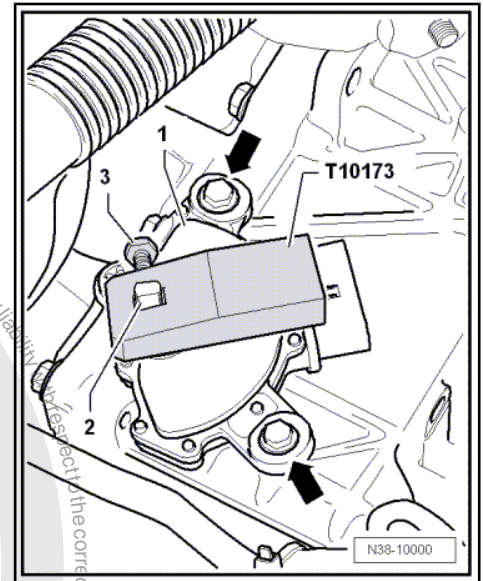
3.3.1 Adjustment prerequisites

- Selector lever cable is disconnected from selector shaft lever.
- Selector shaft is set to “N” position.
- Securing bolts for multifunction switch -F125- have been loosened.
- Selector shaft lever has been removed.



Carry out procedure as follows:

- Place setting gauge on selector shaft -2- and turn multifunction switch -1- until setting gauge engages in lug on multifunction switch connector.
- Secure setting gauge on selector shaft -2- with bolt -3-.
- Tighten bolts -arrows- to 6 Nm.
- Remove setting gauge.
- Continue installation in reverse order of removal ➔ [page 19](#).





4 Selector mechanism up to 02.2009



WARNING

Before working on vehicle with engine running, move selector lever into position "P" and apply handbrake.

Selector mechanism from 03.2009 onwards ⇒ [page 35](#) .

4.1 Overview of selector mechanism up to 02.2009

1 - Selector cover with knob

- ☐ Do not remove knob without reason. For emergency release, only the cover needs to be unclipped ⇒ [page 31](#) .
- ☐ Before removing knob, pull button out past its pressure point. Secure button with cable tie or appropriate wire against being pressed in. This will prevent the button from being accidentally pressed into the knob.
- ☐ If button is pressed into removed handle
 - Always pull out button past the felt pressure point before installing knob.

2 - Selector mechanism with selector lever

- ☐ Removing and installing ⇒ [page 23](#)

3 - Bolt with spring

- ☐ 3 Nm

4 - Pin

- ☐ Removing ⇒ [page 23](#)
- ☐ Do not grease

5 - Locking plate

- ☐ Always renew after removing

6 - Nut

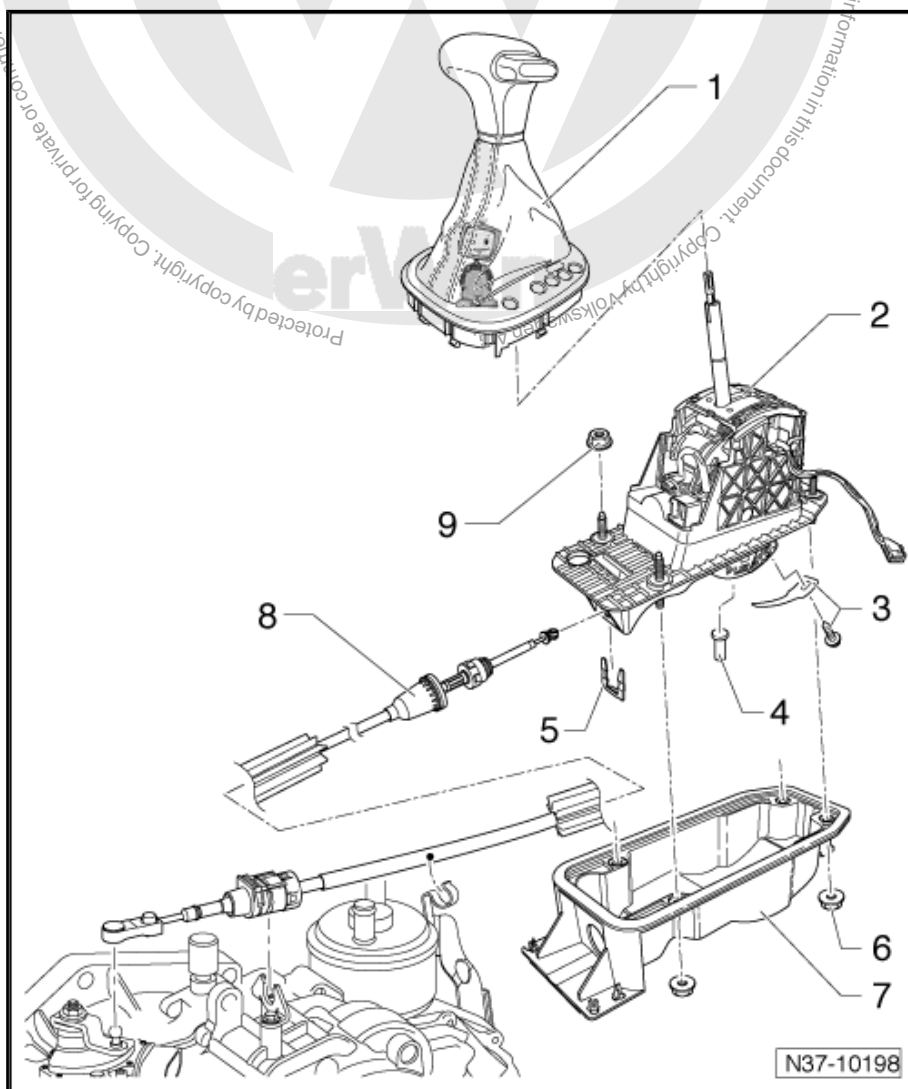
- ☐ 9 Nm
- ☐ Qty. 4

7 - Selector housing

- ☐ With seal

8 - Selector lever cable

- ☐ Cable must not be greased
- ☐ Removing and installing ⇒ [page 23](#)
- ☐ Checking ⇒ [page 30](#)





- ❑ Adjusting ➤ [page 30](#)

9 - Hexagon nut with washer

- ❑ 8 Nm
- ❑ Qty. 4

4.2 Removing and installing selector mechanism with selector lever up to 02.2009

Carry out procedure as follows:



Note

Following installation, selector lever cable must be checked for ease of movement and be adjusted.

- Remove selector lever cable from gearbox ➤ [page 23](#) .
- Remove centre console ➤ Rep. Gr. 68 ; Compartments, covers and trims .
- Remove selector lever cable from gearbox ➤ [page 23](#) .
- Remove exhaust system below heat shield ➤ Rep. Gr. 26 ; Removing and installing parts of exhaust system .
- Remove heat shield beneath selector mechanism.
- Remove 4 nuts for selector mechanism “from above”.

Torque setting for nuts: 8 Nm

- Take selector mechanism out downwards.
- Check selector lever cable after installing ➤ [page 30](#) .

4.3 Removing and installing selector lever cable up to 02.2009

Carry out procedure as follows:



Note

Following installation, selector lever cable must be checked for ease of movement and be adjusted.

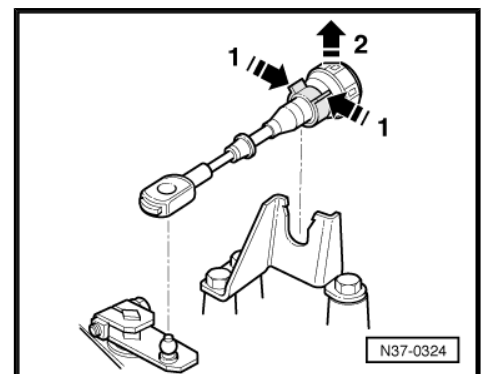
Removing

- Move selector lever to position “S” position.
- In order to remove selector lever cable from gearbox, first release cable -arrows 1- and then remove it from cable support bracket -arrow 2-.



Note

- ◆ Do not use any pliers, otherwise securing tabs on cable support bracket could break off.
- ◆ Do not bend or kink selector lever cable.

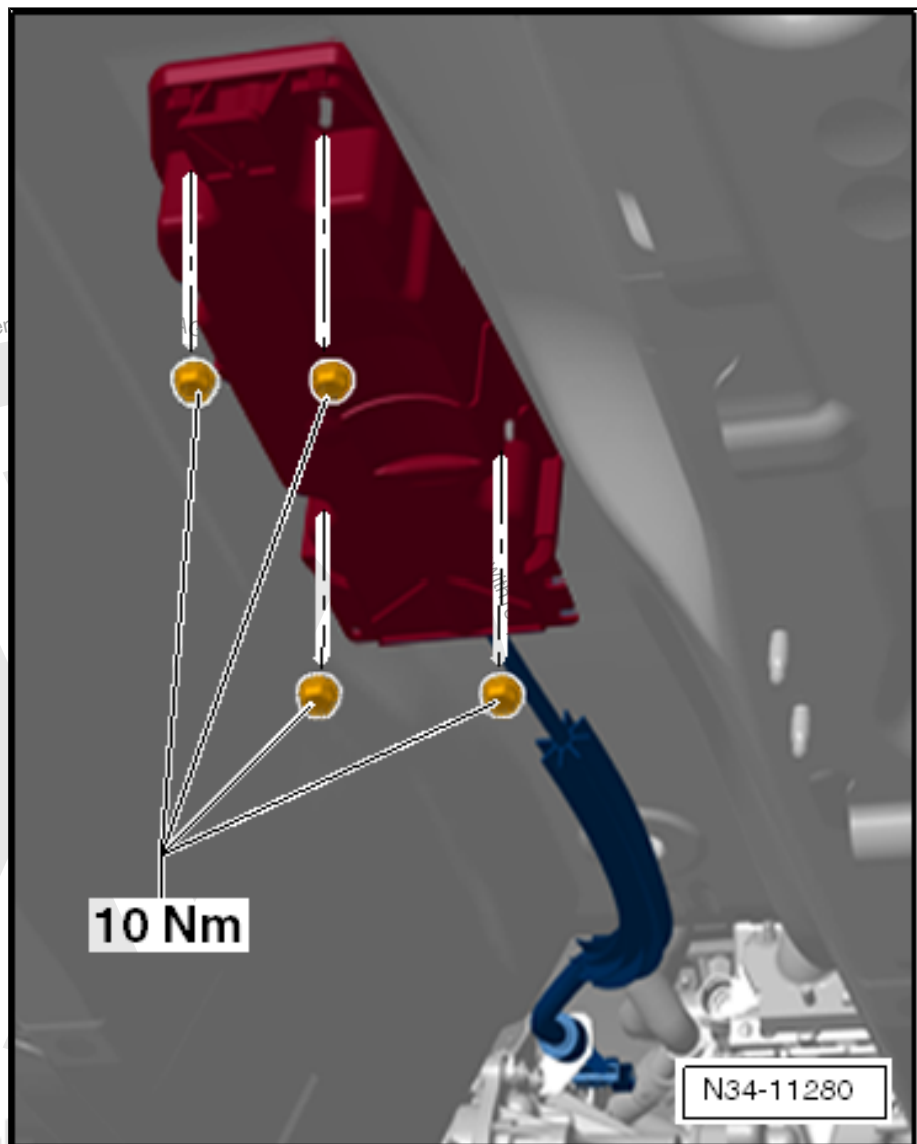
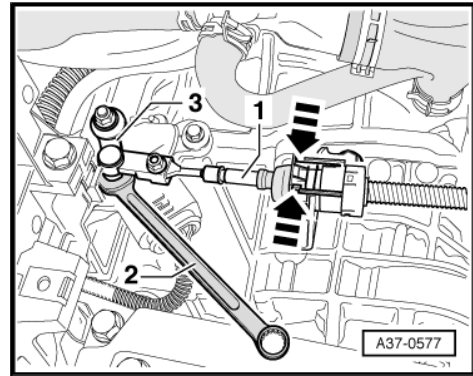




- Lever cable -1- off lever -3- using an open jaw spanner -2-.
- Raise vehicle.

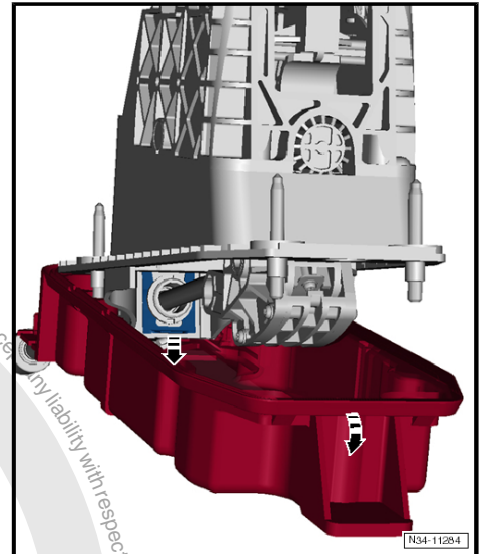
To remove cable and/or selector mechanism, heat shield and, if necessary, parts of exhaust system must be removed ⇒ Rep. Gr. 26 ; Removing and installing parts of exhaust system .

- Remove heat shield beneath selector mechanism.
- Remove -selector housing- beneath selector lever.

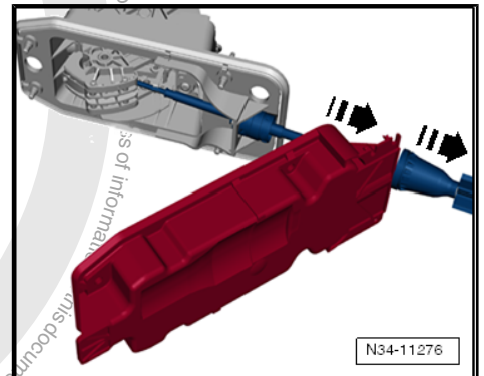




- Remove locking plate for selector lever cable. Always renew locking plate.

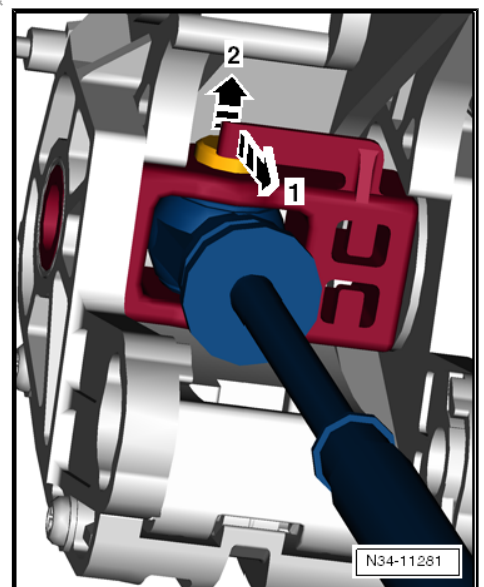


-Selector housing- is pushed forwards slightly on cable --.

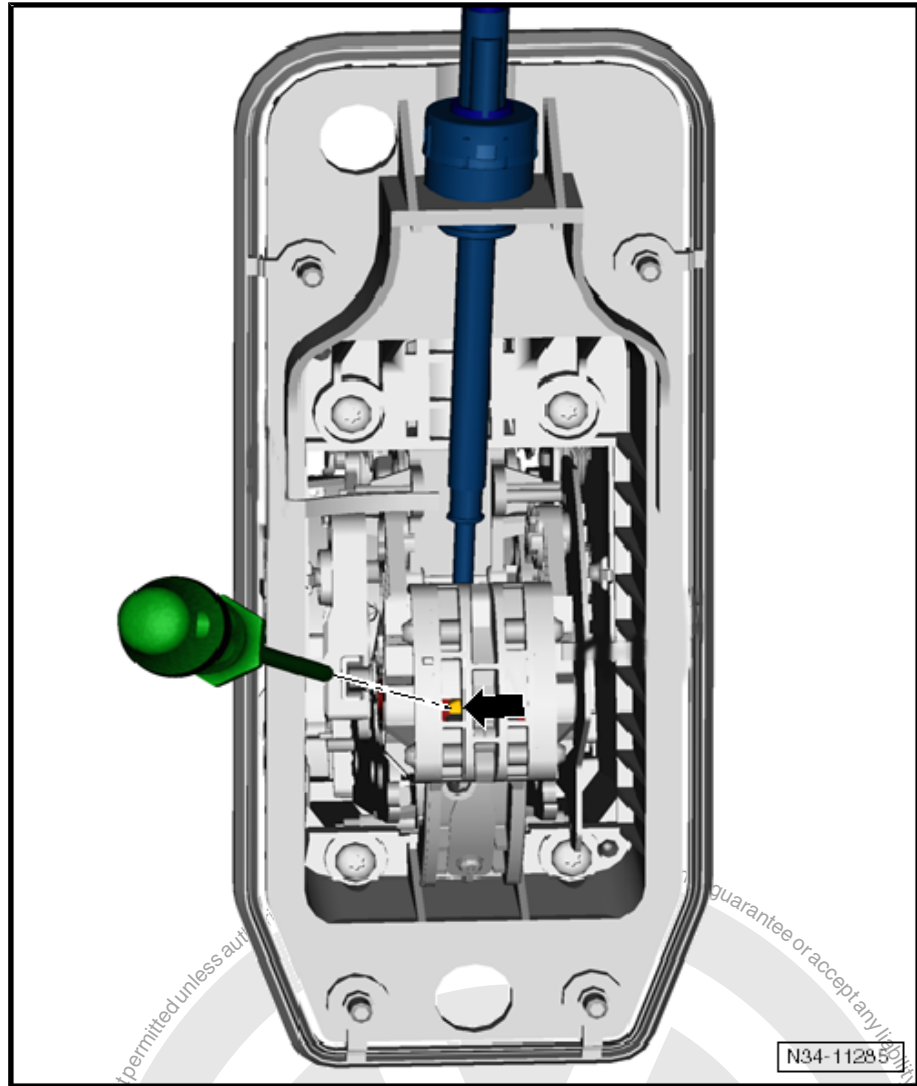


To remove selector lever cable, securing tab must be pushed forwards in -direction of arrow 1-.

- At same time, -pin- is pushed up with a screwdriver -arrow 2-.

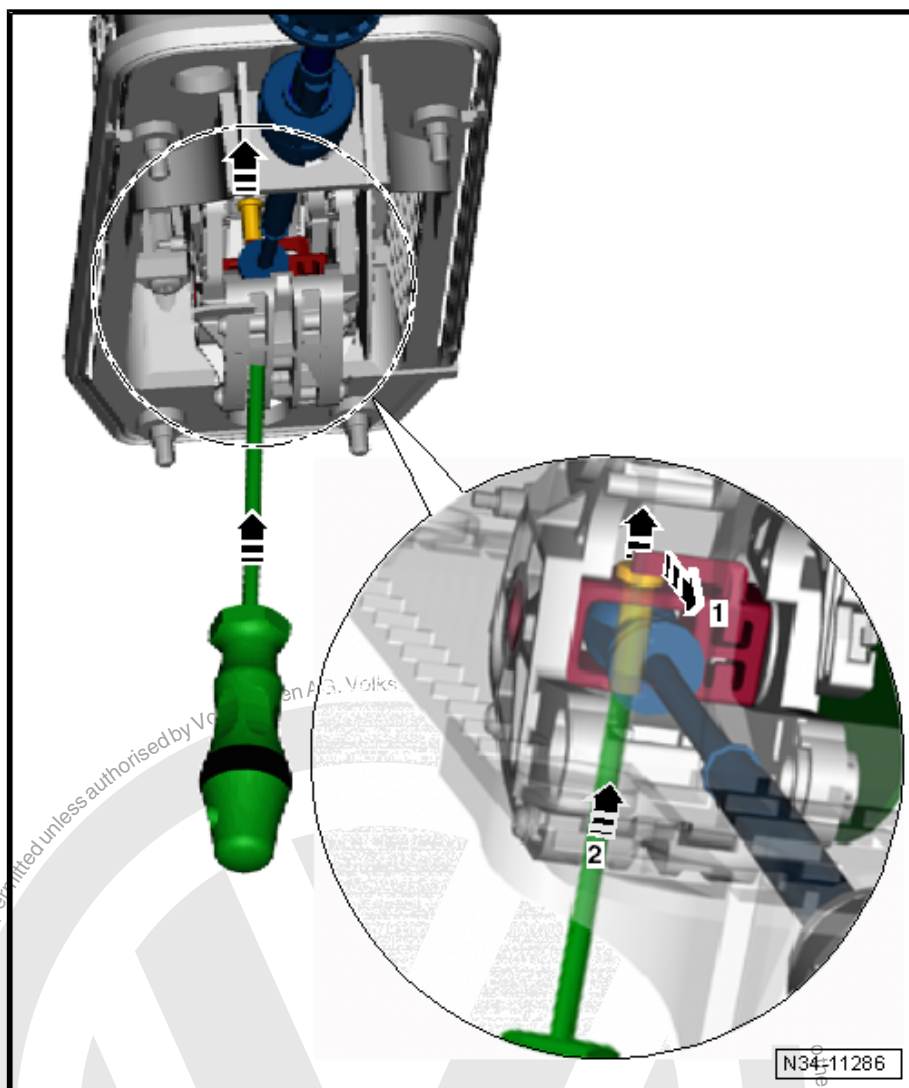


- Please insert -screwdriver- from underneath whilst pushing securing tab forwards.



Clarification:

- ◆ -1- Push tab forwards
- ◆ -2- Push pin up



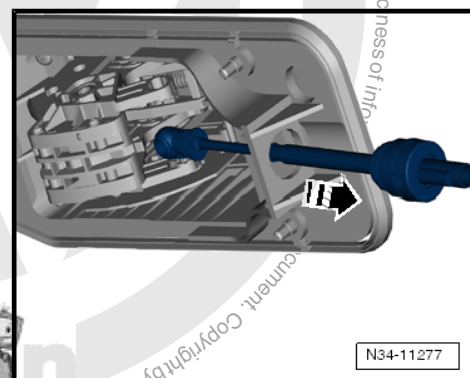
- Remove selector lever cable.

Remove selector housing from selector lever cable.

Installing

Do not grease cable.

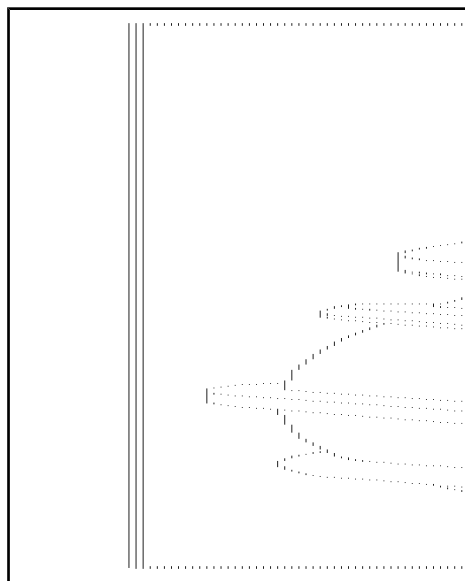
- Route selector lever cable free of tension and insert in cable support bracket on gearbox. However, do not secure it there yet.
- Ensure that selector lever cable is properly routed during installation.



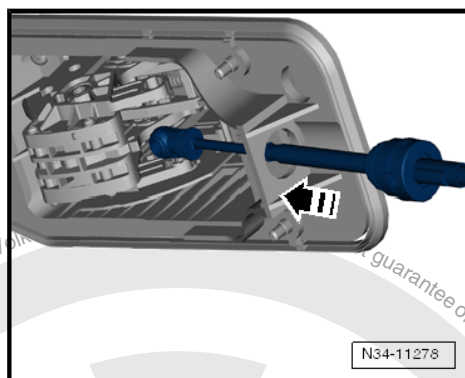


- Also clip selector lever cable into bracket. Make sure that bracket does not make contact with ATF cooler.

Tighten -nuts- to 8 Nm.

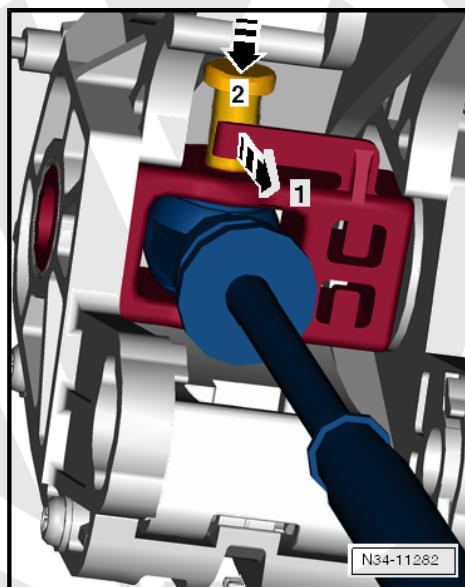


- Put selector housing onto selector lever cable.
- Insert selector lever cable into selector mechanism.

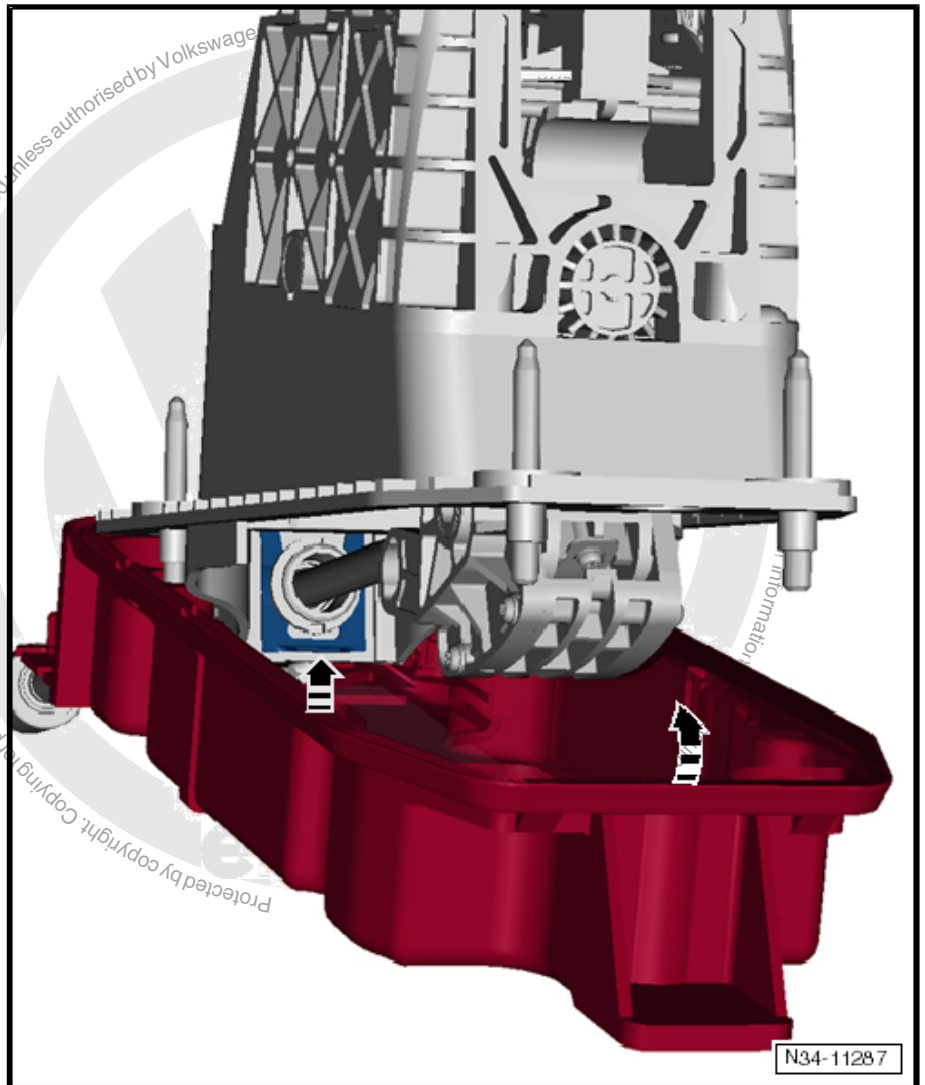


- Insert selector lever cable into bearing and insert pin from above, downwards through eye -direction of arrow 2-.

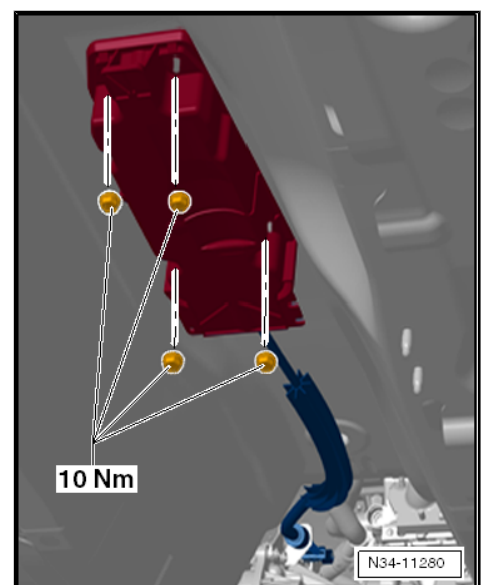
When you have checked freedom of movement of cable
⇒ [page 30](#) , insert locking plate.



- Attach selector lever cable with new locking plate on cable support bracket of selector mechanism.



- Install selector housing, heat shield and exhaust system.
- Adjust selector lever cable after installing ⇒ [page 30](#) .





4.4 Checking selector lever cable

Brief description

To check ease of movement of selector lever cable, it must be removed from the gearbox and the free end must be placed so that it does not bump against anything.

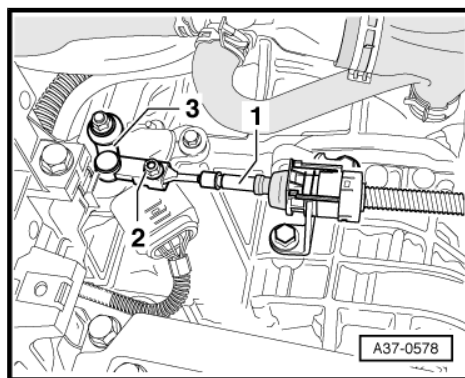
Then move selector lever and reinstall the selector lever cable.

Then the selector lever cable must be adjusted ⇒ [page 30](#) .

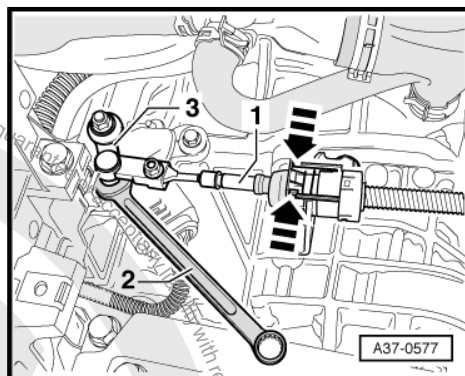
Do not grease connection of selector lever cable.

Carry out procedure as follows:

- Move selector lever to position “P” position.
- Loosen bolt -2- of selector lever cable -1-.



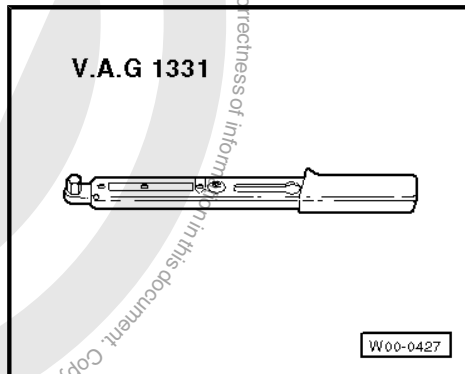
- Lever cable -1- from selector shaft lever -3- using an open jaw spanner -2-.
- Cable is removed from cable support bracket by pressing catches together -arrows-.
- Move selector lever repeatedly from “P” to “S” and back to “P”.
- Selector lever must move easily.
- Install selector lever cable again.
- Adjust selector lever cable!



4.5 Adjusting selector lever cable

Special tools and workshop equipment required

- ♦ Torque wrench -V.A.G 1331-



The selector lever cable must always be adjusted whenever

- ♦ 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.

Carry out procedure as follows:

- Move selector lever to “P” position.
- Adjuster screw -2- must be “loosened”.
- Set selector shaft lever -3- to “P” on gearbox (push lever backwards).



WARNING

Be sure that the parking lock is engaged.



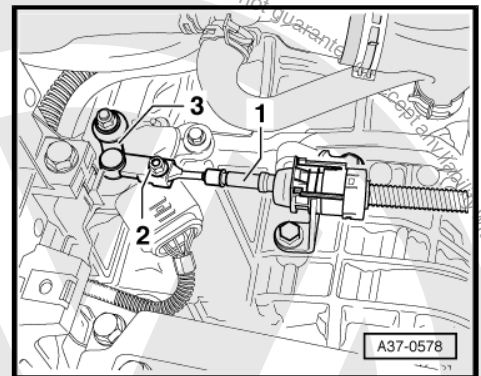
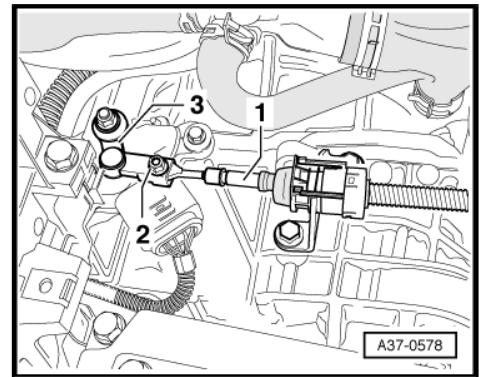
Note

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.

- Gently push knob of selector lever forwards and backwards but under no circumstances must you shift out of “P”.

In this way the ⇒ inner cable of the Bowden cable finds it optimal position.

- Tighten bolt -2- to 13 Nm.



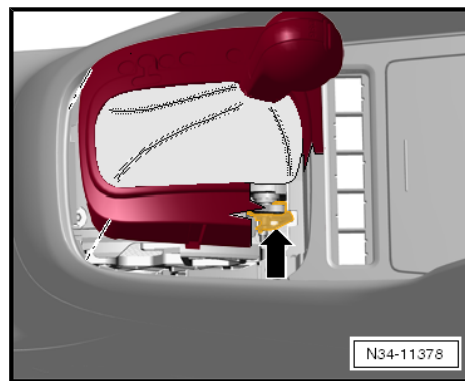
4.6 Emergency release of selector lever

Do not remove knob.

