



Repair Manual Golf 2015 ➤ Golf Variant 2015 ➤ **Automatic Transmission**

Edition 11.2014



List of Workshop Manual Repair Groups

Repair Group

- 00 - General, Technical Data
- 32 - Torque Converter
- 37 - Controls, Housing
- 38 - Gears, Hydraulic Controls
- 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 – General, Technical Data

1 Identification

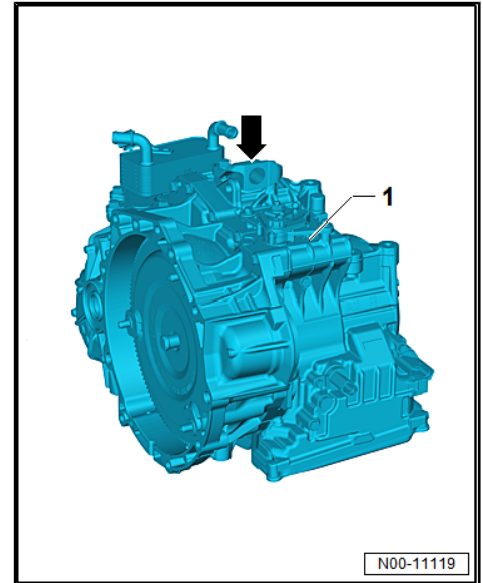
(Edition 11.2014)

⇒ [“1.1 Transmission Identification”, page 1](#)

⇒ [“1.2 Torque Converter Identification”, page 1](#)

1.1 Transmission Identification

Code and Production Date -arrow- of the Transmission -1-



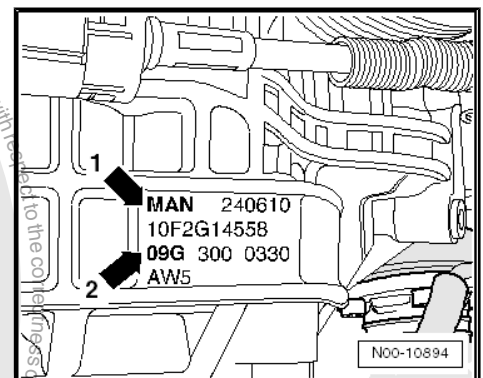
Code letter -arrow 1-

“Automatic transmission 09G - 6-speed” -arrow 2-

Example:

MAN	24	06	10
Code letters	Day	Month	Production year -2015-

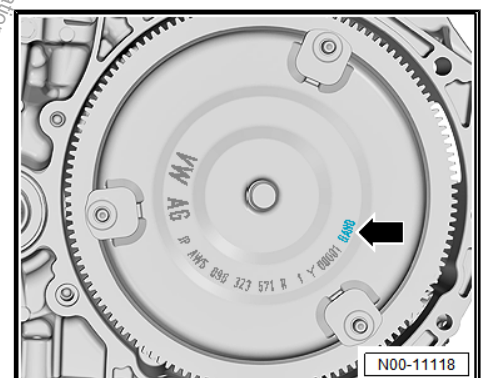
The transmission code is also listed on the vehicle data label.



1.2 Torque Converter Identification

There are different torque converters. Use the code letters to identify the torque converter -arrow-.

Correct allocation of the torque converter/transmission. Refer to the Parts Catalog.





2 Safety Precautions

⇒ **"2.1 General Safety Precautions", page 2**

⇒ **"2.2 Road Test with Testing Equipment Safety Precautions", page 2**

⇒ **"2.3 Towing Notes", page 3**

2.1 General Safety Precautions

Observe the following to avoid personal injury and vehicle damage:



WARNING

There is a risk of injury and accident from accidentally engaging a gear when the engine is running.

- ◆ *Move the selector lever into "P" and set the parking brake before working on a running engine.*

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

- ◆ Connect and disconnect test equipment only when the ignition is off.



Caution

Risk of damaging electronic components when disconnecting the battery.

- ◆ *Complete the steps for disconnecting the battery.*
- ◆ *Disconnect the battery only when the ignition is turned off. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .*

2.2 Road Test with Testing Equipment Safety Precautions

When performing road tests while using testing and measuring devices pay attention to the following:



WARNING

Distraction and testing equipment that is not secured properly can cause accidents.

The passenger airbag could pose a risk if it deploys in a collision.

- *Operating testing equipment while driving causes it to shift position.*
- *There is an increased risk of injury due to unsecured testing equipment.*
- ◆ *Always secure testing equipment on the rear seat using a strap and have a second person in the rear seat operating it.*



2.3 Towing Notes



Caution

Danger of causing damage to the transmission.

- ◆ ***The selector lever must be in "N" whenever the vehicle is being towed. The vehicle may not be towed further than 50 km (31 miles) and not faster than 50 km/h (31 mph).***



Note

It is not possible to tow-start the engine.





3 Repair Information

⇒ ["3.1 General Information", page 4](#)

⇒ ["3.2 Guidelines for Clean Working Conditions", page 4](#)

⇒ ["3.3 General Repair Information", page 5](#)

⇒ ["3.4 Seals, Sealing Rings", page 6](#)

⇒ ["3.5 Bolts and Nuts", page 6](#)

3.1 General Information

Transmission

The "automatic transmission 09G" has 6 hydraulically control forward gears. By passing the torque converter slip, 2nd, 3rd, 4th, 5th and 6th gears become mechanically driven gears if lock-up clutch is closed.

Torque Converter

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

Automatic Transmission Fluid

(Automatic Transmission Fluid)

ATF is a permanent fill. As far as Maintenance is concerned, the ATF does not need to be replaced.

The ATF levels inside the planetary gear and inside the final drive are checked and filled at the same time.

Drained ATF must not be used to fill again.



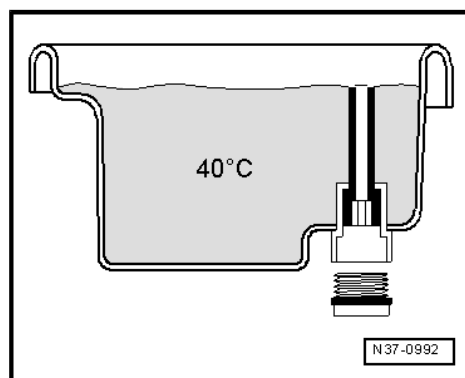
Caution

Be very careful when working with transmission fluid. Dispose of drained transmission fluid correctly.

To drain, rising tube is removed.

The height of this rising tube corresponds to the height of the ATF level.

Use only ATF available as a replacement part in the automatic transmission 09G. Using other oils can lead to function problems or can even cause the transmission to fail, ATF part number. Refer to the Parts Catalog.



3.2 Guidelines for Clean Working Conditions

- ◆ Always clean the connection locations and the area around them before loosening.
- ◆ Place removed parts on a clean surface and cover them. Use foil and paper. Use a lint-free cloth.



- ◆ Cover or plug unpacked components if repairs cannot be performed immediately.
- ◆ Only install clean components: Remove the replacement parts from their packaging just prior to installing them.
- ◆ Always replace seals and gaskets.
- ◆ Coat O-rings with ATF before inserting to prevent crushing rings during installation.
- ◆ After installing check the ATF level and if necessary fill. Refer to ⇒ **"7 Automatic Transmission Fluid", page 73**.

3.3 General Repair Information

- ◆ Carefulness, cleanliness and the correct tools are required for transmission repairs to be successful. The usual basic safety precautions also, naturally apply when carrying out vehicle repairs.
- ◆ A number of generally applicable instructions for individual repair operations, which are otherwise mentioned at various points in the repair procedure, are summarized here. They apply to this repair manual.

Guided Fault Finding, On Board Diagnostics (OBD) and Test Instruments

- ◆ Before servicing the transmission, determine the cause of the fault using the Vehicle Diagnostic Tester in Guided Fault Finding, Vehicle Self-Diagnosis and Test Instruments.

Tools

A complete list of special tools and workshop equipment used in the repair manual can be found at the beginning of each repair section and in its corresponding binder: Listed "Special tools and workshop equipment".

Often times there are questions when a bolt has a low tightening specification. Use Torque Wrench 1783 - 2-10Nm - VAG1783- to tighten these bolts.

Transmission

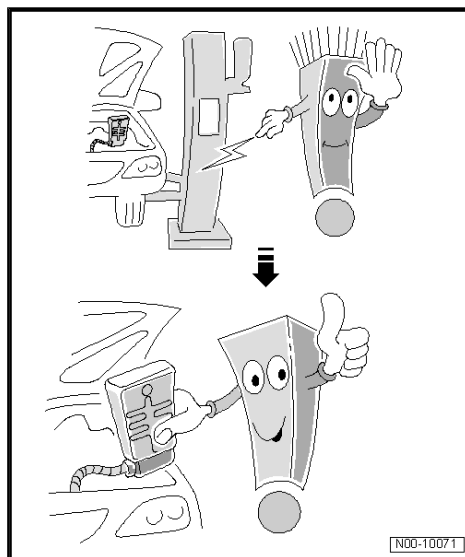
- ◆ Do not run the engine and do not tow the vehicle if the transmission cover is removed or if there is no transmission fluid inside the transmission.
- ◆ Always clean the connection points and the area around them first, and then loosen them.
- ◆ When installing transmission, make sure centering sleeves are correctly seated between engine and transmission.
- ◆ With the transmission removed, secure the torque converter so that it cannot fall out.



Electrical Components

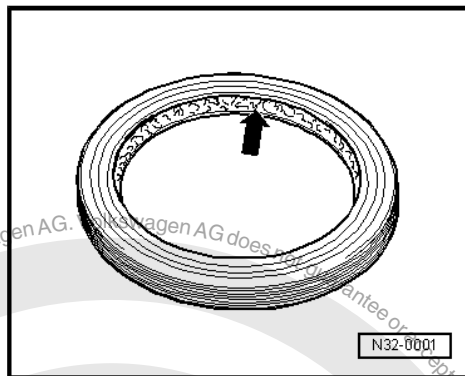
You have probably received an electrical shock at one time, when touching a metal item. The reason behind this is the electrostatic charge to the human body. This charge can damage the electrical components on the transmission and the selector mechanism.

- Touch a grounded object, such as, a water pipe or a vehicle hoist, before working on electrical components. Do not touch connector or »open« electronic components directly.



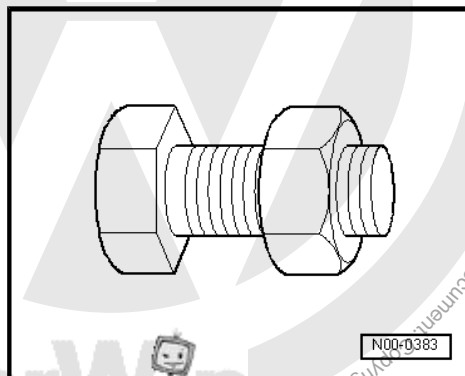
3.4 Seals, Sealing Rings

- ◆ Always replace the O-rings, seals and gaskets.
- ◆ Flange shaft, torque converter and selector shaft seals are illustrated as shaft seals.
- ◆ After removing the seals, check the sealing surfaces on the housing or shaft for burrs resulting from removal or damage.
- ◆ Coat O-rings with ATF before inserting to prevent crushing rings during installation.
- ◆ Use ATF only. Other types of lubrication cause faults to occur in the transmission hydraulics.
- ◆ Before installing the seal rings, lightly oil the outer circumference and coat the space between the sealing lips -arrow- with ATF.
- ◆ The open side of the seals point toward the fluid to be sealed in.
- ◆ Check the ATF level. Refer to [⇒ "7 Automatic Transmission Fluid", page 73](#).



3.5 Bolts and Nuts

- ◆ Loosen or tighten bolts and nuts on the covers or housings diagonally.
- ◆ The tightening specifications stated apply to non-oiled nuts and bolts.
- ◆ Use a wire brush to clean the threads of bolts that were screwed in with locking compound. Install the bolts with Locking Fluid - AMV 185 101 A1-.
- ◆ Threaded holes with self-locking bolts or bolts coated with locking fluid must be cleaned, for example using a thread tap. Otherwise there is a risk that the bolts will shear the next time they are removed.
- ◆ Always replace self-locking nuts and bolts.





4 Technical Data

⇒ [“4.1 Transmission/Engine Allocation”, page 7](#)

⇒ [“4.2 Capacities”, page 7](#)

4.1 Transmission/Engine Allocation

Use the transmission code letters if a repair requires replacement parts.

“Automatic Transmission 09G”		
Code letters	»PAL« »QNQ«	»PPU«
Engine	1.6L - 81 kW	1.8L - 125 kW

4.2 Capacities

Capacities	“Automatic Transmission”
Original filling by the manufacturer	Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03
Filling after draining in Service	Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03
Change	<ul style="list-style-type: none"> ◆ No change ◆ Permanent fill; only change after repairs such as when removing the ATF pan
Lubricant	ATF is available as a replacement part. Therefore the part numbers are also located in the Parts Catalog.



5 Electrical Components

⇒ ["5.1 Component Location Overview - Electrical Components", page 8](#)

5.1 Component Location Overview - Electrical Components

1 - Transmission Control Module - J217-

- ❑ Installed location, removing and installing. Refer to ⇒ [Fig. "Transmission Control Module - J217- -arrow- ", page 10](#)
- ❑ Can be checked in "Guided Fault Finding" using Vehicle Diagnostic Tester .

2 - Engine Control Module (ECM)

- ❑ The control module sends and receives data from the Data bus
- ❑ Component location and removing and installing. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Engine Control Module; Engine Control Module - J623- , Removing and Installing .

3 - Multifunction Transmission Range Switch - F125-

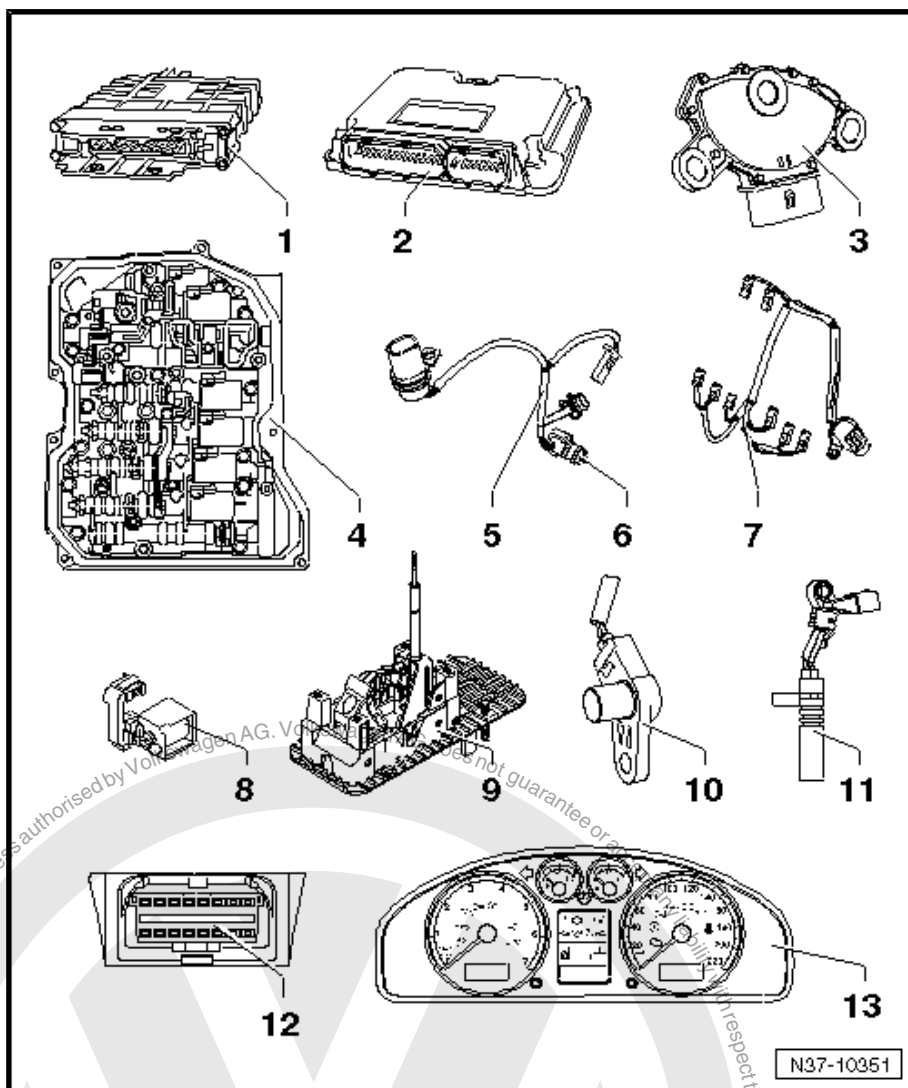
- ❑ Component location. Refer to ⇒ [Fig. "Multifunction Transmission Range Switch -F125- ", page 10](#)
- ❑ Removing and installing. Refer to ⇒ ["2.9 Multifunction Switch, Removing and Installing", page 37](#) .
- ❑ Adjusting. Refer to ⇒ ["2.10 Multifunction Transmission Range Switch, Adjusting", page 40](#) .
- ❑ Can be checked in "Guided Fault Finding" using Vehicle Diagnostic Tester .

4 - Valve Body

- ❑ Component location. Refer to ⇒ [Fig. "Valve Body" , page 10](#)
- ❑ Removing and installing. Refer to ⇒ ["2.2 Valve Body, Removing and Installing", page 90](#) .
- ❑ The components can be checked in "Guided Fault Finding" using Vehicle Diagnostic Tester
- ❑ Allocation. Refer to the Parts Catalog.

5 - Sensor Wiring Harness

- ❑ 8-pin wiring harness
- ❑ With Transmission Fluid Temperature Sensor - G93-
- ❑ Component location. Refer to ⇒ [Fig. "Sensor Wiring Harness" , page 10](#)





- ☐ Removing and installing. Refer to
⇒ [“2.4.2 Wiring Harness, Removing and Installing, Sensors”, page 100](#) .
- ☐ Allocation. Refer to the Parts Catalog.

6 - Transmission Fluid Temperature Sensor - G93-

- ☐ Component location. Refer to ⇒ [Fig. ““Sensor Wiring Harness””, page 10](#)
- ☐ Can be checked in “Guided Fault Finding” using Vehicle Diagnostic Tester .

7 - Solenoid Valve Wiring Harness

- ☐ Wiring harness, 14-pin.
- ☐ Component location. Refer to ⇒ [Fig. ““Solenoid Valve Wiring Harness””, page 11](#)
- ☐ Removing and installing. Refer to
⇒ [“2.4.1 Wiring Harness, Removing and Installing, Solenoid Valves”, page 99](#) .
- ☐ Allocation. Refer to the Parts Catalog.

8 - Shift Lock Solenoid - N110-

- ☐ Component location: The shift lock solenoid is located in selector mechanism.
- ☐ Can be checked in “Guided Fault Finding” using Vehicle Diagnostic Tester .

9 - Selector Mechanism

- ☐ With the Tiptronic Switch - F189-
- ☐ The Tiptronic Switch - F189- is a component of the selector mechanism.
- ☐ Replace the selector mechanism if faulty. Refer to
⇒ [“2.2 Selector Mechanism, Removing and Installing”, page 21](#)
- ☐ Can be checked in “Guided Fault Finding” using Vehicle Diagnostic Tester .

10 - Transmission Input Speed Sensor - G182-

- ☐ Component location. Refer to
⇒ [Fig. ““Transmission Input Speed Sensor -G182- and Transmission Output Speed Sensor -G195- ””, page 11](#)
- ☐ Removing and installing. Refer to
⇒ [“2.5 Transmission Input Speed Sensor G182 , Removing and Installing”, page 101](#) .
- ☐ Can be checked in “Guided Fault Finding” using Vehicle Diagnostic Tester .

11 - Transmission Output Speed Sensor - G195-

- ☐ Component location. Refer to
⇒ [Fig. ““Transmission Input Speed Sensor -G182- and Transmission Output Speed Sensor -G195- ””, page 11](#)
- ☐ Removing and installing. Refer to
⇒ [“2.6 Transmission Output Speed Sensor G195 , Removing and Installing”, page 101](#) .
- ☐ Can be checked in “Guided Fault Finding” using Vehicle Diagnostic Tester .

12 - Data Link Connector (DLC)

- ☐ Component location. Refer to ⇒ [Fig. ““Data Link Connector \(DLC\)””, page 11](#)

13 - Transmission Range Display - Y6-

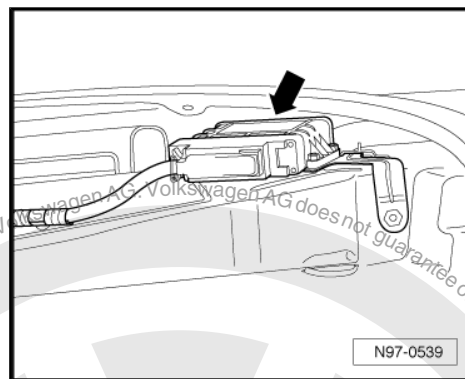
- ☐ Component location. Refer to ⇒ [Fig. ““Transmission Range Display -Y6- ””, page 11](#)
- ☐ Removing and installing. Refer to ⇒ Electrical Equipment; Rep. Gr. 90 ; Instrument Cluster; Overview - Instrument Cluster .



Transmission Control Module - J217- -arrow-

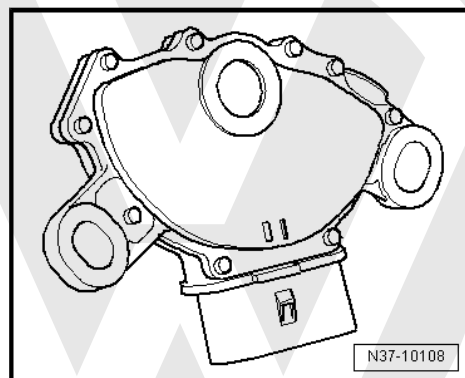
Component location: The control module is located in front left wheel housing.

- The wheel housing liner must be removed for removal and installation.



Multifunction Transmission Range Switch - F125-

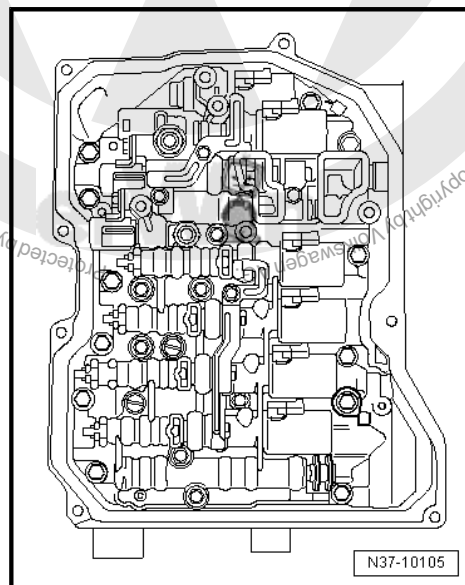
Component location: The multi-function switch is located on upper side of transmission.



Valve Body

Component location: Valve body is bolted to underside of transmission housing and is covered by transmission fluid pan.

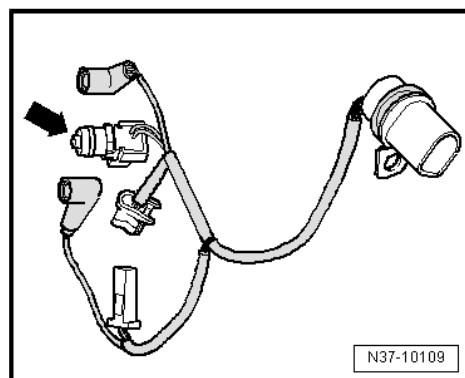
The Solenoid Valve 1 - N88- , -N89- , -N90- , -N91- , -N92- , -N93- , -N282- and -N283- are secured on the valve body.



Sensor Wiring Harness

- ◆ 8-pin wiring harness
- ◆ With integrated Transmission Fluid Temperature Sensor - G93- -arrow-.

Component location: The wiring harness is secured to valve body in the transmission.

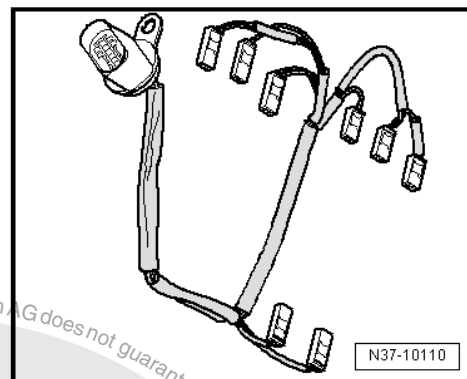




Solenoid Valve Wiring Harness

- ◆ Wiring harness, 14-pin

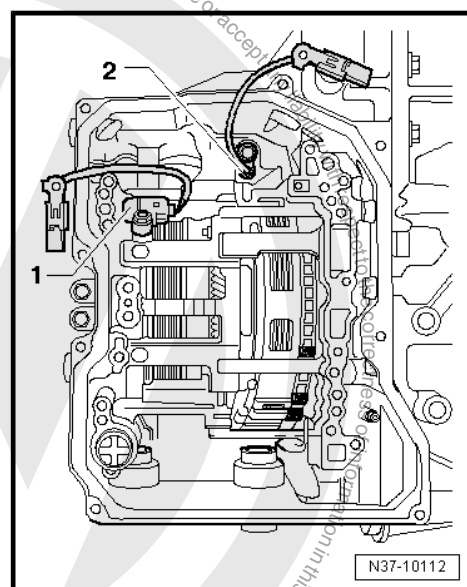
Component location: The wiring harness is secured to valve body in the transmission.



Transmission Input Speed Sensor - G182- and Transmission Output Speed Sensor - G195-

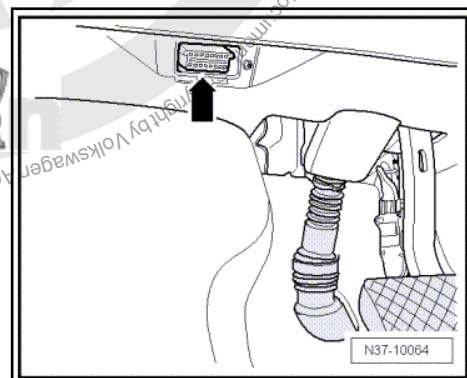
Component location: Inside the transmission housing above the valve body.

- 1 - Transmission Input Speed Sensor - G182-
- 2 - Transmission Output Speed Sensor - G195-



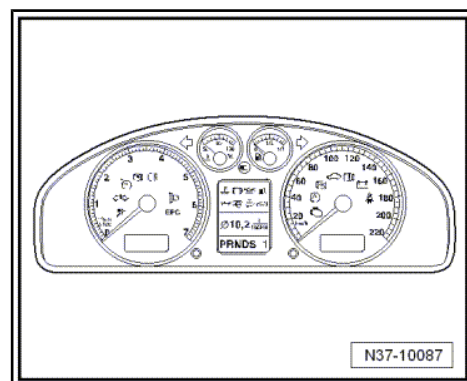
Data Link Connector (DLC)

Component location: The DLC -arrow- is located under the driver side storage compartment on the left side.



Transmission Range Display - Y6-

Component location: inside the instrument cluster

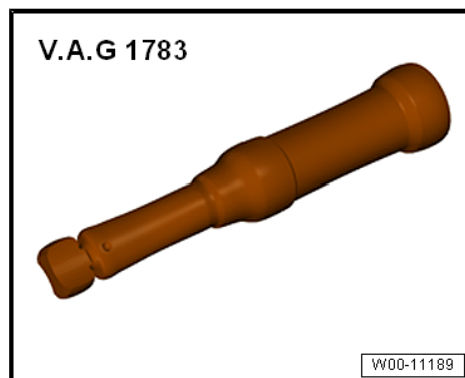




6 Special Tools

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-





32 – Torque Converter

1 Torque Converter

⇒ [“1.1 Overview - Torque Converter”, page 13](#)

⇒ [“1.2 Torque Converter, Removing and Installing”, page 14](#)

⇒ [“1.3 Torque Converter, Checking”, page 15](#)

⇒ [“1.4 Torque Converter, Draining”, page 15](#)

⇒ [“1.5 Torque Converter Seal, Removing and Installing”, page 15](#)

1.1 Overview - Torque Converter



Note

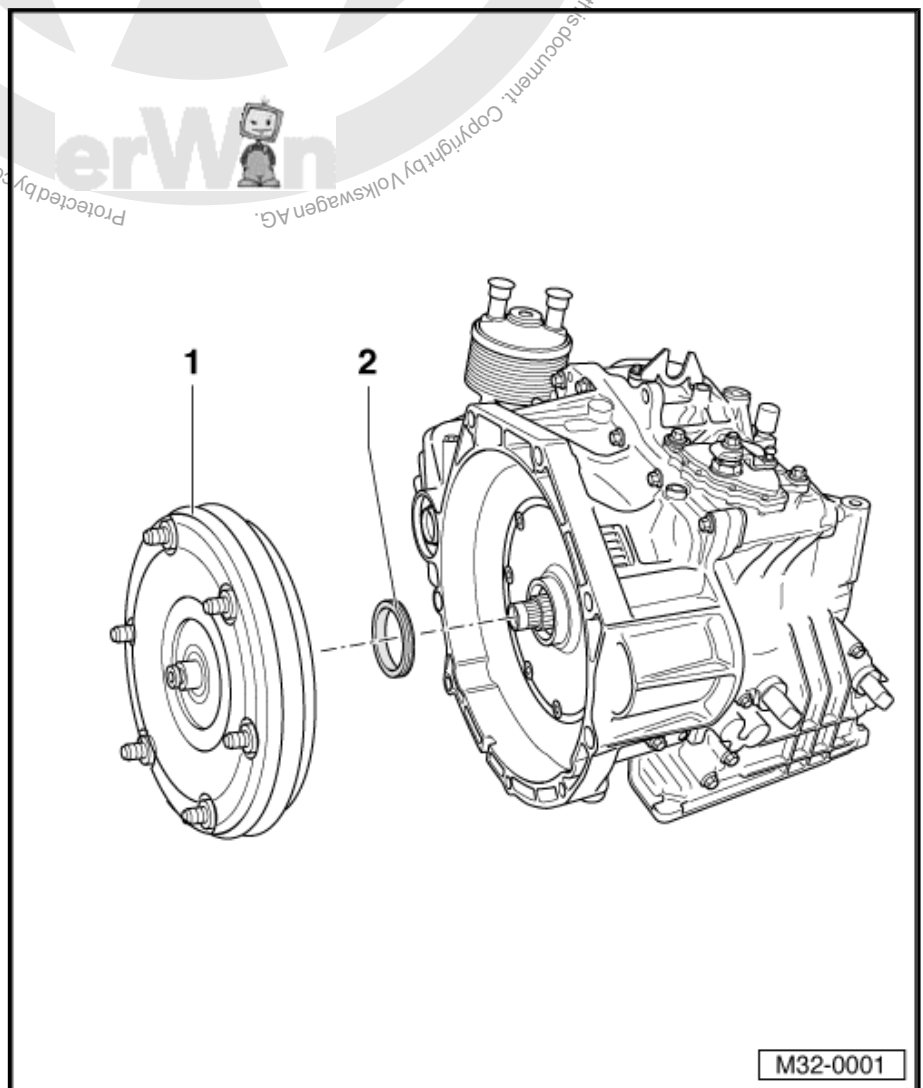
The torque converter and transmission in the illustration may differ from the original part.

1 - Torque Converter

- ☐ Secure the torque converter from falling when the transmission is removed or during transport. Refer to ⇒ [Fig. “Securing the Torque Converter from Falling Out”](#), page 14
- ☐ There are different torque converters.
- ☐ Use the code letters to designate them. Refer to the Parts Catalog.
- ☐ Removing and installing. Refer to ⇒ [“1.2 Torque Converter, Removing and Installing”, page 14](#).
- ☐ Checking. Refer to ⇒ [“1.3 Torque Converter, Checking”, page 15](#).
- ☐ Draining. Refer to ⇒ [“1.4 Torque Converter, Draining”, page 15](#).

2 - Seal

- ☐ For the torque converter
- ☐ Replacing. Refer to ⇒ [“1.5 Torque Converter Seal, Removing and Installing”, page 15](#).

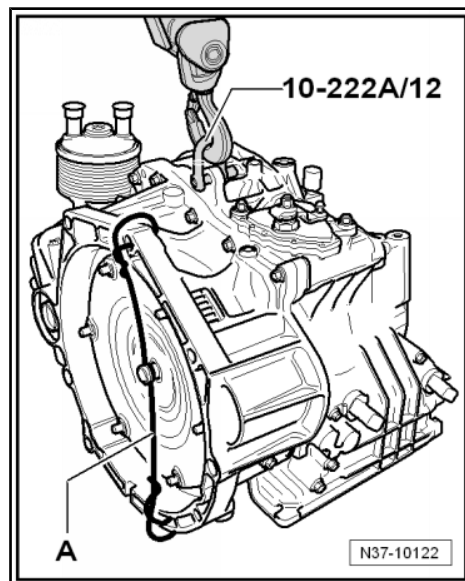




Securing the Torque Converter from Falling Out

- Secure the torque converter with wire -A- to prevent it from falling when being transported.

Unsecured torque converters can slide out if the transmission is tipped.



1.2 Torque Converter, Removing and Installing

Removing

- Transmission is removed.
- Carefully remove the torque converter from the transmission.

Installing

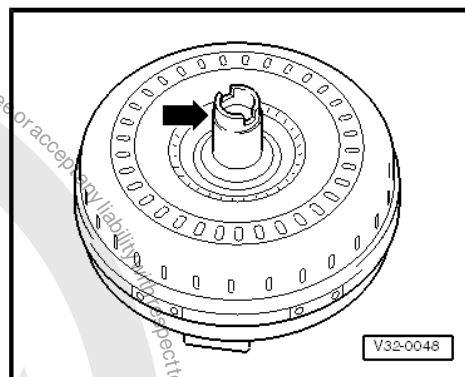
- Press torque converter hub through the seal as far as first stop.
- Lightly press torque converter toward transmission and turn it until slots on torque converter hub -arrow- engage in drive lugs on ATF pump gear and torque converter slides inward noticeably.

The converter is installed correctly if it is easy to turn by hand and if it fits evenly in the transmission.



Caution

Before and during fastening the engine/transmission flange bolts, check that the torque converter can still be turned behind the drive plate. If the torque converter cannot be turned, it must be assumed that it has not been inserted properly and that the coupling plate of the torque converter or the ATF pump will be destroyed during final tightening of the bolts.





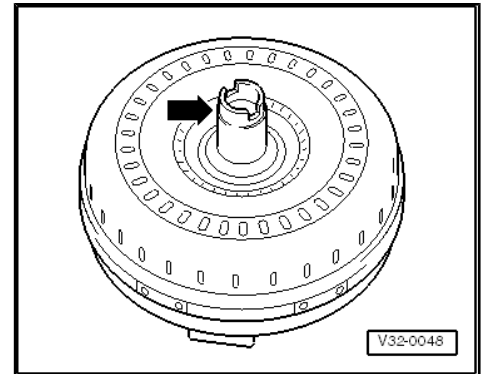
1.3 Torque Converter, Checking

- Check hub -arrow- of torque converter for scoring.



Note

The torque converter is welded together and must be replaced as a complete unit if it is damaged or faulty.



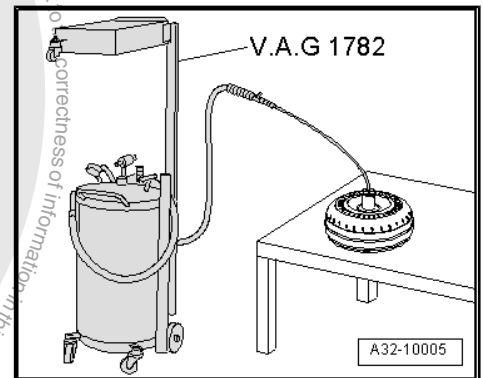
1.4 Torque Converter, Draining

Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-

Drain the torque converter if the ATF is dirty:

- Extract the ATF from the torque converter using the Used Oil Collection and Extraction Unit - SMN372500- and the oil extraction sensor.



