



27 – Battery, Starter, Generator, Cruise Control

1 Battery

(Edition 01.2016)

⇒ [“1.1 Battery Types”, page 1](#)

⇒ [“1.2 Battery, General Information”, page 1](#)

⇒ [“1.3 Overview - Battery”, page 2](#)

⇒ [“1.4 Battery, Removing and Installing”, page 4](#)

⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#)

⇒ [“1.6 Battery Tray, Removing and Installing”, page 11](#)

⇒ [“1.7 Battery, Checking”, page 13](#)

⇒ [“1.8 Battery, Charging”, page 13](#)

⇒ [“1.9 Ground Cable with Battery Monitoring Control Module J367, Removing and Installing”, page 13](#)

1.1 Battery Types

Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery, Checking; Different Types of Batteries, Checking .

1.2 Battery, General Information

⇒ [“1.2.1 Warnings and Safety Precautions”, page 1](#)

⇒ [“1.2.2 Battery Post/Terminal”, page 1](#)

⇒ [“1.2.3 Battery Recharging or Battery Jump Start Terminal, Vehicles with Start/Stop System”, page 1](#)

1.2.1 Warnings and Safety Precautions

Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery; Battery General Information.

1.2.2 Battery Post/Terminal

Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery; Battery General Information .

1.2.3 Battery Recharging or Battery Jump Start Terminal, Vehicles with Start/Stop System



WARNING

Risk of injury. Pay attention to all warnings and safety precautions.

Refer to

⇒ [“1.2.1 Warnings and Safety Precautions”, page 1](#) .

Information regarding Recharging the Battery or Using the Battery Jump Start Terminal on Vehicles with Start/Stop

Connect the positive terminal first and then the body ground using a charge cable. This ensures that the Battery Monitoring Control Module - J367- is not bridged. Charging the battery directly on the negative terminal bridges the Battery Monitoring Control Module - J367- and prevents the Battery Monitoring Control Module - J367- from recording the battery data during the charging proc-



ess. The values stored in the Data Bus On Board Diagnostic Interface - J533- regarding the battery condition no longer match the values for the charged Battery - A- .

1.3 Overview - Battery

⇒ ["1.3.1 Overview - Battery A Inside Engine Compartment", page 2](#)

⇒ ["1.3.2 Overview - Battery A in Luggage Compartment, High-Voltage Vehicle", page 3](#)

1.3.1 Overview - Battery - A- Inside Engine Compartment

1 - Battery - A-

- ❑ Removing and installing. Refer to ⇒ ["1.4.1 Battery A In Engine Compartment, Removing and Installing", page 4](#) .
- ❑ Disconnecting. Refer to ⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#) .
- ❑ Connecting. Refer to ⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#) .

2 - Battery Positive Cable Terminal Clamp

- ❑ Battery terminal threaded connection. Refer to ⇒ ["1.2.2 Battery Post/Terminal", page 1](#) .

3 - Nut

- ❑ 6 Nm

4 - Positive Cable

5 - Bolt

- ❑ 20 Nm

6 - Clamping Plate

7 - Connector

- ❑ On Battery Monitoring Control Module - J367-

8 - Ground Cable

9 - Battery Monitoring Control Module - J367-

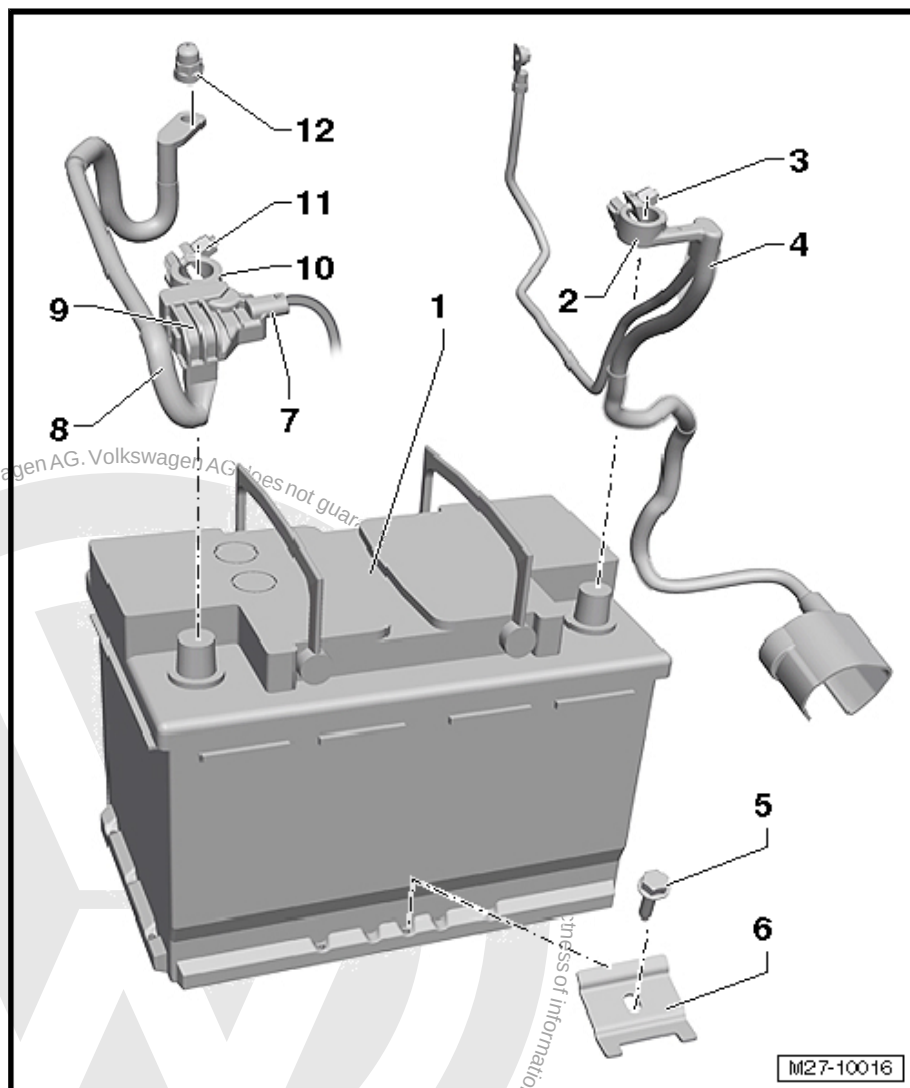
- ❑ Replacing and Starting. Refer to ⇒ ["1.9.2 Battery Monitoring Control Module J367, Replacing and Starting", page 13](#)
- ❑ Removing and installing. Refer to ⇒ ["1.9.3 Battery Monitoring Control Module J367 in Engine Compartment, Removing and Installing", page 14](#) .

10 - Battery Ground Cable Terminal Clamp

- ❑ Battery terminal threaded connection. Refer to ⇒ ["1.2.2 Battery Post/Terminal", page 1](#) .

11 - Nut

- ❑ 6 Nm





12 - Nut

- ☐ 20 Nm

No Illustration

- ◆ Battery tray bolts: 9 Nm

1.3.2 Overview - Battery - A- in Luggage Compartment, High-Voltage Vehicle

1 - Nut

- ☐ 6 Nm

2 - Nut

- ☐ 6 Nm

3 - Fuse Panel

- ☐ Removing and installing. Refer to ["1.5 Fuse Panel on Battery A, Removing and Installing, High-Voltage Vehicle", page 317](#).

4 - Battery Positive Cable Terminal Clamp

- ☐ Battery terminal threaded connection. Refer to ["1.2.2 Battery Post/Terminal", page 1](#).

5 - Battery - A-

- ☐ Removing and installing. Refer to ["1.4.2 Battery A in Luggage Compartment, Removing and Installing, High-Voltage Vehicle", page 5](#).
- ☐ Disconnecting. Refer to ["1.5.3 Battery A in Luggage Compartment, Disconnecting, High-Voltage Vehicle", page 9](#).
- ☐ Connecting. Refer to ["1.5.4 Battery A in Luggage Compartment, Connecting, High-Voltage Vehicle", page 10](#).

6 - Clamping Plate

7 - Bolt

- ☐ 20 Nm

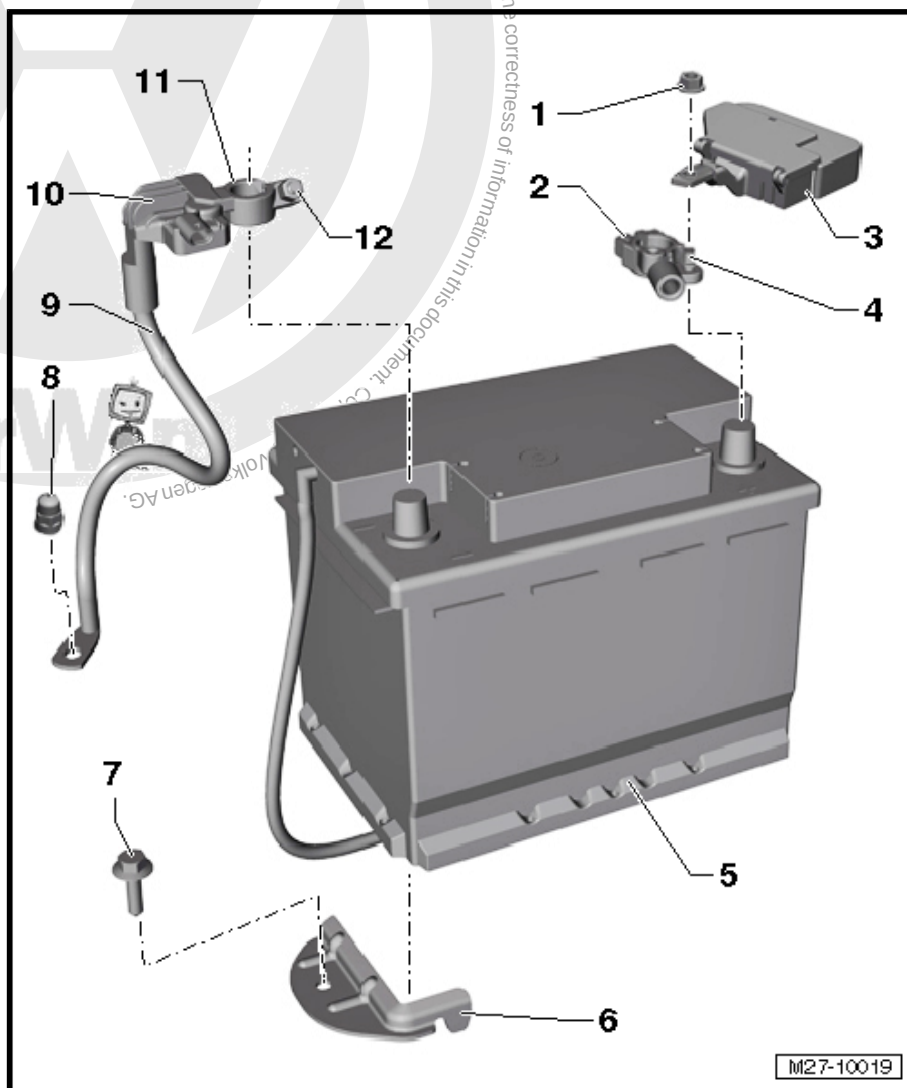
8 - Nut

- ☐ 20 Nm

9 - Ground Cable

10 - Battery Monitoring Control Module - J367-

- ☐ Replacing and Starting. Refer to ["1.9.2 Battery Monitoring Control Module J367, Replacing and Starting", page 13](#)





- ❑ Removing and installing. Refer to
⇒ [“1.9.4 Battery Monitoring Control Module J367 in Luggage Compartment, Removing and Installing, High-Voltage Vehicle”, page 15](#).

11 - Battery Ground Cable Terminal Clamp

- ❑ Battery terminal threaded connection. Refer to ⇒ [“1.2.2 Battery Post/Terminal”, page 1](#).

12 - Nut

- ❑ 6 Nm

No Illustration

- ◆ Battery tray bolts: 9 Nm

1.4 Battery, Removing and Installing

⇒ [“1.4.1 Battery A In Engine Compartment, Removing and Installing”, page 4](#)

⇒ [“1.4.2 Battery A in Luggage Compartment, Removing and Installing, High-Voltage Vehicle”, page 5](#)

⇒ [“1.4.3 Battery A, Adapting”, page 6](#)

1.4.1 Battery - A- In Engine Compartment, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#).*

Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#).

Vehicles with Diesel Engine

- Remove the air filter housing and the connecting pipe. Refer to ⇒ Rep. Gr. 23 ; Diesel Direct Injection System; Overview - Air Filter .

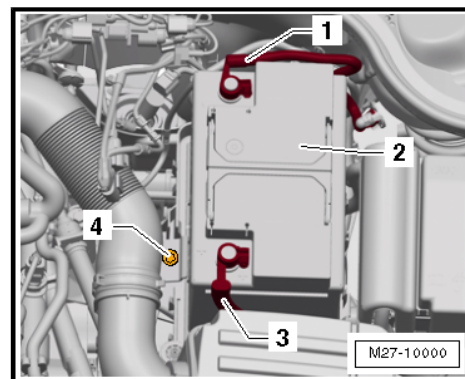
All Vehicles

- Remove the battery jacket -1-.





- Remove the bolt -4- and then remove the clamping plate.



- Remove the Battery - A- -2-.

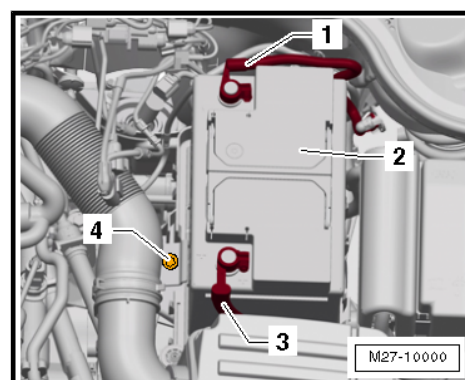
Installing



Caution

If Battery - A- is not secured properly, the following risks can occur:

- ◆ *Shortened service life due to vibration damage (explosion hazard).*
- ◆ *If the Battery - A- is not secured properly, the plates within the Battery - A- can be damaged.*
- ◆ *Damage to the battery housing caused by bracket (possible electrolyte leakage, high subsequent costs).*
- ◆ *Inadequate crash safety.*



Pay attention to the replacement part identification when replacing the Battery - A- , especially for vehicles with the Start/Stop System. Refer to the Parts Catalog.

Install in reverse order of removal. Note the following:

- Make sure the Battery - A- is secure after installing it.
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .
- After replacing, the Battery - A- must be adapted. Refer to
⇒ [“1.4.3 Battery A , Adapting”, page 6](#) .

Tightening Specifications

- ◆ Refer to
⇒ [“1.3.1 Overview - Battery A Inside Engine Compartment”, page 2](#)

1.4.2 Battery - A- in Luggage Compartment, Removing and Installing, High-Voltage Vehicle

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ➔ **"1.5 Battery, Disconnecting and Connecting", page 7** .*

Removing

- Disconnect the Battery - A- . Refer to ➔ **"1.5.3 Battery A in Luggage Compartment, Disconnecting, High-Voltage Vehicle", page 9** .
- Remove the bolt -arrow- and then remove the clamping plate -1-.
- Remove the Battery - A- -2-.

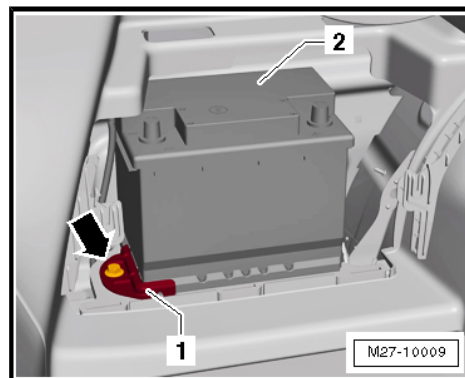
Installing



Caution

If Battery - A- is not secured properly, the following risks can occur:

- ◆ *Shortened service life due to vibration damage (explosion hazard).*
- ◆ *If the Battery - A- is not secured properly, the plates within the Battery - A- can be damaged.*
- ◆ *Damage to the battery housing caused by bracket (possible electrolyte leakage, high subsequent costs).*
- ◆ *Inadequate crash safety.*



Install in reverse order of removal. Note the following:

- Make sure the Battery - A- is secure after installing it.
- Connect the Battery - A- . Refer to ➔ **"1.5.4 Battery A in Luggage Compartment, Connecting, High-Voltage Vehicle", page 10** .
- After replacing, the Battery - A- must be adapted. Refer to ➔ **"1.4.3 Battery A, Adapting", page 6** .

Tightening Specifications

- ◆ Refer to ➔ **"1.3.2 Overview - Battery A in Luggage Compartment, High-Voltage Vehicle", page 3**

1.4.3 Battery - A- , Adapting

If the Battery - A- has been replaced, an adaption must be performed. Refer to Vehicle Diagnostic Tester

Procedure

- Connect the Vehicle Diagnostic Tester .
- Select the **Guided Fault Finding** mode.
- Use the **GO TO** button to select the "function/component selection" and the following menu options one after the other:
 - ◆ Body
 - ◆ Electrical Equipment



- ◆ 01 - OBD-capable systems
- ◆ 61 - battery monitoring
- ◆ Battery monitoring functions
- ◆ Battery parameterization adaptation

1.5 Battery, Disconnecting and Connecting

⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#)

⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#)

⇒ ["1.5.3 Battery A in Luggage Compartment, Disconnecting, High-Voltage Vehicle", page 9](#)

⇒ ["1.5.4 Battery A in Luggage Compartment, Connecting, High-Voltage Vehicle", page 10](#)

1.5.1 Battery - A- in Engine Compartment, Disconnecting



WARNING

Follow all safety precautions when working on pyrotechnic components:

- ◆ *When working on pyrotechnic components (airbag, belt tensioner), the Battery - A- must be disconnected with the ignition turned on, contrary to the following description. Refer to ⇒ Body Interior; Rep. Gr. 00; Safety Precautions; Safety Precautions for Pyrotechnic Components .*

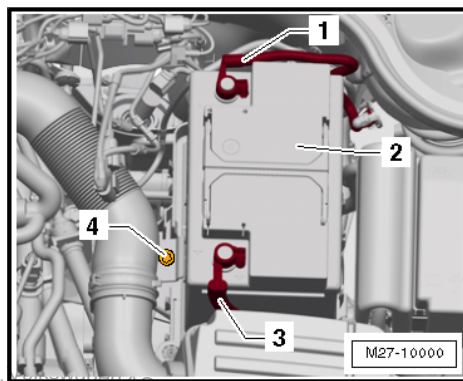
Disconnecting

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Open the battery jacket -1-.





- Disconnect the battery ground cable terminal clamp -1- from the battery negative terminal.



1.5.2 Battery - A- in Engine Compartment, Connecting



Caution

Pay attention to the information regarding the threaded connection for the battery terminals. Refer to ⇒ "1.2.2 Battery Post/Terminal", page 1.

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

After connecting the Battery - A- and switching the ignition on, the ASR/ESP Indicator Lamp - K155- lights up continuously. The ASR/ESP Indicator Lamp - K155- goes out automatically if a straight distance is driven at 15 to 20 km/h. This reactivates the Steering Angle Sensor - G85- .

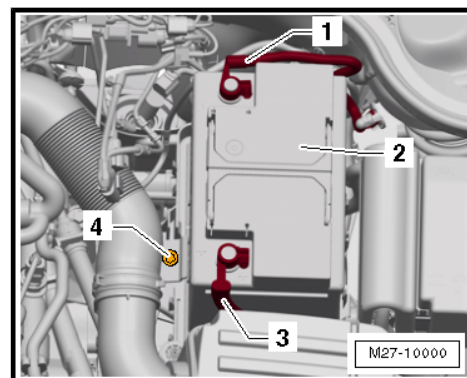


Connecting

- Attach the battery ground cable terminal clamp -1- to the negative terminal on the Battery - A- -2- and then tighten the nut to the tightening specification. Refer to [⇒ "1.3.1 Overview - Battery A Inside Engine Compartment", page 2](#).
- Close the battery jacket.
- Perform the work steps listed in the table.

Work Steps Required after Connecting the Battery - A- .

Steps	Performed
Switch the ignition on using the ignition key and switch it off again.	
Read the DTC memory. Refer to Vehicle Diagnostic Tester .	
Clock: Check and reset to local time.	
Power window regulator: Open and close all of the windows. Window regulator convenience closing: The window must close all the way without having to hold the switch.	
Perform function test of all electrical consumers.	



The table can be printed out.

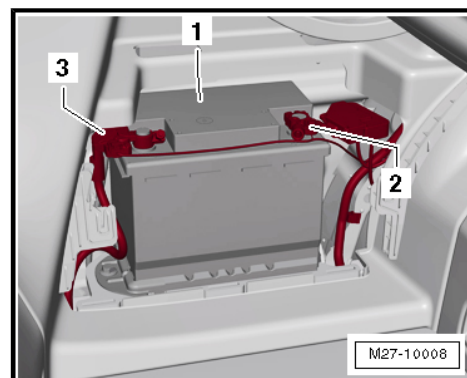
1.5.3 Battery - A- in Luggage Compartment, Disconnecting, High-Voltage Vehicle

Caution

- ◆ *Make sure the electrical system of the vehicle is always protected by disconnecting the Battery - A- before working on the electrical system.*
- ◆ *Follow all warning messages and Safety Precautions. Refer to [⇒ "1.2.1 Warnings and Safety Precautions", page 1](#).*

Disconnecting

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Disconnect the battery ground cable terminal clamp -3- on the battery negative terminal.





1.5.4 Battery - A- in Luggage Compartment, Connecting, High-Voltage Vehicle



Caution

Pay attention to the information regarding the threaded connection for the battery terminals. Refer to ⇒ "1.2.2 Battery Post/Terminal", page 1.

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

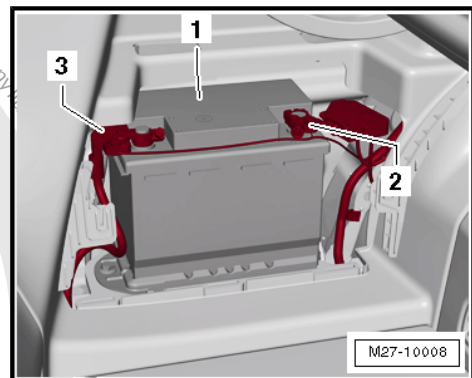
After connecting the Battery - A- and switching the ignition on, the ASR/ESP Indicator Lamp - K155- lights up continuously. The ASR/ESP Indicator Lamp - K155- goes out automatically if a straight distance is driven at 15 to 20 km/h. This reactivates the Steering Angle Sensor - G85-.

Connecting

- Attach the battery ground cable terminal clamp -3- to the negative terminal on the Battery - A- -1- and then tighten the nut to the tightening specification. Refer to ⇒ "1.3.2 Overview - Battery A in Luggage Compartment, High-Voltage Vehicle", page 3.
- Perform the work steps listed in the table.

Work Steps Required after Connecting the Battery - A- .

Steps	Performed
Switch the ignition on using the ignition key and switch it off again.	
Read the DTC memory using. Refer to Vehicle Diagnostic Tester .	
Clock: Check and reset to local time.	
Power window regulator: Open and close all of the windows. Window regulator convenience closing: The window must close all the way without having to hold the switch.	
Perform function test of all electrical consumers.	



The table can be printed out.



1.6 Battery Tray, Removing and Installing

⇒ [“1.6.1 Battery Tray in Engine Compartment, Removing and Installing”, page 11](#)

⇒ [“1.6.2 Battery Tray in Luggage Compartment, Removing and Installing, High-Voltage Vehicle”, page 12](#)

1.6.1 Battery Tray in Engine Compartment, Removing and Installing



WARNING

Risk of injury. Pay attention to all warnings and safety precautions.

Refer to “1.2.1 Warnings and Safety Precautions”, page 1.

Removing

- Remove the Battery -A-. Refer to ⇒ [“1.4.1 Battery A In Engine Compartment, Removing and Installing”, page 4](#).
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Diesel Direct Injection System; Overview - Air Filter or ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Remove the bolts -2- from the battery tray -1- and then remove the battery tray -1-.

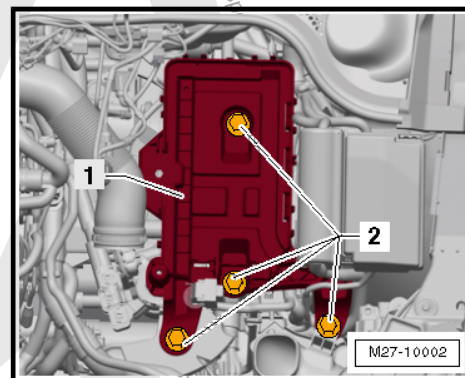
Installing



Caution

If Battery - A- is not secured properly, the following risks can occur:

- ◆ *Shortened service life due to vibration damage (explosion hazard).*
- ◆ *If the Battery -A- is not secured properly, the plates within the Battery - A- can be damaged.*
- ◆ *Damage to the battery housing caused by bracket (possible electrolyte leakage, high subsequent costs).*
- ◆ *Inadequate crash safety.*



Install in reverse order of removal. Note the following:

- Install the Battery - A- . Refer to ⇒ [“1.4.1 Battery A In Engine Compartment, Removing and Installing”, page 4](#) .

Tightening Specifications

- ◆ Refer to ⇒ [“1.3.1 Overview - Battery A Inside Engine Compartment”, page 2](#)



1.6.2 Battery Tray in Luggage Compartment, Removing and Installing, High-Voltage Vehicle



WARNING

Risk of injury. Pay attention to all warnings and safety precautions.
Refer to
⇒ "1.2.1 Warnings and Safety Precautions", page 1.

Removing

- Remove the Battery - A- . Refer to
⇒ ["1.4.2 Battery A in Luggage Compartment, Removing and Installing, High-Voltage Vehicle", page 5](#) .
- Remove the bolts -arrows- from the battery tray -1- and then remove the battery tray -1-.

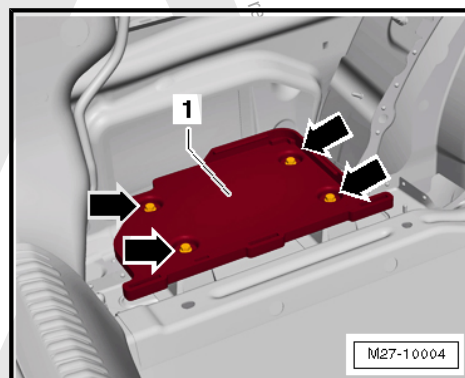
Installing



Caution

If Battery - A- is not secured properly, the following risks can occur:

- ◆ **Shortened service life due to vibration damage (explosion hazard).**
- ◆ **If the Battery - A- is not secured properly, the plates within the Battery - A- can be damaged.**
- ◆ **Damage to the battery housing caused by bracket (possible electrolyte leakage, high subsequent costs).**
- ◆ **Inadequate crash safety.**



Install in reverse order of removal. Note the following:

- Install the Battery - A- . Refer to
⇒ ["1.4.2 Battery A in Luggage Compartment, Removing and Installing, High-Voltage Vehicle", page 5](#) .

Tightening Specifications

- ◆ Refer to
⇒ ["1.3.2 Overview - Battery A in Luggage Compartment, High-Voltage Vehicle", page 3](#)



1.7 Battery, Checking

Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery; Battery, Checking .

1.8 Battery, Charging

Refer to ⇒ Electrical Equipment General Information; Rep. Gr. 27 ; Battery; Battery, Charging .

1.9 Ground Cable with Battery Monitoring Control Module - J367- , Removing and Installing

⇒ ["1.9.1 Battery Monitoring Control Module J367 ", page 13](#)

⇒ ["1.9.2 Battery Monitoring Control Module J367 , Replacing and Starting", page 13](#)

⇒ ["1.9.3 Battery Monitoring Control Module J367 in Engine Compartment, Removing and Installing", page 14](#)

⇒ ["1.9.4 Battery Monitoring Control Module J367 in Luggage Compartment, Removing and Installing, High-Voltage Vehicle", page 15](#)

1.9.1 Battery Monitoring Control Module - J367-

The Battery Monitoring Control Module - J367- is installed for vehicles with the start/stop system.

The Battery Monitoring Control Module - J367- will be recognized during the battery charging process. The battery data for the battery charge is then compared with the values in the Data Bus on Board Diagnostic Interface - J533- .

Note the following When Charging or Using the Battery Jump Start Terminal on Vehicles with the Start/Stop System: Always First Connect the Charge Cable to the Positive Terminal and Then Connect the Body Ground.

Further information can be found in the Start/Stop System chapter. Refer to ⇒ ["5 Start/Stop System", page 92](#) .

1.9.2 Battery Monitoring Control Module - J367- , Replacing and Starting

The procedure for "replacing the battery monitoring control module" includes the following steps:

- ◆ If a new Battery Monitoring Control Module - J367- is installed in the vehicle, then the Battery Monitoring Control Module - J367- must be coded.
- ◆ Then the Battery Monitoring Control Module - J367- must be adapted.

The Procedure to "Replace the Battery Monitoring Control Module". Refer to Vehicle Diagnostic Tester in the "Guided Fault Finding" function.

Procedure

- Connect the Vehicle Diagnostic Tester .
- Select the **Guided Fault Finding** mode.
- Use the **GO TO** button to select the "function/component selection" and the following menu options one after the other:
- ◆ Body



- ◆ Electrical Equipment
- ◆ 01 - OBD-capable systems
- ◆ 61 - Battery regulation
- ◆ Battery regulation functions
- ◆ Replace control module

After the "Replace the Battery Monitoring Control Module" Procedure Occurs, the "Starting After Replacing" Procedure Must Be Performed.

