

Generator, removing and installing

CAUTION!

Disconnect the battery Ground (GND) strap before working on the electrical system.

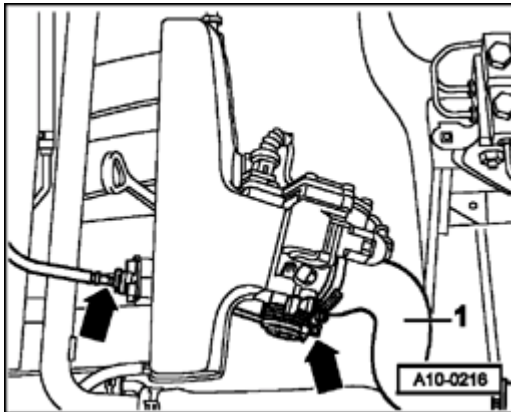
Notes:

- ◆ *Before disconnecting the battery, determine the correct coding for the anti-theft radio.*
- ◆ *Once the battery is reconnected, check and activate the vehicle's electrical equipment (radio, clock, comfort and convenience features, etc.) as described in this Repair Manual or the Owners Manual.*

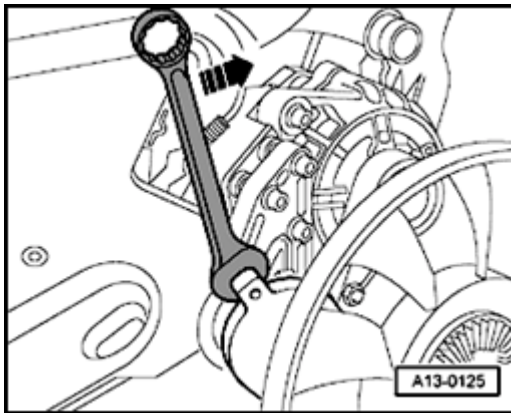
Vehicles with 4-cylinder gasoline engines

Removing

1.8 Liter/110 kW, 5V Turbo

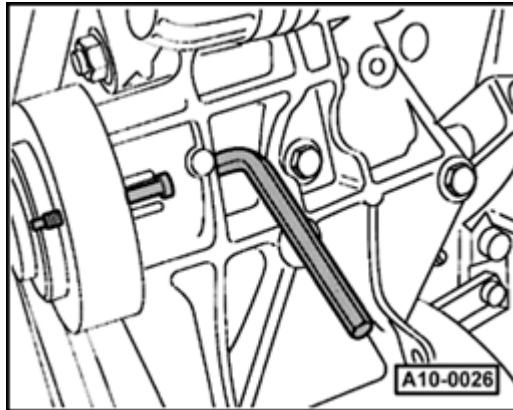
**A**

- Disconnect air duct -1- for charge air cooler from throttle valve.

**A**

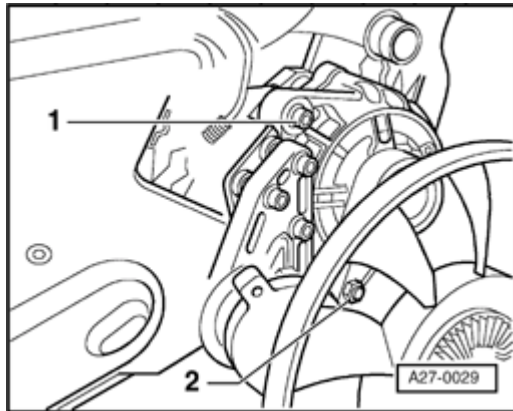
- Pivot ribbed belt tensioner in direction of arrow and remove ribbed belt from generator pulley.
- Slowly release pressure on tensioner.

