

## Steering gear, replacing

Special tools: [999 5259](#) , [999 5460](#) , [999 5716](#) , [999 5972](#) , [999 7018](#)

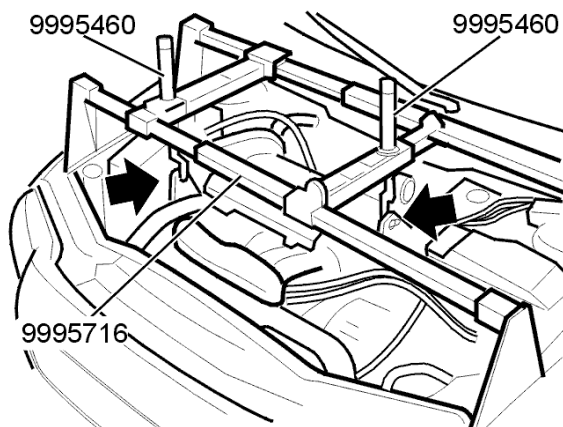
### Removal

**Note!** As the illustrations in this service information are used for different model years and / or models, some variation may occur. However, the essential information in the illustrations is always correct.

### Installing lifting tools

Remove the engine cover (applies only to diesels). Ensure that the front wheels are pointing straight ahead. Lock the steering wheel by removing the ignition key. Do not turn the front wheels so that the steering gear position is changed. The SRS-system contact reel can be damaged.

Install lifting lug [999 7018](#) (applies only to 6 cylinder engines).



Install lifting tools [999 5716](#) and lifting hooks [999 5460](#) . Lift the engine to relieve the load on the engine pads.



### Disconnecting the connector

**Note!** Only applies to cars with speed related power steering.

#### Left-hand drive:

Disconnect the connector at the brake servo.

#### Right-hand drive:

Disconnect the connector at the right suspension turret.

#### Left and right-hand drive:

Disconnect the connector cable from the clips along the ABS cable.

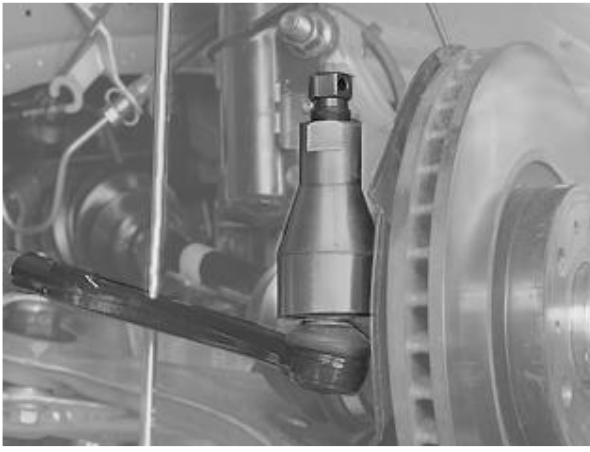
Push down the connector and cable to the steering gear.

### Removing track rod ends

Raise the car.

**Note!** Ensure that the front wheels are pointing straight ahead.

**Remove:**

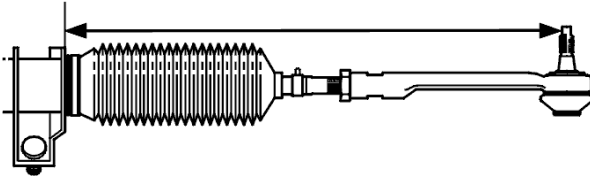


- the front wheels
- the track rod ends from the steering arms.

**Note!** If the car has steel wheel spindles, use puller [999 5259](#) .

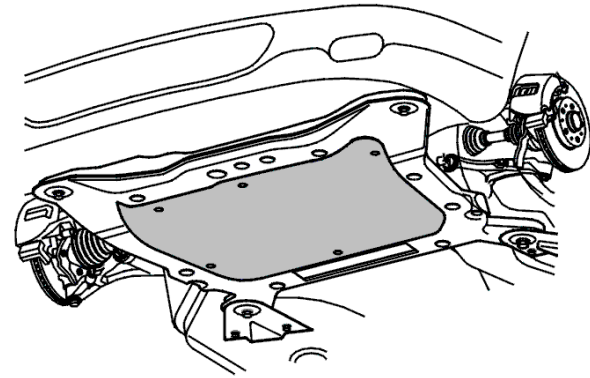
### Measuring the position of the track rod in the steering gear

On one side, measure the length of the track rod in relation to the steering gear housing. Note the measurement.