Procedure

- Connect the Vehicle Diagnostic Tester .
- Select the **Guided Fault Finding** mode.
- Use the **GO TO** button to select the "function/component selection" and the following menu options one after the other:
 - ◆ Body
 - ◆ Electrical Equipment
 - ◆ 01 - OBD-capable systems
 - ◆ 61 - Battery regulation
 - ◆ Battery regulation functions
 - ◆ Starting after replacing

1.9.3 Battery Monitoring Control Module - J367- in Engine Compartment, Removing and Installing

The "replacing the battery monitoring control module" procedure must be performed each time before removing the Battery Monitoring Control Module - J367- to read the data stored in the Battery Monitoring Control Module - J367- . Refer to [⇒ "1.9.2 Battery Monitoring Control Module J367 , Replacing and Starting", page 13](#) .

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



Caution

Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to [⇒ "1.5 Battery, Disconnecting and Connecting", page 7](#) .

Removing

- Disconnect the Battery - A- . Refer to [⇒ "1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#) .



- Loosen the nut -4- a few turns and remove the battery ground cable terminal clamp and the Battery Monitoring Control Module - J367- -3- from the battery negative terminal.
- Release and disconnect the connector -5-.
- Free up the ground wire -1-.
- Remove the nut -2- and remove the ground cable with the Battery Monitoring Control Module - J367- -1- from the Battery - A- -6-.

Installing

Install in reverse order of removal. Note the following:

- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .

The “Start after replacing” procedure must be performed after installing the Battery Monitoring Control Module - J367- . Refer to
⇒ [“1.9.2 Battery Monitoring Control Module J367 , Replacing and Starting”, page 13](#) .

Tightening Specifications

- ◆ Refer to
⇒ [“1.3.1 Overview - Battery A Inside Engine Compartment”, page 2](#)

1.9.4 Battery Monitoring Control Module - J367- in Luggage Compartment, Removing and Installing, High-Voltage Vehicle

The “replacing the battery monitoring control module” procedure must be performed each time before removing the Battery Monitoring Control Module - J367- to read the data stored in the Battery Monitoring Control Module - J367- . Refer to
⇒ [“1.9.2 Battery Monitoring Control Module J367 , Replacing and Starting”, page 13](#) .

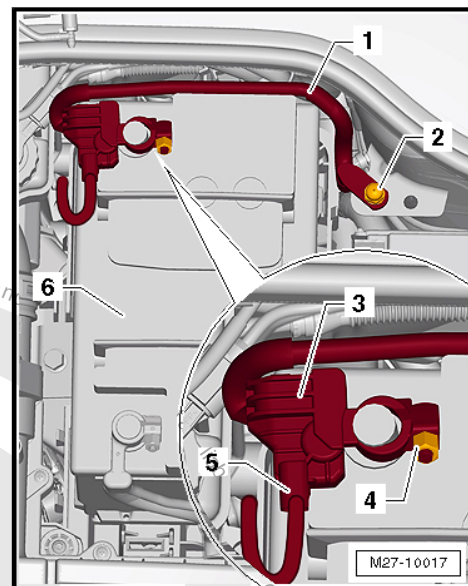
Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .*



Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.3 Battery A in Luggage Compartment, Disconnecting, High-Voltage Vehicle”, page 9](#) .



- Loosen the nut -2- a few turns and remove the battery ground cable terminal clamp with the Battery Monitoring Control Module - J367- -1- from the battery negative terminal.
- Release and disconnect the connector.
- Remove the nut -3- and remove the ground cable with the Battery Monitoring Control Module - J367- -1- from the Battery - A- -4-.

Installing

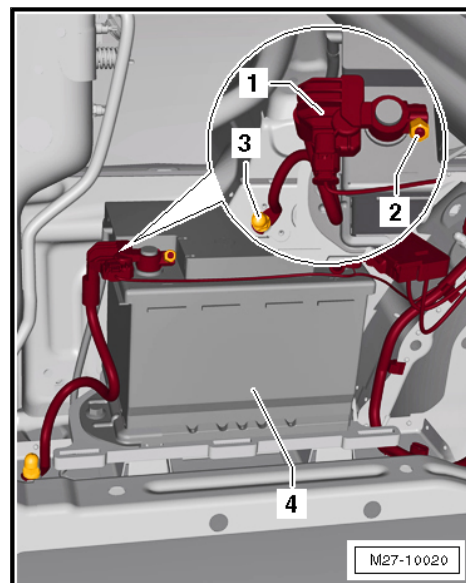
Install in reverse order of removal. Note the following:

- Connect the Battery - A- . Refer to
⇒ [“1.5.4 Battery A in Luggage Compartment, Connecting, High-Voltage Vehicle”, page 10](#) .

The “Start after replacing” procedure must be performed after installing the Battery Monitoring Control Module - J367- . Refer to
⇒ [“1.9.2 Battery Monitoring Control Module J367 , Replacing and Starting”, page 13](#) .

Tightening Specifications

- ◆ Refer to
⇒ [“1.3.2 Overview - Battery A in Luggage Compartment, High-Voltage Vehicle”, page 3](#)





2 Generator

⇒ [“2.1 Overview - Generator”, page 17](#)

⇒ [“2.2 Generator, Removing and Installing”, page 27](#)

⇒ [“2.3 Generator, Checking”, page 46](#)

⇒ [“2.4 Ribbed Belt, Checking”, page 46](#)

⇒ [“2.5 Ribbed Belt Pulley, Removing and Installing”, page 47](#)

⇒ [“2.6 Voltage Regulator, Removing and Installing”, page 50](#)

2.1 Overview - Generator

⇒ [“2.1.2 Overview - Generator, 1.4L Gasoline Engine 90/110/118 kW”, page 18](#)

⇒ [“2.1.4 Overview - Generator, 2.0L Gasoline Engine 85 kW”, page 21](#)

⇒ [“2.1.5 Overview - Generator, 2.0L Gasoline Engine 147 kW”, page 22](#)

⇒ [“2.1.6 Overview - Generator, 2.5L Gasoline Engine 125 kW”, page 23](#)

⇒ [“2.1.7 Overview - Generator, 1.8L Gasoline Engine 125 kW”, page 24](#)

⇒ [“2.1.9 Overview - Generator, 2.0L Diesel Engine 81/103 kW”, page 25](#)

2.1.1 Overview - Generator, 1.2L Gasoline Engine 77 kW

Refer to the Parts Catalog for the correct bolts and nuts.





1 - Screw

- 4 Nm

2 - Screw

- 2 Nm

3 - Battery Positive Wire

4 - Nut

- 20 Nm
- Nut for the B+ wire

5 - Cap

6 - Generator - C- Cap

7 - Cap for Carbon Brushes

8 - Voltage Regulator - C1-

- Removing and installing. Refer to
⇒ ["2.6 Voltage Regulator, Removing and Installing", page 50](#).

9 - Generator - C-

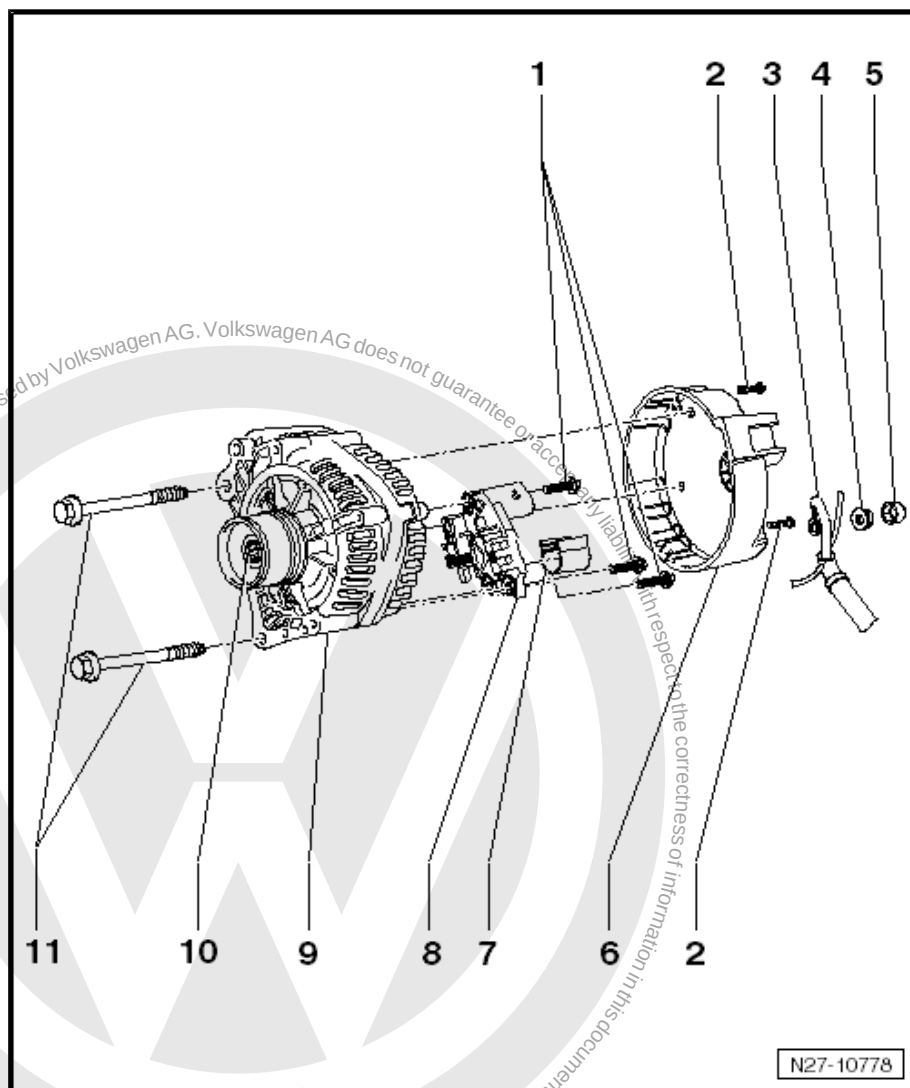
- Removing and installing. Refer to
⇒ ["2.2.1 Generator C, Removing and Installing, 1.2L Gasoline Engine, 77 kW", page 27](#).
- Checking. Refer to
⇒ ["2.3 Generator, Checking", page 46](#).

10 - Ribbed Belt Pulley

- Nut: 80 Nm
- Removing and installing. Refer to ⇒ ["2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#).

11 - Bolt

- 25 Nm



No Illustration

- ◆ Cable holder nut to the back of the generator: 3.2 Nm

2.1.2 Overview - Generator, 1.4L Gasoline Engine 90/110/118 kW

Refer to the Parts Catalog for the correct bolts and nuts.



1 - Bolts

- ☐ 23 Nm

2 - Ribbed Belt

- ☐ Checking. Refer to
⇒ ["2.4 Ribbed Belt, Checking", page 46](#).
- ☐ Removing and installing. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing.

3 - Ribbed Belt Pulley

- ☐ Without free-running hub: 65 Nm
- ☐ With free-running hub: 80 Nm
- ☐ Removing and installing. Refer to
⇒ ["2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#).

4 - Generator - C-

- ☐ Removing and installing. Refer to
⇒ ["2.2.2 Generator C-, Removing and Installing, 1.4L Gasoline Engine, 90/110/118 kW", page 29](#).
- ☐ Checking. Refer to
⇒ ["2.3 Generator, Checking", page 46](#)

5 - Voltage Regulator - C1-

- ☐ Removing and installing. Refer to ⇒ ["2.6 Voltage Regulator, Removing and Installing", page 50](#).

6 - Screw

- ☐ 2 Nm

7 - Screw

- ☐ 2 Nm

8 - Nut

- ☐ 3.2 Nm
- ☐ Cable Holder

9 - Screw

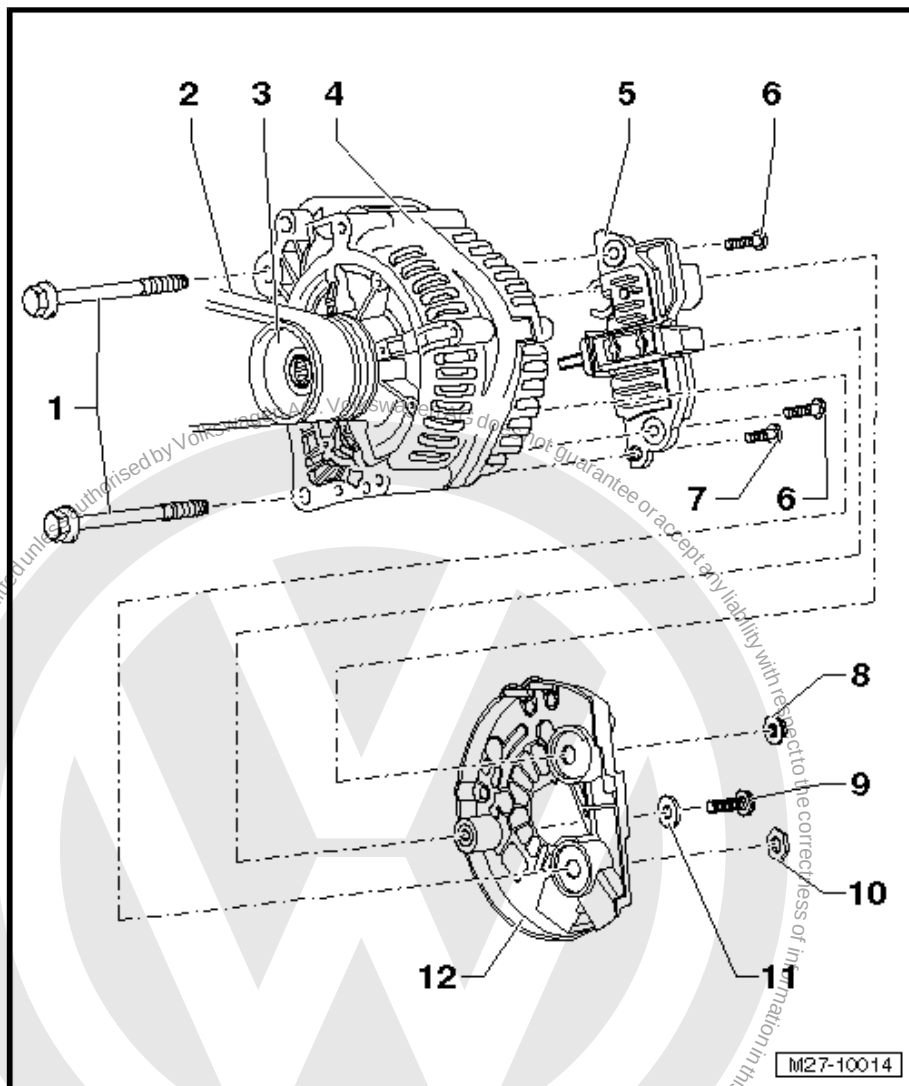
- ☐ 4.5 Nm

10 - Nut

- ☐ 20 Nm
- ☐ Nut for the B+ wire

11 - Washer

12 - Cap





2.1.3 Overview - Generator, 1.6L Gasoline Engine 77 kW

Refer to the Parts Catalog for the correct bolts and nuts.

1 - Bolt

- 23 Nm

2 - Ribbed Belt

- Checking. Refer to ➤ ["2.4 Ribbed Belt, Checking", page 46](#).
- Removing and installing. Refer to ➤ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing.

3 - Ribbed Belt Pulley

- Without free-running hub: 65 Nm
- With free-running hub: 80 Nm
- Removing and installing. Refer to ➤ ["2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#).

4 - Generator - C-

- Removing and installing. Refer to ➤ ["2.2.3 Generator C-, Removing and Installing, 1.6L Gasoline Engine, 77 kW", page 31](#).
- Checking. Refer to ➤ ["2.3 Generator, Checking", page 46](#).

5 - Voltage Regulator - C1-

- Removing and installing. Refer to ➤ ["2.6 Voltage Regulator, Removing and Installing", page 50](#).

6 - Screw

- 2 Nm

7 - Screw

- 2 Nm

8 - Nut

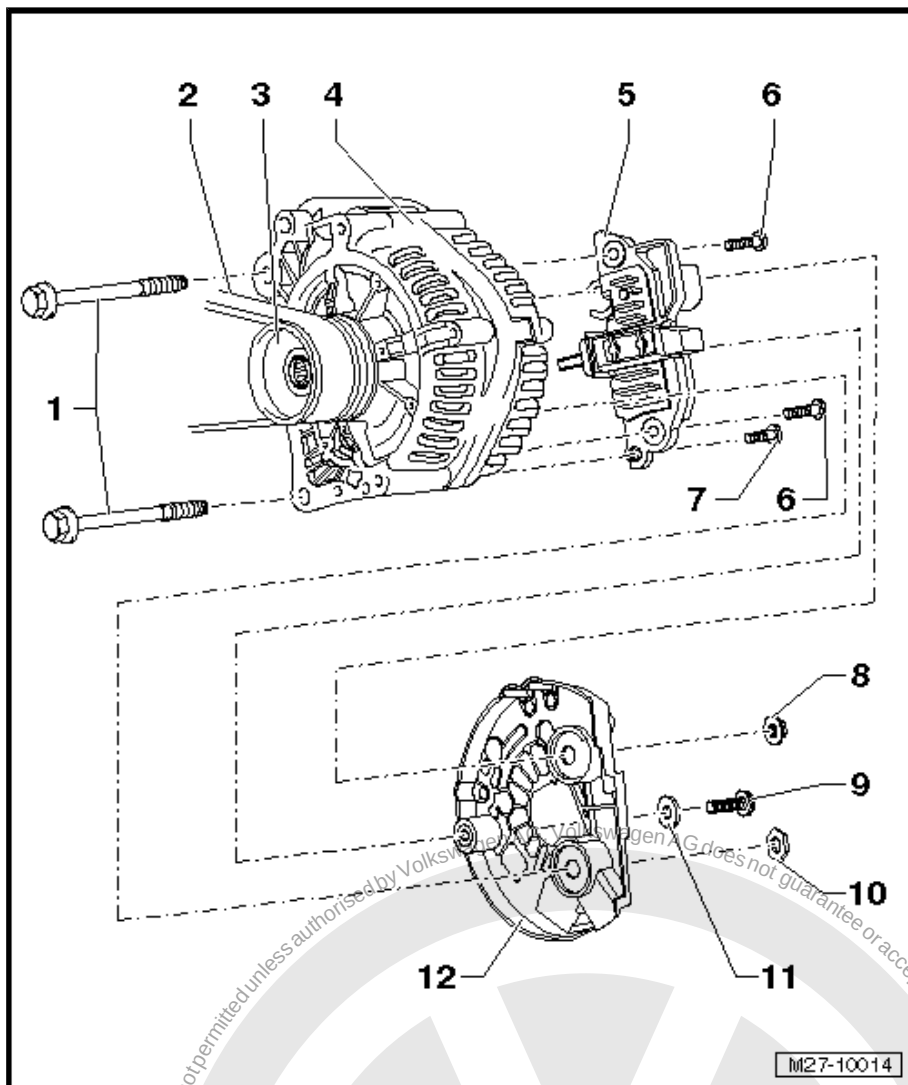
- 3.2 Nm
- Cable Holder

9 - Screw

- 4.5 Nm

10 - Nut

- 20 Nm
- Nut for the B+ wire





11 - Washer

12 - Cap

2.1.4 Overview - Generator, 2.0L Gasoline Engine 85 kW

Refer to the Parts Catalog for the correct bolts and nuts.

1 - Bolt

- ☐ 23 Nm

2 - Ribbed Belt

- ☐ Checking. Refer to ⇒ ["2.4 Ribbed Belt, Checking", page 46](#).
- ☐ Removing and installing. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing.

3 - Ribbed Belt Pulley

- ☐ Without free-running hub: 65 Nm
- ☐ With free-running hub: 80 Nm
- ☐ Removing and installing. Refer to ⇒ ["2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#).

4 - Generator - C-

- ☐ Removing and installing. Refer to ⇒ ["2.2.4 Generator C-, Removing and Installing, 2.0L Gasoline Engine, 85 kW", page 33](#).
- ☐ Checking. Refer to ⇒ ["2.3 Generator, Checking", page 46](#).

5 - Voltage Regulator - C1-

- ☐ Removing and installing. Refer to ⇒ ["2.6 Voltage Regulator, Removing and Installing", page 50](#).

6 - Screw

- ☐ 2 Nm

7 - Screw

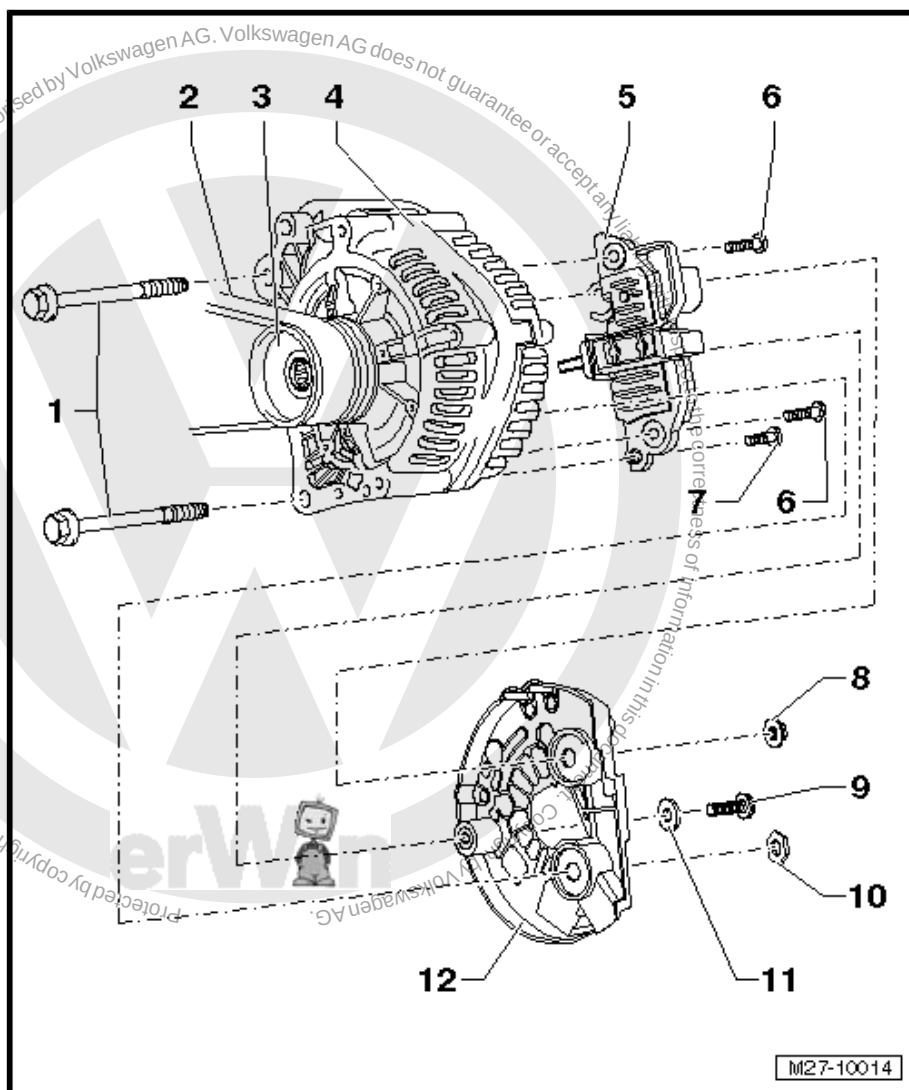
- ☐ 2 Nm

8 - Nut

- ☐ 3.2 Nm
- ☐ Cable Holder

9 - Screw

- ☐ 4.5 Nm





10 - Nut

- ☐ 20 Nm
- ☐ Nut for the B+ wire

11 - Washer

12 - Cap

2.1.5 Overview - Generator, 2.0L Gasoline Engine 147 kW

Refer to the Parts Catalog for the correct bolts and nuts.

1 - Bolt

- ☐ 20 Nm

2 - Screw

- ☐ 2 Nm

3 - Washer

4 - Screw

- ☐ 4.5 Nm

5 - Nut

- ☐ 3.2 Nm
- ☐ Cable Holder

6 - Nut

- ☐ 20 Nm
- ☐ Nut for the B+ wire

7 - Cap

8 - Screw

- ☐ 2 Nm

9 - Voltage Regulator - C1-

- ☐ Removing and installing. Refer to [⇒ "2.6 Voltage Regulator, Removing and Installing", page 50](#).

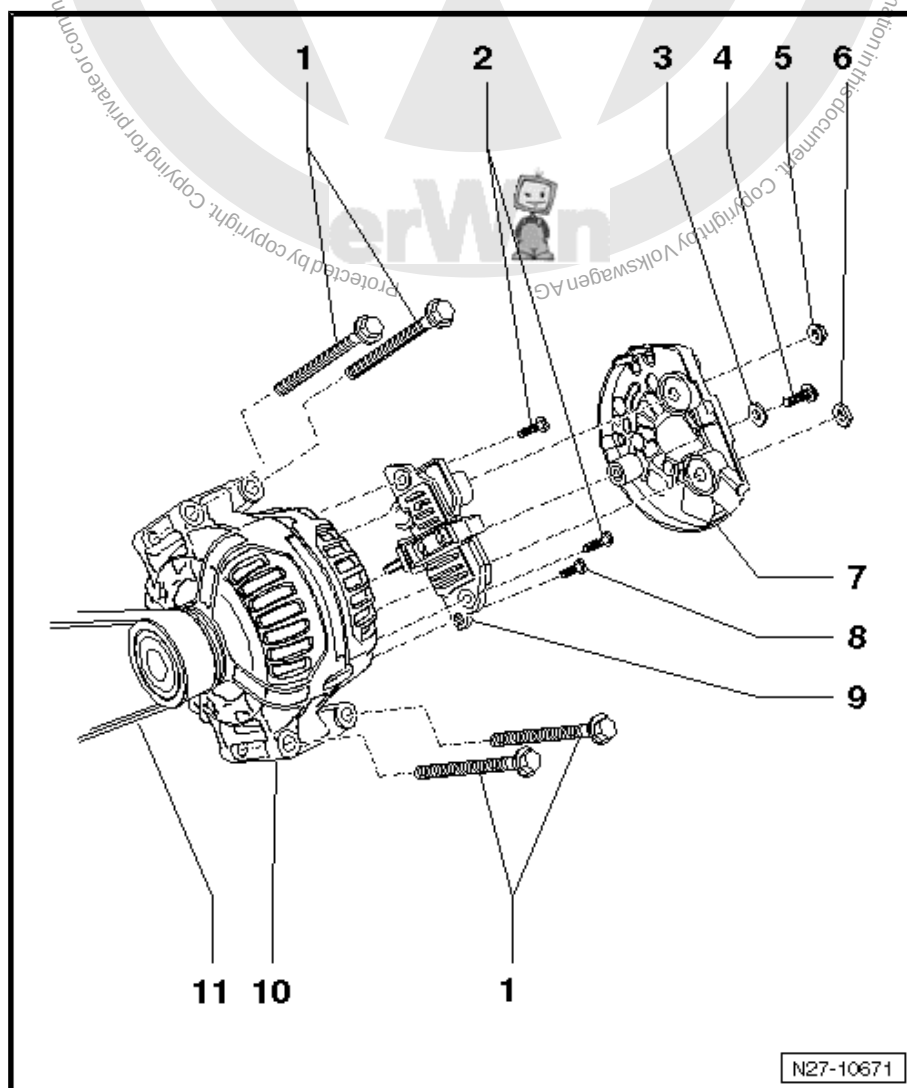
10 - Generator - C-

- ☐ Removing and installing. Refer to [⇒ "2.2.5 Generator C-, Removing and Installing, 2.0L Gasoline Engine, 147 kW", page 35](#).

- ☐ Checking. Refer to [⇒ "2.3 Generator, Checking", page 46](#).
- ☐ Ribbed Belt Pulley, Removing and installing. Refer to [⇒ "2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#).

11 - Ribbed Belt

- ☐ Checking. Refer to [⇒ "2.4 Ribbed Belt, Checking", page 46](#).
- ☐ Removing and installing. Refer to [⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing](#).





No Illustration

- ◆ Ribbed belt pulley without freewheel: 65 Nm.
- ◆ Ribbed belt pulley with freewheel: 80 Nm.

2.1.6 Overview - Generator, 2.5L Gasoline Engine 125 kW

Refer to the Parts Catalog for the correct bolts and nuts.

1 - Bolt

- ☐ 25 Nm

2 - Ribbed Belt

- ☐ Checking. Refer to ⇒ ["2.4 Ribbed Belt, Checking", page 46](#).
- ☐ Removing and installing. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing.

3 - Ribbed Belt Pulley

- ☐ Without free-running hub: 65 Nm
- ☐ With free-running hub: 80 Nm
- ☐ Removing and installing. Refer to ⇒ ["2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#).

4 - Generator - C-

- ☐ Removing and installing. Refer to ⇒ ["2.2.6 Generator C, Removing and Installing, 2.5L Gasoline Engine, 125 kW", page 37](#).
- ☐ Checking. Refer to ⇒ ["2.3 Generator, Checking", page 46](#).

5 - Voltage Regulator - C1-

- ☐ Removing and installing. Refer to ⇒ ["2.6 Voltage Regulator, Removing and Installing", page 50](#).

