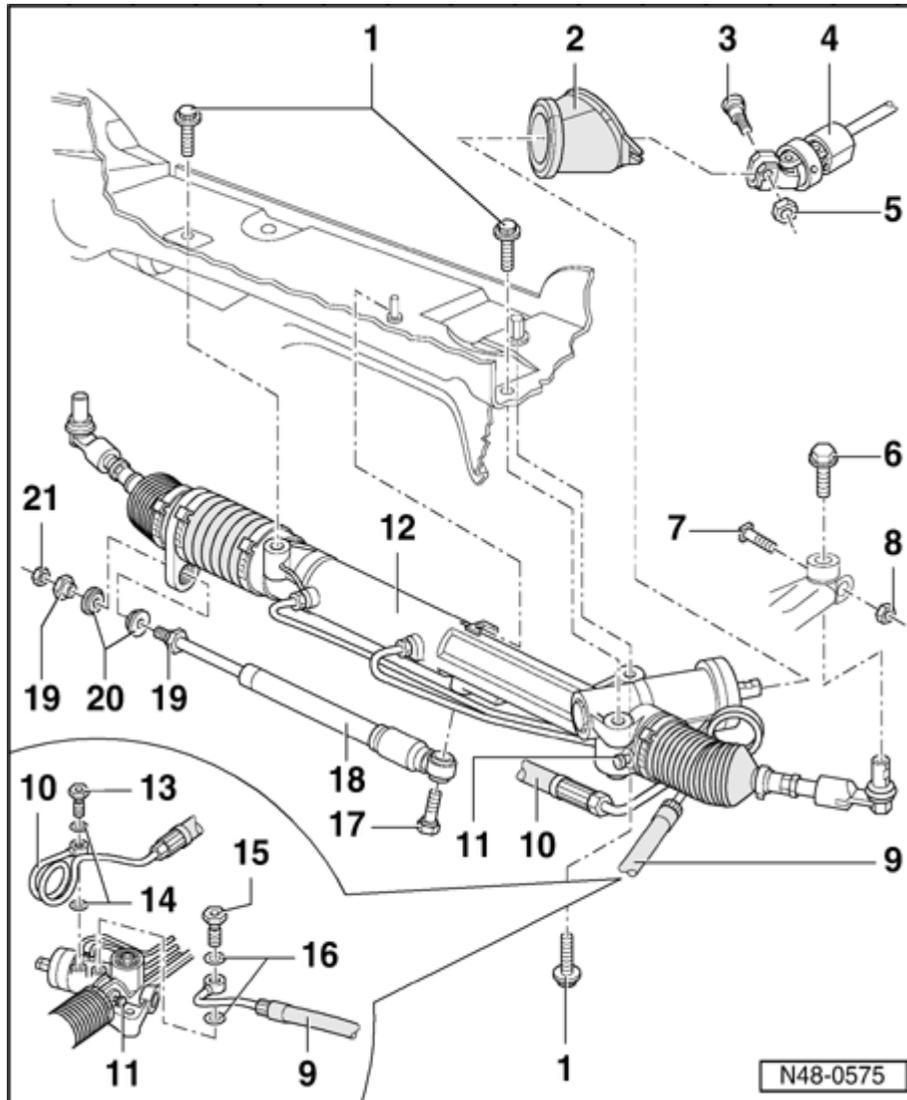


## Steering gear, assembly overview

- 1 - Twelve point bolt, 65 Nm
- 2 - Sealing boot
- 3 - Eccentric bolt
  - ◆ Torx T50
- 4 - Steering column
- 5 - Self-locking hex nut, 40 Nm
  - ◆ Always replace
- 6 - Hex bolt, 7 Nm
  - ◆ Always replace
- 7 - Bolt
- 8 - Self-locking hex nut, 45 Nm
  - ◆ Always replace
- 9 - Return hose