### Removing the splash guard

Remove the splash guard under the engine.



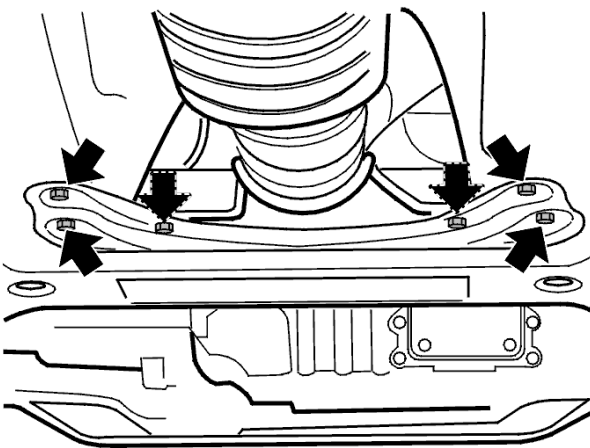
### Removing the bracket for the exhaust pipe

**Remove:**

- the mounting for the exhaust pipe on the bracket
- the screws holding the exhaust pipe bracket.

Disconnect the brake pipe from the snap fasteners on the bracket.

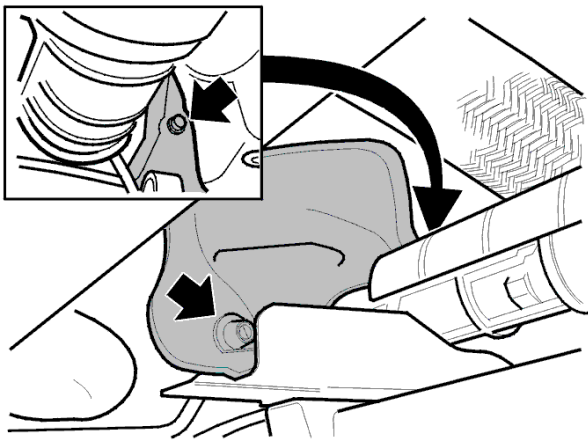
Remove the bracket.



### Removing the collision protection system over the steering gear

**Right-hand drive:**

- Remove the collision protection system over the steering gear (2 screws)
- Position a container under the steering gear to collect the oil
- Disconnect the oil pipes from the steering gear.

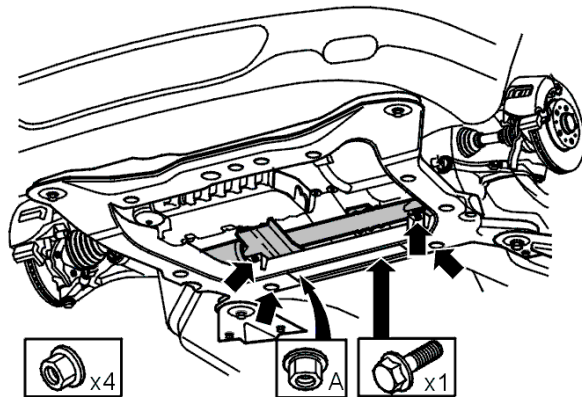


### Removing the nuts and screw for the steering gear

Remove the four nuts and the screw holding the steering gear to the sub-frame.

#### Right-hand drive:

Remove the nut (A) holding the lower half of the collision protection.