- Unclip selector cover and hold to side.
- Depress brake pedal or set handbrake.



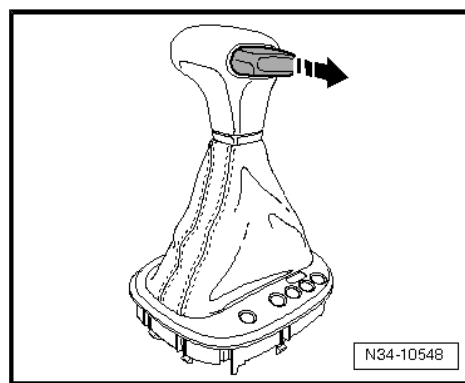
- Press yellow plastic part -arrow- from right to left.
- Lever can now be moved from position “P”.



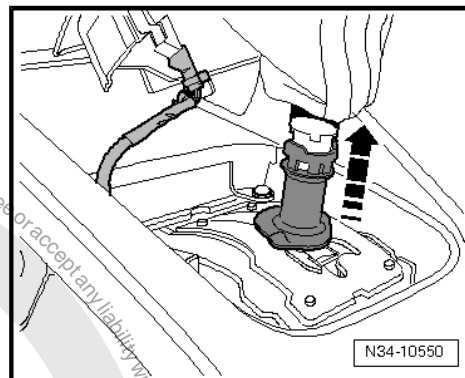
4.7 Removing and installing knob

It is possible with all knobs that the button is pressed into the knob.
Never install a knob with the button pressed in.

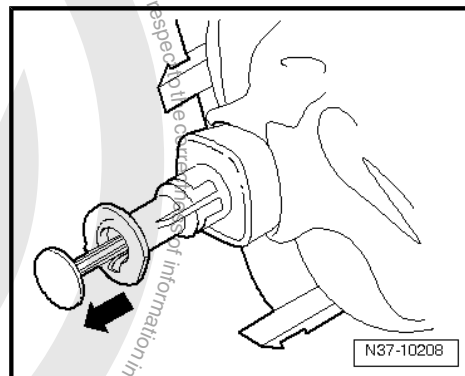
- Before removal, pull button out past its pressure point.
- Secure button with a cable tie or wire against being pressed in.
- Unclip cover.



- Release knob.
- Lock knob again after installing.
- Press plastic part under knob back down.



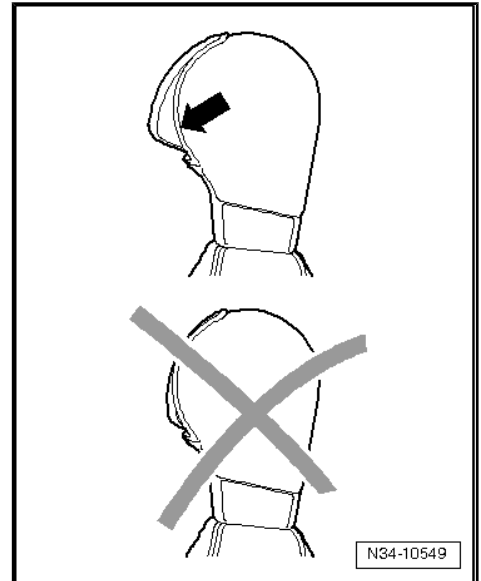
- Remove transport guard of a “new” knob after releasing knob.
- Pull connector from cover.
- Pull off knob upwards.



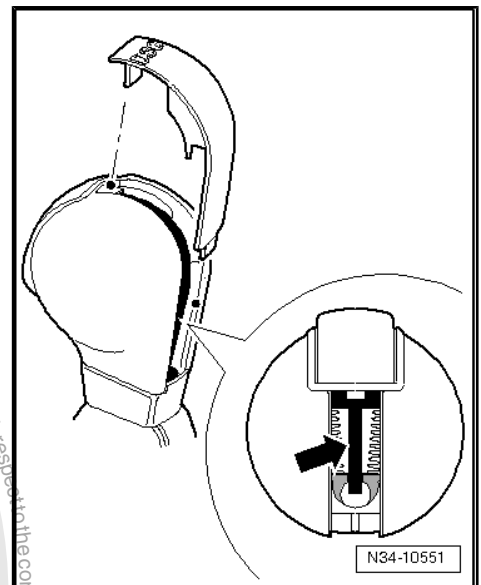


In vehicles with button -arrow- at front on knob

Button -arrow- is not allowed to be pressed in when knob is being fitted and removed.



- However, should this happen, unclip knob trim upwards.
- Press small lever for pull rod -arrow- back into groove before installing knob.



4.8 Checking selector mechanism

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

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

When selector lever is shifted to position "N" at speeds above 5 km/h, solenoid for selector lever lock must not engage and block selector lever. Selector lever can be shifted into a driving range.

When the vehicle is moving at speeds below 5 km/h (almost stationary) and the selector lever is shifted to position "N", the solenoid for selector lever lock should only engage after about 1 second. Selector lever cannot be shifted out of "N" position until brake pedal is depressed.

4.8.1 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 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.

4.8.2 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 depressed:

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

4.8.3 Selector lever in position "Tiptronic"

- Shift selector lever into Tiptronic gate.

The illuminated "D" symbol in the selector mechanism cover must go out and the "+" 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".

4.8.4 Ignition and light switched on

The respective symbol in the shift mechanism cover lights up.

4.8.5 Selector lever position display

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



5 Selector mechanism from 03.2009 onwards



WARNING

Before working on vehicle with engine running, move selector lever into position "P" and apply handbrake.

Selector mechanism in vehicles up to 02.2009 ➔ [page 22](#) .

5.1 Overview of selector mechanism in vehicles from 03.2009 onwards

1 - Selector cover with knob

- ☐ Do not remove knob without reason. For emergency release, only the cover needs to be unclipped ➔ [page 37](#) .
- ☐ Before removing knob, pull button out past its pressure point. Secure button with cable tie or appropriate wire against being pressed in. This will prevent the button from being accidentally pressed into the knob.
- ☐ If button is pressed into removed handle
- Always pull out button past the felt pressure point before installing knob.

2 - Selector lever and selector mechanism with selector lever cable

- ☐ With selector lever lock solenoid -N110-
- ☐ Selector lever cable is not greased
- ☐ Removing and installing ➔ [page 36](#)
- ☐ Checking ➔ [page 30](#)
- ☐ Adjusting ➔ [page 30](#)

3 - Bolt

- ☐ 8 Nm

4 - Hexagon flange nut

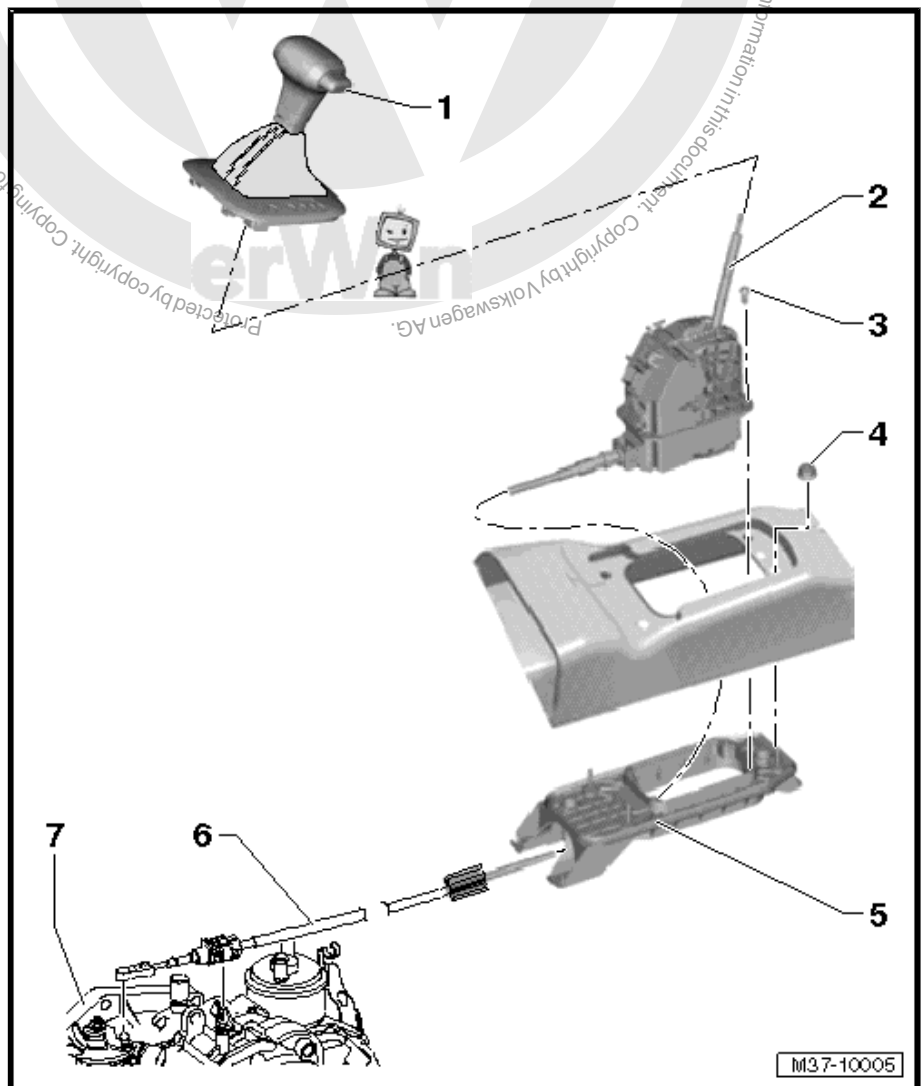
- ☐ 8 Nm
- ☐ Qty. 4

5 - Selector lever housing

6 - Selector lever cable

- ☐ Is not allowed to be removed from selector mechanism and is renewed jointly as one component

7 - Gearbox





5.2 Removing and installing selector lever and selector mechanism with selector lever cable from 03.2009 onwards



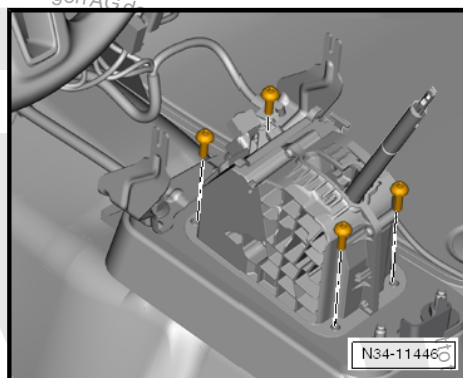
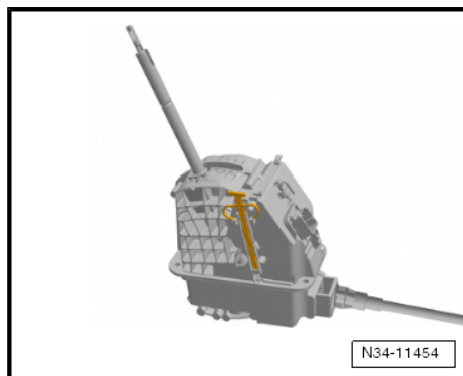
Note

- ◆ *Selector mechanism and selector lever cable are not allowed to be separated from one another. Both are removed together.*
- ◆ *Following installation, selector lever cable must be checked for ease of movement and be adjusted.*

Carry out procedure as follows:

- Move selector lever to position “P” position.
- Remove selector lever handle ➔ [page 32](#) .
- Remove centre console ➔ Rep. Gr. 68 ; Compartments, covers and trims .
- Pull connector off selector mechanism.
- Remove 4 bolts.

Torque setting 8 Nm.

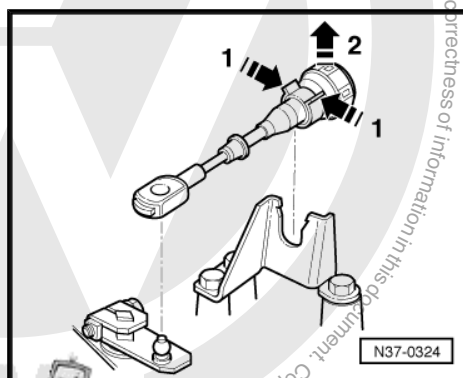


- In order to remove selector lever cable from gearbox, first release cable -arrows 1- and then remove it from cable support bracket -arrow 2-.

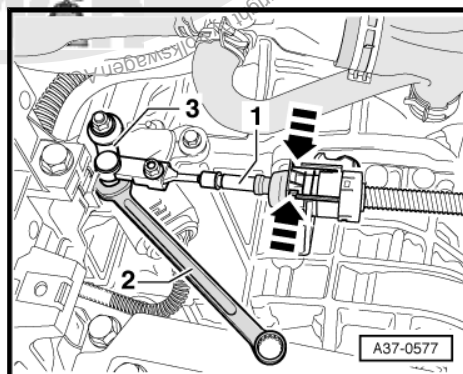


Note

- ◆ *Do not use any pliers, otherwise securing tabs on cable support bracket could break off.*
- ◆ *Do not bend or kink selector lever cable.*



- Lever cable -1- off lever -3- using an open jaw spanner -2-.
- Raise vehicle.
- Remove exhaust system below heat shield ➔ Rep. Gr. 26 ; Removing and installing parts of exhaust system .
- Remove heat shield beneath selector mechanism.

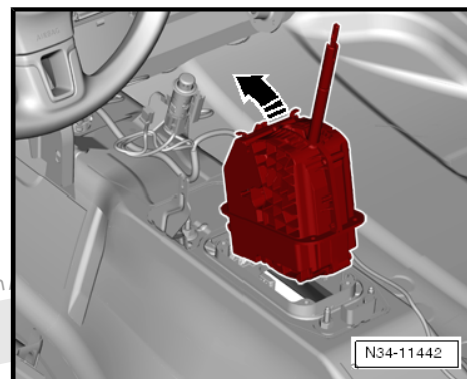




- Remove selector mechanism.

Install in reverse order of removal.

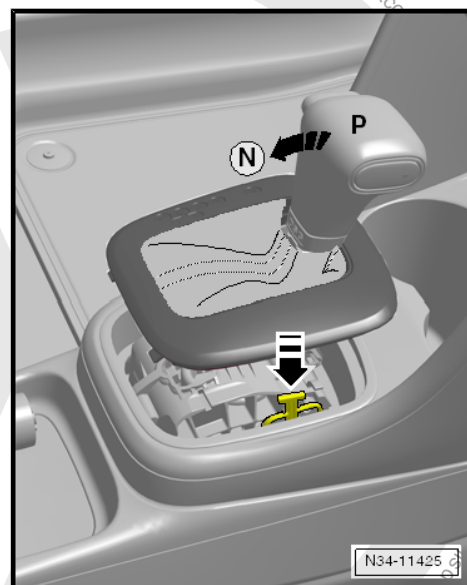
- Install heat shield beneath selector mechanism.
- Install parts of exhaust system ⇒ Rep. Gr. 26 ; Removing and installing parts of exhaust system .
- Adjust selector lever cable after installing ⇒ [page 30](#) .



5.3 Emergency release of selector lever

- Press yellow plastic wedge.

Lever can now be moved from position "P".





6 Removing and installing gearbox, Jetta 2005 ▶, Bora 2006 ▶, Golf Var- iant 2007 ▶, Jetta Wagon 2008 ▶

Removing gearbox, vehicles with 1.6 l - 75 kW and 2.0 l - 110 kW (FSI) engines ⇒ [page 38](#)

Installing gearbox, vehicles with 1.6 l - 75 kW and 2.0 l - 110 kW (FSI) engines ⇒ [page 45](#)

Removing gearbox, vehicles with 2.5 l - 110 kW engine
⇒ [page 45](#)

Installing gearbox, vehicles with 2.5 l - 110 kW engine
⇒ [page 53](#)

Torque settings ⇒ [page 54](#)

6.1 Removing gearbox, vehicles with 1.6 l - 75 kW and 2.0 l - 110 kW (FSI) engines

- Before beginning with removal, “if possible” print out a diagnosis log. Before sending back removed gearbox in the usual manner, secure log to gearbox.

Brief description

The gearbox is removed downwards as a unit. The engine re-
mains in the vehicle.

Battery, battery carrier, air filter and engine cover are removed
“from above”. Engine and gearbox must then be supported so that
left assembly mounting can be removed.

Noise insulation is removed and drive shafts are pressed off “from
below”. Gearbox is lowered using gearbox jack.



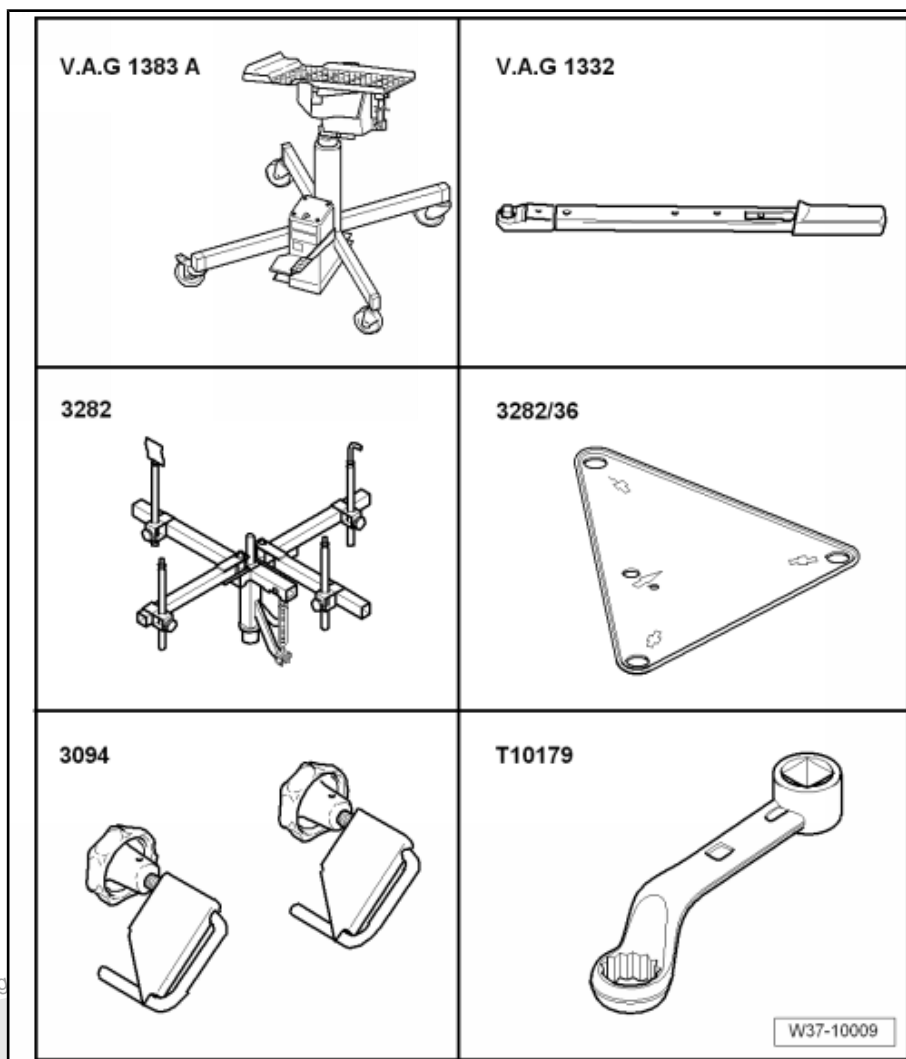
Note

The subframe is not to be removed.

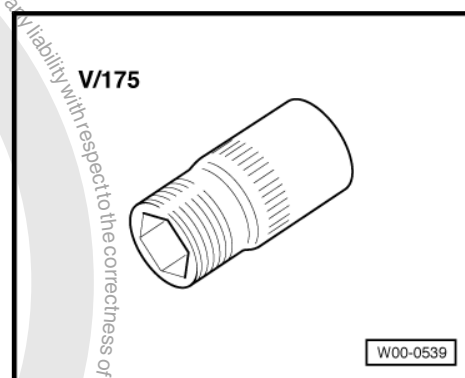


Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Torque wrench -V.A.G 1332-
- ◆ Gearbox support -3282-
- ◆ Adjustment plate -3282 /36-
- ◆ Hose clamps to 25 mm Ø -3094-
- ◆ Socket -T10179-

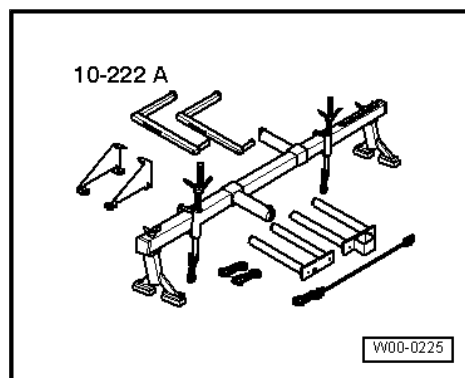


- ◆ Insert -V/175-

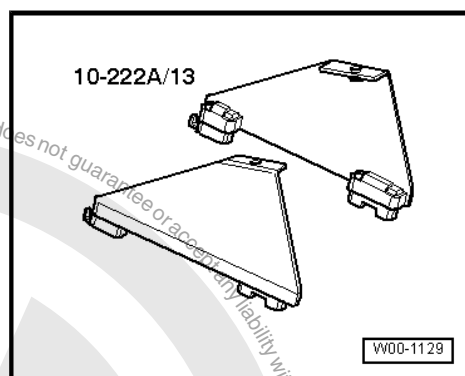




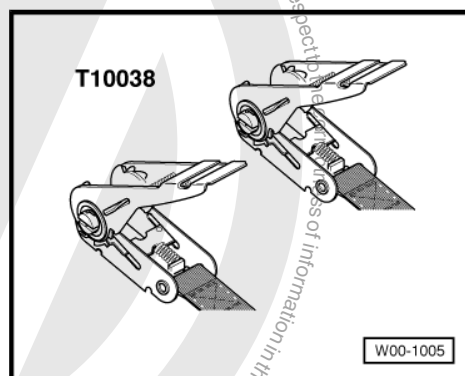
◆ Support bracket -10 - 222 A-



◆ Adapter -10 - 222 A /13-



◆ Tensioning strap -T10038-



Following descriptions show "automatic gearbox 09G" with 2-litre petrol engine (FSI). Deviations to other engine types are minimal. However, torque settings for bolting gearbox to engine go into detail "as usual" (large and small engines, FSI and multi-point injection engines).

- Before beginning with removal, "if possible" print out a diagnosis log. Before sending back removed gearbox in the usual manner, secure log to gearbox.

Carry out procedure as follows:

- Move selector lever to position "P" position.
- Remove battery and battery tray ⇒ Rep. Gr. 27 ; Disconnecting and connecting battery; Removing and installing battery .
- Remove engine cover and air filter with intake hose.

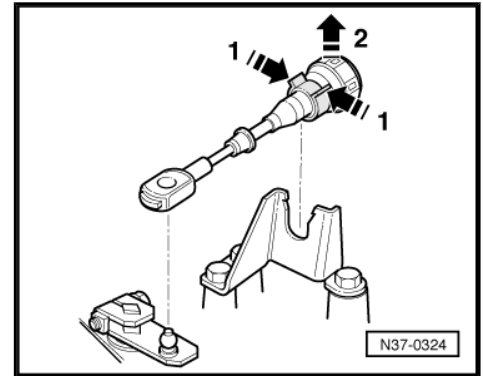


- In order to remove selector lever cable from gearbox, first release cable -arrows 1- and then remove it from cable support bracket -arrow 2-.

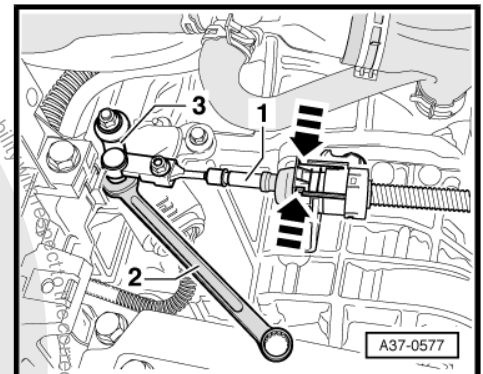


Note

- ◆ Do not use any pliers, otherwise securing tabs on cable support bracket could break off.
- ◆ Do not bend or kink selector lever cable.



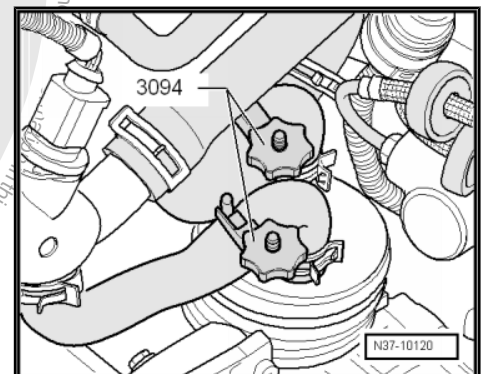
- Lever cable -1- off lever -3- using an open jaw spanner -2-.



- Tighten hose clamps up to Ø 25 mm -3094- on hoses and remove hoses from ATF cooler.

Disconnect electrical connections to gearbox and starter.

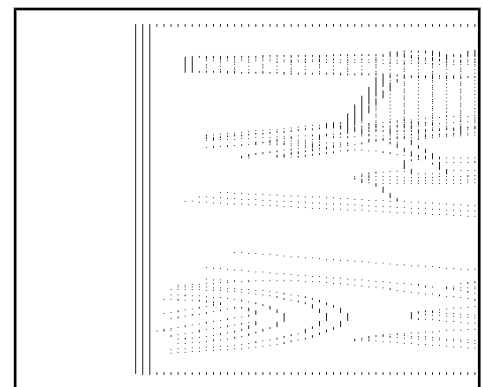
- Remove upper starter motor bolt.



- Set up support bracket -10 - 222 A- and support engine with gearbox. Do not raise.

- Remove upper engine/gearbox connecting bolts.

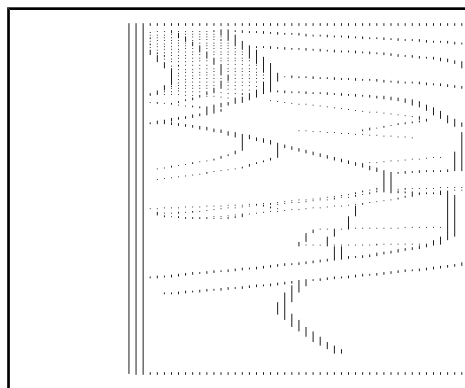
Bolts may be installed with a socket -T10179-. However, note lower torque setting when tightening ⇒ [page 54](#) .





- If present, remove earth strap from bracket -A-.
- Remove 2 securing bolts for gearbox mounting on bracket -A- and 4 bolts for bracket on gearbox.

The bracket is removed later.



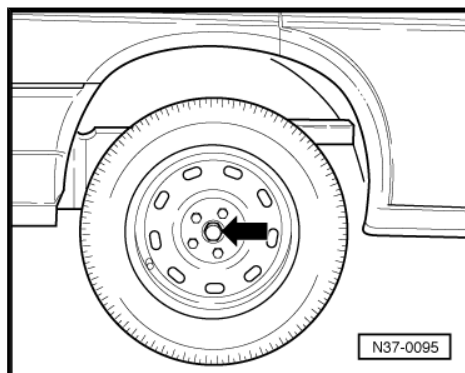
- Depress brake pedal to remove bolt for left drive shaft -arrow- (second mechanic required).



Note

After this, do not set vehicle on the ground any more ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

- Raise vehicle.
- Remove noise insulation tray.
- Remove vacuum pump with bracket and lines. "The pump is located near the ATF filler tube."
- If not already done, now remove electrical connectors from gearbox.
- Remove starter ⇒ Rep. Gr. 27 ; Removing and installing starter .
- Remove ⇒ pendulum support, first bolt -A- and then bolts -B-.

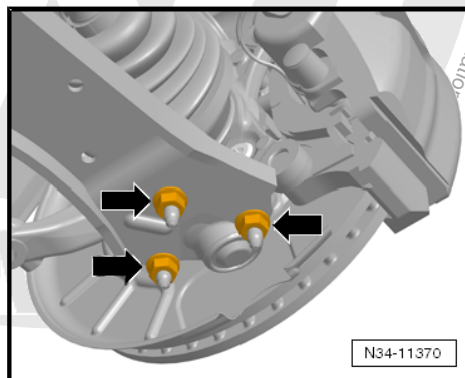
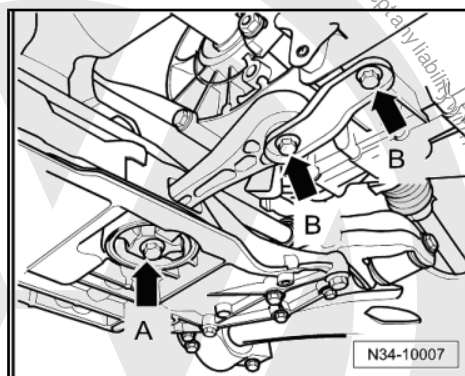


Note

When installing, first tighten bolts -B-, then bolt -A-, torque settings ⇒ Rep. Gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

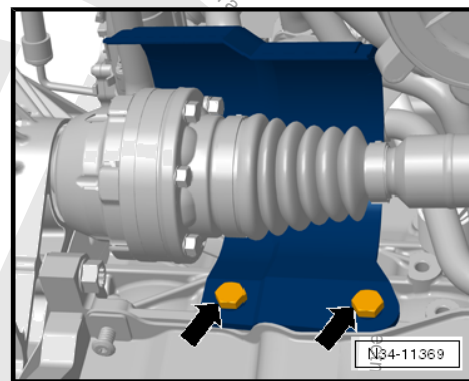
- Unbolt suspension link from wheel bearing housing on both sides.

Torque settings ⇒ Rep. Gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

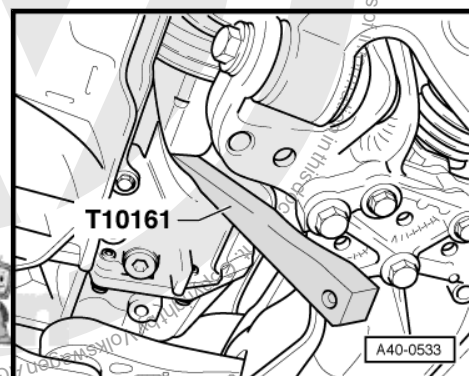




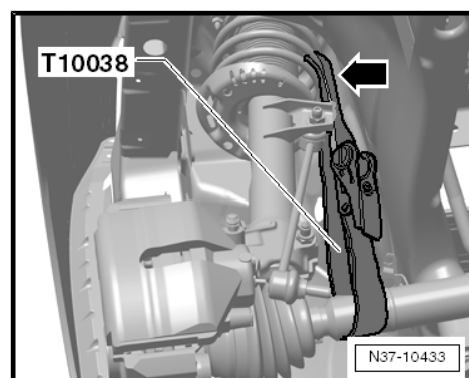
- If present, remove heat shield above right drive shaft -arrows-.



- Press both drive shafts out of gearbox. This procedure is described in ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .
- Remove left drive shaft ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .



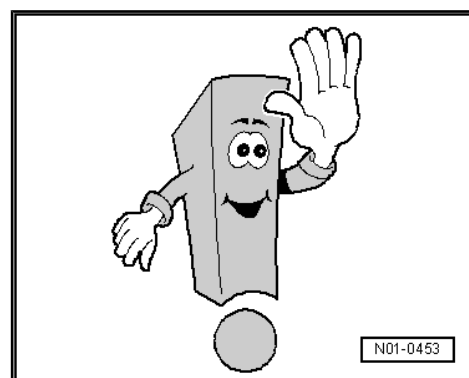
- Raise right shaft as far as possible and secure in this position.



- Now remove assembly mounting bracket. To do this, lower engine and gearbox slightly via support bracket -10 - 222 A-spindles.

4 turns are sufficient.

- If exhaust system retainer is present on gearbox, remove it.
- Remove lower engine/gearbox connecting bolts.
- Leave an easily accessible bolt installed for safety.
- Start with two lower bolts.





Note

On some smaller engines up to 1.6 litres, one of the lower -bolts- can be backed out of the gearbox but not removed from the hole.

- If this bolt has to be removed then remove front exhaust pipe
⇒ Rep. Gr. 26 ; Removing and installing parts of exhaust system .

The hole for removing the torque converter nut is covered with a rubber cap on the rear of the engine.

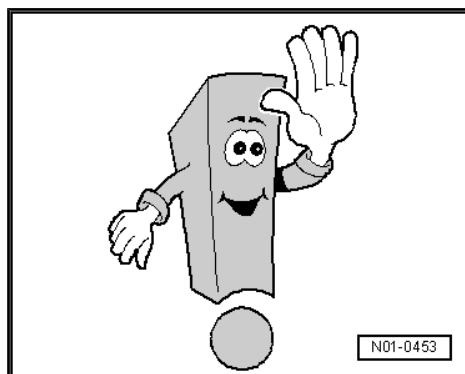
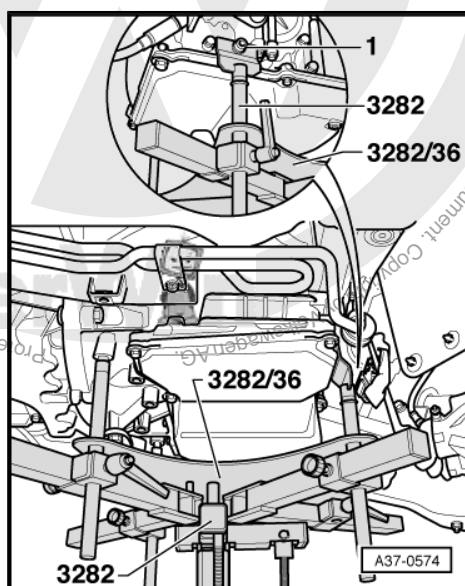
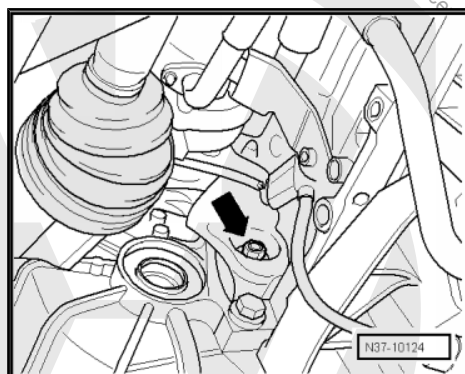
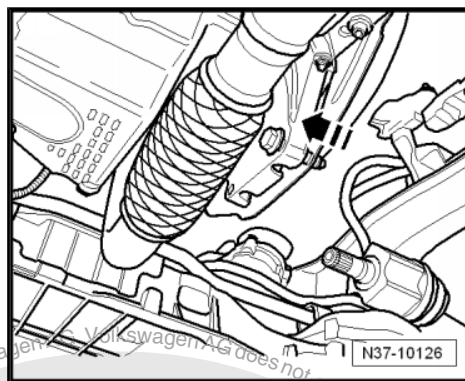
- Remove this cap.
- Remove six -torque converter nuts- with insert -V/175- .