**10 - Pressure hose**

**11 - Hex key head bolt, 13 Nm**

**12 - Power assisted steering gear with track rods**

**13 - Banjo bolt, 40 Nm**

◆ With integrated non-return valve

**14 - Oil seal, 14 x 20**

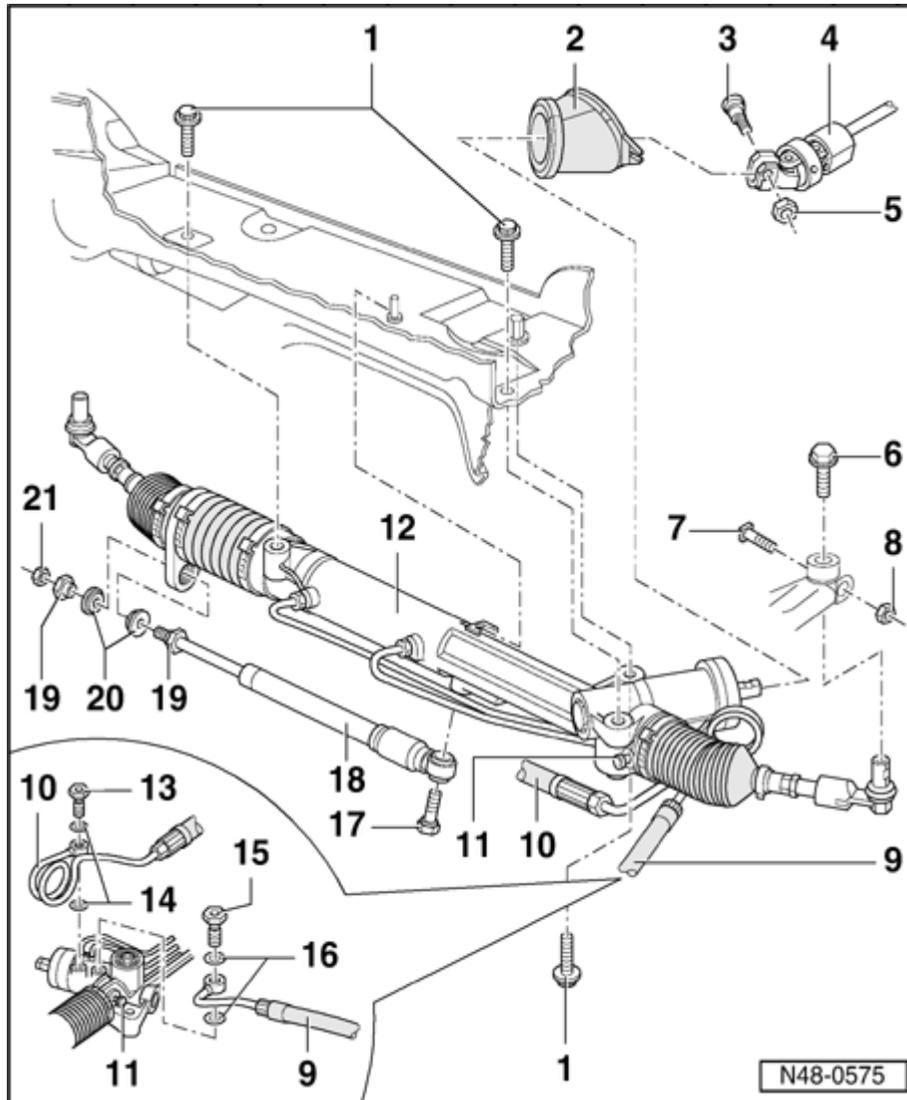
◆ Always replace

**15 - Banjo bolt, 50 Nm**

**16 - Oil seal, 16 x 22**

◆ Always replace

**17 - Hex bolt, 35 Nm**



### 18 - Steering damper

Introduced in vehicles with 4 or 5 cylinder engines at a later stage in production

### 19 - Bushing

### 20 - Rubber mounting

◆ Two part

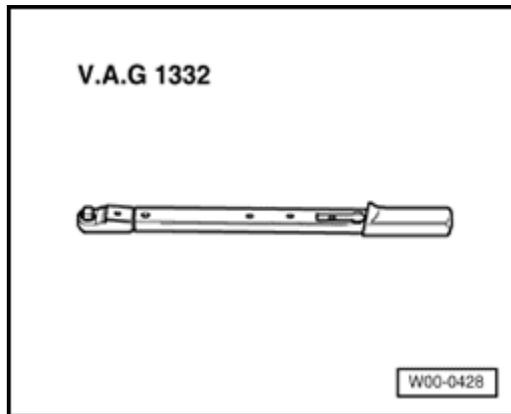
### 21 - Hex nut, 10 Nm

◆ To loosen and tighten, counter hold on steering damper piston rod hex



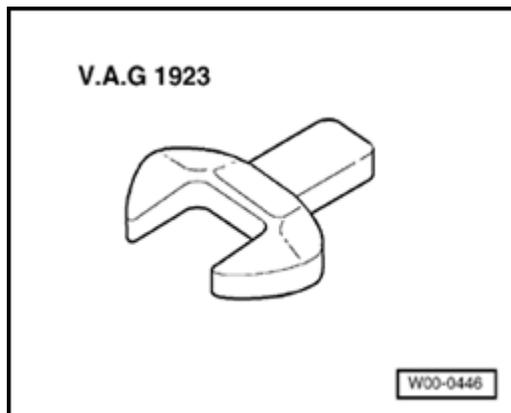
## Tie rods, removing and installing

Special tools, workshop equipment, testers, measuring instruments and auxiliary items required



A

- ◆ VAG 1332 Torque wrench



A

- ◆ VAG 1923 Open end wrench attachment

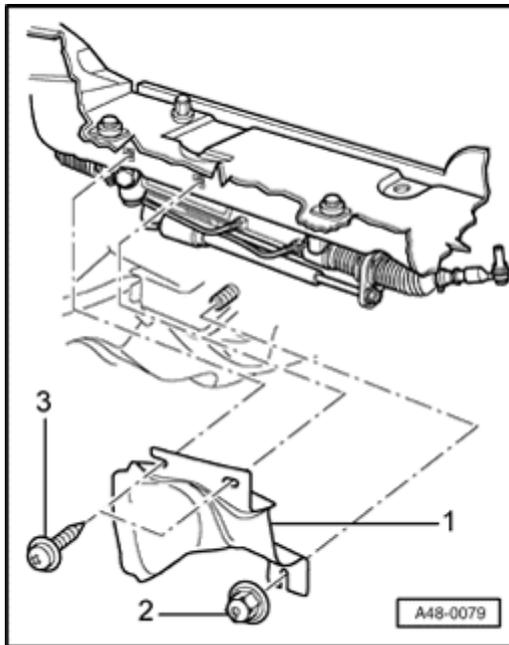


Left and right-hand tie rods are identical.

They can be removed and installed with steering gear remaining installed.