1.5 Torque Converter Seal, Removing and Installing

Special tools and workshop equipment required

- ◆ Puller - Seal Lever - VW681-
- ◆ Seal Installer - Torque Converter Seal - T10175-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

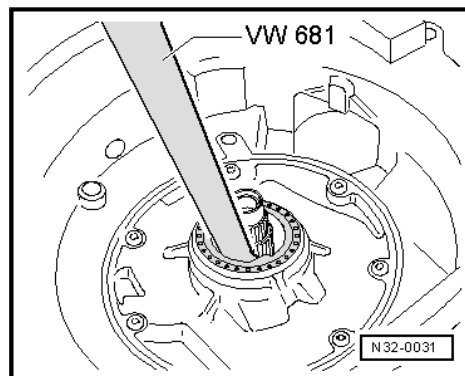
Mandatory Replacement Parts

- ◆ Seal - Torque Converter



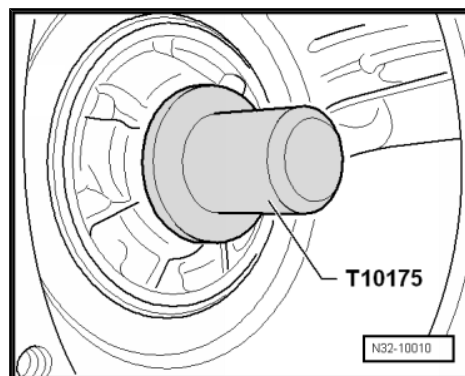
Removing

- Remove the transmission. Refer to
⇒ [“3.1 Transmission, Removing”, page 43](#) .
- Remove the torque converter.
- Pry out the seal with the Puller - Seal Lever - VW681- .



Installing

- Coat outer circumference and sealing lips of new seal with ATF.
- Installed position: The open side of seal faces the transmission.
- Install the sealing ring using the Seal Installer - Torque Converter Seal - T10175- until it is flush.
- Install the torque converter. Refer to
⇒ [“1.2 Torque Converter, Removing and Installing”, page 14](#) .
- Install the transmission. Refer to
⇒ [“3.2 Transmission, Installing”, page 64](#) .

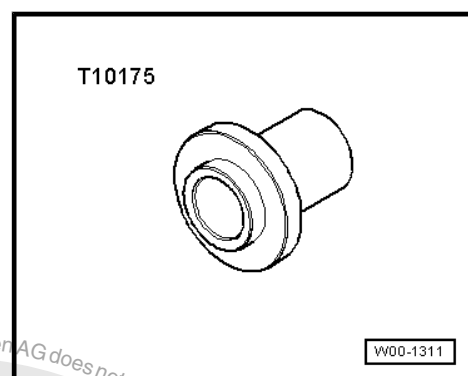




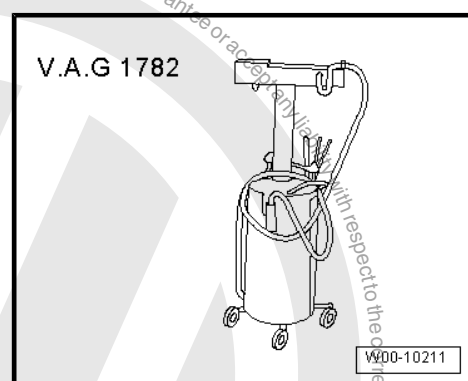
2 Special Tools

Special tools and workshop equipment required

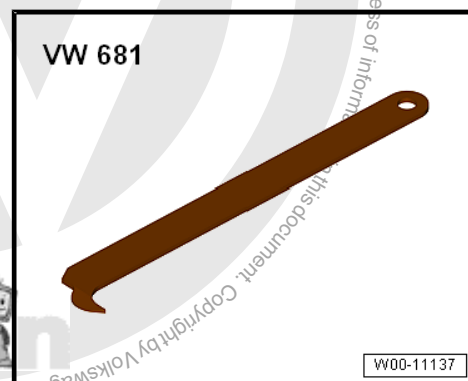
- ◆ Seal Installer - Torque Converter Seal - T10175-



- ◆ Used Oil Collection and Extraction Unit - SMN372500-



- ◆ Puller - Seal Lever - VW681-





37 – Controls, Housing

1 Vehicle Diagnostic Tester , Connecting

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester

Volkswagen offers various testers, for example:

- ◆ Tester - VAS5051/11A-

The operation of these »devices« is described in the respective operating instructions.

Vehicle Diagnostic Tester Connecting to the Data Link Connector (DLC).



WARNING

- ◆ *During a test drive you must always secure testing and measuring equipment on the back seat.*
- ◆ *Only the passenger may use the equipment during the road test.*

- Turn on the Vehicle Diagnostic Tester .

The Vehicle Diagnostic Tester is ready for use when it is possible to select between the fields/buttons Guided Functions and Guided Functions on the »right« side of the screen.

Depending on equipment and tester version, additional functions may be »displayed«, for example:

- ◆ ElsaWin
- ◆ Test Instruments
- ◆ On Board Diagnostics (OBD)

»Tester« is Ready for Operation.

- Turn on the ignition.
- Touch a field/button on the display to start desired function.



2 Selector Mechanism

- ⇒ [“2.1 Overview - Selector Mechanism”, page 19](#)
- ⇒ [“2.2 Selector Mechanism, Removing and Installing”, page 21](#)
- ⇒ [“2.3 Selector Lever Cable, Removing and Installing”, page 27](#)
- ⇒ [“2.4 Selector Lever Cable, Checking and Adjusting”, page 30](#)
- ⇒ [“2.5 Emergency Release from P”, page 32](#)
- ⇒ [“2.6 Selector Lever Handle, Removing and Installing”, page 33](#)
- ⇒ [“2.7 Button in Handle, Moving Into Installation Position”, page 35](#)
- ⇒ [“2.8 Gearshift Mechanism, Checking”, page 36](#)
- ⇒ [“2.9 Multifunction Switch, Removing and Installing”, page 37](#)
- ⇒ [“2.10 Multifunction Transmission Range Switch, Adjusting”, page 40](#)
- ⇒ [“2.11 Selector Shaft Seal, Replacing”, page 41](#)

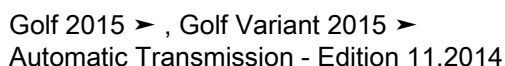
2.1 Overview - Selector Mechanism



WARNING

Move the selector lever into “P” and set the parking brake before working with the engine running.





- ❑ Do not remove the handle unnecessarily. Unclip only the cover for the emergency release. Refer to
⇒ [“2.5 Emergency Release from P”](#), [page 32](#).
- ❑ Removing and installing. Refer to
⇒ [“2.6 Selector Lever Handle, Removing and Installing”](#), [page 33](#).

- ❑ With integrated Selector Lever Sensor System Control Module - J587- with Selector Lever - E313- , Tiptronic Switch - F189- , Selector Lever Park Position Lock Switch - F319- and Shift Lock Solenoid - N110-
- ❑ Do not grease the selector lever cable.
- ❑ Removing and installing. Refer to
⇒ **"2.2 Selector Mechanism, Removing and Installing", page 21** .
- ❑ Checking and Adjusting. Refer to
⇒ **"2.4 Selector Lever Cable, Checking and Adjusting", page 30** .



- ☐ 4 Nm
- ☐ For attaching the selector mechanism to the selector housing
- ☐ Quantity: 4

5 - Nut with Collar

- ☐ M6 - 8 Nm
- ☐ M8 - 20 Nm
- ☐ Quantity: 4

7 - Clip

- ☐ For the selector lever cable on the bracket
- ☐ Is secured to the ATF cooler

9 - Cable Mounting Bracket

- ☐ For selector lever cable
- ☐ With installed grommet and spacer for the cable mounting bracket on the transmission

10 - Bolt

- ❑ 13 Nm
- ❑ Selector lever cable adjusting screw



11 - Selector Lever Cable

- ❑ Removing and installing. Refer to ⇒ [“2.3 Selector Lever Cable, Removing and Installing”, page 27](#) .

12 - Clips

- ❑ Secures the selector lever cable on the cable bracket
- ❑ Replace after removing

13 - Bolt

- ❑ 20 Nm

14 - Clips

- ❑ Replace after removing

2.2 Selector Mechanism, Removing and Installing

⇒ [“2.2.1 Shift Mechanism with Selector Lever Cable, Removing and Installing”, page 21](#)

⇒ [“2.2.2 Selector Mechanism without Selector Lever Cable, Removing and Installing”, page 24](#)

2.2.1 Shift Mechanism with Selector Lever Cable, Removing and Installing



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

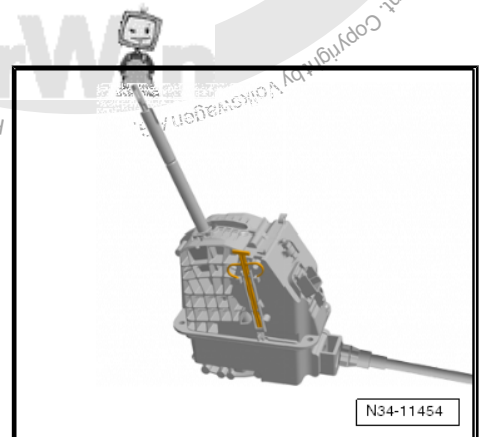
- ◆ Clip - Selector Lever Cable to the Cable Bracket
- ◆ Clip - Selector Lever Cable to the Selector Mechanism
- ◆ Plug - Selector Mechanism

Short Description

Remove the center console inside the passenger compartment.

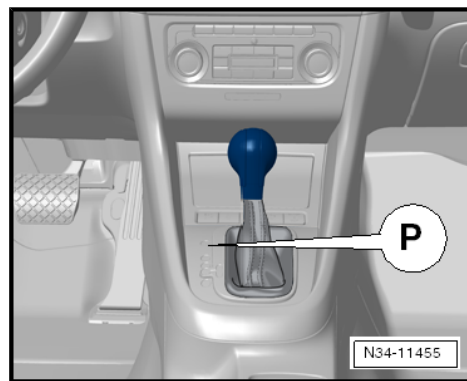
It is necessary to remove the heat shield under the vehicle.

Removing

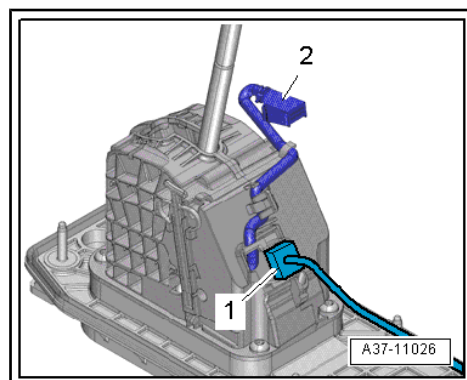




- Move the selector lever into “P”.



- Remove the selector lever handle. Refer to ➤ [“2.6 Selector Lever Handle, Removing and Installing”, page 33](#) . Disconnect the connector -2- from the cover while doing this.
- Disconnect the connector -1- from the selector mechanism to the vehicle wiring harness.
- Remove the center console. Refer to ➤ Body Interior; Rep. Gr. 68 ; Center Console; Center Console, Removing and Installing .
- Remove the air guide channel from the center console. Refer to ➤ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Routing; Overview - Air Routing and Air Distribution in Passenger Compartment .
- Remove the bracket -2-, to do this remove the left and right bolts -1-.
- Remove the air filter housing. Refer to ➤ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing



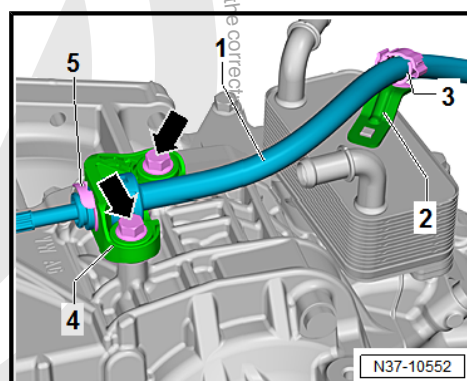
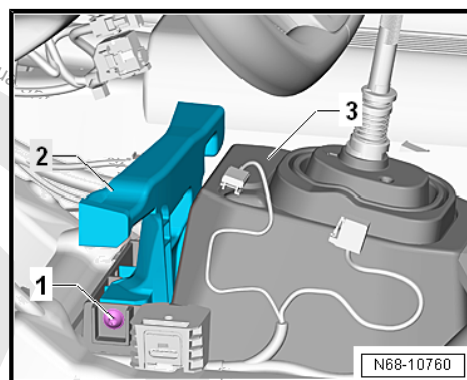
- Disengage the selector lever cable -1- from the bracket -2- clip -3-.

Use pliers to remove the clip -5- from the cable bracket -4-. Do not use a sharp-edged lever. Otherwise the selector lever cable could get damaged.



Note

- ◆ Always replace the clip on the selector lever cable.
- ◆ It is better to remove the cable bracket -4- together with the selector lever cable -1- from the transmission -arrow-.
- ◆ If the selector mechanism is replaced with the selector lever cable the cable bracket -4- must be replaced.





- Pry the selector lever cable -1- off the selector lever -3-, for example, using a wrench.

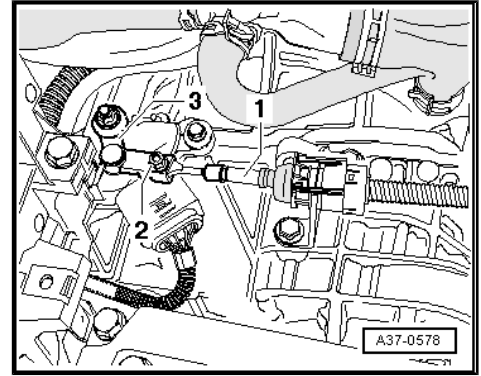
The adjusting screw -2- must not be loosened.



Caution

Danger of damaging the selector lever cable.

- ◆ **Push the selector lever cable to the rear and out of the cable bracket. Guide the selector lever cable out of the cable bracket when removing the selector mechanism.**



- Lift the vehicle.
- Remove the center tunnel heat shield under the selector mechanism. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Molding/Trim/Extensions/Trim Panels; Floor Heat Shield, Removing and Installing .
- Remove the bracket -A-, if equipped.
- Remove the nuts -arrows- in the vehicle interior.
- Remove the selector mechanism -B- with the selector lever cable and selector housing downward.

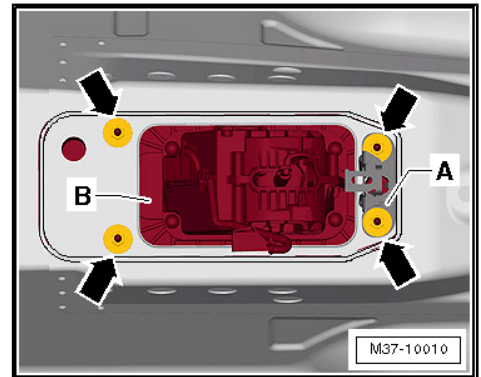
Installing

Install in reverse order of removal. Note the following:



Note

- ◆ **Do not bend or kink the selector lever cable.**
- ◆ **Do not lubricate the selector lever cable.**
- ◆ **After installation, the selector lever cable movement must be checked and adjusted.**

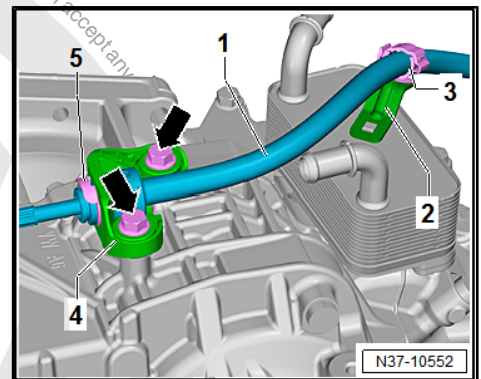


- Insert the selector lever cable -1- in the cable bracket -4- and install a new clip -5-.

- Press the selector lever cable carefully onto the selector lever.

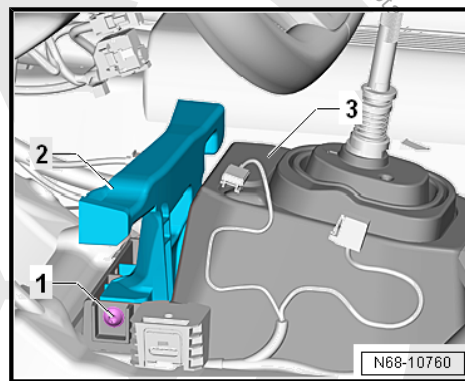
If removed, install the cable bracket -4- with the bolts -arrows- on the transmission.

- Engage the selector lever cable in the bracket -2- clip -3-.
- Install the heat shield under the selector mechanism. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Molding/Trim/Extensions/Trim Panels; Floor Heat Shield, Removing and Installing .





- Install the bracket -2-. Refer to ➔ Body Interior; Rep. Gr. 68 ; Center Console; Center Console, Removing and Installing .
- Install the air guide channel from the center console. Refer to ➔ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Routing; Overview - Air Routing and Air Distribution in Passenger Compartment .
- Install the center console. Refer to ➔ Body Interior; Rep. Gr. 68 ; Center Console; Center Console, Removing and Installing .
- Install the selector lever handle. Refer to ➔ ["2.6 Selector Lever Handle, Removing and Installing", page 33](#) .
- Selector lever cable, adjusting. Refer to ➔ ["2.4 Selector Lever Cable, Checking and Adjusting", page 30](#) .
- Check the selector mechanism. Refer to ➔ ["2.8 Gearshift Mechanism, Checking", page 36](#)
- Install the air filter housing. Refer to ➔ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing .



Tightening Specifications

- ◆ Refer to ➔ ["2.1 Overview - Selector Mechanism", page 19](#)

2.2.2 Selector Mechanism without Selector Lever Cable, Removing and Installing



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

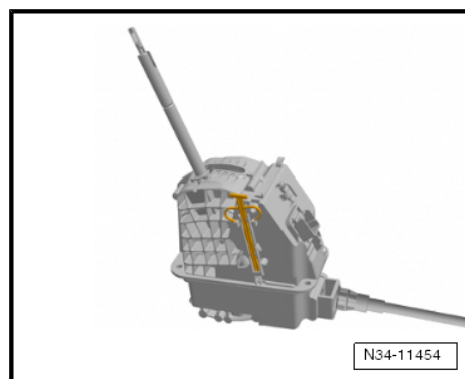
Mandatory Replacement Parts

- ◆ Clip - Selector Lever Cable to the Selector Mechanism
- ◆ Plug - Selector Mechanism

Short Description

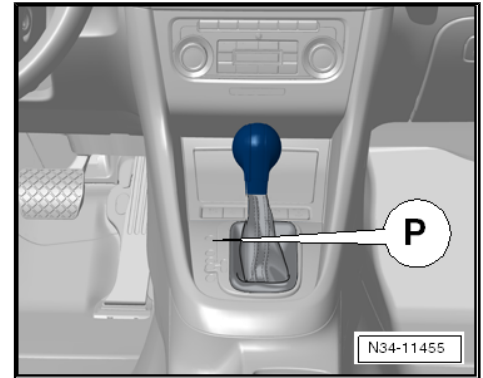
Remove the center console inside the passenger compartment.
It is necessary to remove the heat shield under the vehicle.

Removing

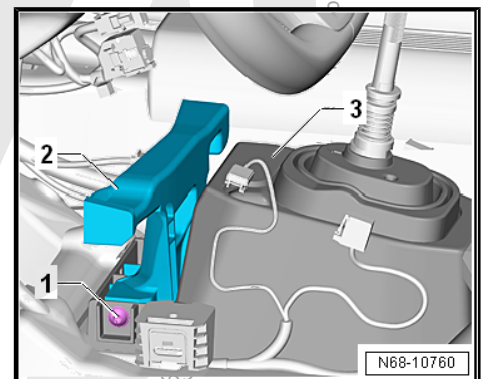
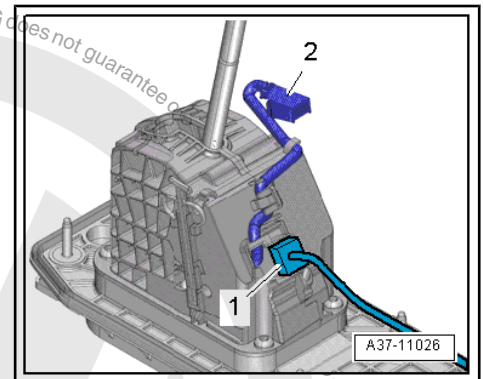




- Move the selector lever into “P”.

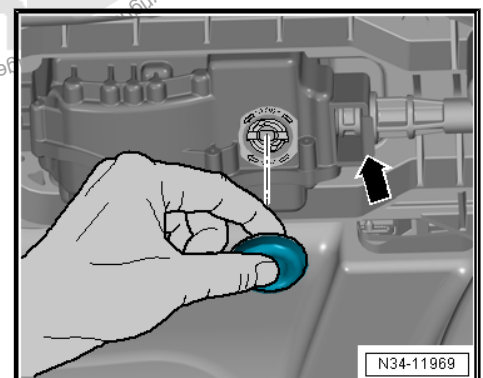


- Remove the selector lever handle. Refer to ⇒ **“2.6 Selector Lever Handle, Removing and Installing”, page 33**. Disconnect the connector -2- from the cover while doing this.
- Disconnect the connector -1- from the selector mechanism to the vehicle wiring harness.
- Remove the center console. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console; Overview - Center Console .
- Remove the air guide channel from the center console. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Routing; Overview - Air Routing and Air Distribution in Passenger Compartment .
- Remove the bracket -2-, to do this remove the left and right bolts -1-.
- Position the selector lever on the selector mechanism in the “N” position. The cable can only be loosened in this position.
- Remove the center tunnel heat shield under the selector mechanism. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Molding/Trim/Extensions/Trim Panels; Floor Heat Shield, Removing and Installing .



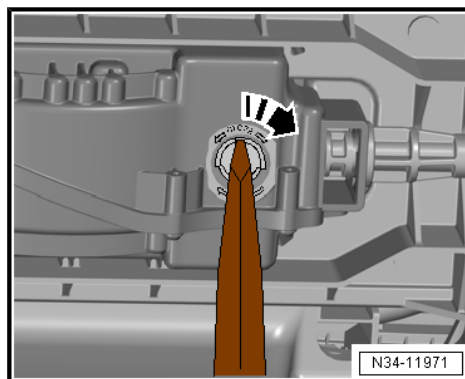
- Remove the plugs, and remove the clip -arrow-.

Replace the clip after removing.





- Insert a large screwdriver in the groove on the locking mechanism and turn 90° in the direction of -arrow-.
- Remove the cable from the selector mechanism.
- Remove the bracket -A-, if equipped.
- Remove the nuts -arrows- in the vehicle interior.



- Remove the selector mechanism -B- with the gearshift housing downward.

Installing

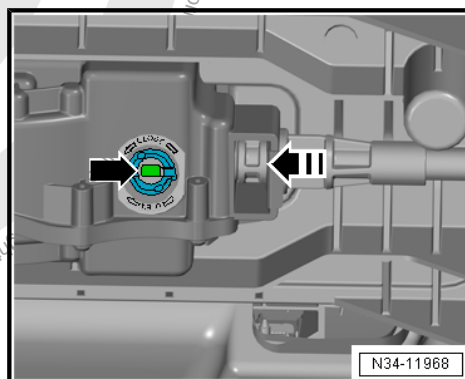
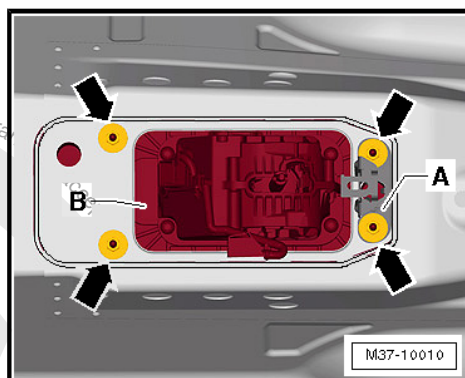
Install in reverse order of removal. Note the following:

A second technician will be needed for inserting the selector lever cable from the passenger compartment into the engine compartment.

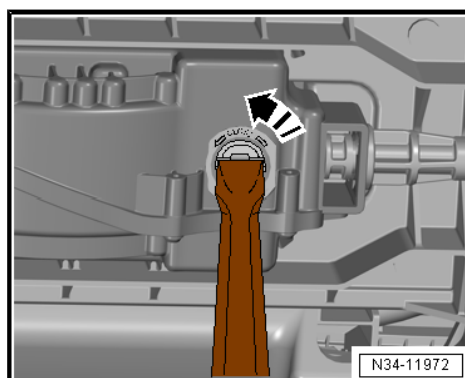


Note

- ◆ Do not bend or kink the selector lever cable.
- ◆ Do not lubricate the selector lever cable.
- ◆ After installation, the selector lever cable movement must be checked and adjusted.
- The selector mechanism selector lever is in the "N" position. The cable can only be locked in this position.
- Guide the cable in the selector mechanism until it is visible through the locking mechanism -arrow-.

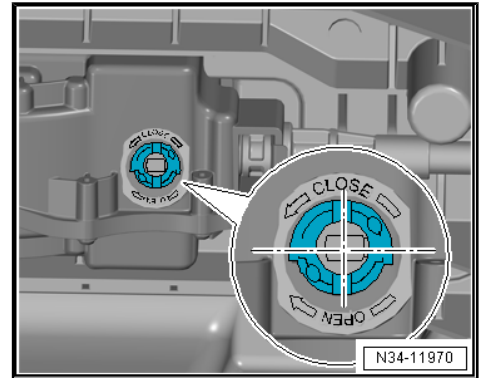


- Turn the locking mechanism in the direction of -arrow- 90° with a large screwdriver.

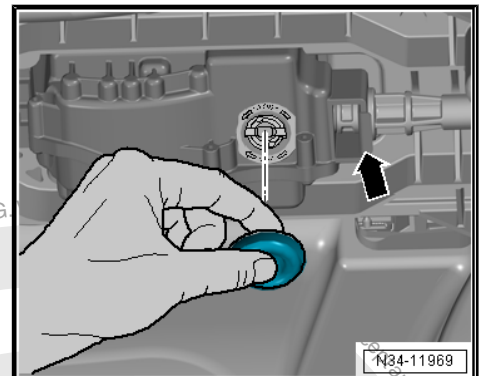




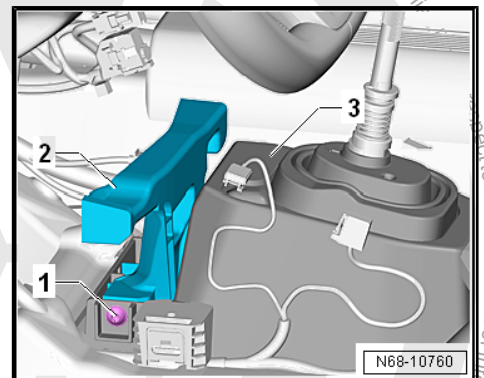
- The cable is correctly locked when the grooves on the locking mechanism are at a right angle to the cable.



- Install new clip -arrow- and replace the plugs.
- Install the heat shield under the selector mechanism. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Molding/Trim/Extensions/Trim Panels; Floor Heat Shield, Removing and Installing .



- Install the bracket -2- if equipped. Refer to ➤ Body Interior; Rep. Gr. 68 ; Center Console; Center Console, Removing and Installing .
- Install the air guide channel from the center console. Refer to ➤ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Routing; Overview - Air Routing and Air Distribution in Passenger Compartment .
- Install the center console. Refer to ➤ Body Interior; Rep. Gr. 68 ; Center Console; Center Console, Removing and Installing .
- Install the selector lever handle. Refer to ➤ [“2.6 Selector Lever Handle, Removing and Installing”, page 33](#) .
- Selector lever cable, adjusting. Refer to ➤ [“2.4 Selector Lever Cable, Checking and Adjusting”, page 30](#) .
- Check the selector mechanism. Refer to ➤ [“2.8 Gearshift Mechanism, Checking”, page 36](#)



Tightening Specifications

- ◆ Refer to ➤ [“2.1 Overview - Selector Mechanism”, page 19](#)

2.3 Selector Lever Cable, Removing and Installing



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.



Mandatory Replacement Parts

- ◆ Clip - Selector Lever Cable to the Cable Bracket
- ◆ Clip - Selector Lever Cable to the Selector Mechanism
- ◆ Plug - Selector Mechanism
- Remove the air filter housing; Refer to ➔ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing
- Disengage the selector lever cable -1- from the bracket -2- clip -3-.

Use pliers to remove the clip -5- from the cable bracket -4-. Do not use a sharp-edged lever. Otherwise the selector lever cable could get damaged.

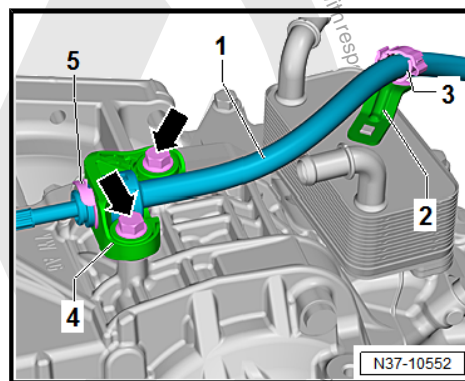


Note

- ◆ Always replace the clip on the selector lever cable.
- ◆ It is better to remove the cable bracket -4- together with the selector lever cable -1- from the transmission -arrow-.
- ◆ If the selector lever cable is replaced, the cable bracket -4- must be replaced.

- Pry the selector lever cable -1- off the selector lever -3-, for example, using a wrench.

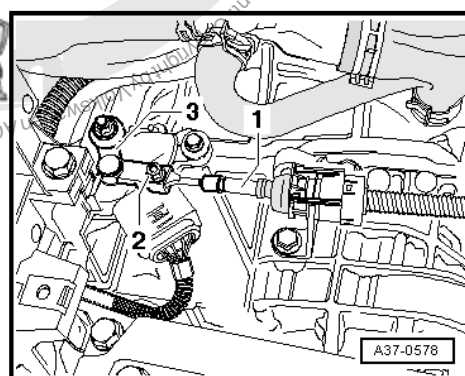
The adjusting screw -2- must not be loosened.



Caution

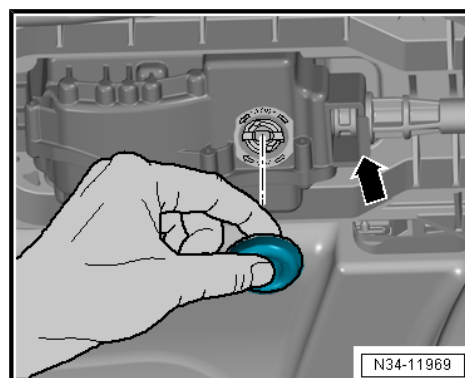
Danger of damaging the selector lever cable.

- ◆ Push the selector lever cable to the rear and out of the cable bracket. The selector lever cable is guided out of the cable bracket when removing the selector mechanism.



- Lift the vehicle.
- Remove the center tunnel heat shield under the selector mechanism. Refer to ➔ Body Exterior; Rep. Gr. 66 ; Molding/Trim/Extensions/Trim Panels; Floor Heat Shield, Removing and Installing .
- Remove the plugs, and remove the clip -arrow-.

Replace the clip after removing.





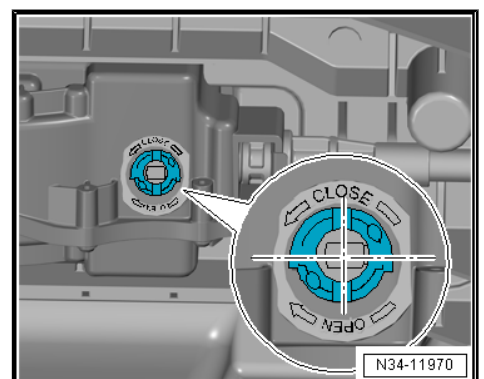
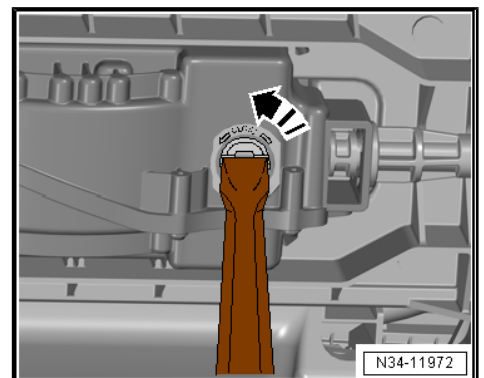
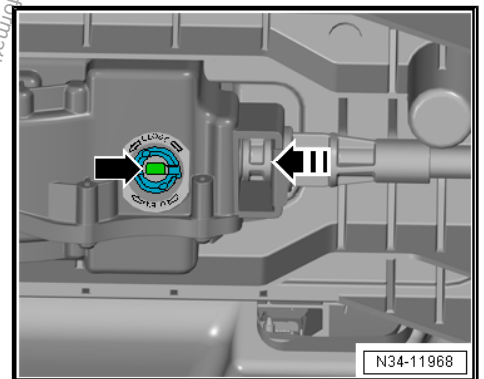
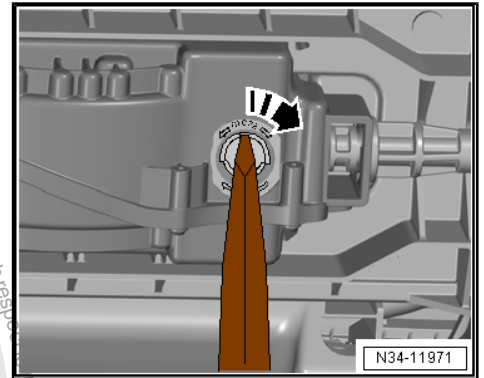
- Insert a large screwdriver in the groove on the locking mechanism and turn 90° in the direction of -arrow-.
- Pull the cable from the selector mechanism and remove.

Installing



Note

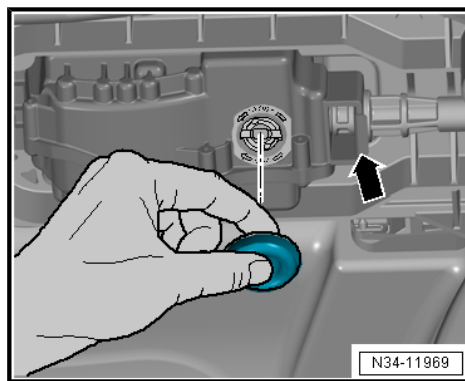
- ◆ Do not bend or kink the selector lever cable.
- ◆ Do not lubricate the selector lever cable.
- ◆ After installing check the selector lever cable for ease of movement.
- The selector mechanism selector lever is in the “N” position. The cable in the selector mechanism can only be locked in this position.
- Guide the cable in the selector mechanism until it is visible through the locking mechanism -arrow-.



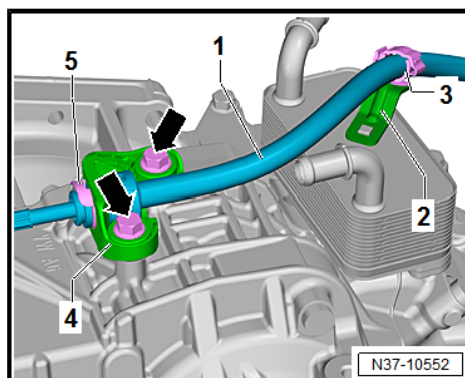
- Turn the locking mechanism in the direction of -arrow- 90° with a large screwdriver.
- The cable is correctly locked when the grooves on the locking mechanism are at a right angle to the cable.



- Install new clip -arrow- and replace the plugs.