Note

Continue turning the engine carefully!

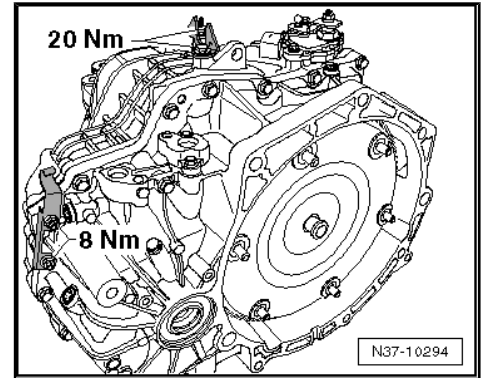
- Before you now remove final connecting bolt, support gearbox with engine and gearbox jack -V.A.G 1383 A- , gearbox support -3282- and adjustment plate -3282 /36- .
- Secure gearbox to gearbox support -3282- using bolt -1-.
- Only now is the final bolt removed.
- Press gearbox off engine while simultaneously pressing torque converter out of drive plate of engine.
- Note clearance from subframe when lowering. If necessary, readjust gearbox support -3282- slightly.





Note

- ♦ Pay attention to torque converter. It must be removed together with gearbox. Secure torque converter to prevent it from falling out.
- ♦ Keep in mind that if a new gearbox is installed, parts such as cable support bracket and retainer for gate selector cable must be transferred.



6.2 Installing gearbox, vehicles with 1.6 l - 75 kW and 2.0 l - 110 kW (FSI) engines

- Check whether dowel sleeves are pressed into engine flange.
- Check seat of intermediate plate between engine and gearbox. The plate must make contact with the engine along its entire perimeter when it is pressed gently with both hands against the engine. If the top does not contact the engine, it is not properly engaged in the engine block.

Continue installation in reverse order of removal.

The engine and gearbox should be mounted tension-free in the assembly mounting. The correct procedure is described in ⇒ Rep. Gr. 10 ; Removing and installing engine; Notes on installation .

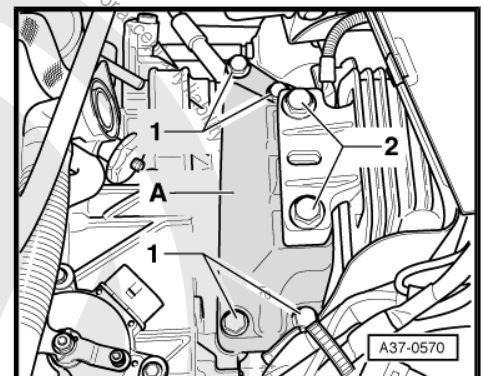
- Renew all bolts on left assembly mounting.
- First screw in all bolts by hand.

When installing, first screw bracket -A- onto gearbox using securing bolts -1-, tighten to 40 Nm and 90° further.

Two bolts -2- for securing bracket to gearbox mounting can be tightened by inserting a screwdriver between the two bolts to adjust to "previous seating". These two larger bolts are tightened to 60 Nm + 90°.

Torque settings, gearbox to engine ⇒ [page 54](#) .

- Adjust selector lever cable ⇒ [page 30](#) .
- After installing, check ATF level ⇒ [page 77](#) .
- Carry out basic settings. To do this
- Connect vehicle diagnosis, testing and information system - VAS 5051- and then select "Perform basic settings" under Guided functions.



6.3 Removing gearbox, vehicles with 2.5 l, 110 kW engine

- Before beginning with removal, "if possible" print out a diagnosis log. Before sending back removed gearbox in the usual manner, secure log to gearbox.

Brief description

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

Battery, battery carrier, air filter and engine cover are removed "from above". Engine and gearbox must then be supported so that left assembly mounting can be removed.



Noise insulation is removed and drive shafts are pressed off "from below". Gearbox is lowered using gearbox jack.



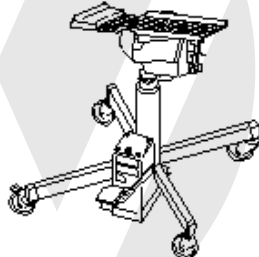
Note

The subframe is not to be removed.

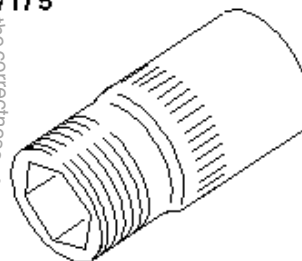
Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Insert -V/175-
- ◆ Gearbox support -3282-
- ◆ Wedge -T10161-
- ◆ Torque wrench -V.A.G 1332-
- ◆ Adjustment plate -3282 /36-

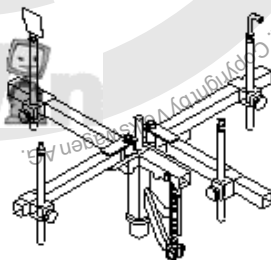
V.A.G. 1383 A



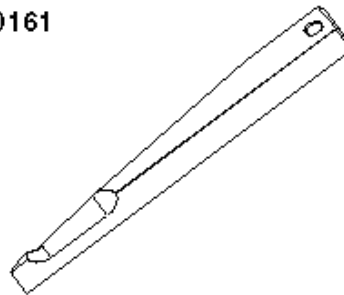
V/175



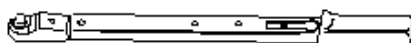
3282



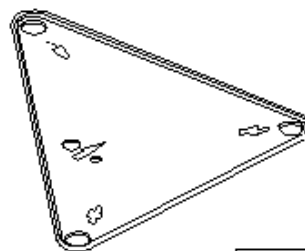
T10161



V.A.G. 1332



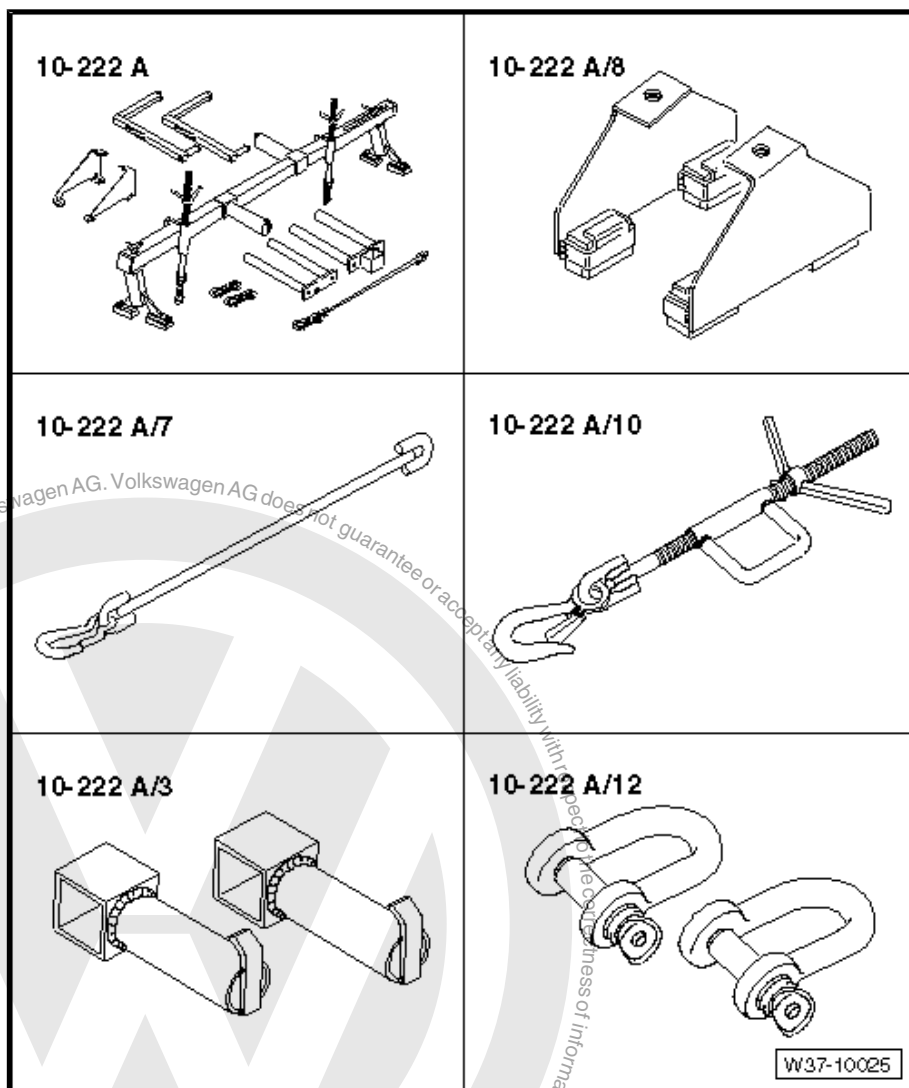
3282/36



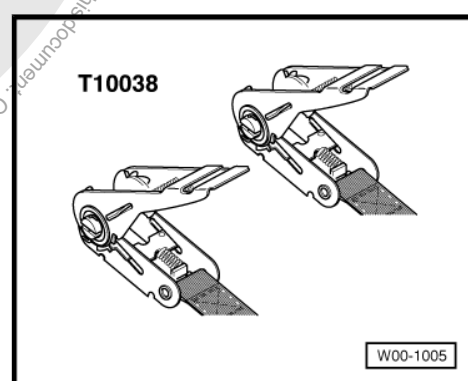
W37-10024



- ◆ Support bracket -10 - 222 A-
- ◆ Adapter -10 - 222 A /8-
- ◆ Adapter -10 - 222 A /7-
- ◆ Hook -10 - 222 A /10-
- ◆ Adapter -10 - 222 A /3-
- ◆ Shackle -10 - 222 A /12-



- ◆ Tensioning strap -T10038-



Carry out procedure as follows:

- Before beginning with removal, “if possible” print out a diagnosis log. Before sending back removed gearbox in the usual manner, secure log to gearbox.
- Move selector lever to position “P” position.
- Raise vehicle.



- Depress brake pedal to remove bolt for left drive shaft -arrow- (second mechanic required).



Note

After this, do not set vehicle on the ground any more ➔ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

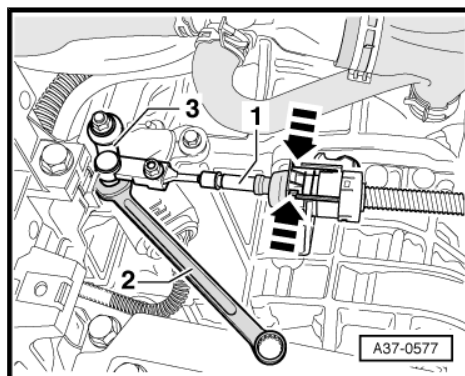
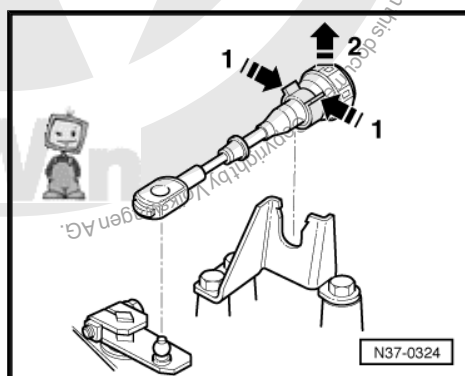
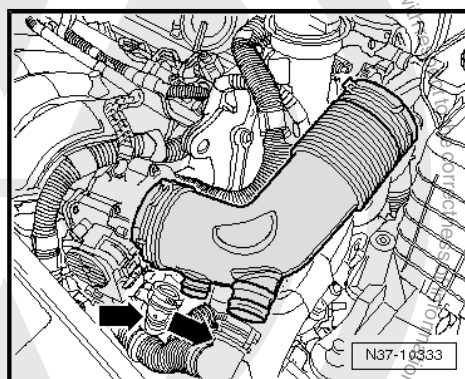
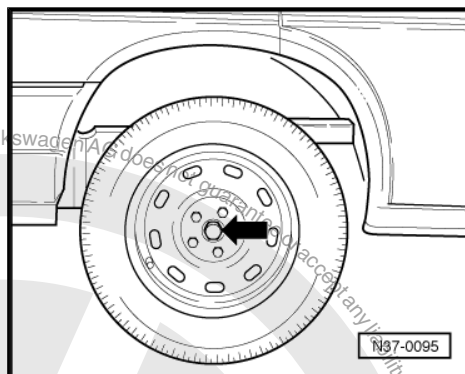
- Remove engine cover and air filter.
- Pull off hoses -arrows- and remove intake hose from throttle valve unit.
- Remove battery and battery tray ➔ Rep. Gr. 27 ; Disconnecting and connecting battery; Removing and installing battery .
- In order to remove selector lever cable from gearbox, first release cable -arrows 1- and then remove it from cable support bracket -arrow 2-.



Note

- ♦ *Do not use any pliers, otherwise securing tabs on cable support bracket could break off.*
- ♦ *Do not bend or kink selector lever cable.*

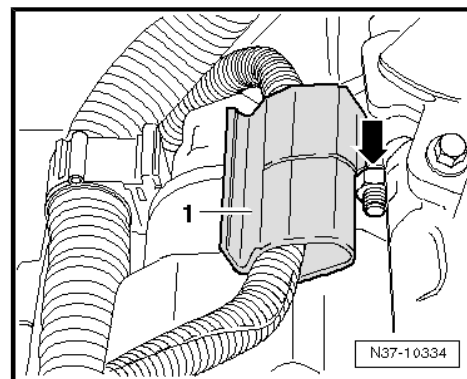
- Lever cable -1- off lever -3- using an open jaw spanner -2-.
- Disconnect electrical connections to gearbox and starter.
- ♦ Multifunction switch
- ♦ Starter motor
- ♦ Earth strap to bracket



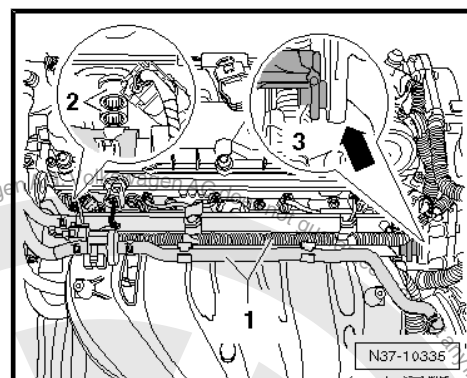


- Remove cable retainer -1- from starter bolt -arrow-.
- Remove upper starter motor bolt.
- Remove upper engine/gearbox connecting bolts.

To support engine and gearbox:



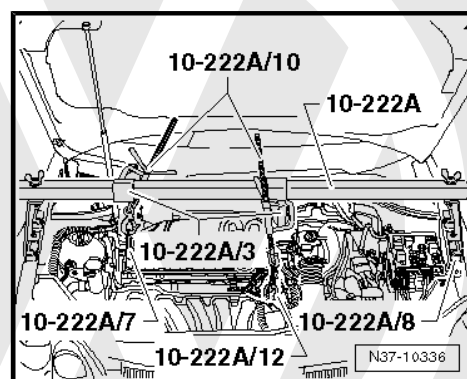
- Remove cables -1- from transportation bracket -3-.
- Unbolt transportation bracket -3- from engine -2- and pull out of eye -arrow-.
- Attach a shackle -10 - 222 A /12- in “this” eye.



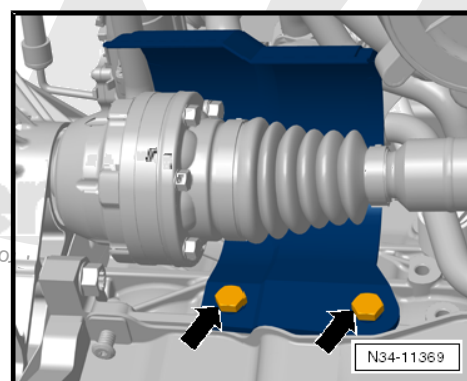
- Set up support device -10 - 222 A- .
- Extend right hook -10 - 222 A /10- using adapter -10 - 222 A / 7- .

The hook faces downwards and will later be hooked into the engine block.

- Remove noise insulation tray.
- Remove lower part of left wheel housing liner.

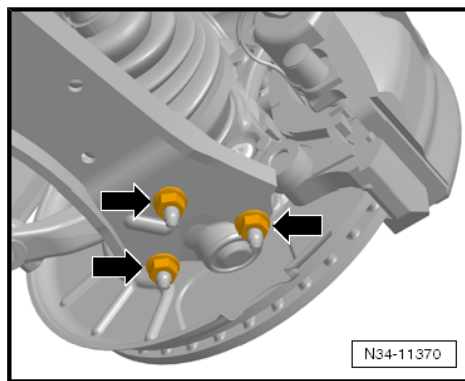


- If present, remove heat shield above right drive shaft -arrows-.

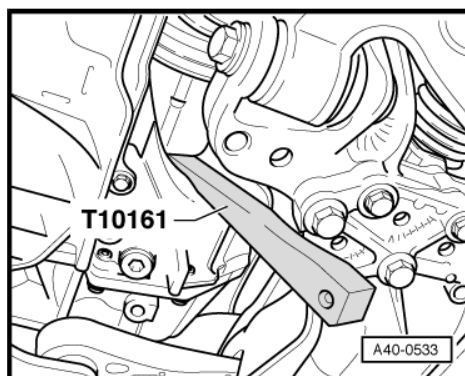




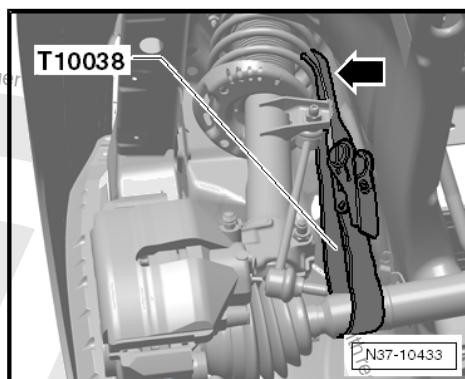
- Unbolt suspension link from wheel bearing housing on both sides.



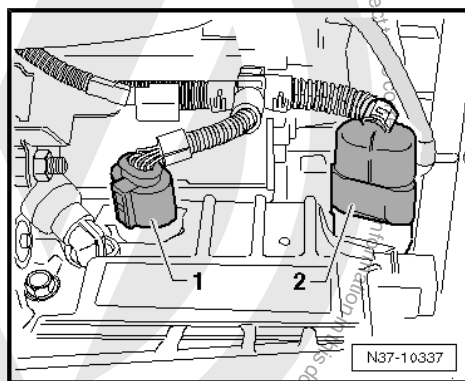
- Press both drive shafts out of gearbox. This procedure is described in ➤ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .
- Remove left drive shaft ➤ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .



- Raise right shaft as far as possible and secure in this position.

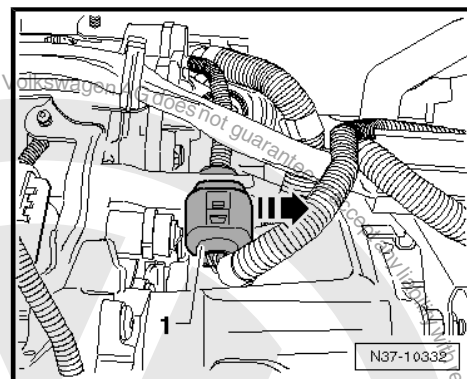


- Now pull electrical connectors -1- and -2- off gearbox.

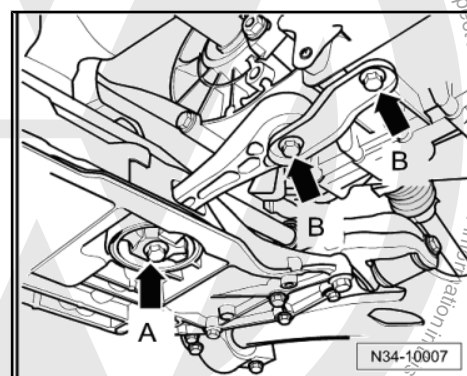




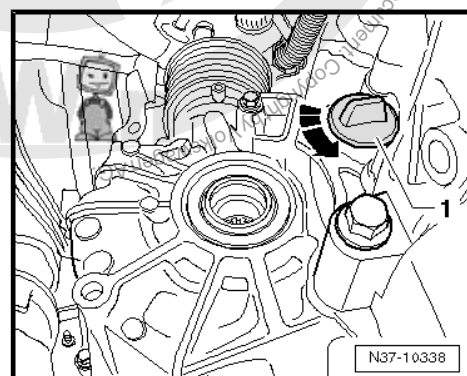
- Pull connector beneath starter -1- out of retainer and separate.
- Unbolt retainer from lower starter bolt.
- Remove lower starter bolt and remove starter.



- Remove ⇒ pendulum support, first bolt -A- and then bolts -B-.
- Drain coolant.



- Turn cap -1- in -direction of arrow- and remove.

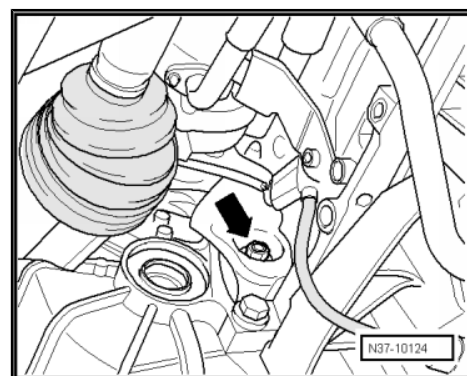


- Remove six -torque converter nuts- with insert -V/175- .



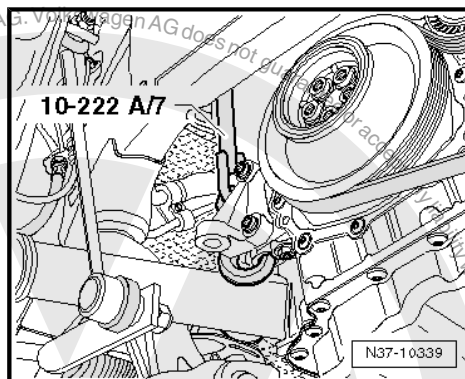
Note

Continue turning the engine carefully!

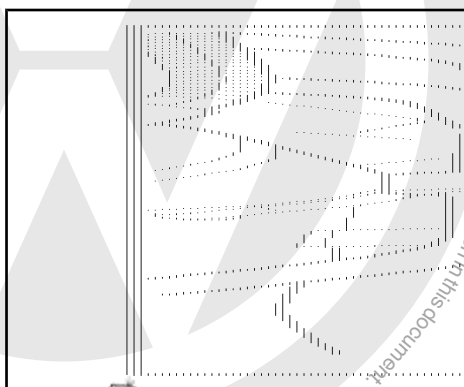




- Hook adapter -10 - 222 A /7- into engine block.
 - Pull coolant hoses off ATF cooler.
- Tighten right spindle one turn (more is not necessary).
- Support engine and gearbox with left spindle. Do not raise.



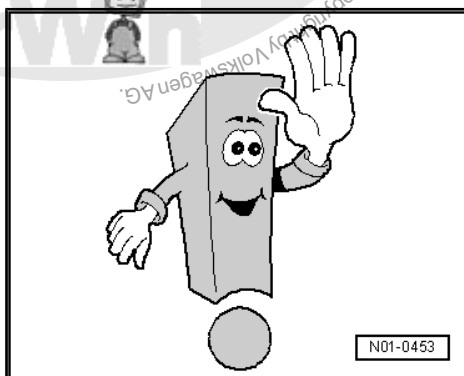
- Remove 2 securing bolts for gearbox mounting on bracket -A- and 4 bolts for bracket on gearbox.



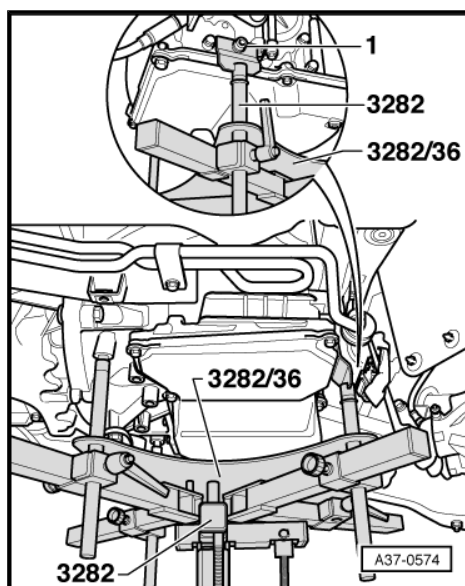
- Now remove assembly mounting bracket. To do this, lower engine and gearbox slightly via left spindle of support bracket -10 - 222 A- .

4 turns are sufficient.

- Remove lower engine/gearbox connecting bolts.
- Leave an easily accessible bolt installed for safety.



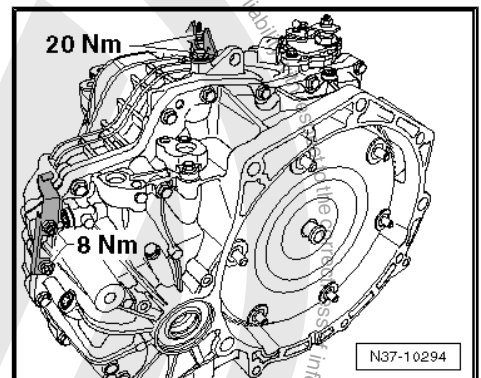
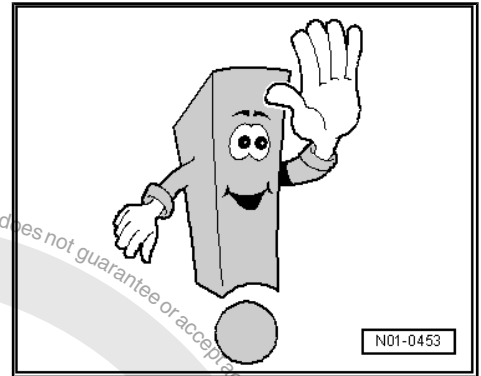
- Before you now remove final connecting bolt, support gearbox with engine and gearbox jack -V.A.G 1383 A- , gearbox support -3282- and adjustment plate -3282 /36- .
- Secure gearbox to gearbox support -3282- using bolt -1-.
- Only now is the final bolt removed.
- Press gearbox off engine while simultaneously pressing torque converter out of drive plate of engine.
- Note clearance from subframe when lowering. If necessary, readjust gearbox support -3282- slightly.





Note

- ◆ Pay attention to torque converter. It must be removed together with gearbox. Secure torque converter to prevent it from falling out.
- ◆ Keep in mind that if a new gearbox is installed, parts such as cable support bracket and retainer for gate selector cable must be transferred.



6.4 Installing gearbox, vehicles with 2.5 l, 110 kW engine

- Check whether dowel sleeves are pressed into engine flange.
- Check seat of intermediate plate between engine and gearbox. The plate must make contact with the engine along its entire perimeter when it is pressed gently with both hands against the engine. If the top does not contact the engine, it is not properly engaged in the engine block.

Continue installation in reverse order of removal.

The engine and gearbox should be mounted tension-free in the assembly mounting. The correct procedure is described in ⇒ Rep. Gr. 10 ; Removing and installing engine; Notes on installation .

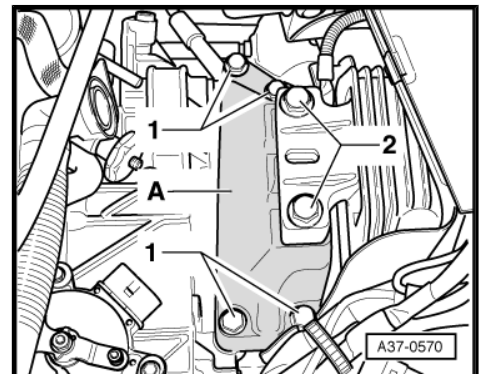
- Renew all bolts on left assembly mounting.
- First screw in all bolts by hand.

When installing, first screw bracket -A- onto gearbox using securing bolts -1-, tighten to 40 Nm and 90° further.

Two bolts -2- for securing bracket to gearbox mounting can be tightened by inserting a screwdriver between the two bolts to adjust to "previous seating". These two larger bolts are tightened to 60 Nm + 90°.

Torque settings, gearbox to engine ⇒ [page 54](#) .

- Adjust selector lever cable ⇒ [page 30](#) .
- After installing, check ATF level ⇒ [page 77](#) .
- Carry out basic settings. To do this
- Connect vehicle diagnosis, testing and information system - VAS 5051- and then select "Perform basic settings" under Guided functions.





6.5 Torque settings, gearbox to engine

Vehicles with 1.6 l - 75 kW and 2.0 l - 110 kW (FSI) engines

⇒ [page 54](#)

Vehicles with 2.5 l - 110 kW engine ⇒ [page 55](#)

6.5.1 Torque settings, vehicles with 1.6 l - 75 kW and 2.0 l - 110 kW (FSI) engines

1 - Direction of travel

A - Bolt for 2.0 l - 110 kW (FSI) engine

B - Bolt for 1.6 l - 75 kW engine

- Drive plate to torque converter

- ☐ 60 Nm
- ☐ Qty. 6; remove and install with insert V/175-

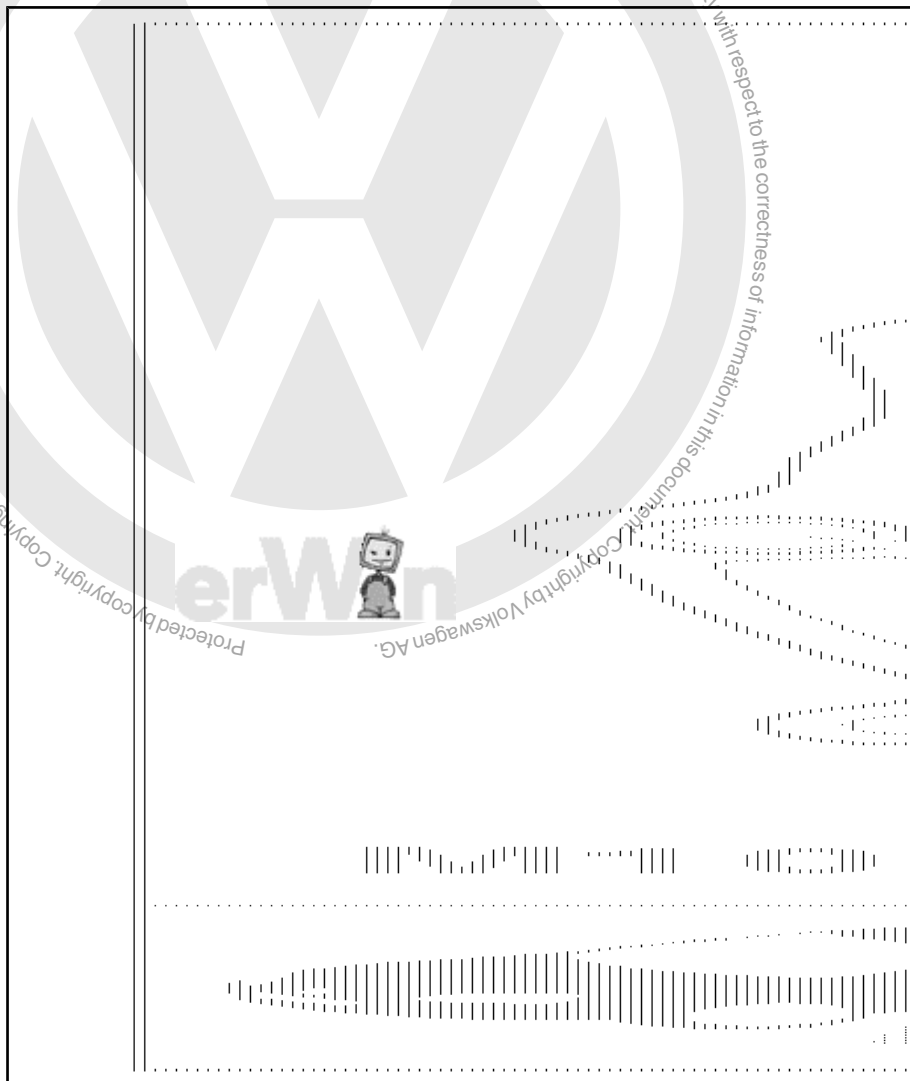
- M12 bolts ⇒ M12

- ☐ 80 Nm
- ☐ 65 Nm if you use socket -T10179-

- M10 bolts ⇒ M10

- ☐ 40 Nm
- ☐ These bolts are located in lower flange

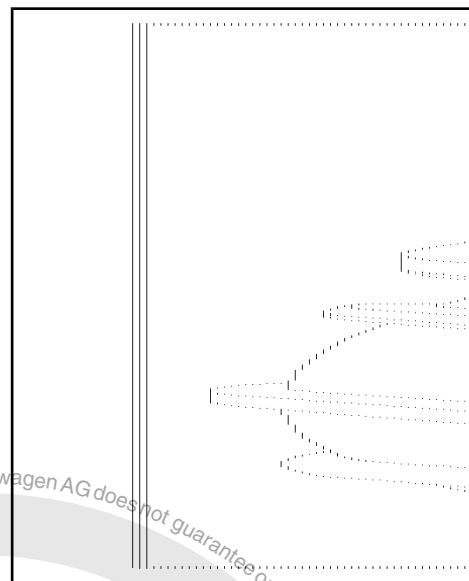
- 2 dowel sleeves in engine -arrows-





- Make sure that bracket does not make contact with ATF cooler.