### Removing

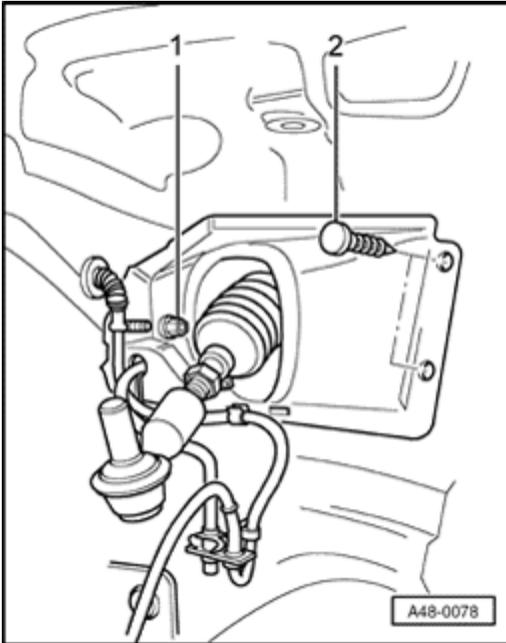
On vehicles with 5 valve engines, air cleaner and air line must be removed.



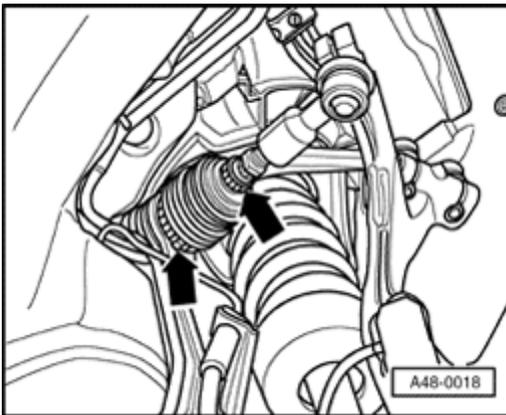
A

To remove the left tie rod on vehicles with 4-cyl. engine additionally remove heat shield.

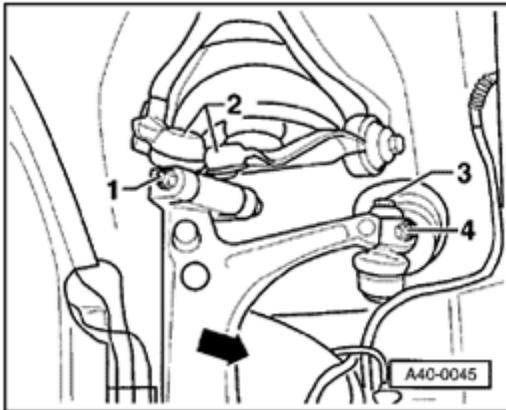
- Remove nut -2- and cross head screws -3-.
- Remove heat shield -1-.
- Remove front wheel.



- A**
- Remove synthetic material nut -1-.
  - Pry out clips -2-.
  - Take out cover for tie rod.

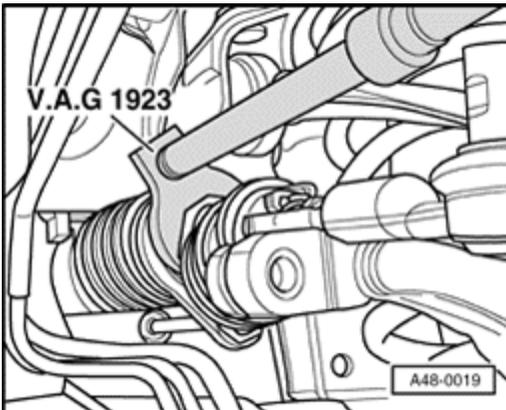


- A**
- Open clips on boot.
- Illustration shows tie rod for vehicles with V6 engine.  
On vehicles with 4-cyl. engine, open clip on steering gear.



A

- Loosen bolts -3- and -4- and pull tie rod ball joint off downward.
- Pull boot as far as possible outward.



A

- Remove tie rod with VAG 1923.

### Installing

Install in reverse order.

- Checking suspension geometry ⇒ [Page 44-2](#) .

### Tightening torque:

tie rod to steering gear

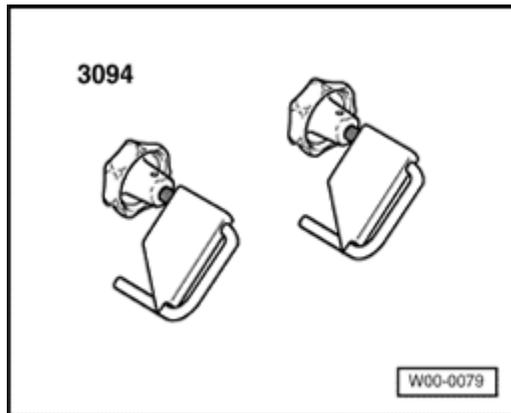
Vehicles with 4-cylinder engine ⇒ [Page 48-65](#) , item 6

Vehicles with 6 or 8-cylinder engines ⇒ [Page 48-68](#) , item 7



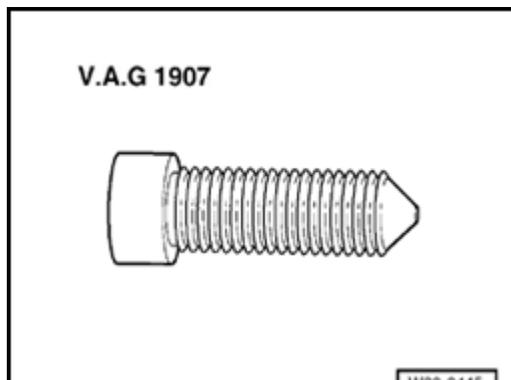
## Steering gear, vehicles with 4 or 6-cylinder engines, removing and installing

Special tools, workshop equipment, testers, measuring instruments and auxiliary items required



A

- ◆ 3094 Hose clamps



A

- ◆ VAG 1907 Steering centering bolt



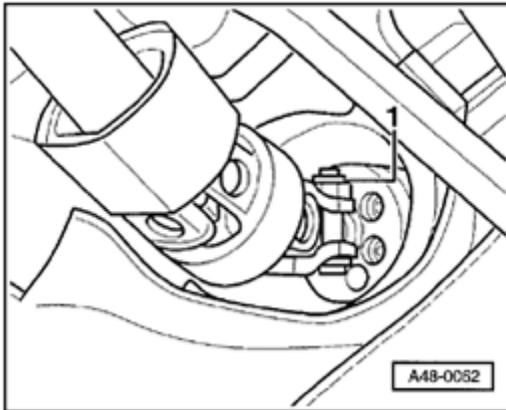
## Removing

- Remove plenum chamber cover.
- Remove battery.
- Remove driver's side stowage compartment.
- Bring steering wheel to center position.
- Remove ignition key with steering wheel in center position.
- Move steering wheel slightly so that the steering lock engages.