- Insert the selector lever cable -1- in the cable bracket -4- and install a new clip -5-.
 - Press the selector lever cable carefully onto the selector lever.
- If removed, install the cable bracket -4- with the bolts -arrows- on the transmission.
- Engage the selector lever cable in the bracket -2- clip -3-.
 - Install the heat shield under the selector mechanism. Refer to ➔ Body Exterior; Rep. Gr. 66 ; Molding/Trim/Extensions/Trim Panels; Floor Heat Shield, Removing and Installing .
 - Adjust the selector lever cable. Refer to ➔ [“2.4 Selector Lever Cable, Checking and Adjusting”](#), [page 30](#) .
 - Check the selector mechanism. Refer to ➔ [“2.8 Gearshift Mechanism, Checking”](#), [page 36](#) .
 - Install the air filter housing. Refer to ➔ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing .



Tightening Specifications

- ♦ Refer to ➔ [“2.1 Overview - Selector Mechanism”](#), [page 19](#)

2.4 Selector Lever Cable, Checking and Adjusting

Special tools and workshop equipment required

- ♦ Torque Wrench 5-50Nm VAG1331-

Short Description

To check the selector lever cable for ease of movement, remove it from the transmission and position the removed end so it does not make contact anywhere.

Then selector lever is moved and the selector lever cable installed again on the transmission.

After that, selector lever cable must be adjusted. Refer to ➔ [page 31](#) .

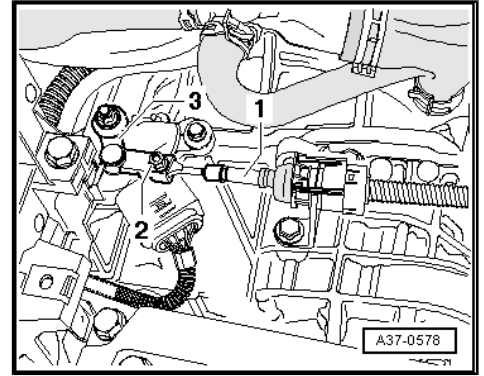
Do not grease the selector lever cable connection!

Checking

- Move the selector lever into »P«.



- Loosen the bolt -2- on the selector lever cable -1-.
- Pry the selector lever cable -1- off the selector lever -3-, for example, using a wrench.

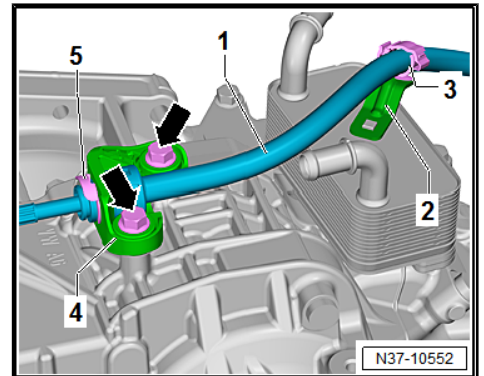


- Disengage the selector lever cable -1- from the bracket -2- clip -3-.
- Remove the cable bracket -4- from the transmission to do this remove the bolts -arrows-.



Note

Do not remove the clip -5-.



- Move the selector lever from »P« through »S« and back to »P« several times.
- The selector lever and the selector lever cable must have ease of movement at the same time.
- Install the selector lever cable again.
- Adjust the selector lever cable. Refer to [⇒ page 31](#).

Selector Lever Cable Must Always be Adjusted If:

- ◆ The selector lever cable was removed from the transmission.
- ◆ The engine and/or transmission were removed and installed.
- ◆ Parts of subframe mount were removed and installed.
- ◆ The selector lever cable itself or the selector mechanism was removed and installed.
- ◆ Engine/transmission positions changes, for example, were installed free of tension.

Adjusting:

- Move the selector lever into »P«.



- The adjustment screw -2- must be »loosened«.
- Move the selector lever -3- on the transmission into “P” (push the gearshift lever to the rear).



WARNING

The parking lock must be engaged.

- From »underneath the vehicle«, rotate both front wheels in the same direction and at the same time until the parking lock audibly engages.
- The parking lock is engaged when it is not possible to rotate both front wheels in the same direction at the same time.
- Tap the handle on the selector lever back and forth gently but do not move it out of “P”.

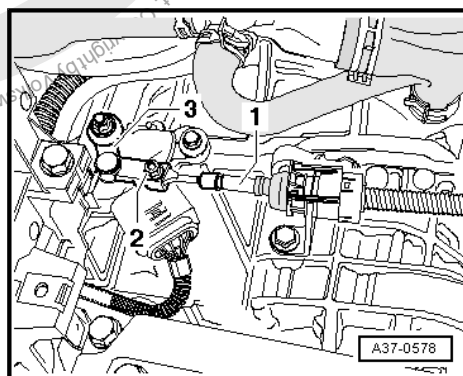
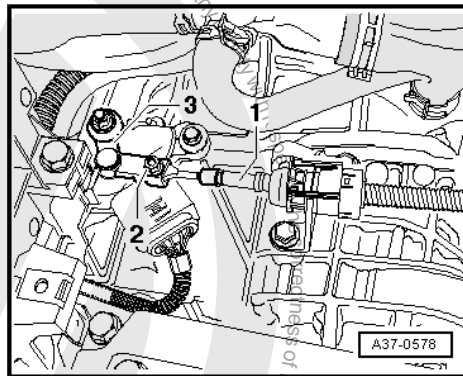
This places the selector lever cable core in its optimal position.

- Tighten the bolt -2-.

This ends the adjustment.

Tightening Specifications

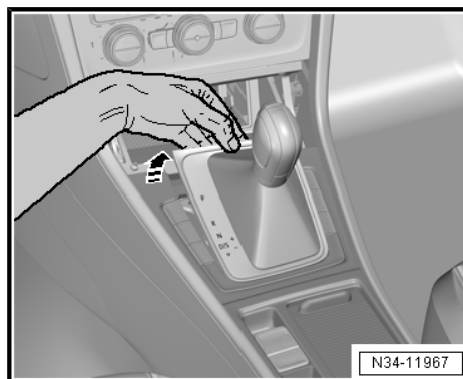
- ◆ Refer to ⇒ [“2.1 Overview - Selector Mechanism”, page 19](#)



2.5 Emergency Release from P

Do Not Remove the Handle.

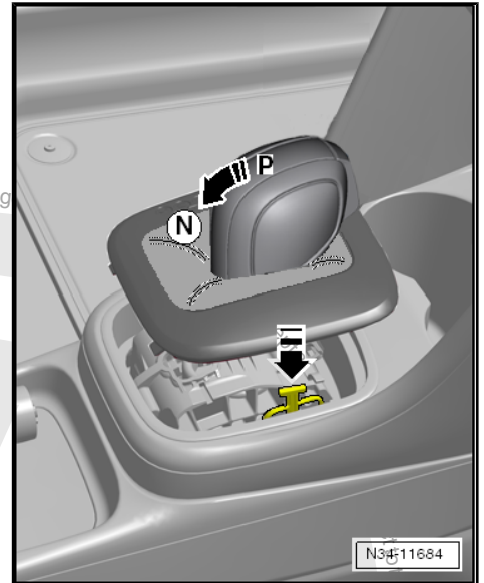
- Press the brake or set the parking brake.
- Open the storage compartment door.
- Grab under the cover by hand and unclip by pulling upward.





- Hold the shift cover to the side and from above push the yellow plastic part and hold it in this position.

The selector lever can now be moved out of P.



2.6 Selector Lever Handle, Removing and Installing



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Clamp - Selector Level Handle

Short Description:

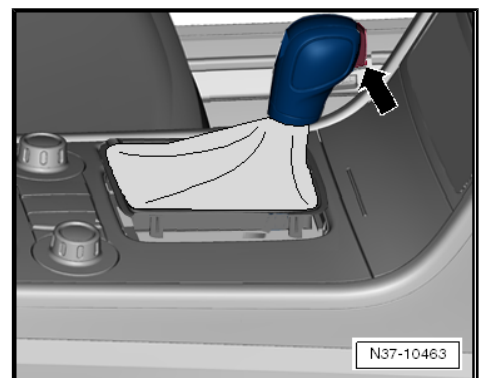
The handle is removed together with the shift cover.

Removing

- Move the selector lever into “D”.

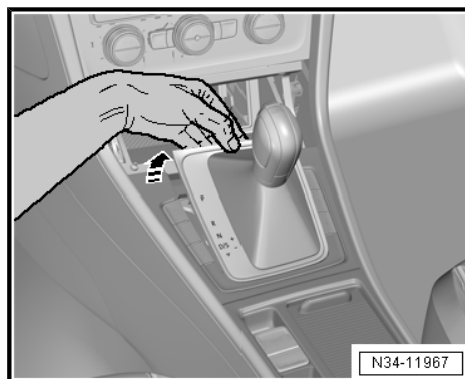
It is not necessary to pull out the button -arrow- manually. The push button locks in the installation position by itself when the handle is removed.

- Open the storage compartment door.





- Grab and under the cover by hand and unclip by pulling upward.
- Disconnect the connector.



- Cut the clamp under the boot -arrow- with a side cutter.
- Pull the handle up without pressing the button.



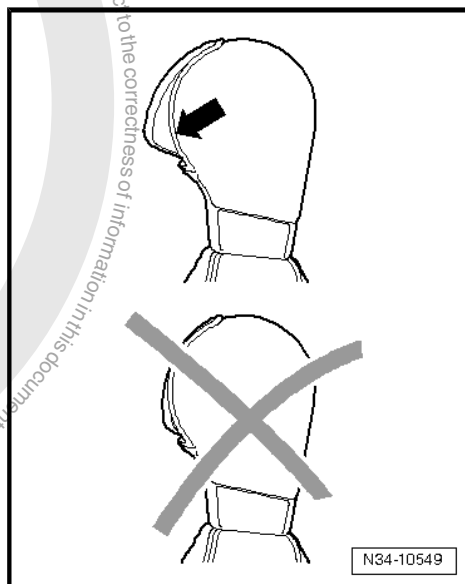
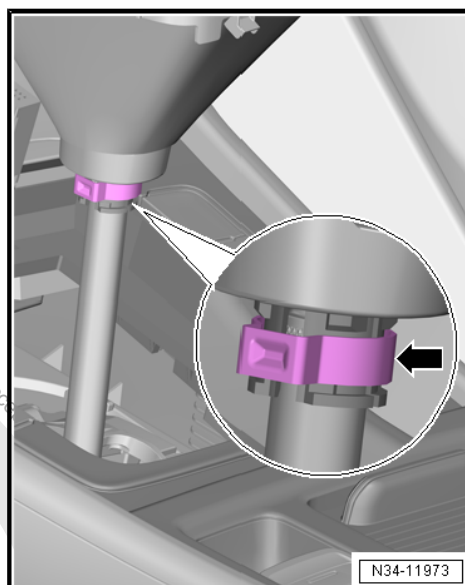
Note

Do not push the button once the handle has been removed otherwise it will not be possible to remove the handle again.

Installing

Install in reverse order of removal. Note the following:

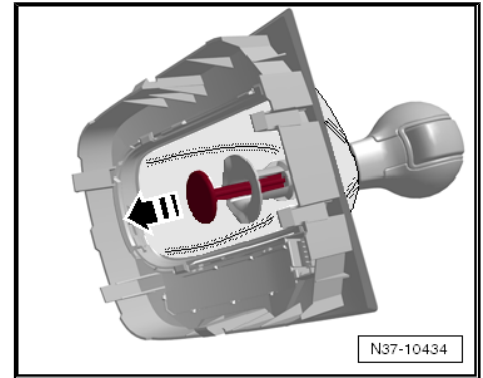
- The selector lever is in the “D” position.





Note

- ◆ There is the possibility that the button can be pressed into the handle. Never install the handle when the button is pressed in.
- ◆ Move the button in the installation position. Refer to [⇒ "2.7 Button in Handle, Moving Into Installation Position", page 35](#).
- ◆ A new handle is delivered with an assembly fastener. Pull out the safety catch in direction of -arrow- just before installing the new handle.



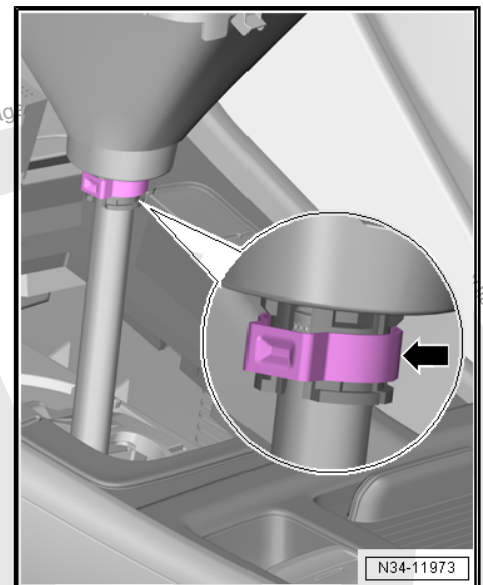
- Install the handle with a new clamp -arrow-.
- Clamp off the clamps using Hose Clamp Pliers - VAG1275- .
- Connect the connector.
- Press the button after installing it.



Note

If the button stays in the handle after being pressed, this means it was installed incorrectly. If this happens, remove the handle again and move the button in the installation position again. Refer to [⇒ "2.7 Button in Handle, Moving Into Installation Position", page 35](#). Install the handle again.

- Clip on the cover.



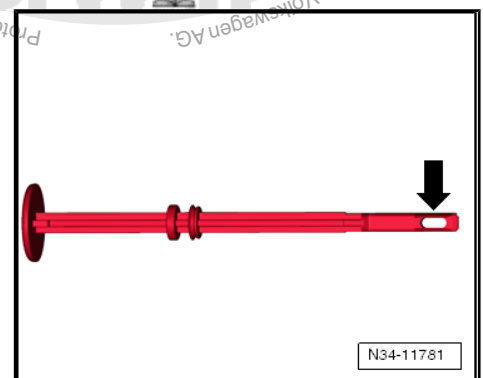
2.7 Button in Handle, Moving Into Installation Position

If the button was pushed in by mistake, the installed position can be set again.

There are two ways to move the button into the installation position, »with« or »without« assembly fastener. The following describes both ways.

Moving the handle »with« an assembly fastener into the installation position:

Make sure the assembly fastener has an eye -arrow- at the front. Other assembly fasteners cannot be used.

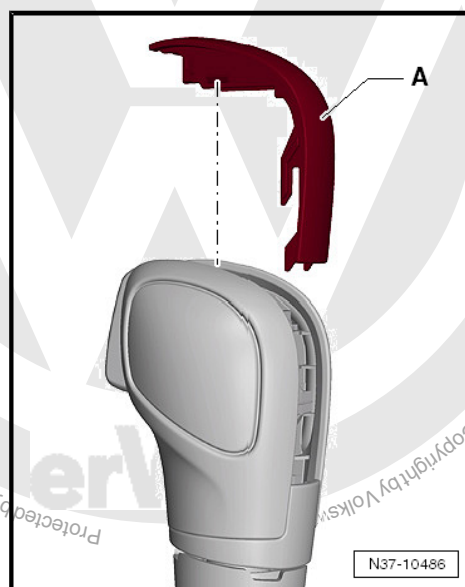
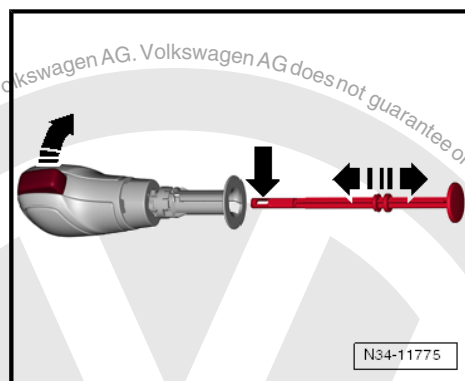




- Press the button and push the assembly fastener (with the eye) -arrow- all the way in until it latches into place. Then release the button. The button locks into the installation position when the assembly fastener is pulled out.

Moving the handle »without« an assembly fastener into the installation position:

- Remove the trim -A- from the handle.

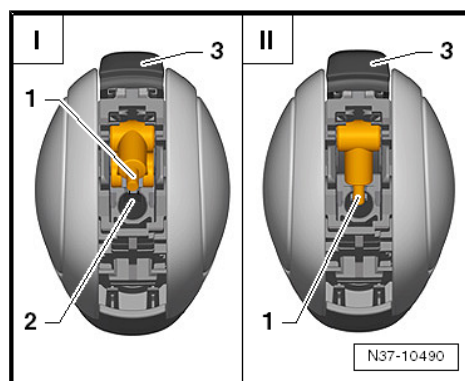


- Push the small lever -1- into the groove -2- with a screwdriver. This pushes the button -3- into the installation position.
 - I- the button is in the pressed position
 - II- the button is in the installation position



Note

- ◆ *Push the lever into the groove and no further.*
- ◆ *Install the trim back onto the selector mechanism only after the handle is installed. This way it is possible to see if the small lever fits into the pull rod when the button is pushed.*



2.8 Gearshift Mechanism, Checking

Starter must not be able to be operated in selector lever positions "R", "D", "S" and in tiptronic position.

Over 5 km/h

The shift lock solenoid must not block the selector lever when the lever is in "N". The selector lever can be moved back into another gear.

Below 5 km/h

The shift lock solenoid will block the selector lever approximately 1 second after the lever is moved into "N". The selector lever can be moved out of "N" only when the brake pedal is pressed.



Selector Lever in "P" and the Ignition Turned On:

- If the brake pedal is not depressed:

The selector lever is locked and cannot be moved out of "P" when the locking button is pressed. The shift lock solenoid blocks the selector lever.

- If the brake pedal is depressed:

The shift lock solenoid releases the selector lever. It is possible to shift into a gear. Shift selector lever slowly through from "P" to "S"; while doing this, check whether display of selector lever position in instrument panel insert matches actual selector lever position.

The Selector Lever is in "N" and the Ignition is Turned on:

- If the brake pedal is not depressed:

The selector lever is locked and cannot be moved out of "N" when the button is pressed. The shift lock solenoid blocks the selector lever.

- If the brake pedal is depressed:

The shift lock solenoid releases the selector lever. It is possible to shift into a gear.

Selector Level in the "tiptronic" Position

- Move selector lever into Tiptronic gate:

The illuminated "D" in the cover must turn off. The "+" and "-" must turn on.

The transmission range display in the instrument cluster must change from "P R N D S" to "6 5 4 3 2 1" when the selector lever is moved into the Tiptronic gate.

Ignition and Lights Turned On

The appropriate symbol is being lit up in shift mechanism cover.

Transmission Range Display

Simultaneous lighting of all segments of transmission range selector lever display indicates transmission is in emergency running mode.

2.9 Multifunction Switch, Removing and Installing

Special tools and workshop equipment required

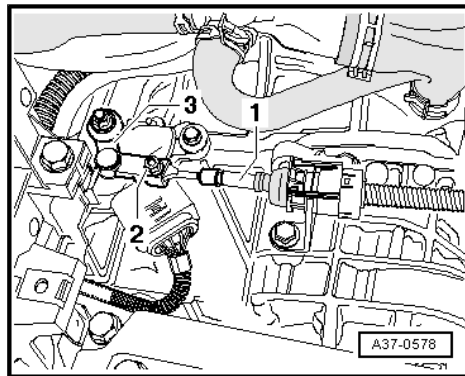
- ◆ Torque Wrench 5-50Nm - VAG1331-

Multifunction Transmission Range Switch - F125- Removing

- Move the selector lever into "N".
- Turn off the ignition.
- Remove the air filter housing. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing



- Loosen the bolt -2- on the selector lever cable -1-.
- Pry the selector lever cable -1- off the selector lever -3-, for example, using a wrench.



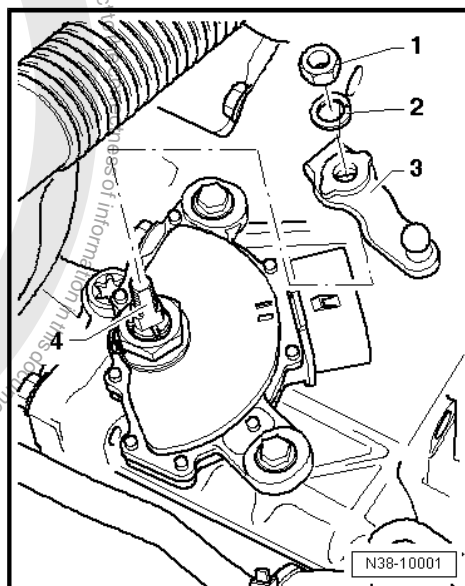
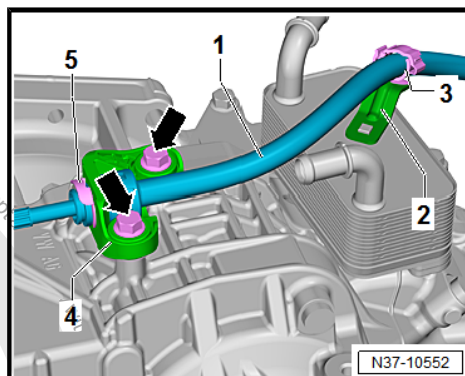
- Disengage the selector lever cable -1- from the bracket -2- clip -3-.
- Remove the cable bracket -3- from the transmission to do this remove the bolts -arrows-.



Note

Do not remove the clip -5-.

- Disconnect the connector from the Multifunction Transmission Range Switch - F125- .
- Remove the nut -1-.
- Remove the spring washer -2- and the gearshift lever -3- from the selector shaft -4-.
- Bend back the hooks on the lock washer -2- using a screwdriver.
- Replace the lock washer if a hook breaks off.
- Remove the nut -1-.
- Remove the bolts -5-.

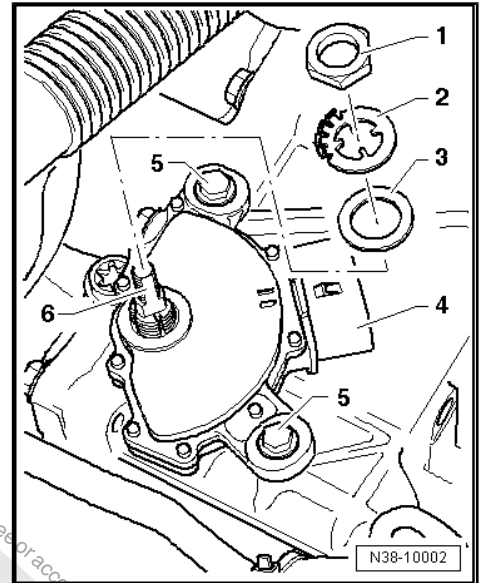




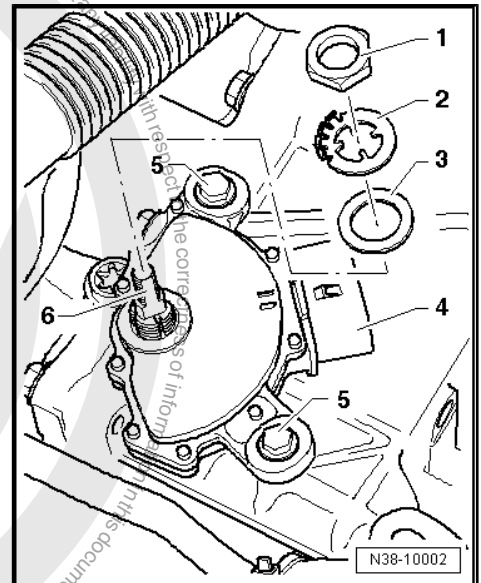
- Remove the multifunction switch -4- and the washers -2 and 3- from the selector shaft -6-.

Multifunction Transmission Range Switch - F125- Installing

Install in reverse order of removal. Note the following:



- Attach the lever -4- to the selector shaft -6-.
- Install the bolts -5- for the Multifunction Transmission Range Switch - F125- hand-tight.
- Bend back the hooks on the lock washer -2-.
- Mount the washer -3- on the selector shaft -6-.
- Install the washer -2- with the hooks facing up.
- Install the washer -2- with the long narrow guide into the long narrow depressions in the selector shaft -6-.
- Tighten the nuts -1- to the tightening specification.
- Tighten the nut -1- and secure it by bending the hook on the washer -2- upward.

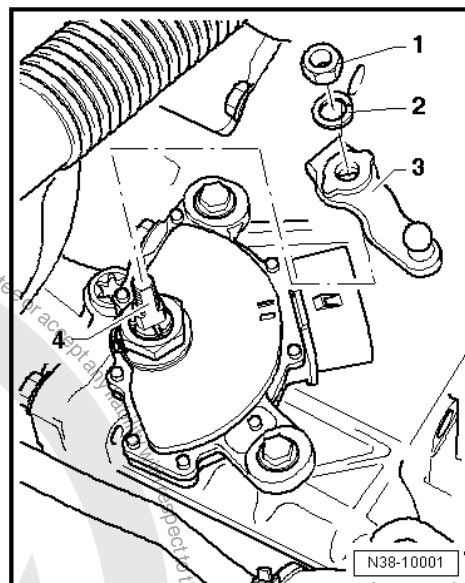


Note

- ◆ Replace the lock washer if several of the hooks break off while being bent.
- ◆ Before installing the gearshift lever on the gearshift shaft, adjust the Multifunction Transmission Range Switch - F125-. Refer to
⇒ "2.10 Multifunction Transmission Range Switch, Adjusting", page 40.



- Attach the gearshift lever -3- to the selector shaft -4-.
- With the gearshift lever -3- shift the transmission into “N”. This means pushing the gearshift lever -3- opposite the direction of travel all the way toward the rear.
- Then move the gearshift lever -3- into “N”. Push the gearshift lever -3- two positions forward in the direction of travel.
- Mount the spring washer -2- and the nut -1- on the selector shaft -4-.
- Tighten the nuts -1- to the tightening specification.
- Adjust the selector lever cable. Refer to [⇒ “2.4 Selector Lever Cable, Checking and Adjusting”, page 30](#).
- Check the selector mechanism. Refer to [⇒ “2.8 Gearshift Mechanism, Checking”, page 36](#)
- Install the air filter housing. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing .



Tightening Specifications

Component	Nm
Multifunction Transmission Range Switch - F125- on the gearshift shaft	7
Transmission selector lever to selector shaft .	13

- ◆ Refer to [⇒ “2.1 Overview - Selector Mechanism”, page 19](#)

2.10 Multifunction Transmission Range Switch, Adjusting

Special tools and workshop equipment required

- ◆ Gauge - Multi Function Switch - T10173-

- Move the selector lever into “N”.
- Do not bend the selector lever cable.

Adjustment Prerequisites

- Selector lever cable is disconnected at selector shaft lever
- The selector shaft is in “N”.
- The bolts on the Gauge - Multi Function Switch - T10173- have been loosened.
- The gearshift lever is removed from the front gearshift shaft.



Adjusting

- Place the Gauge - Multi Function Switch - T10173- on the selector shaft -2- and turn the Multifunction Switch -1- until the Gauge - Multi Function Switch - T10173- locks into the tab on the Multifunction Switch connector.



Note

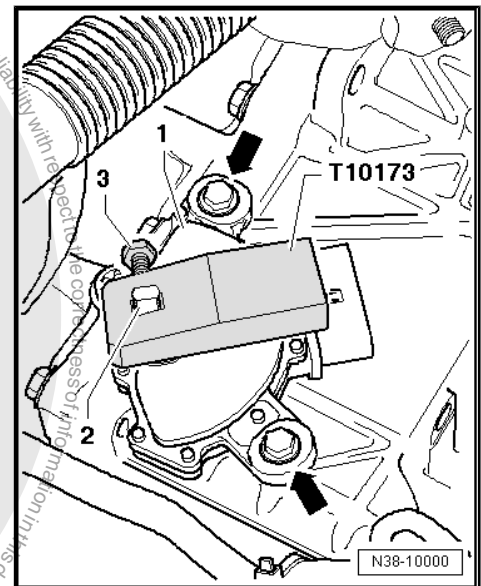
If the tab on the connector does not engage in the Adjustment Gauge groove, then the transmission is no longer in "N". In this case, shift the transmission into "N" using the Adjustment Gauge .

Secure the Adjustment Gauge to the selector shaft -2- with the bolt -3-.

- Tighten the bolts -arrows- to the tightening specification.
- Remove the Adjustment Gauge .
- Further installation is performed in the reverse sequence. Refer to ➔ [page 39](#) .

Tightening Specifications

Component	Nm
Multifunction Transmission Range Switch - F125- on the transmission	6



2.11 Selector Shaft Seal, Replacing

Special tools and workshop equipment required

- ◆ Seal Installer - Selector Shaft Oil Seal - T10174-
- ◆ Puller - Crankshaft/Power Steering Seal - T20143/1-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Seal - Selector Shaft

Removing

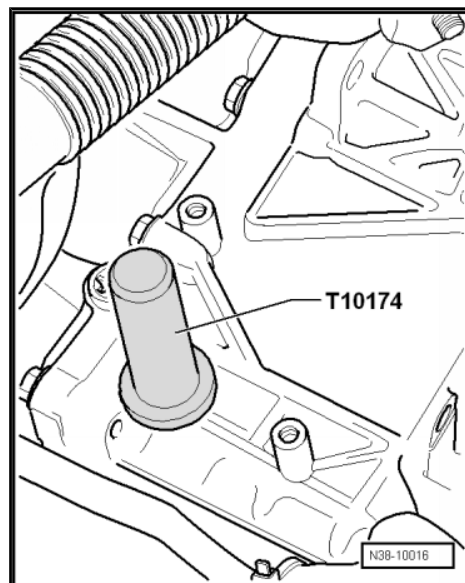
- Remove the Multifunction Transmission Range Switch - F125- . Refer to ➔ ["2.9 Multifunction Switch, Removing and Installing", page 37](#) .
- Carefully remove the selector shaft seal with the Puller - Crankshaft/Power Steering Seal - T20143/1- . Be careful not to damage the selector shaft when doing this.

Installing

- Coat the outer circumference and the sealing lip on the oil seal with ATF.
- Installed position: Open side of the seal faces the transmission housing.



- Install the new seal using Seal Installer - Selector Shaft Oil Seal - T10174- . Do not tilt the seal when doing this.
- Install the Multifunction Transmission Range Switch - F125- . Refer to ➤ [page 39](#) .





3 Transmission, Removing and Installing

⇒ [“3.1 Transmission, Removing”, page 43](#)

⇒ [“3.2 Transmission, Installing”, page 64](#)

⇒ [“3.3 Transmission Tightening Specifications”, page 66](#)

3.1 Transmission, Removing

⇒ [“3.1.2 Transmission, Removing, Vehicles with 1.8L - 125 kW Engine”, page 54](#)

3.1.1 Transmission, Removing, Vehicles with 1.6L - 81 kW Engine

Short description

The transmission is removed downward separately. The engine remains in the vehicle.

Batteries, battery trays and air filter housings are removed »from above«. Engine with transmission are then supported so that the left subframe mount can be removed.

Remove the noise insulation »from underneath«. Remove the driveshafts from the transmission and then remove the driveshafts. Lower the transmission with the transmission jack.

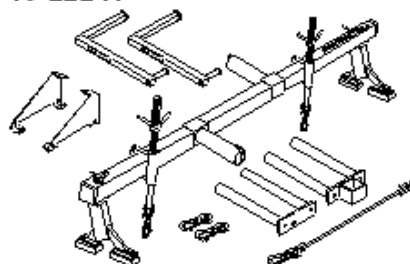
The subframe is not removed.



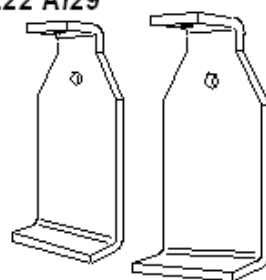
Special tools and workshop equipment required

- ◆ Engine Support Bridge - 10-222A-
- ◆ Engine Support Bridge - Engine Support 29 - 10-222A/29-
- ◆ Engine Support Bridge - Engine Support 18 - 10-222A/18-
- ◆ Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- (quantity 2)
- ◆ Transmission Support - Pins 29 - 3282/29-
- ◆ Transmission Support - 3282-

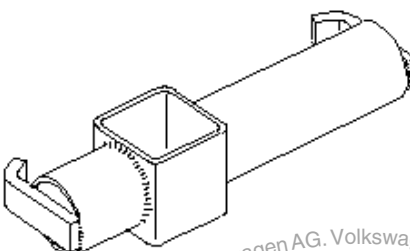
10-222 A



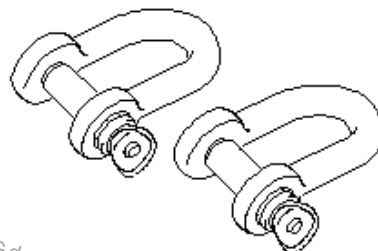
10-222 A/29



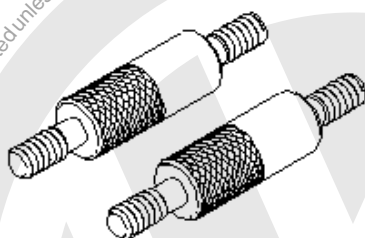
10-222 A/18



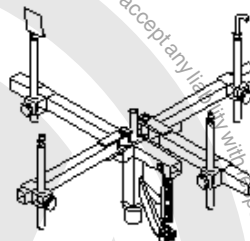
10-222 A/12



3282/29



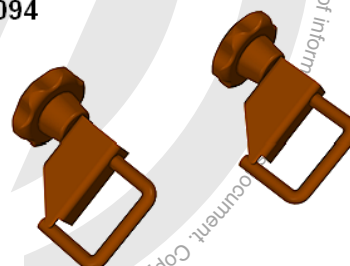
3282



W04-10226

- ◆ Hose Clamps - Up To 25mm - 3094-

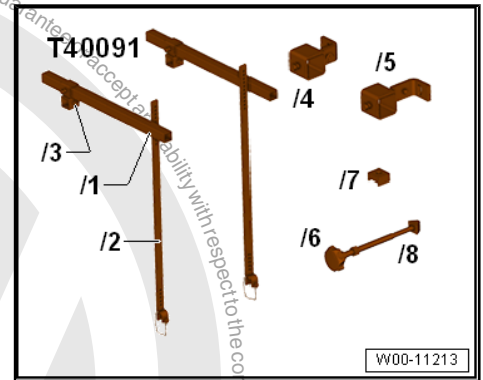
3094



W00-11130

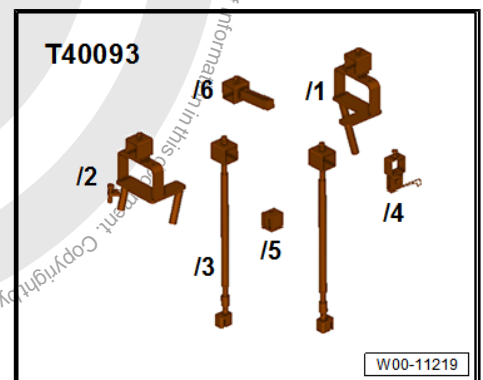


- ◆ Engine Support - Basic Set Square Pipe - T40091/1- (quantity 2)



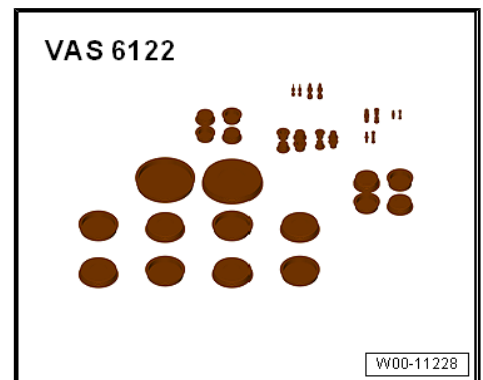
- ◆ Engine Support - Basic Set Movable Joint - T40091/3- (quantity 2)

- ◆ Engine Support - Supplement Kit Spindle - T40093/3- (quantity 2) from the Engine Support - Supplement Kit - T40093A-



- ◆ Engine Support Brackets - T40093/3-6- (quantity 2)

- ◆ Engine Bung Set - VAS6122-

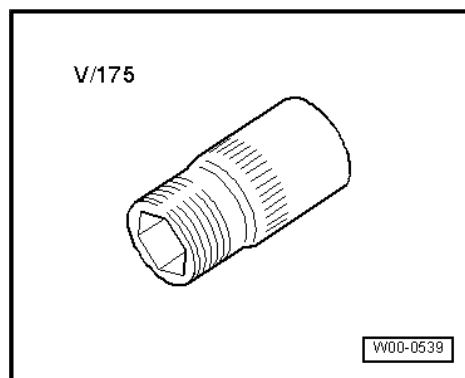


- ◆ Engine and Gearbox Jack - VAS6931- or Engine/Gearbox Jack - VAG1383A-





◆ Socket - Sw15 - V/175-



◆ Hose Clip Pliers

Tool Development

- If the adapter for Engine Support Bridge - Engine Support 4 - 10-222A/4- does not have the indicated holes -arrow- shown they must be added.