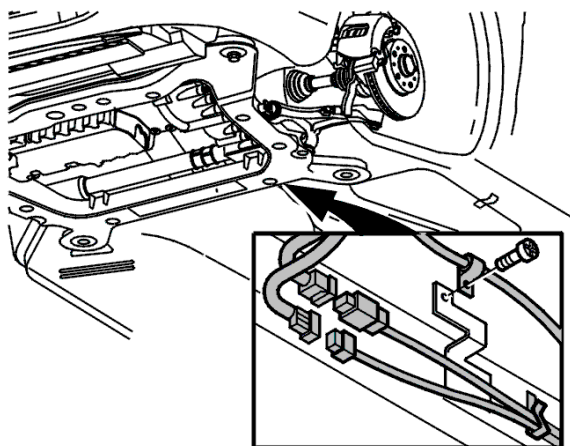
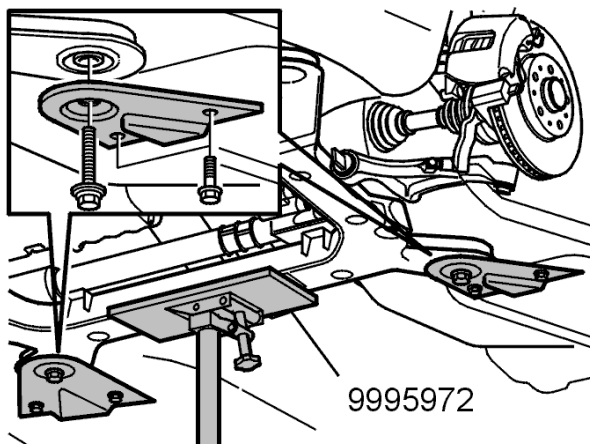
### Lowering the sub-frame at the rear edge

Position a mobile jack with universal fixture [999 5972](#) at the rear edge of the sub-frame.

Remove the screws holding the sub-frame brackets to the bodywork on both sides.

Remove the rear sub-frame screws together with the brackets and washers.

Unscrew the front screws in the sub-frame by 10–15 mm.



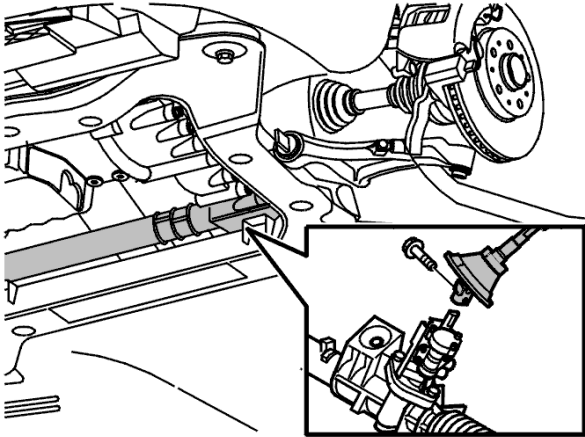
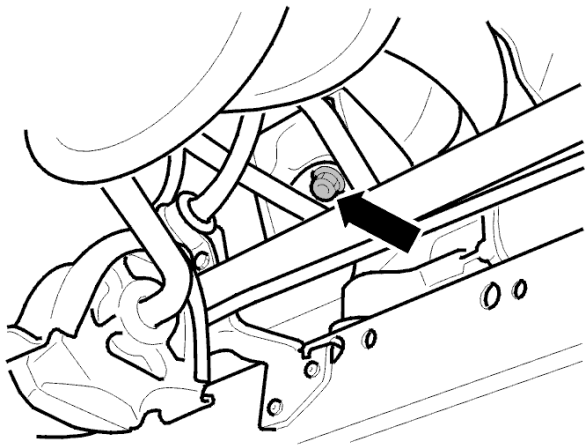
Remove the bracket for the heated oxygen sensor (HO2S) from its mounting (6 cylinder engines only). Lower the rear edge of the sub-frame approximately 90 mm. Ensure that the steering gear screws are released from the sub-frame.

Remove the mobile jack.

### Removing steering gear

Remove the rear engine mounting screw.

Position a container under the steering gear to collect the



oil.  
Remove the oil pipes from the steering gear and holders along the steering gear.