27-28



A

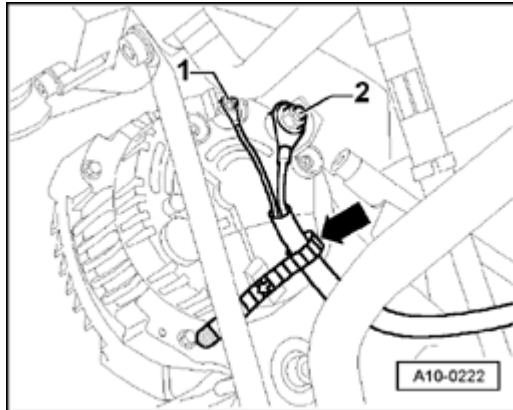
- Secure viscous clutch with 5 x 60 mm bolt and remove mounting bolt for viscous clutch.
- Tightening torque: 45 Nm (33 ft lb)
- Remove viscous clutch.



A

- Remove socket-head bolt -1-.
- Tightening torque: 25 Nm (18 ft lb)
- Remove nut -2- from bolt.
- Tightening torque: 45 Nm (33 ft lb)
- Pivot generator slightly to side and remove bolt from below.

27-29



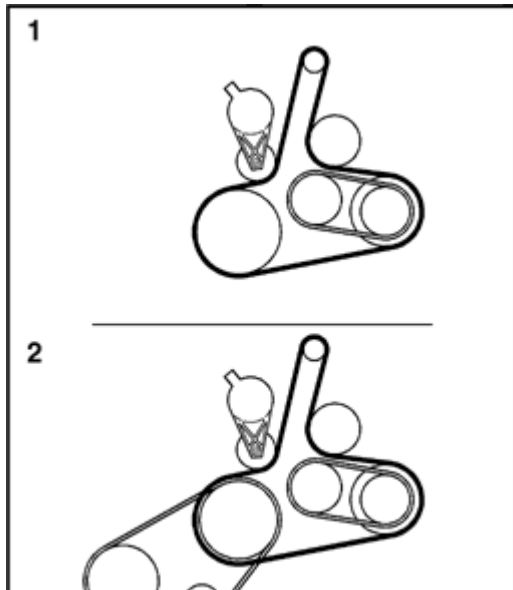
- Release wiring harness from cable tie (arrow).
- Disconnect wire on terminal 30/B+ by removing nut -2-.
Tightening torque: 16 Nm (12 ft lb)
- Disconnect wire on terminal D+ by removing nut -1-.
Tightening torque: 4 Nm (35 in. lb)
- Carefully push radiator hose to side and lift generator up and out.

Installing

- To make it easier to install generator onto mount, drive bushing for mounting bolt back approx. 1 mm.
- Install generator in reverse order of removal.



- Make sure ribbed belt is properly seated and correctly routed.
- 1 - Without air conditioning
 - 2 - With air conditioning

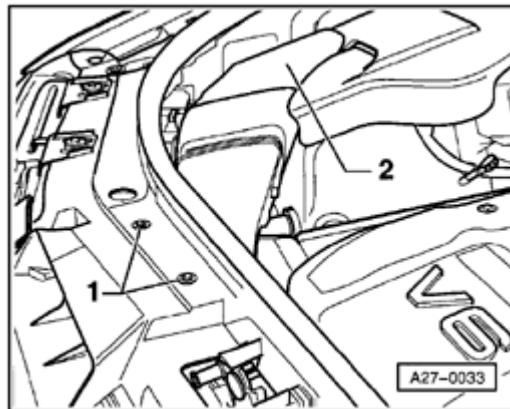
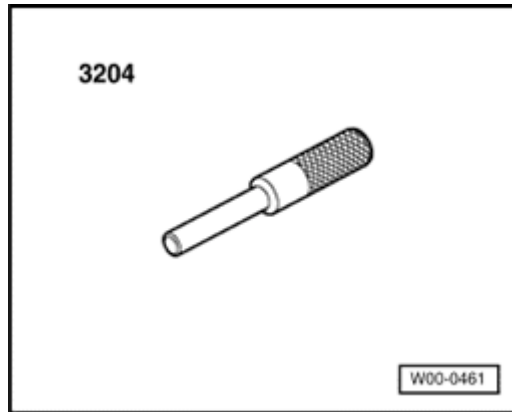