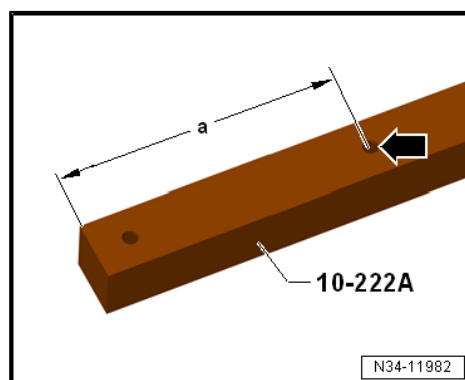
- Dimension -a- = 225 mm
- Hole diameter = 12.5 mm

Removing



Note

- ◆ Pay attention to ⇒ **"3 Repair Information", page 4** .
- ◆ Reinstall cable ties that were loosened or cut off during removal at same locations during installation.



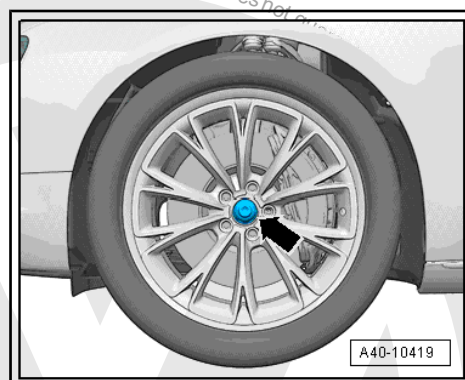
- With the vehicle still standing on its wheels, loosen the left and right twelve-point bolt -arrow- a maximum 90°, otherwise the wheel bearing will get damaged. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Threaded Connection, Loosening and Tightening



Note

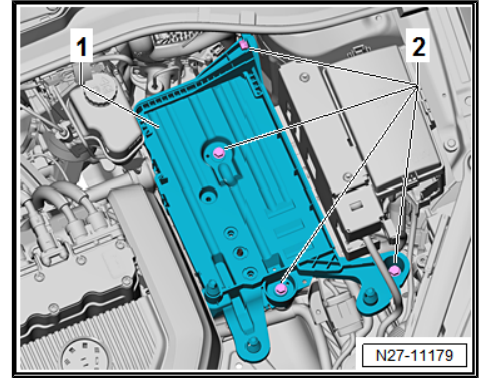
Do not place vehicle on floor after loosening screw.

- Slightly lift the vehicle, all four take-up points of lifting platform at same height.
- Move the selector lever into »P«.
- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the air filter housing. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing





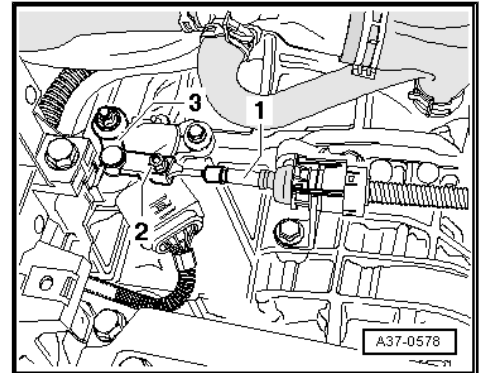
- Remove the battery and the battery tray -1-. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery Tray, Removing and Installing .



- Pry the selector lever cable -1- off the selector lever -3-, for example, using a wrench.

The adjusting screw -2- must not be loosened.

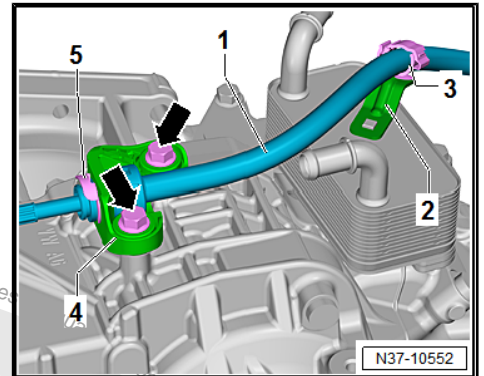
- Disconnect the connector from the Multifunction Transmission Range Switch - F125- .



- Disengage the selector lever cable -1- from the bracket -2- clip -3-.
- Remove the cable bracket -4- from the transmission to do this remove the bolts -arrows-.

Note

- ◆ Do not remove the clip -5-.
- ◆ Do not bend or kink the selector lever cable.
- Removing starter. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Starter; Starter, Removing and Installing .
- Place lint-free cloth on to ATF cooler and transmission to absorb exiting coolant.

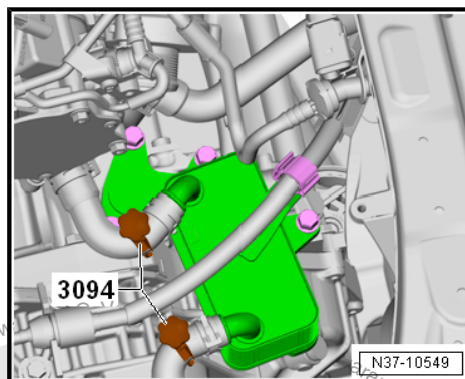


Note

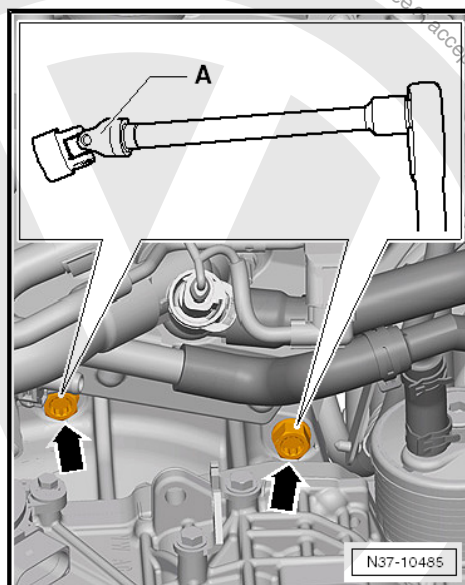
- ◆ Mark the ATF cooler coolant hoses to prevent confusing them when installing them later.
- ◆ The coolant system is under pressure when the engine is warm.
- ◆ Cover the cap on the reservoir with a cloth and open it carefully before removing the coolant hoses.



- Clamp the coolant hoses with Hose Clamps - Up To 25mm - 3094- and remove them from the ATF cooler.
- Seal the coolant hoses and connections with plugs taken from Engine Bung Set - VAS6122- .



- Remove the upper transmission bolts -arrows- to the engine, for example, with a 12-point double joint socket insert -A-.
- Remove the filler tube for the windshield washer system washer fluid reservoir. Refer to ➤ Electrical Equipment; Rep. Gr. 92 ; Windshield Washer System; Washer Fluid Reservoir, Removing and Installing .
- Insert the Engine Support Bridge - Engine Support 29 - 10-222A/29- between the fender bolting edge and the fender bolting plate underneath it on both sides of the vehicle.
- ◆ Engine Support Bridge - Engine Support 29 - 10-222A/29- installation position:

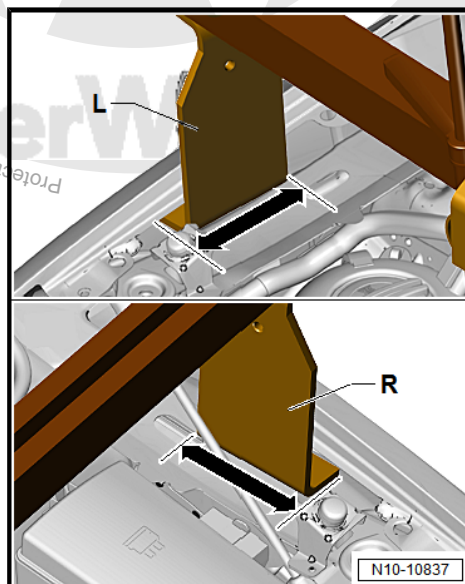


Adapter -L- is installed on the right side of the vehicle:

- The Adapter -arrow- locks in the opening on the fender.

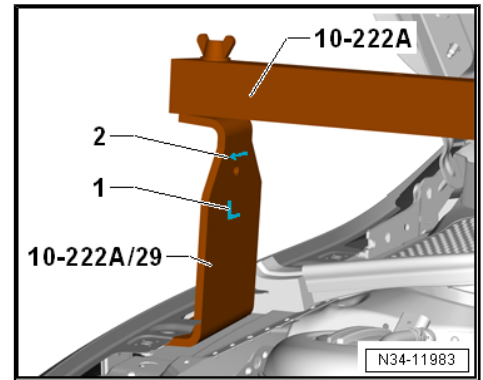
The Adapter -R- is installed on the left side of the vehicle:

- The Adapter -arrow- locks in the opening on the fender.

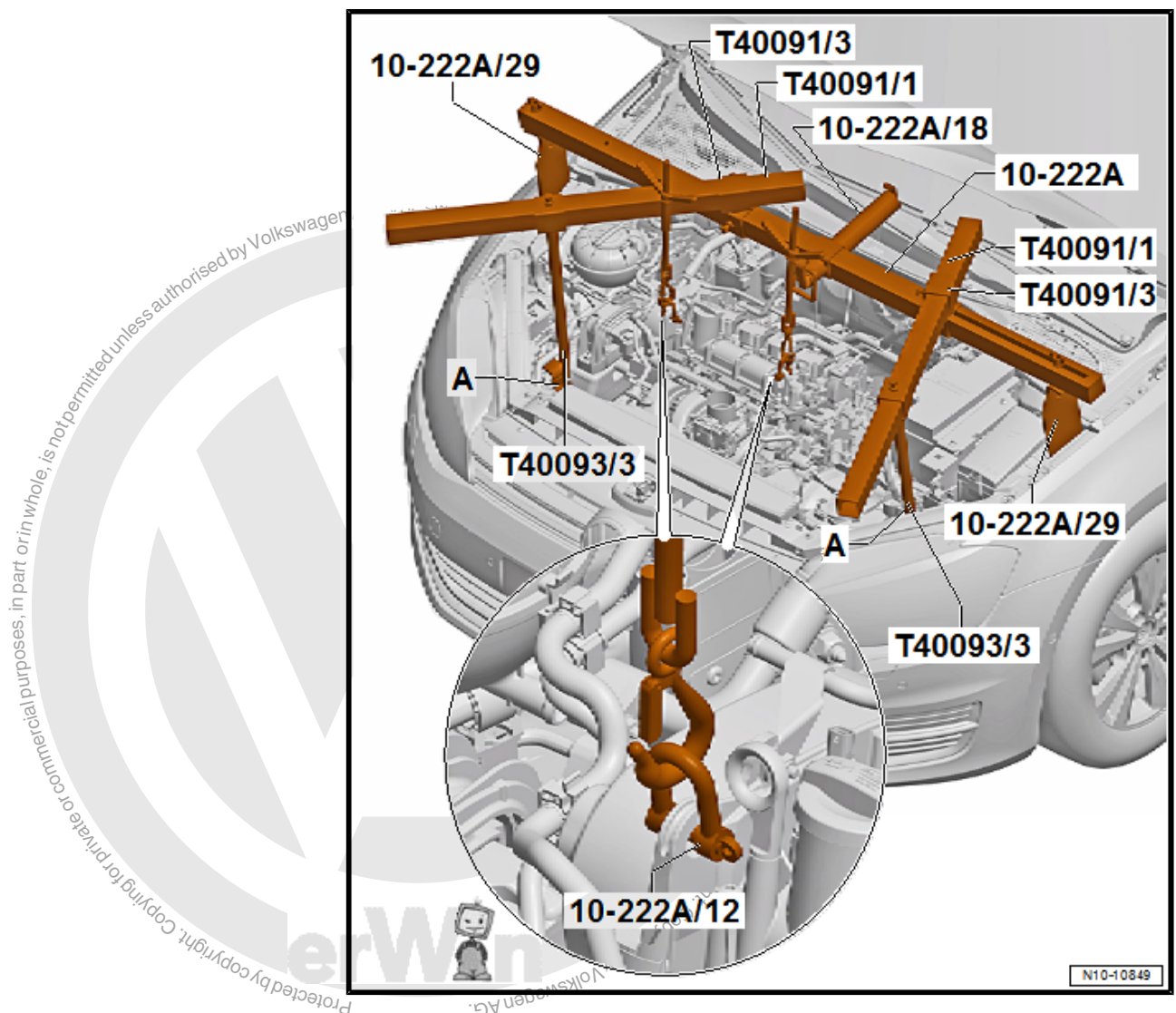




- The arrow -2- on the Engine Support Bridge - Engine Support 29 - 10-222A/29- always points in the direction of travel.
- The Engine Support Bridge - Engine Support 29 - 10-222A/29- on the load-bearing components of the fender bolting edge.



Assemble the Engine Support Bridge - 10-222A- as follows:



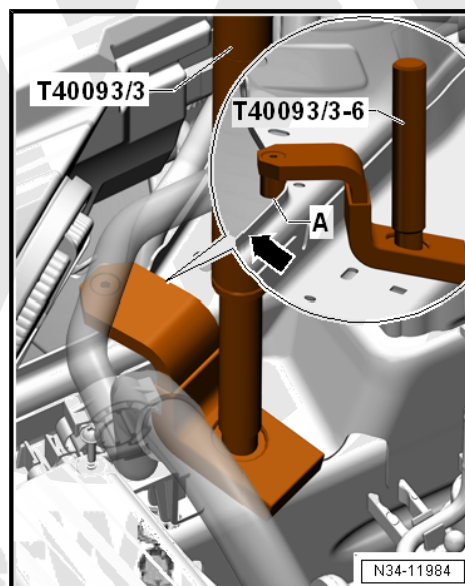
- Slide the Engine Support Bridge - Engine Support 18 - 10-222A/18- and two Engine Support - Basic Set Movable Joint - T40091/3- onto the Engine Support Bridge - 10-222A- .
- Install the Square Pipe - T40091/1- in the Engine Support - Basic Set - Movable Joint - T40091/3- .
- Push the Engine Support Bridge - Spindle - 10 - 222 A /11- on the square pipe -T40091/1-



- Place the Engine Support Bridge - Spindle - 10 - 222 A /11- on the Engine Support Bridge - Engine Support 18 - 10-222A/18- .
- Tighten the Engine Support Bridge - 10-222A- on the Engine Support Bridge - Engine Support 29 - 10-222A/29- .
- Install the Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- as shown on the engine.
- Install the Engine Support Brackets - T40093/3-6- -A- as follows. (⇒ next illustration).

The adapter -A- is the Engine Support Brackets - T40093/3-6- and is positioned as follows:

- If present, remove wires from the front area of both longitudinal members -arrow-. Do not disconnect line system.
- Place the Engine Support Brackets - T40093/3-6- on both longitudinal members (the right longitudinal member is illustrated here).
- If necessary, carefully unclip the A/C-system pipe in the front area. Do not disconnect the line system. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Refrigerant Circuit; System Overview - Refrigerant Circuit .
- The Engine Support Brackets - T40093/3-6- locks respectively with the pins -A- behind the tab on the longitudinal member -arrow-.
- Install the Engine Support - Supplement Kit Spindle - T40093/3- .
- Connect the Engine Support - Supplement Kit Spindle - T40093/3- over the Engine Support - Basic Set Square Pipe - T40091/1- with the Engine Support Bridge - 10-222A- and tension it (⇒ previous illustration).

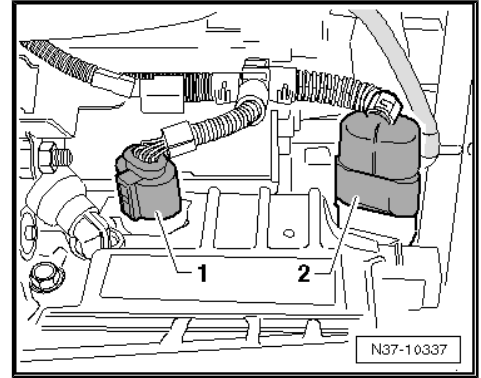


Note

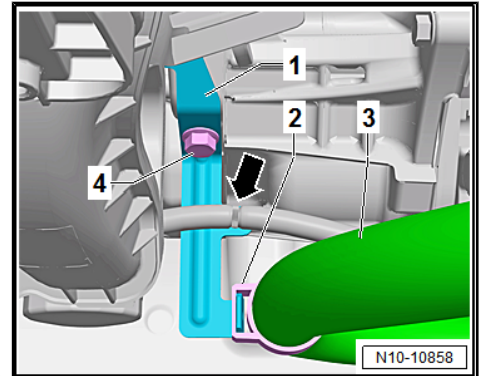
- ◆ *The Engine Support - Basic Set - Square Pipe - T40091/1- must not touch the windshield.*
- ◆ *The Engine Support Bridge - Engine Support 18 - 10-222A/18- must not lie on the windshield wiper arm.*
- Engage the Spindles into the engine lifting eyes using the Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- .
- Pretension the engine/transmission assembly and Engine Support Bridge via the Spindles .
- Raise the vehicle and remove the front wheels.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the lower section of the left front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .
- Remove the left and right driveshafts. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .



- Disconnect the connectors -1- and -2- from the front of the transmission.



- Open the coolant hose bracket -2- and remove the coolant hose -3-.
- Unclip the wiring harness -arrow-.
- Remove the bolts -4- from the engine and remove the bracket -1-.

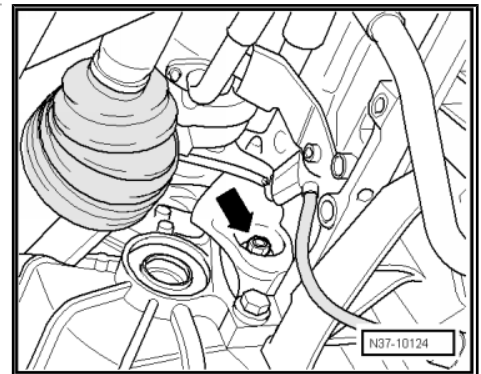


- Remove the three converter nuts -arrow- through the opening in the intermediate plate using the Storage Compartment Central Locking Motor - V/175- .
- To do this, turn the engine 120° further in the direction of engine rotation at the belt pulley/vibration damper.

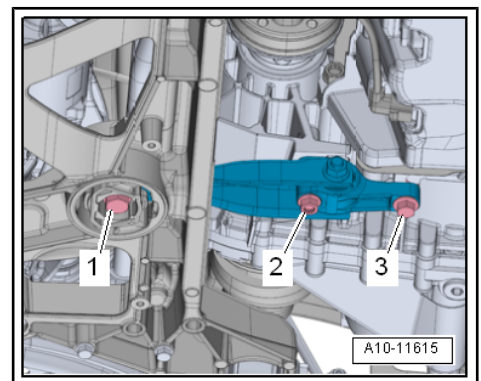


Note

The torque converter will be pulled out when the transmission is separated from the engine if all three nuts are not removed!

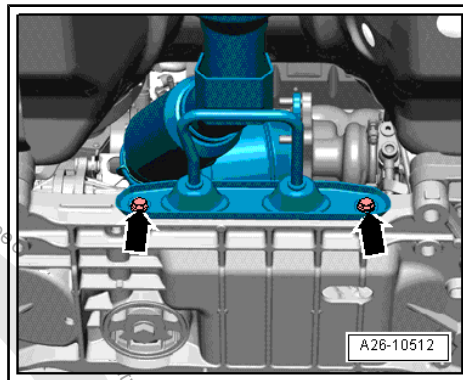


- Remove bolts -1 through 3- and remove pendulum support.

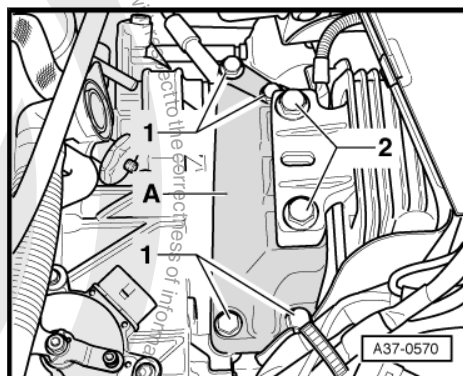




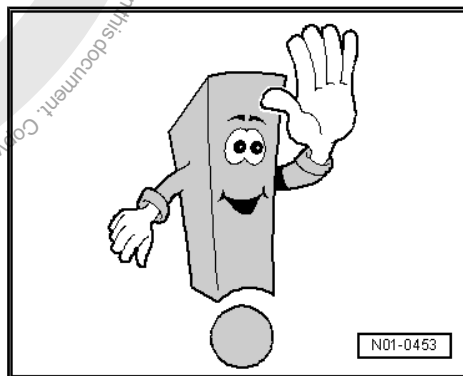
- Remove the bracket bolts -arrows- for the exhaust system on the subframe.



- Remove the bolts -2- that attach the transmission mount to the transmission bracket -A- and the bolts -1- that attach the transmission bracket to the transmission.
- Remove the transmission bracket -A-. Lower the engine with the transmission slightly using the spindles on the Engine Support Bridge .



Four turns should be sufficient.

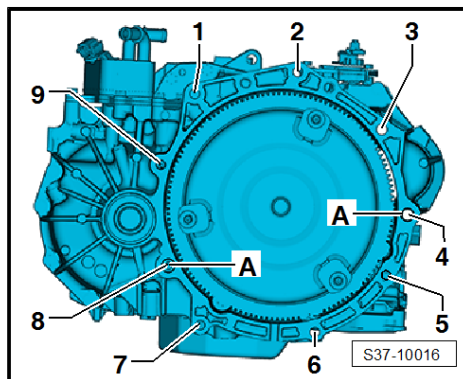


- Remove the lower bolts -5 to 7- between the engine and the transmission.



Note

The rear bolts -8- and -9- that connect the engine to the transmission remain installed.

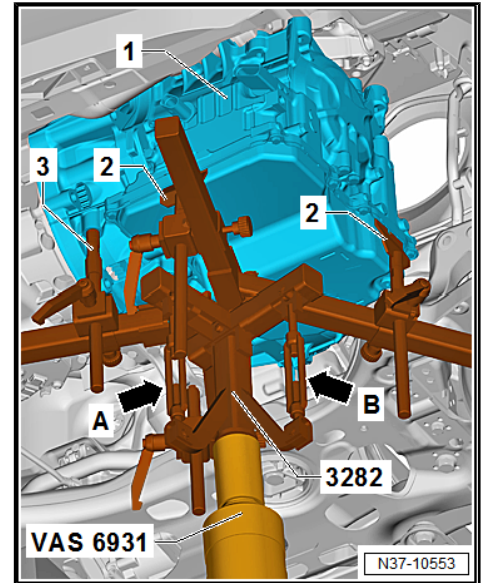




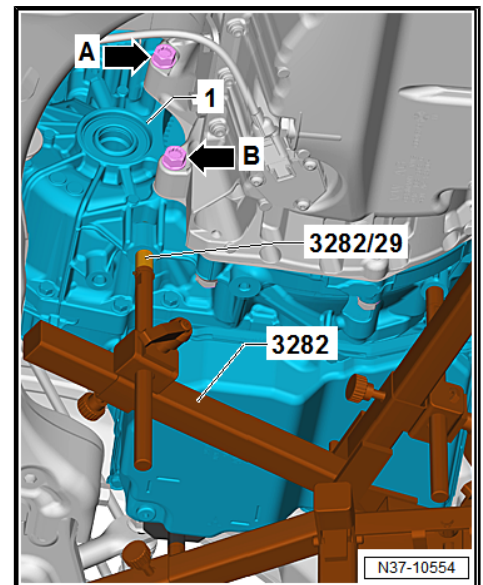
- Place the Transmission Support - 3282- on the Engine and Gearbox Jack - VAS6931- or Engine/Gearbox Jack - VAG1383A- .

Install the Transmission Support - 3282- as follows with the Mounting Element on the transmission:

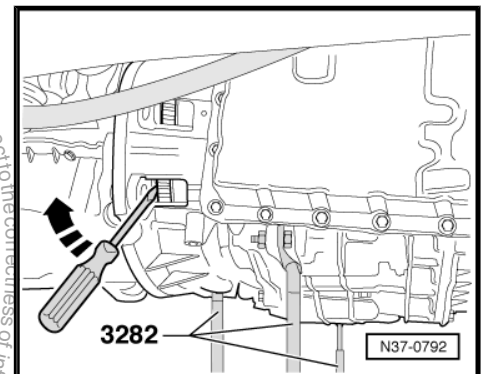
- The Engine and Gearbox Jack with Transmission Support is positioned under the transmission -1- so that the spindle -arrow A- points forward in the direction of travel.
- The spindle -arrow B- points in the direction of travel to the left.
- The Mounts -2- are positioned as shown in the illustration in the oil pan surrounding groove.
- The Pins -3- lock in the recess on the front right of the transmission.



- Install the Transmission Support - Pins 29 - 3282/29- into the rear hole for the pendulum support bolt on the transmission -1-.
- Support the transmission with the Engine and Gearbox Jack by carefully lifting.
- Remove the last bolts for the -arrow A- and -arrow B- for the engine to the transmission. These bolts can be removed with for example the Socket - Xzn 14 - T10061- .



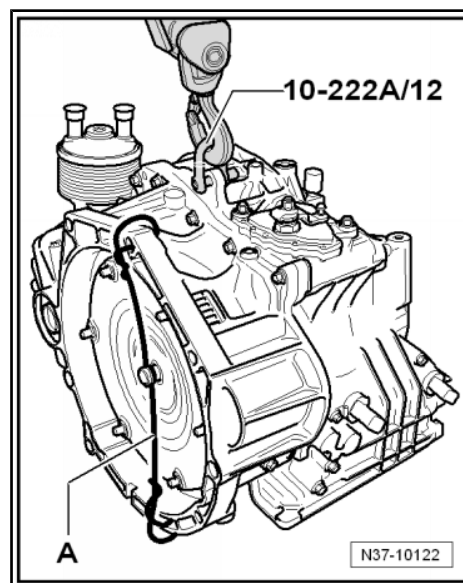
- While pressing the torque converter off the drive plate, separate the transmission from the engine.
- Guide the transmission past the subframe when lowering it. Adjust the Transmission Support - 3282- slightly, if necessary.





Note

- ♦ The connector on the transmission must not be damaged when removing and installing transmission. Replace the wiring harness in the transmission if the connector gets damaged. Refer to
⇒ "2.4 Solenoid Valve and Sensor Wiring Harness, Removing and Installing", page 99.
- ♦ Be careful of the torque converter. It must be removed together with the transmission. Secure the torque converter for example with a wire -A- to prevent it from falling out.
- ♦ The torque converter and transmission in the illustration may differ from the Original Part.



3.1.2 Transmission, Removing, Vehicles with 1.8L - 125 kW Engine

Short Description

The transmission is removed downward separately. The engine remains in the vehicle.

Remove the battery, the battery tray, the engine cover and the air filter housing »from above«. Engine with transmission are then supported so that the left subframe mount can be removed.

Remove the noise insulation »from underneath«. Remove the drive axles from the transmission and then remove the drive axles. Lower the transmission with the transmission jack.

The subframe is not removed.

Special tools and workshop equipment required

- ♦ Engine Support Bridge - 10-222A-
- ♦ Engine Support Bridge - Engine Support 29 - 10-222A/29-
- ♦ Engine Support Bridge - Engine Support 18 - 10-222A/18-
- ♦ Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- (quantity 2)
- ♦ Transmission Support - Pins 29 - 3282/29-
- ♦ Transmission Support - 3282-
- ♦ Hose Clamps - Up To 25mm - 3094-
- ♦ Engine Support - Basic Set Square Pipe - T40091/1- (quantity 2)
- ♦ Engine Support - Basic Set Movable Joint - T40091/3- (quantity 2)
- ♦ Engine Support - Supplement Kit Spindle - T40093/3- (quantity 2) from the Engine Support - Supplement Kit - T40093A-
- ♦ Engine Support Brackets - T40093/3-6- (quantity 2)
- ♦ Engine Bung Set - VAS6122-
- ♦ Engine and Gearbox Jack - VAS6931- or Engine/Gearbox Jack - VAG1383A-
- ♦ Socket - Sw15 - V/175-



- ◆ Hose Clip Pliers
- ◆ Engine Support Bridge - Engine Support 4 - 10-222A/4-
- ◆ Insert Tool - 18mm - T10179-
- ◆ Engine Support Bridge - Special Hook (2 pc.) - 10-222A/20-
- ◆ Engine Support Brackets - T40093/3-6-
- ◆ Socket - Xzn 14 - T10061-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Bolts - Pendulum Support
- ◆ Bolts - Transmission Mount to Transmission Bracket
- ◆ Bolts - Transmission Bracket to Transmission
- ◆ Bolts - Engine to Transmission

Tool Development

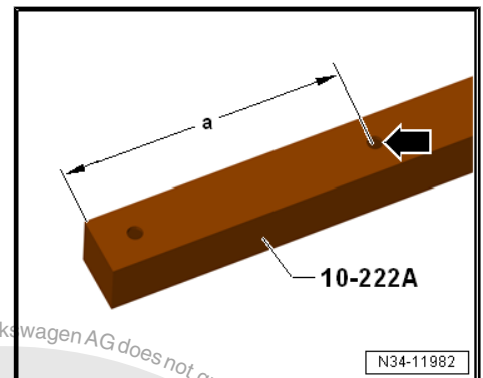
- If the adapter for Engine Support Bridge - Engine Support 4 - 10-222A/4- does not have the indicated holes -arrow- shown they must be added.
- Dimension -a- = 225 mm
- Hole diameter = 12.5 mm

Removing



Note

- ◆ Pay attention to ➔ **"3 Repair Information", page 4**.
- ◆ Reinstall cable ties that were loosened or cut off during removal at same locations during installation.





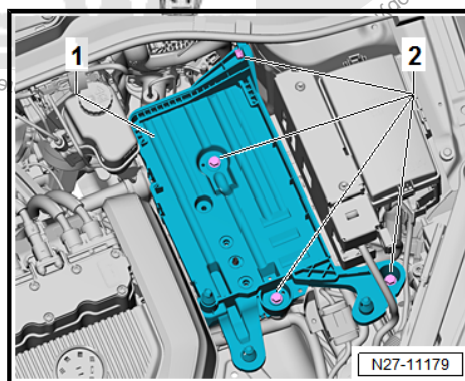
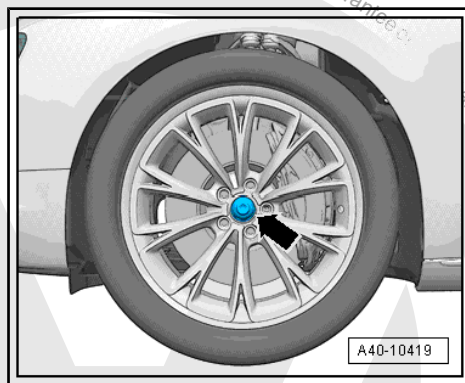
- With the vehicle still standing on its wheels, loosen the left and right twelve-point bolt -arrow- a maximum 90°, otherwise the wheel bearing will get damaged. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Threaded Connection, Loosening and Tightening



Note

Do not place vehicle on floor after loosening bolt.

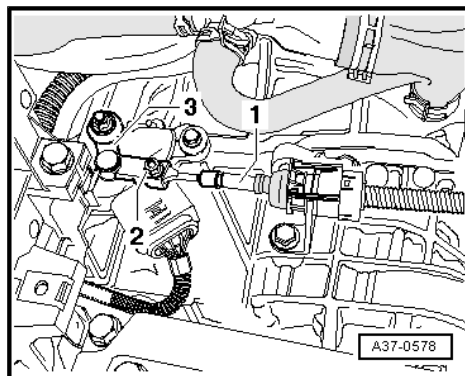
- Slightly lift the vehicle, all four take-up points of lifting platform at same height.
- Move the selector lever into »P«.
- Disconnect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the engine cover. Refer to ➤ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the air filter housing. Refer to ➤ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing
- Remove the battery and the battery tray -1-. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery Tray, Removing and Installing .



- Pry the selector lever cable -1- off the selector lever -3-, for example, using a wrench.

The adjusting screw -2- must not be loosened.

- Disconnect the connector from the Multifunction Transmission Range Switch - F125- .

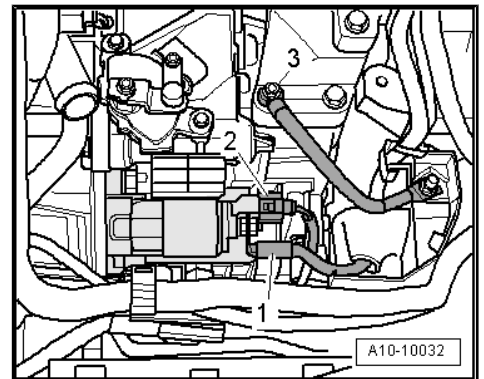
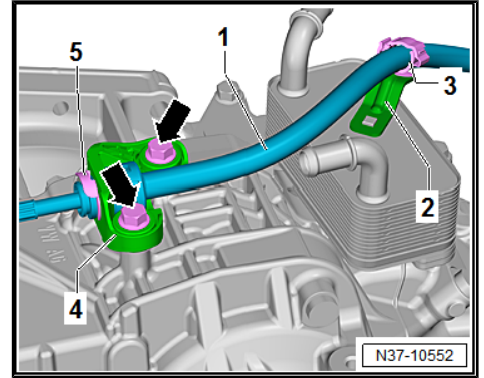




- Disengage the selector lever cable -1- from the bracket -2- clip -3-.

i Note

- ◆ *Do not remove the clip -5-.*
- ◆ *Do not bend or kink the selector lever cable.*
- Remove the cable bracket -4- from the transmission to do this remove the bolts -arrows-.
- If equipped, disconnect the Ground (GND) cable from the bolt -3- on the transmission bracket.
- Remove the wires -1 and 2- from the starter.
- Removing starter. Refer to ➔ Electrical Equipment; Rep. Gr. 27 ; Starter; Starter, Removing and Installing .
- Place lint-free cloth on to ATF cooler and transmission to absorb exiting coolant.



i Note

- ◆ *Mark the ATF cooler coolant hoses to prevent confusing them when installing them later.*
- ◆ *The coolant system is under pressure when the engine is warm.*
- ◆ *Cover the cap on the reservoir with a cloth and open it carefully before removing the coolant hoses.*
- Clamp the coolant hoses with Hose Clamps - Up To 25mm - 3094- and remove them from the ATF cooler.
- Seal the coolant hoses and connections with plugs taken from Engine Bung Set - VAS6122- .
- Remove the Secondary Air Injection Solenoid Valve - N112- . Refer to ➔ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 26 ; Secondary Air Injection System; Secondary Air Injection Solenoid Valve - N112- , Removing and Installing .





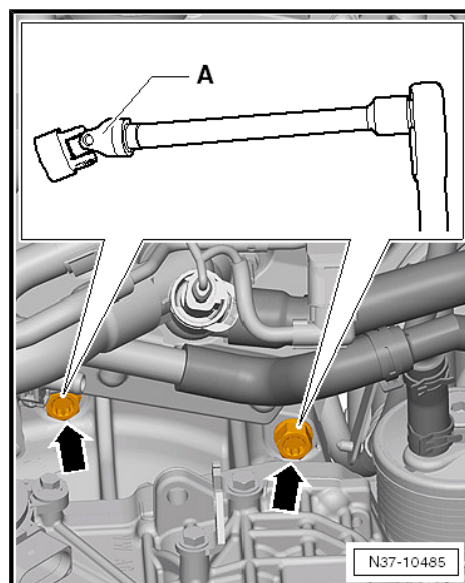
- Remove the upper transmission bolts -arrows- to the engine, for example, with a 12-point double joint socket insert -A-.