Remove the screw for the joint between the steering gear and the steering shaft.  
Press up the joint from the steering gear.  
Lift the steering gear out to the left (left-hand drive cars only).  
Lift the steering gear out to the right (right-hand drive cars only).

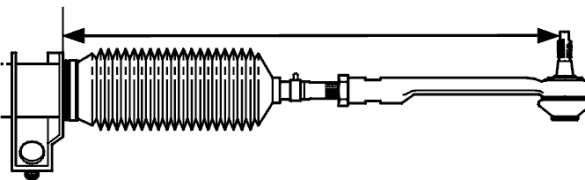
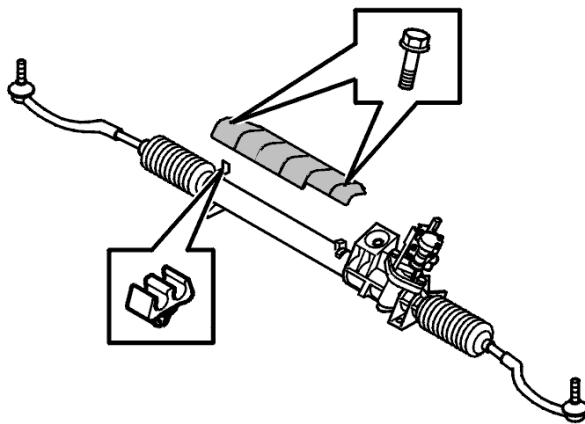
## Installation

### Installing steering gear

Transfer the heat shield.

### When replacing steering gear:

Replace the oil pipe holder (only left-hand drive).

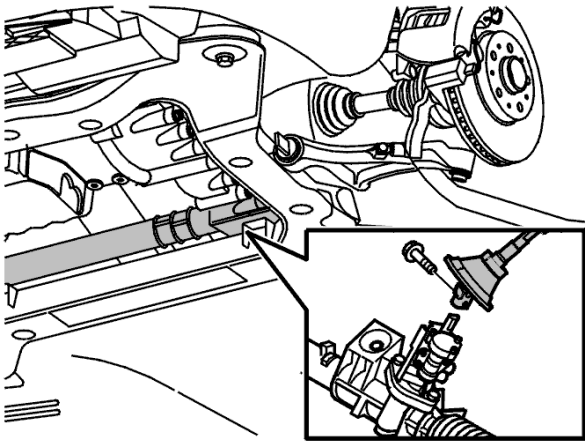


### Checking the position of the track rod in the steering gear

Check that track rod is in the same position as when it was removed.

Lift in the steering gear in from the left (left-hand drive cars).  
Lift in the steering gear in from the right (right-hand drive cars).  
Allow the steering gear to rest on the sub-frame.  
Install the oil pipes on the steering gear. Use new O-rings. Tighten to **25 Nm**.  
Secure the oil pipes in the holders on the power steering (left-hand drive).





### Applies to cars with speed related power steering:

Slide the connector to the terminal at the brake servo. Install the cabling in the clip along the ABS cable.

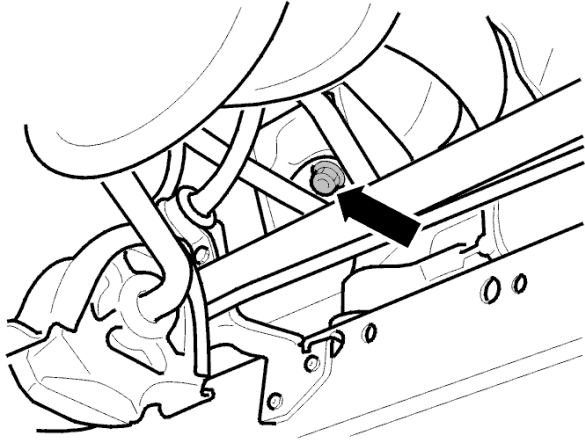
### Applies to all models:

Align the steering shaft joint.

Lift up the rear edge of the sub-frame slightly using a mobile jack and universal fixture **999 5972**.