Vehicles with 6-cylinder gasoline engines

Special tools, test equipment and auxiliary items

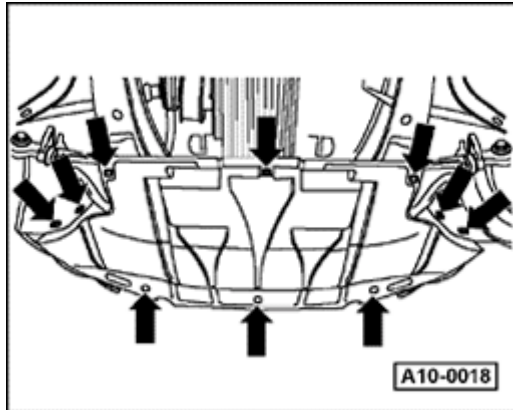
➤ 3204 drift

Removing



➤ - Remove two bolts -1- on air intake duct and then lift up back portion of air intake duct -2-.

27-31



A

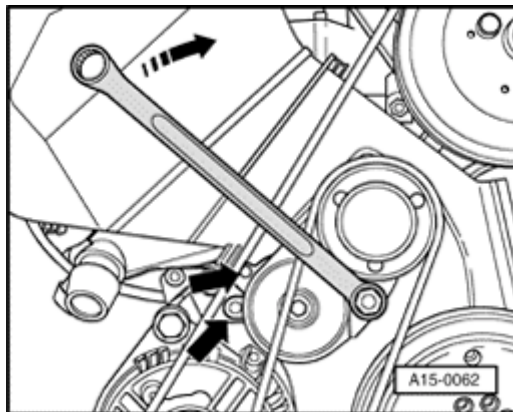
- Remove noise insulation panel (arrows).
- Remove front bumper.

⇒ [Repair Manual, Body Exterior, Repair Group 63](#)

- Move lock carrier to service position.

⇒ [Repair Manual, Body Exterior, Repair Group 50](#)

- Remove cover for engine and ribbed belt.

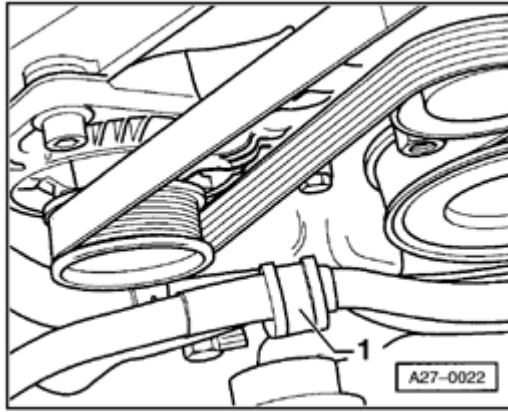


A

- Rotate tensioner for ribbed belt toward right using box wrench until both holes are in alignment (lower arrows), and secure in place using 3204 drift.
- Remove ribbed belt from generator pulley.

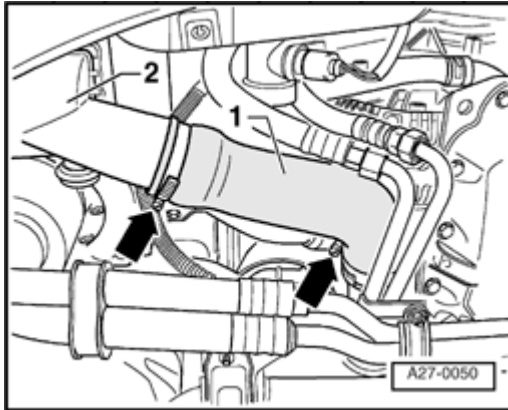
Vehicles with air conditioning

(Except 2.7 Liter/184 kW engine, 5V twin-turbo)

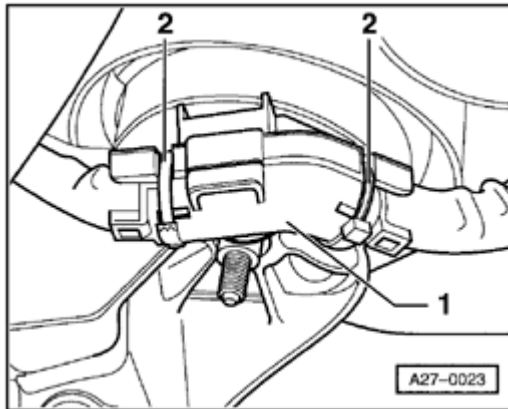
**A**

- Remove mounting clamp -1- for refrigerant lines above torque arm.