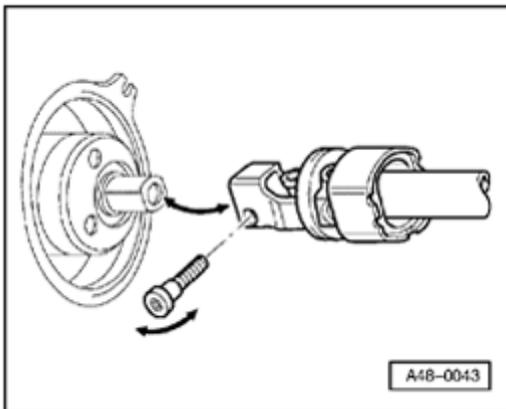
### **Note:**

*If the steering wheel is turned excessively with the steering gear removed, the spiral spring for the airbag system may become over-wound and damaged.*

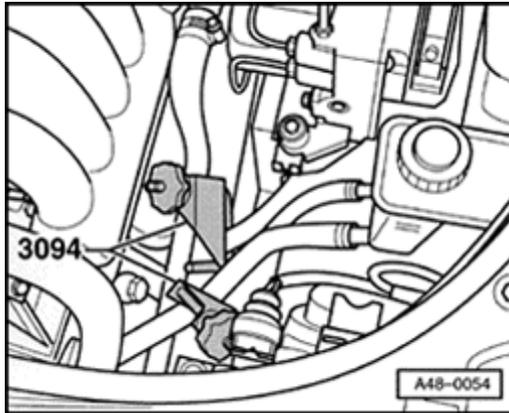
**Secure steering column against moving apart. Securing steering column before removal ⇒ [Page 48-21](#)**



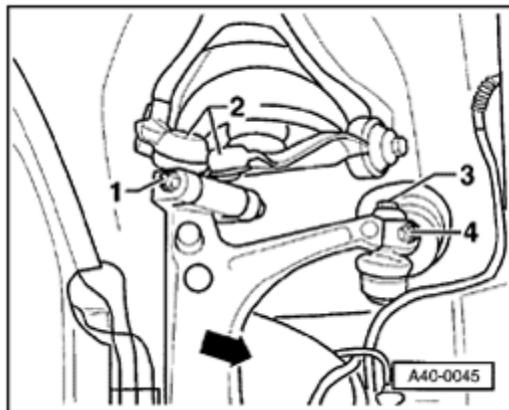
- A**
- Remove nut -1- on universal joint.
  - Relieve tension on eccentric by turning tensioning bolt (Torx T50) clockwise and remove bolt.



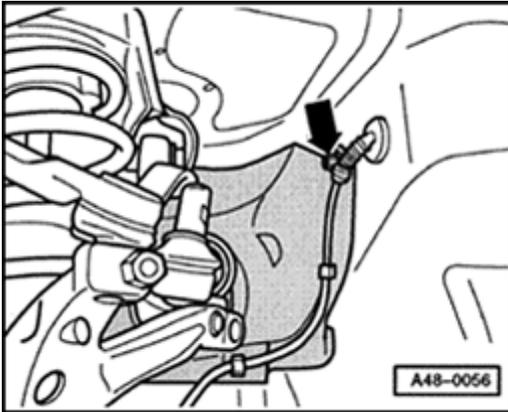
- A**
- Swing universal joint away downward.
  - Pull boot out from bulkhead.
  - Remove front wheels.



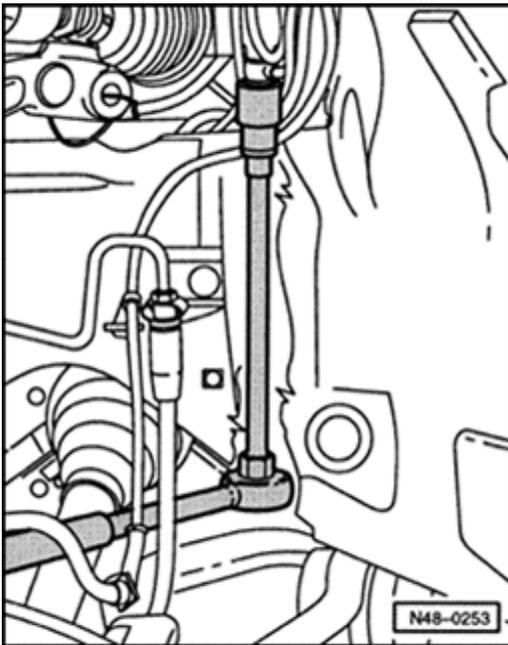
- A**
- Clamp off intake and return lines using hose clamps -3094-.