-Nuts- 8 Nm



6.5.2 Torque settings, vehicles with 2.5 l - 110 kW engine

1 - Direction of travel

- Drive plate to torque converter

- ☐ 60 Nm
- ☐ Qty. 6; remove and install with insert -V/175-

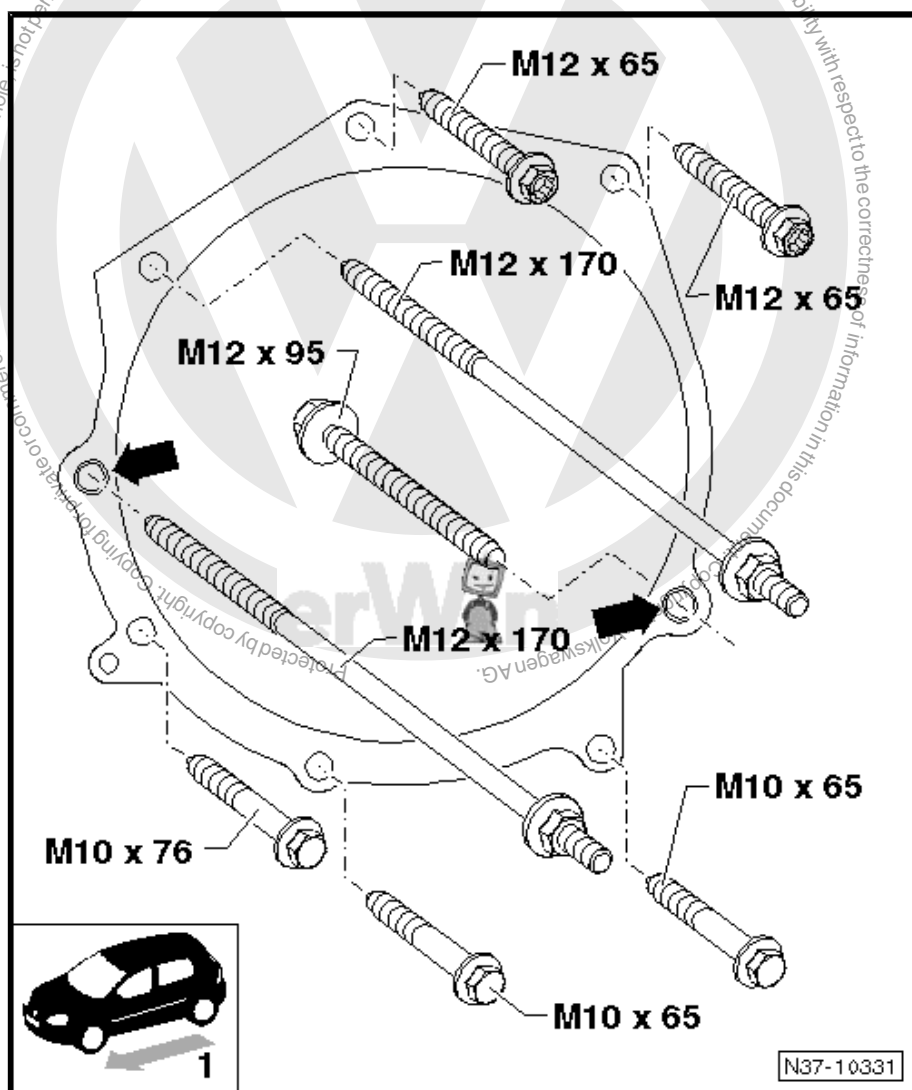
- M12 bolts ➔ M12

- ☐ 80 Nm
- ☐ 65 Nm if you use socket -T10179-

- M10 bolts ➔ M10

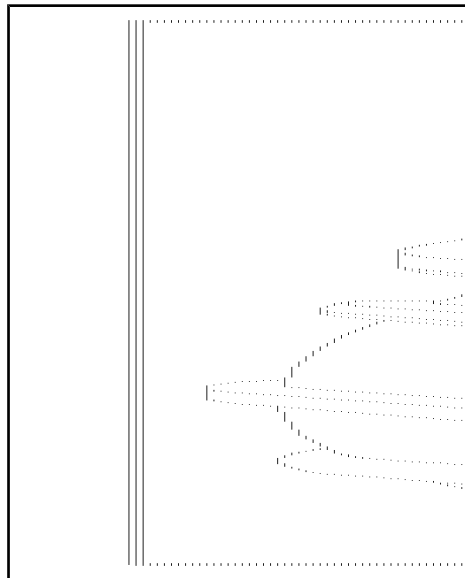
- ☐ 40 Nm
- ☐ These bolts are located in lower flange

- 2 dowel sleeves in engine -arrows-





- Make sure that bracket does not make contact with ATF cooler.
- Nuts- 8 Nm





7 Removing and installing gearbox, Jetta 2011 ➤

Removing gearbox, Jetta 2011 with 2.0 l - 85 kW engine
⇒ [page 57](#)

Installing gearbox, Jetta 2011 with 2.0 l - 85 kW engine
⇒ [page 63](#)

Removing gearbox, Jetta 2011 with 2.5 l - 125 kW engine
⇒ [page 63](#)

Installing gearbox, Jetta 2011 with 2.5 l - 125 kW engine
⇒ [page 72](#)

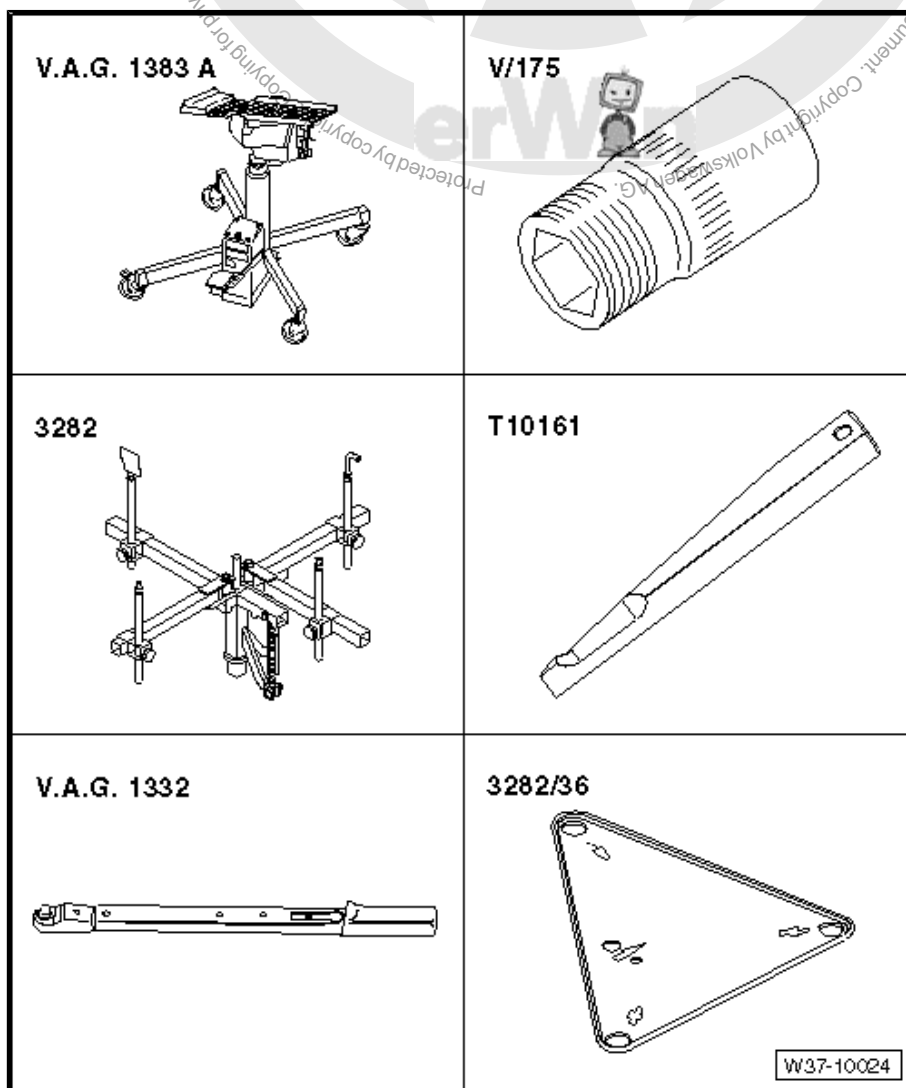
Torque settings ⇒ [page 72](#)

7.1 Removing gearbox, Jetta 2011 with 2.0 l - 85 kW engine

- Before beginning with removal, “if possible” print out a diagnosis log. Before sending back removed gearbox in the usual manner, secure log to gearbox.

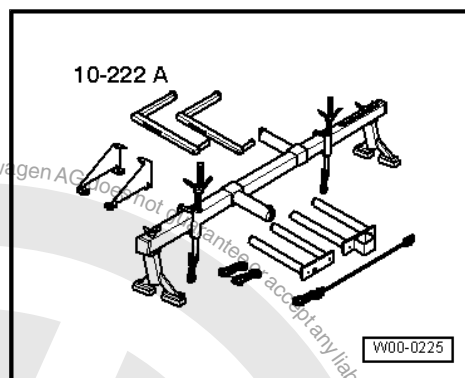
Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Insert -V/175-
- ◆ Gearbox support -3282-
- ◆ Wedge -T10161-
- ◆ Torque wrench -V.A.G 1332-
- ◆ Adjustment plate -3282/36-

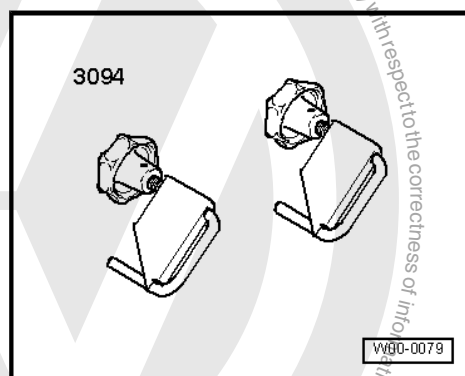




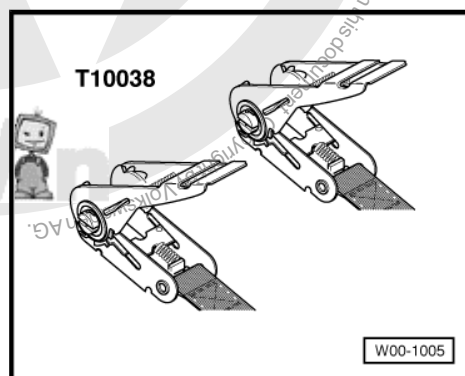
◆ Support bracket -10 - 222 A-



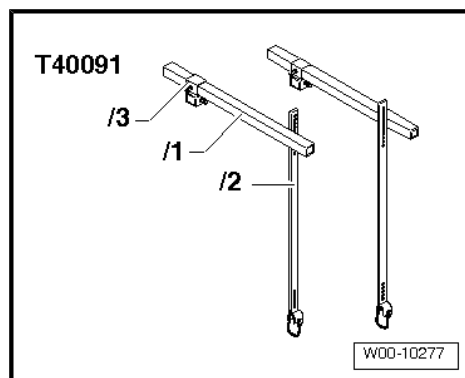
◆ Hose clamps to 25 mm -3094-



◆ Tensioning strap -T10038-



◆ Engine support basic set -T40091-



Carry out procedure as follows:

- Move selector lever to position “P” position.
- Remove air filter.
- Remove battery and battery tray ⇒ Rep. Gr. 27 ; Disconnecting and connecting battery; Removing and installing battery .

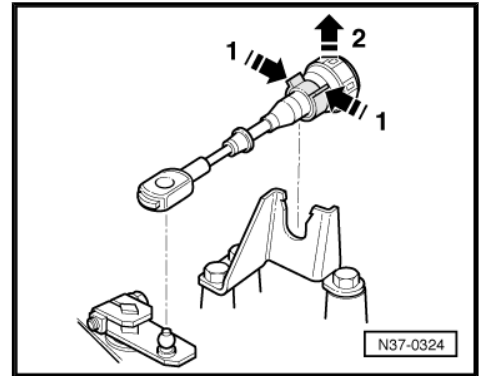


- In order to remove selector lever cable from gearbox, first release cable -arrows 1- and then remove it from cable support bracket -arrow 2-.

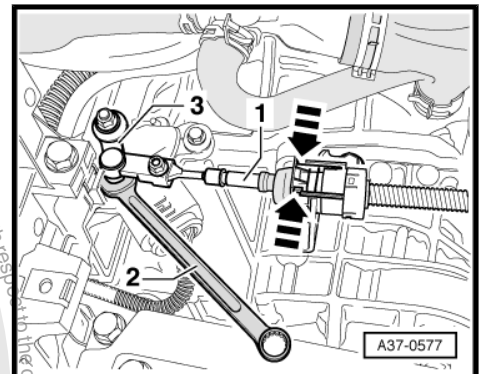


Note

- ◆ Do not use any pliers, otherwise securing tabs on cable support bracket could break off.
- ◆ Do not bend or kink selector lever cable.



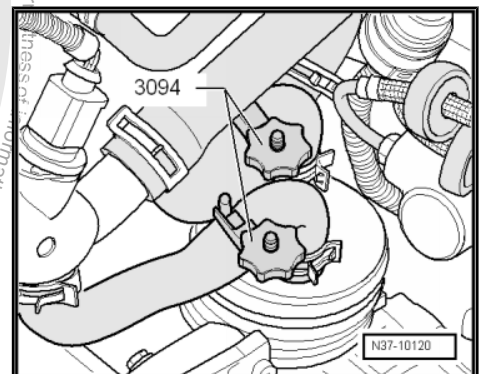
- Lever cable -1- off lever -3- using an open jaw spanner -2-.



- Tighten hose clamps up to Ø 25 mm -3094- on hoses and remove hoses from ATF cooler.
- Disconnect electrical connections to gearbox and starter.
- ◆ Multifunction switch
- ◆ Starter motor

Remove upper starter motor bolt.

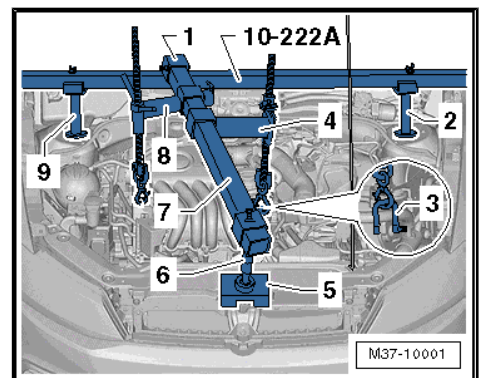
- Remove plenum chamber cover ⇒ Rep. Gr. 50 ; Plenum chamber cover; Removing and installing plenum chamber cover.



- Set up support bracket -10 - 222 A- and support engine and gearbox. Do not raise.

- 1 - -T40091/3-
- 2 - -10-222 A /31-1-
- 3 - -10-222 A /12-
- 4 - -10-222 A /3-
- 5 - -10-222 A /31-4-
- 6 - -10-222 A /31-3-
- 7 - -T40091/1-
- 8 - -10-222 A /18-
- 9 - -10-222 A /31-2-

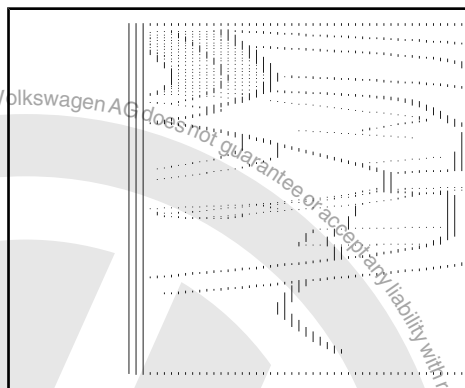
- Remove upper engine/gearbox connecting bolts.





- If present, remove earth strap from bracket -A-.
- Remove 2 securing bolts for gearbox mounting on bracket -A- and 4 bolts for bracket on gearbox.

The bracket is removed later.



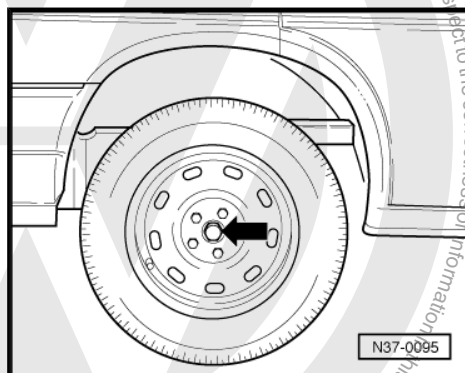
- Depress brake pedal to remove bolt for left drive shaft -arrow- (second mechanic required).



Note

After this, do not set vehicle on the ground any more ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

- Raise vehicle and remove front wheels.
- Remove noise insulation tray.
- Remove front left wheel housing liner ⇒ Rep. Gr. 66 ; Wheel housing liner; front wheel housing liner

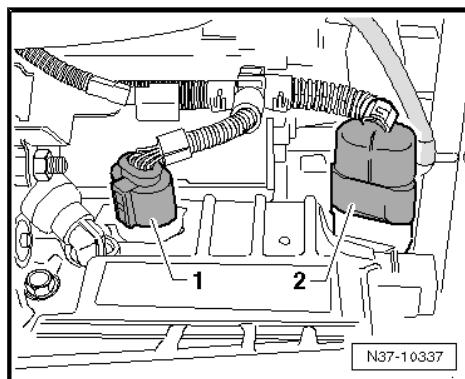


For vehicles with power steering

- Remove brackets with power assisted steering line from gearbox.

Continuation for all vehicles

- Now pull electrical connectors -1- and -2- off gearbox.
- Remove starter ⇒ Rep. Gr. 27 ; Removing and installing starter .
- Separate exhaust system at double clamp and remove exhaust pipe bracket from subframe ⇒ Rep. Gr. 26 ; Removing and installing parts of exhaust system .

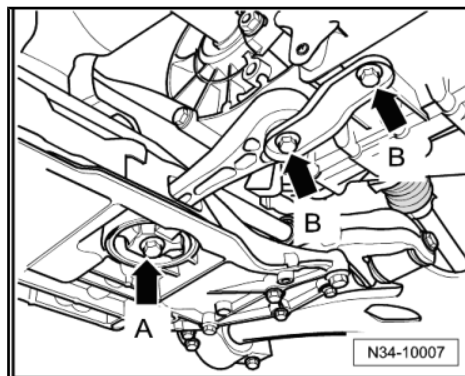


- Remove ⇒ pendulum support, first bolt -A- and then bolts -B-.



Note

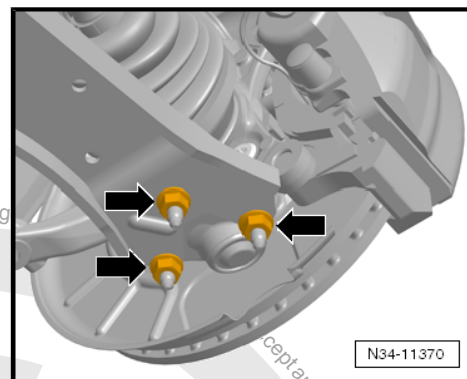
When installing, first tighten bolts -B-, then bolt -A-, torque settings ⇒ Rep. Gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .



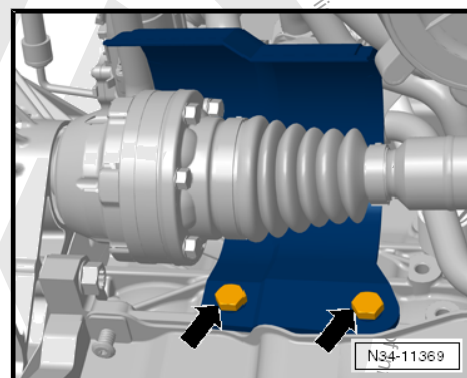


- Unbolt suspension link from wheel bearing housing on both sides.

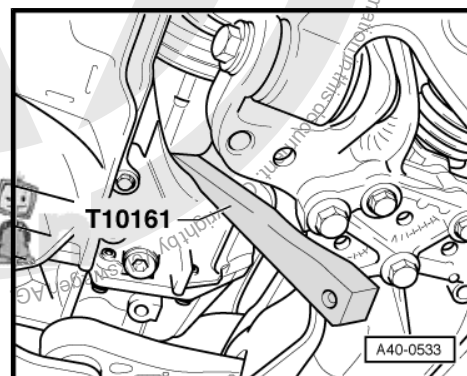
Torque settings ⇒ Rep. Gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .



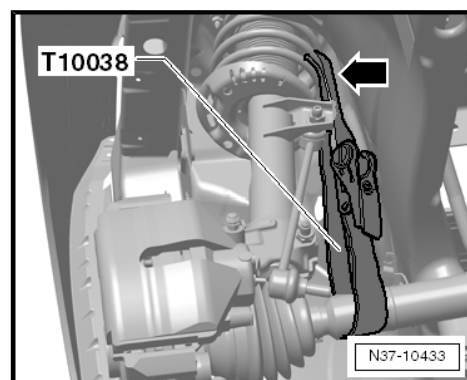
- If present, remove heat shield above right drive shaft -arrows-.



- Press both drive shafts out of gearbox. This procedure is described in ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .
- Remove left drive shaft ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .



- Raise right shaft as far as possible and secure in this position.





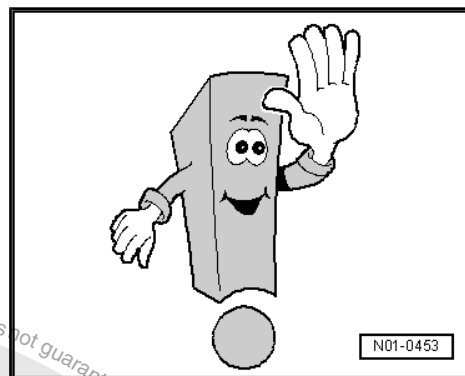
- Now remove assembly mounting bracket. To do this, lower engine and gearbox slightly via support bracket -10 - 222 A-spindles.

4 turns are sufficient.

- Remove lower connecting bolts between engine and gearbox.
- Leave an easily accessible bolt installed for safety.

The torque converter nut bore is concealed with a rubber cap on the rear of the engine.

- Remove this cap.

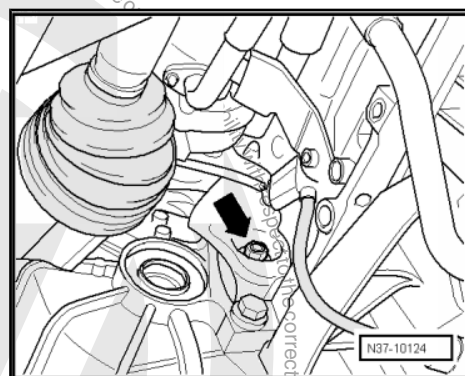


- Remove six -torque converter nuts- with insert -V/175- .

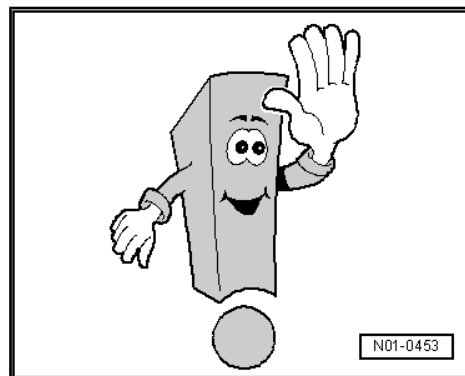
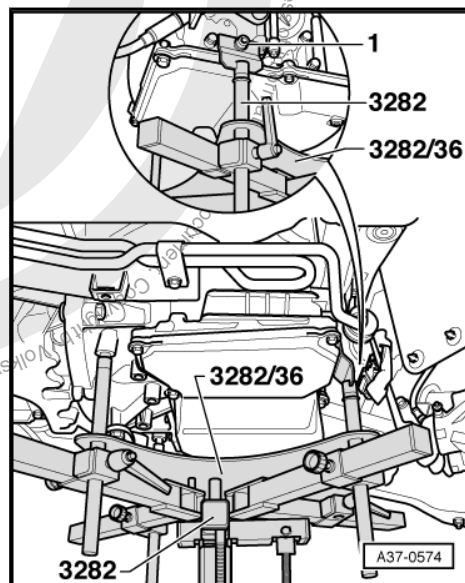


Note

Continue turning the engine carefully!



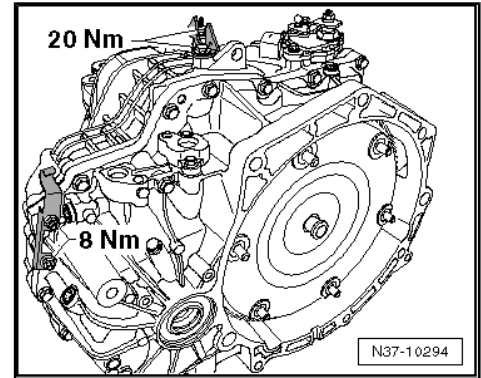
- Before you now remove final connecting bolt, support gearbox with engine and gearbox jack -V.A.G 1383 A- , gearbox support -3282- and adjustment plate -3282 /36- .
- Secure gearbox to gearbox support -3282- using nut -1- at double bolt.
- Only now is the final bolt removed.
- Press gearbox off engine while simultaneously pressing torque converter out of drive plate of engine.
- When lowering gearbox, guide it past power assisted steering line and past subframe. If necessary, readjust gearbox support -3282- slightly.





Note

- ◆ Pay attention to torque converter. It must be removed together with gearbox. Secure torque converter to prevent it from falling out.
- ◆ Keep in mind that if a new gearbox is installed, parts such as cable support bracket and retainer for gate selector cable must be transferred.



7.2 Installing gearbox, Jetta 2011 with 2.0 I - 85 kW engine

- Check whether dowel sleeves are pressed into engine flange.
- Check seat of intermediate plate between engine and gearbox. The plate must make contact with the engine along its entire perimeter when it is pressed gently with both hands against the engine. If the top does not contact the engine, it is not properly engaged in the engine block.

Continue installation in reverse order of removal.

The engine and gearbox should be mounted tension-free in the assembly mounting. The correct procedure is described in ➔ Rep. Gr. 10 ; Removing and installing engine; Notes on installation .

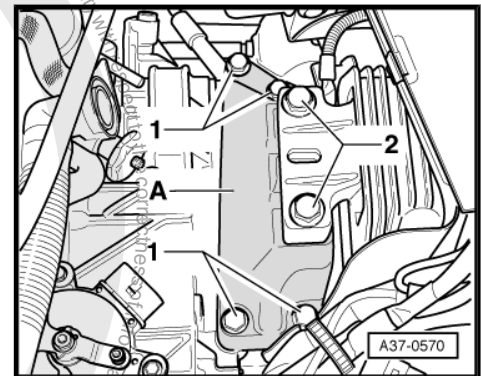
- Renew all bolts on left assembly mounting.
- First screw in all bolts by hand.

When installing, first screw bracket -A- onto gearbox using securing bolts -1-, tighten to 40 Nm and 90° further.

Two bolts -2- for securing bracket to gearbox mounting can be tightened by inserting a screwdriver between the two bolts to adjust to "previous seating". These two larger bolts are tightened to 60 Nm + 90°.

Torque settings, gearbox to engine ➔ [page 73](#) .

- Adjust selector lever cable ➔ [page 30](#) .
- After installing, check ATF level ➔ [page 77](#) .
- Carry out basic settings. To do this
- Connect vehicle diagnosis, testing and information system - VAS 5051- and then select "Perform basic settings" under Guided functions.



7.3 Removing gearbox, Jetta 2011 with 2.5 I - 125 kW engine

- Before beginning with removal, "if possible" print out a diagnosis log. Before sending back removed gearbox in the usual manner, secure log to gearbox.

Brief description

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

Battery, battery carrier, air filter and engine cover are removed "from above". Engine and gearbox must then be supported so that left assembly mounting can be removed.



Noise insulation is removed and drive shafts are pressed off "from below". Gearbox is lowered using gearbox jack.

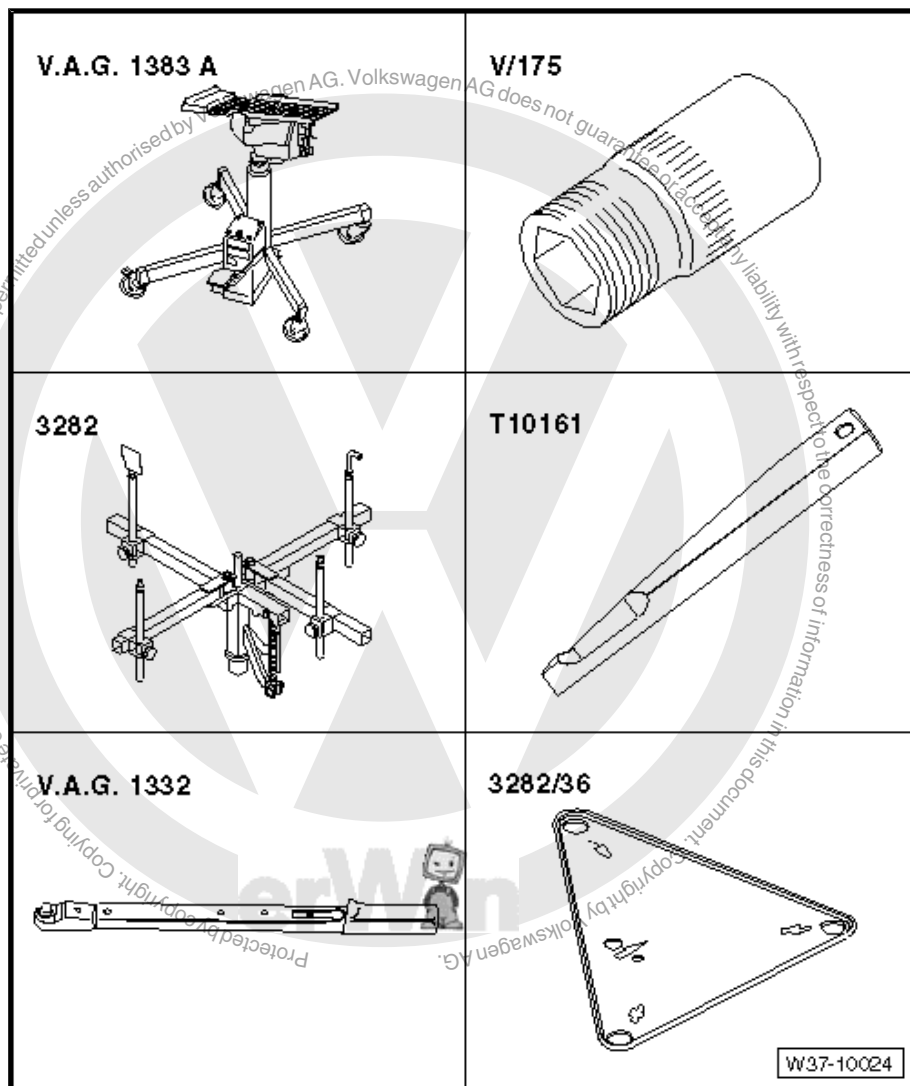


Note

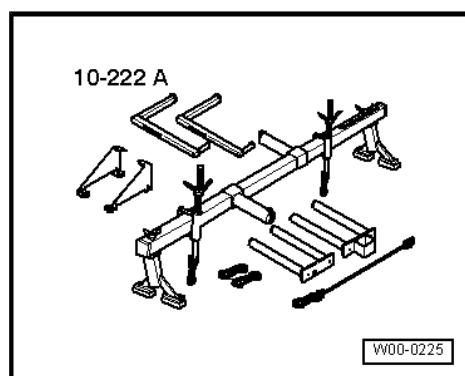
The subframe is not to be removed.

Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Insert -V/175-
- ◆ Gearbox support -3282-
- ◆ Wedge -T10161-
- ◆ Torque wrench -V.A.G 1332-
- ◆ Adjustment plate -3282/36-

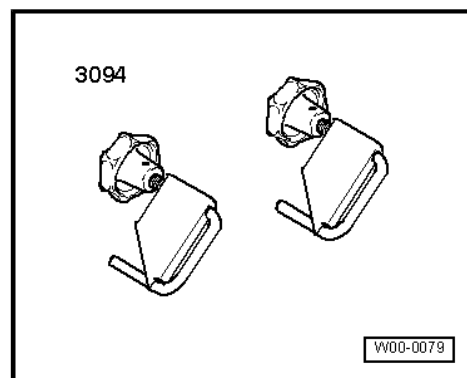


- ◆ Support bracket -10 - 222 A-

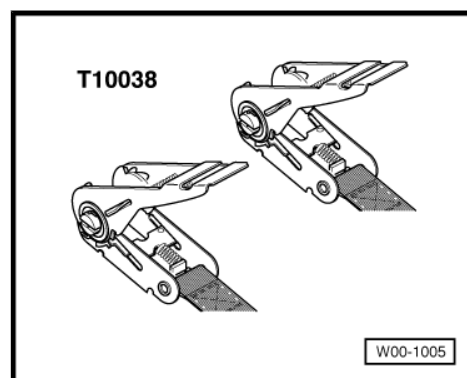




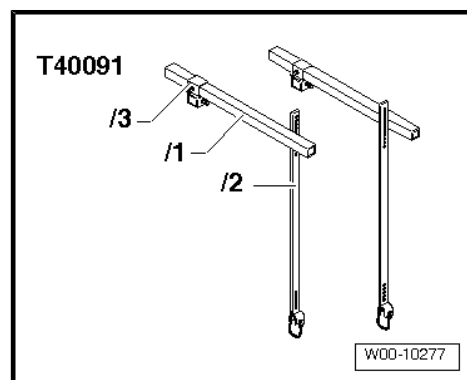
- ◆ Hose clamps to 25 mm -3094-



- ◆ Tensioning strap -T10038-

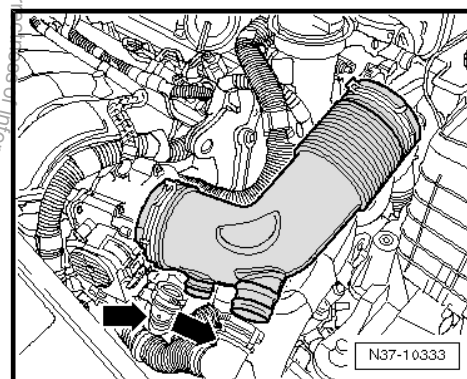


- ◆ Engine support basic set -T40091-



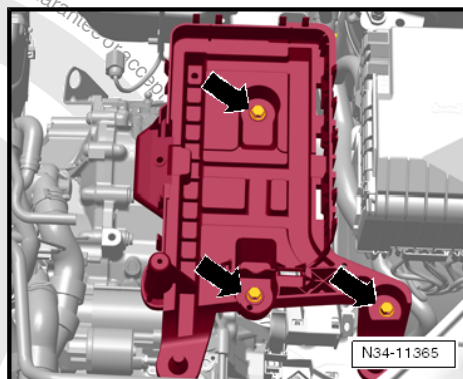
Carry out procedure as follows:

- Move selector lever to position “P” position.
- Remove engine cover and air filter.
- Pull off hoses -arrows- and remove intake hose from throttle valve unit.