27-33

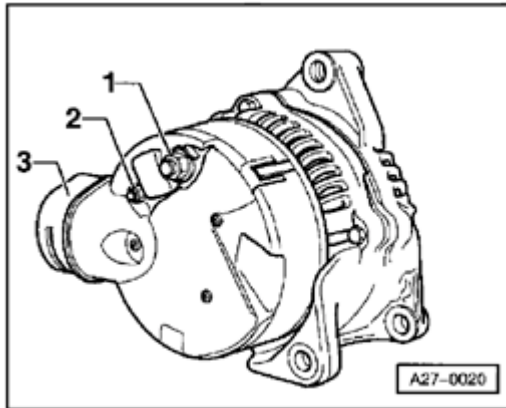
2.7 Liter/184 kW engine, 5V Twin-turbo only**A**

- Remove air duct -1- (arrow).
- Remove charge air cooler on right -2- (loosen hose connection above, mounted on three rubber supports).

All vehicles**A**

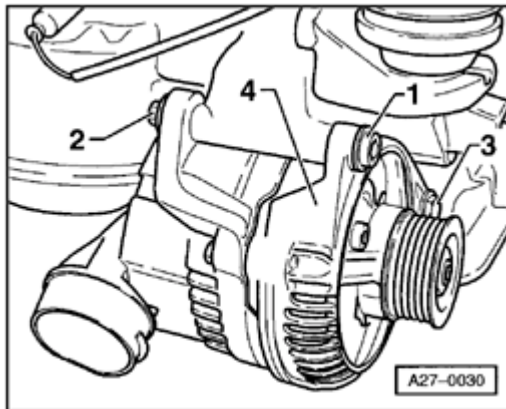
- Detach cable for starter and generator from bracket -1-.
- To do this, cut both tie wraps -2- open and then release the snap catches.

27-34



A

- Disconnect air duct from generator fitting -3-.
 - Disconnect wire on terminal 30/B + by removing nut -2-.
 - Disconnect wire on terminal D+ by removing nut -1-.
- Tightening torque: 16 Nm (12 ft lb)
- Tightening torque: 4 Nm (35 in. lb)



A

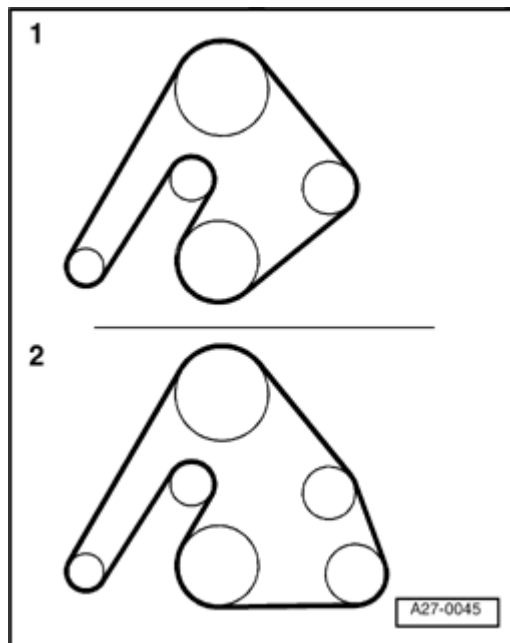
- Remove socket head bolt -1- and lock nut -2-.
 - Loosen bolt -3-.
 - Remove generator -4- from below.
- Tightening torque: 45 Nm (33 ft lb)
- Tightening torque: 22 Nm (16 ft lb)