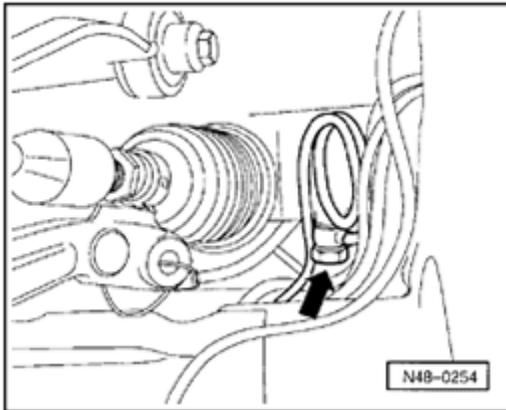
- A**
- Remove hex bolt -3- and bolt -4-.
  - Pull out tie rod.



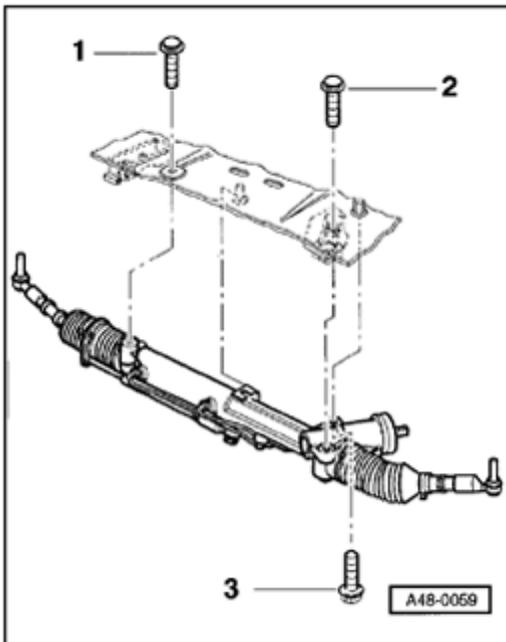
- A
- Remove plastic nut -arrow-.
  - Pry out clips and take out cover.
  - Place oil tray under vehicle.



- A
- Remove return line (22 mm AF) banjo bolt on steering gear.



- A**
- Remove pressure hose banjo bolt (19 mm AF) from steering gear.



- A**
- Remove steering gear bolts -1-, -2- and -3-.
  - Take out steering gear through left-hand wheel housing (second mechanic required).

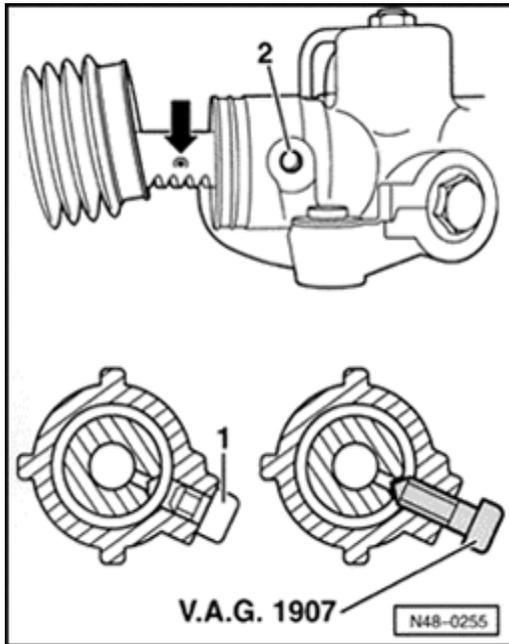


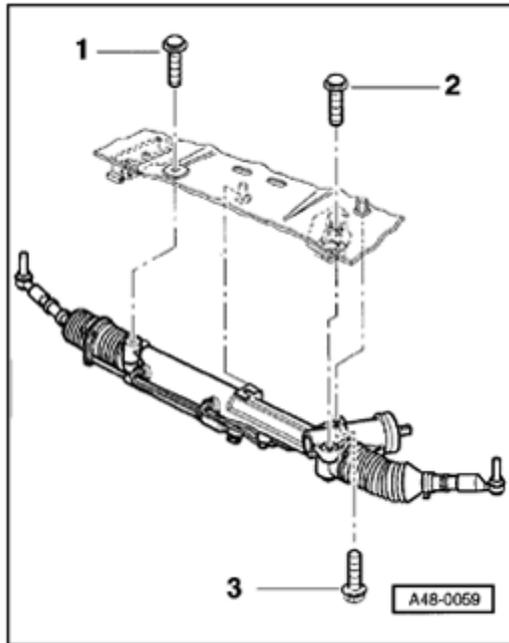
## Installing

- A Centralize removed steering gear with -VAG 1907-.

Centering is also possible when steering gear is installed. But access is poor.

- To do this remove hex socket head bolt -1- on steering gear.
- Move rack until center marking on rack -arrow- aligns with threaded hole -2-.
- Screw in VAG 1907.





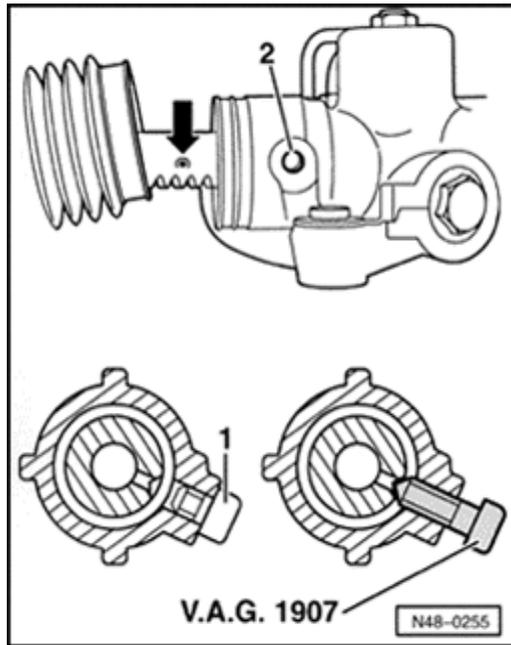
A

- Position steering gear on plenum chamber.