6 - Hex Bolt with Washer and Threaded Piece

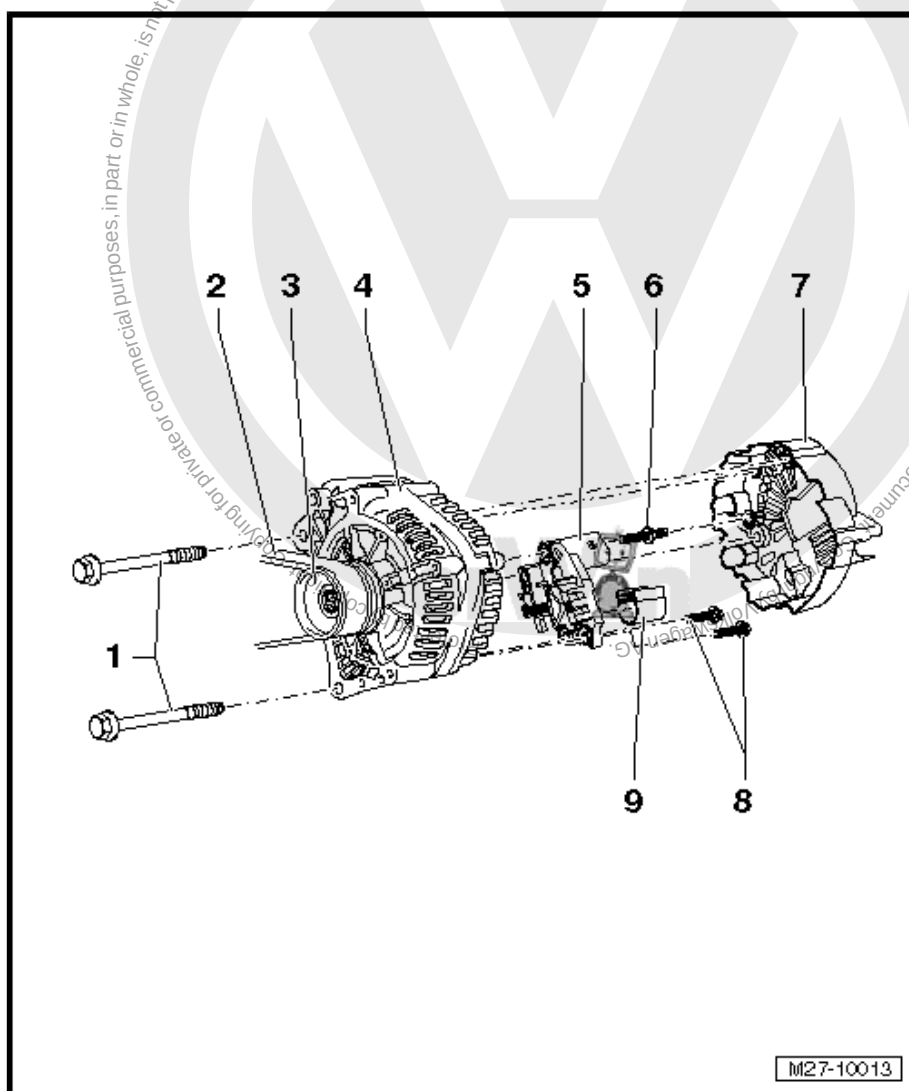
- ☐ 4 Nm

7 - Cap

8 - Screw

- ☐ 2 Nm

9 - Cap for the Carbon Brushes



No Illustration

- ◆ B+ wire nut to rear side of generator: 20 Nm



- ◆ Cable holder nut to the back of the generator: 3.2 Nm

2.1.7 Overview - Generator, 1.8L Gasoline Engine 125 kW

Refer to the Parts Catalog for the correct bolts and nuts.

1 - Generator - C-

- ☐ Removing and installing. Refer to
⇒ ["2.2.7 Generator C-, Removing and Installing, 1.8L Gasoline Engine, 125 kW", page 40](#).
- ☐ Checking. Refer to
⇒ ["2.3 Generator, Checking", page 46](#).
- ☐ Voltage Regulator - C1-, Removing and installing. Refer to
⇒ ["2.6.1 Voltage Regulator C1, Removing and Installing, Bosch", page 50](#).
- ☐ Ribbed Belt Pulley, removing and installing. Refer to
⇒ ["2.5.2 Ribbed Belt Pulley with Freewheel, Removing and Installing, Bosch", page 47](#).

2 - Connector

3 - Terminal 30/B+

- ☐ B+ wire connection

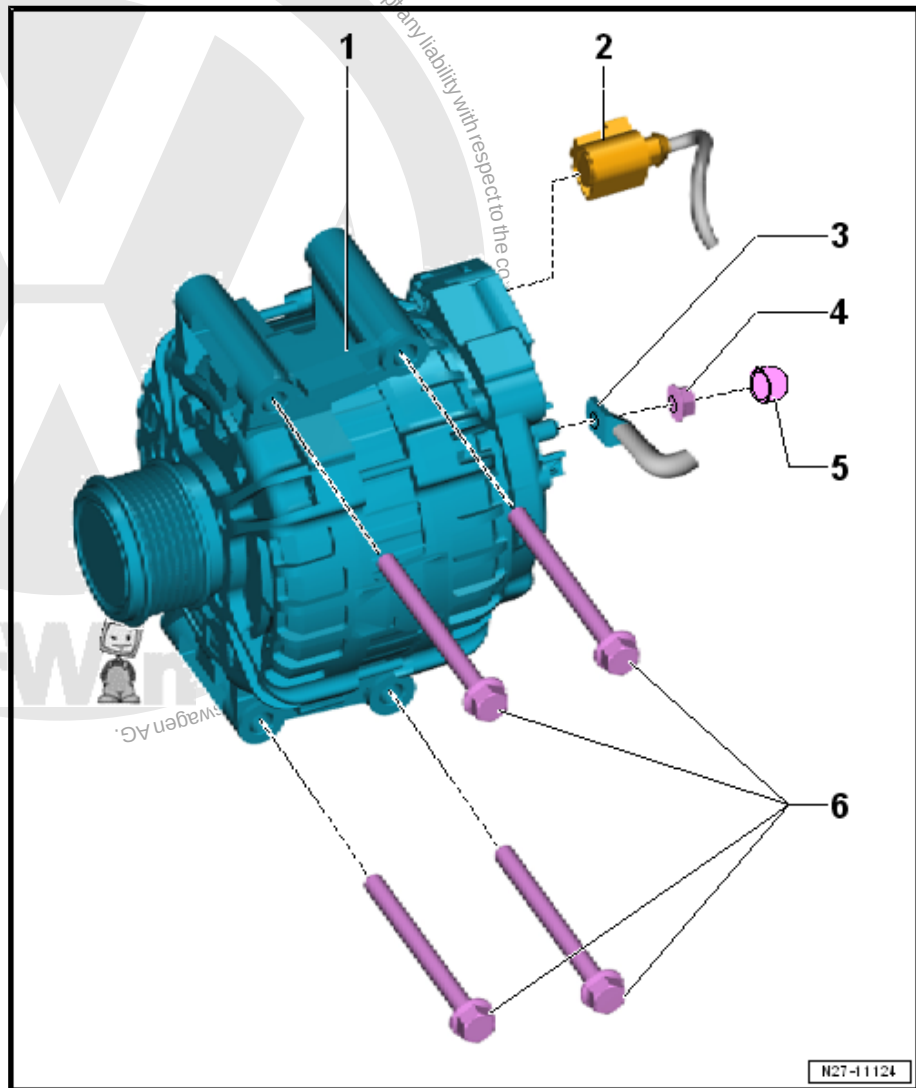
4 - Nut

- ☐ 20 Nm

5 - Cap

6 - Bolt

- ☐ 20 Nm
- ☐ Quantity: 4



2.1.8 Overview - Generator, 1.6L Diesel Engine 77 kW

Refer to the Parts Catalog for the correct bolts and nuts.



1 - Bolt

- ☐ 20 Nm

2 - Ribbed Belt

- ☐ Checking. Refer to
⇒ ["2.4 Ribbed Belt, Checking", page 46](#).
- ☐ Removing and installing. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing.

3 - Ribbed Belt Pulley

- ☐ Without free-running hub: 65 Nm
- ☐ With free-running hub: 80 Nm
- ☐ Removing and installing. Refer to
⇒ ["2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#).

4 - Generator - C-

- ☐ Removing and installing. Refer to
⇒ ["2.2.8 Generator C, Removing and Installing, 1.6L Diesel Engine, 77 kW", page 41](#).
- ☐ Checking. Refer to
⇒ ["2.3 Generator, Checking", page 46](#).

5 - Voltage Regulator - C1-

- ☐ Removing and installing. Refer to
⇒ ["2.6 Voltage Regulator, Removing and Installing", page 50](#).

6 - Hex bolt with washer and threaded piece

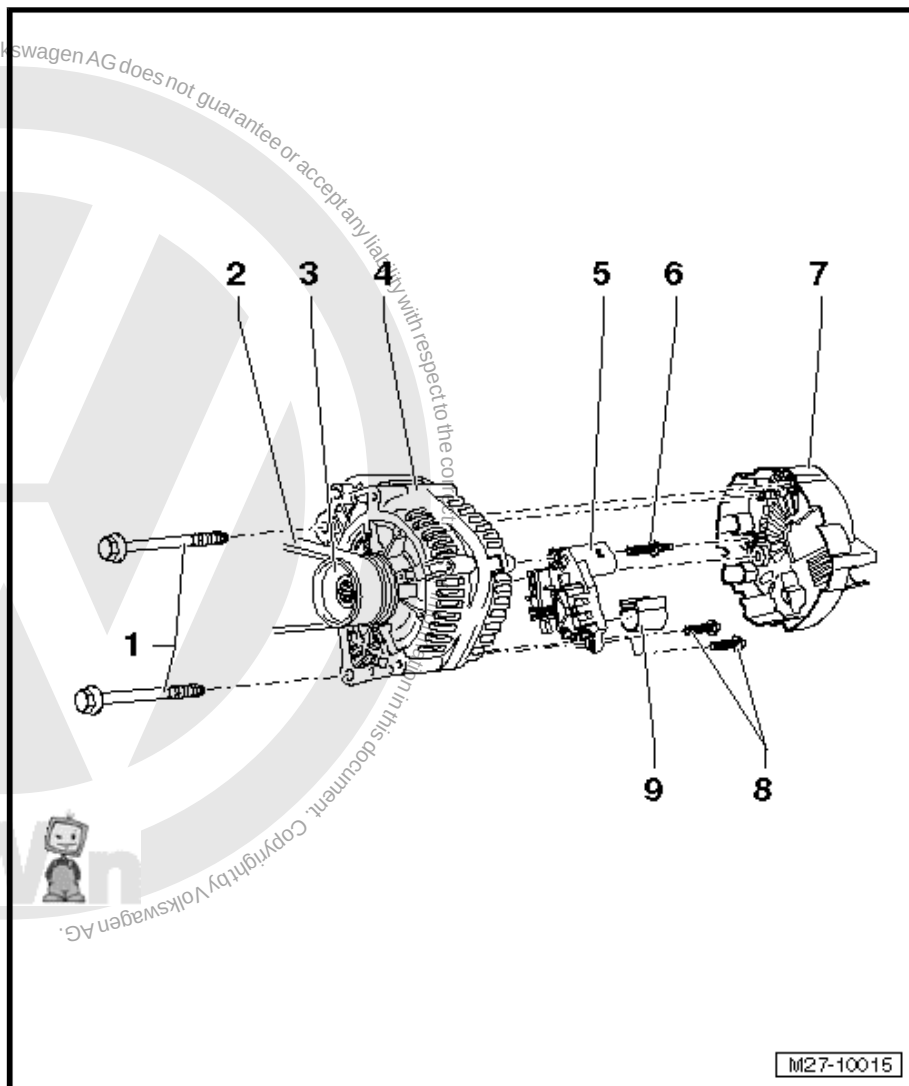
- ☐ 4 Nm

7 - Cap

8 - Screw

- ☐ 2 Nm

9 - Cap for the Carbon Brushes



No illustration

- ◆ B+ wire nut to rear side of generator: 20 Nm
- ◆ Cable holder nut to the back of the generator: 3.2 Nm

2.1.9 Overview - Generator, 2.0L Diesel Engine 81/103 kW

Refer to the Parts Catalog for the correct bolts and nuts.



1 - Bolt

- 20 Nm

2 - Ribbed Belt

- Checking. Refer to
⇒ ["2.4 Ribbed Belt, Checking", page 46](#) .
- Removing and installing. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .

3 - Ribbed Belt Pulley

- Without free-running hub: 65 Nm
- With free-running hub: 80 Nm
- Removing and installing. Refer to
⇒ ["2.5 Ribbed Belt Pulley, Removing and Installing", page 47](#) .

4 - Generator - C-

- Removing and installing. Refer to
⇒ ["2.2.9 Generator C, Removing and Installing, 2.0L Diesel Engine, 81/103 kW", page 44](#) .
- Checking. Refer to
⇒ ["2.3 Generator, Checking", page 46](#) .

5 - Voltage Regulator - C1-

- Removing and installing. Refer to
⇒ ["2.6 Voltage Regulator, Removing and Installing", page 50](#) .

6 - Hex Bolt with Washer and Threaded Piece

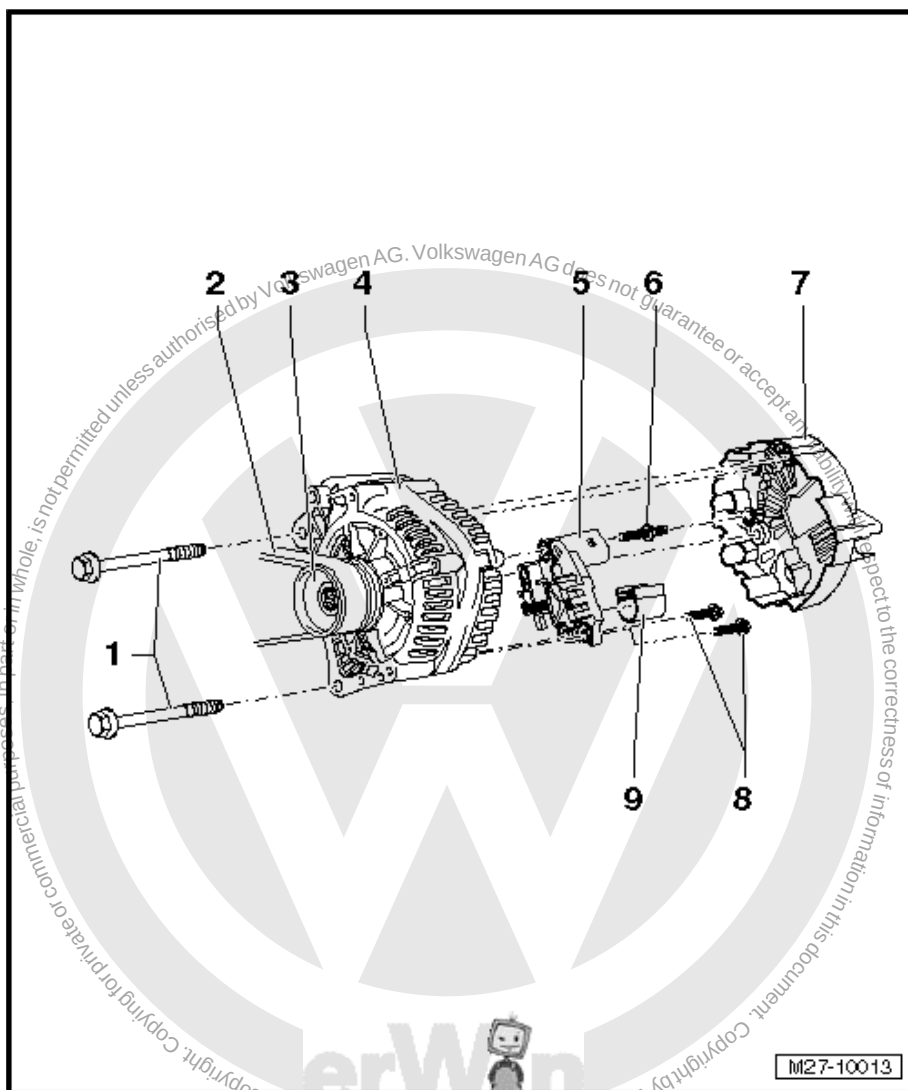
- 4 Nm

7 - Cap

8 - Bolts

- 2 Nm

9 - Cap for the Carbon Brushes



No Illustration

- ◆ B+ wire nut to rear side of generator: 20 Nm
- ◆ Cable holder nut to the back of the generator: 3.2 Nm



2.2 Generator, Removing and Installing

⇒ ["2.2.2 Generator C, Removing and Installing, 1.4L Gasoline Engine, 90/110/118 kW", page 29](#)

⇒ ["2.2.4 Generator C, Removing and Installing, 2.0L Gasoline Engine, 85 kW", page 33](#)

⇒ ["2.2.5 Generator C, Removing and Installing, 2.0L Gasoline Engine, 147 kW", page 35](#)

⇒ ["2.2.6 Generator C, Removing and Installing, 2.5L Gasoline Engine, 125 kW", page 37](#)

⇒ ["2.2.7 Generator C, Removing and Installing, 1.8L Gasoline Engine, 125 kW", page 40](#)

⇒ ["2.2.9 Generator C, Removing and Installing, 2.0L Diesel Engine, 81/103 kW", page 44](#)

2.2.1 Generator - C-, Removing and Installing, 1.2L Gasoline Engine, 77 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

Always follow the instructions regarding disconnecting and connecting the Battery - A-. Refer to ⇒ ["1.5 Battery, Disconnecting and Connecting", page 7](#).

Removing

- Disconnect the Battery - A-. Refer to ⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#).



Caution

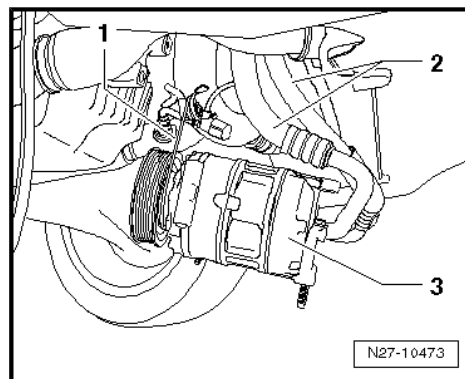
Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed opposite the running direction or is positioned incorrectly, the belt will be destroyed.

- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side, Ribbed Belt, Removing and Installing .
- Remove the A/C compressor. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor Sub-Assembly Bracket .

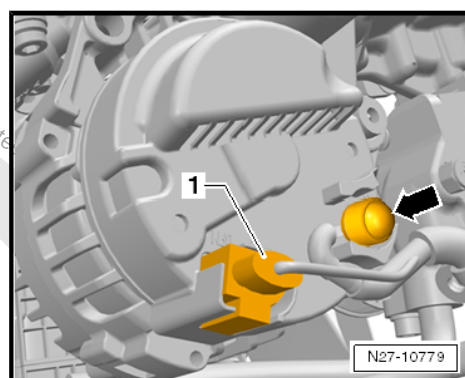


The hoses on the A/C compressor can remain connected.

Tie the A/C compressor -3- to a suitable place under the vehicle using a binding wire -1- until it is ready to be reinstalled. Make sure the hoses -2- are not pulled off or kinked.



- Release and disconnect the (DF lead) -1-.
- Remove the cap -arrow-.
- Remove the nut situated behind it, and disconnect the battery positive terminal from the Generator - C- .
- Remove the idler roller. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Overview - Ribbed Belt Drive .



- Remove the bolts -arrows- from the Generator - C- .
- Remove the Generator - C- .

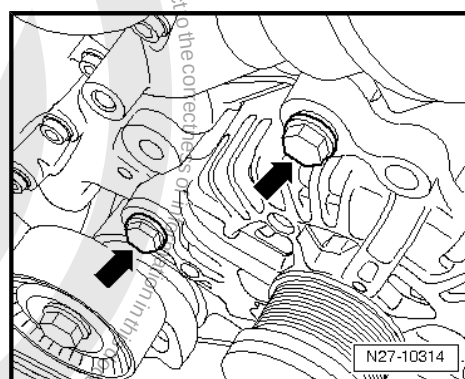
Installing

Install in reverse order of removal. Note the following:

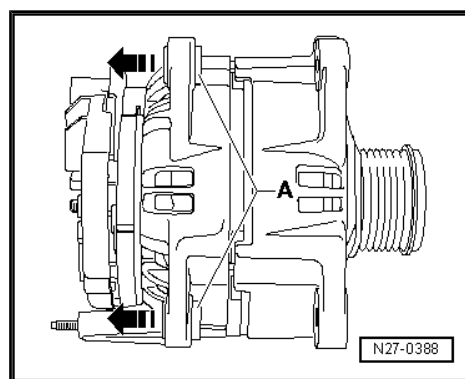


Caution

- ◆ **When installing a used ribbed belt, note direction of travel marked when it was removed!**
- ◆ **Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.**
- ◆ **When installing the ribbed belt, make sure it is properly seated in the belt pulley!**



- Remove the threaded bushings -A- from the Generator - C- housing approximately 4 mm in -direction of arrow-.
- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“2.1.1 Overview - Generator, 1.2L Gasoline Engine 77 kW”, page 17](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .
- Start the engine and check the belt routing.
- Turn off the engine.





2.2.2 Generator - C- , Removing and Installing, 1.4L Gasoline Engine, 90/110/118 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ⇒ "1.5 Battery, Disconnecting and Connecting", page 7 .

Removing

- Disconnect the Battery - A- . Refer to ⇒ "1.5.1 Battery A in Engine Compartment, Disconnecting", page 7 .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .



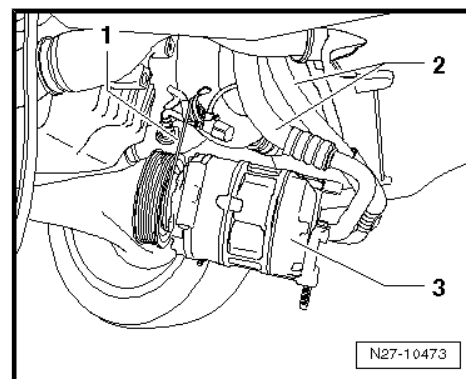
Caution

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed opposite the running direction or is positioned incorrectly, the belt will be destroyed.

- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the upper tensioning roller. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Overview - Ribbed Belt Drive .
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .
- Remove the A/C compressor. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor Sub-Assembly Bracket .

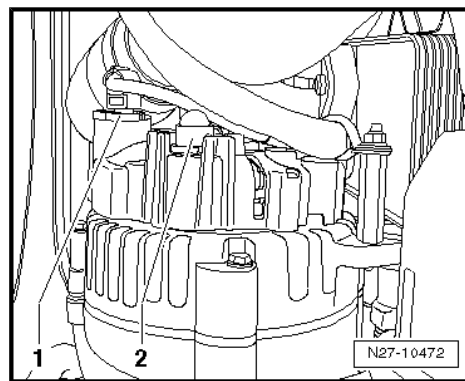
The hoses on the A/C compressor can remain connected.

Tie the A/C compressor -3- to a suitable place under the vehicle using a binding wire -1- until it is ready to be reinstalled. Make sure the hoses -2- are not pulled off or kinked.

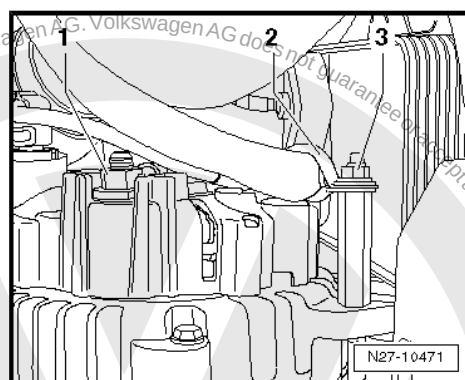




- Release and disconnect the (DF lead) -1-.
- Pry off the cap -2-.



- Remove the nut -1- and then remove the B+ wire from the threaded connector on the Generator - C- .
- Remove the nut -3- and remove the wire holder -2- from the Generator - C- .
- Remove the bolts -arrows- from the Generator - C- .



- Remove the Generator - C- .

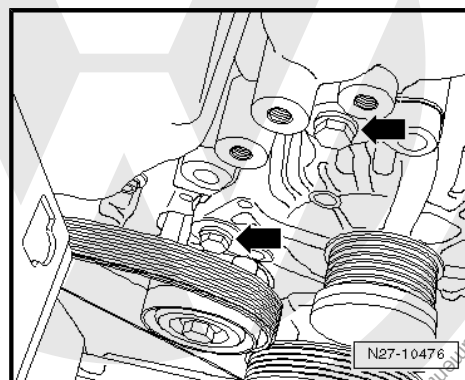
Installing

Install in reverse order of removal. Note the following:

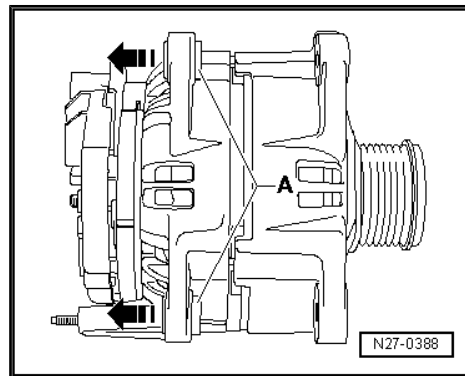


Caution

- ◆ *When installing a used ribbed belt, note direction of travel marked when it was removed!*
- ◆ *Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.*
- ◆ *When installing the ribbed belt, make sure it is properly seated in the belt pulley!*

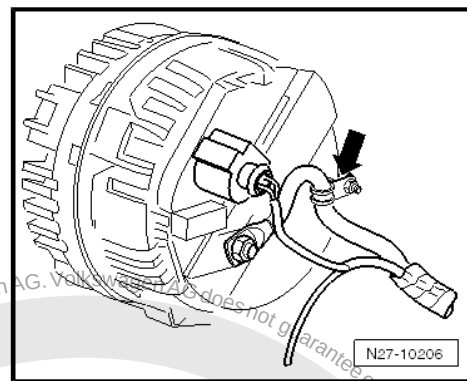


- Remove the threaded bushings -A- from the Generator - C- housing approximately 4 mm in direction of -arrow-.





- Attach the wire holder -arrow- on the back of the Generator - C- in the 9 o'clock position.
- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["2.1.2 Overview - Generator, 1.4L Gasoline Engine 90/110/118 kW", page 18](#).
- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#).
- Start the engine and check the belt routing.
- Turn off the engine.



2.2.3 Generator - C- , Removing and Installing, 1.6L Gasoline Engine, 77 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

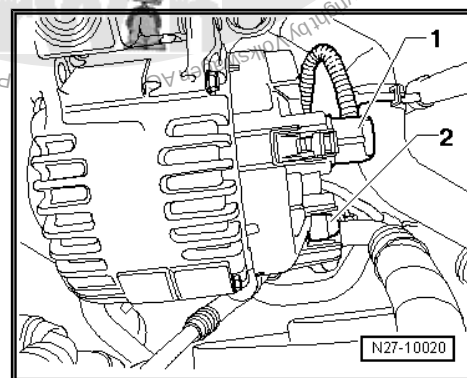


Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ ["1.5 Battery, Disconnecting and Connecting", page 7](#) .*

Removing

- Disconnect the Battery - A- . Refer to
⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#) .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing
- Disconnect the connector from the DF lead -1- and remove the cap -2-.



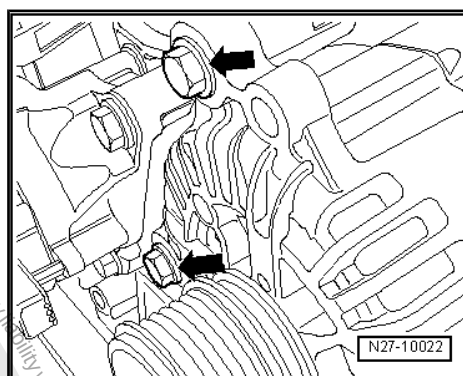
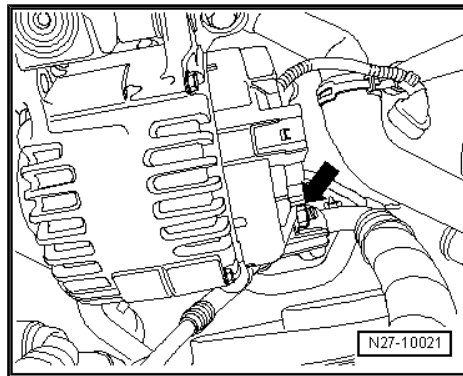


- Disconnect the B+ wire -arrow- from the Generator - C- .

**Caution**

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed opposite the running direction or is positioned incorrectly, the belt will be destroyed.

- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the bracket together with the tensioner. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Overview - Ribbed Belt Drive .
- Remove the bolts -arrows- from the Generator - C- .



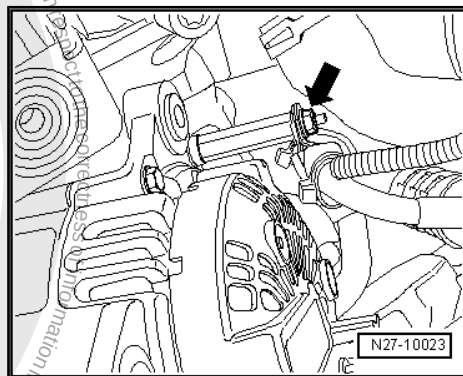
- Remove the wire holder -arrow- from the Generator - C- .
- Remove the Generator - C- .

Installing

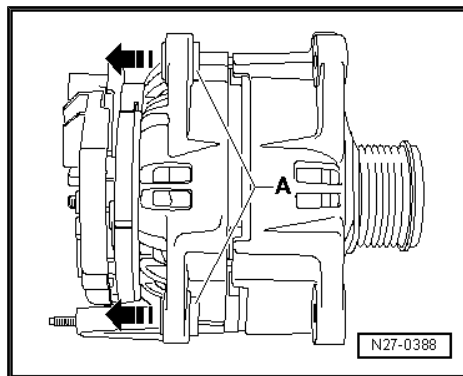
Install in reverse order of removal. Note the following:

**Caution**

- ◆ **When installing a used ribbed belt, note direction of travel marked when it was removed!**
- ◆ **Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.**
- ◆ **When installing the ribbed belt, make sure it is properly seated in the belt pulley!**

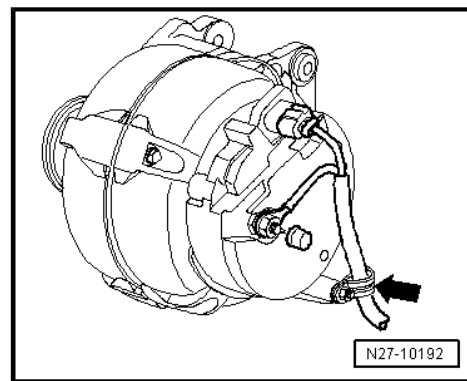


- Remove the threaded bushings -A- from the Generator - C- housing approximately 4 mm in -direction of arrow-.