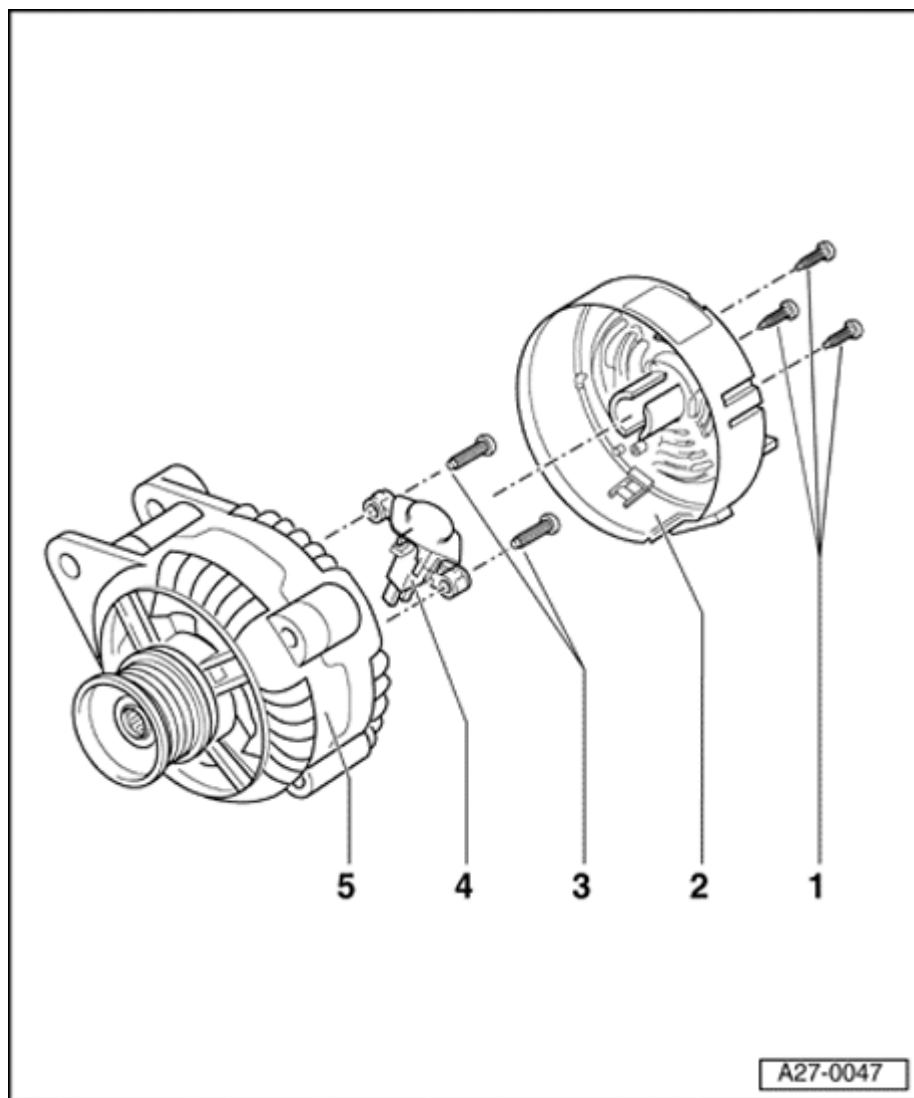
CAUTION!

When removing the generator, be careful not to damage the refrigerant lines.

Installing

- To make it easier to install generator onto mount, drive bushing for mounting bolt back approx. 1 mm.
 - Install generator in reverse order of removal.
- 4
- Make sure ribbed belt is properly seated and correctly routed.
- 1 - Without air conditioning
2 - With air conditioning





Voltage regulator, replacing

Model: Bosch

1 - Phillips-head screws

- ◆ 1 Nm (9 in. lb)

2 - Protective cover

- ◆ 3 snap catches

3 - Slotted screws

- ◆ M4 = 2 Nm (18 in. lb)