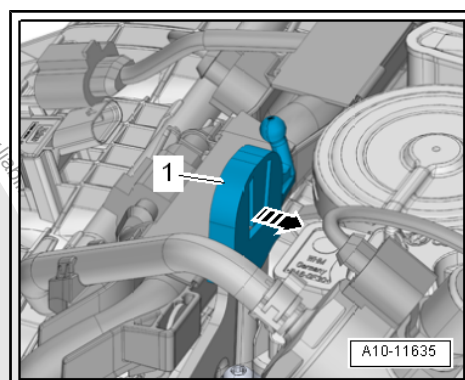
Note

If necessary for removing and installing these bolts the Insert Tool - 18mm - T10179- or the Insert Tool - 18mm - T10509- can be used.

- Remove the filler tube for the windshield washer system washer fluid reservoir. Refer to ➤ Electrical Equipment; Rep. Gr. 92 ; Windshield Washer System; Washer Fluid Reservoir, Removing and Installing .



- Unlock the retaining tab in direction of -arrow- and remove the left engine cover mount -1-.

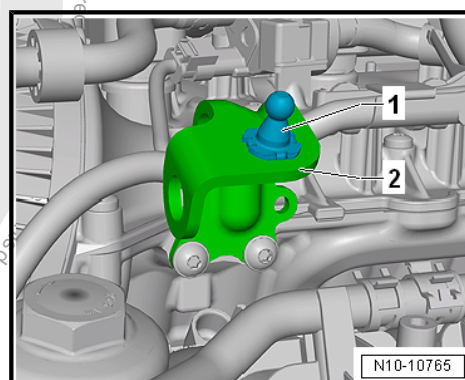


Unclip the right mount -1- for the engine cover from the bracket -2-.

Attach the Engine Support Bridge - 10-222A- as follows:

The following are needed:

- ♦ Engine Support Bridge - Engine Support 18 - 10-222A/18-
- ♦ Engine Support Bridge - Special Hook (2 pc.) - 10-222A/20-
- ♦ Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- (is needed if the Spindle from the Engine Support Bridge - 10-222A- cannot be engaged in the engine lifting eye).
- ♦ Engine Support Bridge - Engine Support 29 - 10-222A/29- (quantity 2)
- ♦ Engine Support - Basic Set Square Pipe - T40091/1- (quantity 2)
- ♦ Engine Support - Basic Set Movable Joint - T40091/3- (quantity 2)
- ♦ Engine Support - Supplement Kit Spindle - T40093/3- (quantity 2)
- ♦ Engine Support Brackets - T40093/3-6- (quantity 2)





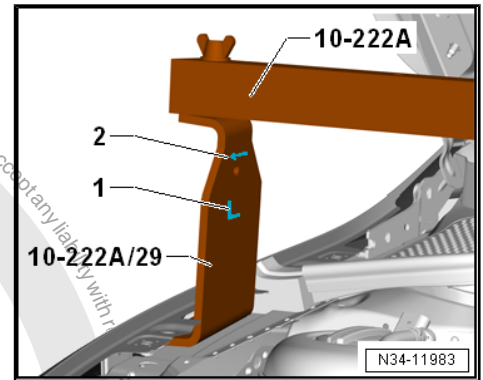
- Insert the Engine Support Bridge - Engine Support 29 - 10-222A/29- between the fender bolting edge and the fender bolting plate underneath it on both sides of the vehicle.

- ◆ Engine Support Bridge - Engine Support 29 - 10-222A/29- in installation position:

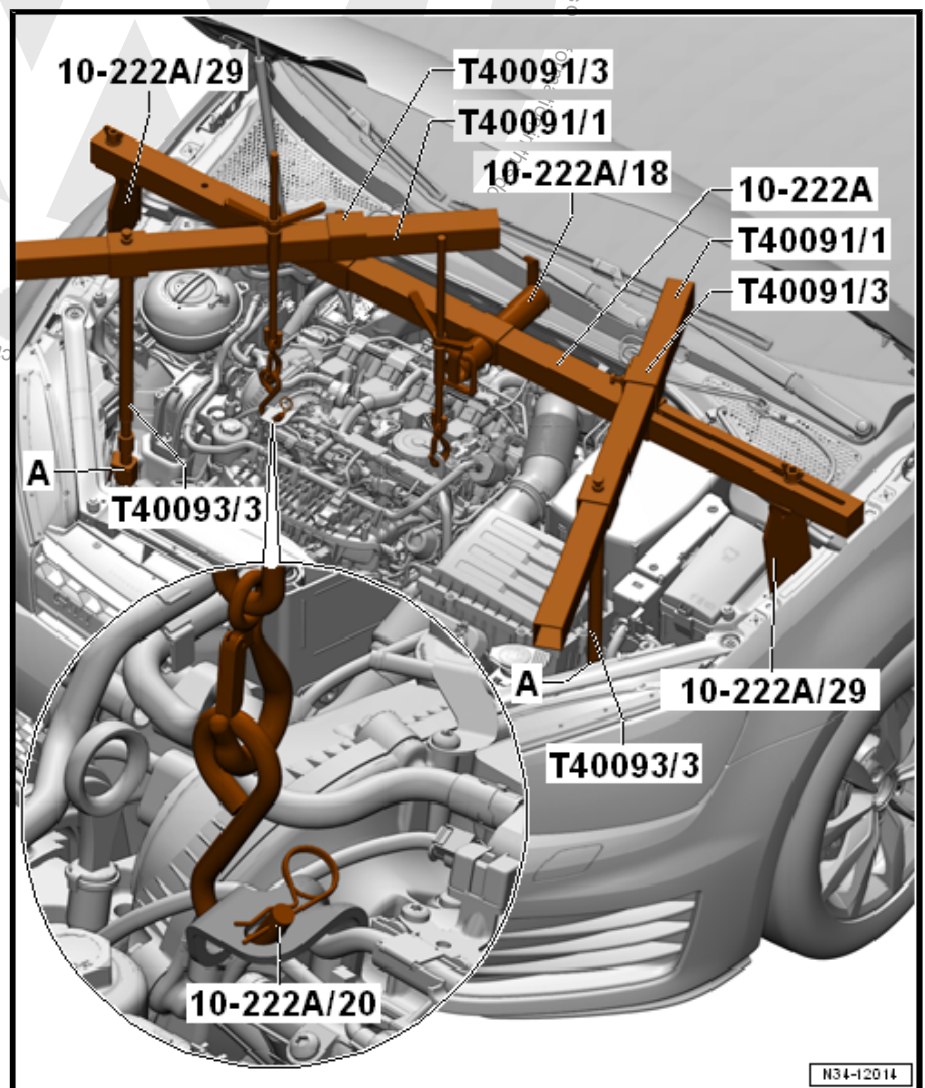
"L" = -1- Adapter is installed on the "right" side of the vehicle (Adapter locks in the hole on the fender).

"R" (not illustrated here), Adapter is installed on the "left" side of the vehicle.

The arrow -2- on the Engine Support Bridge - Engine Support 29 - 10-222A/29- always points in the direction of travel.



- Slide the Engine Support Bridge - Engine Support 18 - 10-222A/18- and two Engine Support - Basic Set Movable Joint - T40091/3- onto the Engine Support Bridge - 10-222A- .



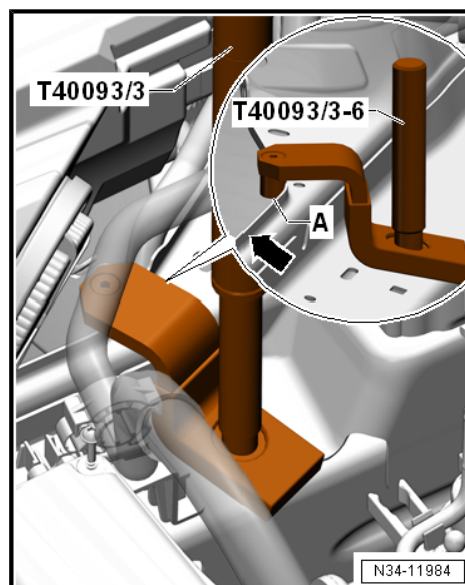
- Tighten the Engine Support Bridge - 10-222A- on the Engine Support Bridge - Engine Support 29 - 10-222A/29- .

-A- = Engine Support Brackets - T40093/3-6- (⇒ next illustration)



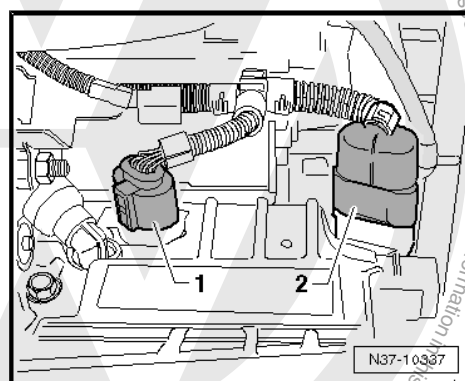
The adapter -A- is the Engine Support Brackets - T40093/3-6- and is positioned as follows:

- If present, remove wires from the front area of both longitudinal members -arrow-. Do not disconnect line system.
- Place the Engine Support Brackets - T40093/3-6- on both longitudinal members (the right longitudinal member is illustrated here).
- If necessary, carefully unclip the Air Conditioning (A/C) system pipe in the front area. Do not disconnect the line system. Refer to ➤ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Refrigerant Circuit; System Overview - Refrigerant Circuit .
- The Engine Support Brackets - T40093/3-6- locks respectively with the pins -A- behind the tab on the longitudinal member -arrow-.
- Install the Engine Support - Supplement Kit Spindle - T40093/3- .
- Connect the Engine Support - Supplement Kit Spindle - T40093/3- over the Engine Support - Basic Set Square Pipe - T40091/1- with the Engine Support Bridge - 10-222A- and tension it (➤ previous illustration).



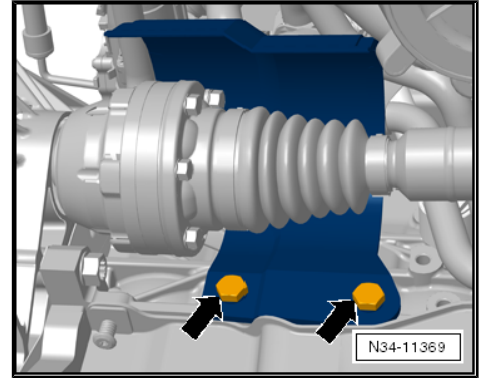
Note

- ◆ *The Engine Support - Basic Set - Square Pipe - T40091/1- must not touch the windshield.*
- ◆ *The Engine Support Bridge - Engine Support 18 - 10-222A/18- must not lie on the windshield wiper arm.*
- Engage the Spindles with the Engine Support Bridge - Special Hook (2 pc.) - 10-222A/20- and if necessary with the Engine/ Gearbox Support Shackle (2 pc.) - 10-222A/12- in the engine lifting eyes.
- Pretension the engine/transmission assembly and Engine Support Bridge via the Spindles .
- Raise the vehicle and remove the front wheels.
- Remove the noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the lower section of the left front wheel housing liner. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Front Wheel Housing Liner, Removing and Installing .
- Disconnect the connectors -1 and 2- from the front of the transmission.

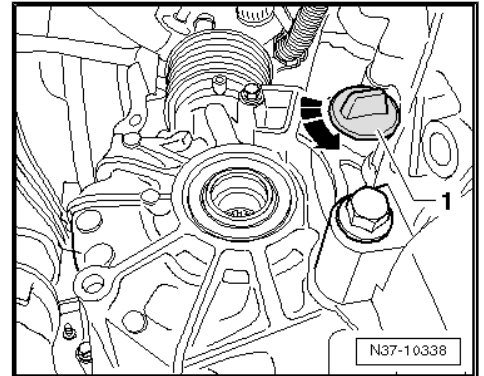




- Remove the heat shield (if equipped) above the right drive axle -arrows-.
- Remove the left and right drive axles. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .



- Turn the cap -1-, if present, in direction of -arrow- and remove.

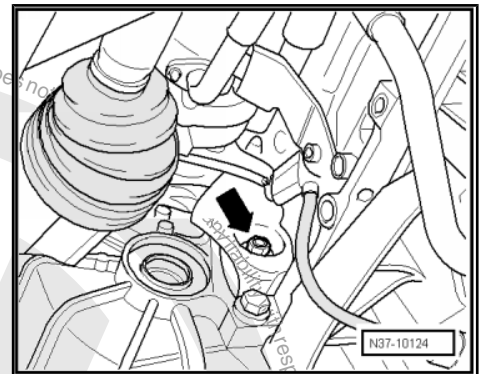


- Remove the six converter nuts -arrow- with the Socket - Sw15 - V/175- .



Note

- ◆ *Carefully rotate the engine further!*
- ◆ *The torque converter will be pulled out when the transmission is separated from the engine if all nuts are not removed!*

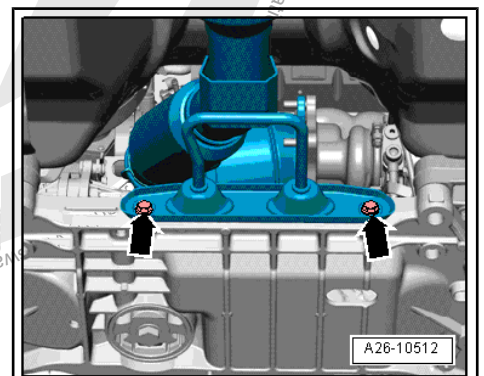


Caution

There is a danger of causing damage to the decoupling element.

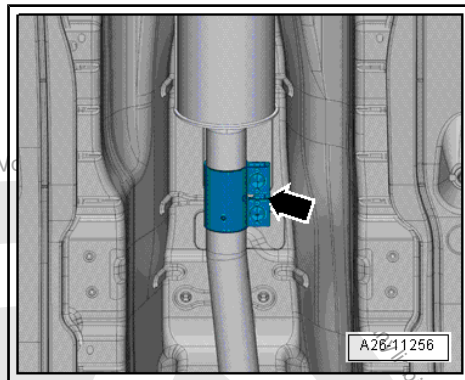
- ◆ ***Do not bend the decoupling element more than 10°.***
- ◆ ***Do not load the decoupling element.***
- ◆ ***Do not damage the wire mesh on the decoupling element.***

- Remove the bracket bolts -arrows- for the exhaust system on the subframe.

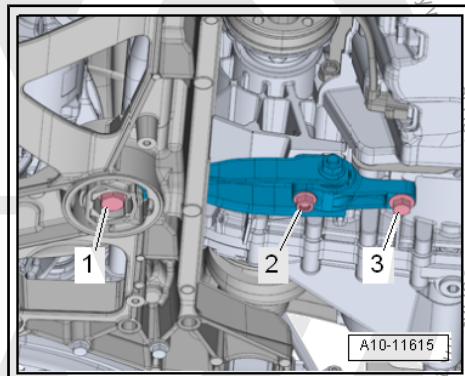




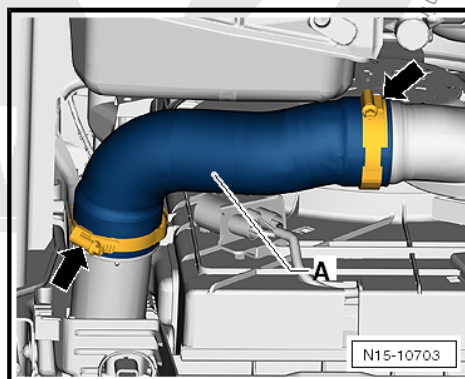
- Disconnect the exhaust system at the clamping sleeve -arrow-. Refer to ➤ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



- Remove bolts -1 through 3- and remove pendulum support.



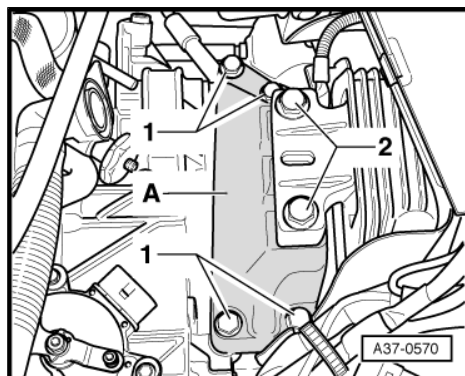
- Loosen the hose clamps -arrows- and remove the left charge air hose -A-. Refer to ➤ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 21 ; Charge Air System; Overview - Charge Air System .



- Remove the bolts -2- that attach the transmission mount to the transmission bracket -A- and the bolts -1- that attach the transmission bracket to the transmission.
- Remove the transmission bracket -A-. To do this slightly lower the engine with the transmission using the Engine Support Bridge - 10-222A- spindle.

Four turns should be sufficient.

- Remove the lower bolts between the engine and the transmission.



Note

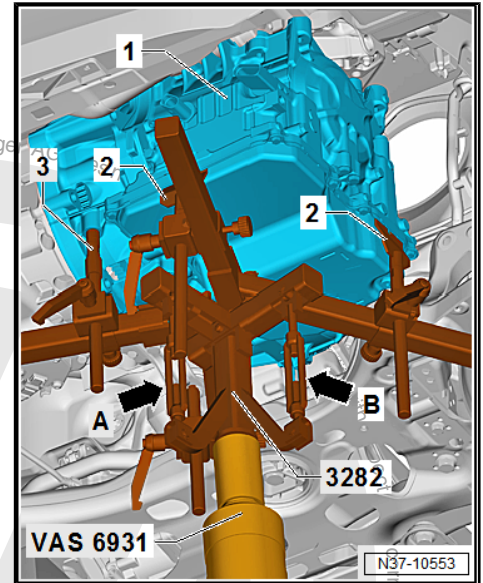
The rear connecting hose between the engine and transmission, in the area of the right drive axle remains installed.



- Place the Transmission Support - 3282- on the Engine and Gearbox Jack - VAS6931- or Engine/Gearbox Jack - VAG1383A- .

Install the Transmission Support - 3282- as Follows with the Mounting Element on the Transmission:

- The Engine and Gearbox Jack with Transmission Support is positioned under the transmission -1- so that the spindle -arrow A- points forward in the direction of travel.
- The spindle -arrow B- points in the direction of travel to the left.
- The Mounts -2- are positioned as shown in the illustration in the oil pan surrounding groove.
- The Pins -3- lock in the recess on the front right of the transmission.

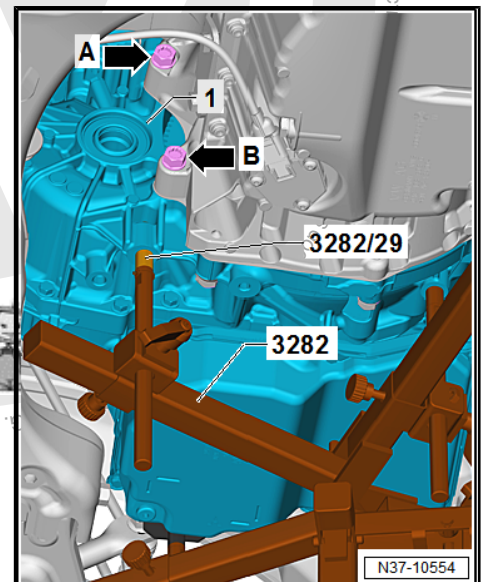


- Install the Engine Support Bridge - Engine Support 29 - 10-222A/29- into the rear hole for the pendulum support bolt on the transmission -1-.
- Support the transmission with the Engine and Gearbox Jack by carefully lifting.
- Remove the last bolt -arrow B- for the engine to the transmission. This bolt can be removed with for example the Socket - Xzn 14 - T10061- .

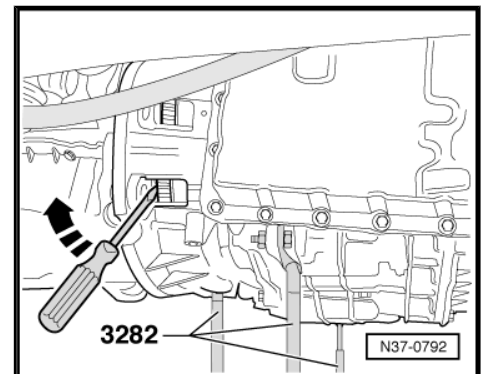


Note

Ignore the bolt -arrow A-.



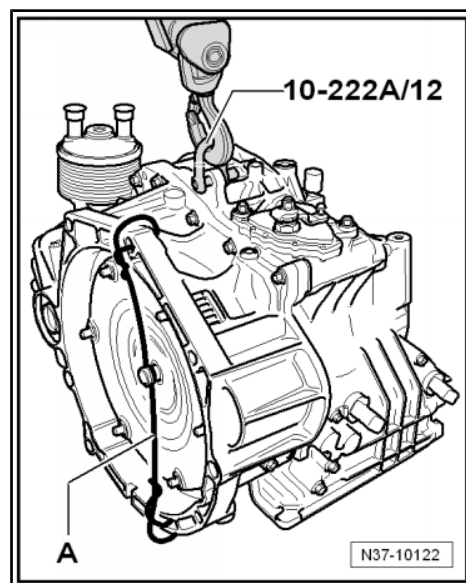
- While pressing the torque converter off the drive plate, separate the transmission from the engine.
- Guide the transmission past the subframe when lowering it. Adjust the Transmission Support - 3282- slightly, if necessary.





Note

- ◆ *The connector on the transmission must not be damaged when removing and installing transmission. Replace the wiring harness in the transmission if the connector gets damaged. Refer to ➔ ["2.4 Solenoid Valve and Sensor Wiring Harness, Removing and Installing"](#), page 99.*
- ◆ *Be careful of the torque converter. It must be removed together with the transmission. Secure the torque converter for example with a wire -A- to prevent it from falling out.*
- ◆ *The illustration of the transmission may differ from the original part.*



3.2 Transmission, Installing



Note

For the special tool needed and mandatory replacement parts. Refer to ➔ ["3.1 Transmission, Removing"](#), page 43.

Install in reverse order of removal. Note the following:

- Make sure the alignment sleeves are pressed into the engine flange.
- Make sure the intermediate plate fits correctly between the engine and the transmission. The plate must contact the engine along the entire perimeter. If it is above the engine, then it is not hooked into the cylinder block correctly.
- Make sure the torque converter is installed correctly. Refer to ➔ ["1.2 Torque Converter, Removing and Installing"](#), page 14. It must be easy turn easily by hand and the entire circumference must be equally deep inside the transmission.
- Carefully raise the transmission with the Engine and Gearbox Jack - VAS6931- or Engine/Gearbox Jack - VAG1383A- and bring it into the installation position using the Transmission Support - 3282-.
- Insert transmission without pinching any lines.



Note

- ◆ *Engine and transmission must be brought together by hand until both flanges touch all around!*
- ◆ *If this is not the case, adjust the Transmission Support until the engine and transmission are in alignment.*
- ◆ *While the transmission is guided onto the engine, carefully turn the engine further! Hold the starter ring gear steady from the outside with a screwdriver. When installing torque converter threaded pins are located in the drive plate holes.*
- Fasten the transmission on the engine and the torque converter on the drive plate.



- Remove the Transmission Support - 3282- from the transmission.
- Replace all the bolts from the left subframe mount.
- Install all the new bolt first hand-tight.

First tighten the bolts -1- when installing the transmission bracket -A-.

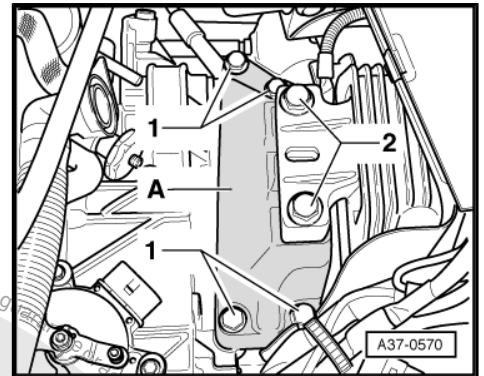
- Align the engine/transmission in its installed position. Lift until the transmission bracket is touching the transmission mount completely.



Caution

Risk of damaging threads in transmission bracket by inserting bolts crooked.

- ◆ **Before installing bolts -2-, transmission bracket and transmission mount support arm must be absolutely parallel to each other. If necessary, lift the back of the transmission with Engine and Transmission Jack .**



Adjust the »old fit« between both bolts using a screwdriver when tightening the transmission bracket to the transmission mount bolts -2-.

- Check the subframe mount adjustment. If required, adjust. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 10 ; Subframe Mount; Subframe Mount, Adjusting .



WARNING

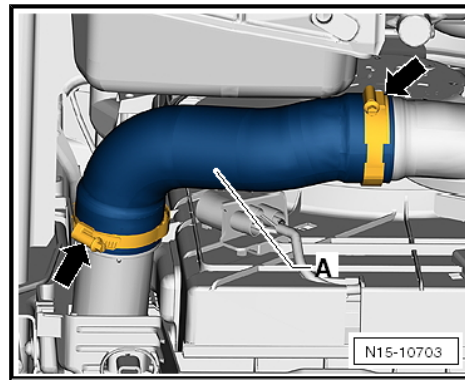
Only remove Engine Support Bridge - 10-222A- when all the left and right subframe mount bolts are tightened to the tightening specification.

Tightening specification of the transmission on the engine and the left subframe mount. Refer to
⇒ **“3.3 Transmission Tightening Specifications”, page 66** .

- Install the pendulum support. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- Install the drive axles. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .
- Install the heat shield over the right drive axle, if removed. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Heat Shield, Removing and Installing .
- Align the exhaust system free of tension. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Exhaust System, Installing without Tension .
- Install starter. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Starter; Starter, Removing and Installing .



- Install the charge air hose -A-. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 21 ; Charge Air System; Overview - Charge Air System .
- Install the Secondary Air Injection Solenoid Valve - N112- . Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 26 ; Secondary Air Injection System; Secondary Air Injection Solenoid Valve - N112- , Removing and Installing .
- Install the coolant hoses to the ATF cooler according the markings made during the removal.
- Attach the selector lever cable to the transmission and adjust it. Refer to
⇒ **"2.4 Selector Lever Cable, Checking and Adjusting", page 30** .
- Install the battery tray and the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Overview - Battery .
- Connect the battery and follow the procedure regarding what to do after connecting a battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Check the ATF level. Refer to
⇒ **"7 Automatic Transmission Fluid", page 73** .
- Install the lower section of the left front wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner, Front Wheel Housing Liner, Removing and Installing .
- Install the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Install the wheels. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires; Wheel Bolt Tightening Specifications.
- Perform a basic setting. Connect the Vehicle Diagnostic Tester and select "perform basic setting" under Guided Functions.



3.3 Transmission Tightening Specifications

Transmission on a 1.8L - 125 kW - Engine



Note

- ◆ The -arrows- point to the alignment sleeves in the engine.
- ◆ When removing and installing pay attention to the different bolt lengths.
- ◆ In necessary the bolt length may differ from the illustration.
- ◆ The starter bolts for the starter are M12 x 155 if necessary.



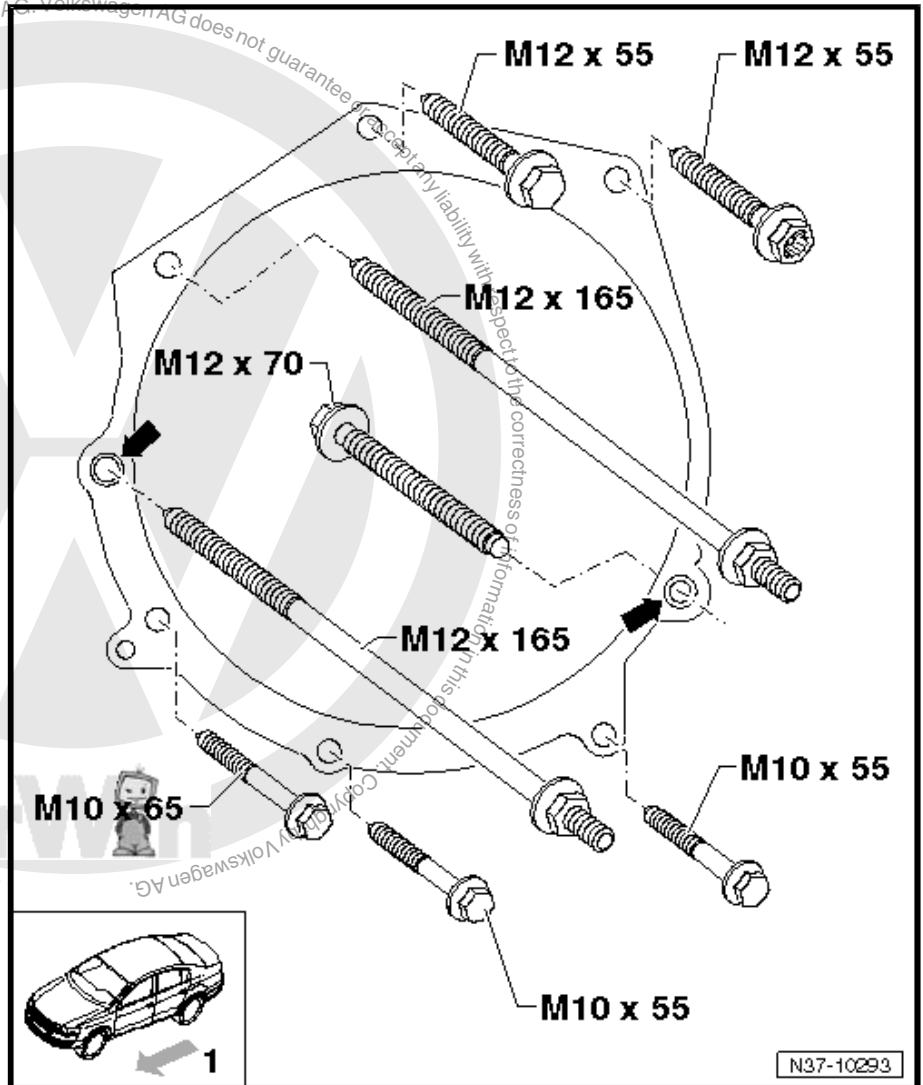
1 - Direction of Travel

M12 - 80 Nm

- ❑ When the Insert Tool - 18mm - T10179- or Insert Tool - 18mm - T10509- is used: 65 Nm.

M10 - 40 Nm

- ❑ The bolts are located inside the lower flange

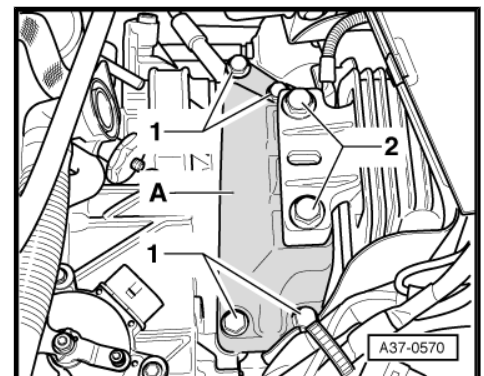


Left Assembly Mounts

- Replace all the bolts from the left subframe mount.
- Position all the new bolt first by hand.

Tightening Specifications

Component	Tightening Specification
Transmission bracket to transmission (use new bolts -1-)	40 Nm +90°
Transmission bracket to the transmission mount (use new bolts -2-)	60 Nm +90°
Drive plate to torque converter	60 Nm
Coolant hose bracket to the engine	20 Nm





4 Transmission, Transporting

Special tools and workshop equipment required

- ◆ Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12-
- ◆ Shop Crane - VAS6100-

The Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- can be used when transporting the automatic transmission and for setting up the Transmission Support - 3282- .

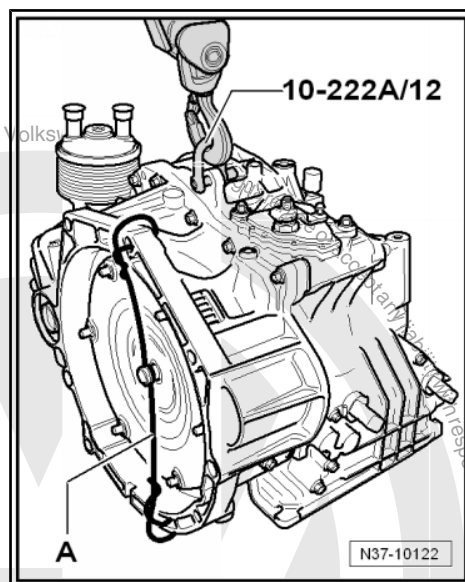
- Secure the torque converter with wire -A- to prevent it from falling when being transported.



Note

The torque converter and transmission in the illustration may differ from the Original Part.

- Secure the Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- at the top of the transmission housing.
- Engage the hook of the Shop Crane - VAS6100- into the shackles as illustrated.
- Lift the transmission with the Shop Crane - VAS6100- and Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- .





5 Securing on Engine and Transmission Holder

Special tools and workshop equipment required

- ◆ Holding Fixture - VW313-
- ◆ Holding Fixture - VW540-
- ◆ Engine And Transmission Holder - VAS6095-

Remember there is oil in the transmission. Do not turn the transmission with the vents facing downward when transporting or when it is on the assembly stand. The oil will leak out.



Note

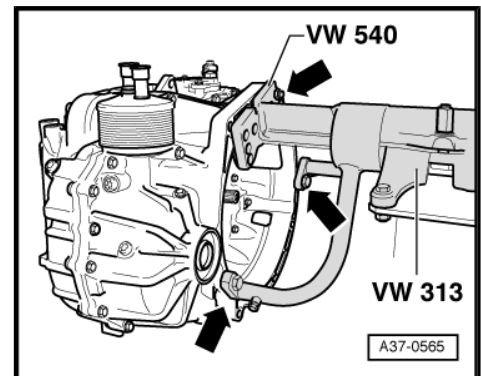
Remove the bleed cap if necessary and use oil-tight plugs.

- Secure the transmission on the Holding Fixture - VW540-
-arrows-.
- Install the transmission using the Shop Crane - VAS6100- in
the Holding Fixture - VW313- or the Engine And Transmission
Holder - VAS6095- .



WARNING

Center of gravity of transmission is outside center of rotation at holding fixture. To prevent back swing, a second technician must hold transmission housing when rotating the transmission on the Holding Fixture - VW313- .