**Note:**

*Make sure that threads and bolt contact surfaces are oil and grease free!*

- Insert bolts -1- and -2- but do not tighten.
  - Install bolt -3- and tighten ⇒ [Page 48-36](#) , item 1 .
  - Now tighten bolts -1- and -2 ⇒ [Page 48-36](#) , item 1 .
  - Install return hose and tighten 22 mm AF banjo bolt ⇒ [Page 48-37](#) , item 15 .
  - Install pressure hose and tighten 19 mm AF banjo bolt ⇒ [Page 48-37](#) , item 13 .
  - Install boot in bulkhead.
- Take care not to damage boot when installing.
- Turn steering wheel to center position, if not already done.
  - Insert tensioning bolt (Torx T50) and tension counterclockwise.



A

- Tighten hex nut of tensioning bolt (Torx T50) ⇒ [Page 48-36](#) , item 5 .
- Now remove tool -VAG 1907- from steering gear.
- 1 - hex socket head bolt
- 2 - Threaded hole in steering gear
- Seal steering gear with hex socket head bolt -1- ; tightening torque ⇒ [Page 48-65](#) , item 9 and ⇒ [Page 48-69](#) , item 19 .
- Install universal joint to steering pinion.
- Remove steering column assembly aid.
- Install driver's side stowage compartment.
- Install wheel housing cover.
- After completely installing steering gear remove hose clamps -3094-.
- Turn ignition key to position "ignition off".
- Install battery and enter code for radio if necessary.
- Install noise insulation tray.
- Install wheel and tighten ⇒ [Page 44-1](#) .



- Check hydraulic oil ⇒ [Page 48-70](#) .
  
- Check steering system for leaks ⇒ [Page 48-73](#) .
  
- Bleed steering system ⇒ [Page 48-72](#) .

After installing check position of steering wheel during a test drive.

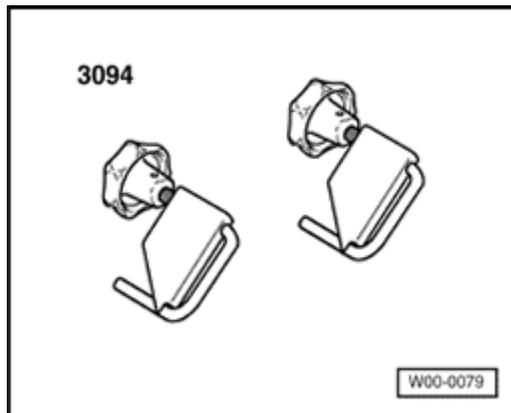
If steering wheel is not in straight ahead position the front axle tracking must be checked and if necessary adjusted!

- Check toe adjustment ⇒ [Page 44-2](#) .



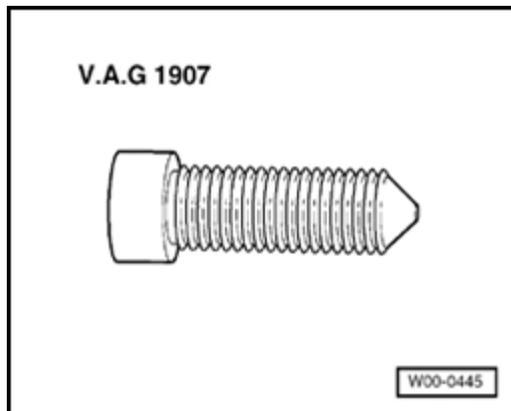
## Steering gear, vehicles with 8-cylinder engines, removing and installing

Special tools, workshop equipment, testers, measuring instruments and auxiliary items required



A

- ◆ 3094 Hose clamps



A

- ◆ VAG 1907 Steering centering bolt



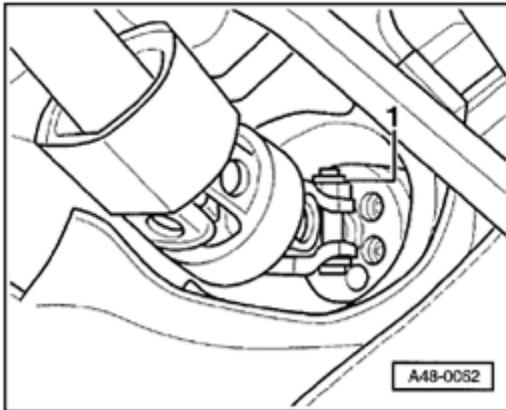
## Removing

- Remove plenum chamber cover.
- Remove battery.
- Remove driver's side stowage compartment.
- Bring steering wheel to center position.
- Remove ignition key with steering wheel in center position.
- Move steering wheel slightly so that the steering lock engages.