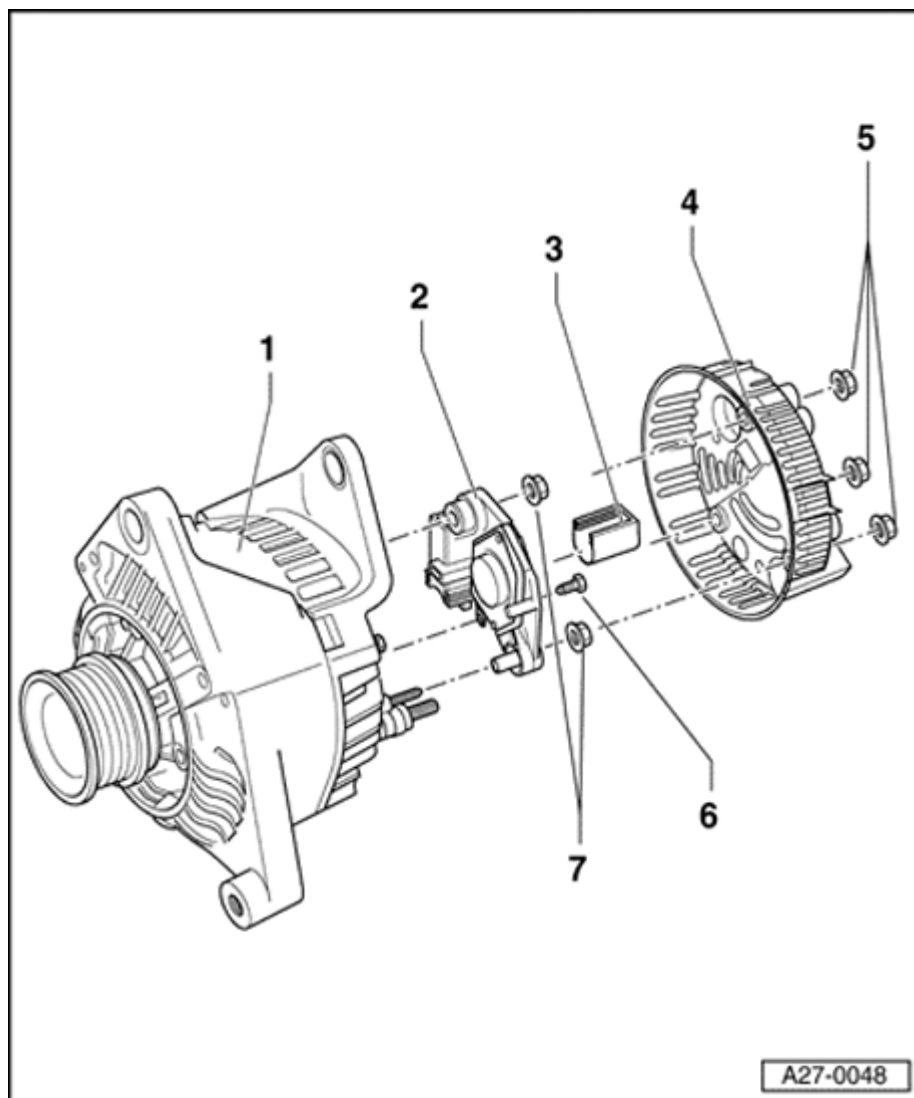
4 - Voltage regulator

- ◆ Removing and installing⇒ items - 1 -, - 2 - and - 3 -

- ◆ Wear limit for carbon brushes: 5 mm

5 - Generator

27-37

**Model: Valeo****1 - Generator****2 - Voltage regulator**

- ◆ Removing and installing ⇒ items - 4 -, - 5 -, - 6 - and - 7 -
- ◆ Wear limit for carbon brushes: 5 mm

3 - Cover

- ◆ Push off before mounting voltage regulator; press on after mounting

4 - Protective cover**5 - Flanged nuts**

- ◆ 2 Nm (18 in. lb)

6 - Screw

- ◆ 2 Nm (18 in. lb)