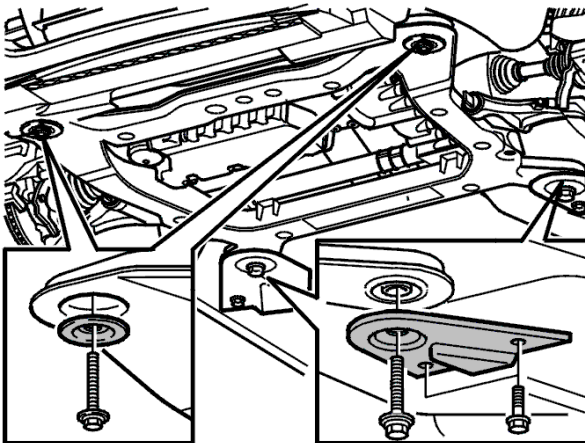
Locate the steering shaft joint on the steering gear.

Install a new steering shaft screw. Tighten to **20 Nm**.



Install the rear engine mounting screw.

Align the steering gear so that it is positioned straight relative to the sub-frame. Tighten the screw. Tighten to **50 Nm**.



### Installing the sub-frame at the rear edge

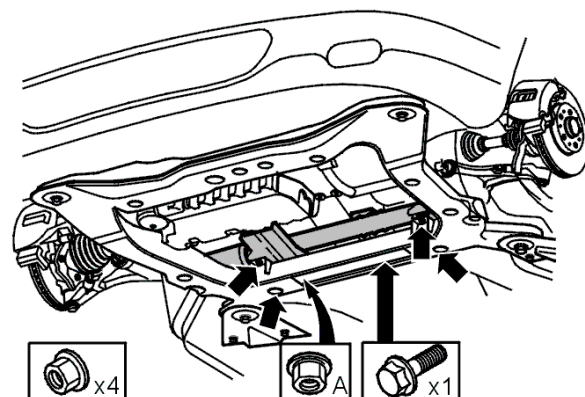
- Lift the sub-frame. At the same time locate the steering gear mounting screws in the frame and, on right-hand drive cars, the collision protection system screw
- Loosely install the sub-frame brackets together with the washers
- Install the rear screws in the sub-frame. Use new screws. Do not tighten yet
- Transfer the mobile jack to the sub-frame front edge
- Replace the front sub-frame screws
- First tighten the screws on the left side of the sub-frame. Tighten to **105 Nm**. Angle tighten 120°.
- Then tighten the right-hand side to the same values as the left side
- Finally tighten the screws for the brackets on both sides. Tighten to **50 Nm**.

Install the four nuts and the screw holding the steering gear. Use new nuts and a new screw. Tighten to **50 Nm**.

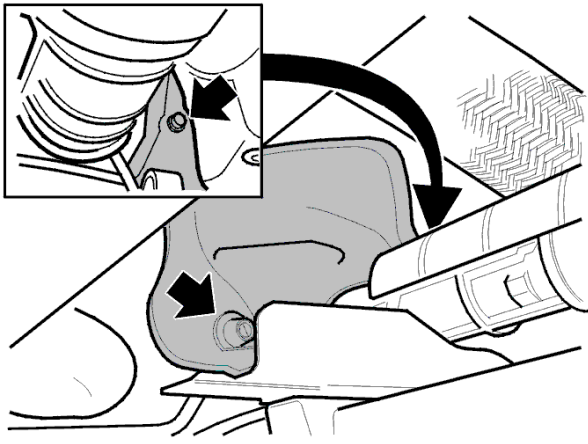
### Right-hand drive:

Install nut (A) holding the lower half of the collision protection system. Tighten to **50 Nm**.

Install the oil pipes. Use new O-rings.



Install the collision protection system over the steering gear (2 screws).