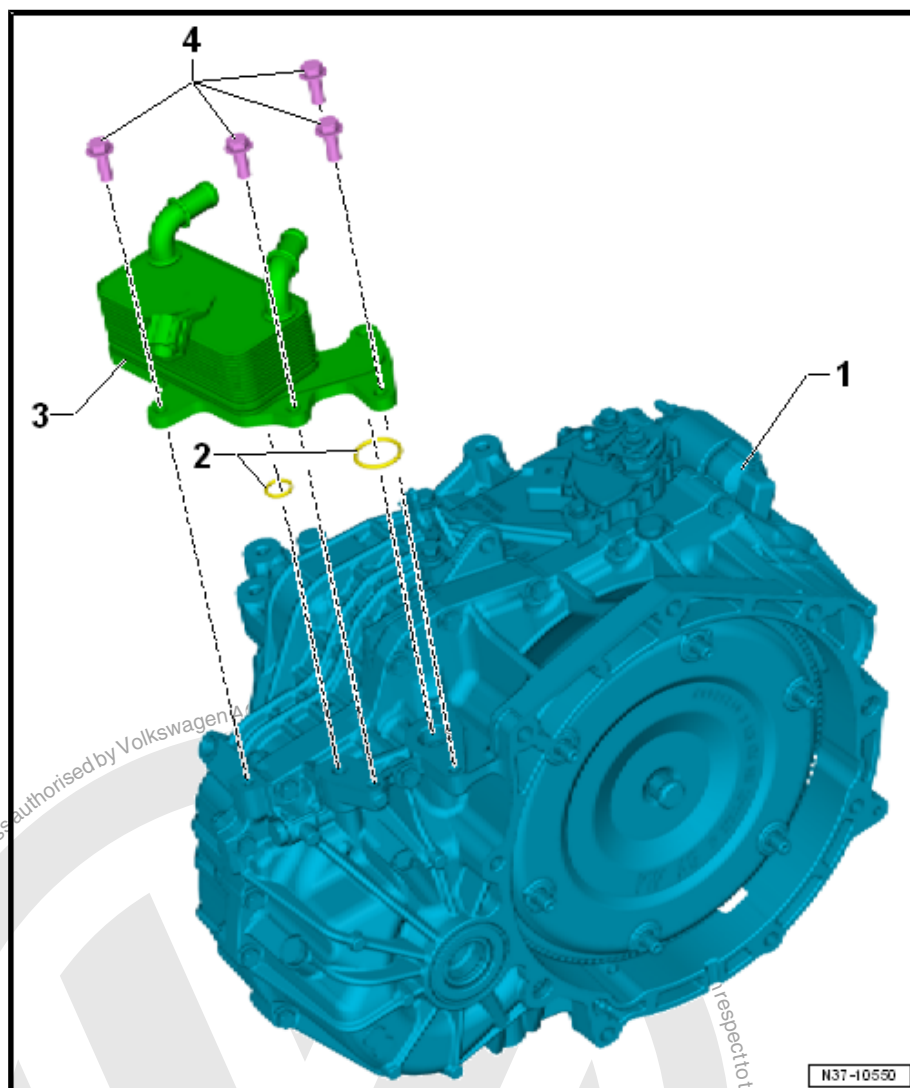
6 ATF Circuit

⇒ "6.1 ATF Circuit Assembly Overview", page 70

⇒ "6.2 ATF Cooler, Removing and Installing", page 70

6.1 ATF Circuit Assembly Overview

- 1 - Transmission
- 2 - O-Rings
 - ❑ Replace after removing
- 3 - ATF Cooler
 - ❑ Removing and installing. Refer to
⇒ "6.2 ATF Cooler, Removing and Installing",
page 70 .
- 4 - Bolt
 - ❑ 20 Nm
 - ❑ Quantity: 4, M8 x 25



6.2 ATF Cooler, Removing and Installing

Special tools and workshop equipment required

- ◆ Hose Clamps - Up To 25mm - 3094-
- ◆ Engine Bung Set -VAS6122-
- ◆ Hose Clip Pliers



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.





Mandatory Replacement Parts

- ◆ O-rings - ATF Cooler

Removing

- Move the selector lever into »P«.

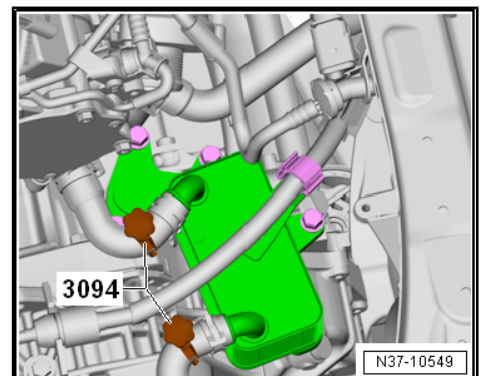
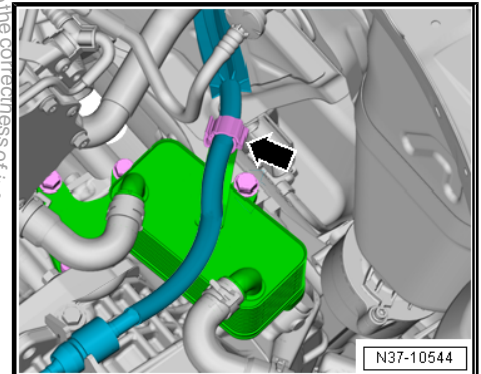
Remove the air filter housing. Refer to ➔ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing

- Remove the battery and the battery tray. Refer to ➔ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery Tray, Removing and Installing .
- Disconnect the selector lever cable on the retaining clip -arrow-.



Note

- ◆ *Mark the ATF cooler coolant hoses to prevent confusing them when installing them later.*
 - ◆ *The coolant system is under pressure when the engine is warm.*
 - ◆ *Cover the cap on the reservoir with a cloth and open it carefully before removing the coolant hoses.*
- Clamp the coolant hoses with Hose Clamps - Up To 25mm - 3094- and remove them from the ATF cooler.
 - Seal the coolant hoses and connections with plugs taken from Engine Bung Set - VAS6122- .





- Remove the bolts -arrows- and take out the ATF cooler.

Installing

Install in reverse order of removal. Note the following:



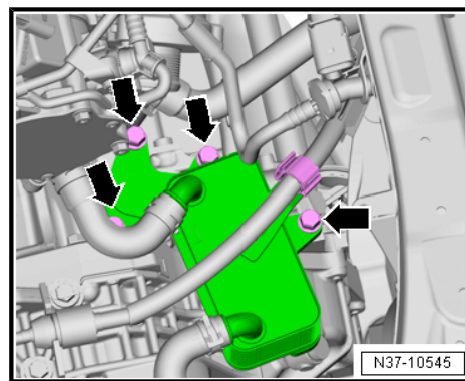
Note

Always replace O-rings.

- Install the coolant hoses to the ATF cooler according the markings made during the removal.
- Check the coolant level. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 19 ; Cooling System/Coolant; Coolant, Draining and Filling .
- Install the battery and the battery tray. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery Tray, Removing and Installing .
- Check the ATF level. Refer to ⇒ [“7 Automatic Transmission Fluid”, page 73](#) .
- Install the air filter housing. Refer to ⇒ Engine Mechanical, Fuel Injection and Ignition; Rep. Gr. 24 ; Air Filter; Air Filter Housing, Removing and Installing .

Tightening Specifications

- ◆ Refer to ⇒ [“6.1 ATF Circuit Assembly Overview”, page 70](#)





7 Automatic Transmission Fluid

⇒ [“7.1 ATF Level, Checking”, page 73](#)

⇒ [“7.2 ATF, Draining and Filling”, page 76](#)

7.1 ATF Level, Checking

Special tools and workshop equipment required

- ◆ Torque Wrench 5-50Nm - VAG1331-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Vehicle Diagnostic Tester
- ◆ Shop Crane - Drip Tray - VAS6208-
- ◆ Oil Filler - VAS6262A-
- ◆ Oil Filler - Adapter 2 - VAS6262/2-
- ◆ Also for some oil containers Oil Filler - Adapter 6 - VAS6262/6-
- ◆ Brake Line Tool Kit - Pipe Cutter - VAS6056/2-



Caution

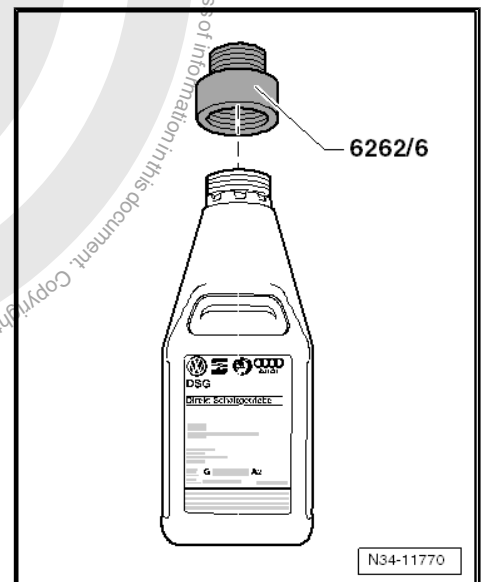
This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Seal - Drain Plug

Note the following information:

- ◆ If ATF is filled, only use the ATF available as a replacement part. Refer to the Parts Catalog.
- ◆ It is necessary to use the Oil Filler - Adapter 6 - VAS6262/6- on some oil containers.
- ◆ It may be necessary to shorten the bleed pipe on the Oil Filler - VAS6262A- . Refer to [⇒ page 74](#) .





Shorten the Bleed Pipe on the Oil Filler - VAS6262A- as Follows:

- Shorten the pipe to dimension -a-. This assures the pipe on the Oil Filler - VAS6262A- will not touch the bottom on some oil containers.
- Dimension -a- = 210 mm (8.26 in.)



Note

Dimension -a- is measured starting from the shaft (the green surface) on the Oil Filler - VAS6262A-

- Make a mark on the bleed pipe, dimension -a-, and cut it, with for example the Brake Line Tool Kit - Pipe Cutter - VAS6056/2- .

Requirements

- ◆ The vehicle is level and all hoist supports are the same height.
- ◆ The noise insulation has been removed.
- ◆ Vehicle Diagnostic Tester is connected
- ◆ To begin working, the oil temperature should not be higher than 45 °C (113 °F).
- ◆ Test temperature: 35 ° to 45 °C (95 ° to 113 °F)

Checking

- Vehicle Diagnostic Tester Connect and identify the vehicle in Guided Functions.
- Select Check ATF Level.

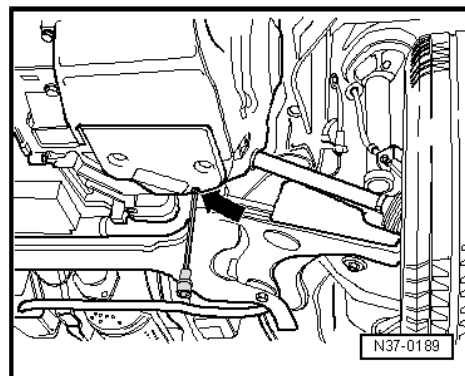
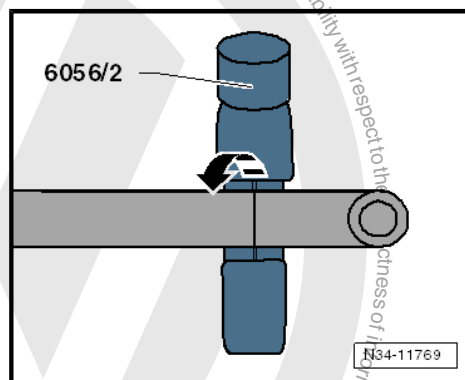
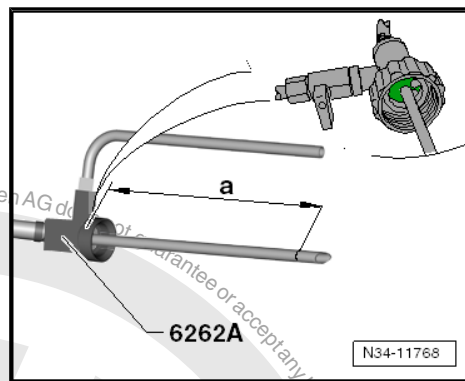


Note

Let the transmission cool down if the oil temperature is higher than 45 °C (113 °F).

The engine is idling and the selector lever is in "P".

- Move the Drip Tray For Workshop Cranes or Used Oil Collection and Extraction Unit - SMN372500- under the transmission near the ATF check plug -arrow-.
- Remove the ATF check plug -arrow-.





- Always replace the seal -arrow- for the drain plug.



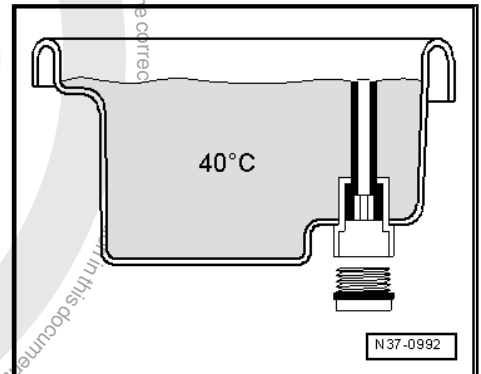
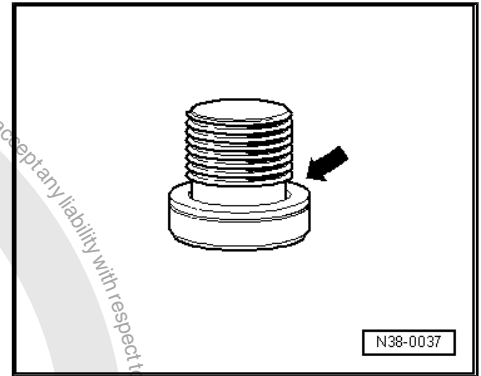
Note

Even if the level of transmission fluid is too low, first a small amount of transmission fluid will flow out of the overflow tube, because it fills during operation.

ATF flows out of the overflow pipe.

- Let the excess oil drain.
- Install the drain plug with a new seal as soon as all the fluid has drained out (it starts to drip).
- If no transmission fluid comes out, then fill.

Adding





- With the engine running install the Oil Filler - Adapter 2 - VAS6262/2- hand-tight in the check hole.
- Shake before opening.



Caution

The ATF filler tool must be clean and the ATF must not be mixed with any other ATF.

Allocation. Refer to the Parts Catalog.

- Attach the Oil Filler - VAS6262A- to the oil bottle. Be sure to read the instructions. Refer to ➤ [page 73](#) .
- Fill 1.0 liters (1.05 quarts) ATF.
- Remove the Oil Filler - VAS6262A- at the quick-release coupling and check it.

If ATF Flows Out of Adapter Hole

ATF does not need to be topped off.

- Allow ATF to drain until it drips.
- Install the ATF inspection plug with a new seal. The ATF level test is now completed.

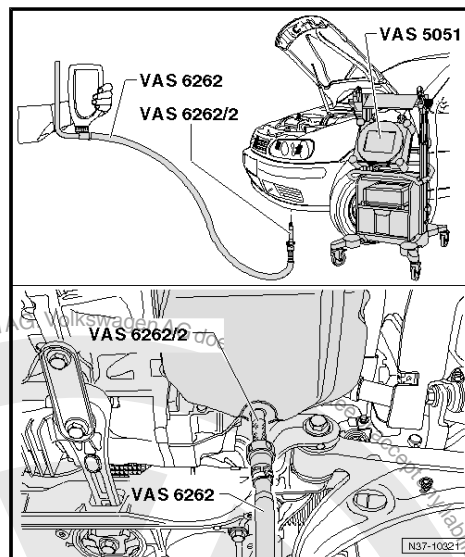
If No Oil Drips Out of the Hole

- Add another liter. Refer to ➤ [page 75](#) .



Caution

Too little or too much ATF will impair the transmission.



Tightening Specifications

- ◆ Refer to ➤ [“2.1 Overview - Valve Body”, page 87](#).

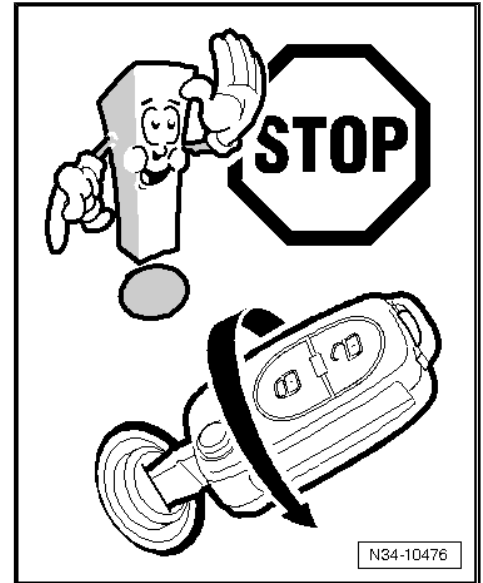
7.2 ATF, Draining and Filling

Special tools and workshop equipment required

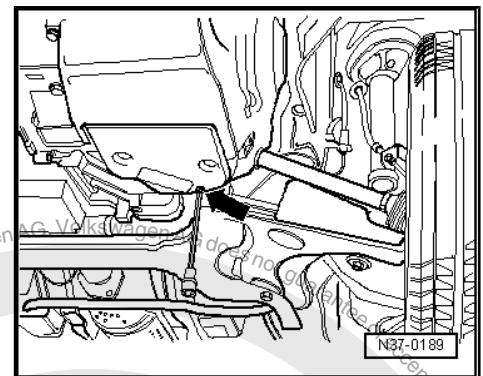
- ◆ Torque Wrench 5-50Nm - VAG1331-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Vehicle Diagnostic Tester
- ◆ Shop Crane - Drip Tray - VAS6208-
- ◆ Oil Filler - VAS6262A-
- ◆ Oil Filler - Adapter 2 - VAS6262/2-
- ◆ Also for some oil containers Oil Filler - Adapter 6 - VAS6262/6-



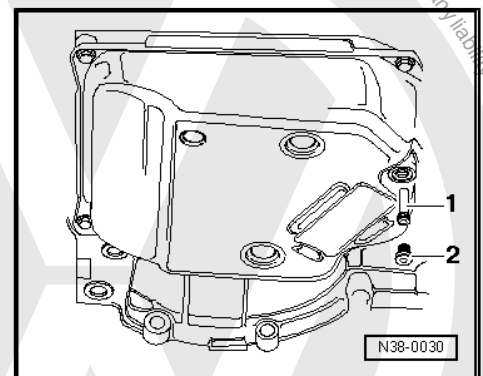
- Turn off the engine.
- Place the Drip Tray or Used Oil Collection and Extraction Unit - SMN372500- under the transmission.



- Remove the ATF check plug from the ATF pan -arrow-.



- Remove the overflow pipe -1- through check plug hole.
- Drain the ATF.
- Install the overflow pipe.
- Attach the Oil Filler - VAS6262A- to the oil bottle. Be sure to read the instructions. Refer to [⇒ page 73](#).

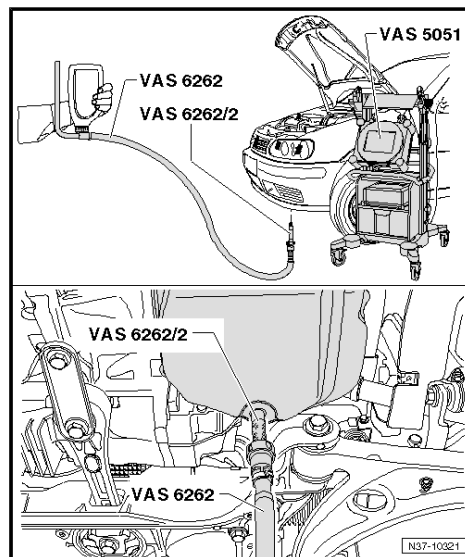




- Install the Oil Filler - Adapter 2 - VAS6262/2- hand-tight in the ATF-check hole.
- Fill with three liters of ATF. Refer to the Parts Catalog.
- Remove the Oil Filler - Adapter 2 - VAS6262/2- from the oil pan and tighten the ATF check plug with the old seal.
- Move the selector lever into “P”.
- Start the engine.
- With brake depressed, move the selector lever through all the different positions “P, R, N, D, S” at idle, holding it at each position for at least 10 seconds.
- Move the selector lever into “P”.
- Check the ATF level. Refer to
⇒ [“7.1 ATF Level, Checking”, page 73](#) .

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Valve Body”, page 87](#)


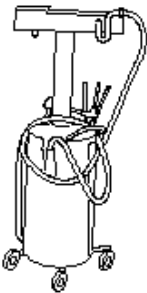
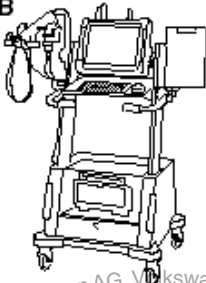
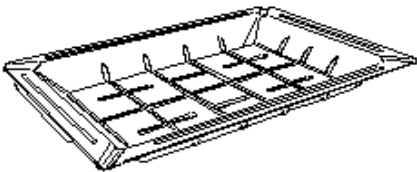
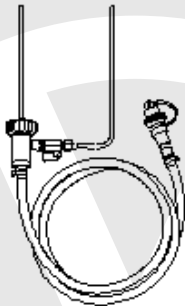
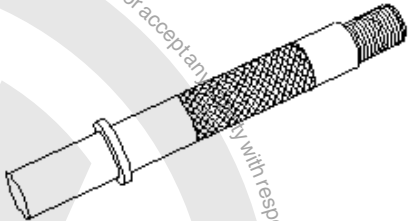




8 Special Tools

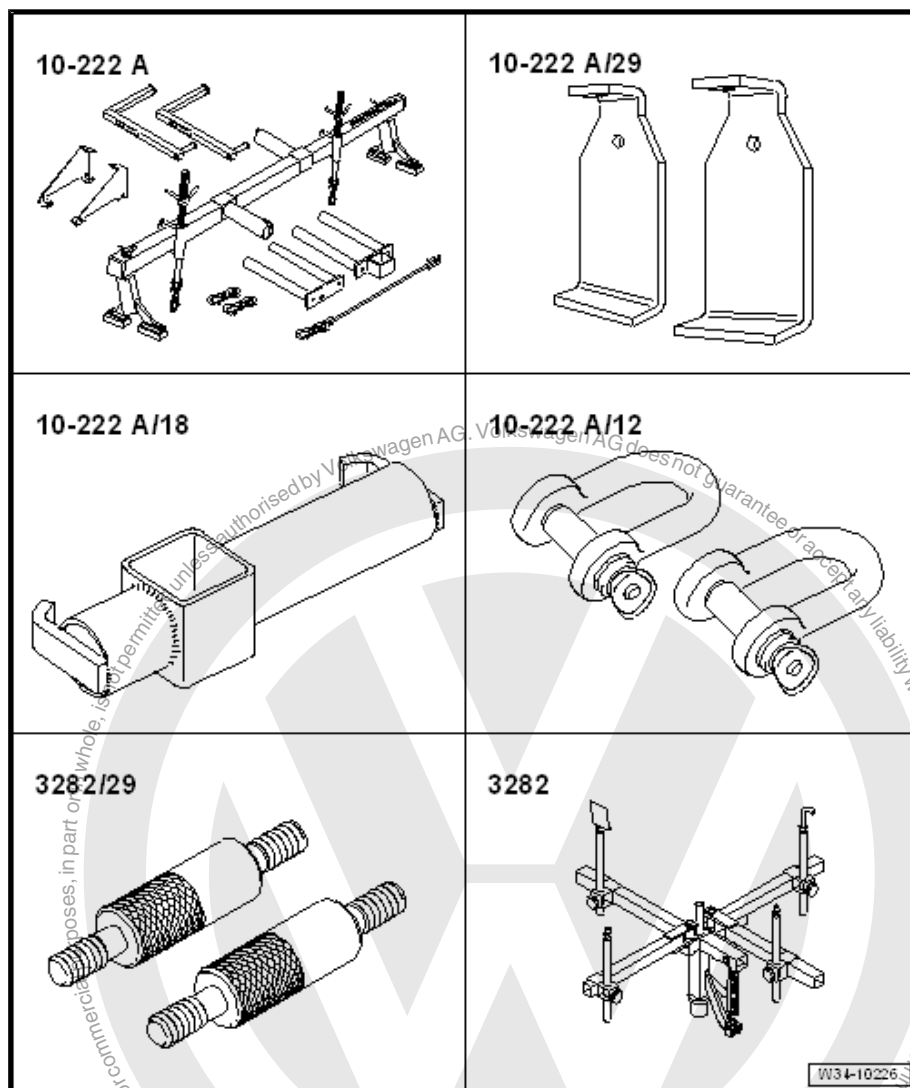
Special tools and workshop equipment required

- ◆ Torque Wrench 5-50Nm - VAG1331-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Vehicle Diagnostic Tester
- ◆ Shop Crane - Drip Tray - VAS6208-
- ◆ Oil Filler - VAS6262A-
- ◆ Oil Filler - Adapter 2 - VAS6262/2-
- ◆ Also for some oil containers Oil Filler - Adapter 6 - VAS6262/6-

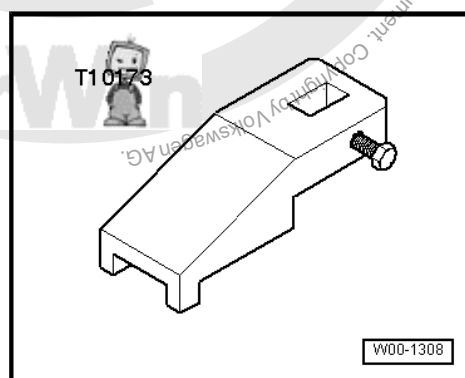
<p>V.A.G 1331</p> 	<p>V.A.G 1782</p> 
<p>VAS 5051 B</p> 	<p>VAS 6208</p> 
<p>VAS 6262 A</p> 	<p>VAS 6262/2</p>  <p>W34-10210</p>



- ◆ Engine Support Bridge - 10-222A-
- ◆ Engine Support Bridge - Engine Support 29 - 10-222A/29-
- ◆ Engine Support Bridge - Engine Support 18 - 10-222A/18-
- ◆ Engine/Gearbox Support Shackle (2 pc.) - 10-222A/12- (quantity 2)
- ◆ Transmission Support - Pins 29 - 3282/29-
- ◆ Transmission Support - 3282-

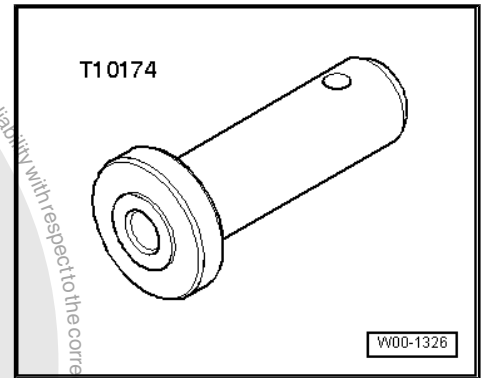


- ◆ Gauge - Multi Function Switch - T10173-

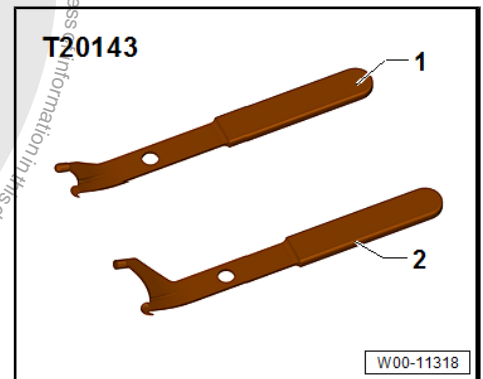




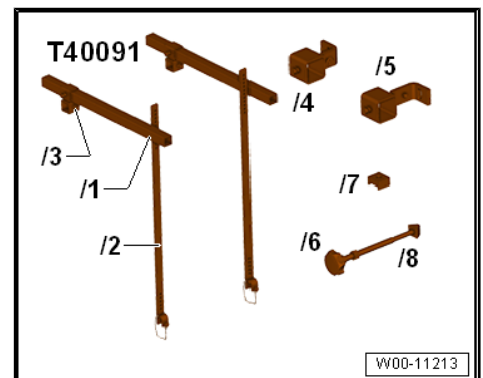
◆ Seal Installer - Selector Shaft Oil Seal - T10174-



◆ Puller - Crankshaft/Power Steering Seal - T20143/1-

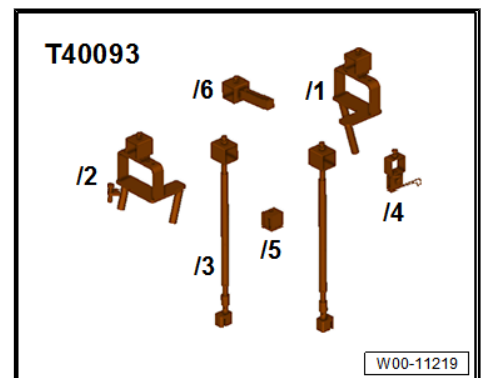


◆ Engine Support - Basic Set Square Pipe - T40091/1- (quantity 2)



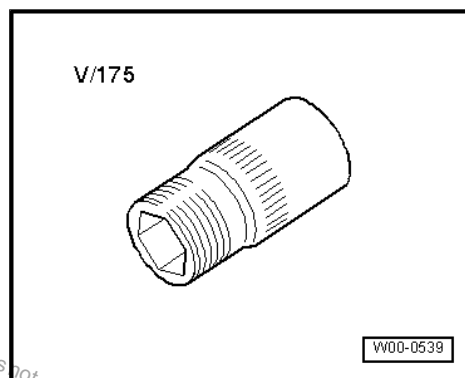
◆ Engine Support - Basic Set Movable Joint - T40091/3- (quantity 2)

◆ Engine Support - Supplement Kit Spindle - T40093/3- (quantity 2) from the Engine Support - Supplement Kit - T40093A-

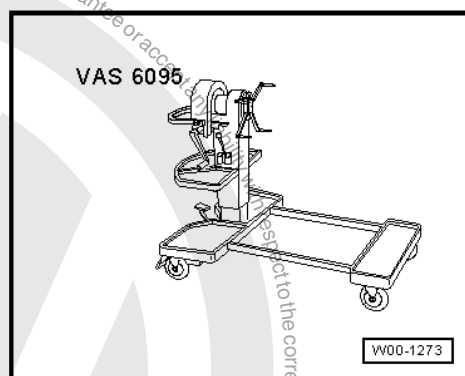




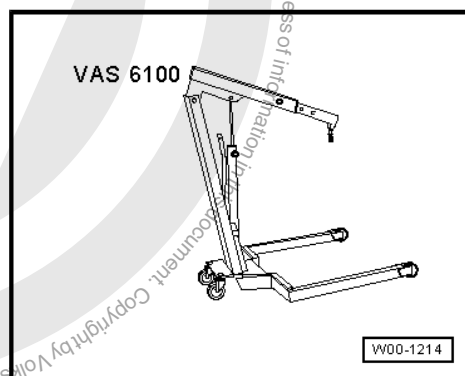
◆ Socket - Sw15 - V/175-



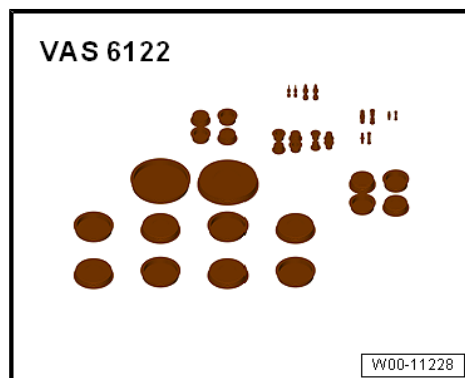
◆ Engine And Transmission Holder - VAS6095-



◆ Shop Crane - VAS6100-

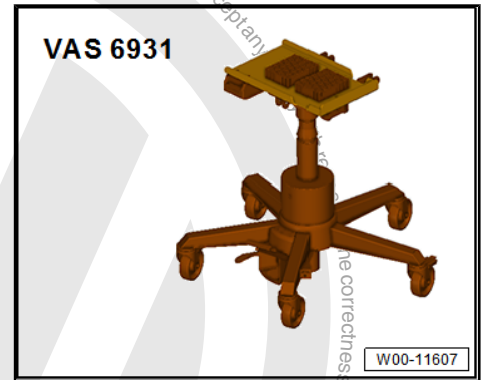


◆ Engine Bung Set - VAS6122-

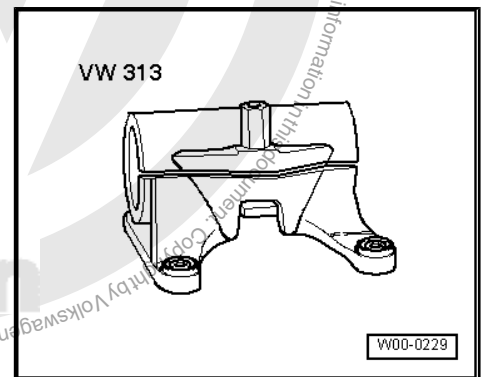




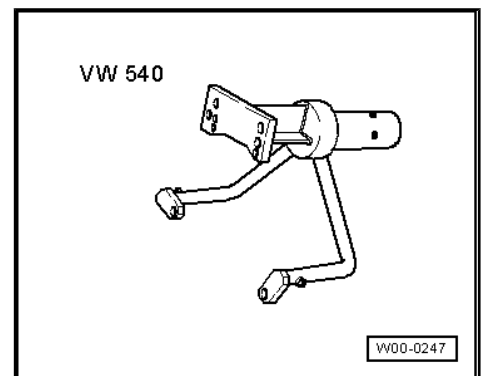
- ◆ Engine and Gearbox Jack - VAS6931- or Engine/Gearbox Jack - VAG1383A-



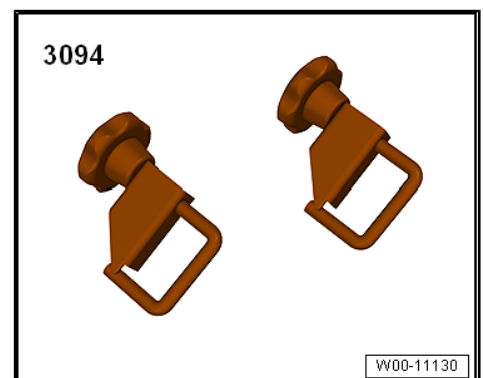
- ◆ Holding Fixture - VW313-



- ◆ Holding Fixture - VW540-



- ◆ Engine Support Brackets - T40093/3-6- (quantity 2)
- ◆ Hose Clamps - Up To 25mm - 3094-



- ◆ Not Illustrated:
- ◆ Brake Line Tool Kit - Pipe Cutter - VAS6056/2-



38 – Gears, Hydraulic Controls

1 ATF System

⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#)

⇒ [“1.2 ATF Strainer, Removing and Installing”, page 86](#)

1.1 Oil Pan, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Used Oil Collection and Extraction Unit - SMN372500- or Drip Tray - VAS6208-



Caution

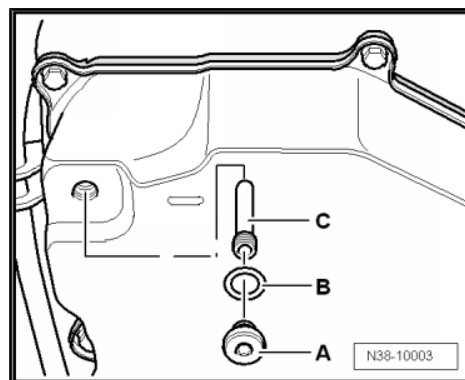
This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Gasket - ATF Check Plug

Removing

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Place the Used Oil Collection and Extraction Unit - SMN372500- or Drip Tray under the transmission.
- Remove the ATF check plug -A-.
- Remove the overflow pipe -C- and drain any remaining ATF.





- Loosen and tighten the bolts on the ATF pan -arrows- diagonally.



Note

Some residual ATF will remain in the ATF pan.

- Remove the ATF pan and gasket.

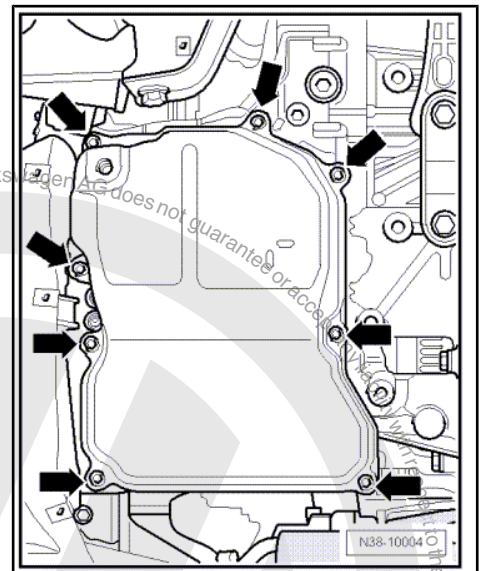
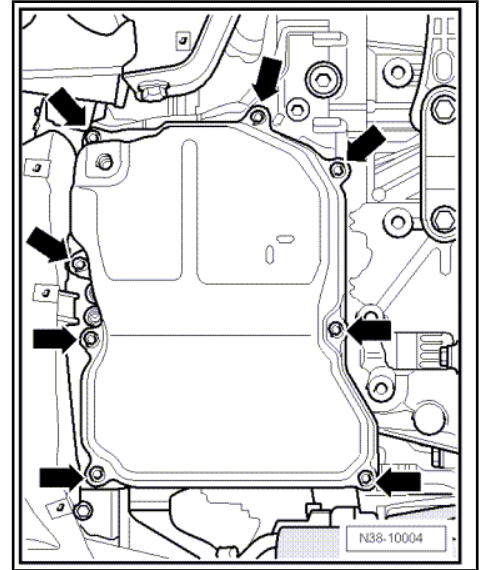
Installing

Install in reverse order of removal. Note the following:

- Clean the two magnets in the ATF pan depressions. Make sure the magnets touch the ATF pan completely.
- Check the seal for damage and make sure all of the spacers (quantity: 8) are present.