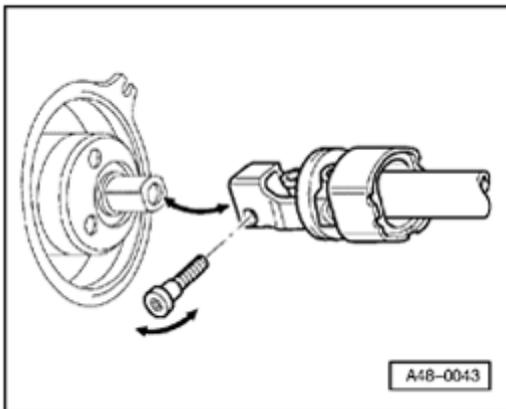
### **Note:**

*If the steering wheel is turned excessively with the steering gear removed, the spiral spring for the airbag system may become over-wound and damaged.*

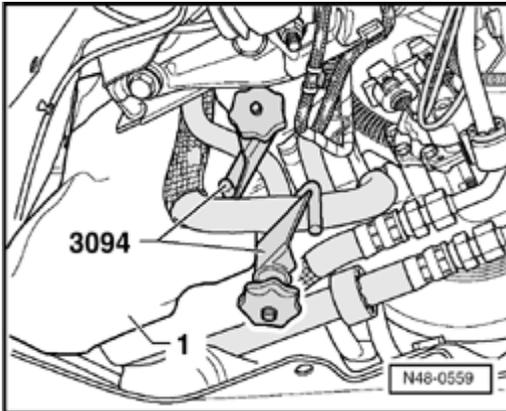
**Secure steering column against moving apart. Securing steering column before removal ⇒ [Page 48-21](#)**

**A**

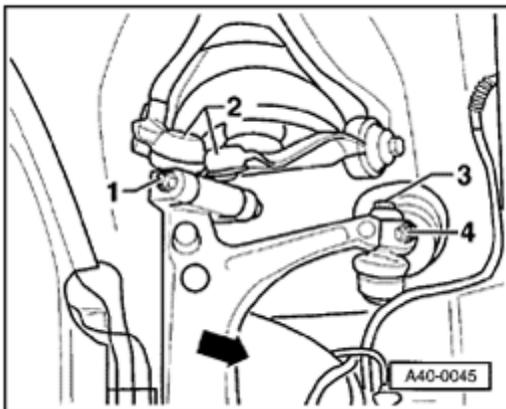
- Remove nut -1- on universal joint.
- Relieve tension on eccentric by turning tensioning bolt (Torx T50) clockwise and remove bolt.

**A**

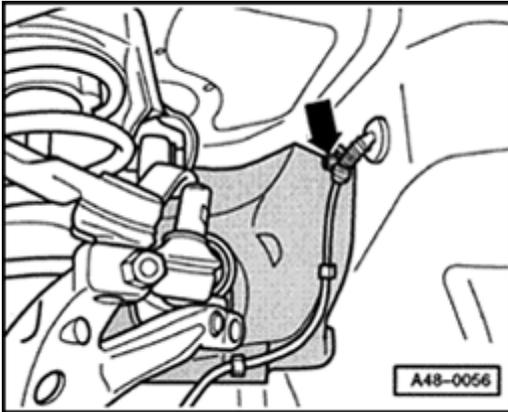
- Swing universal joint away downward.
- Pull boot out from bulkhead.
- Remove noise insulation tray.
- Remove front wheels.



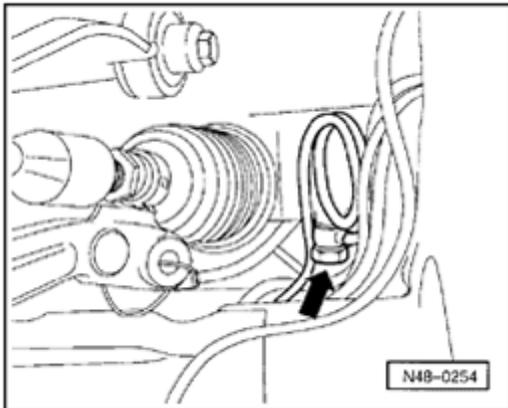
- A**
- Clamp off intake and return lines using hose clamps -3094-.



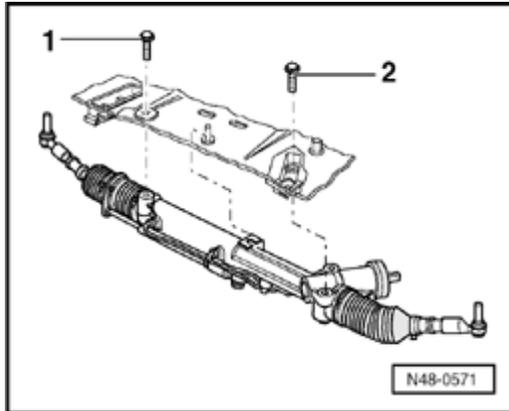
- A**
- Remove hex bolt -3- and bolt -4-.
  - Pull out tie rod ball joint.

**A**

- Remove panel nut -arrow-.
- Pry out clips and take out cover.
- Place oil tray under vehicle.
- Remove return line banjo bolt (22 mm AF) from steering gear.

**A**

- Remove pressure hose banjo bolt (19 mm AF) from steering gear.

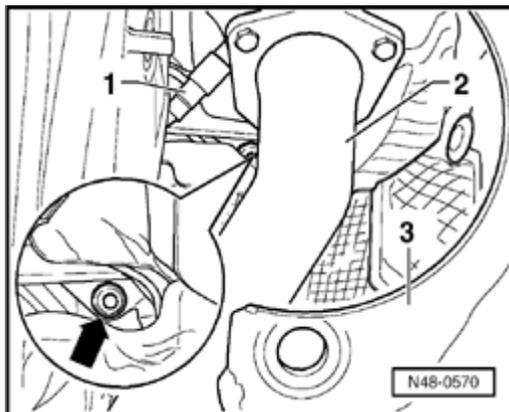


A

- Remove steering gear bolts -1- and -2- in plenum chamber.
- Remove complete left transmission support.

⇒ *Repair Manual, Manual Transmission, Repair Group 34; Removing and installing transmission*

⇒ [\*Repair Manual, 5 Spd. Automatic Transmission 01V Front Wheel Drive, Repair Group 37; Removing and installing left and right transmission supports\*](#)



A

- Remove steering gear securing bolt -arrow-.