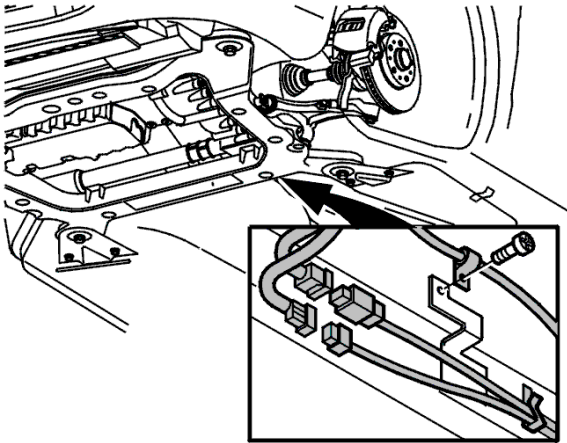
Tighten to **80 Nm**.

### Installing the cable harness for the heated oxygen sensors (HO2S)

#### Applies only to 6 cylinder engines:

Install the bracket for the heated oxygen sensor (HO2S) in its mounting. Connect the connectors.

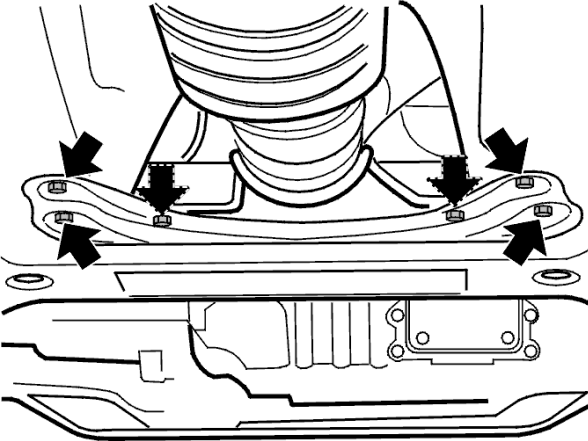
Install the wiring on the sub-frame. Connect the connectors.



### Installing the bracket for the exhaust pipe

#### Install:

- the mounting for the exhaust pipe on the bracket.  
Tighten to **10 Nm**
- the brake pipe on the exhaust pipe bracket
- the exhaust pipe bracket. Tighten the bracket screws.  
Tighten to **25 Nm**.



### Installing the track rod ends on the steering arms

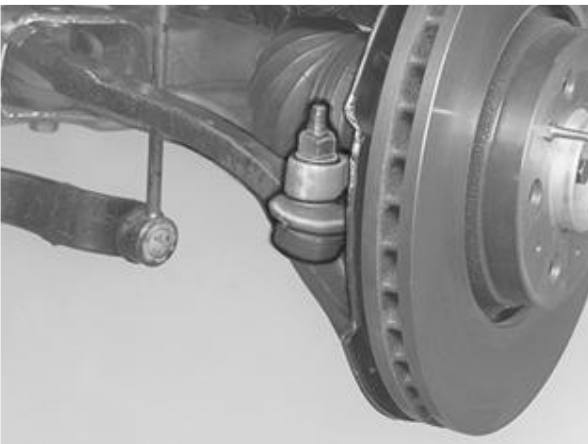
Install the track rod ends on the steering arms. Use new nuts.

#### Tighten:

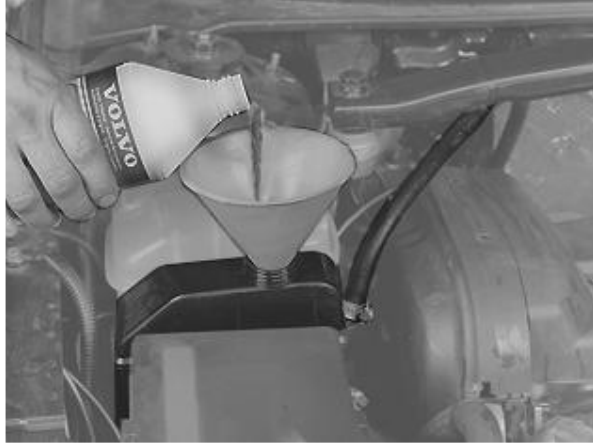
- the steel wheel spindles, tighten to **70 Nm**
- the aluminium stub axle. Tighten to **80 Nm**.