Otherwise, replace the seal.

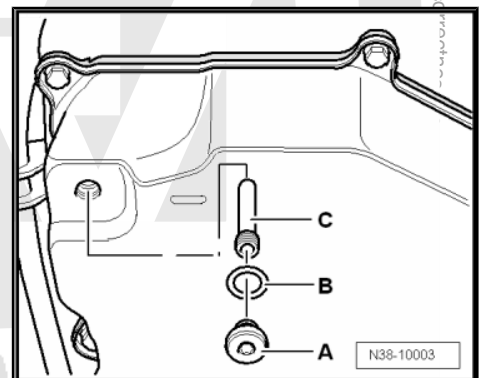
- Install the ATF pan and seal; when doing this be sure not to pinch any lines.
- Make sure the ATF pan seal fits correctly.
- Tighten the ATF pan bolts -arrows- diagonally and in several steps. For the correct tightening specification. Refer to [⇒ page 89](#).



- Install the overflow pipe -C-. For the correct tightening specification. Refer to [⇒ page 89](#).
- Replace the gasket -B- for the ATF check plug -A-.
- Install the ATF check plug -A- and new gasket -B- hand-tight only.
- Fill the ATF and check the level. Refer to [⇒ "7 Automatic Transmission Fluid", page 73](#).
- Install the noise insulation. Refer to [⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation](#).

Tightening Specifications

- ◆ Refer to [⇒ "2.1 Overview - Valve Body", page 87](#)





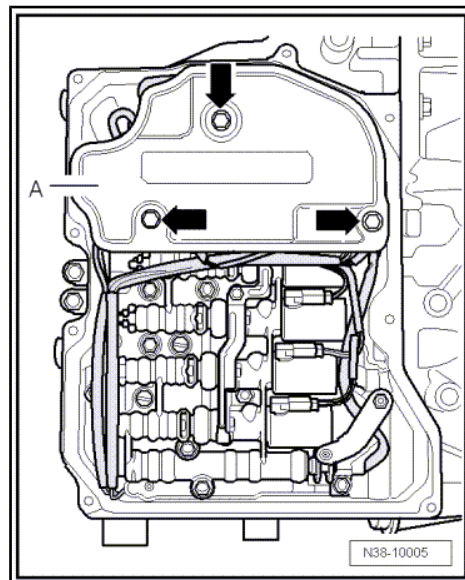
1.2 ATF Strainer, Removing and Installing

Removing

- Remove the ATF pan. Refer to
⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#) .
- Remove the bolts -arrows- from the ATF strainer.
- Remove the ATF strainer -A- from the valve body.

Installing

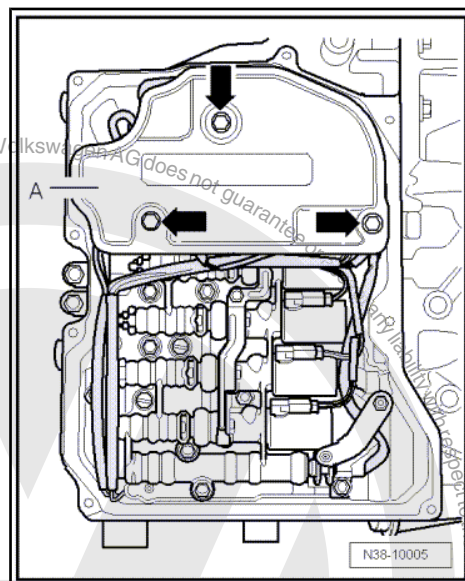
- Lightly coat the seals on the ATF strainer suction collar with ATF.
- Replace the ATF strainer if the seals are loose or faulty.



- Mount the ATF strainer -A- on the valve body and tighten the bolts -arrows-. For the correct tightening specification. Refer to ⇒ [page 89](#) .
- Install the ATF pan. Refer to
⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#) .
- Fill the ATF and check the level. Refer to
⇒ [“7 Automatic Transmission Fluid”, page 73](#)

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Valve Body”, page 87](#)





2 Valve Body

⇒ [“2.1 Overview - Valve Body”, page 87](#)

⇒ [“2.2 Valve Body, Removing and Installing”, page 90](#)

⇒ [“2.3 Wire Routing, Connectors and Bracket on Valve Body”, page 97](#)

⇒ [“2.4 Solenoid Valve and Sensor Wiring Harness, Removing and Installing”, page 99](#)

⇒ [“2.5 Transmission Input Speed Sensor G182 , Removing and Installing”, page 101](#)

⇒ [“2.6 Transmission Output Speed Sensor G195 , Removing and Installing”, page 101](#)

2.1 Overview - Valve Body

1 - ATF Check Plug

- ☐ 27 Nm
- ☐ ATF level, checking and filling. Refer to
⇒ [“7 Automatic Transmission Fluid”, page 73](#)

2 - Seal

- ☐ Replace after removing

3 - Overflow Pipe

- ☐ 2 Nm
- ☐ Remove in order to drain the ATF

4 - Oil Pan

- ☐ Removing and installing. Refer to
⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#)

5 - Bolt

- ☐ 7 Nm
- ☐ Tighten the ATF pan bolts diagonally and in several steps.

6 - Seal

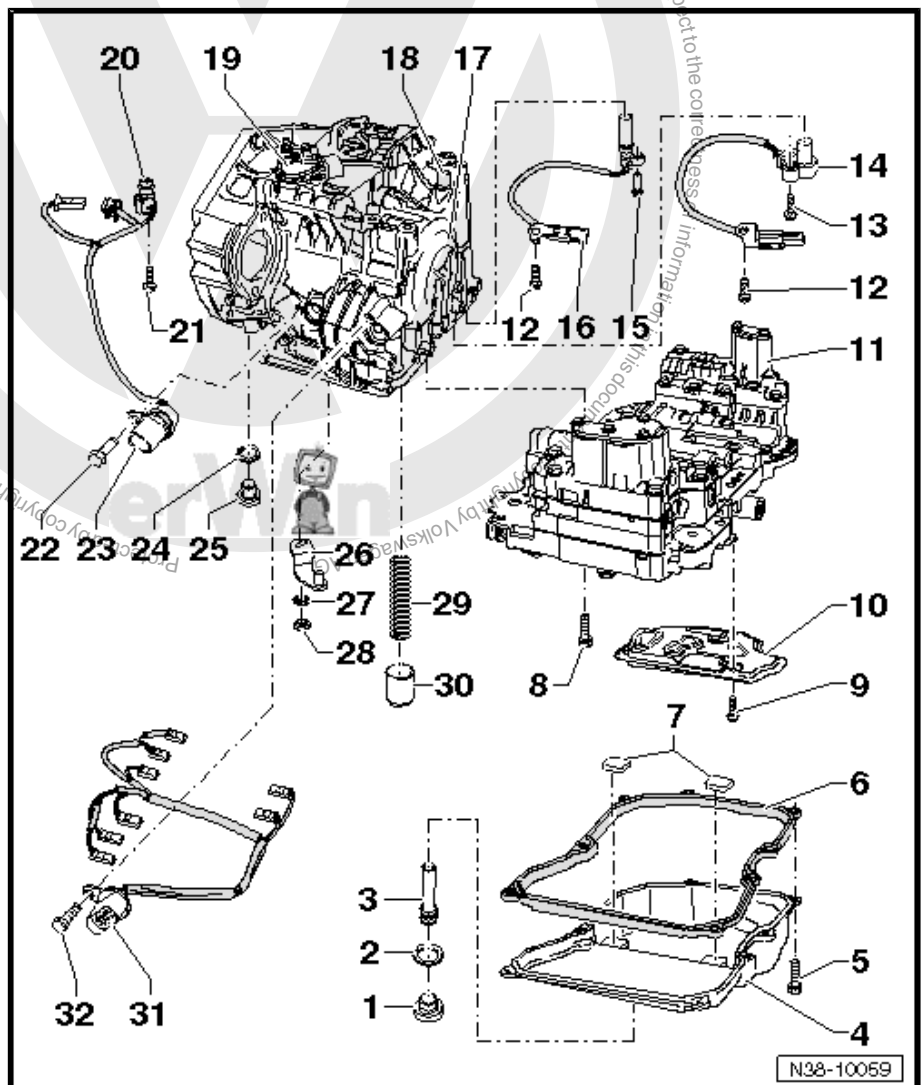
- ☐ With spacers (quantity: 8)
- ☐ Check before installing
- ☐ Replace brittle, cracked or deformed seals

7 - Magnet

- ☐ Quantity: 2; in depressions in the ATF pan
- ☐ Clean before installing the ATF pan.

8 - Bolt

- ☐ 8 Nm +90°
- ☐ Replace after removing





- ☐ For attaching the valve body to the transmission
- ☐ Quantity 12; with different lengths ⇒ [Fig. ""Bolt Lengths and Locations on the Valve Body""](#) , page 96

9 - Bolt

- ☐ 11 Nm
- ☐ Quantity: 3
- ☐ For attaching the ATF strainer to the valve body

10 - Oil Screen

- ☐ Removing and installing. Refer to ⇒ ["1.2 ATF Strainer, Removing and Installing"](#) , page 86 .

11 - Valve Body

- ☐ Removing and installing. Refer to ⇒ ["2.2 Valve Body, Removing and Installing"](#) , page 90 .
- ☐ Solenoid valve identification. Refer to
⇒ ["2.3 Wire Routing, Connectors and Bracket on Valve Body"](#) , page 97 .
- ☐ Allocation. Refer to the Parts Catalog.

12 - Bolt

- ☐ 7 Nm

13 - Bolt

- ☐ 6 Nm

14 - Transmission Input Speed Sensor - G182-

- ☐ Removing and installing. Refer to
⇒ ["2.5 Transmission Input Speed Sensor G182 , Removing and Installing"](#) , page 101 .

15 - Bolt

- ☐ 7 Nm

16 - Transmission Output Speed Sensor - G195-

- ☐ Removing and installing. Refer to
⇒ ["2.6 Transmission Output Speed Sensor G195 , Removing and Installing"](#) , page 101 .

17 - Transmission Housing

- ☐ Illustrated here without the ATF cooler

18 - Bleed Cap

19 - Multifunction Transmission Range Switch - F125-

- ☐ Removing and installing. Refer to ⇒ ["2.9 Multifunction Switch, Removing and Installing"](#) , page 37 .
- ☐ Adjusting. Refer to ⇒ ["2.10 Multifunction Transmission Range Switch, Adjusting"](#) , page 40 .

20 - Transmission Fluid Temperature Sensor - G93-

- ☐ Integrated inside the wiring harness -item 23- ⇒ [Item 23 \(page 88\)](#)
- ☐ Removing and installing. Refer to
⇒ ["2.4.2 Wiring Harness, Removing and Installing, Sensors"](#) , page 100 .
- ☐ Wire routing. Refer to ⇒ ["2.3 Wire Routing, Connectors and Bracket on Valve Body"](#) , page 97

21 - Bolt

- ☐ 6 Nm

22 - Bolt

- ☐ 6 Nm

23 - Sensor Wiring Harness

- ☐ With an 8-pin connector
- ☐ With an O-ring on the connector; always replace the O-ring
- ☐ With Transmission Fluid Temperature Sensor - G93-
- ☐ For the Transmission Input Speed Sensor - G182-
- ☐ For the Transmission Output Speed Sensor - G195-
- ☐ Removing and installing. Refer to
⇒ ["2.4.2 Wiring Harness, Removing and Installing, Sensors"](#) , page 100 .



- ☐ Wire routing. Refer to ➤ [“2.3 Wire Routing, Connectors and Bracket on Valve Body”, page 97](#)
- ☐ Allocation. Refer to the Parts Catalog.

24 - Seal

- ☐ If present, replace after removing

25 - ATF Drain Plug

- ☐ 40 Nm
- ☐ Not installed on all transmissions

26 - Selector Lever

- ☐ For the selector shaft
- ☐ Inside, on the valve body
- ☐ Removing and installing. Refer to ➤ [“2.2 Valve Body, Removing and Installing”, page 90](#) .

27 - Washer

28 - Nut

- ☐ 10 Nm
- ☐ Installed position: The centering collar faces the washer -item 27- ➤ [Item 27 \(page 89\)](#)

29 - Spring

- ☐ Allocation. Refer to the Parts Catalog.

30 - Damper Piston

31 - Solenoid Valve Wiring Harness

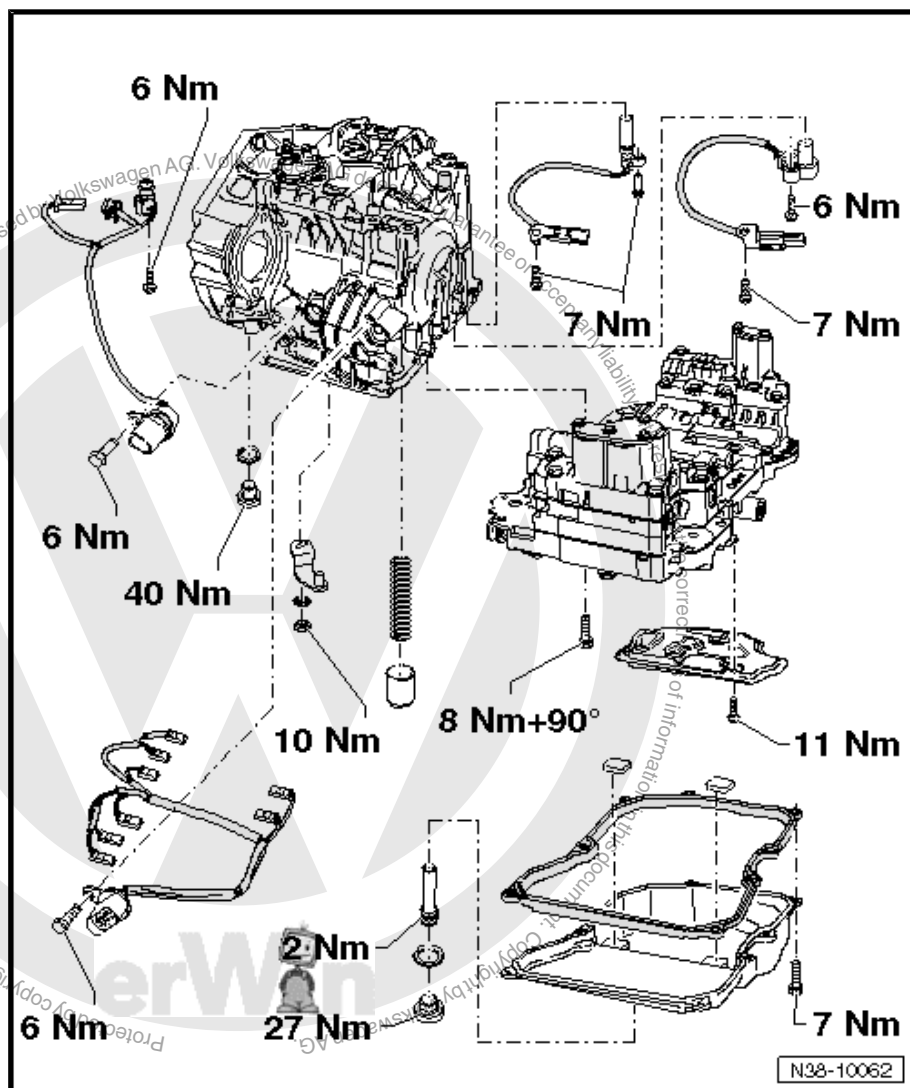
- ☐ With 14-pin connector
- ☐ With an O-ring on the connector; always replace the O-ring
- ☐ Solenoid valve installed location and wiring harness routing. Refer to ➤ [“2.3 Wire Routing, Connectors and Bracket on Valve Body”, page 97](#) .
- ☐ Removing and installing. Refer to ➤ [“2.3 Wire Routing, Connectors and Bracket on Valve Body”, page 97](#) .

32 - Bolt

- ☐ 6 Nm

Tightening Specifications





2.2 Valve Body, Removing and Installing



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Bolts - Valve Body to Transmission



Caution

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

- ◆ The valve body and the wiring harnesses can also be removed with transmission installed.
- ◆ Install the O-rings with ATF. Other types of lubrication lead to faults in the transmission hydraulics.
- ◆ Always replace a dirty or faulty valve body.



- ◆ Only use lint-free cloths
- ◆ Check the ATF level after installing the ATF pan. Refer to
⇒ [“7 Automatic Transmission Fluid”, page 73](#) .

Removing

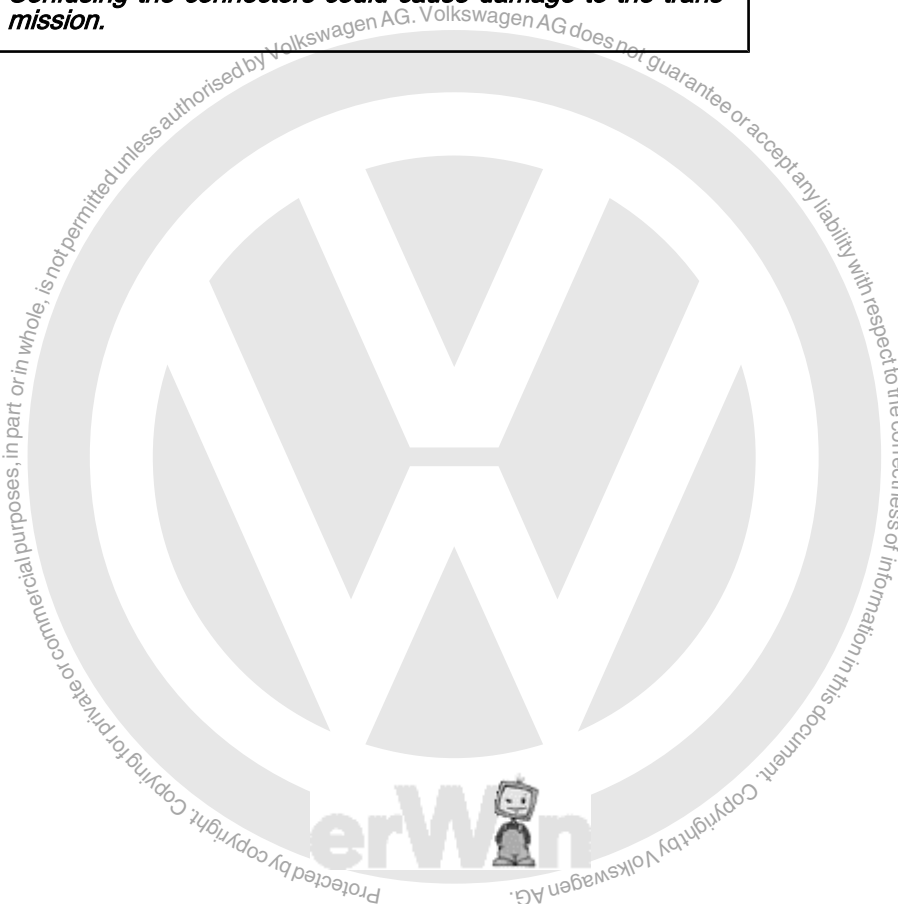
- Turn off the ignition and disconnect the battery Ground (GND) cable. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the ATF pan. Refer to
⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#) .
- Remove the ATF strainer. Refer to
⇒ [“1.2 ATF Strainer, Removing and Installing”, page 86](#) .
- Make a sketch, identical to the illustration, of all the sensors and solenoid valves and their connectors.
- Mark the solenoid valve and/or sensor and its connector before disconnecting them.

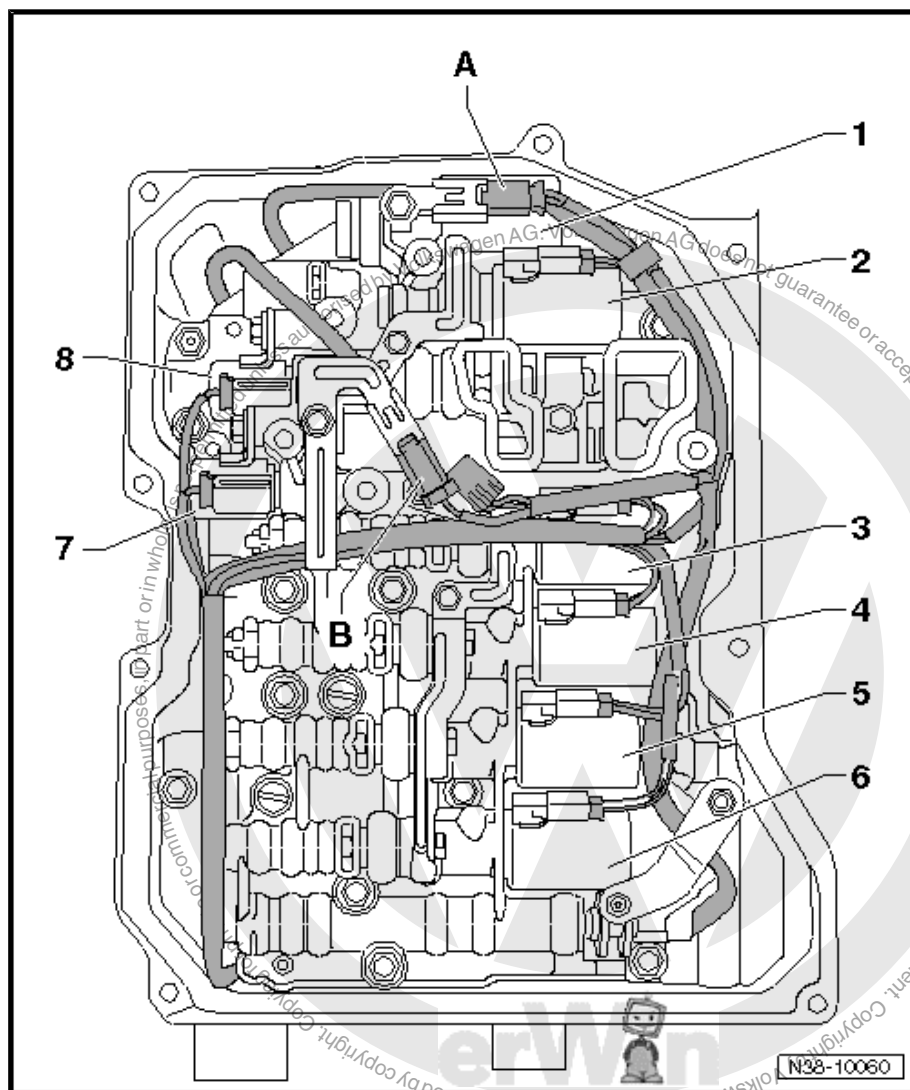


WARNING

It is absolutely required to draw or take pictures and to make identifying marks so that connectors at solenoid valves cannot be interchanged unintentionally when reinstalling the sensors and valve body.

Confusing the connectors could cause damage to the transmission.





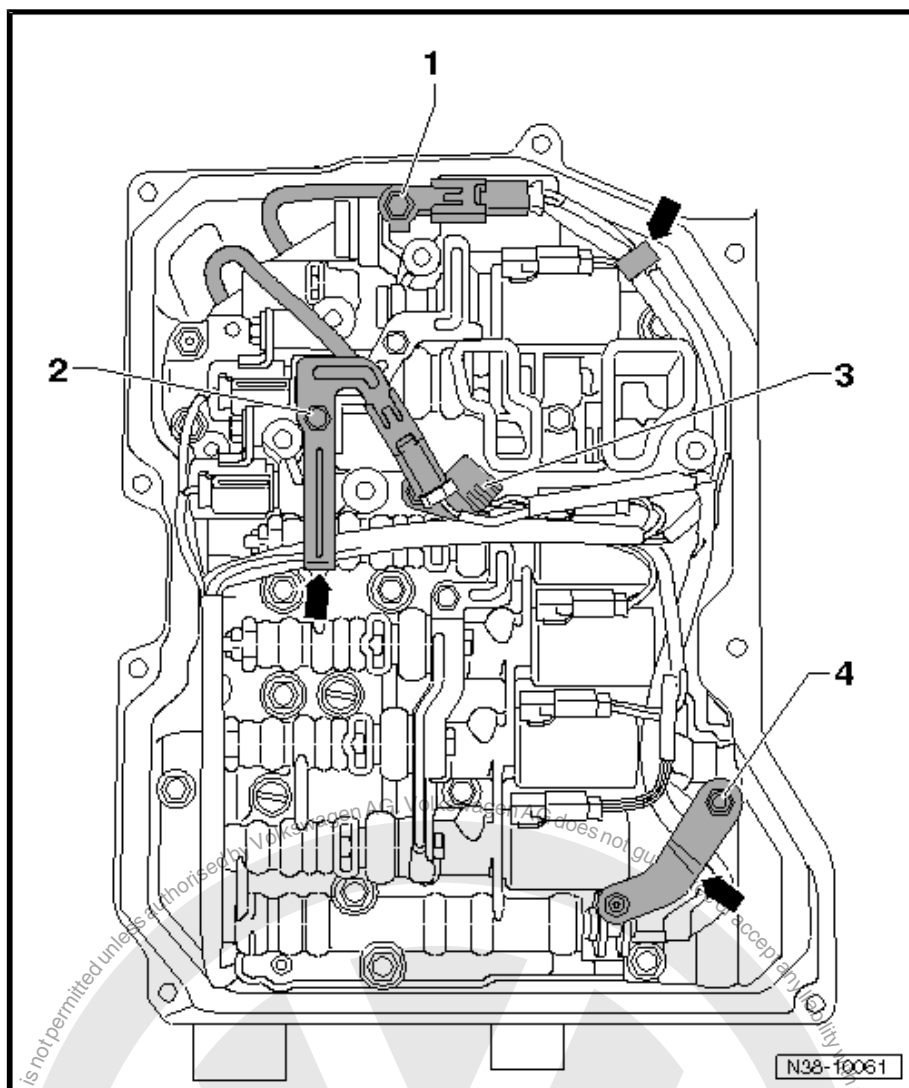
- Carefully pry out the connector tabs on the solenoid valves -1 through 8- using a small screwdriver and then disconnect the connectors.



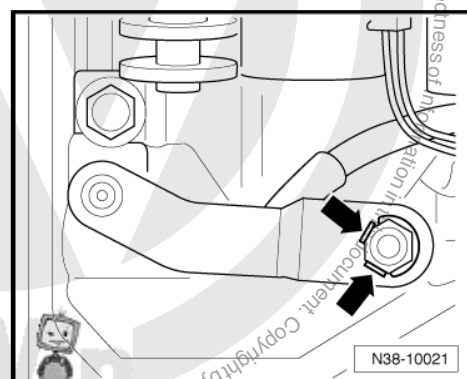
Caution

The wiring harness or the valve body with the solenoid valves must be replaced if the one of the connectors gets damaged.

- Disconnect the connectors -A and B-.
- Remove the bracket for the connectors -1 and 2-.

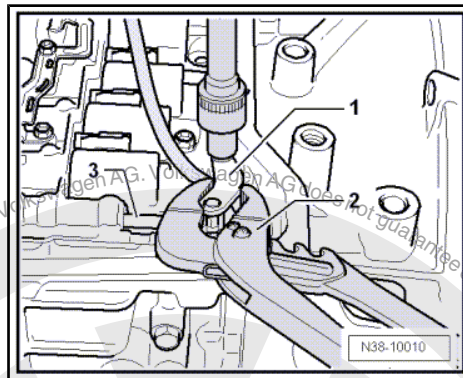


- Remove the Transmission Fluid Temperature Sensor - G93-3- from the valve body.
- Disengage the wiring harnesses from the brackets -arrows-.
- If equipped, bend back the locking plate on the selector lever -arrows-.



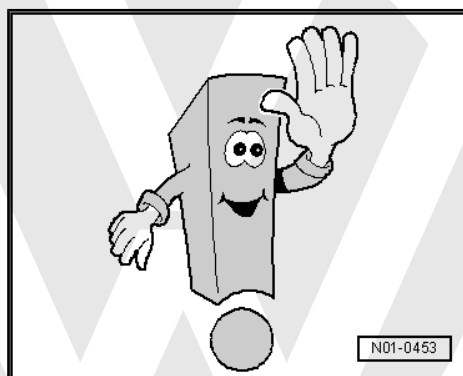


- Remove the selector lever -1- from the selector shaft.
- When doing this, hold the selector lever -1- secure with pliers -2- so that it does not turn when removing the Multifunction Transmission Range Switch - F125- .
- Make sure the slide -3- on the valve body in which the shift lever engages is not damaged.



The valve is very »sensitive«. Even minor damage leads to malfunction.

- Always slide the valve into the body, secure it against falling out and never exchange it.



The valve body bolts on the transmission housing have different lengths and must be replaced.

Only the bolts marked -arrows-, -A arrows- and -B arrows- can be loosened.

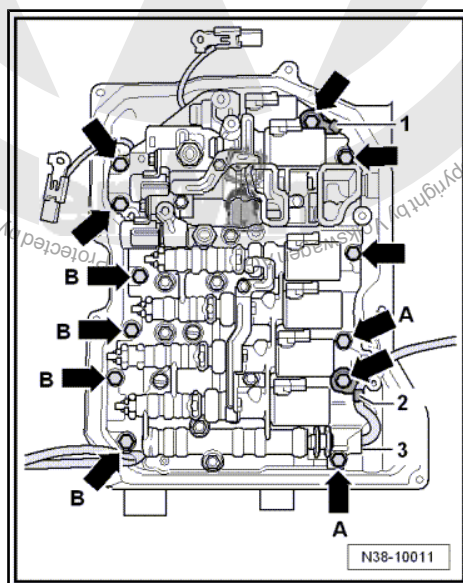


Caution

When loosening the other bolts, the function of the valve body can be influenced or the valve body splits up.

- Remove the bracket -1 and 2-.
- Loosen the valve body bolts -arrows-, -arrows A and arrows B- diagonally and then remove the valve body.

-3- Valve body description, for example, A2

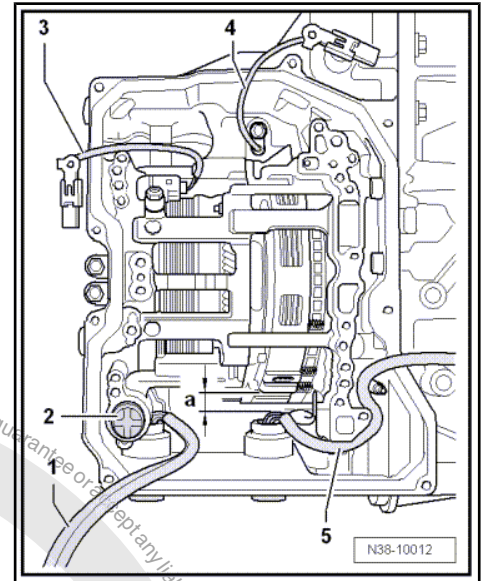




- When removing the valve body, pay attention to the damper pistons -2-.
- Remove the damper piston -2- with spring.

Installing

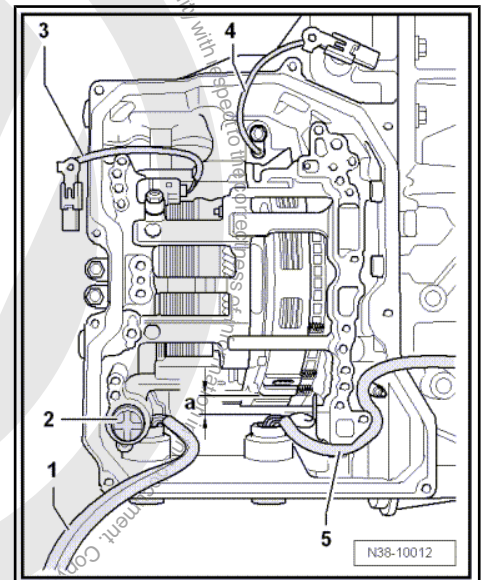
- Observe correct routing of wires so that they do not get jammed when installing the valve body.



- Route the wiring harness -5- into the transmission as illustrated.

The distance -a- must be maintained so that the wiring harness -5- does not touch the planetary gear and get damaged when the vehicle is being driven.

- The wiring harnesses -1, 3, 4 and 5- lay over the edge of the transmission as illustrated.
- Attach the wiring harnesses to the transmission with tape.
- Coat the damper piston -2- with ATF and then install it with the spring into the transmission housing, as illustrated.
- Mount the valve body and install the two bolts hand-tight.
- The wiring harnesses -1, 3, 4 and 5- must not get caught by the valve body.





Bolt Lengths and Locations on the Valve Body

- | | |
|------------------|------------------------|
| Bolts -arrows- | Quantity 6,
M6×21 |
| Bolts -arrows A- | Quantity 2, M6 x
16 |
| Bolts -arrows B- | Quantity 4, M6 x
28 |
- Install the remaining new bolts and the bracket -1 and 2- and tighten hand-tight.



Note

- ◆ If the wires are too short to connect to the sensor or to be attached to the valve body, then they were routed incorrectly or they are caught by the valve body. The valve body must be removed again and wires must be routed correctly.
- ◆ Replace the valve body bolts.
- Attach the valve body from the inside toward the outside diagonally; tightening specification. Refer to ⇒ [page 89](#) .
- Install the Transmission Fluid Temperature Sensor - G93- . For the tightening specification. Refer to ⇒ [page 89](#) .
- Connect the 8-pin connector according to the markings made on the solenoid valves. Refer to ⇒ ["2.3 Wire Routing, Connectors and Bracket on Valve Body", page 97](#) .



Caution

Confusing the connectors could cause damage to the transmission.

The wiring harness or the valve body with the solenoid valves must be replaced if the one of the connectors gets damaged.

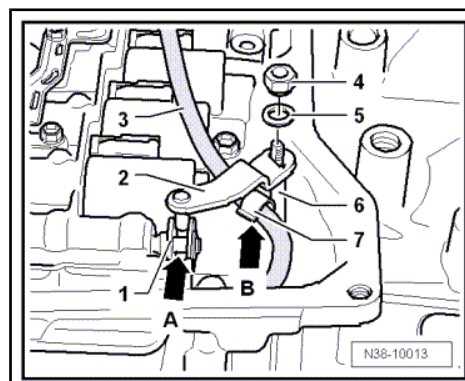
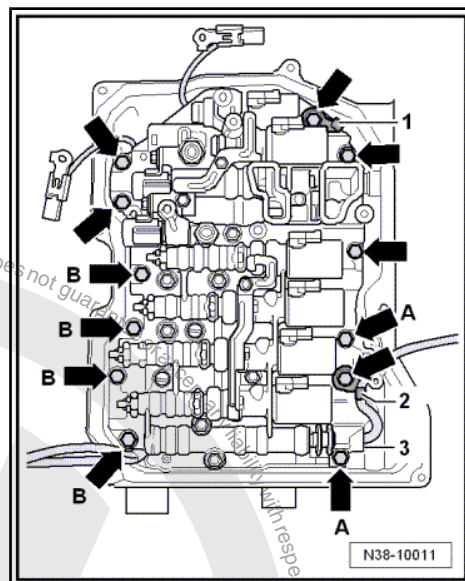
- Connect the bracket for the connectors. Refer to ⇒ [page 98](#) , tightening specification. Refer to ⇒ [page 89](#) .
- Connect the connectors -item A- ⇒ [Item A \(page 98\)](#) and -item B- ⇒ [Item B \(page 98\)](#) .
- Engage the wiring harness -3- in the bracket -7- -arrow B-.
- Attach the selector lever -2- to the selector shaft -6-.

When doing this, make sure the pin on the selector lever -2- engages into the slider -1- -arrow A-. The slider must be positioned accordingly if necessary.

- Install the washer -5- and nut -4- on the selector shaft -6-.