- Attach the cable holder -arrow- to the back of the Generator - C- in the 3 o'clock position.
- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["2.1.3 Overview - Generator, 1.6L Gasoline Engine 77 kW", page 20](#).
- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#).
- Start the engine and check the belt routing.
- Turn off the engine.



2.2.4 Generator - C- , Removing and Installing, 2.0L Gasoline Engine, 85 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

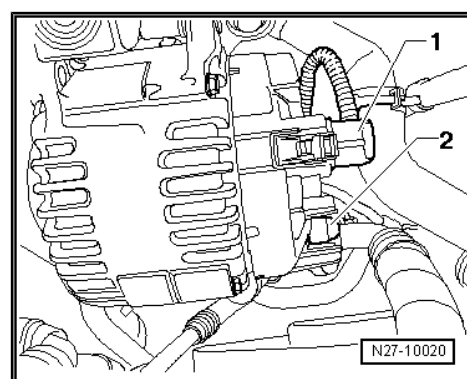


Caution

**Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ ["1.5 Battery, Disconnecting and Connecting", page 7](#) .**

Removing

- Disconnect the Battery - A- . Refer to
⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#) .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Disconnect the connector (DF lead) -1- and remove the cap -2-.



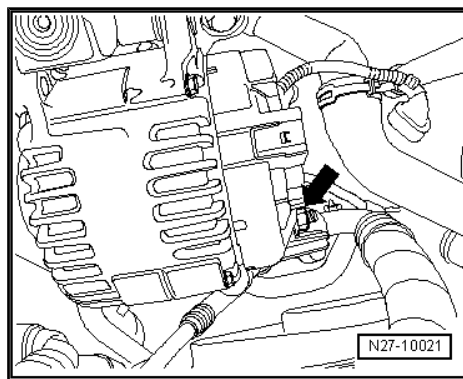


- Disconnect the B+ wire -arrow- from the Generator - C- .



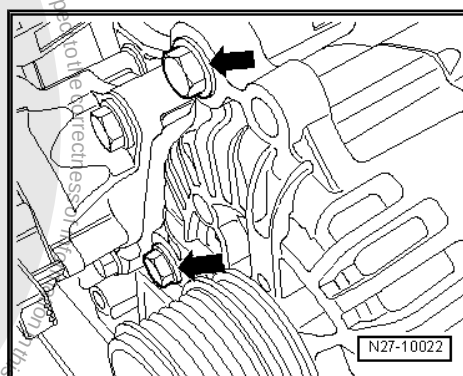
Caution

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed opposite the running direction or is positioned incorrectly, the belt will be destroyed.



- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the tensioner together with the lifting eye. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Overview - Ribbed Belt Drive .

Remove the bolts -arrows- from the Generator - C- .

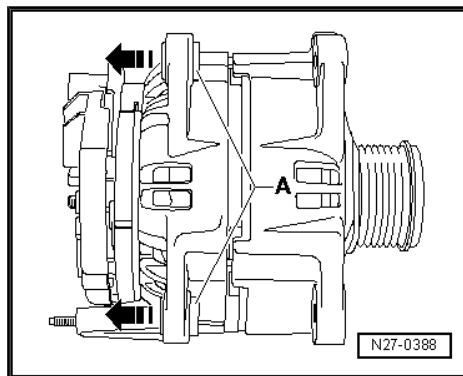
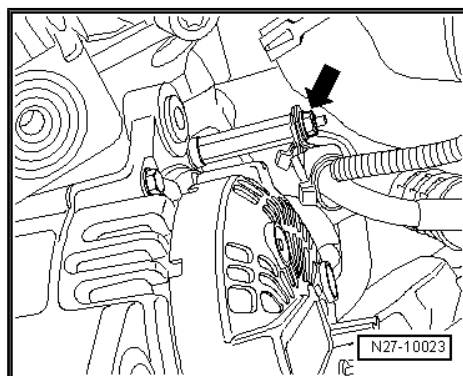


- Remove the wire holder -arrow- from the Generator - C- .
- Remove the Generator - C- .

Installing

Install in reverse order of removal. Note the following:

- Remove the threaded bushings -A- from the Generator - C- housing approximately 4 mm in direction of -arrow-.



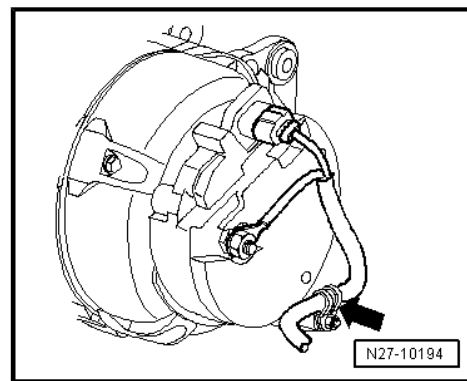


- Attach the wire holder -arrow- on the back of the Generator - C- in the 12 o'clock position.
- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["2.1.4 Overview - Generator, 2.0L Gasoline Engine 85 kW", page 21](#).



Caution

- ◆ *When installing a used ribbed belt, note direction of travel marked when it was removed!*
- ◆ *Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.*
- ◆ *When installing the ribbed belt, make sure it is properly seated in the belt pulley!*



- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#).
- Start the engine and check the belt routing.
- Turn off the engine.

2.2.5 Generator - C- , Removing and Installing, 2.0L Gasoline Engine, 147 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ ["1.5 Battery, Disconnecting and Connecting", page 7](#).*

Removing

- Disconnect the Battery - A- . Refer to
⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#).



Caution

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed in the opposite rotation direction, or is installed in the opposite installed location, then the belt will be ruined!

- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing.



- Remove the bolts -arrows- and move the coolant pipes and hose -1- upward. This will make space for removing the Generator - C- .



Note

The coolant pipes and the hose can remain connected.

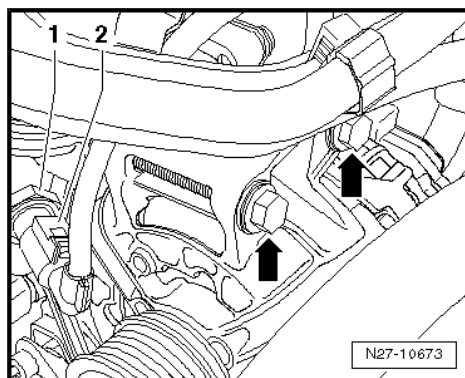
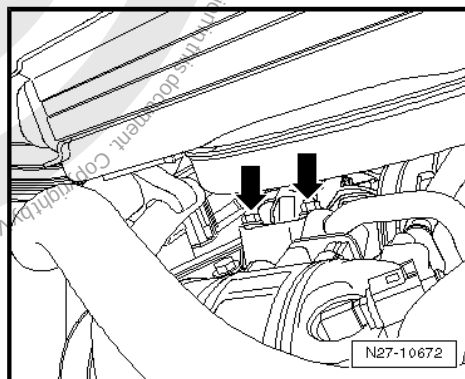
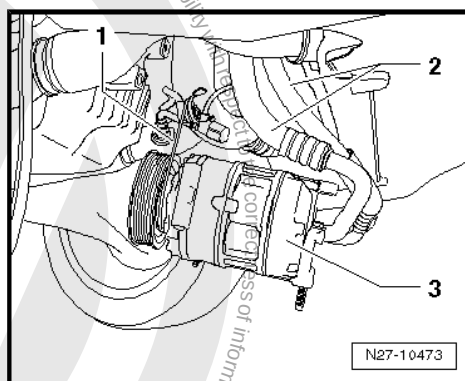
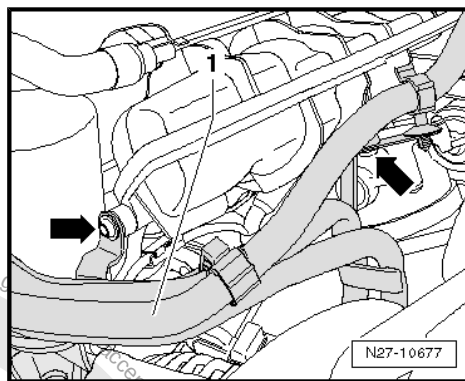
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .
- Remove the A/C compressor. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor Sub-Assembly Bracket .

The hoses on the A/C compressor can remain connected.

Tie the A/C compressor -3- to a suitable place under the vehicle using a binding wire -1- until it is ready to be reinstalled. Make sure the hoses -2- are not pulled off or kinked.

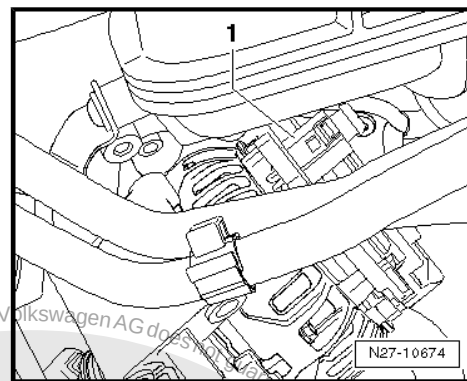
- Remove the bottom bolts -arrows- from the Generator - C- from underneath.

- Release and disconnect the connector -2-.
- Remove the upper bolts -arrows- from the Generator - C- .
- Pivot the Generator - C- slightly to the left in order to be able to access the connections on the back of the generator.

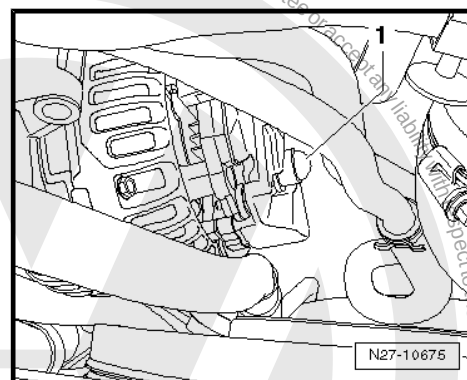




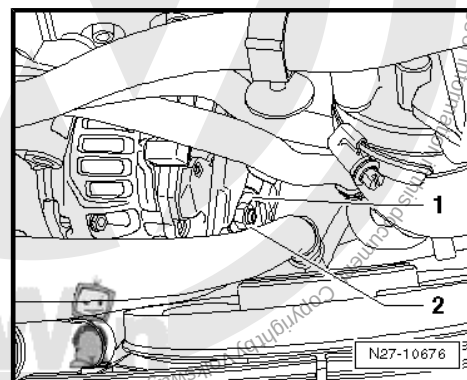
- Release and disconnect the (DF lead) -1-.



- Pry up the cap -1-.



- Remove the nut -2- and then remove the B+ wire -1- that is underneath from the threaded connector on the Generator - C- .
- Remove the Generator - C- .



Installing

Install in reverse order of removal. Note the following:



Caution

- ◆ **When installing a used ribbed belt, note direction of travel marked when it was removed!**
- ◆ **Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.**
- ◆ **When installing the ribbed belt, make sure it is properly seated in the belt pulley!**

- Tighten the threaded connections to the tightening specification. Refer to ["2.1.5 Overview - Generator, 2.0L Gasoline Engine 147 kW", page 22](#) .
- Connect the Battery - A- . Refer to ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#) .
- Start the engine and check the belt routing.
- Turn off the engine.

2.2.6 Generator - C- , Removing and Installing, 2.5L Gasoline Engine, 125 kW

Special tools and workshop equipment required



- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ⇒ "1.5 Battery, Disconnecting and Connecting", page 7 .

Removing

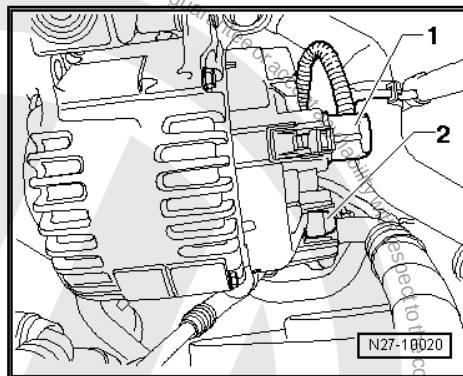
- Disconnect the Battery - A- . Refer to ⇒ "1.5.1 Battery A in Engine Compartment, Disconnecting", page 7 .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Bring the lock carrier into the service position. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Lock Carrier; Service Position .



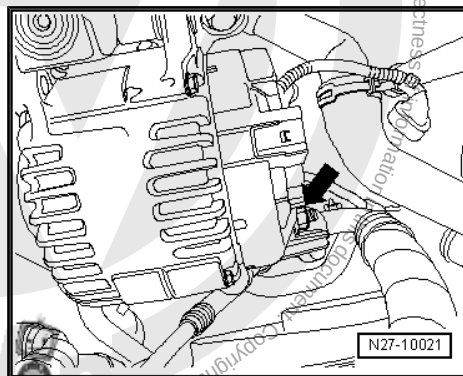
Caution

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed opposite the running direction or is positioned incorrectly, the belt will be destroyed.

- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Release and disconnect the connector (DF lead) -1- and remove the cap -2-.

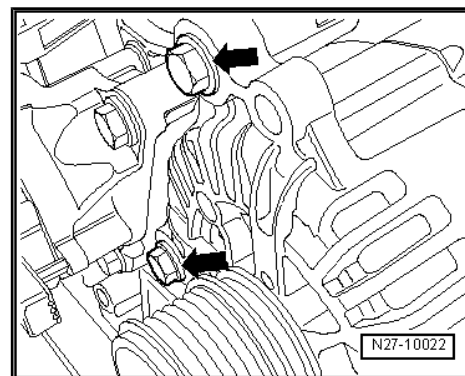


- Disconnect the B+ wire -arrow- from the Generator - C- .
- Remove the upper idler roller, the lower idler roller and the ribbed belt tensioning roller for the Generator - C- and the coolant pump. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Overview - Ribbed Belt Drive .





- Remove the bolts -arrows- from the Generator - C- .



- Remove the wire holder -arrow- from the Generator - C- .
- Remove the Generator - C- .

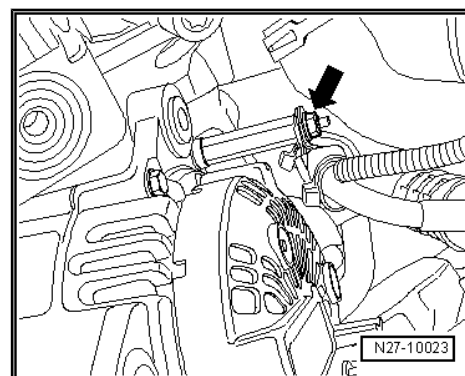
Installing

Install in reverse order of removal. Note the following:

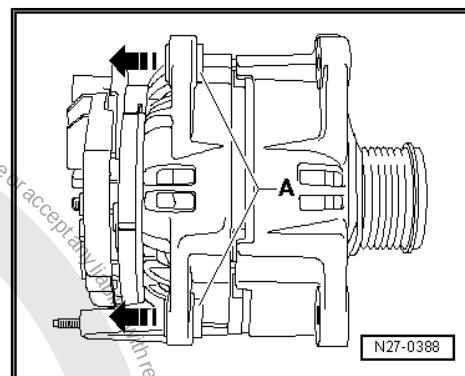


Caution

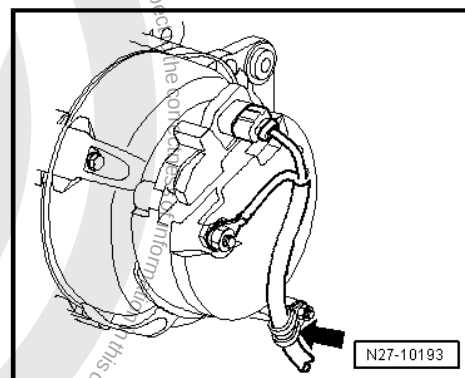
- ◆ *When installing a used ribbed belt, note direction of travel marked when it was removed!*
- ◆ *Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.*
- ◆ *When installing the ribbed belt, make sure it is properly seated in the belt pulley!*



- Remove the threaded bushings -A- from the Generator - C- housing approximately 4 mm in direction of -arrows-.



- Attach the cable holder -arrow- to the back of the Generator - C- in the 9 o'clock position.
- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["2.1.6 Overview - Generator, 2.5L Gasoline Engine 125 kW", page 23](#) .
- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#) .
- Start the engine and check the belt routing.
- Turn off the engine.





2.2.7 Generator - C- , Removing and Installing, 1.8L Gasoline Engine, 125 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing



Caution

Always follow the instructions in the Repair Manual exactly when disconnecting and connecting the Battery - A- . Refer to ⇒ "1.5 Battery, Disconnecting and Connecting", page 7.

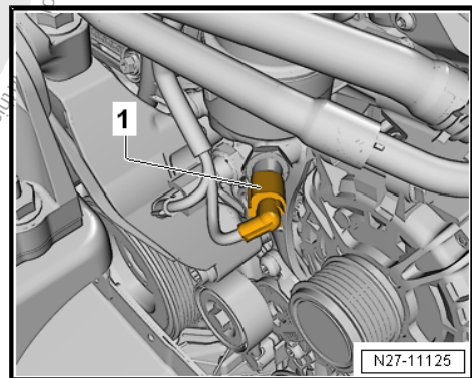
- Disconnect the Battery - A- . Refer to ⇒ "1.5.1 Battery A in Engine Compartment, Disconnecting", page 7 .



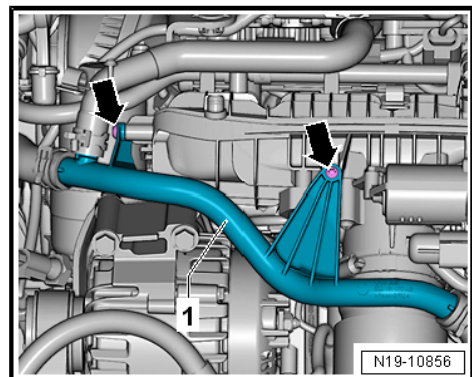
Caution

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the ribbed belt is installed opposite the running direction or is positioned incorrectly, the ribbed belt will be destroyed.

- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Release and disconnect the connector -1-.
- Remove the bolts -arrows-.

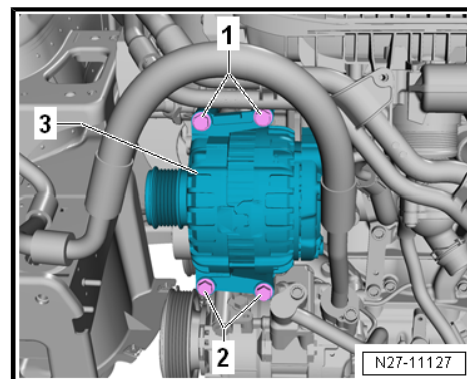


- Move the coolant pipe -1- to the side.





- Remove the bolts -1 and 2-.
- Pivot the Generator - C- -3- to the right in the direction of travel.
- Release and disconnect the connector -1-.
- Pry off the cap -2- and remove the underlying nut.
- Remove the 30/B+ terminal -3-.



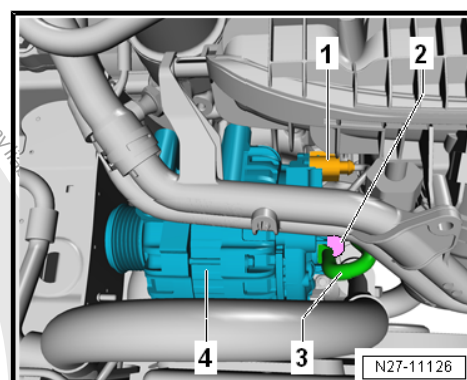
- Remove the Generator - C- -4- upward out of the vehicle.

Installing

Install in the reverse order of removal while noting the following:

Caution

- ◆ *When installing a used ribbed belt, note direction of travel marked when it was removed!*
- ◆ *Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.*
- ◆ *When installing the ribbed belt, make sure it is properly seated in the belt pulley!*



Tightening Specifications

- ◆ Refer to ["2.1.7 Overview - Generator, 1.8L Gasoline Engine 125 kW", page 24](#)

2.2.8 Generator - C- , Removing and Installing, 1.6L Diesel Engine, 77 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Caution

Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ["1.5 Battery, Disconnecting and Connecting", page 7](#) .

Removing

- Disconnect the Battery - A- . Refer to ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#) .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Bring the lock carrier into the service position. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Lock Carrier; Service Position .



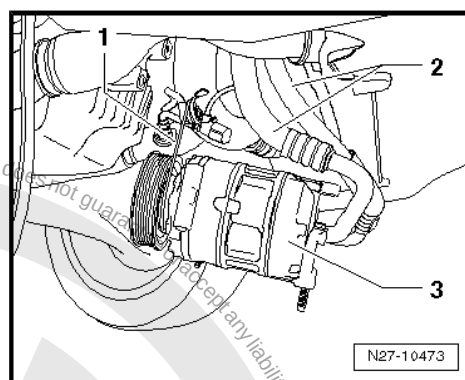
Caution

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed opposite the running direction or is positioned incorrectly, the belt will be destroyed.

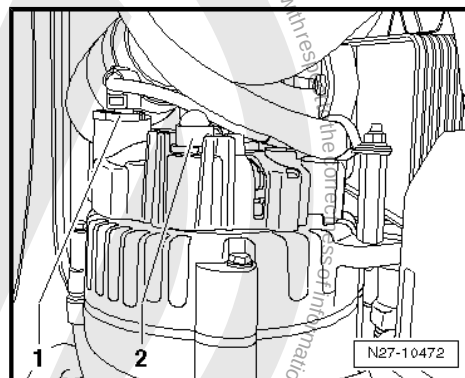
- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .
- Remove the A/C compressor. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor Sub-Assembly Bracket .

The hoses on the A/C compressor can remain connected.

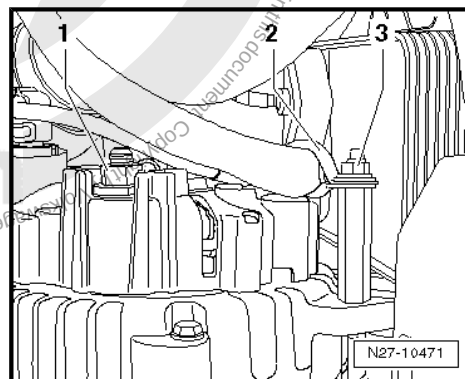
Tie the A/C compressor -3- to a suitable place under the vehicle using a binding wire -1- until it is ready to be reinstalled. Make sure the hoses -2- are not pulled off or kinked.



- Release and disconnect the (DF lead) -1-.
- Pry off the cap -2-.

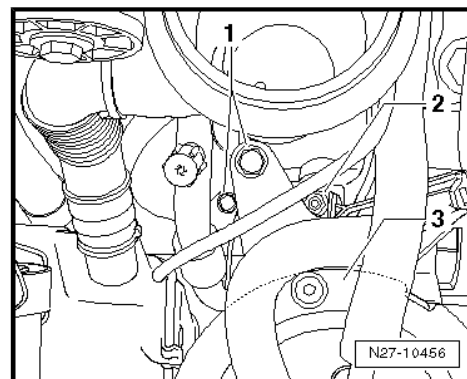


- Remove the nut -1- and then remove the B+ wire from the threaded connector on the Generator - C- .
- Remove the nut -3- and remove the cable holder -2- from the Generator - C- .





- Remove the bolts -1- and nut -2- for the fuel filter -3- and then move the fuel filter -3- to the side. The fuel hoses can remain connected.



- Remove the bolts -arrows- from the Generator - C- .
- Remove the Generator - C- .

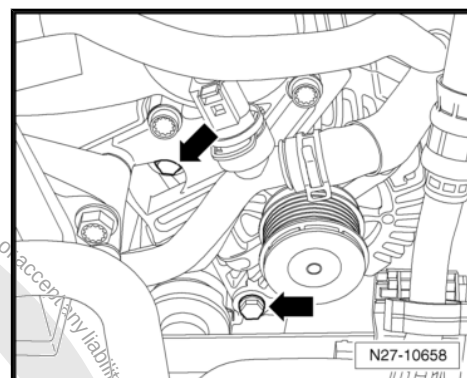
Installing

Install in reverse order of removal. Note the following:

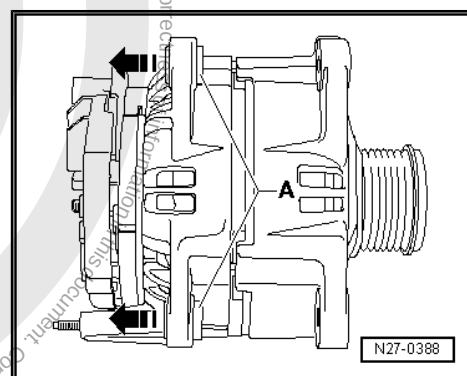


Caution

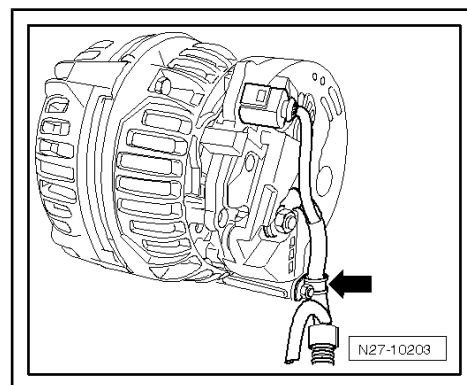
- ◆ *When installing a used ribbed belt, note direction of travel marked when it was removed!*
- ◆ *Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.*
- ◆ *When installing the ribbed belt, make sure it is properly seated in the belt pulley!*



- Remove the threaded bushings -A- from the Generator - C- housing approximately 4 mm in -direction of arrow-.



- Attach the cable holder -arrow- to the back of the Generator - C- in the 3 o'clock position.
- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["2.1.8 Overview - Generator, 1.6L Diesel Engine 77 kW", page 24](#) .
- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#) .
- Start the engine and check the belt routing.
- Turn off the engine.





2.2.9 Generator - C- , Removing and Installing, 2.0L Diesel Engine, 81/103 kW

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ⇒ "1.5 Battery, Disconnecting and Connecting", page 7 .

Removing

- Disconnect the Battery - A- . Refer to ⇒ "1.5.1 Battery A in Engine Compartment, Disconnecting", page 7 .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Bring the lock carrier into the service position. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Lock Carrier; Service Position .



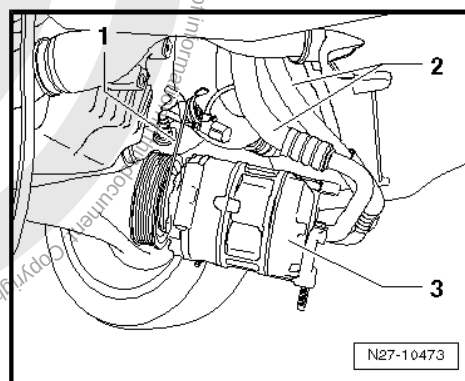
Caution

Mark the top of the ribbed belt and the running direction before removal. Make sure the belt is installed correctly and pay attention to the running direction. If the belt is installed opposite the running direction or is positioned incorrectly, the belt will be destroyed.

- Remove the ribbed belt. Refer to ⇒ Rep. Gr. 13 ; Cylinder Block, Belt Pulley Side; Ribbed Belt, Removing and Installing .
- Remove the A/C compressor. Refer to ⇒ Heating and Air Conditioning; Rep. Gr. 87 ; A/C Compressor Sub-Assembly Bracket.

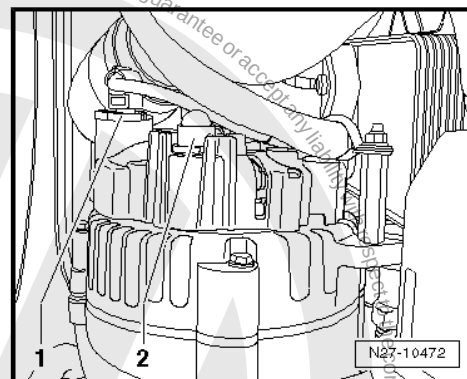
The hoses on the A/C compressor can remain connected.

Tie the A/C compressor -3- to a suitable place under the vehicle using a binding wire -1- until it is ready to be reinstalled. Make sure the hoses -2- are not pulled off or kinked.

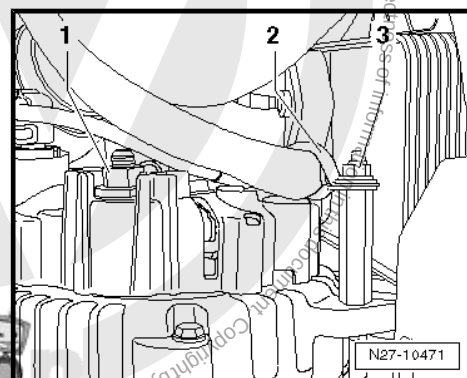




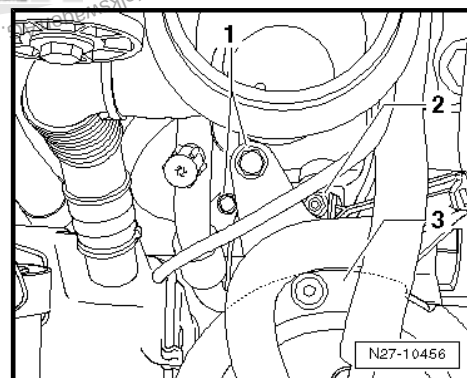
- Release and disconnect the (DF lead) -1-.
- Pry off the cap -2-.
- Remove the nut -1- and then remove the B+ wire from the threaded connector on the Generator - C- .



- Remove the nut -3- and remove the cable holder -2- from the Generator - C- .