- Remove battery and battery tray ⇒ Rep. Gr. 27 ; Disconnecting and connecting battery ; Removing and installing battery .

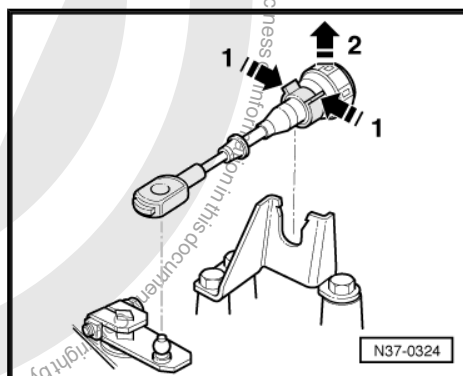


- In order to remove selector lever cable from gearbox, first release cable -arrows 1- and then remove it from cable support bracket -arrow 2-.

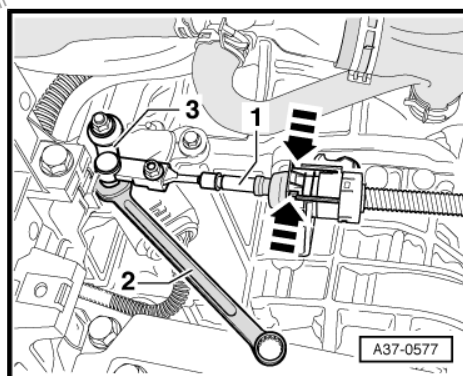


Note

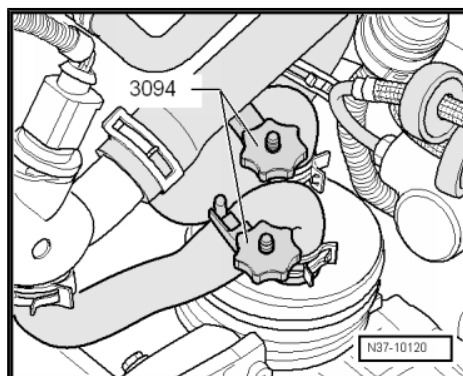
- ◆ Do not use any pliers, otherwise securing tabs on cable support bracket could break off.
- ◆ Do not bend or kink selector lever cable.



- Lever cable -1- off lever -3- using an open jaw spanner -2-.



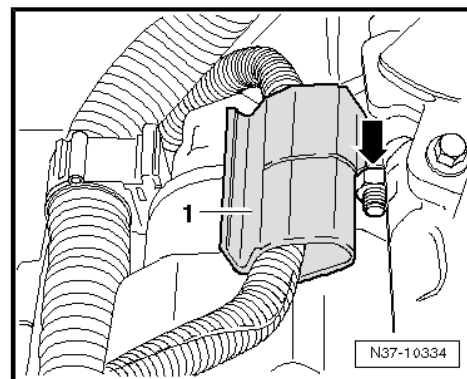
- Tighten hose clamps up to Ø 25 mm -3094- on hoses and remove hoses from ATF cooler.
- Disconnect electrical connections to gearbox and starter.
- ◆ Multifunction switch
- ◆ Starter motor



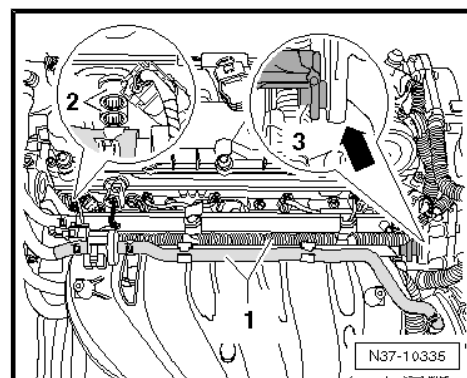


- Remove cable retainer -1- from starter bolt -arrow-.
- Remove upper starter motor bolt.
- Remove upper engine/gearbox connecting bolts.
- Remove plenum chamber cover ⇒ Rep. Gr. 50 ; Plenum chamber cover; Removing and installing plenum chamber cover .

To support engine and gearbox:



- Remove cables -1- from transportation bracket -3-.
- Unbolt transportation bracket -3- from engine -2- and pull out of eye -arrow-.
- Attach a shackle -10 - 222 A /12- in "this" eye.

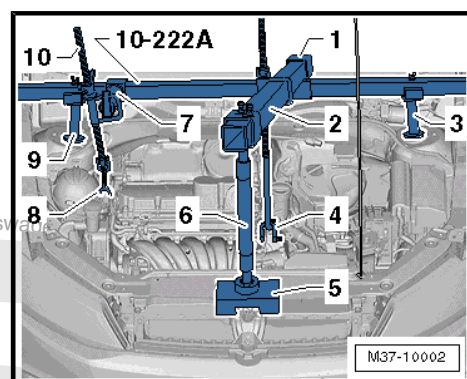


- Set up support bracket -10 - 222 A- and support engine and gearbox. Do not raise.

- 1 - -T40091 /3-
- 2 - -T40091 /1-
- 3 - -10-222 A /31-1-
- 4 - -10-222 A /12-
- 5 - -10-222 A /31-4-
- 6 - -10-222 A /31-3-
- 7 - -10-222 A /3-
- 8 - -10-222 A /7-
- 9 - -10-222 A /31-2-
- 10 - -10-222 A /10-

- Extend right hook -10 - 222 A /10- -no. 10- with adapter -10 - 222 A /7- -no. 8-.

The hook faces downwards and will later be hooked into the engine block.





- Depress brake pedal to remove bolt for left drive shaft
-arrow- (second mechanic required).



Note

After this, do not set vehicle on the ground any more ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

- Raise vehicle and remove front wheels.
- Remove noise insulation tray.
- Remove front left wheel housing liner ⇒ Rep. Gr. 66 ; Wheel housing liner; front wheel housing liner .

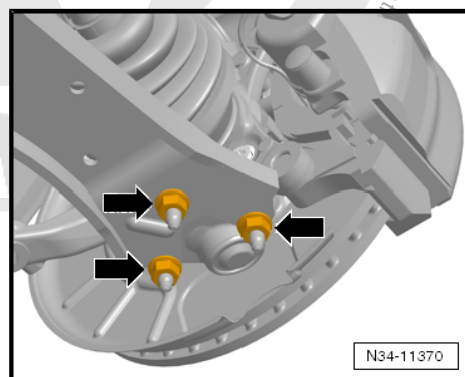
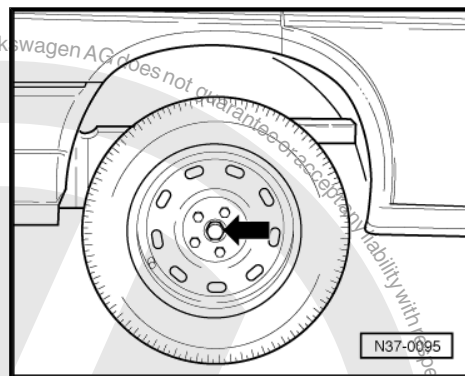
For vehicles with power steering

- Remove brackets with power assisted steering line from gearbox.

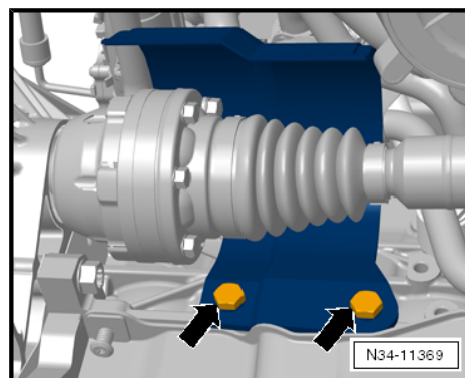
Continuation for all vehicles

- Separate exhaust system at double clamp and remove exhaust pipe bracket from subframe ⇒ Rep. Gr. 26 ; Removing and installing parts of exhaust system .
- Unbolt suspension link from wheel bearing housing on both sides.

Torque settings ⇒ Rep. Gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

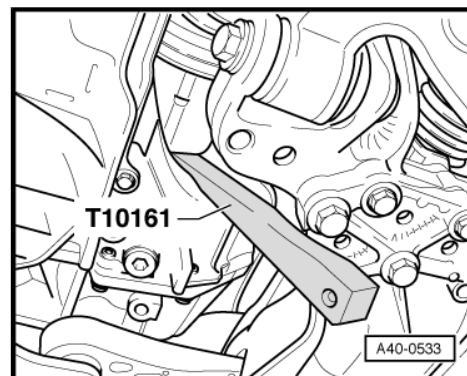


- If present, remove heat shield above right drive shaft
-arrows-.

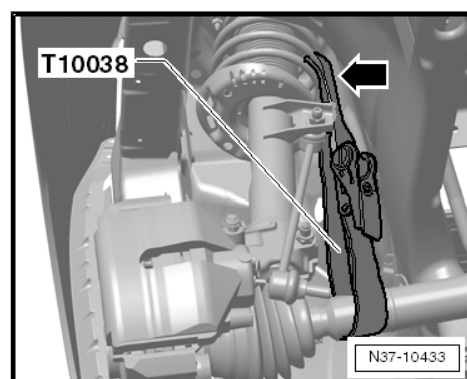




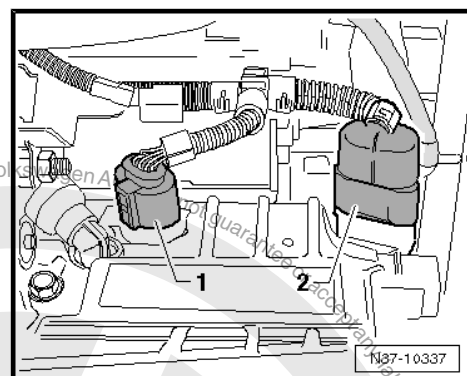
- Press both drive shafts out of gearbox. This procedure is described in ➤ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .
- Remove left drive shaft ➤ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .



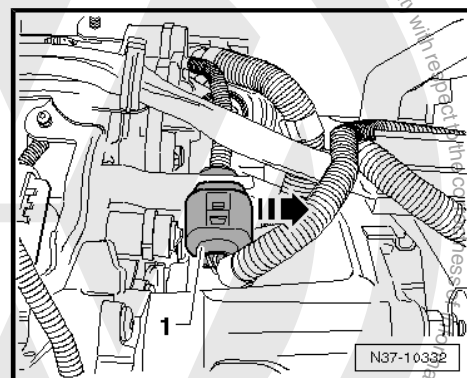
- Raise right shaft as far as possible and secure in this position.



- Now pull electrical connectors -1- and -2- off gearbox.

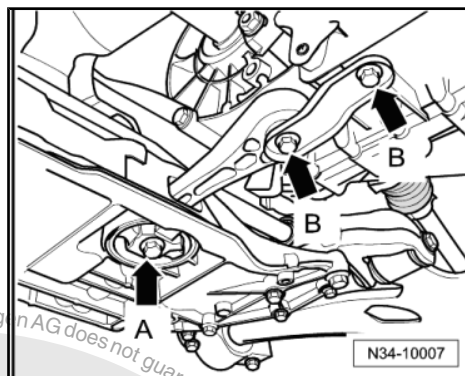


- Pull connector beneath starter -1- out of retainer and separate.
- Unbolt retainer from lower starter bolt.
- Remove lower starter bolt and remove starter ➤ Rep. Gr. 27 ; Removing and installing starter .

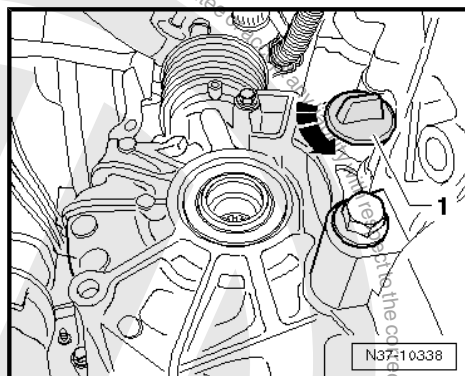




- Remove ⇒ pendulum support, first bolt -A- and then bolts -B-.



- Turn cap -1- in direction of arrow and remove.

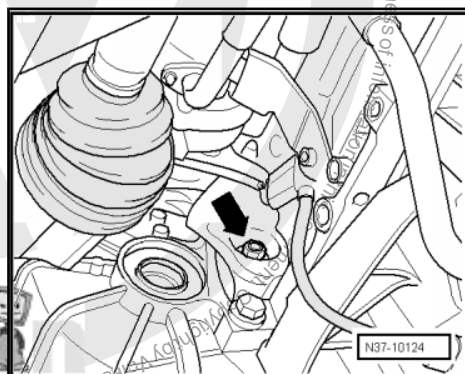


- Remove six -torque converter nuts- with insert -V/175- .

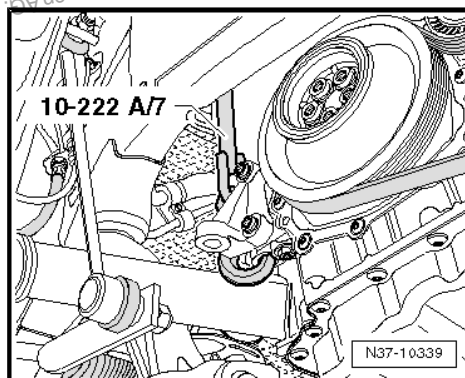


Note

Continue turning the engine carefully!

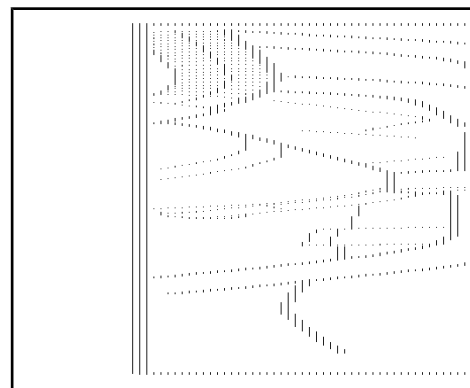


- Hook adapter -10 - 222 A /7- into engine block.
Tighten right spindle one turn (more is not necessary).
- Support engine and gearbox with left spindle. Do not raise.





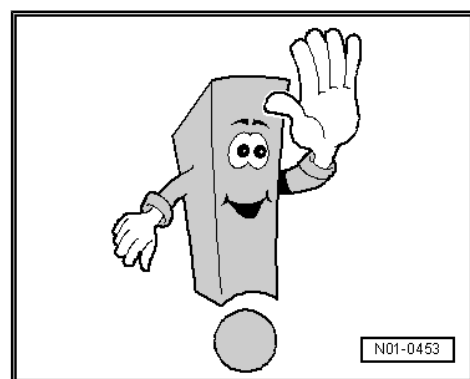
- If present, remove earth strap from bracket -A-.
- Remove 2 securing bolts for gearbox mounting on bracket -A- and 4 bolts for bracket on gearbox.



- Now remove assembly mounting bracket. To do this, lower engine and gearbox slightly via support bracket -10 - 222 A-spindles.

4 turns are sufficient.

- Remove lower connecting bolts between engine and gearbox.
- Leave an easily accessible bolt installed for safety.



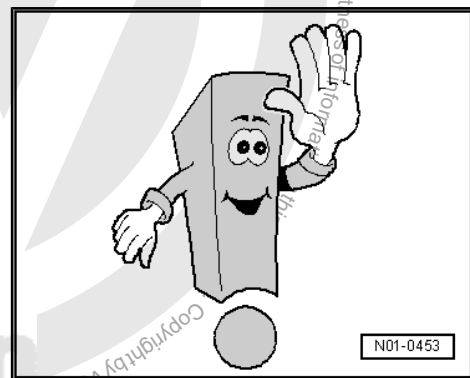
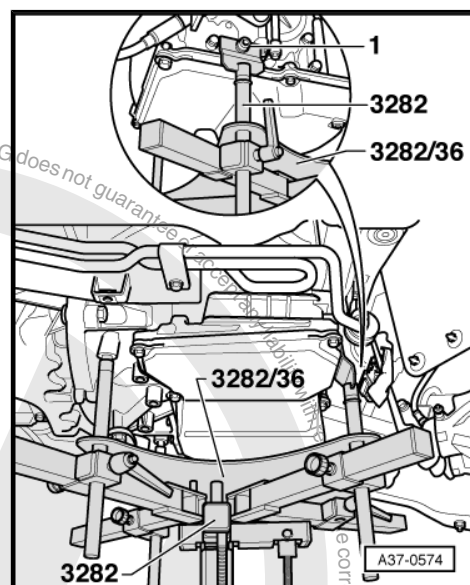
- Before you now remove final connecting bolt, support gearbox with engine and gearbox jack -V.A.G 1383 A-, gearbox support -3282- and adjustment plate -3282 /36- .

- Secure gearbox to gearbox support -3282- using nut -1- at double bolt.

- Only now is the final bolt removed.

- Press gearbox off engine while simultaneously pressing torque converter out of drive plate of engine.

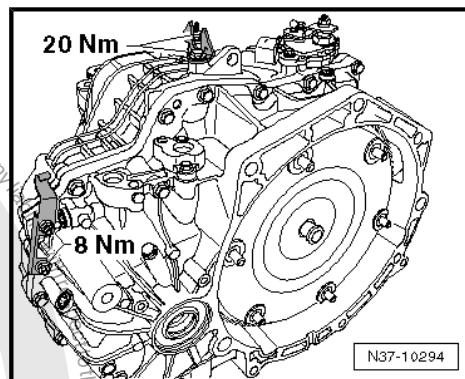
- When lowering gearbox, guide it past power assisted steering line and past subframe. If necessary, readjust gearbox support -3282- slightly.





Note

- ♦ Pay attention to torque converter. It must be removed together with gearbox. Secure torque converter to prevent it from falling out.
- ♦ Keep in mind that if a new gearbox is installed, parts such as cable support bracket and retainer for gate selector cable must be transferred.



7.4 Installing gearbox, Jetta 2011 with 2.5 I - 125 kW engine

- Check whether dowel sleeves are pressed into engine flange.
- Check seat of plate between engine and gearbox. The plate must make contact with the engine along its entire perimeter when it is pressed gently with both hands against the engine. If the top does not contact the engine, it is not properly engaged in the engine block.

Continue installation in reverse order of removal.

The engine and gearbox should be mounted tension-free in the assembly mounting. The correct procedure is described in ⇒ Rep. Gr. 10 ; Removing and installing engine; Notes on installation .

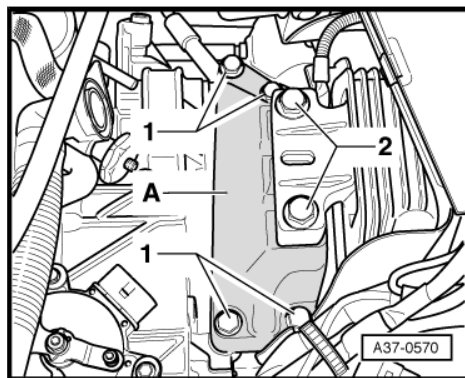
- Renew all bolts on left assembly mounting.
- First screw in all bolts by hand.

When installing, first screw bracket -A- onto gearbox using securing bolts -1-, tighten to 40 Nm and 90° further.

Two bolts -2- for securing bracket to gearbox mounting can be tightened by inserting a screwdriver between the two bolts to adjust to "previous seating". These two larger bolts are tightened to 60 Nm + 90°.

Torque settings, gearbox to engine ⇒ [page 72](#) .

- Adjust selector lever cable ⇒ [page 30](#) .
- After installing, check ATF level ⇒ [page 77](#) .
- Carry out basic settings. To do this
- Connect vehicle diagnosis, testing and information system - VAS 5051- and then select "Perform basic settings" under Guided functions.



7.5 Torque settings, gearbox to engine

Jetta 2011 with 2.0 I - 85 kW engine ⇒ [page 73](#) .

Jetta 2011 with 2.5 I - 125 kW engine ⇒ [page 74](#) .



7.5.1 Torque settings, Jetta 2011 with 2.0 l - 85 kW engine

- Drive plate to torque converter

- ☐ 60 Nm
- ☐ Qty. 6; remove and install with insert -V/175-

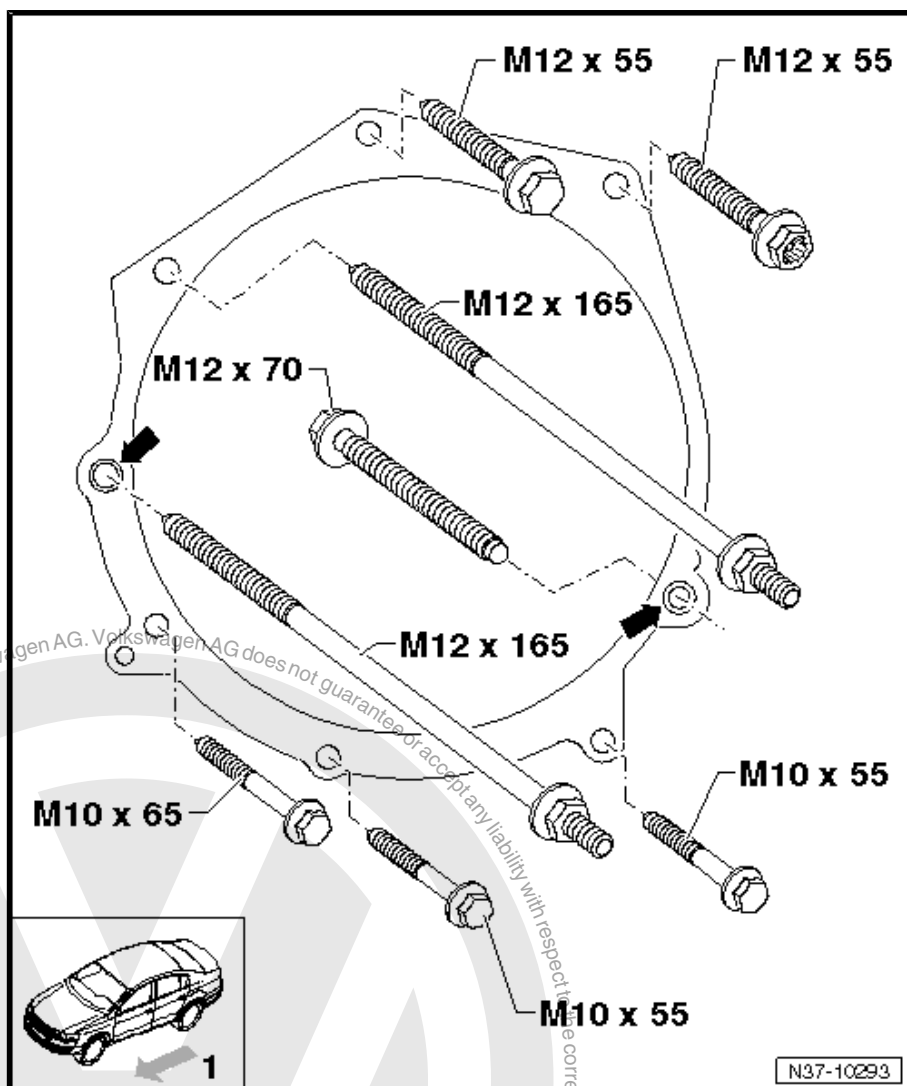
- M12 bolts \Rightarrow M12

- ☐ 80 Nm
- ☐ 65 Nm if you use socket -T10179-

- M10 bolts \Rightarrow M10

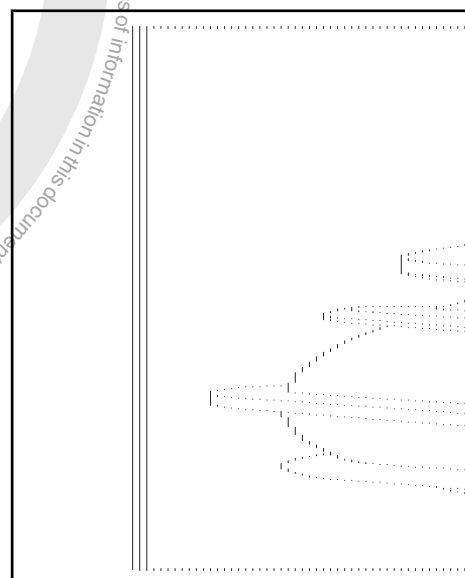
- ☐ 40 Nm
- ☐ These bolts are located in lower flange

- Two dowel sleeves in engine -arrows-



- Make sure that bracket does not make contact with ATF cooler

-Nuts-8 Nm





7.5.2 Torque settings, Jetta 2011 with 2.5 l - 125 kW engine

1 - Direction of travel

- Drive plate to torque converter

- ☐ 60 Nm
- ☐ Qty. 6; remove and install with insert -V/175-.

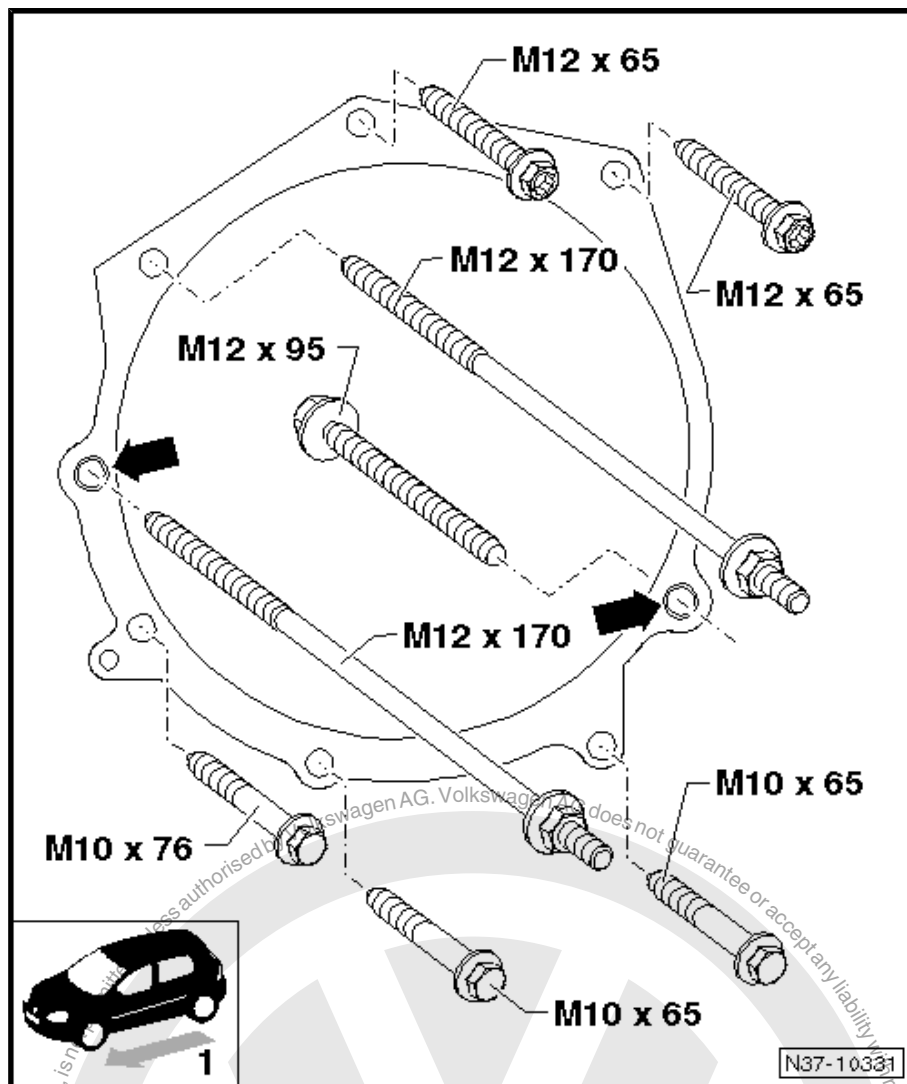
- M12 bolts ➔ M12

- ☐ 80 Nm
- ☐ 65 Nm if you use socket -T10179-

- M10 bolts ➔ M10

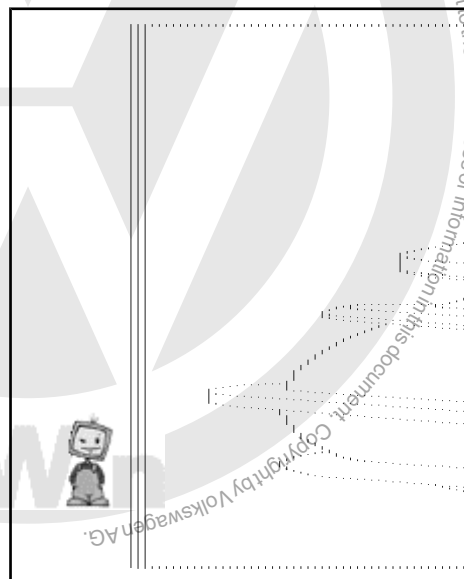
- ☐ 40 Nm
- ☐ These bolts are located in lower flange

- Two dowel sleeves in engine -arrows-



- Make sure that bracket does not make contact with ATF cooler.

-Nuts- 8 Nm

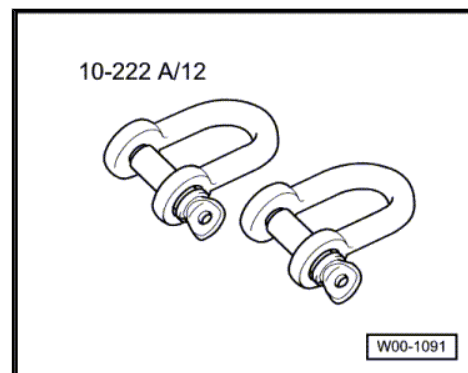




8 Transporting gearbox

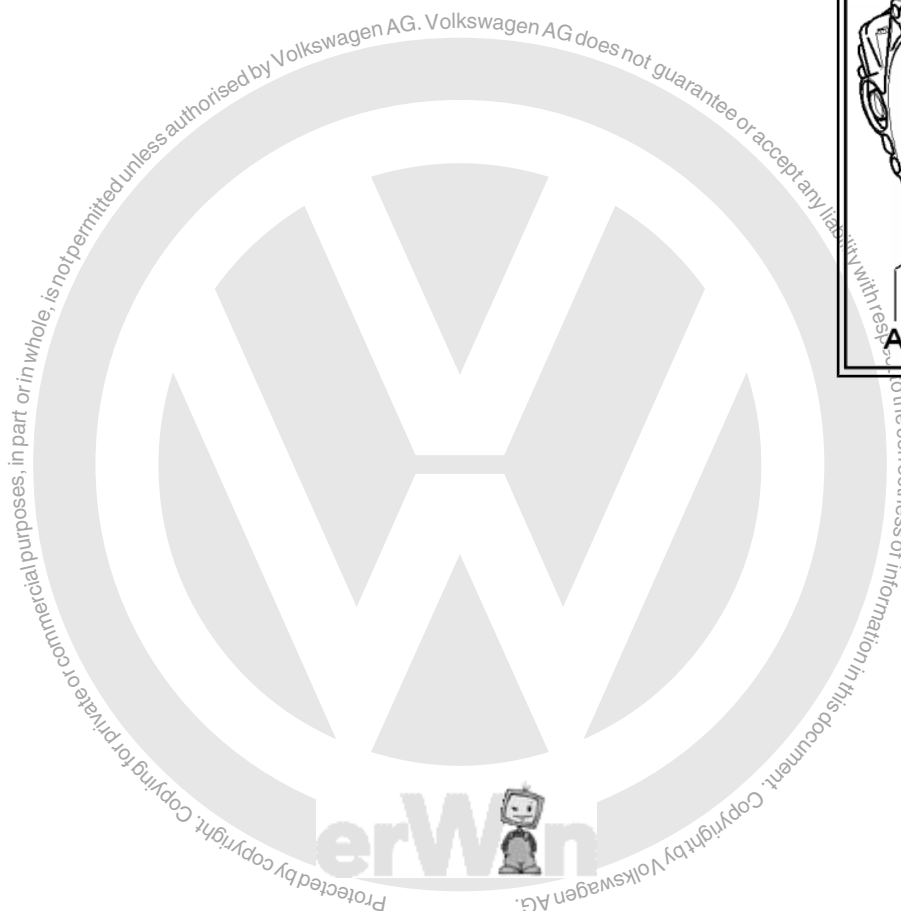
Special tools and workshop equipment required

- ◆ Shackle -10 - 222 A /12-



Shackle 10-222 A/12 can be used to transport the automatic gearbox and set up gearbox support 3282.

- During transportation, protect torque converter -arrow- from falling out, e.g. with a wire -A-.