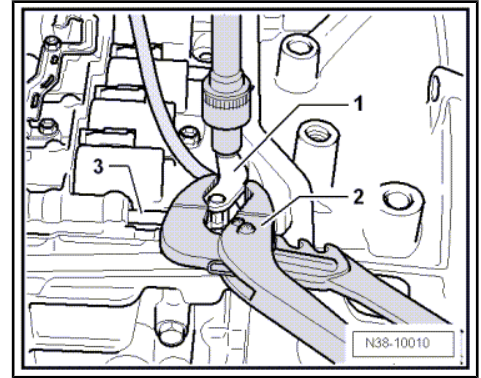
The collar on the nut must always face the washer and fit into the washer when the nut is tightened.

The wiring harness must be routed underneath the selector shaft lever.

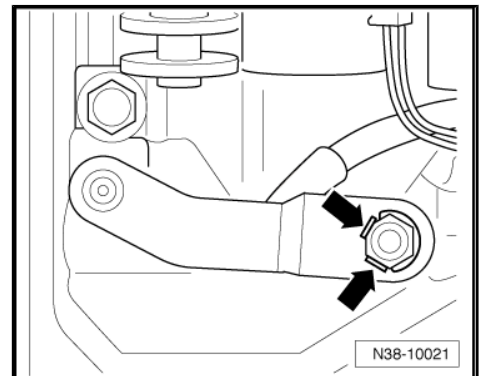




- Tighten the nut on the selector lever -1-. Refer to ➤ [page 89](#) .
- When doing this, hold the selector lever -1- secure with pliers -2- so that it does not turn when removing the Multifunction Transmission Range Switch - F125- .
- Make sure the slide -3- on the valve body in which the shift lever engages is not damaged.



- Bend up the locking plate at the nuts -arrows-, if equipped.
- Install the ATF strainer. Refer to ➤ [“1.2 ATF Strainer, Removing and Installing”, page 86](#) .
- Install the ATF pan. Refer to ➤ [“1.1 Oil Pan, Removing and Installing”, page 84](#) .
- Connect the battery Ground (GND) cable. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Fill the ATF and check the level. Refer to ➤ [“7 Automatic Transmission Fluid”, page 73](#) .
- Connect, for example the Vehicle Diagnostic Tester and select “function/component selection”.
- Press “drive (Repair Groups 01; 10 through 26 and 28 through 39)”.
- After that “6-speed automatic transmission 09G”.
- Press “01 - OBD”.
- Press “Functions”.
- Press “basic setting”.



Tightening Specifications

- ◆ Refer to ➤ [“2.1 Overview - Valve Body”, page 87](#)

2.3 Wire Routing, Connectors and Bracket on Valve Body

In this chapter the information regarding working on the solenoid valves is shown in illustrations.

Wiring Routing and Connectors



Note

Mark the solenoid valve and/or sensor and its connector before disconnecting them.



1 - Solenoid Valve 4 - N91-

- ❑ Wiring colors to the valve: green/brown

2 - Solenoid Valve 6 - N93-

- ❑ Wiring colors to the valve: green/gray

3 - Solenoid Valve 5 - N92-

- ❑ Wiring colors to the valve: yellow/purple

4 - Solenoid Valve 9 - N282-

- ❑ Wiring colors to the valve: red/blue

5 - Solenoid Valve 10 - N283-

- ❑ Wiring colors to the valve: white/black

6 - Solenoid Valve 3 - N90-

- ❑ Wiring colors to the valve: green/blue

7 - Solenoid Valve 1 - N88-

- ❑ Wire color to the valve: white

8 - Solenoid Valve 2 - N89-

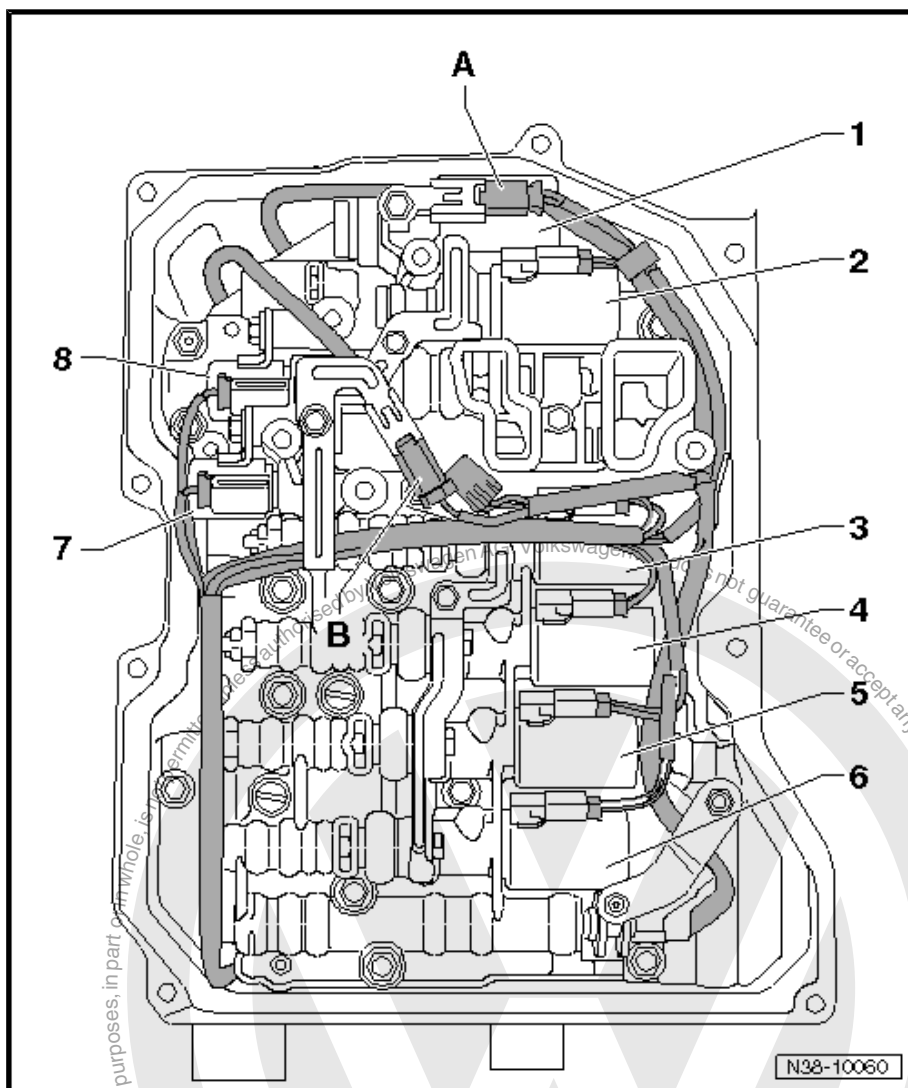
- ❑ Wire color to the valve: black

A - Transmission Output Speed Sensor - G195- Connector

- ❑ Wire color to the sensor: blue/orange

B - Transmission Input Speed Sensor - G182- Connector

- ❑ Wire colors to the sensor: white/red



Bracket for Connectors, Securing the Wires



Note

The -arrows- in the illustration point to the wire brackets or the secured wires.





1 - Bracket for the Transmission Output Speed Sensor - G195- Connector

- ❑ Tightening specification. Refer to [⇒ page 89](#) .

2 - Bracket for the Transmission Input Speed Sensor - G182- Connector

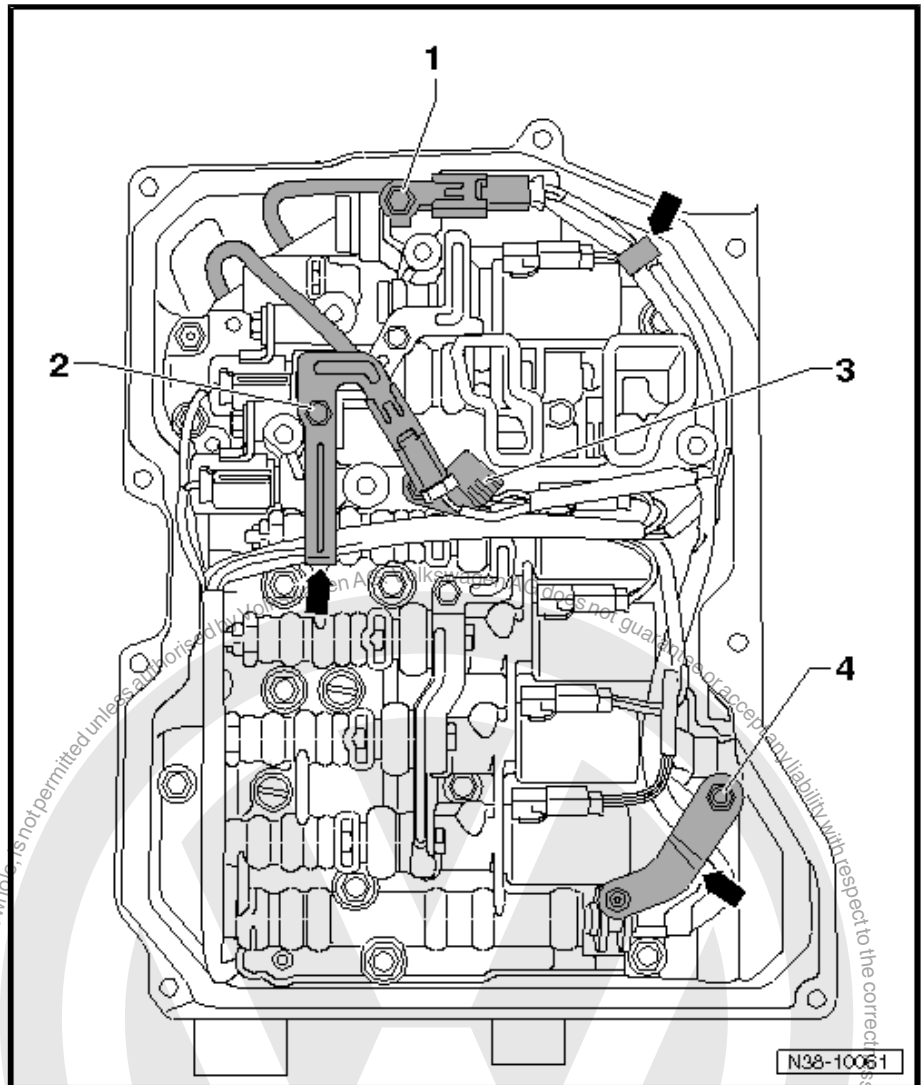
- ❑ Tightening specification. Refer to [⇒ page 89](#) .

3 - Transmission Fluid Temperature Sensor - G93-

- ❑ Wire colors on the sensor: orange/orange

4 - Selector Lever

Tightening specification. Refer to [⇒ page 89](#) .



2.4 Solenoid Valve and Sensor Wiring Harness, Removing and Installing

[⇒ "2.4.1 Wiring Harness, Removing and Installing, Solenoid Valves", page 99](#)

[⇒ "2.4.2 Wiring Harness, Removing and Installing, Sensors", page 100](#)

2.4.1 Wiring Harness, Removing and Installing, Solenoid Valves



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

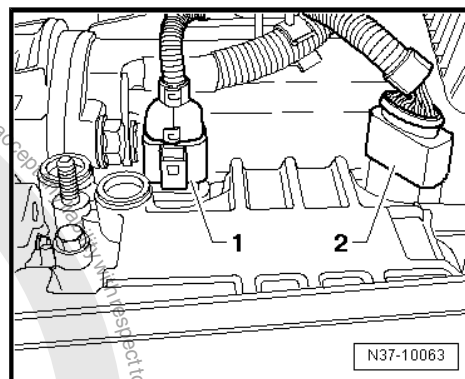
- ◆ O-ring - 14-Pin Transmission Connector
- Drain the ATF. Refer to [⇒ "7.2 ATF, Draining and Filling", page 76](#) .



- Remove the ATF pan. Refer to
⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#) .
- Remove the ATF strainer. Refer to
⇒ [“1.2 ATF Strainer, Removing and Installing”, page 86](#) .
- Remove the valve body. Refer to
⇒ [“2.2 Valve Body, Removing and Installing”, page 90](#) .
- Disconnect the solenoid valve connector -2- from the transmission connector.
- Remove the bolt from the 14-pin transmission connector.
- Remove the transmission connector with the wiring harness outward from the transmission housing.

Install in reverse order of removal. Note the following:

- Replace the O-ring on the transmission connector.
- Coat the O-ring with ATF.
- Push the transmission connector with a new O-ring all the way into the transmission.
- Tighten the bolt for the 14-pin transmission connector. For the correct tightening specification. Refer to ⇒ [page 89](#) .
- Install the valve body. Refer to ⇒ [page 95](#) .
- Install the ATF strainer. Refer to
⇒ [“1.2 ATF Strainer, Removing and Installing”, page 86](#) .
- Install the ATF pan. Refer to
⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#) .
- Fill the ATF and check the level. Refer to
⇒ [“7 Automatic Transmission Fluid”, page 73](#) .



2.4.2 Wiring Harness, Removing and Installing, Sensors



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

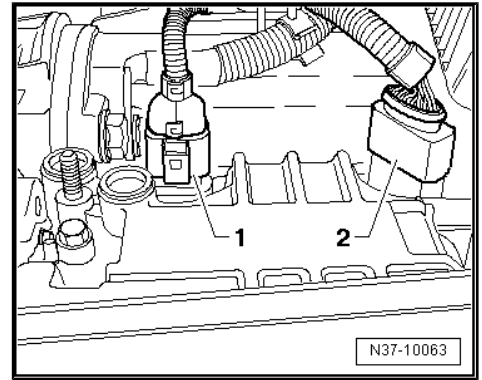
- ◆ O-ring - 8-Pin Transmission Connector
- Drain the ATF. Refer to
⇒ [“7.2 ATF, Draining and Filling”, page 76](#) .
- Remove the ATF pan. Refer to
⇒ [“1.1 Oil Pan, Removing and Installing”, page 84](#) .
- Remove the ATF strainer. Refer to
⇒ [“1.2 ATF Strainer, Removing and Installing”, page 86](#) .
- Remove the valve body. Refer to
⇒ [“2.2 Valve Body, Removing and Installing”, page 90](#) .



- Disconnect the sensor connector -1- from the transmission connector.
- Remove the bolt from the 8-pin transmission connector.
- Remove the transmission connector with the wiring harness outward from the transmission housing.

Install in reverse order of removal. Note the following:

- Coat the O-ring with ATF.
- Push the transmission connector with a new O-ring all the way into the transmission.
- Tighten the bolt for the 8-pin transmission connector. For the correct tightening specification. Refer to [⇒ page 89](#) .
- Install the valve body. Refer to [⇒ page 95](#) .
- Install the ATF strainer. Refer to [⇒ "1.2 ATF Strainer, Removing and Installing", page 86](#) .
- Install the ATF pan. Refer to [⇒ "1.1 Oil Pan, Removing and Installing", page 84](#) .
- Fill the ATF and check the level. Refer to [⇒ "7 Automatic Transmission Fluid", page 73](#) .



2.5 Transmission Input Speed Sensor - G182- , Removing and Installing

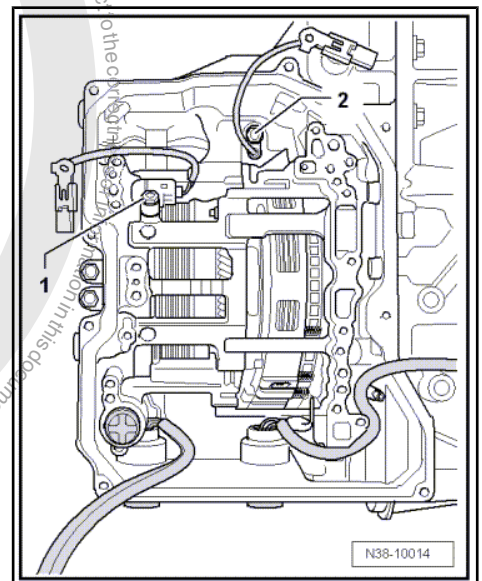
- Remove the valve body. Refer to [⇒ "2.2 Valve Body, Removing and Installing", page 90](#) .
- Remove the bolt -1- from the Transmission Input Speed Sensor - G182- .
- Remove the Transmission Input Speed Sensor - G182- from the transmission housing.

Install in reverse order of removal. Note the following:

- Push the Transmission Input Speed Sensor - G182- all the way into the transmission housing.
- Install the bolt -1- for the Transmission Input Speed Sensor - G182- . For the correct tightening specification. Refer to [⇒ page 89](#) .
- Install the valve body. Refer to [⇒ page 95](#) .

Tightening Specifications

- ◆ Refer to [⇒ "2.1 Overview - Valve Body", page 87](#)



2.6 Transmission Output Speed Sensor - G195- , Removing and Installing

- Remove the valve body. Refer to [⇒ "2.2 Valve Body, Removing and Installing", page 90](#) .



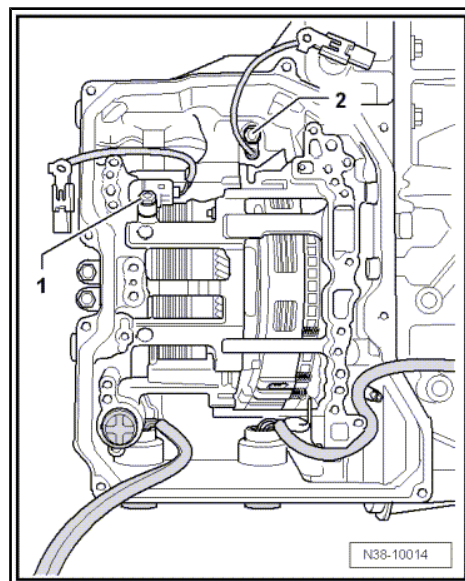
- Remove the bolt -2- from the Transmission Output Speed Sensor - G195- .
- Remove the Transmission Output Speed Sensor - G195- from the transmission housing.

Install in reverse order of removal. Note the following:

- Push the Transmission Output Speed Sensor - G195- all the way into the transmission housing.
- Install the bolt -2- for the Transmission Output Speed Sensor - G195- . Tightening specification. Refer to ➔ [page 89](#) .
- Install the valve body. Refer to ➔ [page 95](#) .

Tightening Specifications

- ◆ Refer to ➔ [“2.1 Overview - Valve Body”, page 87](#)

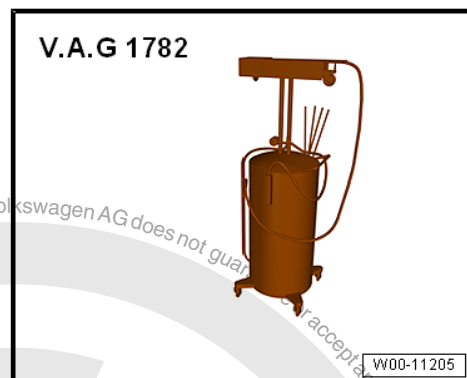




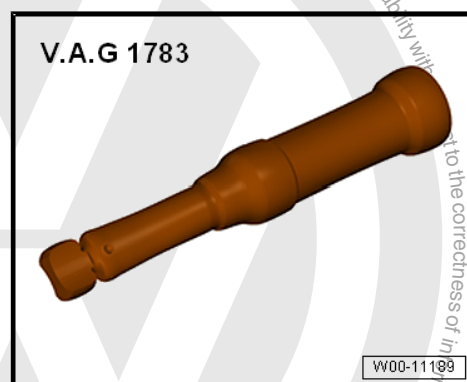
3 Special Tools

Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-



- ◆ Torque Wrench 1783 - 2-10Nm - VAG1783-



- ◆ Not Illustrated:
- ◆ Used Oil Collection and Extraction Unit - SMN372500- or Drip Tray - VAS6208-



39 – Final Drive, Differential

1 Seals

⇒ [“1.1 Component Location Overview - Seals”, page 104](#)

⇒ [“1.2 Left Seal, Replacing”, page 104](#)

⇒ [“1.3 Right Seal, Replacing”, page 106](#)

1.1 Component Location Overview - Seals

1 - Torque Converter Seal

- ❑ Replacing. Refer to
⇒ [“1.5 Torque Converter Seal, Removing and Installing”, page 15](#) .

2 - Right Seal

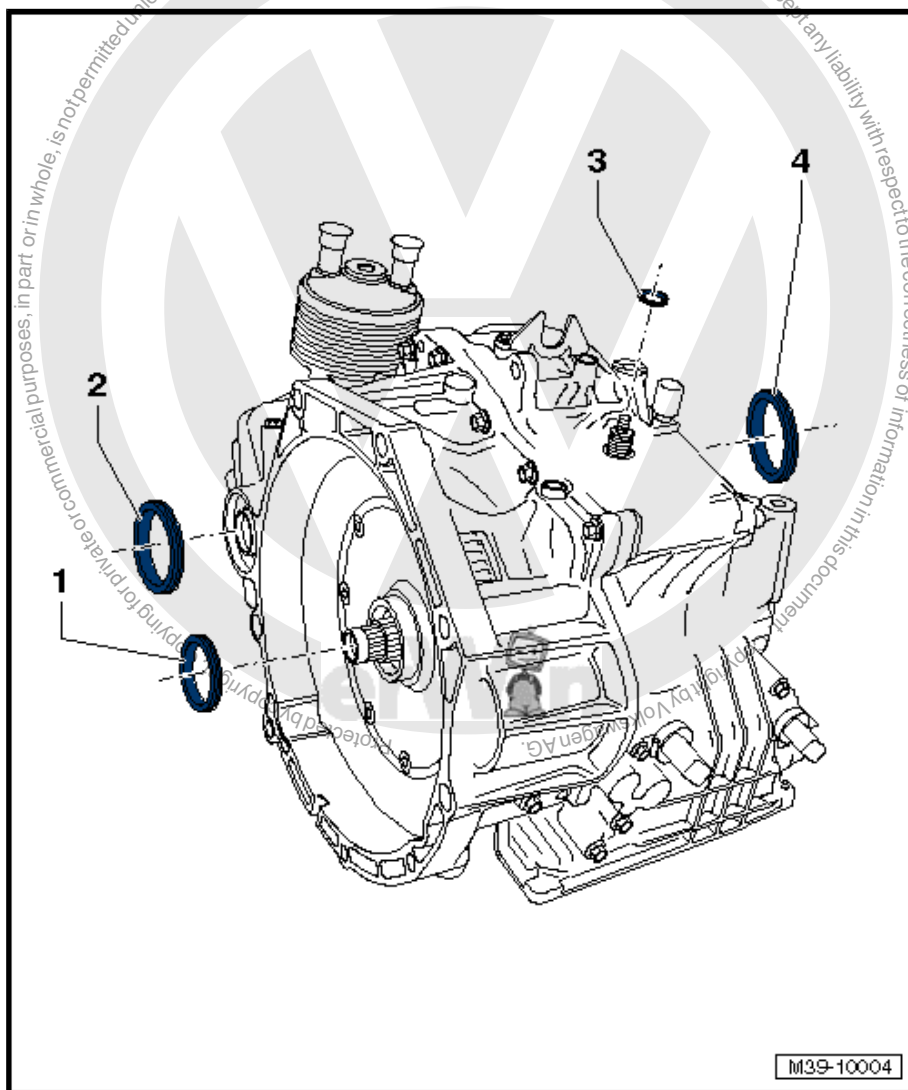
- ❑ For the right flange shaft
- ❑ Replacing. Refer to
⇒ [“1.3 Right Seal, Replacing”, page 106](#) .

3 - Gearshift Shaft Seal

- ❑ Replacing. Refer to
⇒ [“2.11 Selector Shaft Seal, Replacing”, page 41](#) .

4 - Left Seal

- ❑ For the left flange shaft
- ❑ Replacing. Refer to
⇒ [“1.2 Left Seal, Replacing”, page 104](#) .



1.2 Left Seal, Replacing

Special tools and workshop equipment required

- ◆ Shop Crane - Drip Tray - VAS6208-
- ◆ Puller - Unit Injector - T10055-
- ◆ Seal Installer - Flange Shaft Oil Seal LH - T10176-



Caution

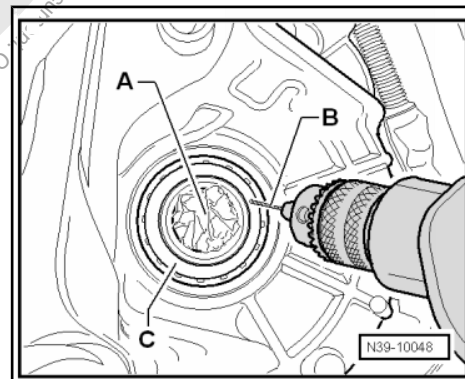
This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

◆ Seal - Left

Removing

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the left drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .
- Place the Drip Tray for example Shop Crane - Drip Tray - VAS6208- under the transmission.
- Seal off the opening in the transmission for the drive axle with a clean cloth -A-.
- Carefully drill a 2 to 4 mm hole -B- into the outer metal ring -C- in the seal.
- Grease the drill -B- so that the shavings stick to the drill bit.

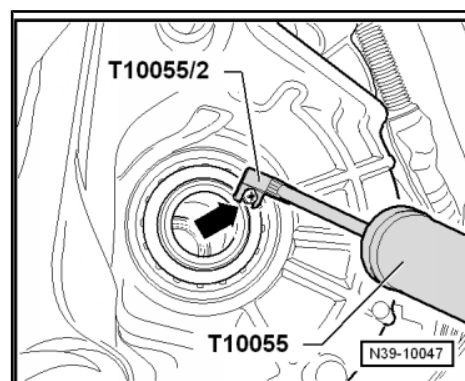


Caution

There is a risk of damage to the rear bearing seal.

- ◆ ***Only drill the seal metal ring.***
- ◆ ***Do not install the screw too deep.***

- Install a 4 mm screw into the drilled hole in the seal -arrow-.
- Remove the seal with the Puller - Unit Injector - T10055- and the Puller - Unit Injector - Adapter 2 - T10055/2- .



Caution

Danger of causing damage to the transmission.

- ◆ ***Drill shavings must not get into the transmission or into the opening for the driveshaft. Vacuum up any shavings if necessary.***



Note

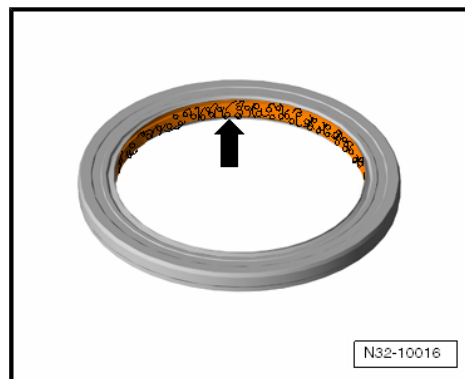
- ◆ ***Be careful not to install the screw too deep otherwise the bearing underneath will get damaged.***
- ◆ ***Remove the cloth and carefully clean the transmission and the opening for the drive axle.***
- ◆ ***If only metal ring of seal could be removed, carefully pry out remaining seal using screwdriver.***



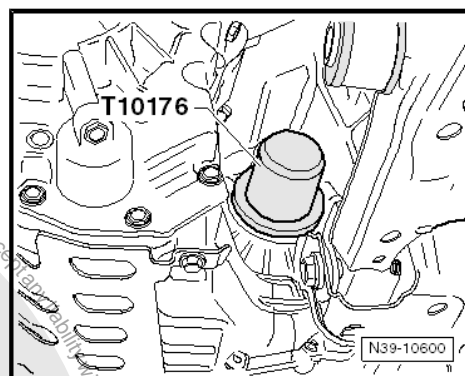
Installing

Install in reverse order of removal. Note the following:

- Coat the outer circumference and the sealing lips -arrow- on the new seal with ATF.
- Installed position: The open side of seal faces the transmission.



- Install the new seal using Seal Installer - Selector Shaft Oil Seal - T10176-. Do not tilt the seal.
- Install the drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .
- Check the ATF level and add if necessary. Refer to ⇒ [“7 Automatic Transmission Fluid”, page 73](#) .
- Install the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .



1.3 Right Seal, Replacing

Special tools and workshop equipment required

- ◆ Puller - Unit Injector - T10055-
- ◆ Seal Installer - Flange Shaft Oil Seal RH - T10177-
- ◆ Shop Crane - Drip Tray - VAS6208-



Caution

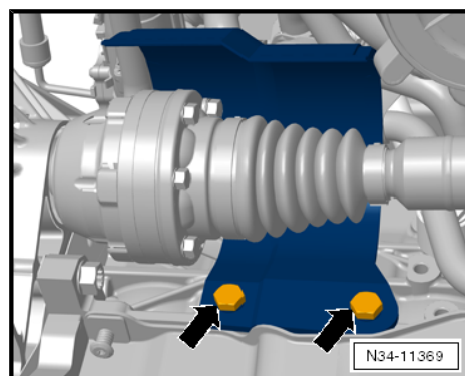
This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Seal - Right

Removing

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the heat shield (if equipped) above the right drive axle -arrows-.
- Remove the right drive axle from the transmission. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .
- Tie the drive axle as high up as possible. Be careful not to damage the paint on the driveshaft.
- Place the Drip Tray for example Shop Crane - Drip Tray - VAS6208- under the transmission.





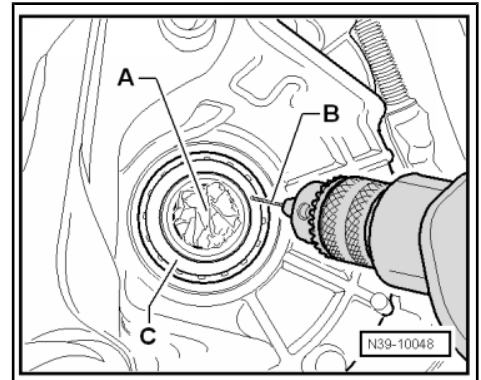
- Seal off the opening in the transmission for the driveshaft with a clean cloth -A-.
- Carefully drill a 2 to 4 mm hole -B- into the outer metal ring -C- in the seal.
- Grease the drill -B- so that the shavings stick to the drill bit.



Caution

There is a risk of damage to the rear bearing seal.

- ◆ *Only drill the seal metal ring.*
- ◆ *Do not install the screw too deep.*



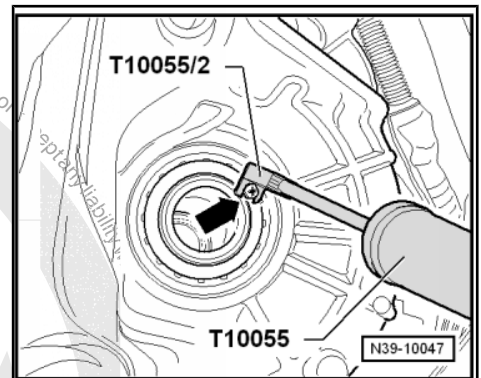
- Install a 4 mm screw into the drilled hole in the seal -arrow-.
- Remove the seal with the Puller - Unit Injector - T10055- and the Puller - Unit Injector - Adapter 2 - T10055/2- .



Caution

Danger of causing damage to the transmission.

- ◆ *Drill shavings must not get into the transmission or into the opening for the driveshaft. Vacuum up any shavings if necessary.*



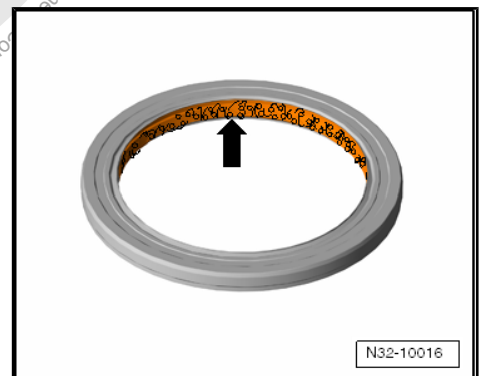
Note

- ◆ *Be careful not to install the screw too deep otherwise the bearing underneath will get damaged.*
- ◆ *Remove the cloth and carefully clean the transmission and the opening for the drives axle.*
- ◆ *If only metal ring of seal could be removed, carefully pry out remaining seal using screwdriver.*

Installing

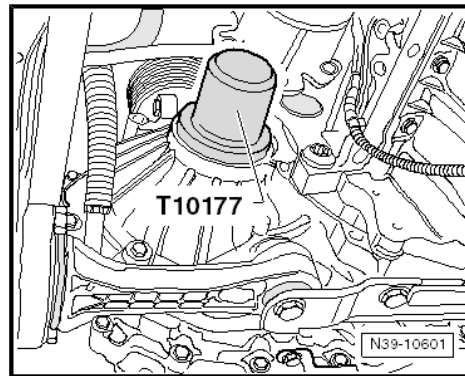
Install in reverse order of removal. Note the following:

- Coat the outer circumference and the sealing lips -arrow- on the new seal with ATF.
- Installed position: The open side of seal faces the transmission.





- Install the new seal using Seal Installer - Flange Shaft Oil Seal RH - T10177- . Do not tilt the seal.
- Mount the right drive axle to the transmission. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .
- Check the ATF level and add if necessary. Refer to ⇒ ["7 Automatic Transmission Fluid", page 73](#) .
- Install the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

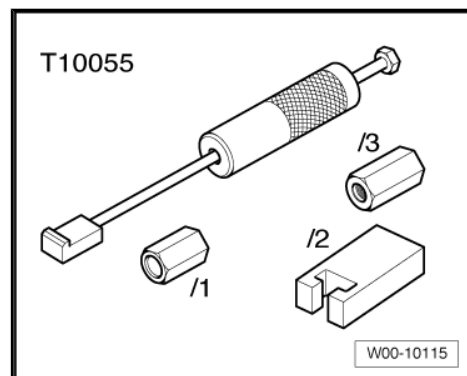




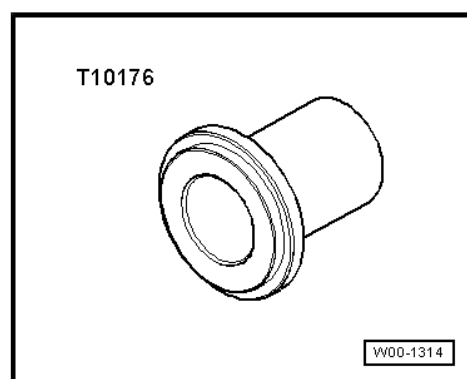
2 Special Tools

Special tools and workshop equipment required

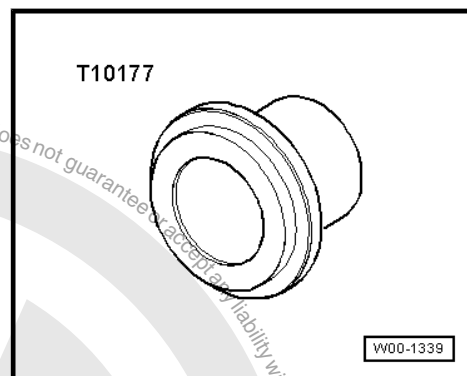
- ◆ Puller - Unit Injector - T10055-



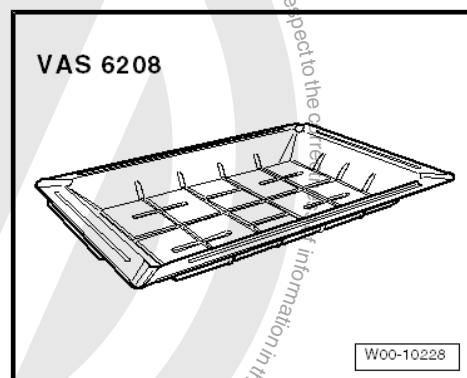
- ◆ Seal Installer - Flange Shaft Oil Seal LH - T10176-



- ◆ Seal Installer - Flange Shaft Oil Seal RH - T10177-



- ◆ Shop Crane - Drip Tray - VAS6208-





3 Revision History

DRUCK NUMBER: K005924072121

Fac- tory Edi- tion	Edit Edi- tion	Job Type	Fe ed- ba ck	Notes	Quality Checke d By
	08/06/2015	Ma- jor Edit	N/ A		Eric P.
	02/13/2015	Link Chec king	N/ A	updated ext-rl tags	Eric P.
	01/14/2015	Fac- tory Up- date	N/ A	BX5 added to Metadata	Eric P.
	6/12/2014	Fac- tory New	N/ A		Jim H.
	4/16/2014	Fac- tory New	N/ A		Jim H.

Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly; do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.
- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.