- Remove the bolts -1- and nut -2- for the fuel filter -3- and then move the fuel filter -3- to the side. The fuel hoses can remain connected.
- Remove the bolts -arrows- from the Generator - C- .



- Remove the Generator - C- .

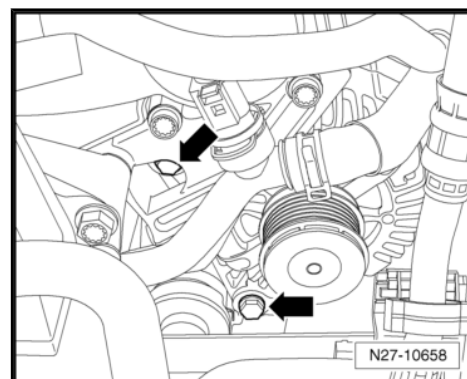
Installing

Install in reverse order of removal. Note the following:



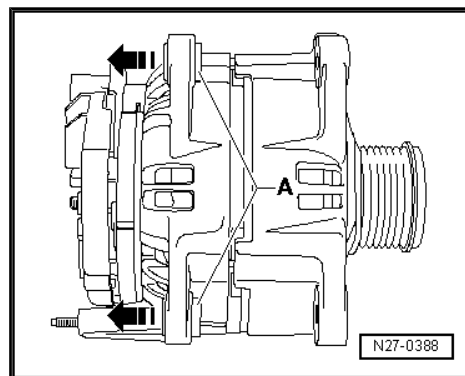
Caution

- ◆ *When installing a used ribbed belt, note direction of travel marked when it was removed!*
- ◆ *Before installing the ribbed belt, make sure all assemblies (Generator - C- , A/C compressor, vane pump) are securely fastened.*
- ◆ *When installing the ribbed belt, make sure it is properly seated in the belt pulley!*

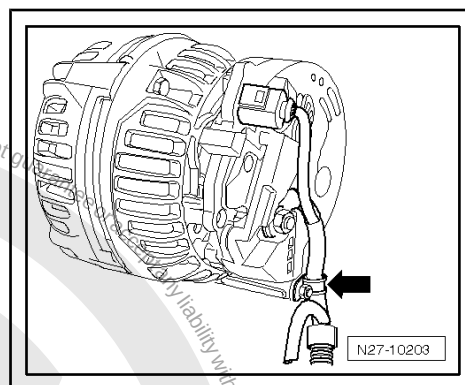




- Remove the threaded bushings -A- from the Generator - C- housing approximately 4 mm in direction of -arrows-.



- Attach the cable holder -arrow- to the back of the Generator - C- in the 3 o'clock position.
- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“2.1.9 Overview - Generator, 2.0L Diesel Engine 81/103 kW”, page 25](#).
- Connect the Battery - A-. Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#).
- Start the engine and check the belt routing.
- Turn off the engine.



2.3 Generator, Checking

Procedure

- Connect the Vehicle Diagnostic Tester .
- Select the **Guided Fault Finding** mode.
- Use the **GO TO** button to select the “function/component selection” and the following menu options one after the other:
 - ◆ Body
 - ◆ Electrical Equipment
 - ◆ 27 - Starter, voltage supply
 - ◆ Electrical Components
 - ◆ C - generator

2.4 Ribbed Belt, Checking



Caution

If defects are identified, the ribbed belt must be replaced. This can help prevent failures and malfunctions.

Procedure

- Rotate the engine on the vibration damper/belt pulley using a wrench socket.
- Check the ribbed belt for:
 - ◆ Cracks in the underside (surface cracks, fragmenting, cross-section breaks)
 - ◆ Layer separation (outer layer, tension cords)



- ◆ Wear-through on the underside
- ◆ Fraying of tension cords
- ◆ Edge wear (material wear, frayed edges, hardened edges, glazed edges, surface cracks)
- ◆ Oil and grease traces

2.5 Ribbed Belt Pulley, Removing and Installing

⇒ ["2.5.1 Ribbed Belt Pulley without Freewheel, Removing and Installing", page 47](#)

⇒ ["2.5.2 Ribbed Belt Pulley with Freewheel, Removing and Installing, Bosch", page 47](#)

⇒ ["2.5.3 Ribbed Belt Pulley with Freewheel, Removing and Installing, Valeo", page 49](#)

2.5.1 Ribbed Belt Pulley without Freewheel, Removing and Installing

Special tools and workshop equipment required

- ◆ Generator Belt Socket - 3310-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

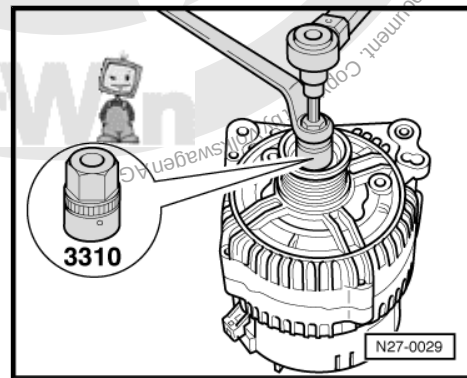
Removing

- Remove the Generator - C- . Refer to [⇒ "2 Generator", page 17](#) .
- Secure the Generator - C- in a vise at the mounting points.
- Remove the ribbed belt pulley nut from the generator shaft using the Generator Belt Socket - 3310- .

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to [⇒ "2.1 Overview - Generator", page 17](#) .



2.5.2 Ribbed Belt Pulley with Freewheel, Removing and Installing, Bosch

Special tools and workshop equipment required

- ◆ Multi-Tooth Adapter - 3400-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

- Remove the Generator - C- . Refer to [⇒ "2 Generator", page 17](#) .
- Secure the Generator - C- in a vise at the mounting points.
- Remove the cap from the ribbed belt pulley with freewheel.

The threads on the generator shaft are a left-handed thread, therefore, rotate it clockwise to loosen and counter-clockwise to tighten.



- Insert the Multi-Tooth Adapter - 3400- into the pulley with ribbed belt pulley with freewheel for the Generator - C- using and open-end wrench.
- Place an M10 multi-point socket -1- into the generator shaft.
- Turn the threaded connection to the right while counterholding it with the wrench.
- Hold the ribbed belt pulley with freewheel in place by hand and turn it at the Generator - C- input shaft until the ribbed belt pulley with freewheel can be removed.

Installing

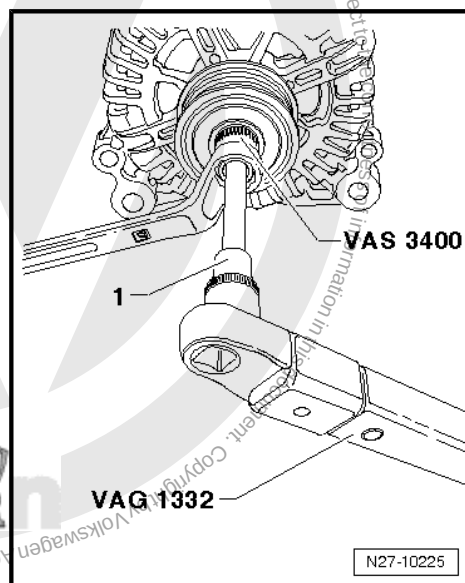
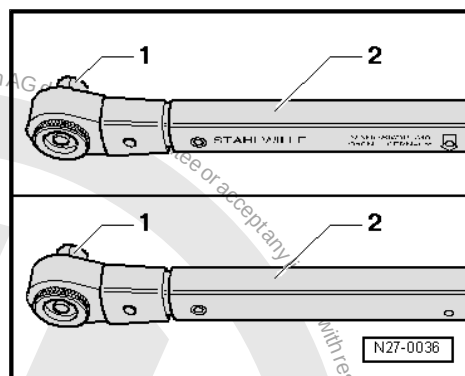
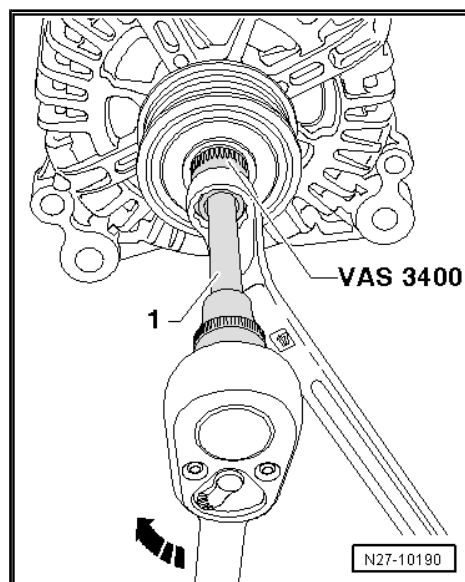
Install in reverse order of removal. Note the following:

- Next, install the ribbed belt pulley with freewheel by hand onto the Generator - C- input shaft until it stops.

The Torque Wrench 1332 40-200Nm - VAG1332- must be rear-ranged for installing the ribbed belt pulley with freewheel as follows:

- Release the socket insert -1- and remove it from the handle -2-.
- Turn the handle -2- on the Torque Wrench 1332 40-200Nm - VAG1332- 180 degrees and install the socket insert -1-.
- Set the rotation direction of the torque wrench bit to left.

- Place an M10 multi-point socket -1- into the generator shaft.
- Counterhold the Multi-Tooth Adapter - 3400- with the wrench.
- Tighten the free-wheeling ribbed belt pulley by turning the Generator - C- input shaft to the left using the Torque Wrench 1332 40-200Nm - VAG1332- .
- Tighten the threaded connections to the tightening specification. Refer to ➔ ["2.1 Overview - Generator", page 17](#) .





2.5.3 Ribbed Belt Pulley with Freewheel, Removing and Installing, Valeo

Special tools and workshop equipment required

- ◆ Multi-Tooth Adapter - 3400-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torx Key Socket Set - VAG1603A/1-

Removing

- Remove the Generator - C- . Refer to ["2 Generator", page 17](#) .
- Secure the Generator - C- in a vise at the mounting points.
- Remove the cap from the ribbed belt pulley with freewheel.

The threads on the generator shaft are a left-handed thread, therefore, rotate it clockwise to loosen and counter-clockwise to tighten.

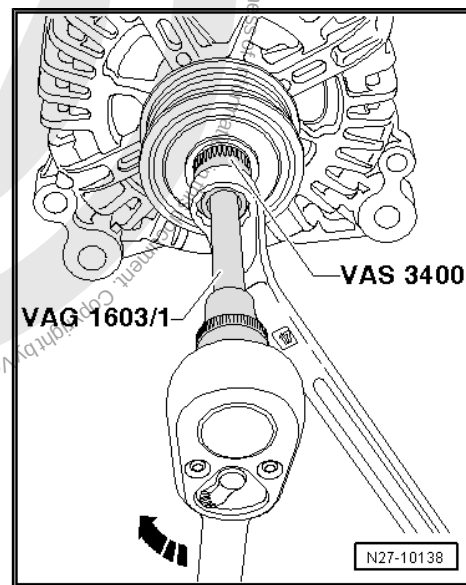
- Insert the Multi-Tooth Adapter - 3400- into the pulley with ribbed belt pulley with freewheel for the Generator - C- using an open-end wrench.
- Install the Torx Key Socket Set - VAG1603A/1- in the generator shaft.
- Turn the threaded connection to the right while counterholding it with the wrench.
- Hold the ribbed belt pulley with freewheel in place by hand and turn it at the Generator - C- input shaft until the ribbed belt pulley with freewheel can be removed.

Installing

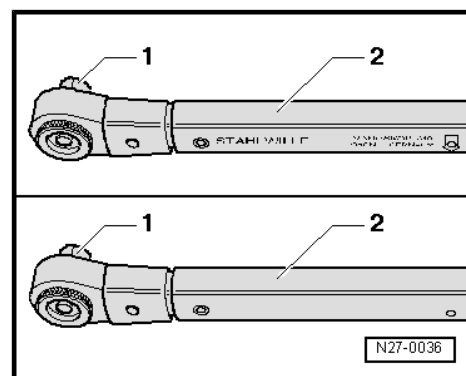
Install in reverse order of removal. Note the following:

- Next, install the ribbed belt pulley with freewheel by hand onto the Generator - C- input shaft until it stops.

The Torque Wrench 1332 40-200Nm - VAG1332- must be rearranged for installing the ribbed belt pulley with freewheel as follows:

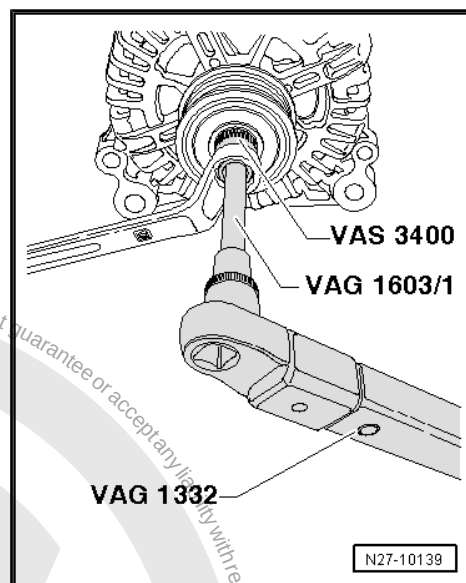


- Release the socket insert -1- and pull it out of the handle -2-.
- Turn the handle -2- on the Torque Wrench 1332 40-200Nm - VAG1332- 180 degrees and install the socket insert.
- Set the rotation direction of the Torque Wrench 1332 40-200Nm - VAG1332- bit to the left.





- Install the Torx Key Socket Set - VAG1603A/1- in the generator shaft.
- Counterhold the Multi-Tooth Adapter - 3400- with the wrench.
- Tighten the free-wheeling ribbed belt pulley by turning the Generator - C- input shaft to the left using the Torque Wrench 1332 40-200Nm - VAG1332- .
- Tighten the threaded connections to the tightening specification. Refer to ⇒ ["2.1 Overview - Generator", page 17](#).



2.6 Voltage Regulator, Removing and Installing

⇒ ["2.6.1 Voltage Regulator C1, Removing and Installing, Bosch", page 50](#)

⇒ ["2.6.2 Voltage Regulator C1, Removing and Installing, Valeo", page 51](#)

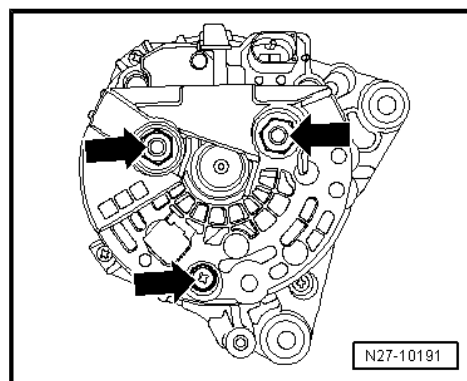
2.6.1 Voltage Regulator - C1- , Removing and Installing, Bosch

Special tools and workshop equipment required

- ◆ Torque Screwdriver - VAG1624-

Removing

- Remove the Generator - C- . Refer to ⇒ ["2 Generator", page 17](#) .
- Remove the bolt and the nuts -arrows- and remove the cap from the Generator - C- .



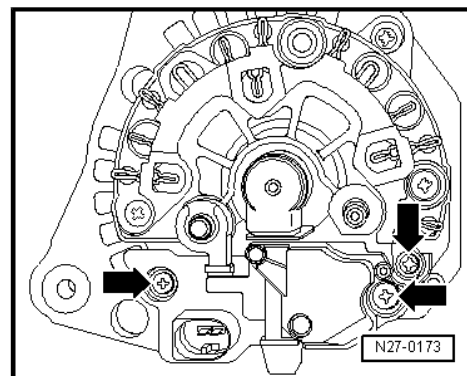


- Remove the bolts -arrows- from the Voltage Regulator - C1- .
- Remove the Voltage Regulator - C1- from the Generator - C- .

Installing

Install in reverse order of removal.

- Tighten the threaded connections to the tightening specification. Refer to ⇒ ["2.1 Overview - Generator", page 17](#) .



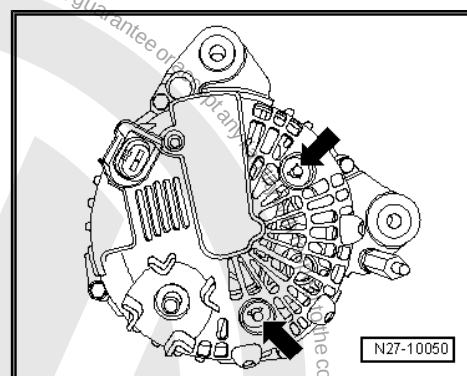
2.6.2 Voltage Regulator - C1- , Removing and Installing, Valeo

Special tools and workshop equipment required

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

Removing

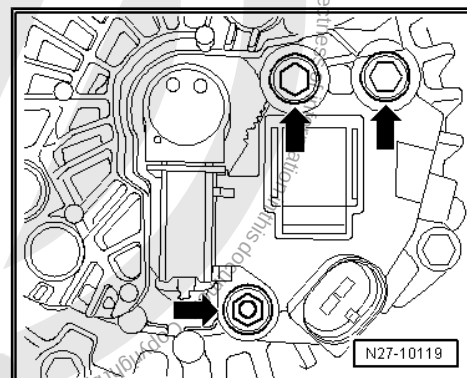
- Remove the Generator - C- . Refer to ⇒ ["2 Generator", page 17](#) .
- Remove the locking rings -arrows- and remove the cap from the Generator - C- .
- Remove the bolts -arrows- from the Voltage Regulator - C1- .



- Remove the Voltage Regulator - C1- from the Generator - C- .

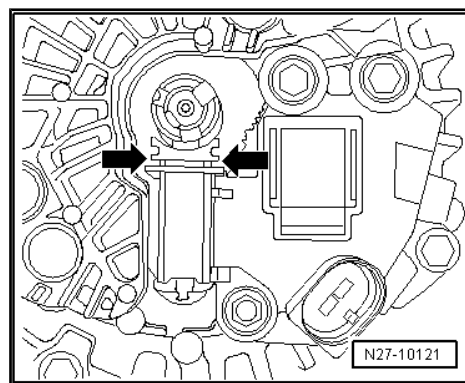
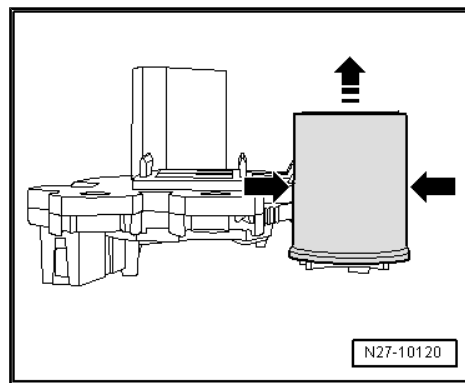
Installing

Install in reverse order of removal. Note the following:





- Open the tabs -arrows- and remove the cap from the Voltage Regulator - C1- .
- Push the carbon brushes in the Voltage Regulator - C1- housing and then insert the Voltage Regulator - C1- in the Generator - C- .
- Tighten the threaded connections to the tightening specification. Refer to [⇒ “2.1 Overview - Generator”, page 17](#) .
- Push the cap into the guide rails -arrows- until it audibly engages.





3 Starter

⇒ ["3.1 Overview - Starter", page 53](#)

⇒ ["3.2 Starter, Removing and Installing", page 56](#)

⇒ ["3.3 Starter, Checking", page 90](#)

3.1 Overview - Starter

⇒ ["3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission", page 53](#)

⇒ ["3.1.2 Overview - Starter, Manual Transmission", page 54](#)

⇒ ["3.1.3 Overview - Starter, 1.8L Gasoline Engine and Automatic Transmission", page 55](#)

3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission

1 - Starter - B-

- ❑ Checking. Refer to
⇒ ["3.3 Starter, Checking", page 90](#).

2 - B+ Wire Connection to Starter - B-

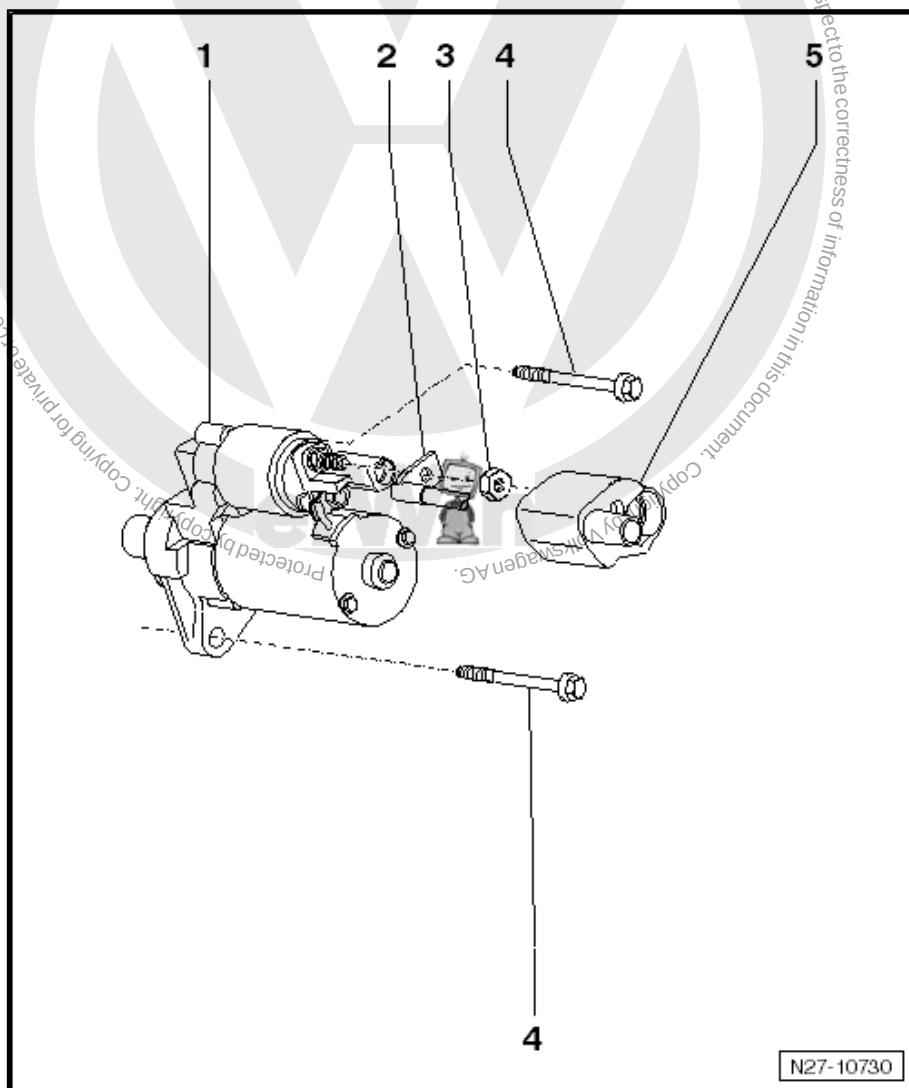
3 - Nut

- ❑ 20 Nm

4 - Bolt

- ❑ M12 = 75 Nm
- ❑ M10 = 40 Nm
- ❑ Quantity: 2

5 - Cap





3.1.2 Overview - Starter, Manual Transmission

1 - Starter - B-

- ❑ Checking. Refer to
⇒ ["3.3 Starter, Checking", page 90](#).

2 - B+ Wire Connection to Starter - B-

3 - Nut

- ❑ 20 Nm

4 - Bolt

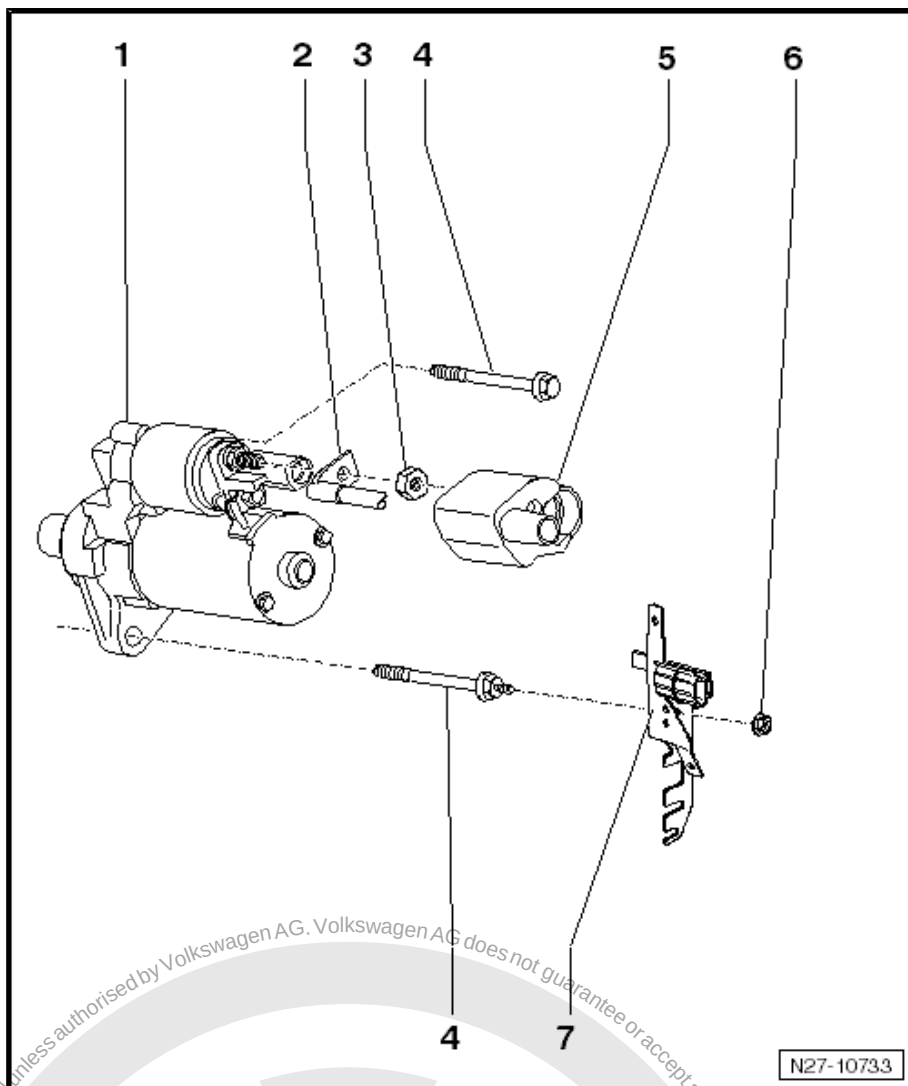
- ❑ Quantity: 2
- ❑ 75 Nm

5 - Cap

6 - Nut

- ❑ 20 Nm

7 - Cable Holder





3.1.3 Overview - Starter, 1.8L Gasoline Engine and Automatic Transmission

1 - Starter - B-

- ☐ Removing and installing. Refer to
⇒ ["3.2.4 Starter, Removing and Installing, 1.8L Gasoline Engine 125 kW, Automatic Transmission", page 62](#).
- ☐ Checking. Refer to
⇒ ["3.3 Starter, Checking", page 90](#).

2 - Bolt

- ☐ 80 Nm
- ☐ Quantity: 2

3 - Bracket

- ☐ For the wiring harness

4 - Connector

5 - Nut

- ☐ 20 Nm
- ☐ Quantity: 2

6 - Nut

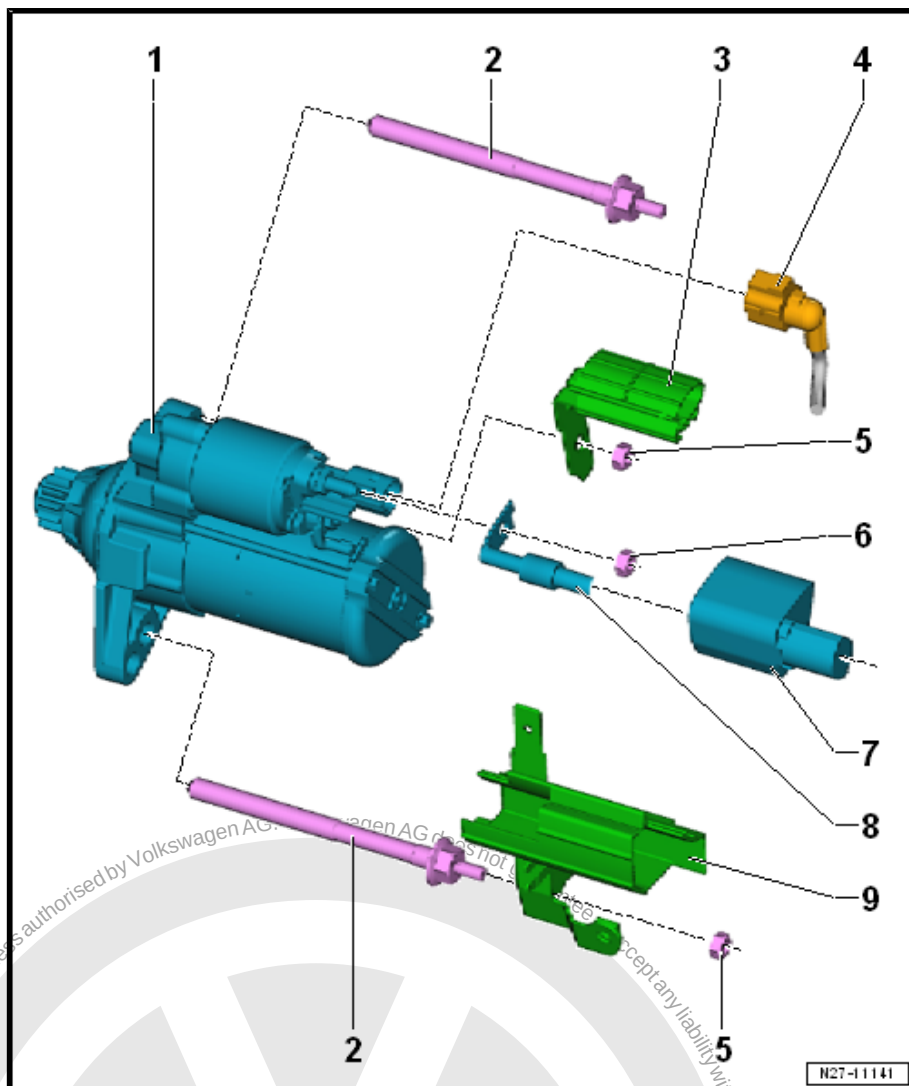
- ☐ 20 Nm

7 - Cap

8 - Terminal 30/B+

9 - Bracket

- ☐ For the wiring harness





3.2 Starter, Removing and Installing

⇒ [“3.2.2 Starter, Removing and Installing, 2.0L Gasoline Engine 85 kW, Automatic Transmission”, page 58](#)

⇒ [“3.2.3 Starter, Removing and Installing, 2.5L Gasoline Engine 125 kW, Automatic Transmission”, page 60](#)

⇒ [“3.2.4 Starter, Removing and Installing, 1.8L Gasoline Engine 125 kW, Automatic Transmission”, page 62](#)

⇒ [“3.2.6 Starter, Removing and Installing, 1.4L Gasoline Engine, 90/110/118 kW, DSG Transmission”, page 66](#)

⇒ [“3.2.7 Starter, Removing and Installing, 2.0L Gasoline Engine 85 kW, DSG Transmission”, page 68](#)

⇒ [“3.2.8 Starter, Removing and Installing, 2.0L Gasoline Engine 147 kW, DSG Transmission”, page 70](#)

⇒ [“3.2.10 Starter, Removing and Installing, 2.0L Diesel Engine, 81/103 kW, DSG Transmission”, page 73](#)

⇒ [“3.2.12 Starter, Removing and Installing, 1.4L Gasoline Engine, 90/110/118 kW, Manual Transmission”, page 77](#)

⇒ [“3.2.14 Starter, Removing and Installing, 2.0L Gasoline Engine 85 kW, Manual Transmission”, page 80](#)

⇒ [“3.2.15 Starter, Removing and Installing, 2.0L Gasoline Engine 147 kW, Manual Transmission”, page 82](#)

⇒ [“3.2.16 Starter, Removing and Installing, 2.5L Gasoline Engine 125 kW, Manual Transmission”, page 84](#)

⇒ [“3.2.18 Starter, Removing and Installing, 2.0L Diesel Engine, 81/103 kW, Manual Transmission”, page 88](#)

3.2.1 Starter, Removing and Installing, 1.6L Gasoline Engine 77 kW, Automatic Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

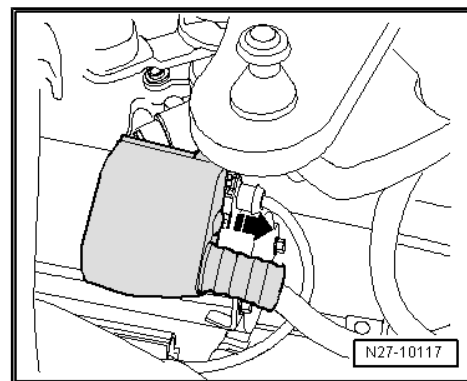
Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .

Removing

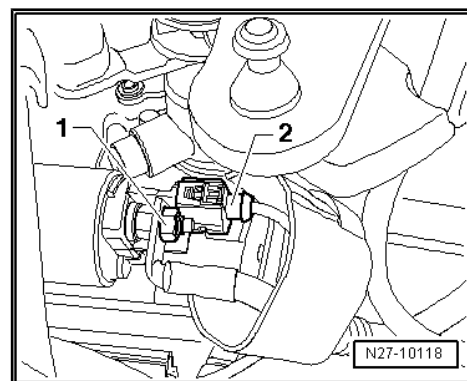
- Disconnect the Battery - A- . Refer to ⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .



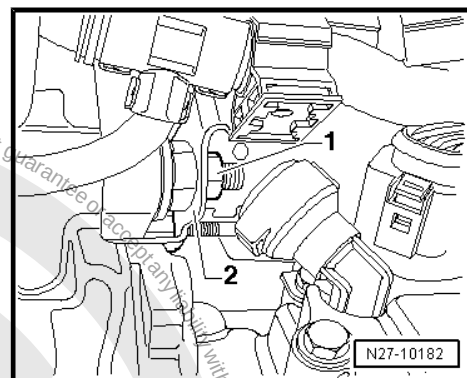
- Remove the cap from the solenoid switch in the -direction of the arrow-.



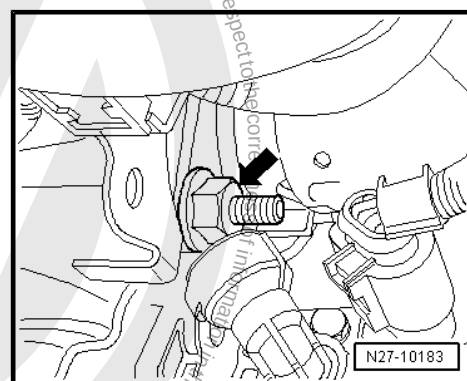
- Remove the positive cable -1- and then release and disconnect the terminal 50 connector -2-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.

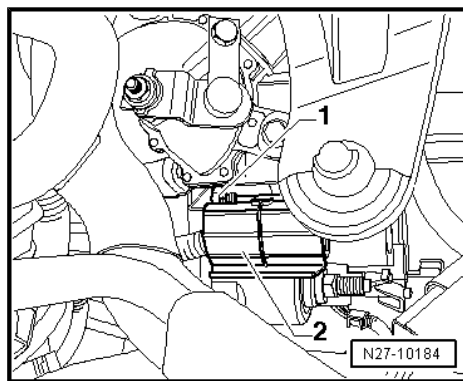


- Remove the lower starter bolt -arrow-.

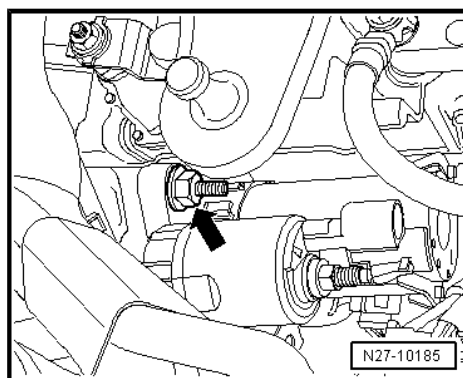




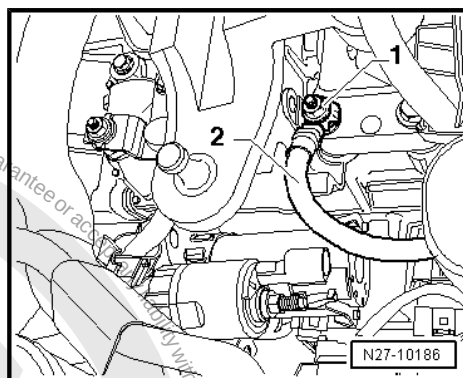
- Remove the nut -1- from the upper starter bolt.
- Remove the cable holder -2-.



- Remove the upper starter bolt -arrow-.



- Remove the nut from the ground cable -1- and then move the cable -2- to the side.
- Remove the Starter - B- .



Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission” page 53](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .

3.2.2 Starter, Removing and Installing, 2.0L Gasoline Engine 85 kW, Automatic Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



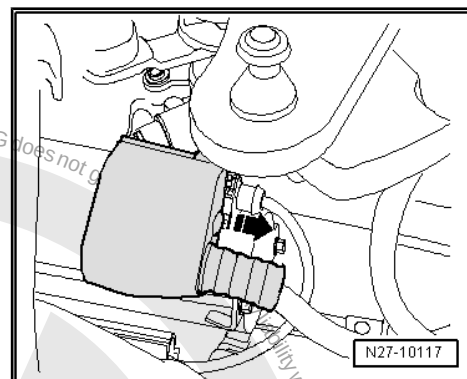
Caution

**Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .**

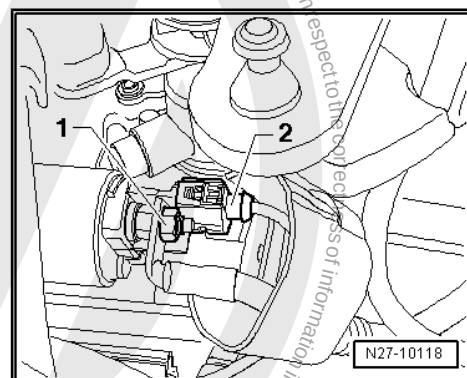


Removing

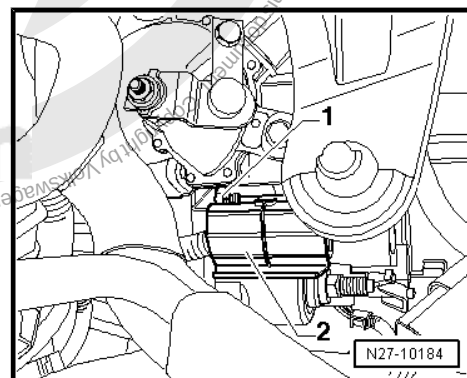
- Disconnect the Battery - A- . Refer to
⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting",
page 7](#) .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air
Filter; Overview - Air Filter Housing .
- Remove the cap from the solenoid switch in the direction of
-arrow-.



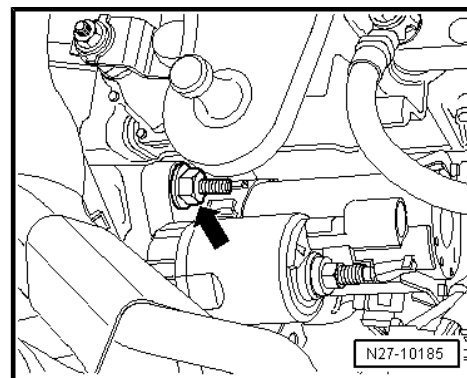
- Remove the positive cable -1-, and release and disconnect the
terminal 50 connector -2-.



- Remove the nut -1- from the upper starter bolt.
- Remove the cable holder -2-.

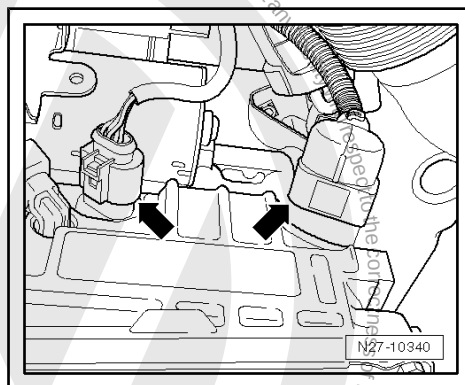


- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep.
Gr. 50 ; Noise Insulation .

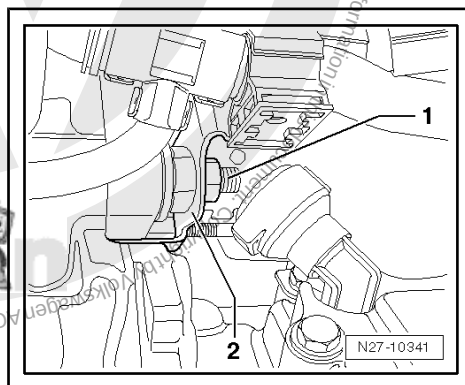




- Release and disconnect the connectors -arrows-.



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.
- Remove the lower starter bolt -arrow-.

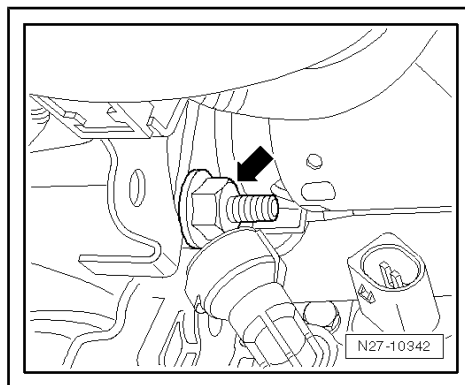


- Remove the Starter - B- downward and out of the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission”, page 53](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.3 Starter, Removing and Installing, 2.5L Gasoline Engine 125 kW, Automatic Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

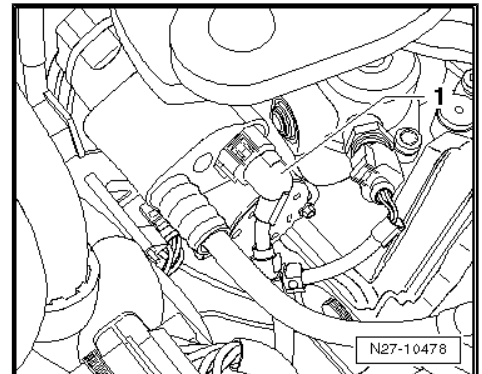
*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .*

Removing

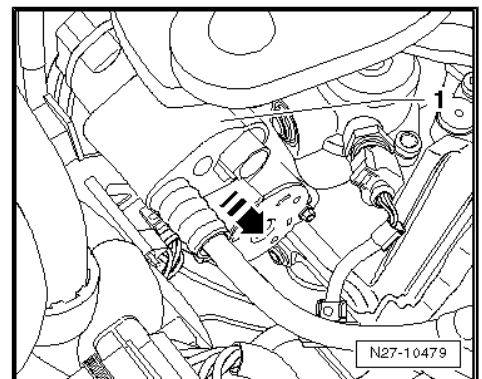
- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .



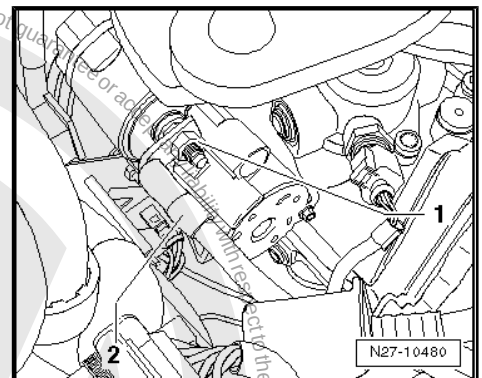
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the air filter housing and the connecting pipe. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Release and disconnect the connector (terminal 50) -1-.



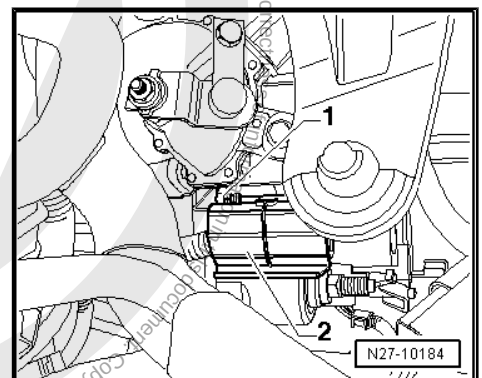
- Remove the cap -1- from the solenoid switch in the direction of -arrow-.



- Remove the nut -1- and remove the positive cable -2- from the solenoid switch.
- Remove the nut -1- from the upper starter bolt.

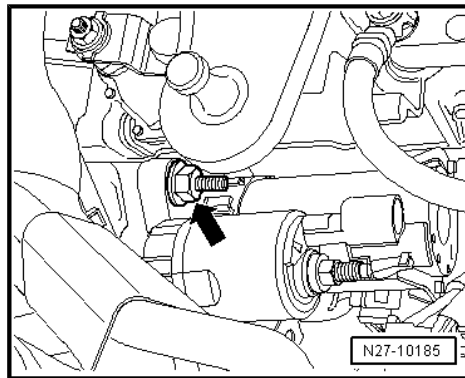


- Remove the cable holder -2-.

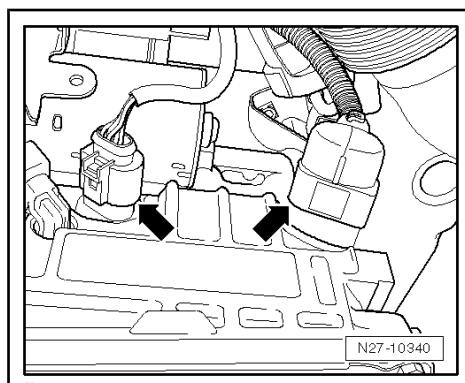




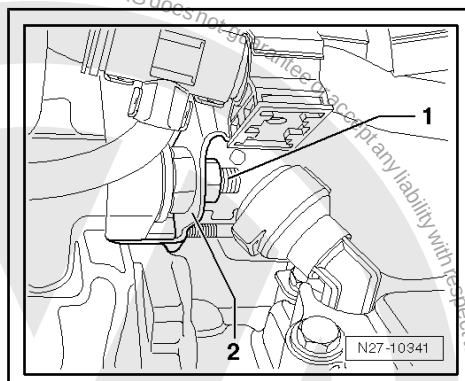
- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .



- Release and disconnect the connectors -arrows-.



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.
- Remove the lower starter bolt -arrow-.

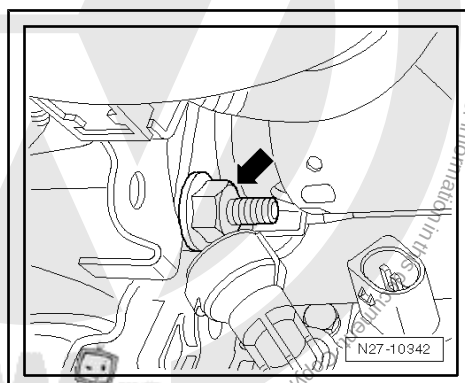


- Remove the Starter - B- downward and out of the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission”, page 53](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.4 Starter, Removing and Installing, 1.8L Gasoline Engine 125 kW, Automatic Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

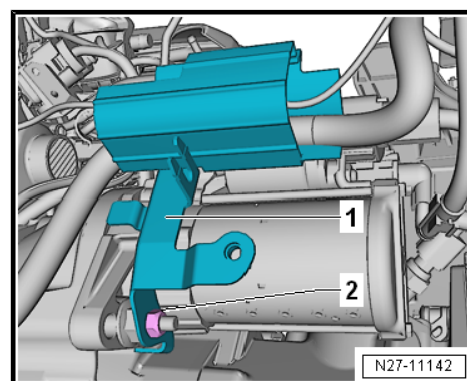
Removing



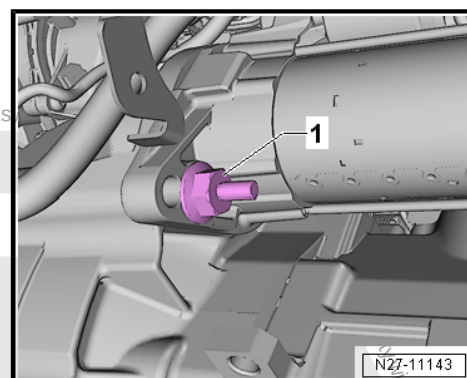
Caution

*Always follow the instructions in the Repair Manual exactly when disconnecting and connecting the Battery - A-. Refer to ⇒ **"1.5 Battery, Disconnecting and Connecting", page 7**.*

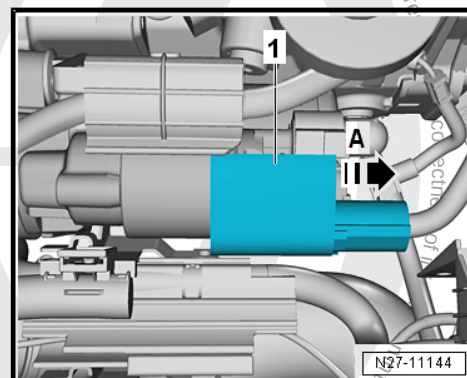
- Disconnect the Battery - A-. Refer to ⇒ **"1.5.1 Battery A in Engine Compartment, Disconnecting", page 7**.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .
- Remove the nut -2-.
- Remove the bracket -1- for the wiring harness.



- Remove the bolt -1-.
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .

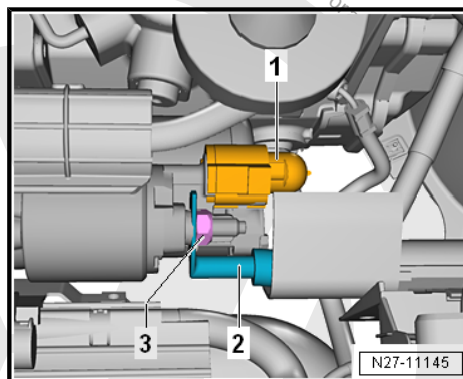


- Slide the cap -1- in the direction of the -arrow A-.
- Release and disconnect the connector -1-.

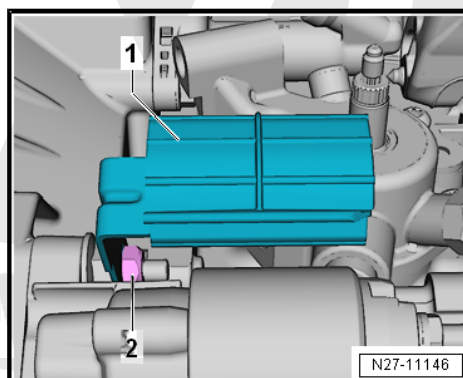




- Remove the nut -3- and remove terminal 30/B+ -2-.
- Remove the nut -2-.



- Remove the bracket -1- for the wiring harness.
- Remove the bolt -1-.



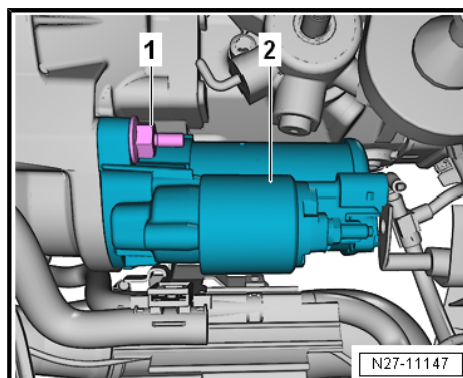
- Remove the Starter - B- -2- upward out of the vehicle.

Installing

Install in the reverse order of removal while noting the following:

Tightening Specifications

- ♦ Refer to
⇒ [“3.1.3 Overview - Starter, 1.8L Gasoline Engine and Automatic Transmission”, page 55](#)



3.2.5 Starter, Removing and Installing, 1.2L Gasoline Engine 77 kW, DSG Transmission

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331-
- ♦ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

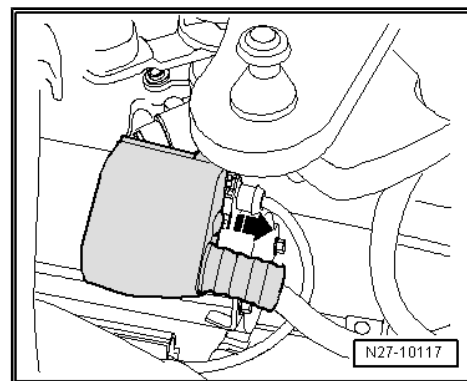
*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .*

Removing

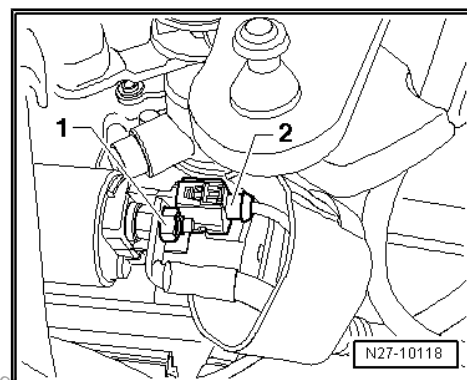
- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .



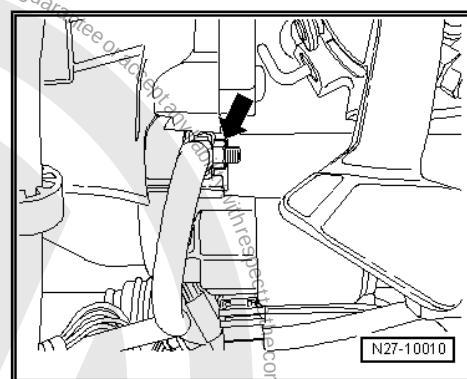
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Remove the cap from the solenoid switch in the -direction of the arrow-.



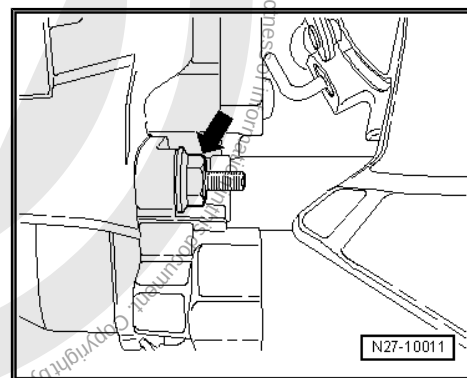
- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



- Remove the ground wire from the upper starter bolt -arrow-.

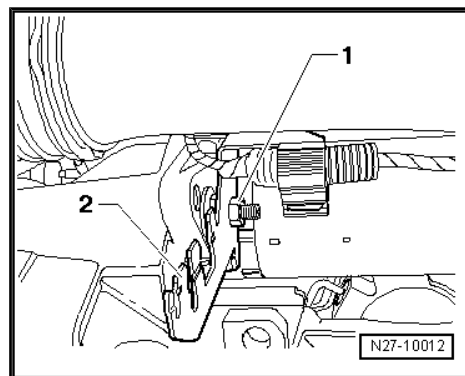


- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .





- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.

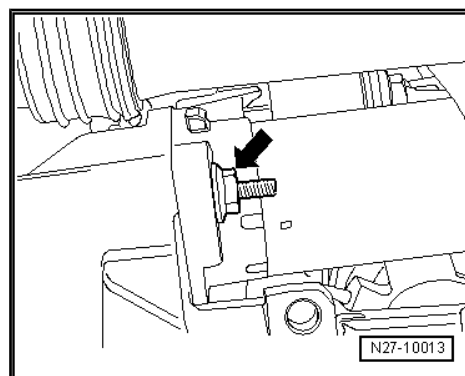


- Remove the lower starter bolt -arrow-.
- Remove the Starter - B- downward and out of the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission”, page 53](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.6 Starter, Removing and Installing, 1.4L Gasoline Engine, 90/110/118 kW, DSG Transmission

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331-
- ♦ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

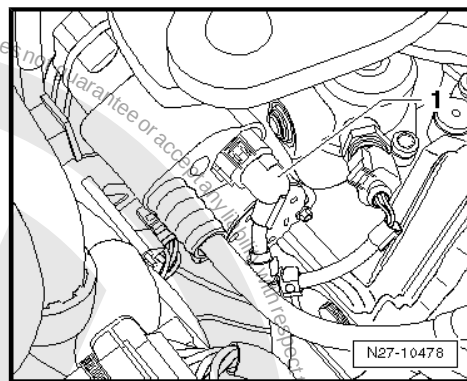
*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .*

Removing

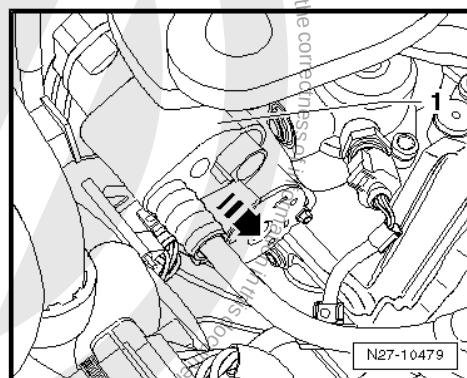
- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .



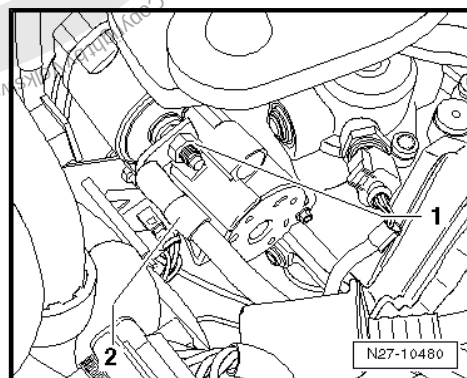
- Release and disconnect the connector (terminal 50) -1-



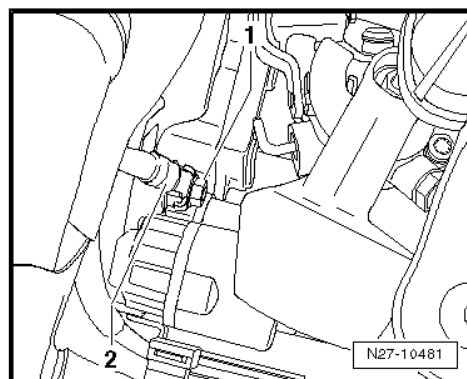
- Remove the cap -1- from the solenoid switch in the direction of -arrow-.



- Remove the nut -1- and remove the positive cable -2- from the solenoid switch.
- Remove the nut -1- from the upper starter bolt and disconnect the ground wire -2-.



- Remove the upper starter bolt.
- Remove the lower starter bolt -arrow-.



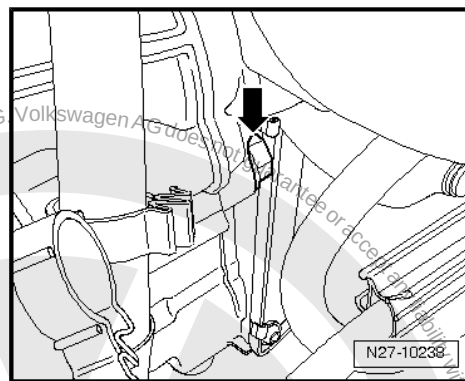


- Remove the Starter - B- from the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission”, page 53](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.7 Starter, Removing and Installing, 2.0L Gasoline Engine 85 kW, DSG Transmission

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331-
- ♦ Torque Wrench 1332 40-200Nm - VAG1332-

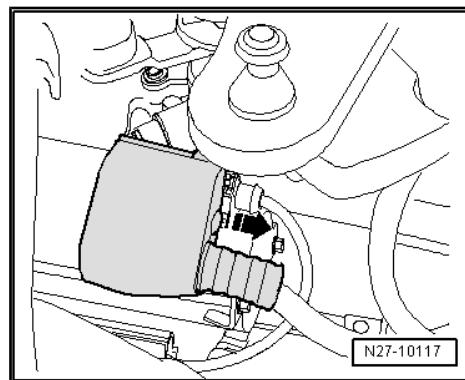


Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .*

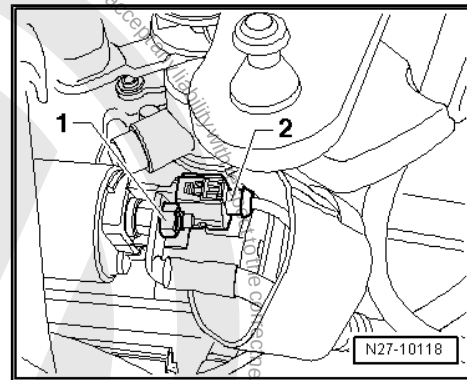
Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Remove the cap from the solenoid switch in the direction of -arrow-.