9 ATF cooler

9.1 Assembly overview - ATF cooler

1 - Gearbox housing

2 - O-ring

- ☐ Always renew

3 - ATF cooler

- ☐ Installation position:
⇒ [page 76](#)

4 - O-ring

- ☐ Always renew

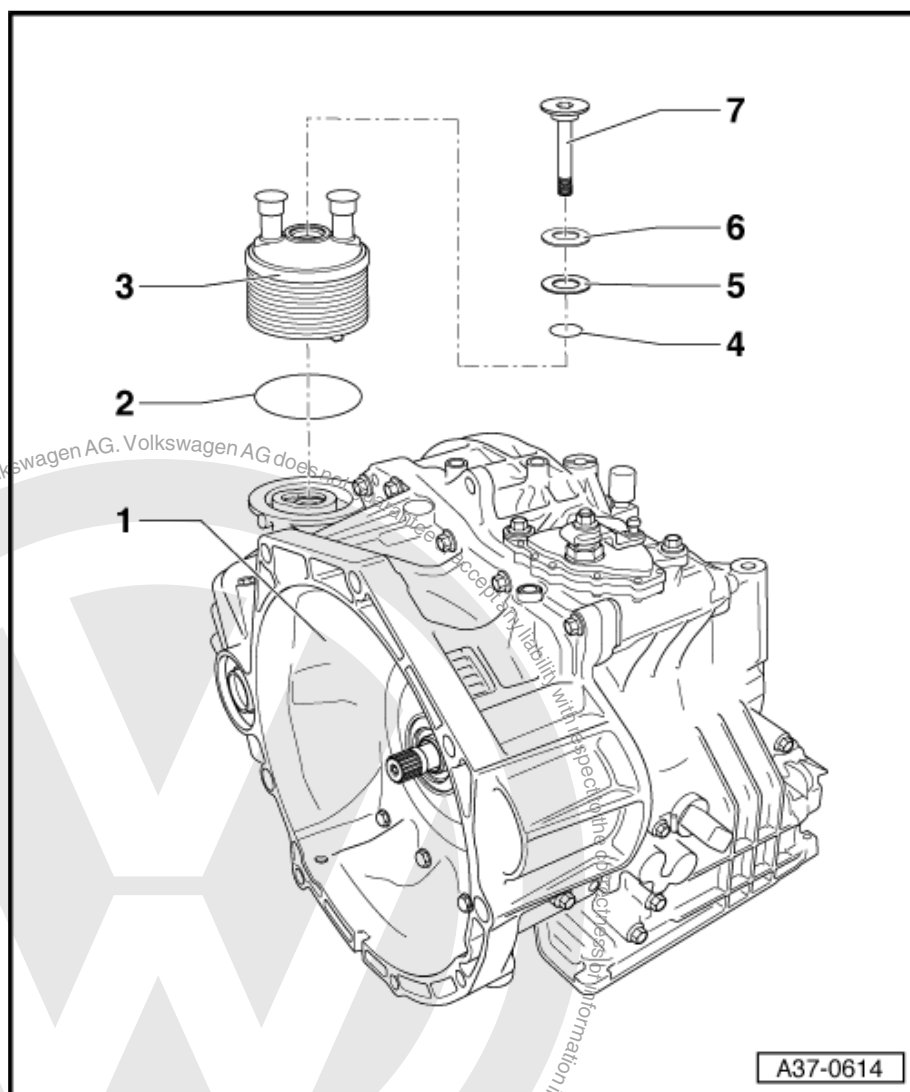
5 - Washer

6 - Dished washer

- ☐ Position: convex side
faces bolt
⇒ [Item 7 \(page 76\)](#)

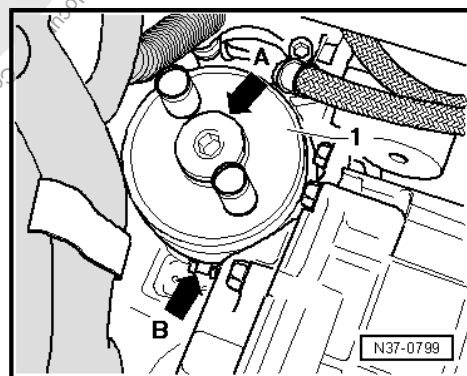
7 - Bolt

- ☐ 36 Nm



Position: ATF cooler

- When installing ATF cooler -1-, insert lug -arrow B- into recess in gearbox housing.





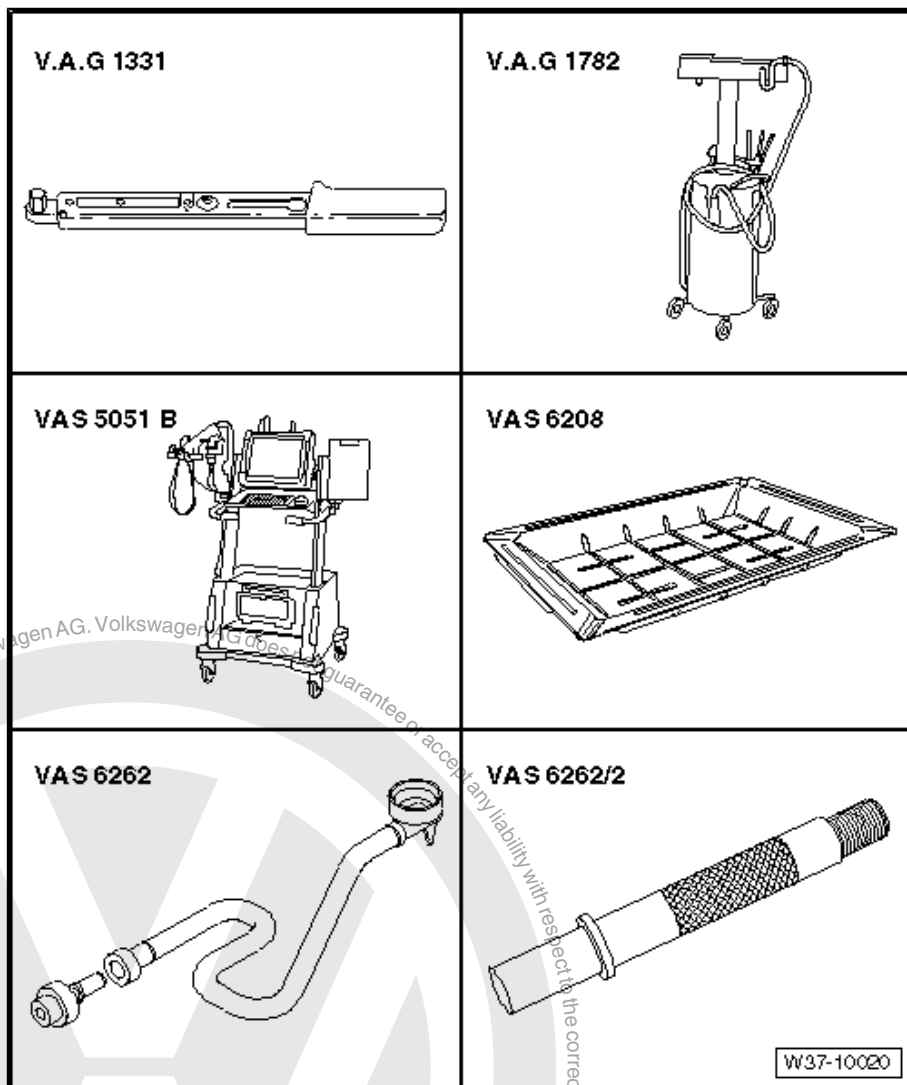
10 Checking ATF level and topping up

Please follow instructions:

- ◆ About this workshop manual ➤ [page 1](#)
- ◆ About ATF ➤ [page 2](#)
- ◆ About "filler pipe" ➤ [page 3](#)

Special tools and workshop equipment required

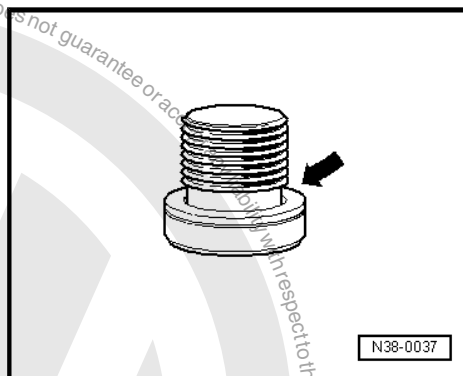
- ◆ Torque wrench -V.A.G 1331-
- ◆ Used oil collection and extraction unit -V.A.G 1782-
- ◆ Vehicle diagnosis, testing and information system -VAS 5051-
- ◆ Drip tray for workshop hoist -VAS 6208-
- ◆ Adapter for filling oil -VAS 6262-
- ◆ Adapter -VAS 6262/2-





If ATF must be added, use only ATF listed in ➔ **Electronic parts catalogue ➔ ETKA** .

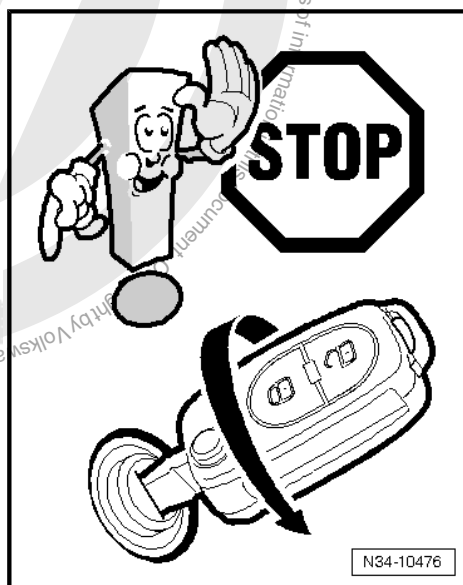
- If ATF level is checked, oil seal -arrow- on ATF inspection plug must always be renewed.



10.1 Checking ATF level

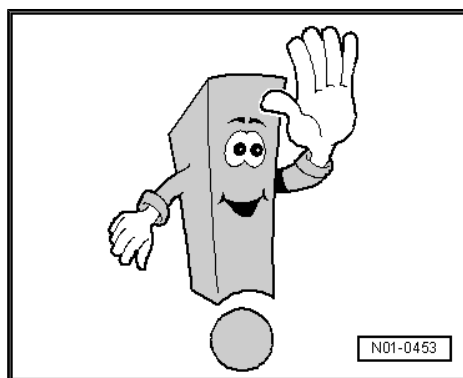
Carry out procedure as follows:

- Switch off engine.



The ATF temperature should not be more than approx. 30 °C at the start of the test.

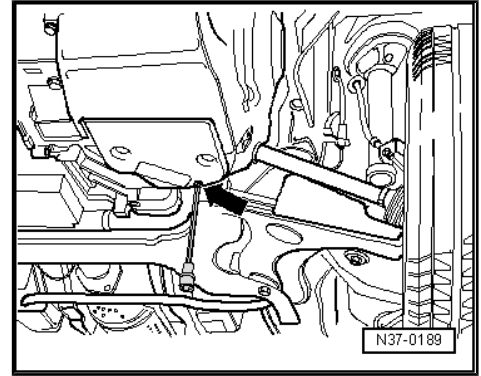
- Gearbox is not in emergency running mode and ATF temperature is not above approx. 30 °C.
- Vehicle must be standing level
- Selector lever in "P".
- Connect "tester" and continue switching until it is ready for operation ➔ [page 11](#) .
- Press **Guided functions** "on right".
- Then select vehicle, the gearbox and **Check ATF level**.
- Press
- Start engine.
- Raise vehicle.
- Place drip tray under gearbox.
- Press



If a test temperature between 35 °C and 45 °C is displayed:



- Remove inspection plug for ATF level from oil pan.



The ATF present in the overflow pipe runs out.

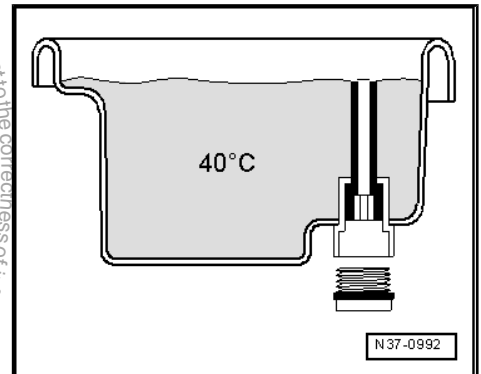
If ATF drips out of drilling:

ATF does not need topping up.

- Fit new seal to plug and tighten to 27 Nm. This concludes the ATF check.

If no ATF drips out of inspection hole:

- Top up ATF ⇒ [page 79](#) .



10.2 Topping up ATF

Carry out procedure as follows:

- With engine “running”, screw in adapter for filling oil -VAS 6262/2- hand-tight.
- Add 1 l of ATF.
- Pull off adapter for oil filling -VAS 6262- at quick-release connection and check:

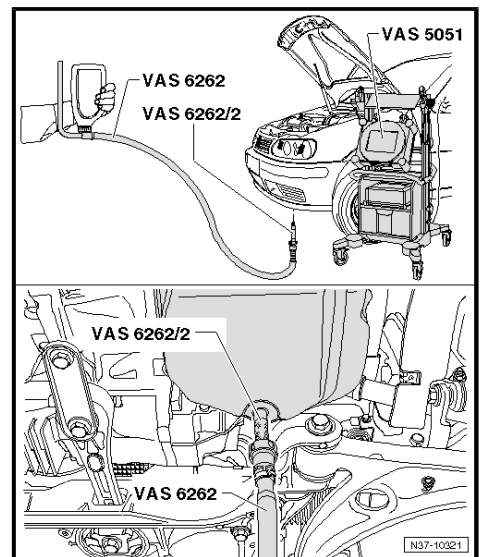
If ATF now flows out of hole in adapter:

ATF does not need topping up.

- Drain ATF until it drips.
- Fit new seal to plug and tighten to 27 Nm. This concludes the ATF check.

If no ATF drips out:

- Add another litre ⇒ [page 79](#) .



WARNING

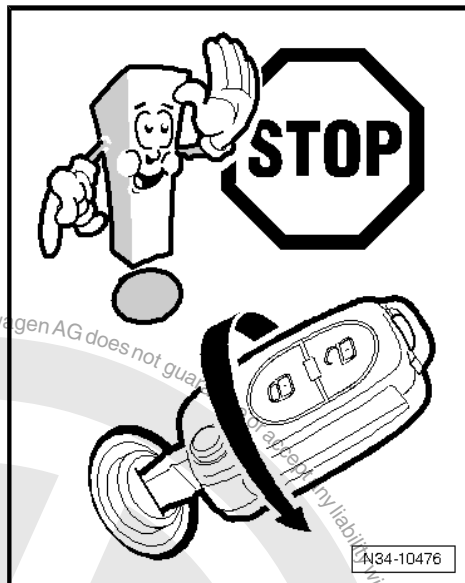
An ATF level which is too low or too high will impair the function of the gearbox. But if the gearbox was 2 litres low, it must be carefully inspected. There is probably a “major” leak.



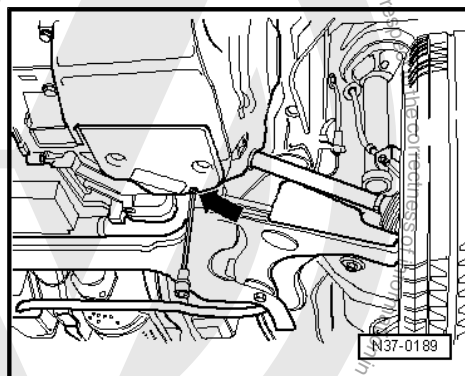
10.3 Draining and filling ATF

Carry out procedure as follows:

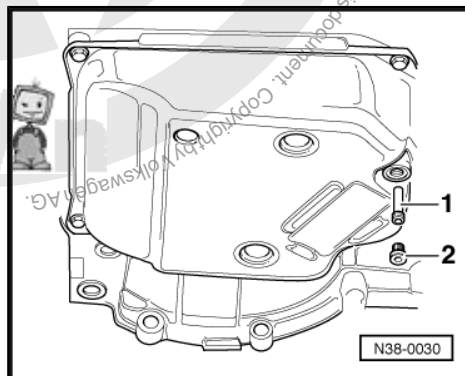
- Switch off engine.



- Remove inspection plug for ATF level from oil pan -arrow-.



- Remove overflow pipe -1- through inspection hole.
- Drain ATF.
- Install overflow pipe.
- Install plug hand-tight.
- Add 3 litres of ATF ⇒ Electronic parts catalogue ⇒ ETKA through filler pipe.
- Start engine, shift through all selector lever positions with vehicle stationary, leaving selector lever in each position for about 10 seconds.
- Finally, check ATF level and top up ⇒ [page 77](#) .



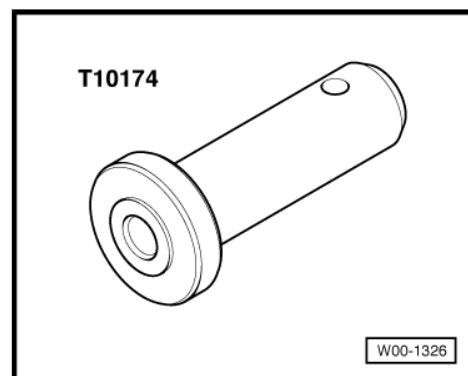


38 – Gears, control

1 Renewing oil seal for selector shaft

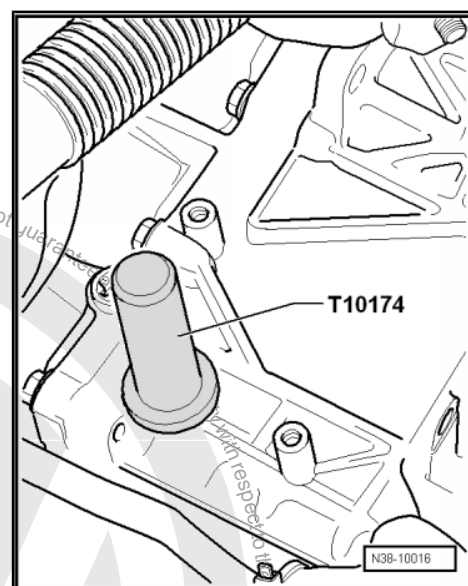
Special tools and workshop equipment required

- ◆ Thrust piece -T10174-



Carry out procedure as follows:

- Remove multifunction switch -F125- ➤ [page 18](#) .
- Carefully lever out selector shaft seal using a screwdriver. Do not damage selector shaft.
- Drive in new seal to stop with thrust piece -T10174-. Do not cant oil seal in the process.
- Adjust multifunction switch -F125- ➤ [page 20](#) .



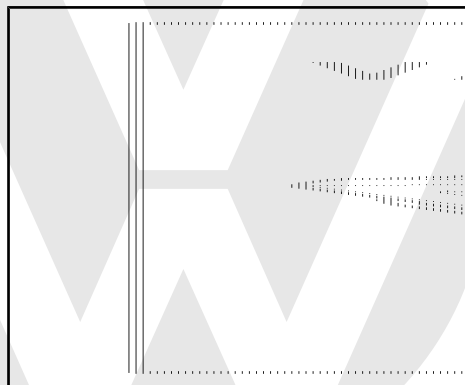


2 ATF pan

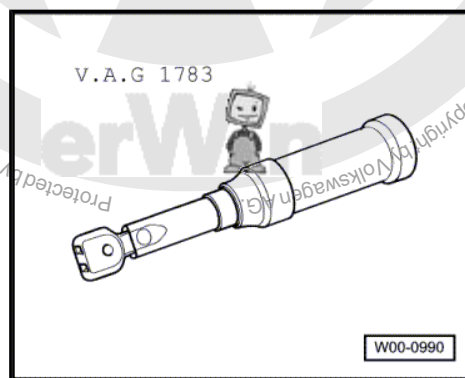
2.1 Removing and installing ATF pan

Special tools and workshop equipment required

- ◆ Drip tray for workshop hoist -VAS 6208-

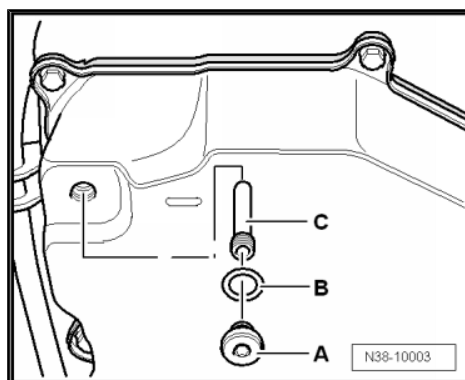


- ◆ Torque wrench -V.A.G 1783-



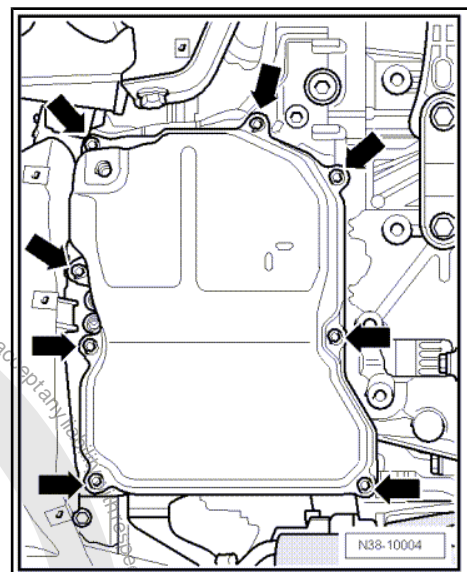
2.1.1 Removing

- Remove noise insulation below engine.
- Place drip tray underneath.
- Unscrew and remove ATF inspection plug -A-.
- Remove overflow pipe -C- and allow remaining ATF to drain.





- Loosen oil pan bolts -arrows- diagonally.
- Remove oil pan together with gasket.



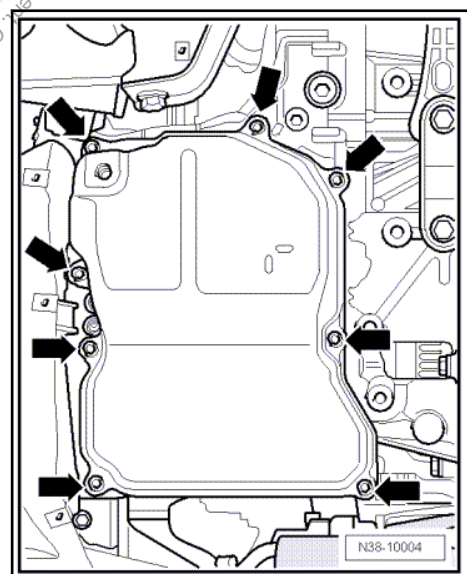
2.1.2 Installing

Install in the reverse order of removal, observing the following:

- Clean two magnets in recesses of oil pan. Make sure that magnets make full contact with oil pan.
- Check that seal is undamaged and all spacer sleeves (qty. 8) are present.

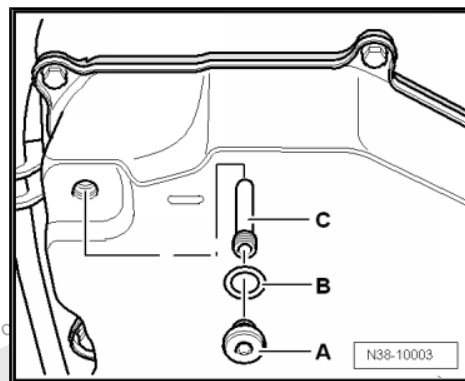
Otherwise renew seal.

- Fit oil sump with seal, taking care not to pinch any wires.
- Ensure proper seating of oil pan gasket.
- Tighten pan bolts -arrows- diagonally in several stages; torque specification ⇒ [page 89](#).





- Screw in overflow pipe -C-; torque specification ➔ [page 89](#) .
- Insert seal -B- for ATF inspection plug -A-.
- Screw in ATF inspection plug -A- hand-tight with new seal -B-.
- Fill with ATF; check ATF level and top up ➔ [page 77](#) .



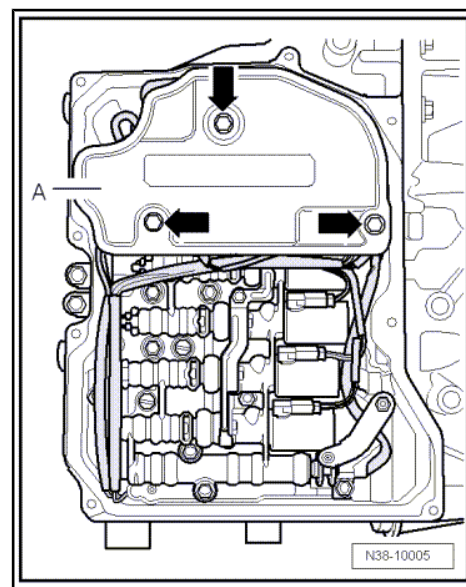


3 ATF strainer

3.1 Removing and installing ATF strainer

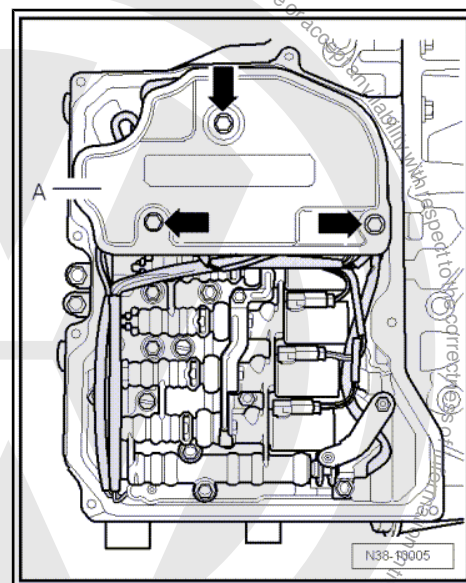
3.1.1 Removing

- Remove oil pan ➔ [page 82](#) .
- Unscrew ATF strainer bolts -arrows-.
- Pull ATF strainer -A- off valve body.



3.1.2 Installing

- Thinly coat seals on intake neck of ATF strainer with ATF.
- The ATF strainer must be renewed if seals are loose or defective.
- Place ATF strainer -A- onto valve body and tighten bolts -arrows-; torque specification ➔ [page 89](#) .
- Install oil pan ➔ [page 82](#) .
- Fill with ATF; check ATF level and top up ➔ [page 77](#) .





4 Valve body

Removing and installing valve body ⇒ [page 91](#)

Solenoid valve identification ⇒ [page 90](#)

Sender identification ⇒ [page 91](#) .

Torque settings ⇒ [page 89](#)



WARNING

Do not run engine or tow vehicle with pan removed or when there is no ATF in gearbox.

- ◆ The valve body and the wiring harnesses can also be removed when the gearbox is installed.
- ◆ Insert O-rings with ATF. Other lubricants lead to malfunction of the gearbox hydraulics.
- ◆ Always renew a valve body which is fouled or defective.
- ◆ Do not use fluffy cloths.
- ◆ After the pan has been installed, the ATF level must be checked and topped up ⇒ [page 77](#) .



4.1 Assembly overview

1 - ATF inspection plug

- ☐ Checking ATF level and topping up ⇒ [page 77](#)
- ☐ Torque setting ⇒ [page 89](#)

2 - Seal

- ☐ Always renew

3 - Overflow pipe

- ☐ Unscrew to drain ATF
- ☐ Torque setting ⇒ [page 89](#)

4 - Oil pan

- ☐ Removing and installing ⇒ [page 82](#)

5 - Bolt

- ☐ Tighten oil pan bolts diagonally in several stages.
- ☐ Torque setting ⇒ [page 89](#)

6 - Seal

- ☐ With spacer sleeves (qty. 8)
- ☐ Examine before fitting
- ☐ Renew brittle, cracked or deformed seal

7 - Magnet

- ☐ Qty. 2 in depressions in pan
- ☐ Clean oil pan before installing

8 - Bolt

- ☐ For securing valve body in gearbox
- ☐ Qty. 12, various lengths ⇒ [page 95](#)
- ☐ Always renew bolts
- ☐ Torque setting ⇒ [page 89](#)

9 - Bolt

- ☐ Qty. 3
- ☐ For securing strainer to valve body
- ☐ Torque setting ⇒ [page 89](#)

10 - ATF strainer

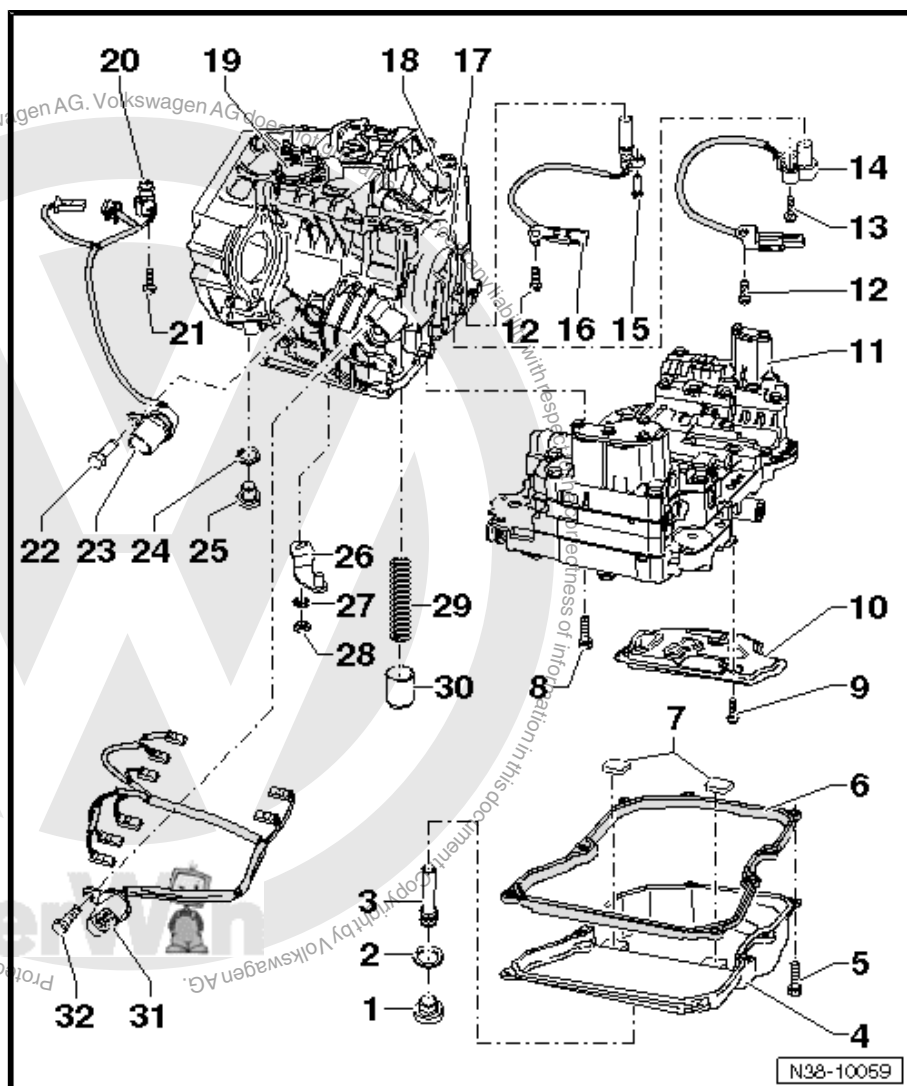
- ☐ Removing and installing ⇒ [page 85](#)

11 - Valve body

- ☐ Removing and installing ⇒ [page 91](#)
- ☐ Solenoid valve identification ⇒ [page 90](#)
- ☐ Allocation ⇒ Electronic parts catalogue "ETKA"

12 - Bolt

- ☐ Torque setting ⇒ [page 89](#)





13 - Bolt

- ☐ Torque setting ⇒ [page 89](#)

14 - Gearbox input speed sender -G182-

- ☐ Removing and installing ⇒ [page 106](#)

15 - Bolt

- ☐ Torque setting ⇒ [page 89](#)

16 - Gearbox output speed sender -G195-

- ☐ Removing and installing ⇒ [page 107](#)

17 - Gearbox housing

- ☐ Shown here without ATF cooler

18 - Breather cap

19 - Multifunction switch -F125-

- ☐ Removing and installing ⇒ [page 18](#)
- ☐ Adjusting ⇒ [page 20](#)

20 - Gearbox oil temperature sender -G93-

- ☐ Integrated into wiring harness ⇒ [Item 23 \(page 88\)](#)

21 - Bolt

- ☐ Torque setting ⇒ [page 89](#)

22 - Bolt

- ☐ Torque setting ⇒ [page 89](#)

23 - Wiring harness with 8-pin connector

- ☐ With O-ring on plug, always renew O-ring
- ☐ With gearbox oil temperature sender -G93-
- ☐ For gearbox input speed sender -G182-
- ☐ For gearbox output speed sender -G195-
- ☐ Sender locations ⇒ [page 91](#)
- ☐ Removing and installing ⇒ [page 105](#)
- ☐ Allocation ⇒ Electronic parts catalogue "ETKA"

24 - Seal

- ☐ Always renew

25 - ATF drain plug

- ☐ Torque setting ⇒ [page 89](#)

26 - Selector lever

- ☐ For selector shaft
- ☐ Removing and installing ⇒ [page 91](#)

27 - Washer

28 - Nut

- ☐ Location: centring collar faces washer ⇒ [Item 27 \(page 88\)](#)
- ☐ Torque setting ⇒ [page 89](#)

29 - Spring

- ☐ Allocation ⇒ Electronic parts catalogue "ETKA"

30 - Damper piston

31 - Wiring harness with 14-pin connector

- ☐ For solenoid valves
- ☐ With O-ring on plug, always renew O-ring
- ☐ Solenoid valve locations and wiring harness routing ⇒ [page 90](#)