#### Install:

- the splash guard under the engine
- the wheels. See [Installing wheels](#).



### Removing the lifting tools



Lower the car.

Remove the lifting tools.

Install the engine cover (diesel engines only).

#### **Applies to cars with speed related power steering:**

Connect the connector at the brake servo (left-hand drive cars).

Connect the connector at the right-hand suspension turret (right-hand drive cars).

Top up the oil level in the servo reservoir. Bleed the system.

For the correct oil quality, see specifications.

**Warning!** Avoid skin contact with the oil.

Repeatedly turn the steering wheel to full lock.

Top up the oil if necessary.

Lower the car.

Apply the handbrake.

Start the engine.

**A:** Turn the steering wheel slowly to the right. Hold on full lock for 2 seconds.

**B:** Turn the steering wheel slowly to the left. Hold on full lock for 2 seconds.

Repeat operations A and B approximately 10 times.

#### **Finishing**

Check the toe-in. See [Wheel alignment, checking / adjusting](#).

## **Replacing the outer steering arm**

### **Removal and Installation**

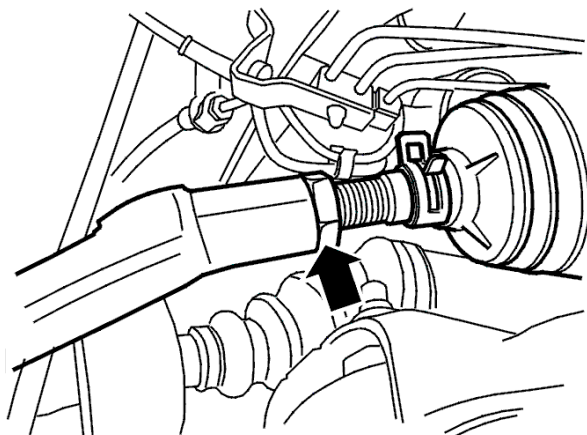
**Note!** For tightening torques, see: [Tightening torque](#).

#### **Removing the steering arm**

**Remove:**

- the wheel
- the steering arm from the spindle.

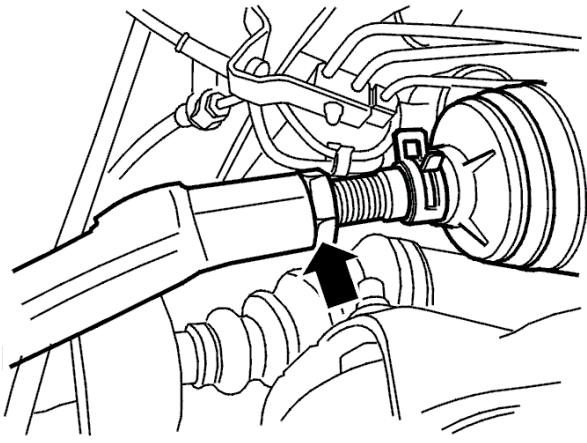
Remove the lock nut. Remove the steering arm.



#### **Installing the steering arm**

**Install:**

- the steering arm
- the steering arm on the wheel spindle. Use a counterhold and tighten. See: [Tightening torque](#)



- the wheel. See: [Installing wheels](#)
- Align the wheels. See: [Wheel alignment, checking / adjusting](#).

## Steering arm inner, replacing

Special tools: [999 7019](#) , [999 7020](#)

### Removal

#### Preparation

Remove the wheel.

Clean the boot and the surrounding area thoroughly.

#### Removing the outer steering arm and boot

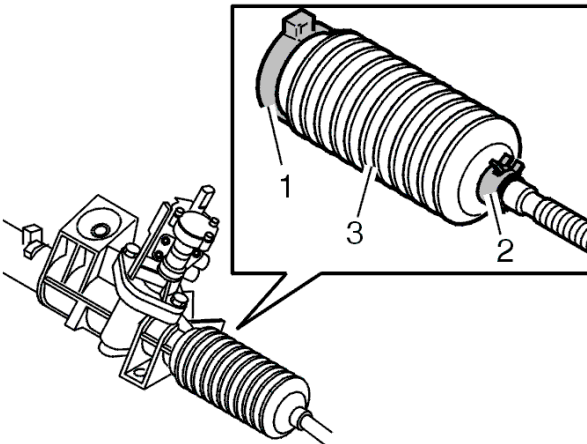
Remove the steering arm from the wheel spindle.  
Slacken off the lock nut.