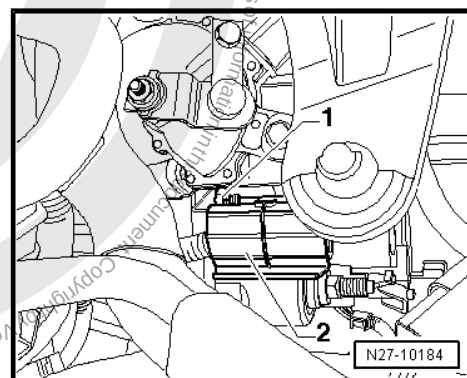




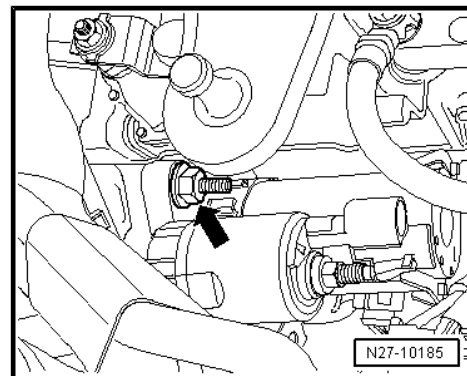
- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



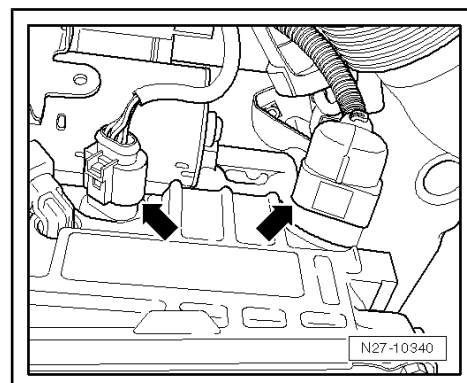
- Remove the nut -1- from the upper starter bolt.
- Remove the cable holder -2-.



- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .

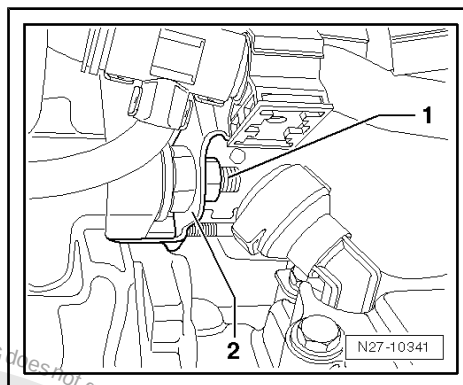


- Release and disconnect the connectors -arrows-.





- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.
- Remove the lower starter bolt -arrow-.

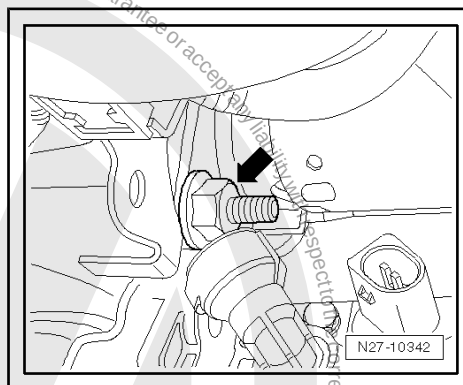


- Remove the Starter - B- downward and out of the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission”, page 53](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.8 Starter Removing and Installing, 2.0L Gasoline Engine 147 kW, DSG Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

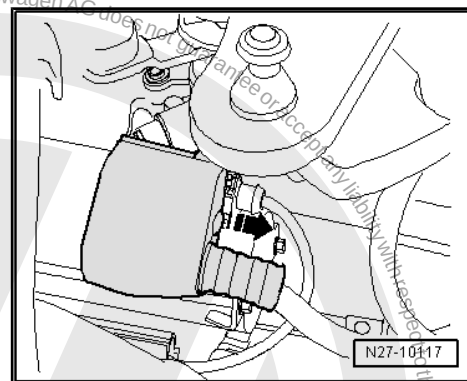
Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .

Removing

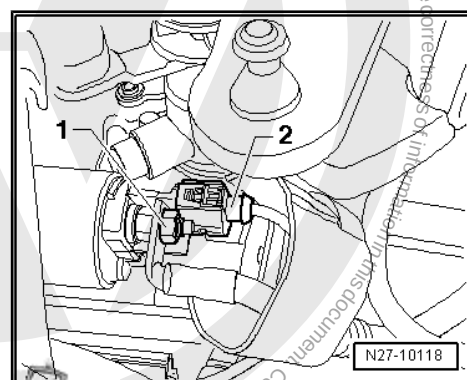
- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .



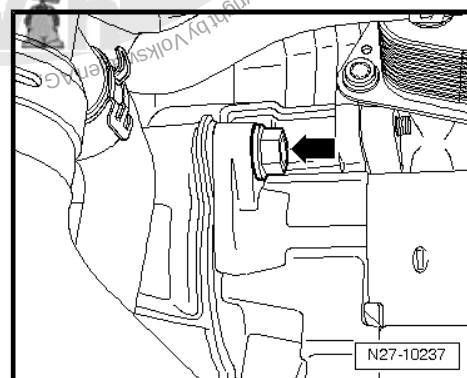
- Remove the cap from the solenoid switch in the direction of -arrow-.



- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



- Remove the upper starter bolt -arrow-.
- Remove the lower starter bolt -arrow-.

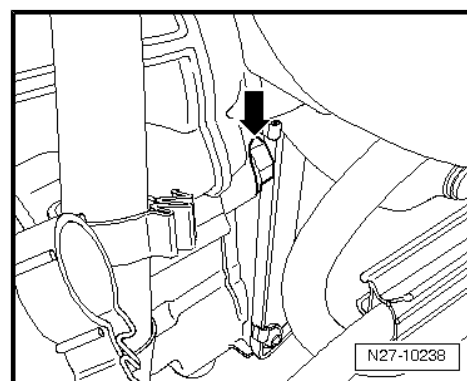


- Remove the Starter - B- from the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission", page 53](#) .
- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#) .



3.2.9 Starter, Removing and Installing, 1.6L Diesel Engine 77 kW, DSG Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

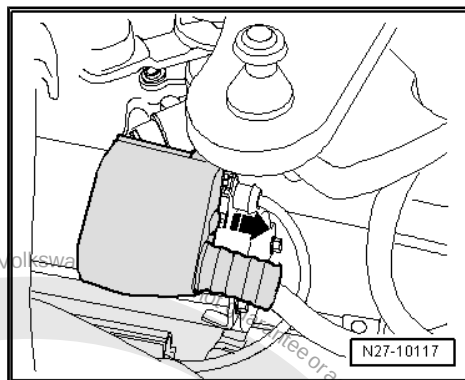


Caution

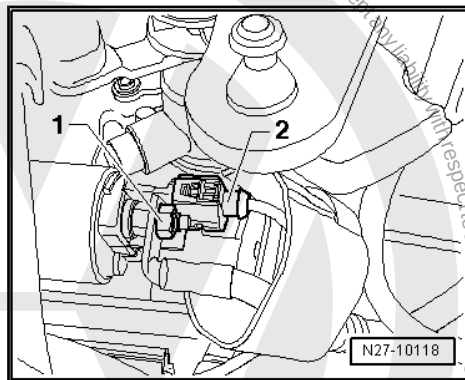
Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ⇒ "1.5 Battery, Disconnecting and Connecting", page 7 .

Removing

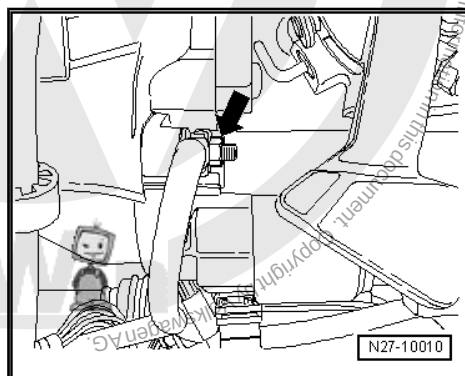
- Disconnect the Battery - A- . Refer to ⇒ "1.5.1 Battery A in Engine Compartment, Disconnecting", page 7 .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Diesel Direct Injection System; Overview - Air Filter .
- Remove the cap from the solenoid switch in the -direction of the arrow-.



- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.

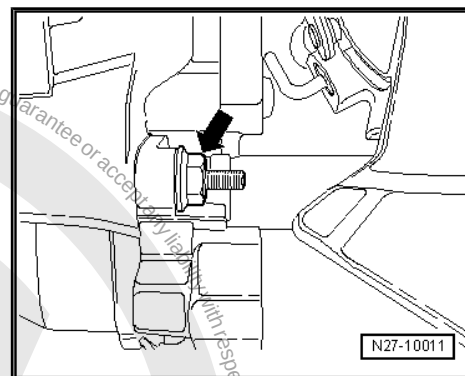


- Remove the nut -arrow- and disconnect the ground wire from the upper starter bolt.

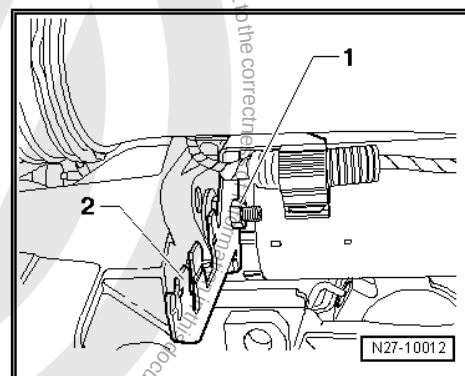




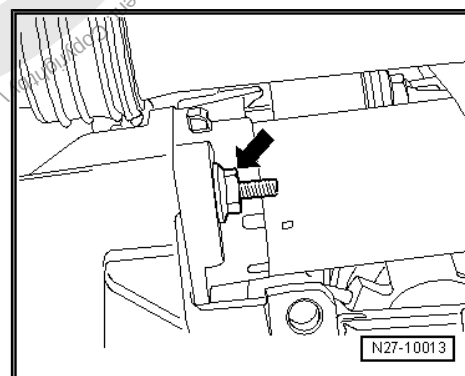
- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep Gr. 50 ; Noise Insulation .



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.



- Remove the lower starter bolt -arrow-.
- Remove the Starter - B- downward.



Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission", page 53](#) .
- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#) .

3.2.10 Starter, Removing and Installing, 2.0L Diesel Engine, 81/103 kW, DSG Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

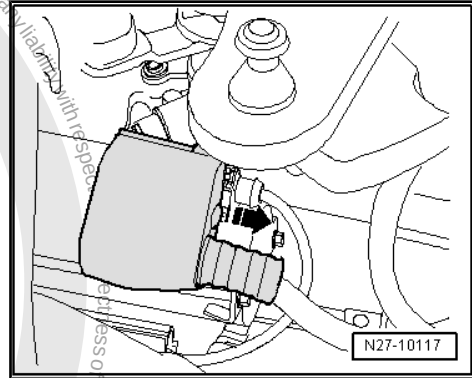
*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ ["1.5 Battery, Disconnecting and Connecting", page 7](#) .*

Removing

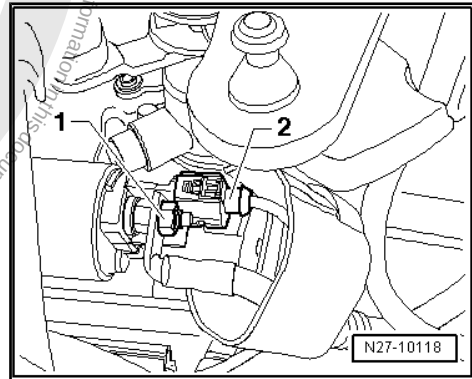
- Disconnect the Battery - A- . Refer to
⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#) .



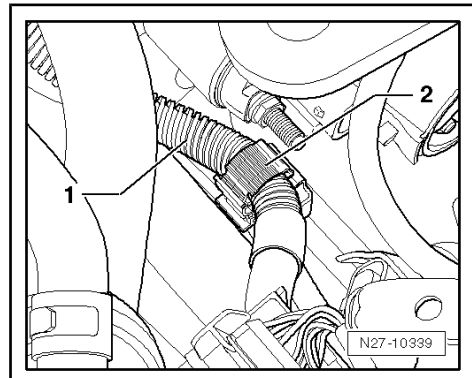
- Remove the air filter housing. Refer to ➤ Rep. Gr. 23 ; Diesel Direct Injection System; Overview - Air Filter .
- Remove the cap from the solenoid switch in the direction of -arrow-.



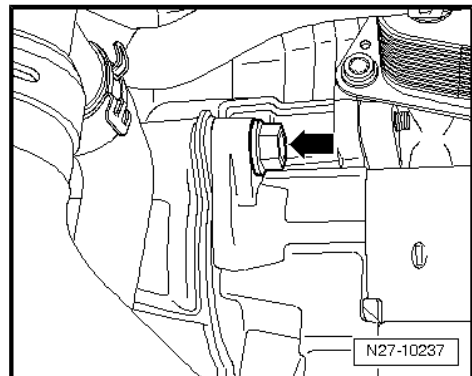
- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



- Unclip the wire -1- from the wire holder -2-.



- Remove the upper starter bolt -arrow-.
- Remove the lower starter bolt -arrow-.



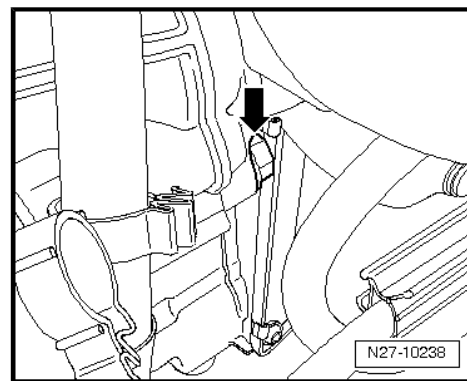


- Remove the Starter - B- upward from the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.1 Overview - Starter, Automatic Transmission/DSG Transmission”, page 53](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.11 Starter, Removing and Installing, 1.2L Gasoline Engine 77 kW, Manual Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

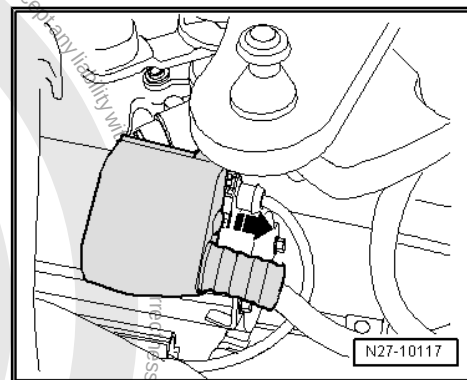


Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .*

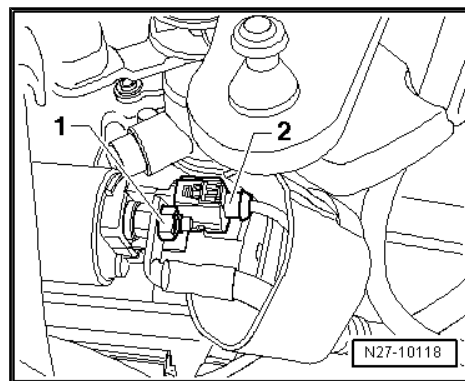
Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview ⇒ Air Filter Housing .
- Remove the cap from the solenoid switch in the -direction of the arrow-.

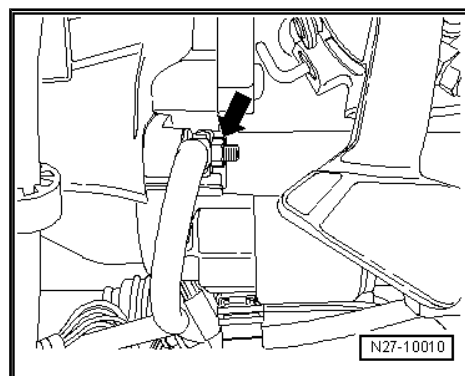




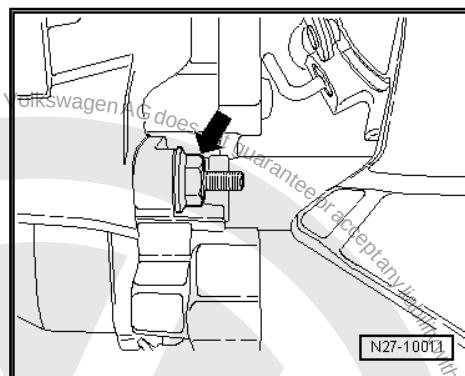
- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



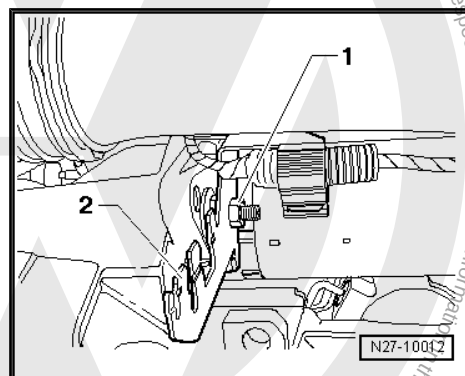
- Remove the ground wire from the upper starter bolt -arrow-.



- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.



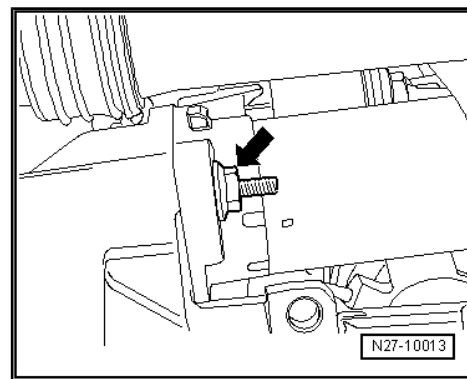


- Remove the lower starter bolt -arrow-.
- Remove the Starter - B- downward and out of the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.2 Overview - Starter, Manual Transmission”, page 54](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.12 Starter, Removing and Installing, 1.4L Gasoline Engine, 90/110/118 kW, Manual Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

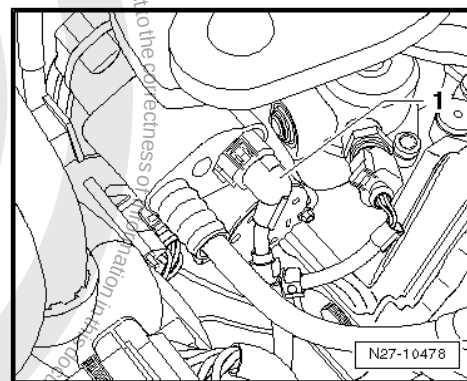


Caution

Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .

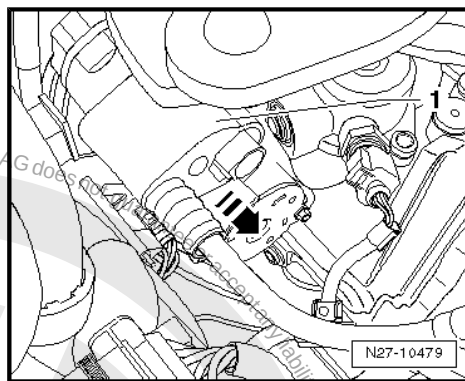
Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Release and disconnect the connector (terminal 50) -1-.

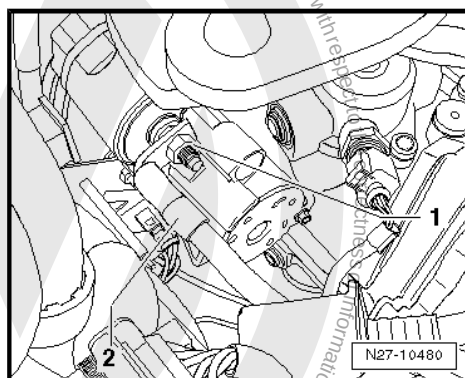




- Remove the cap -1- from the solenoid switch in the direction of -arrow-.



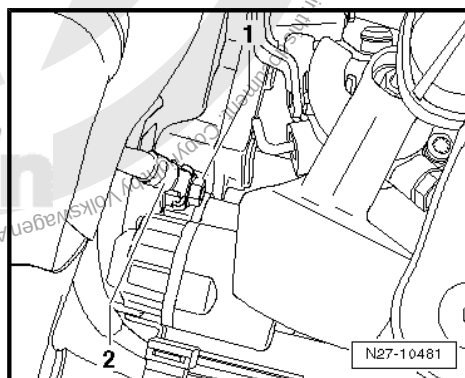
- Remove the nut -1- and disconnect the positive cable -2- from the solenoid switch threaded connector.



- Remove the nut -1- from the upper starter bolt and disconnect the ground wire -2-.

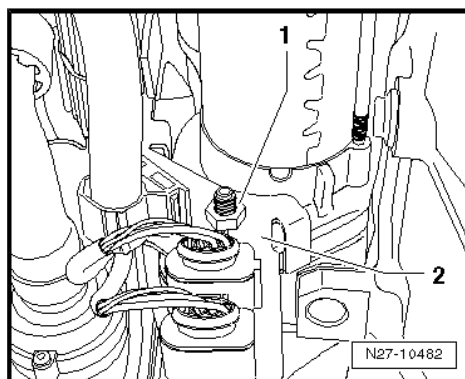
- Remove the upper starter bolt that is located behind.

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .



- Remove the nut -1- and the wire holder -2- from the lower starter bolt.

- Remove the lower starter bolt -2-.



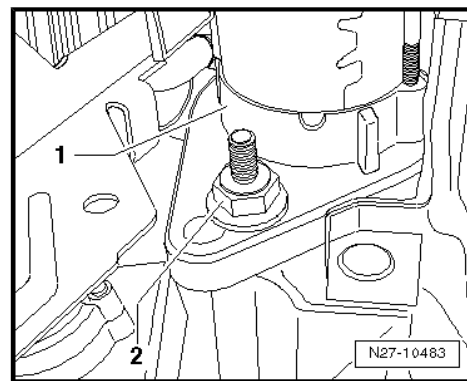


- Remove the Starter - B- downward and out of the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.2 Overview - Starter, Manual Transmission”, page 54](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.13 Starter, Removing and Installing, 1.6L Gasoline Engine 77 kW, Manual Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

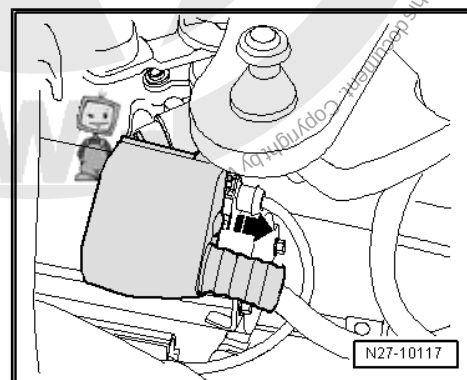


Caution

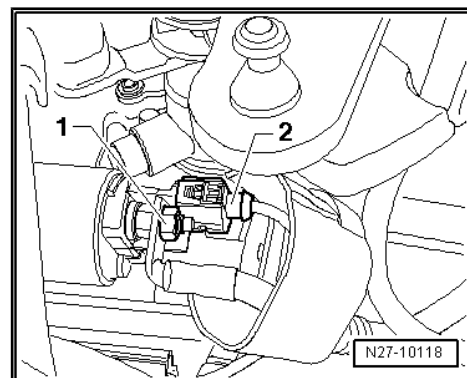
*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .*

Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the cap from the solenoid switch in the -direction of the arrow-.

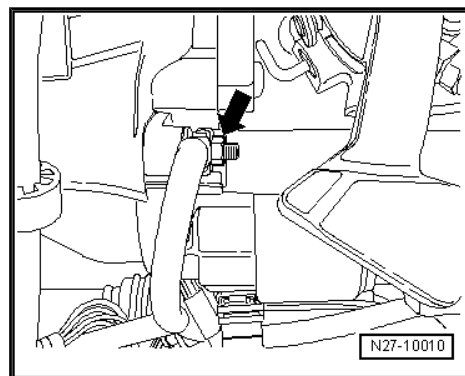


- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.

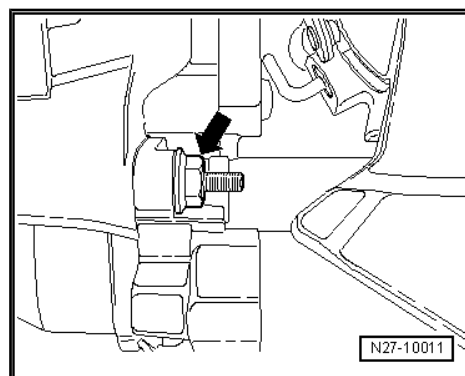




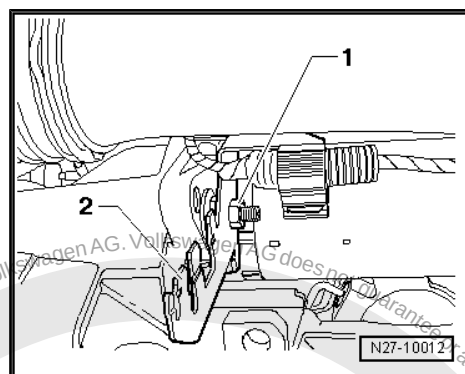
- Remove the ground cable from the starter bolt -arrow-.



- Remove the starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.

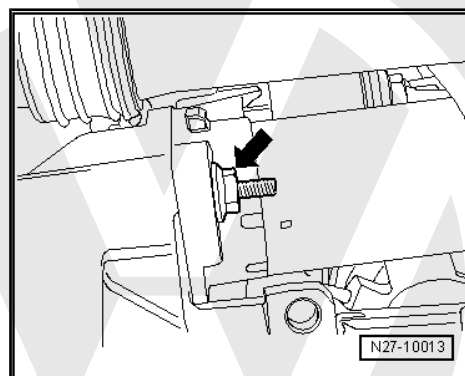


- Remove the starter bolt -arrow-.
- Remove the Starter - B- .

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.2 Overview - Starter, Manual Transmission”, page 54](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment Connecting”, page 8](#) .



3.2.14 Starter, Removing and Installing, 2.0L Gasoline Engine 85 kW, Manual Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

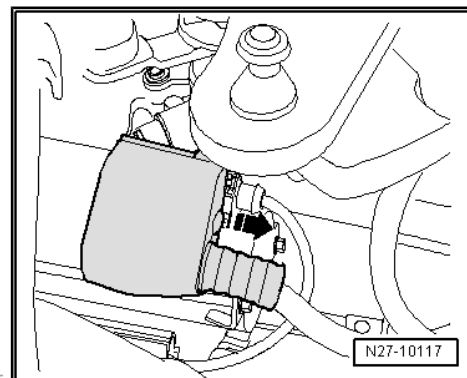


Caution

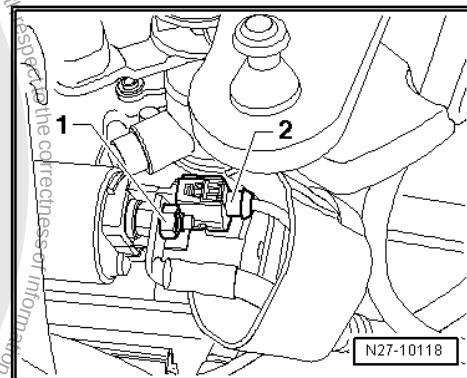
Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to ⇒ "1.5 Battery, Disconnecting and Connecting", page 7 .

Removing

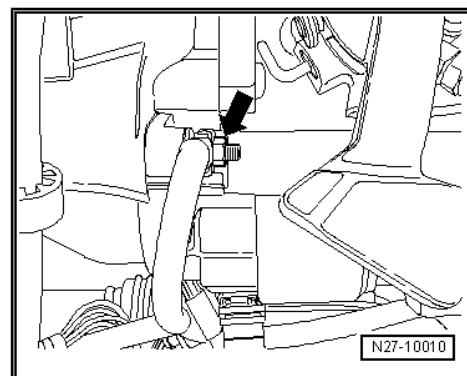
- Disconnect the Battery - A- . Refer to ⇒ "1.5.1 Battery A in Engine Compartment, Disconnecting", page 7 .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Remove the cap from the solenoid switch in the direction of -arrow-.



Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.

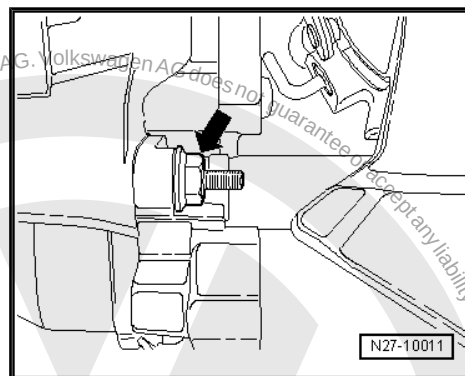


- Remove the ground cable from the starter bolt -arrow-.