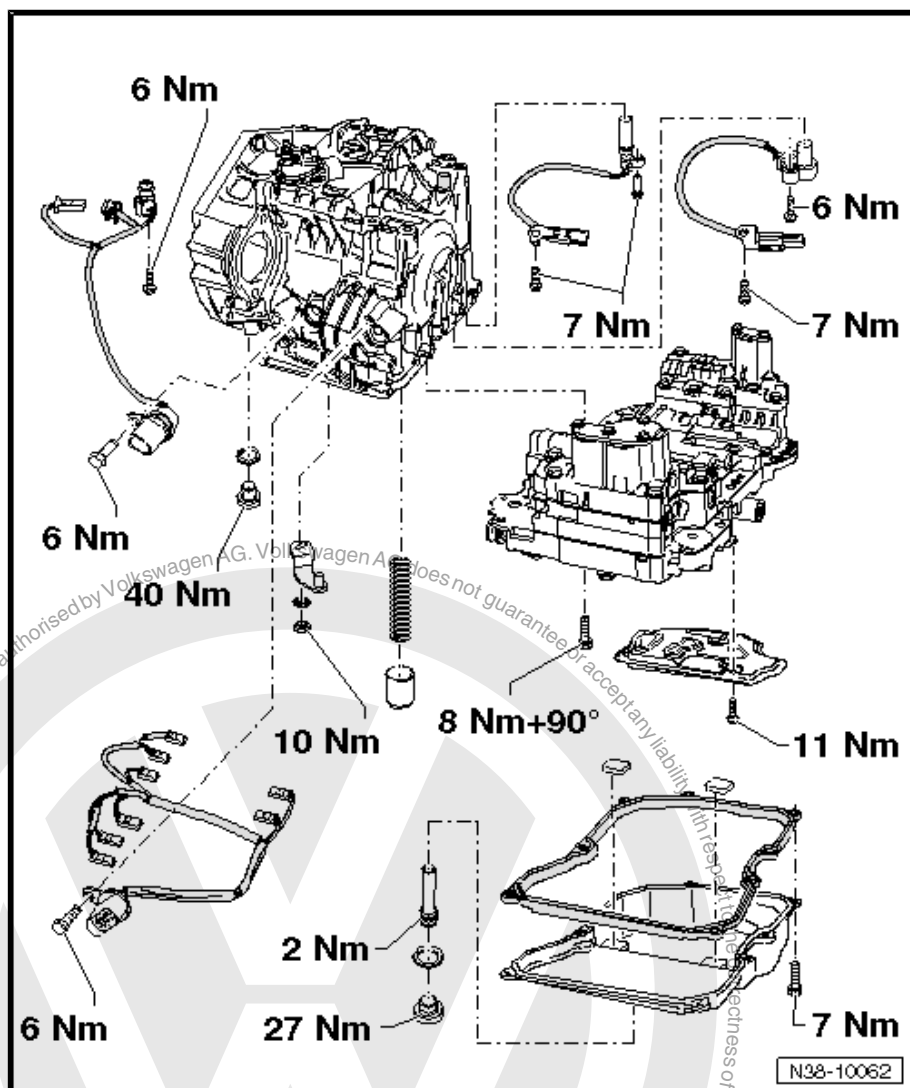


❑ Removing and installing ➤ [page 103](#)

32 - Bolt

❑ Torque setting ➤ [page 89](#)

4.1.1 Torque settings



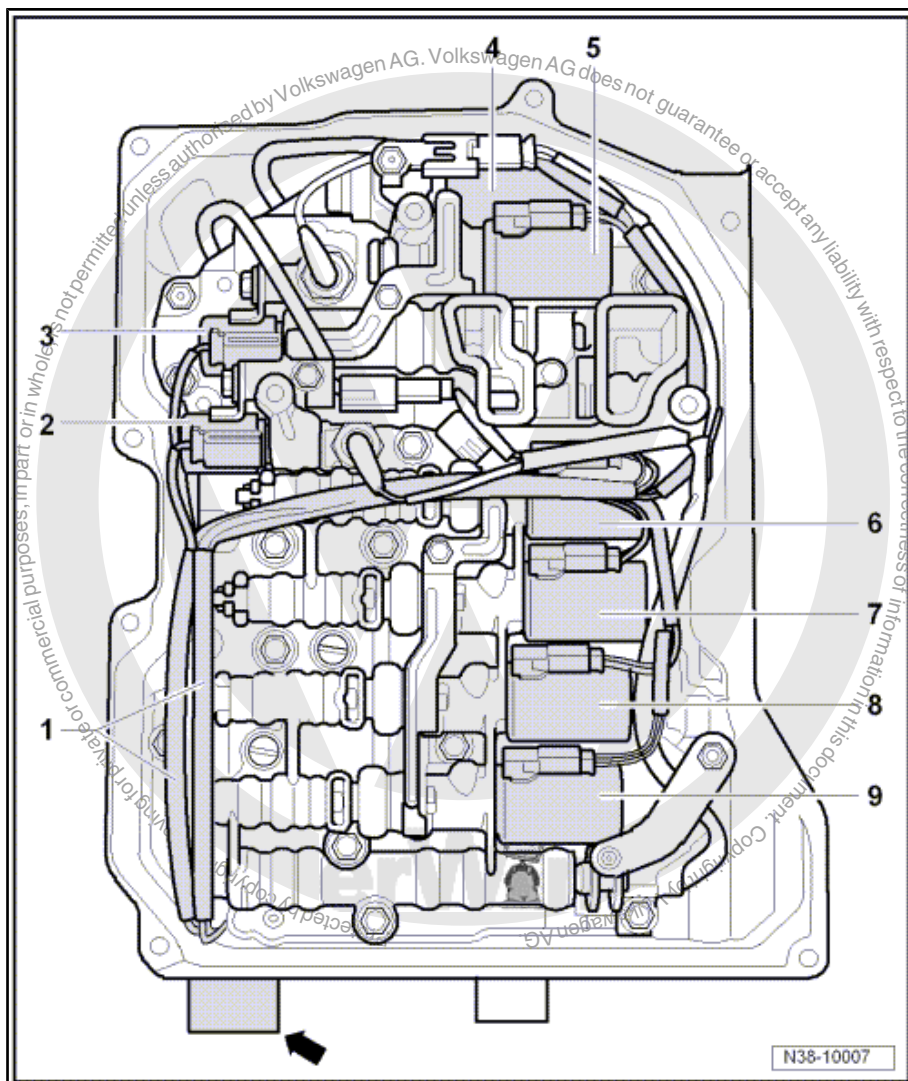


4.1.2 Solenoid valve identification

1 - Wiring harness for solenoid valves with 14-pin connector
-arrow-

- Removing and installing
⇒ [page 103](#)

- 2 - Solenoid valve 1 -N88-
- 3 - Solenoid valve 2 -N89-
- 4 - Solenoid valve 4 -N91-
- 5 - Solenoid valve 6 -N93-
- 6 - Solenoid valve 5 -N92-
- 7 - Solenoid valve 9 -N282-
- 8 - Solenoid valve 10 -N283-
- 9 - Solenoid valve 3 -N90-





4.1.3 Sender identification

**1 - Hydraulic pressure sender
1 for automatic gearbox -
G193-**

- ☐ Not installed in all gear-
boxes
- ☐ Allocation ⇒ Electronic
parts catalogue "ETKA"

**2 - Connector to gearbox input
speed sender -G182-**

**3 - Wire on gearbox input
speed sender -G182-**

**4 - Hydraulic pressure sender
2 for automatic gearbox -
G194-**

- ☐ Not installed in all gear-
boxes
- ☐ Allocation ⇒ Electronic
parts catalogue "ETKA"

**5 - Wire on gearbox output
speed sender -G195-**

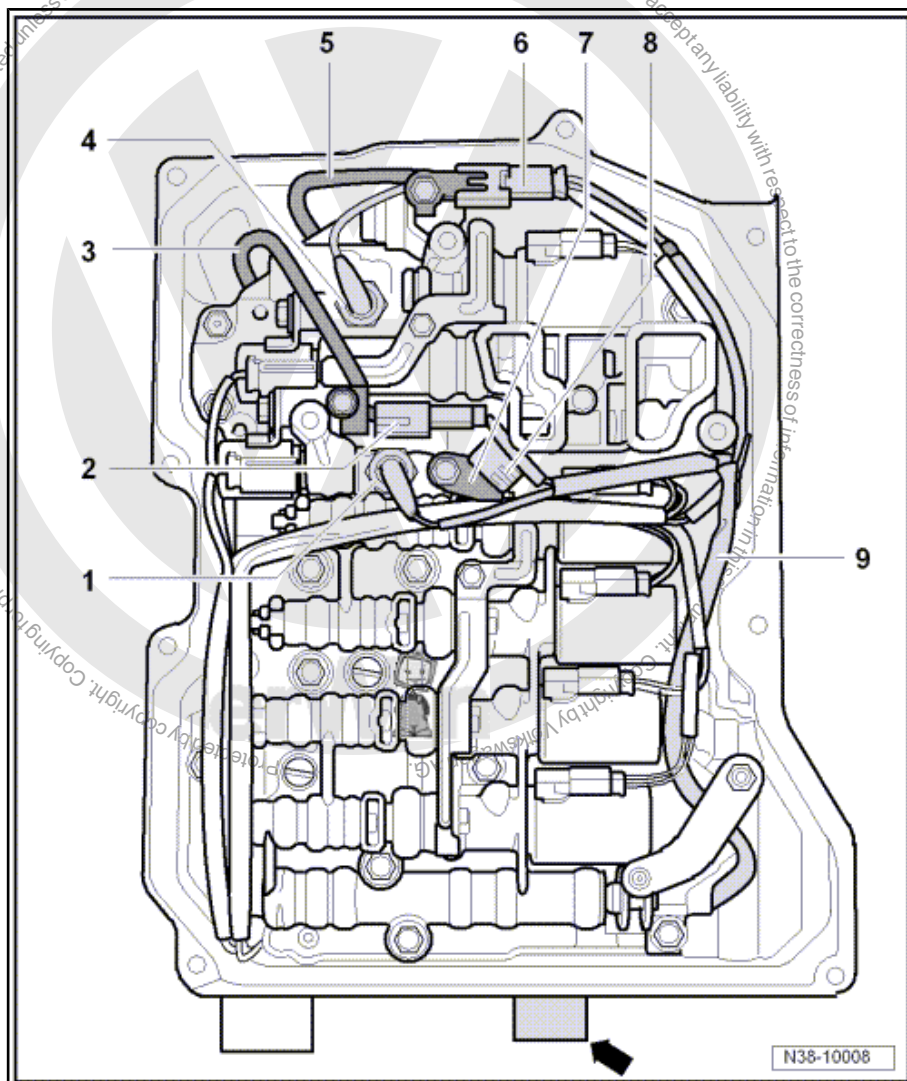
**6 - Connector to gearbox out-
put speed sender -G195-**

**7 - Bracket of gearbox oil tem-
perature sender -G93-**

**8 - Gearbox oil temperature
sender -G93-**

**9 - Wiring harness for sender
with 8-pin connector -arrow-**

- ☐ Removing and installing
⇒ [page 105](#)



4.2 Removing and installing valve body

Special tools and workshop equipment required

- ◆ Torque wrench -V.A.G 1331-

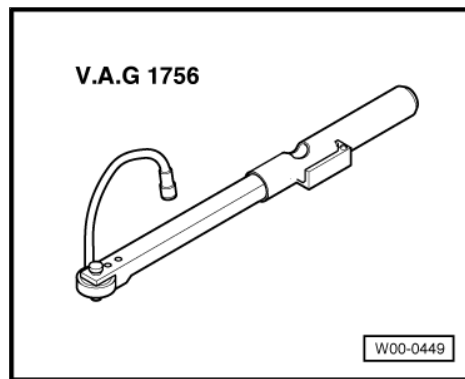
V.A.G 1331



W00-0427



- ◆ Angle wrench -V.A.G 1756-



4.2.1 Removing

Carry out procedure as follows:

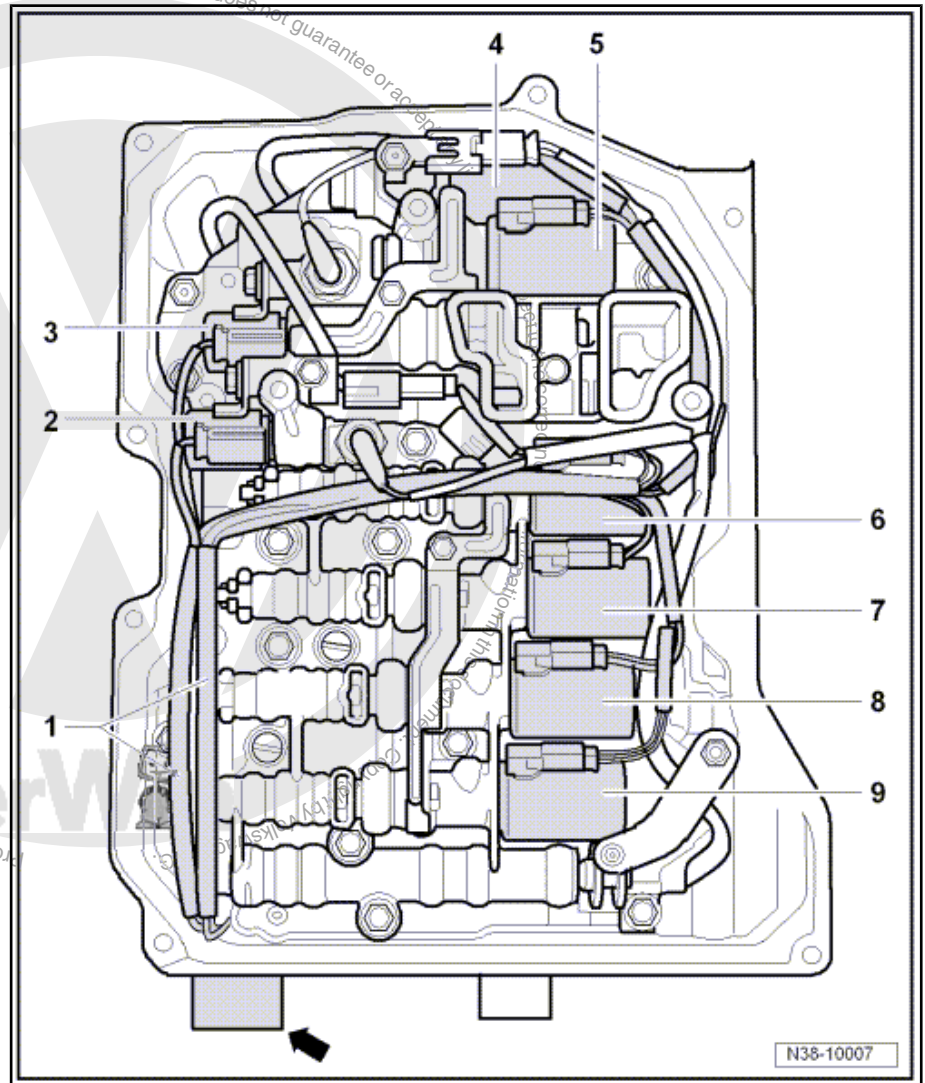
- With ignition switched off, disconnect battery earth strap ⇒ Electrical system; Rep. Gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove oil pan ⇒ [page 82](#) .
- Remove ATF strainer ⇒ [page 85](#) .
- Draw a sketch of all senders and solenoid valves with their respective connectors analogous to figure.
- Before separating connectors at senders and solenoid valves, solenoid valve or sender and respective connector must be identified.



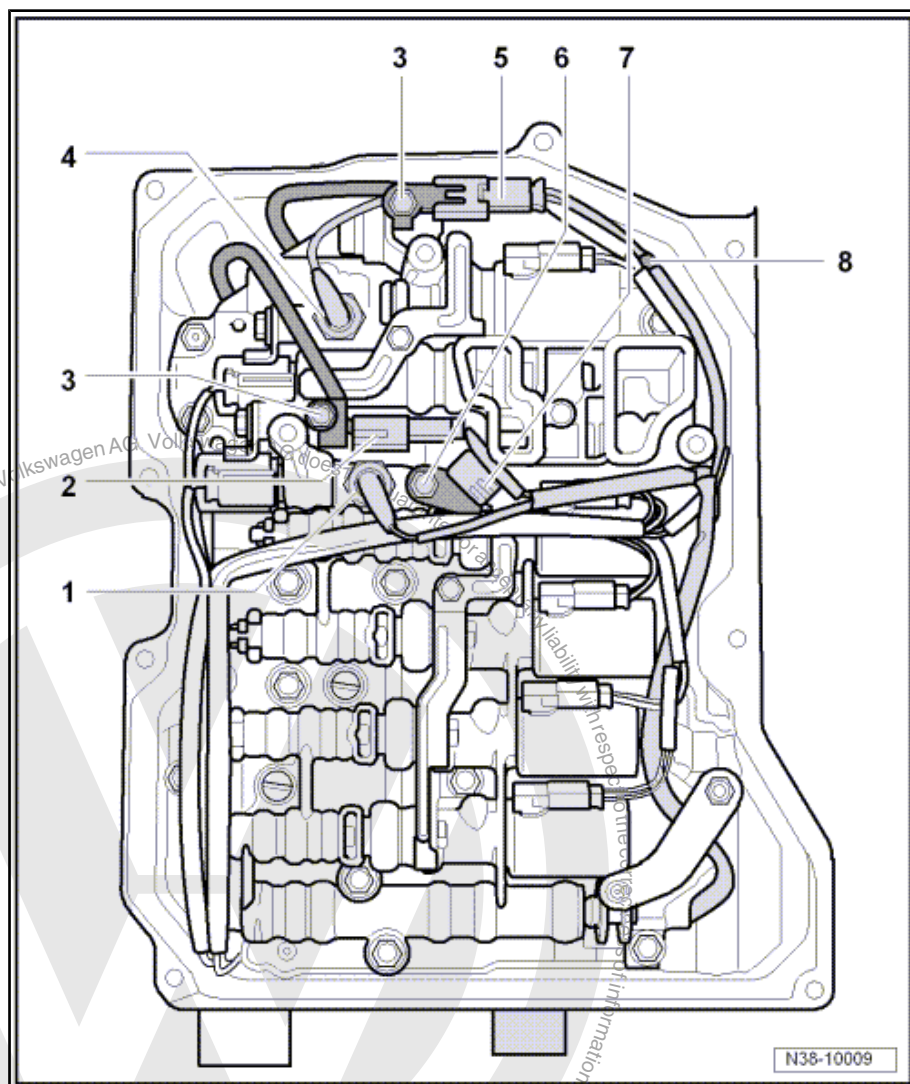
WARNING

This sketch and identification are absolutely vital to prevent inadvertently interchanging sender and solenoid valve when reinstalling valve body.

Under certain circumstances, interchanging connectors may lead to destruction of the gearbox.



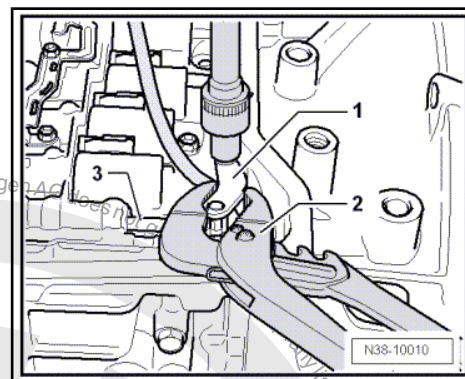
- Use a small screwdriver to pry out securing bolts of connectors on solenoid valves -2- to -9- carefully and pull off connectors.
- If a connector is damaged, the wiring harness or the valve body together with the solenoid valves must be renewed.
- If present, carefully pull off connectors for automatic gearbox hydraulic pressure sender 1 -G193- -1- and automatic gearbox hydraulic pressure sender 2 -G194- -4-.



- Separate connectors -2- and -5-.
- Unscrew bracket bolts -3-.
- If a connector is damaged, the wiring harness or the gearbox input speed sender -G182- or the gearbox output speed sender -G195- must be renewed.
- Unscrew bolt -6-.
- For reinstallation, make sure bracket is attached to gearbox oil temperature sender -G93- -7-.
- Carefully pull gearbox oil temperature sender -G93- -7- out of valve body together with bracket.
- Unhook wiring harness from bracket -8-.



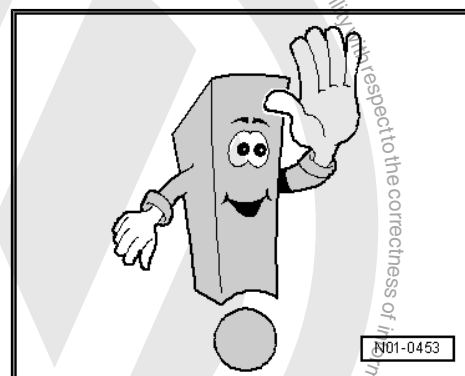
- Remove selector lever -1- from selector shaft.
- In the process, carefully grip selector lever -1- with pliers -2- so that torque is not transferred to multifunction switch -F125-.
- Note spool valve -3- on valve body into which selector lever engages so that this is not damaged.



The spool valve is very "sensitive". Even the slightest damage will lead to faults in operation.

- Therefore, always push spool valve into valve body, secure against falling out and never interchange.

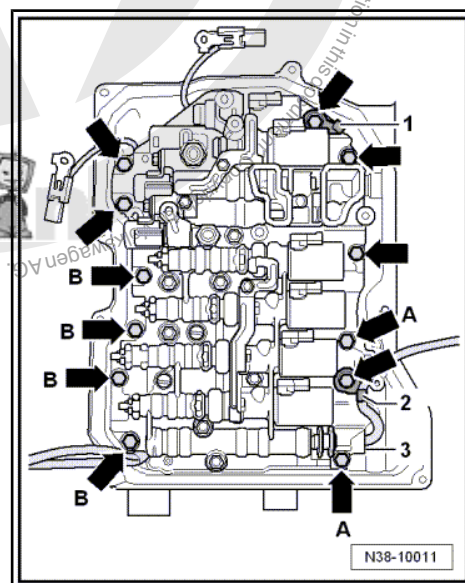
The bolts are of different lengths and must be replaced.



Only the marked securing bolts -arrows- may be loosened.

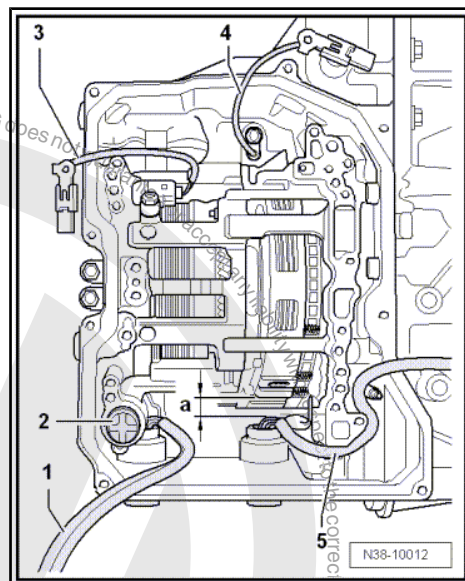
If other bolts are loosened, the function of the valve body is impeded or the valve body falls to pieces.

- Loosen securing bolts -arrows-, -arrows A- and -arrows B- for valve body diagonally and carefully remove valve body.
- Remove brackets -1- and -2-.
- 3- valve body design, e.g. A2 in this case.





- When removing valve body, secure damper piston -2- to prevent it from falling out or remove together with spring if necessary.



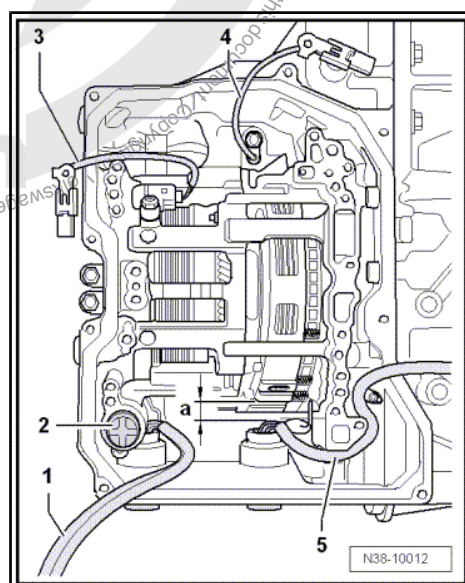
4.2.2 Installing

Carry out procedure as follows:

- Routing of wires must be noted precisely to prevent them from being trapped when valve body is positioned.
- Route wiring harness -5- in specified recess in gearbox according to figure.

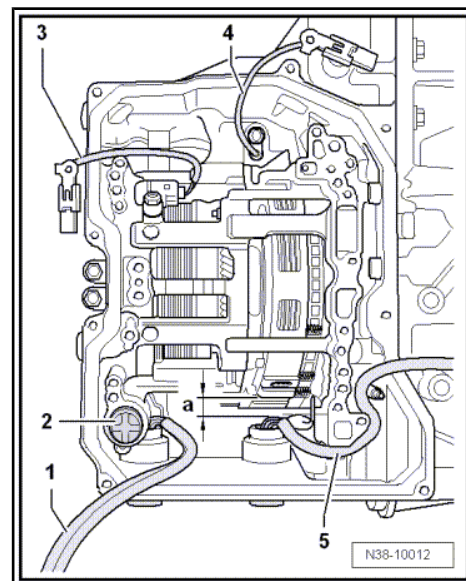
The distance -a- must be maintained to prevent wiring harness -5- from coming into contact with planetary gearbox and thereby becoming damaged during vehicle operation.

- Route wiring harnesses -1-, -3-, -4- and -5- over edge of the gearbox according to figure.
- Secure wiring harnesses on gearbox with adhesive tape.
- Damper piston -2- must be installed in gearbox in illustrated position.
- If damper piston -2- has been removed, it must be cleaned together with spring and installed in accordance with ➔ [Item 29 \(page 88\)](#) and ➔ [Item 30 \(page 88\)](#) .
- Coat damper piston -2- and mounting in gearbox with ATF.
- Insert spring in damper piston.
- Insert damper piston with spring into mounting in gearbox.
- To prevent damper piston from falling out, press it into gearbox until valve body is positioned.
- Carefully put on valve body, without pressing on forcefully.





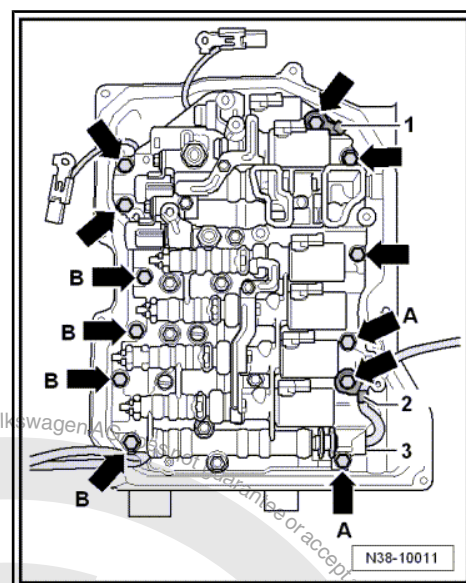
Wiring harnesses -1-, -3-, -4- and -5- are not allowed to be trapped by valve body.



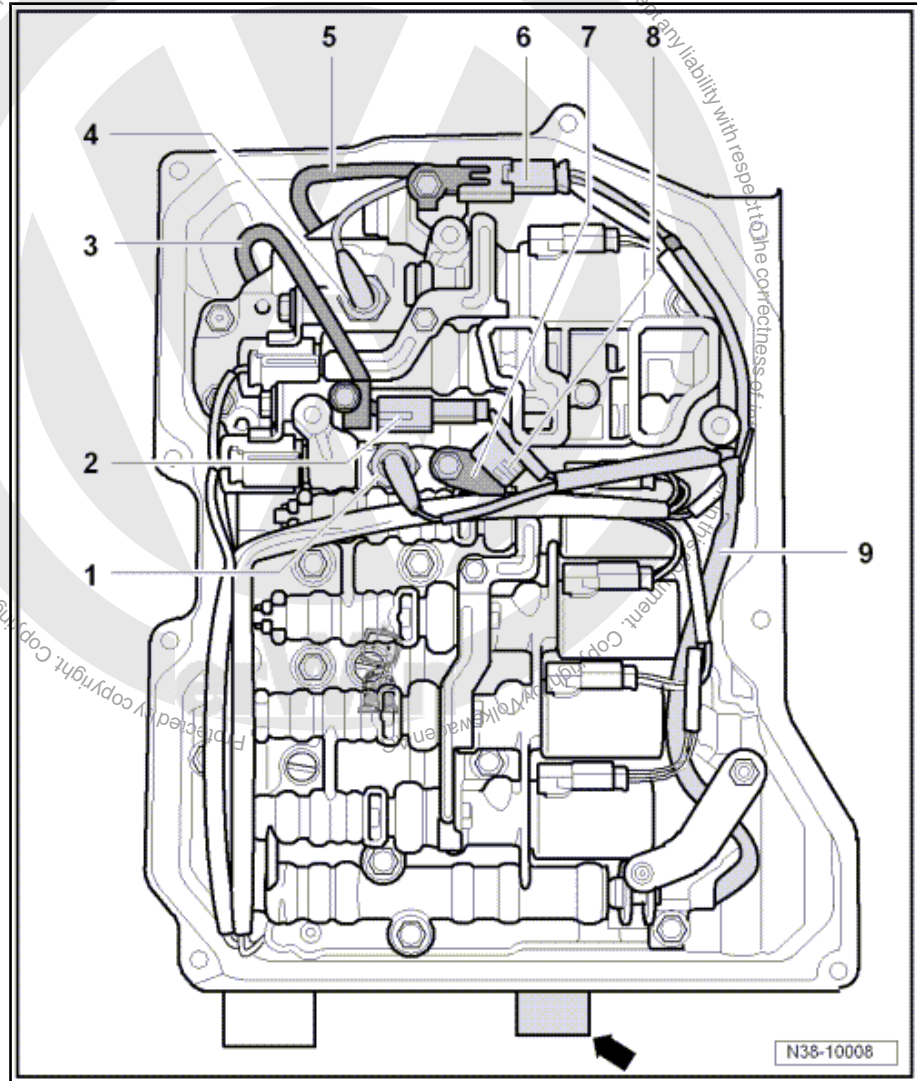
- All bolts -arrows- for securing valve body must be inserted.
- Note different bolt lengths:

| | |
|------------------|-------|
| Bolts -arrows- | M6×21 |
| Bolts -arrows A- | M6×16 |
| Bolts -arrows B- | M6×28 |

- Tighten brackets -1- and -2- for wiring harness hand-tight with new bolts.
- Tighten remaining, new bolts for valve body -arrows-, -arrows A- and -arrows B- hand-tight.

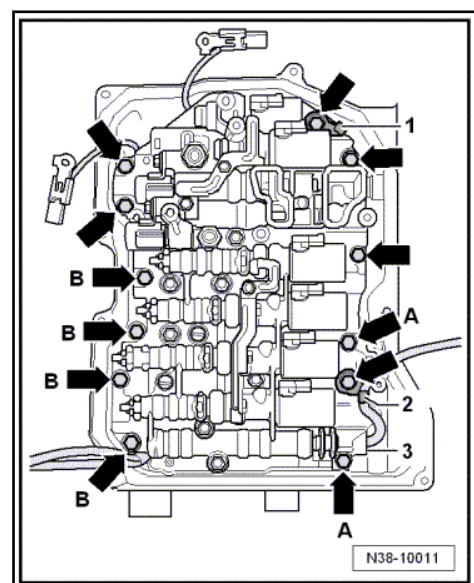


- If lines -3-, -5- and -9- are too short to be connected to senders or bolted to intended points on valve body, they have been incorrectly routed or trapped by valve body. Remove valve body again and route cables correctly.



Cables -3-, -5- and -9- are not allowed to be trapped.

- Tighten new bolts -arrows-, -arrows A- and -arrows B- from inside to outside to specified torque [⇒ page 89](#) .





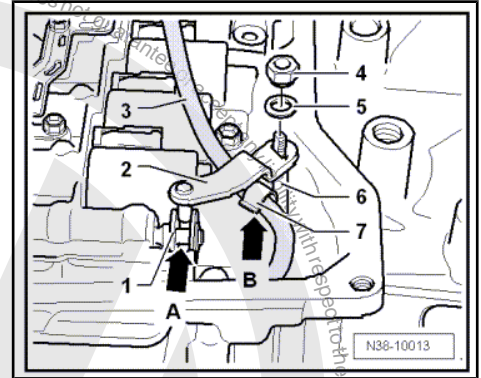
- Hook wiring harness -3- into retainer -7- arrow B-.
- Push selector lever -2- onto selector shaft -6-.

Ensure that selector lever pin -2- engages into spool valve -1- arrow A-. If necessary, position spool valve accordingly.

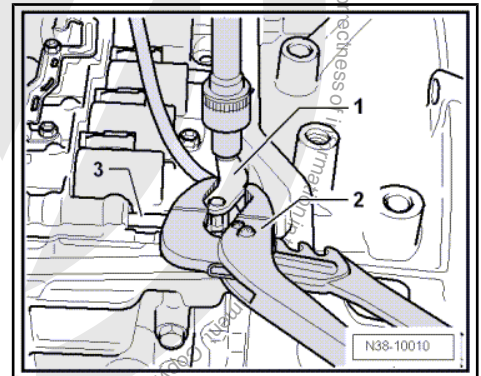
- Set washer -5- and nut -4- on selector shaft -6-.

Centring collar of nut must face washer and run into washer on tightening.