7 - Flanged nuts

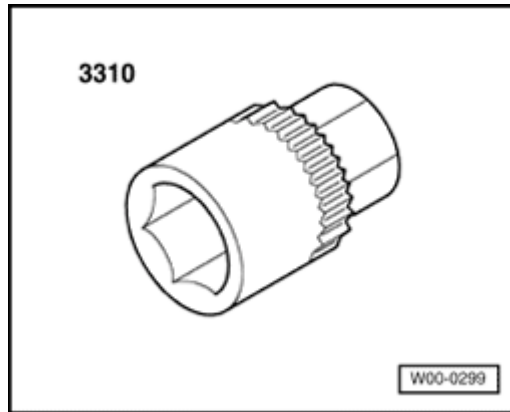
- ◆ 3.5 Nm (31 in. lb)

Ribbed belt pulley, removing and installing

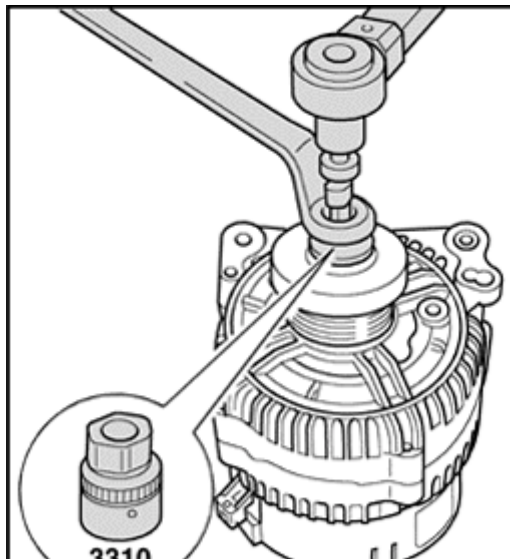
Special tools, test equipment and auxiliary items



3310 socket



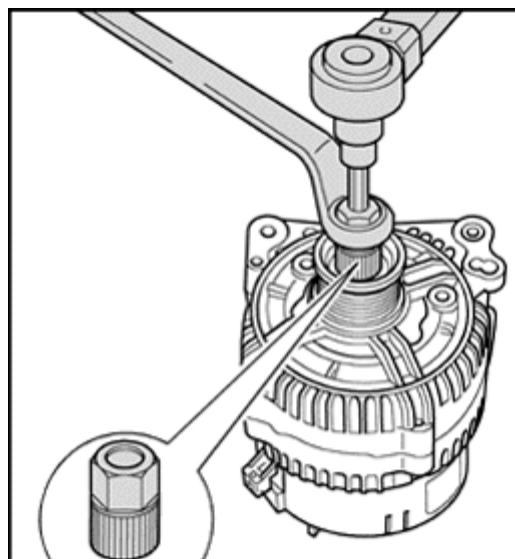
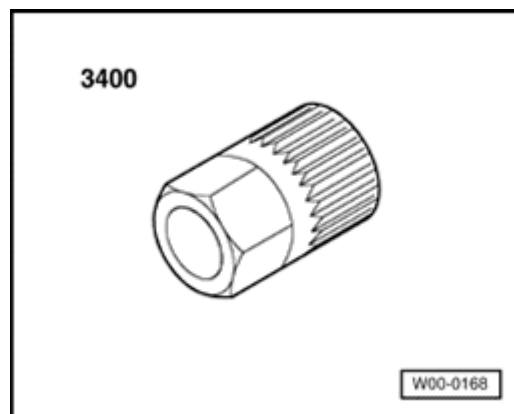
- Counterhold mounting nut using 3310 socket.
 - ◆ Removing: rotate generator shaft to right
 - ◆ Installing: rotate generator shaft to left
 - ◆ Tightening torque: 65 Nm (48 ft lb)



Ribbed belt pulley with freewheel, removing and installing

Special tools, test equipment and auxiliary items

- ⚡ 3400 multi-tooth adapter



- ⚡
 - Counterhold belt pulley using 3400 multi-tooth adapter.
 - ◆ Removing: rotate generator shaft to right
 - ◆ Installing: rotate generator shaft to left
 - ◆ Tightening torque: 80 Nm (59 ft lb)
 - Clip protective cover onto freewheel belt pulley.