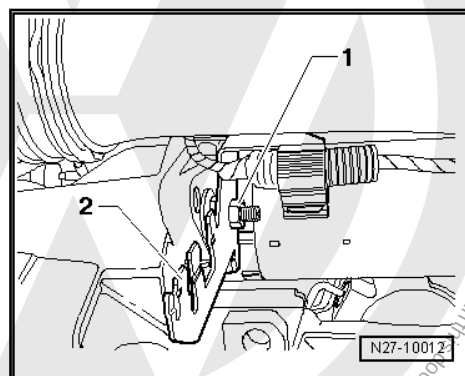




- Remove the starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .
- Remove the nut -1- from the lower starter bolt.



- Remove the cable holder -2-.
- Remove the starter bolt -arrow-.

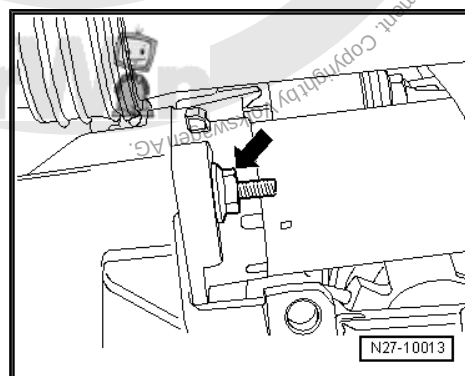


- Remove the Starter - B- downward and out of the vehicle.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ ["3.1.2 Overview - Starter, Manual Transmission", page 54](#) .
- Connect the Battery - A- . Refer to
⇒ ["1.5.2 Battery A in Engine Compartment, Connecting", page 8](#) .



3.2.15 Starter, Removing and Installing, 2.0L Gasoline Engine 147 kW, Manual Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Caution

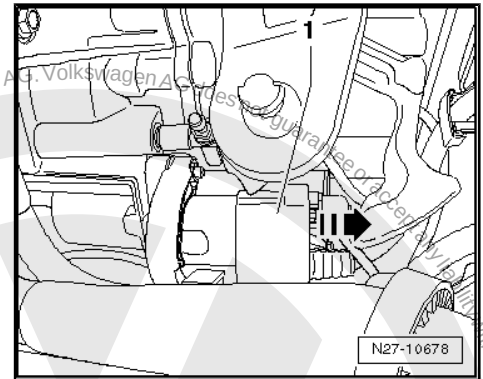
*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ ["1.5 Battery, Disconnecting and Connecting", page 7](#) .*

Removing

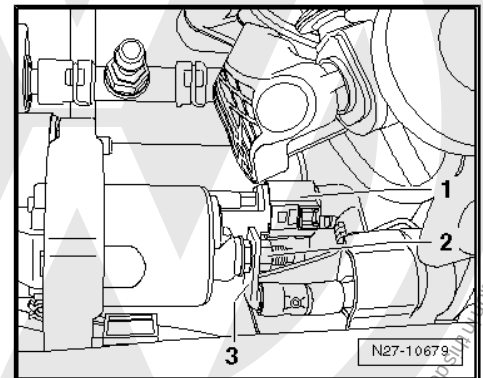
- Disconnect the Battery - A- . Refer to
⇒ ["1.5.1 Battery A in Engine Compartment, Disconnecting", page 7](#) .



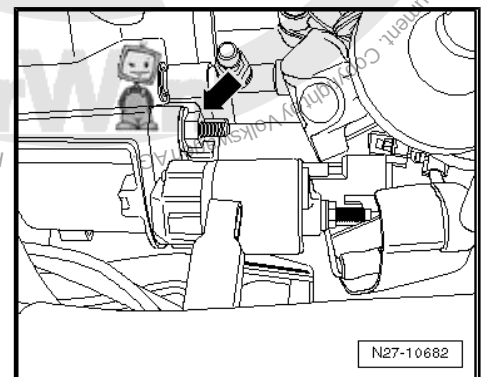
- Remove the air filter housing. Refer to ➔ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Remove the cap -1- from the solenoid switch in the direction of -arrow-.



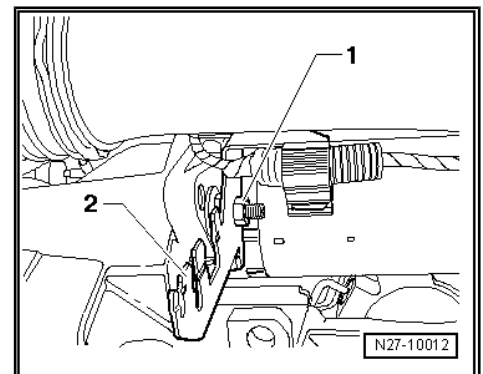
- Release and disconnect the connector (terminal 50) -1-.
- Remove the nut -2- and disconnect the positive wire -3- from the solenoid switch.



- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to ➔ Body Exterior; Rep. Gr. 50 ; Noise Insulation .



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.
- Remove the starter bolt -arrow-.



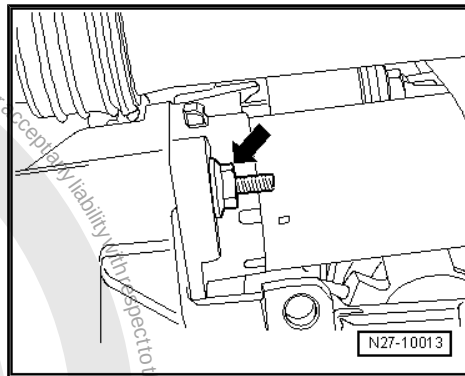


- Remove the Starter - B- downward.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.2 Overview - Starter, Manual Transmission”, page 54](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.16 Starter, Removing and Installing, 2.5L Gasoline Engine 125 kW, Manual Transmission

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331-
- ♦ Torque Wrench 1332 40-200Nm - VAG1332-

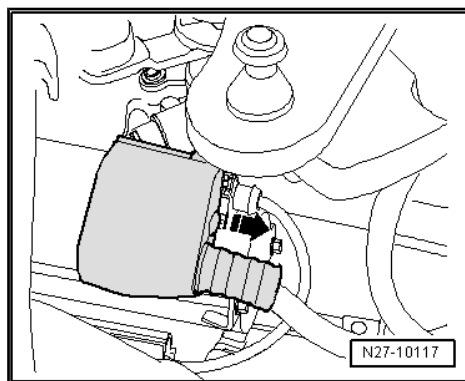


Caution

**Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .**

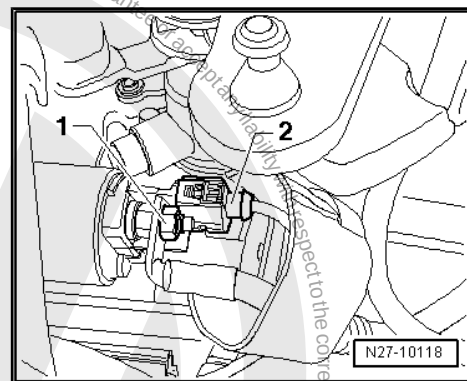
Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 24 ; Air Filter; Overview - Air Filter Housing .
- Remove the cap from the solenoid switch in the direction of -arrow-.

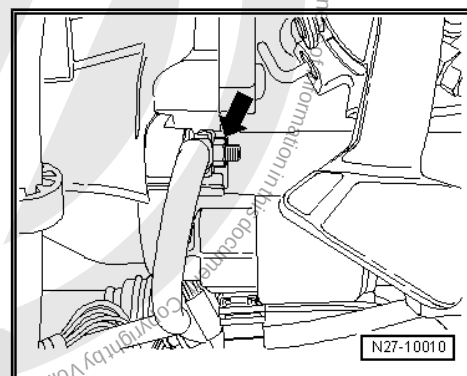




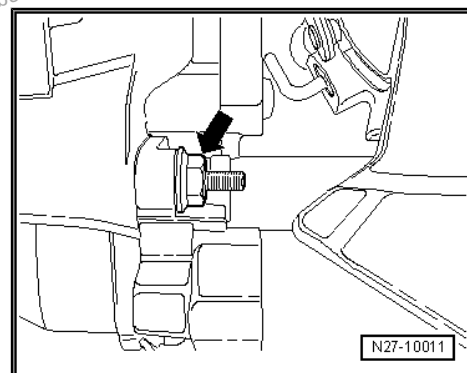
- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



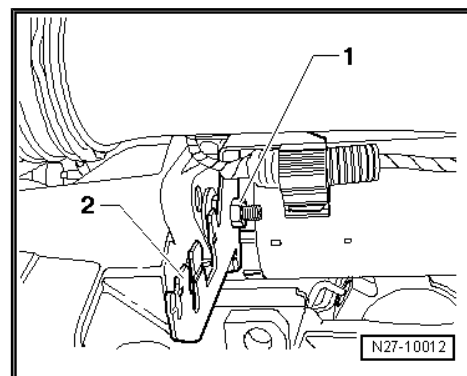
- Remove the ground cable from the starter bolt -arrow-.



- Remove the starter bolt -arrow-.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Noise Insulation .
- Remove the nut -1- from the lower starter bolt.



- Remove the cable holder -2-.
- Remove the starter bolt -arrow-.



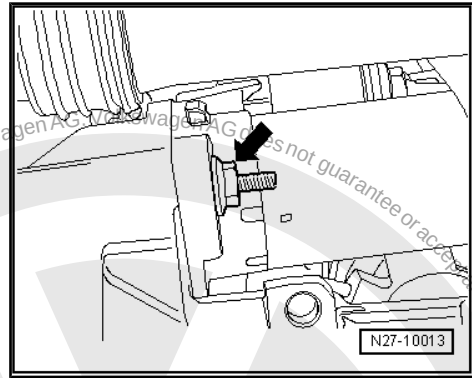


- Remove the Starter - B- .

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.2 Overview - Starter, Manual Transmission”, page 54](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.2.17 Starter, Removing and Installing, 1.6L Diesel Engine 77 kW, Manual Transmission

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

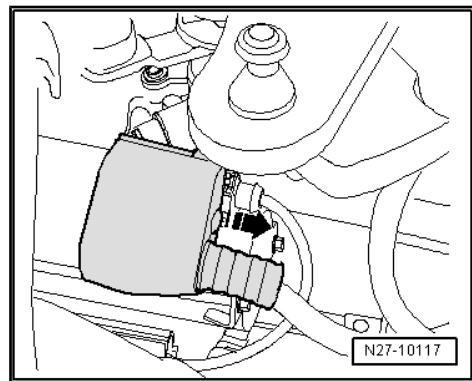


Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#) .*

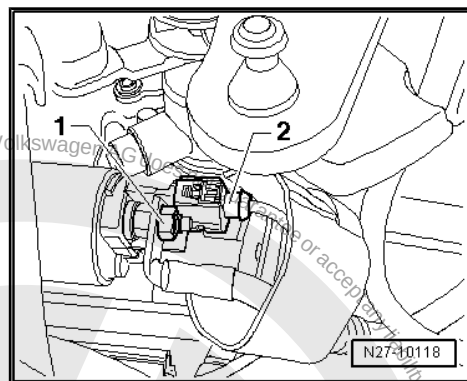
Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#) .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Diesel Direct Injection System; Overview - Air Filter .
- Remove the cap from the solenoid switch in the -direction of the arrow-.

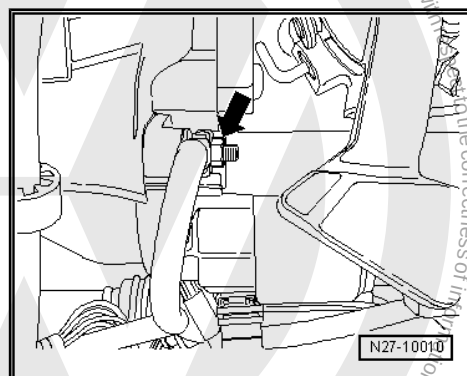




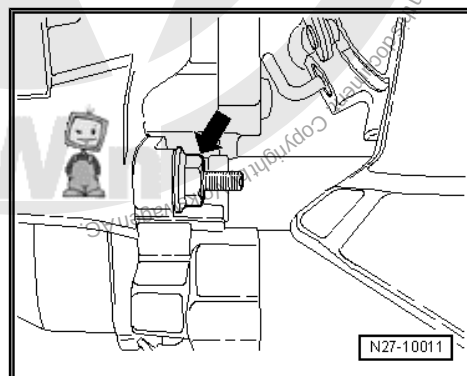
- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



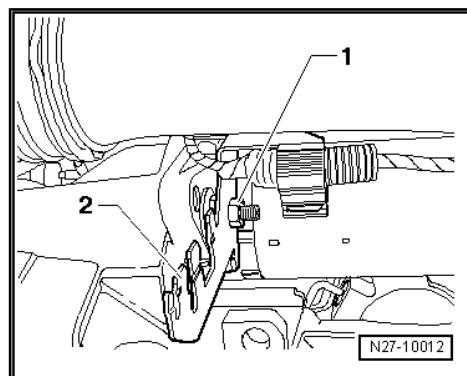
- Remove the nut -arrow- and disconnect the ground wire from the upper starter bolt.



- Remove the upper starter bolt -arrow-.
- Remove the noise insulation. Refer to Body Exterior; Rep. Gr. 50 ; Noise Insulation .



- Remove the nut -1- from the lower starter bolt.
- Remove the cable holder -2-.



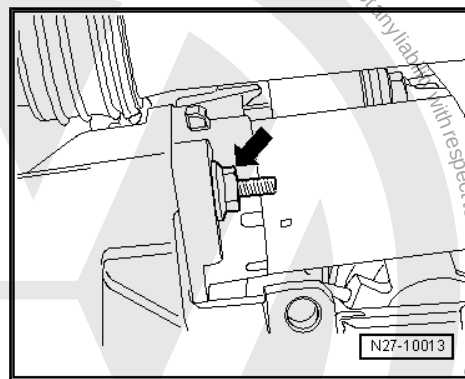


- Remove the lower starter bolt -arrow-.
- Remove the Starter - B- downward.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.2 Overview - Starter, Manual Transmission”, page 54](#).
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#).



3.2.18 Starter, Removing and Installing, 2.0L Diesel Engine, 81/103 kW, Manual Transmission

Special tools and workshop equipment required

- ♦ Torque Wrench 1331 5-50Nm - VAG1331
- ♦ Torque Wrench 1332 40-200Nm - VAG1332

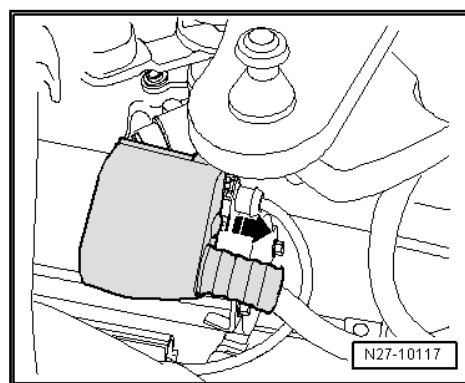


Caution

*Always follow the instructions regarding disconnecting and connecting the Battery - A- . Refer to
⇒ [“1.5 Battery, Disconnecting and Connecting”, page 7](#).*

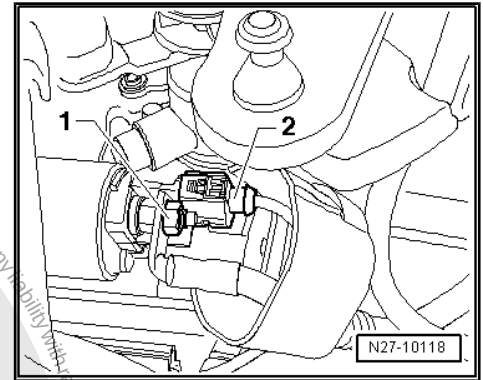
Removing

- Disconnect the Battery - A- . Refer to
⇒ [“1.5.1 Battery A in Engine Compartment, Disconnecting”, page 7](#).
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the air filter housing. Refer to ⇒ Rep. Gr. 23 ; Diesel Direct Injection System; Overview - Air Filter .
- Remove the cap from the solenoid switch in the direction of -arrow-.

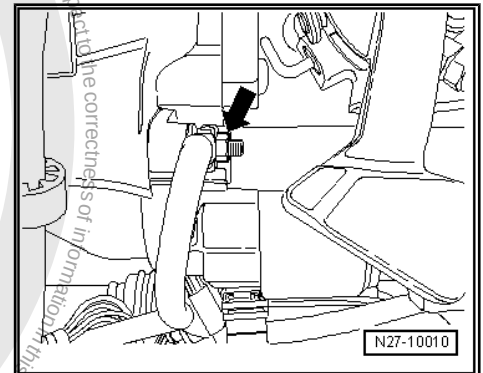




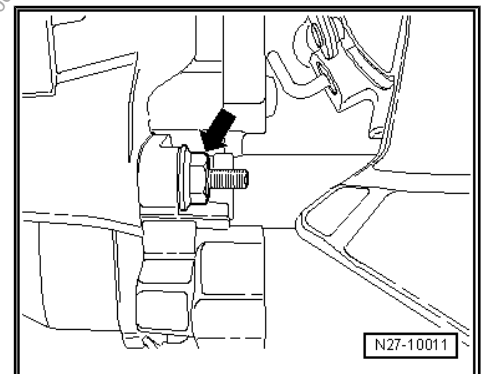
- Remove the positive cable -1-, and release and disconnect the terminal 50 connector -2-.



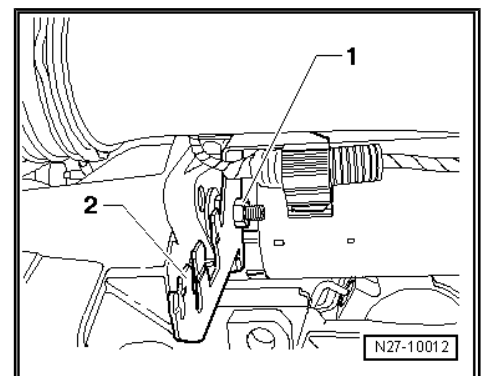
- Remove the ground cable from the starter bolt -arrow-.



- Remove the starter bolt -arrow-.
- Remove the noise insulation. Refer to → Body Exterior; Rep. Gr. 50 ; Noise Insulation .
- Remove the nut -1- from the lower starter bolt.



- Remove the cable holder -2-.
- Remove the starter bolt -arrow-.



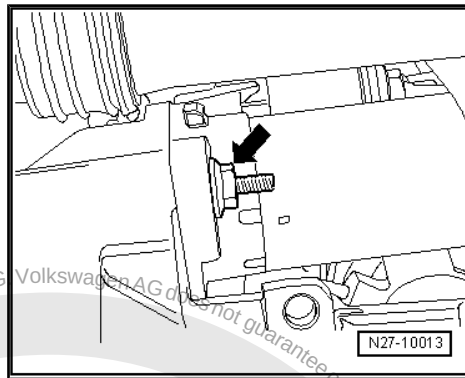


- Remove the Starter - B- .

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to
⇒ [“3.1.2 Overview - Starter, Manual Transmission”, page 54](#) .
- Connect the Battery - A- . Refer to
⇒ [“1.5.2 Battery A in Engine Compartment, Connecting”, page 8](#) .



3.3 Starter, Checking

Procedure

- Connect the Vehicle Diagnostic Tester .
- Select the **Guided Fault Finding** mode.
- Use the **GO TO** button to select the “function/component selection” and the following menu options one after the other:
 - ◆ Body
 - ◆ Electrical Equipment
 - ◆ 27 - Starter, voltage supply
 - ◆ Electrical Components
 - ◆ Starter -B-



4 Cruise Control System

Refer to ⇒ Electrical Equipment General Information; Rep. Gr.
27 ; Cruise Control System .





5 Start/Stop System

⇒ **"5.1 Safety Precautions when Working on Start/Stop System", page 92**

⇒ **"5.2 General Description for Start/Stop System", page 92**

⇒ **"5.3 Voltage Stabilizer, Removing and Installing", page 94**

5.1 Safety Precautions when Working on Start/Stop System

If Working on a Vehicle with Stop/Start, Note the Following:



WARNING

Risk of personal injury due to the engine starting automatically on vehicles with Stop/Start System.

- ◆ *The engine can start automatically on vehicles with Stop/Start (recognizable by a symbol in the instrument cluster).*
- ◆ *Make sure the system is deactivated when working on a vehicle with the Stop/Start system.*

5.2 General Description for Start/Stop System

General Information

The Start/Stop System reduces fuel consumption by turning off the engine when the vehicle is at a standstill and turning the engine back on when the driver starts to drive. The Stop/Start System works automatically when the vehicle is driven for approximately four seconds at a minimum of 3 km/h.

Malfunction Recognition and Malfunction Indicator

The Start/Stop System is integrated in the software for the Engine Control Module - J623- as a function.

The Engine Control Module - J623- is equipped with OBD.

For troubleshooting, refer to Vehicle Diagnostic Tester in the "Guided Fault Finding" function.

Battery Recharging or Battery Jump Start Terminal, Vehicles with Start/Stop System

Connect the positive terminal first and then the body ground using a charge cable. This ensures that the Battery Monitoring Control Module - J367- is not bridged. Charging the battery directly on the negative terminal bridges the Battery Monitoring Control Module - J367- and prevents the Battery Monitoring Control Module - J367- from recording the battery data during the charging process. The values stored in the Data Bus On Board Diagnostic Interface - J533- regarding the battery condition no longer match the values for the charged Battery - A- .

Replacing the Battery - A- On a Vehicle with the Start/Stop System.

Vehicles with a start/stop system only have an AGM battery as the starter battery instead of the typical lead battery due to its higher cycle life.

Refer to the Parts Catalog when performing repairs for the correct part identification. The components of the Stop/Start System do



not have a special markings and look the same as the other components from the outside.

The following Components Make up the Start/Stop System:

- ◆ Battery - A- . Refer to ⇒ ["1 Battery", page 1](#) .
- ◆ Generator - C- . Refer to ⇒ ["2 Generator", page 17](#) .
- ◆ Voltage Regulator - C1- . Refer to ⇒ ["2.6 Voltage Regulator, Removing and Installing", page 50](#) .
- ◆ Starter - B- . Refer to ⇒ ["3 Starter", page 53](#) .
- ◆ Brake Lamp Switch - F- . Refer to ⇒ Brake System; Rep. Gr. 47 ; Brake Booster/Brake Master Cylinder; Brake Lamp Switch, Removing and Installing .
- ◆ Clutch Pedal Switch - F36- . Refer to ⇒ Rep. Gr. 30 ; Clutch Mechanism, Servicing; Clutch Position Sensor - G476- , Removing and Installing .
- ◆ Start/Stop Mode Button - E693- . Refer to ⇒ [page 94](#) .
- ◆ Engine Coolant Temperature Sensor - G62- . Refer to ⇒ Rep. Gr. 19 .
- ◆ Accelerator Pedal Position Sensor - G79- . Refer to ⇒ Rep. Gr. 20 ; Accelerator Mechanism; Overview - Accelerator Pedal Mechanism .
- ◆ Transmission Neutral Position Sensor - G701- . Refer to ⇒ Rep. Gr. 34 ; Mechatronic .
- ◆ ABS Control Module - J104- . Refer to ⇒ Brake System; Rep. Gr. 45 ; Control Module and Hydraulic Unit .
- ◆ Climatronic Control Module - J255- . Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 .
- ◆ Instrument Cluster Control Module - J285- . Refer to ⇒ ["1 Instrument Cluster", page 98](#) .
- ◆ Battery Monitoring Control Module - J367- . Refer to ⇒ ["1.9.1 Battery Monitoring Control Module J367", page 13](#) .
- ◆ Power Steering Control Module - J500- . Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48 ; Electromechanical Steering Gear .
- ◆ Vehicle Electrical System Control Module - J519- . Refer to ⇒ ["2.2 Vehicle Electrical System Control Module J519, Removing and Installing", page 319](#) .
- ◆ Voltage Stabilizer - J532- . Refer to ⇒ ["5.3 Voltage Stabilizer, Removing and Installing", page 94](#) .
- ◆ Data Bus on Board Diagnostic Interface - J533- . Refer to ⇒ ["2.3 Data Bus on Board Diagnostic Interface J533, Removing and Installing", page 326](#) .
- ◆ Engine Control Module - J623- . Refer to ⇒ Rep. Gr. 24 ; Engine Control Module or ⇒ Rep. Gr. 23 ; Engine Control Module .

Voltage Stabilizer - J532-

The Voltage Stabilizer - J532- is installed inside the instrument panel behind the glove compartment. It stabilizes the voltage fluctuations in the vehicle electrical system to 12 volts, which are caused by the stop/start system.



This is the Effect If the Voltage Stabilizer - J532- is Faulty

If the Voltage Stabilizer - J532- is faulty and the voltage supply is insufficient, devices like the Radio/RNS or telephone will be reset. If the above-mentioned electrical equipment is reset each time the engine starts in Start/Stop mode, then this indicates a defective Voltage Stabilizer - J532- . Currently, no malfunction entry is directly logged for the Voltage Stabilizer - J532- in the DTC memory for either the Data Bus On Board Diagnostic Interface - J533- or the Vehicle Electrical System Control Module - J519- . If the radio, the radio/RNS and the telephone all malfunction at the same time, first check the fuse for the Voltage Stabilizer - J532- . Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.

Start/Stop Mode Button - E693-

The Start/Stop Mode Button - E693- is located with the switches inside the center console in front of the gearshift lever. The switch manually switches the Start/Stop System on and off.

Start/Stop Mode Button - E693- Removing and installing. Refer to

⇒ ["2.14 Start/Stop Mode Button E693 , Removing and Installing", page 281](#) .

5.3 Voltage Stabilizer, Removing and Installing

⇒ ["5.3.1 Voltage Stabilizer J532 , Removing and Installing", page 94](#)

5.3.1 Voltage Stabilizer - J532- , Removing and Installing

Removing

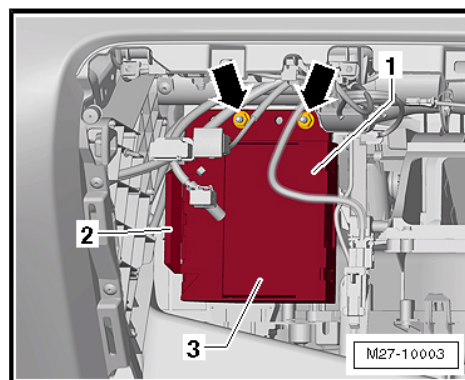
- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the glove compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Glove Compartment, Removing and Installing .
- Remove the nuts -arrows-, the Voltage Stabilizer - J532- -3- and the bracket -1-, paying attention to the wires that are still connected.
- Release and disconnect the connector -2-.
- Remove the Voltage Stabilizer - J532- -3- from the bracket -1-.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to ⇒ [page 94](#) .

Component	Tightening Specification
Voltage Stabilizer - J532- nuts	1.5 Nm





5.3.2 Voltage Stabilizer - J532- , Removing and Installing, RHD

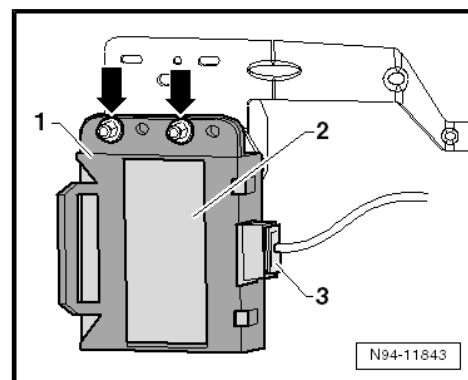
Removing

- Turn off the ignition and all electrical equipment and remove the ignition key.
- Remove the glove compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Glove Compartment, Removing and Installing .
- Disconnect the connector -3-.
- Remove the nuts -arrows- and remove the Voltage Stabilizer - J532- -2- together with the bracket -1-.
- Remove the Voltage Stabilizer - J532- -2- from the bracket -1-.

Installing

Install in reverse order of removal. Note the following:

- Tighten the threaded connections to the tightening specification. Refer to ⇒ [page 95](#) .



Component	Tightening Specification
Voltage Stabilizer - J532- nuts	1,5 Nm

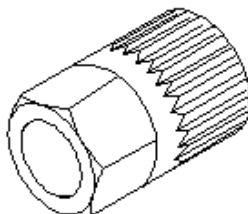


6 Special Tools

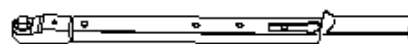
Special tools and workshop equipment required

- ◆ Multi-Tooth Adapter - 3400-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torx Key Socket Set - VAG1603A/1-

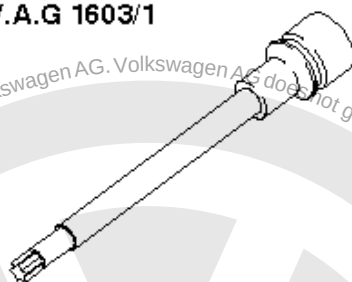
3400



V.A.G 1332



V.A.G 1603/1



WV27-10006

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

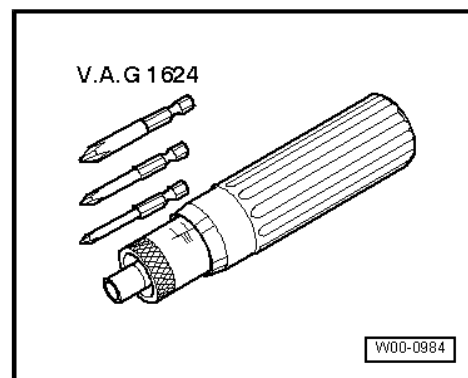
V.A.G 1331



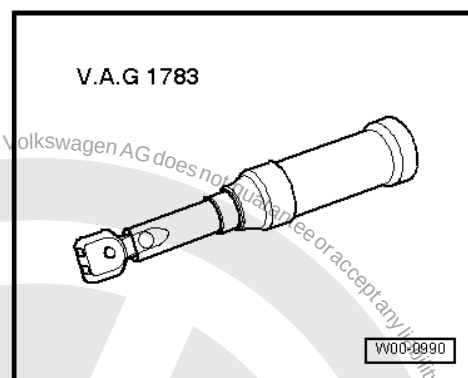
W00-0427



◆ Torque Screwdriver - VAG1624-



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



◆ Generator Belt Socket - VAS3310-