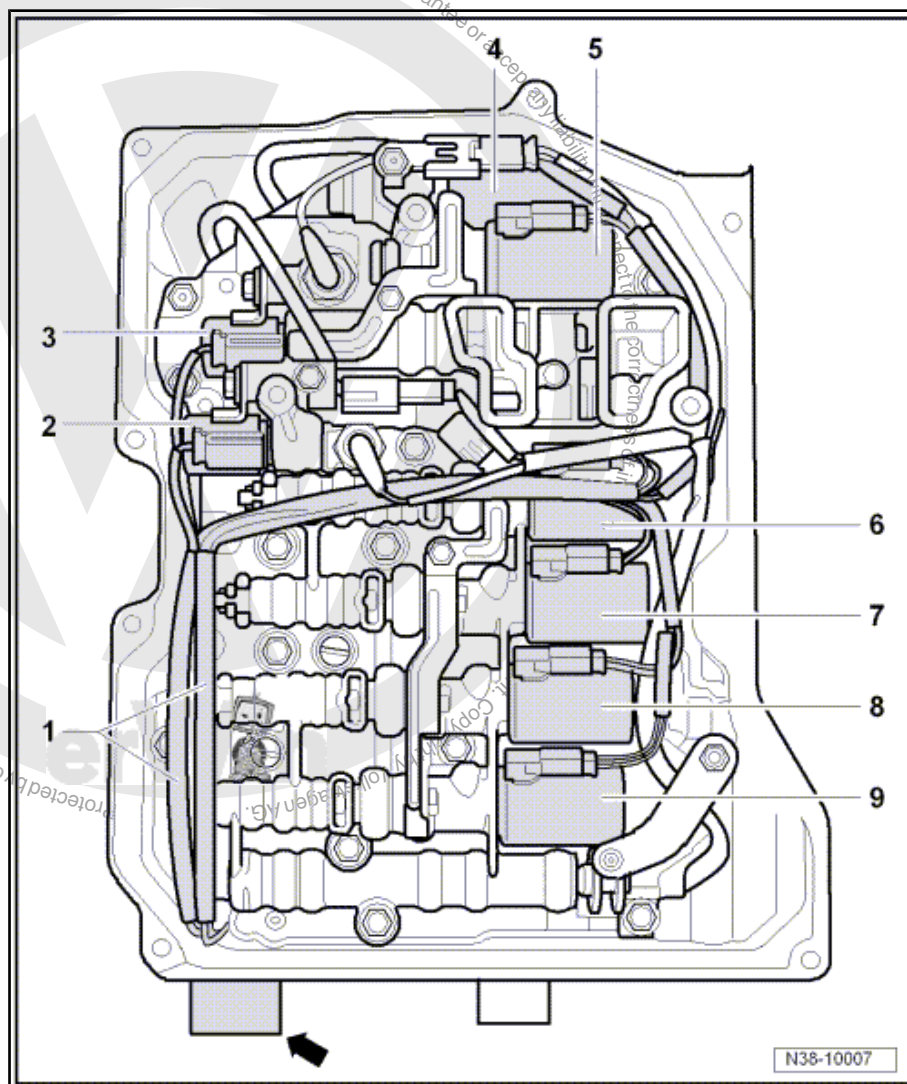
Wiring harness must be routed beneath selector lever.



- Tighten selector lever nut -1- to specified torque ➔ [page 89](#) .
- In the process, carefully grip selector lever -1- with pliers -2- so that torque is not transferred to multifunction switch -F125- .
- Note spool valve -3- on valve body into which selector lever engages so that this is not damaged.



- Connect the connectors to solenoid valves -2- to -9- according to the identifications which you have noted.

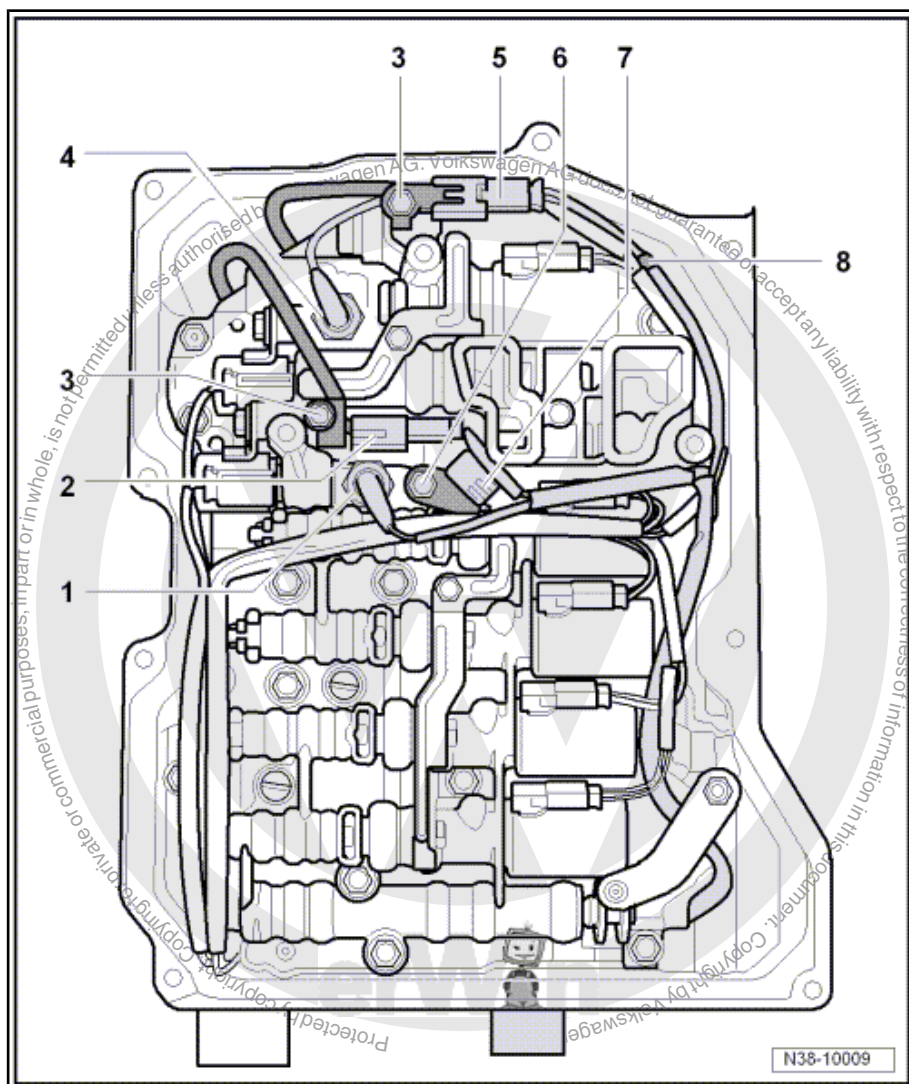


WARNING

Under certain circumstances, interchanging connectors may lead to destruction of the gearbox.

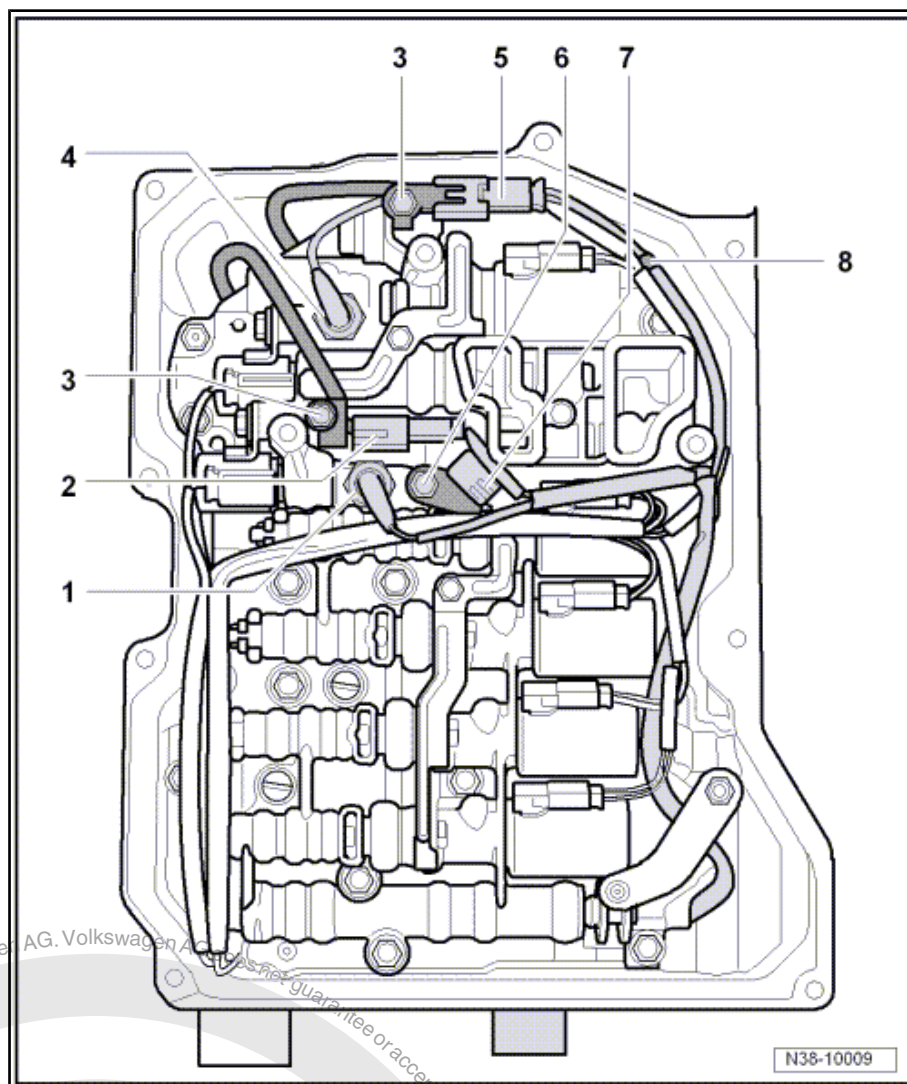
If a connector is damaged, the wiring harness or the valve body together with the solenoid valves must be renewed.

- Route wiring harness -1- as shown in figure.
- Join connectors -2- and -5-.



The mating part of the connectors must bear the same identification as the respective connector itself.

- Place the bracket onto the gearbox oil temperature sender - G93- -7-.
- Insert gearbox oil temperature sender -G93- in valve body together with bracket.
- Tighten bolt -6-, torque setting ⇒ [page 89](#) .
- If present, carefully push connectors onto automatic gearbox hydraulic pressure sender 1 -G193- -1- and automatic gearbox hydraulic pressure sender 2 -G194- -4- at right angles.
- Tighten bolts -3- for connector retainers -2- and -5-; torque specifications ⇒ [page 89](#) .



- If cables are too short to be bolted on, they have been incorrectly routed or trapped by the valve body. Remove valve body again and route cables correctly.
- Attach wiring harness to retainer -8- and route it as shown in figure.
- Install ATF strainer ➤ [page 85](#) .
- Install oil pan ➤ [page 82](#) .
- With ignition switched off, connect battery earth strap ➤ Electrical system; Rep. Gr. 27 ; Battery; Disconnecting and connecting battery .
- Fill with ATF; check ATF level and top up ➤ [page 77](#) .
- Connect -VAS 5051- and continue to advance until "Function/component selection" is displayed.
- Then press "Drive (Repair group 01; 10 ... 26; 28 ... 39)".
- Then "6-speed automatic gearbox 09G".
- Press "01 - Self-diagnosis".
- Press "Functions".
- Press "Basic setting".



4.3 Removing and installing wiring harness with 14-pin connector (for solenoid valves)

4.3.1 Removing

- Remove oil pan ➔ [page 82](#)
- Remove ATF strainer ➔ [page 85](#) .
- Draw a sketch of all senders and solenoid valves with their respective connectors analogous to figure.
- Before separating connectors at solenoid valves, solenoid valve and respective connector must be identified.

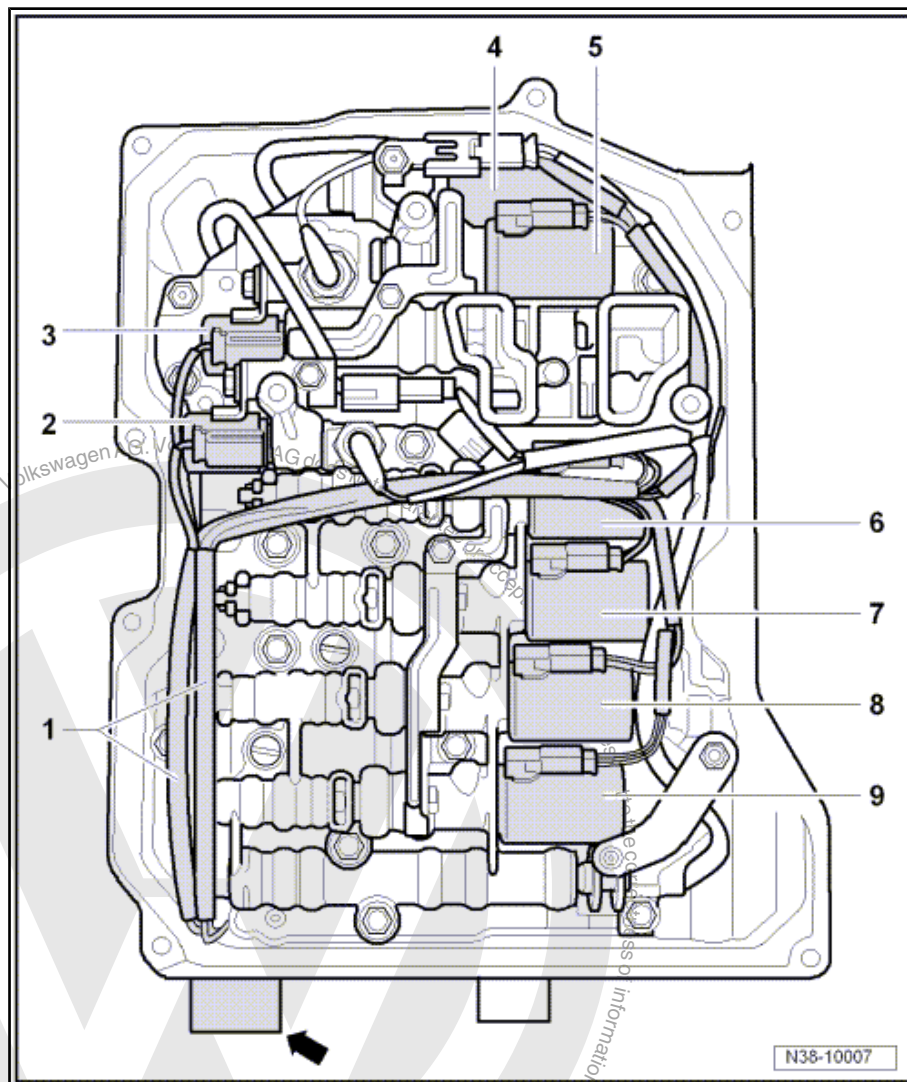


WARNING

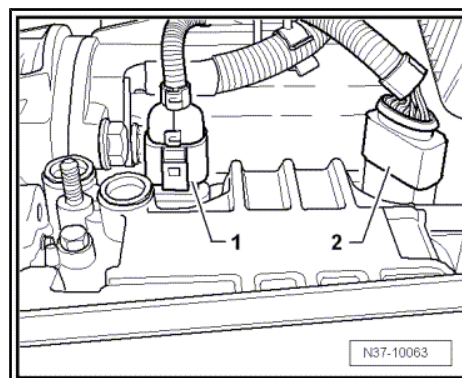
This sketch and identification are absolutely vital to prevent inadvertently interchanging sender and solenoid valve connector when reinstalling the wiring harness.

Under certain circumstances, interchanging connectors may lead to destruction of the gearbox.





- Use a small screwdriver to pry out securing bolts of connectors on solenoid valves -2- to -9- carefully and pull off connectors.
- If a connector is damaged, the wiring harness of the valve body together with the solenoid valves must be renewed.
- Pull connector -2- off gearbox connector.
- Unscrew bolt for 14-pin gearbox connector.
- Pull connector and wiring harness outwards out of gearbox housing.



4.3.2 Installing

Install in the reverse order of removal, observing the following:

- Renew O-ring on connector.
- Push connector with new O-ring into gearbox to stop.



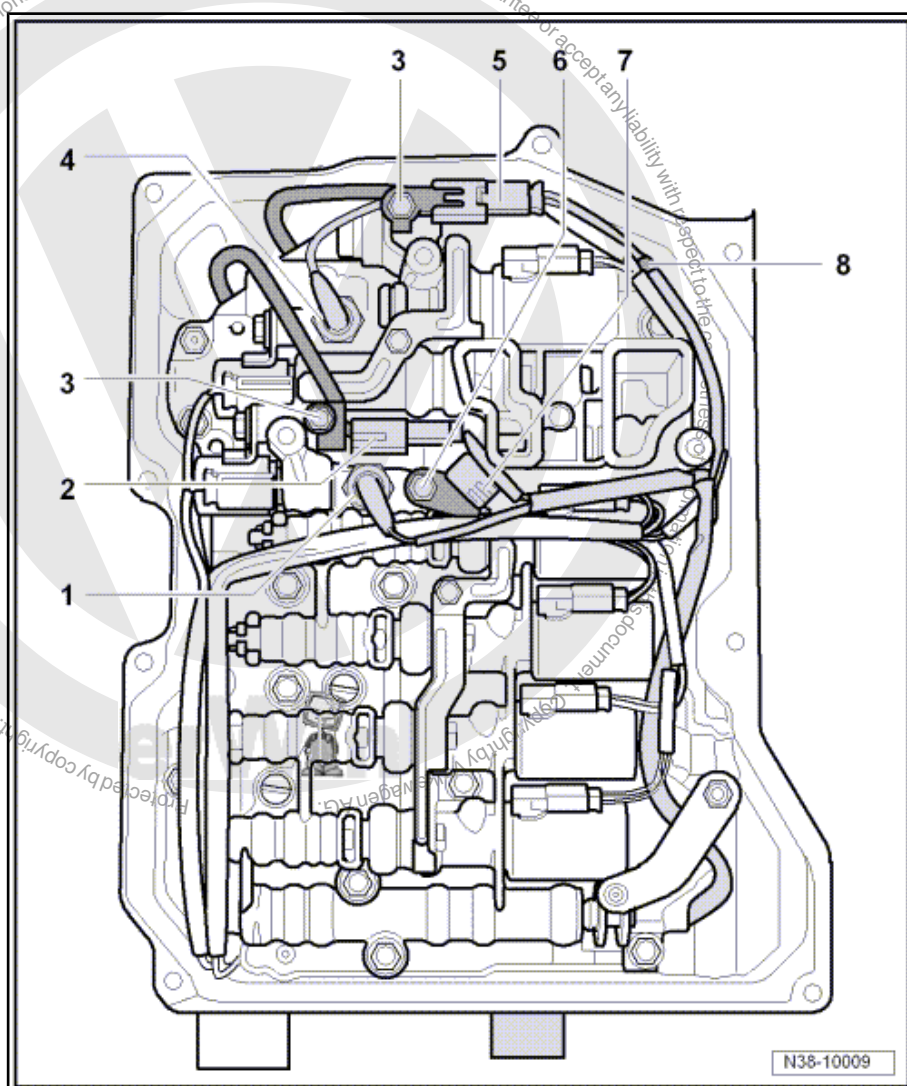
- Tighten bolt for 14-pin gearbox connector; torque specification ➤ [page 89](#) .
- Tighten securing bolts for gearbox speed sender connector retainers; torque specifications ➤ [page 89](#) .
- Tighten bolt on bracket of gearbox oil temperature sender - G93- , torque setting ➤ [page 89](#) .
- Install ATF strainer ➤ [page 85](#) .
- Install oil pan ➤ [page 82](#) .

4.4 Removing and installing wiring harness with 8-pin connector (for sender)

4.4.1 Removing

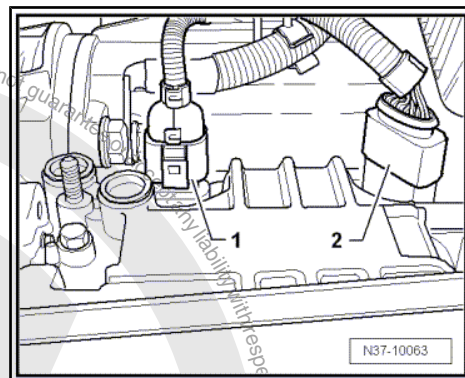
- Remove oil pan ➤ [page 82](#) .
- Remove ATF strainer ➤ [page 85](#) .
- If present, carefully pull off connectors for automatic gearbox hydraulic pressure sender 1 -G193- -1- and automatic gearbox hydraulic pressure sender 2 -G194- -4-.

Senders -1- and -4- are not installed in all gearboxes.





- Separate connectors -2- and -5-.
- If a connector is damaged, the wiring harness or the gearbox input speed sender -G182- or the gearbox output speed sender -G195- must be renewed.
- Unscrew bolt -6-.
- For reinstallation, make sure bracket is attached to gearbox oil temperature sender -G93- -7-.
- Carefully pull gearbox oil temperature sender -G93- -7- out of valve body together with bracket.
- Unhook wiring harness from bracket -8-.
- Pull connector -1- off gearbox connector.
- Unscrew bolt for 8-pin gearbox connector.
- Pull connector and wiring harness outwards out of gearbox housing.



4.4.2 Installing

Install in the reverse order of removal, observing the following:

- Renew O-ring on connector.
- Push connector with new O-ring into gearbox to stop.
- Tighten bolt for 8-pin gearbox connector; torque specification ⇒ [page 89](#) .
- Tighten bolt on bracket of gearbox oil temperature sender - G93- , torque setting ⇒ [page 89](#) .
- Install ATF strainer ⇒ [page 85](#) .
- Install oil pan ⇒ [page 82](#) .

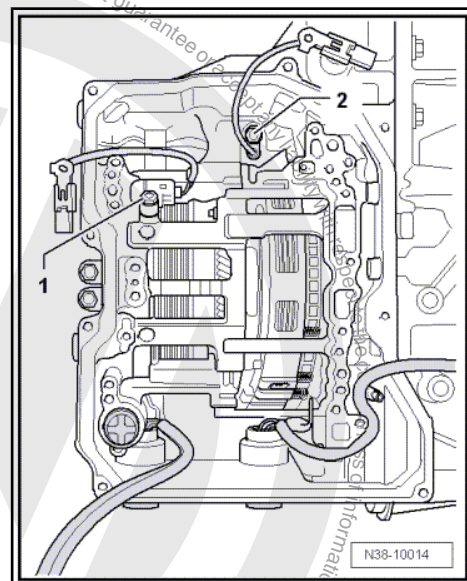
4.5 Removing and installing gearbox input speed sender -G182-

4.5.1 Removing

- Remove valve body ⇒ [page 91](#) .



- Unscrew bolt -1- from gearbox input speed sender -G182- .
- Pull sender out of gearbox.



4.5.2 Installing

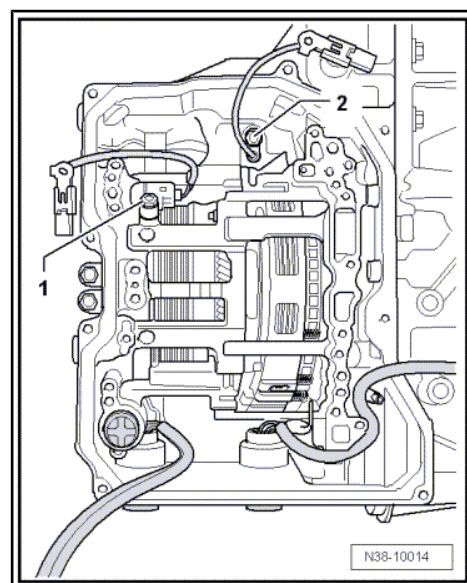
Install in the reverse order of removal, observing the following:

- Press sender into gearbox to stop.
- Tighten bolt -1- for gearbox input speed sender -G182- ; torque specifications ⇒ [page 89](#) .
- Install valve body ⇒ [page 96](#) .

4.6 Removing and installing gearbox output speed sender -G195-

4.6.1 Removing

- Remove valve body ⇒ [page 91](#) .
- Unscrew bolt -2- from gearbox output speed sender -G195- .
- Pull sender out of gearbox.



4.6.2 Installing

Install in the reverse order of removal, observing the following:

- Press sender into gearbox to stop.



- Tighten bolt -2- for gearbox output speed sender -G195- ; torque specifications ➔ [page 89](#) .
- Install valve body ➔ [page 96](#) .





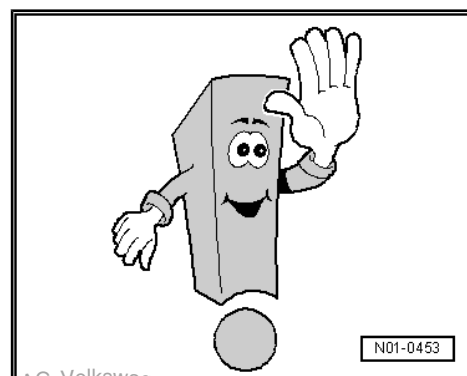
39 – Final drive - differential

1 Renewing oil seals for flange shafts

(Gearbox installed)

Only the left-hand side is described here. Renewing oil seal on right-hand side is nearly identical.

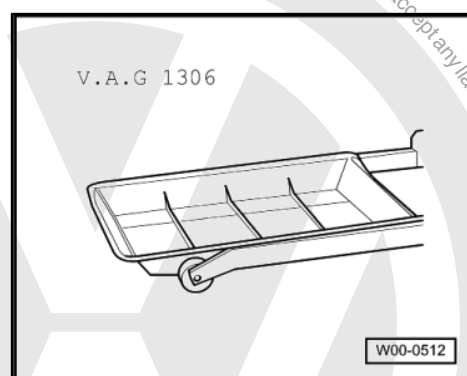
- On right, drive shaft remains installed in wheel bearing. Drive in seal with thrust piece -T10177- .
- Left drive shaft must be removed. Drive in seal with thrust piece -T10176- .



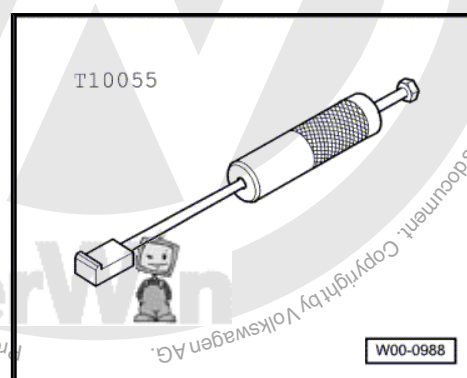
1.1 Renewing oil seal for flange shaft

Special tools and workshop equipment required

- ◆ Drip tray for workshop hoist -VAS 6208-

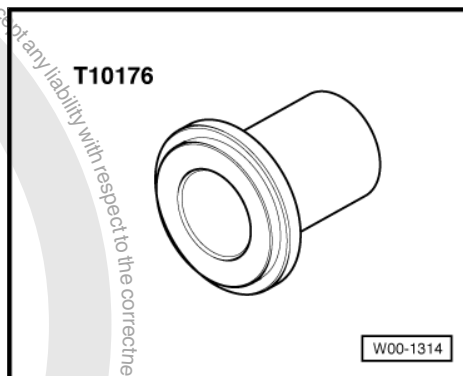


- ◆ Puller -T10055-

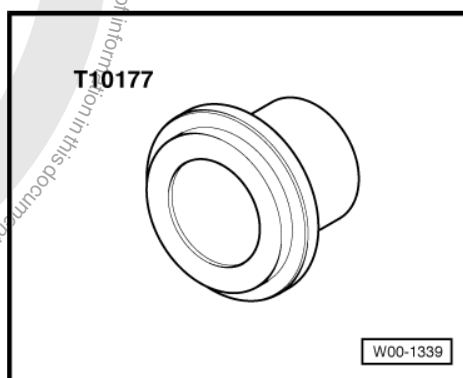




◆ Thrust piece -T10176-



◆ Thrust piece -T10177-



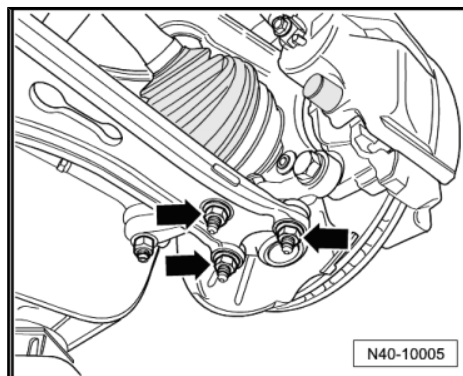
1.1.1 Removing flange shaft oil seal

Carry out procedure as follows:

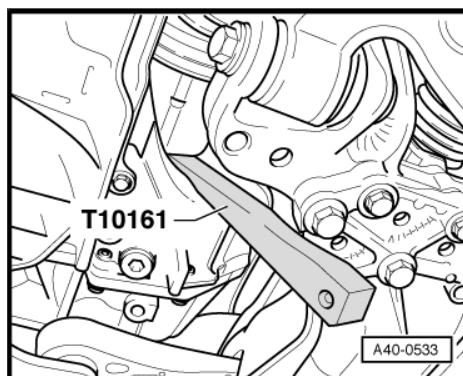
- Remove noise insulation tray.
- Place drip tray underneath.
- Mark position of -nuts- that are used for bolting suspension link onto wheel bearing housing.

Relocate this position during assembly if at all possible.

- Unscrew suspension link from wheel bearing housing.



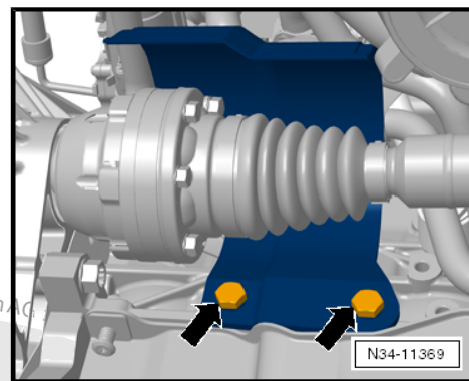
- Press drive shaft out of gearbox. This procedure is described in ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .



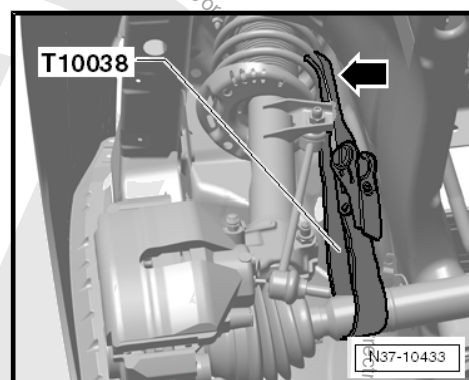


Right:

- If present, remove heat shield above right drive shaft
-arrows-.



- Raise right shaft as far as possible and secure in this position.



Left:

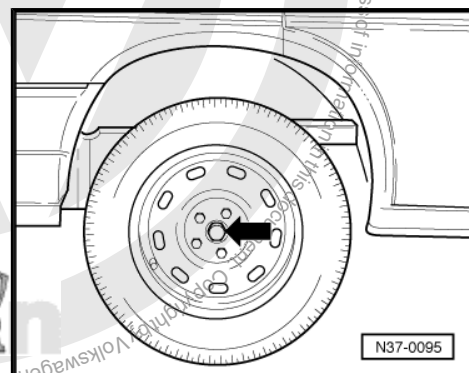
- Depress brake pedal to remove bolt for left drive shaft
-arrow- (second mechanic required).



Note

After this, do not set vehicle on the ground any more ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

- Remove left drive shaft ⇒ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

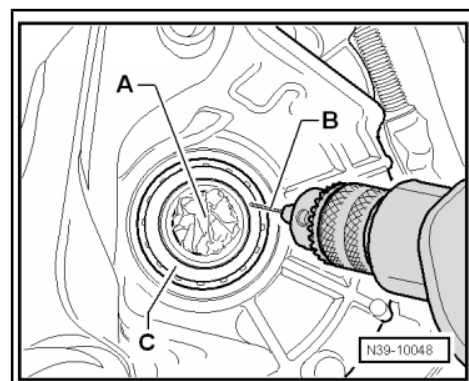


- Seal drive shaft aperture on transmission with a clean cloth
-A-.
- Carefully drill a hole -B- (size 2 to 4 mm) into outer sheet metal
ring -C- of oil seal.



Note

- ◆ Grease drill bit -B- so that metal chips adhere.
- ◆ Drill only through sheet metal ring -C- because gearbox may otherwise be damaged.





- Screw a self-tapping screw, approx. 4 mm in diameter, into hole drilled in oil seal -arrow-.



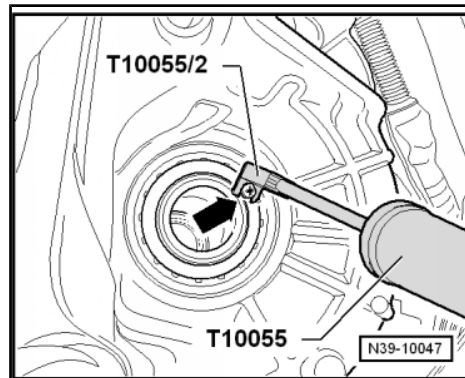
Note

Do not screw in sheet metal screw too far to avoid damaging bearing behind it.

- Pull out oil seal using puller -T10055- and adapter -T10055/2- .
- Remove cloth and carefully clean gearbox and drive shaft aperture.

No iron chips must enter gearbox or drive shaft aperture; vacuum up chips if necessary.

If only the sheet metal ring of seal could be pulled out, carefully lever out rest of seal with a screwdriver.



1.1.2 Installing flange shaft oil seal

Install in the reverse order of removal, observing the following:

- Apply ATF to circumference and sealing lips of oil seal.

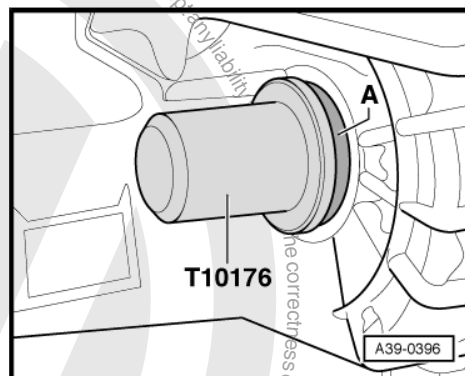
Installation position:

Open side of oil seal faces gearbox.

- Press oil seal in straight as far as possible by hand.

Left-hand side

- Drive seal -A- to stop with thrust piece -T10176- . Do not cant oil seal in the process.



Right side

- Drive seal -A- to stop with thrust piece -T10177- . Do not cant oil seal in the process.
- Install drive shaft ➔ Rep. Gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .
- Finally, check ATF level and top up ➔ [page 77](#) .
- Install noise insulation.