**Note:**

*The bolt -arrow- is accessible only through a recess in heat shield between oxygen sensor -1- and front exhaust pipe -2-.*

3 - Subframe



### Two mechanics are required for the next work steps

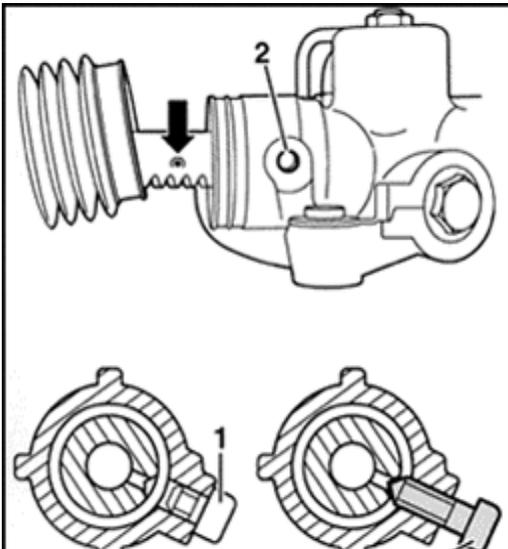
- Guide steering gear as far as possible to left over wheel bearing housing and turn 90° counterclockwise.
- Guide steering gear as far as possible to left and turn again 90° counterclockwise.
- Take out steering gear.

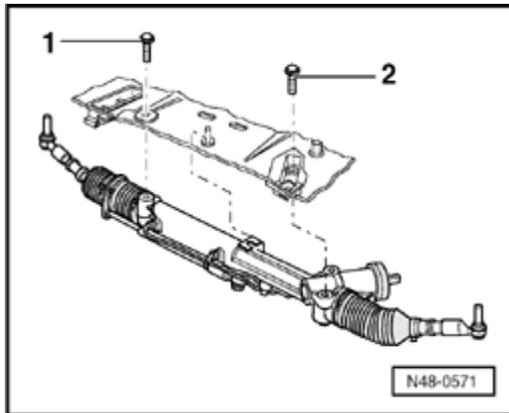
### Installing

- ▲ Centralize removed steering gear with -VAG 1907-.

Centering is also possible when steering gear is installed. But access is poor.

- To do this remove hex socket head bolt -1- on steering gear.
- Move rack until center marking on rack -arrow- aligns with threaded hole -2-.
- Screw in VAG 1907.





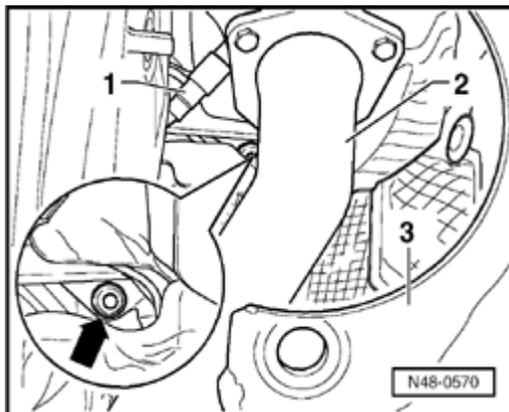
A

- Position steering gear on plenum chamber.

**Note:**

*Make sure that threads and bolt contact surfaces are oil and grease free!*

- Insert bolts -1- and -2- but do not tighten.



A

- Install bolt -arrow- and tighten ⇒ [Page 48-36](#) , item 1 .

**Note:**

*The bolt -arrow- is accessible only through a recess in heat shield between Heated Oxygen Sensor (HO2S) -1- and front exhaust pipe -2-.*

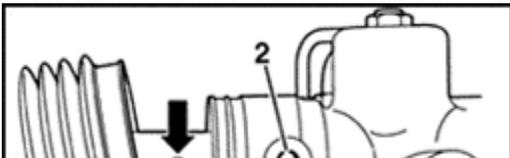
- 3 - Subframe



- Now tighten bolts -1- and -2- ⇒ [Page 48-36](#) , item 1 .
- Install return hose and tighten 22 mm AF banjo bolt ⇒ [Page 48-37](#) , item 15 .
- Install pressure hose and tighten 19 mm AF banjo bolt ⇒ [Page 48-37](#) , item 13 .
- Install boot in bulkhead.

Take care not to damage boot when installing.

- Turn steering wheel to center position, if not already done.
  - Insert tensioning bolt (Torx T50) and tension counterclockwise.
  - Tighten hex nut of tensioning bolt (Torx T50) ⇒ [Page 48-36](#) , item 5 .
  - Now remove tool -VAG 1907- from steering gear.
- 1 - Hex socket head bolt



A

2 - Threaded hole in steering gear

- Seal steering gear with hex socket head bolt -1- ; tightening torque ⇒ [Page 48-65](#) , item 9 and ⇒ [Page 48-69](#) , item 19 .



- Install universal joint to steering pinion.
- Remove steering column assembly aid.
- Install driver's side stowage compartment.
- Install wheel housing cover.
- After completely installing steering gear remove hose clamps -3094-.
- Turn ignition key to position "ignition off".
- Install battery and enter code for radio if necessary.
- Install noise insulation tray.
- Install wheel and tighten ⇒ [Page 44-1](#) .
- Check hydraulic oil ⇒ [Page 48-70](#) .
- Check steering system for leaks ⇒ [Page 48-73](#) .

- Bleed steering system ⇒ [Page 48-72](#) .

After installing check position of steering wheel during a test drive.

If steering wheel is not in straight ahead position the front axle tracking must be checked and if necessary adjusted!

- Check toe adjustment ⇒ [Page 44-2](#) .