#### Remove:

- the steering arm and the lock nut
- the clamps (1) and (2).

Tape the threads on the inner steering arm to protect the boot when removing.

Remove the boot (3).



### Installing the counterhold

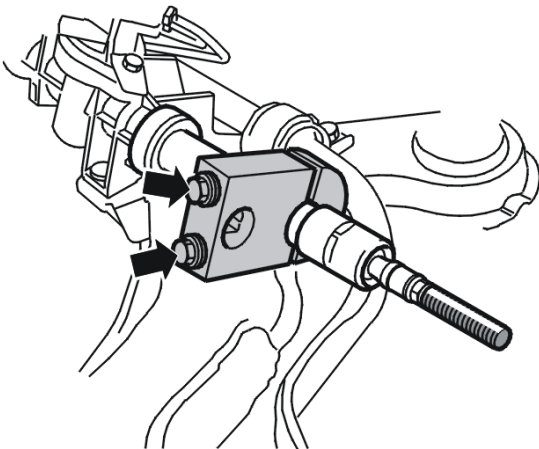
**Note!** Cleanliness is very important as the seals in the steering gear are sensitive to scratches on the rack.

Clean the surfaces on the steering rack and the tool thoroughly.

Install counterhold [999 7020](#).

Tighten to **25 Nm**.

Position the counterhold as close to the deflection limiter as possible.



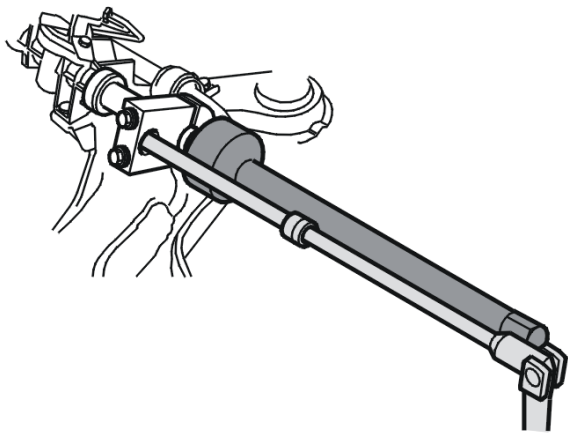
### Removing the inner steering arm

Use tool [999 7019](#) to remove the steering arm.

Ensure that the connecting rods used are the same length.

Remove the steering arm from the steering gear.





## Installation

**Note!** For tightening torques, see: [Tightening torque](#) .

### Installing the inner steering arm

Install the inner tie rod.

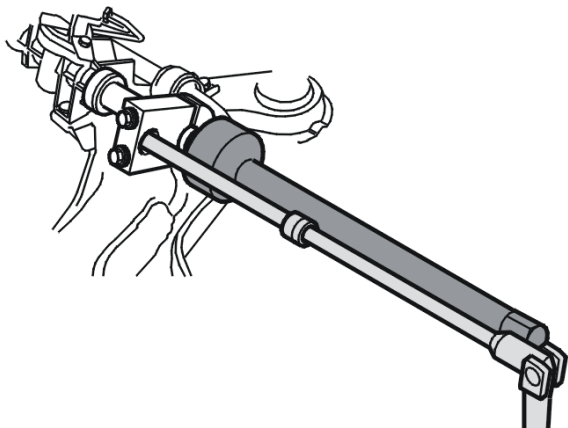
Use thread sealant **116 1053**.

Tighten. See: [Tightening torque](#) .

Use tool [999 7019](#) .

Remove the counterhold.

Clean the steering rack after removing the tool. Check the steering rack for damage.



### Installing the boot

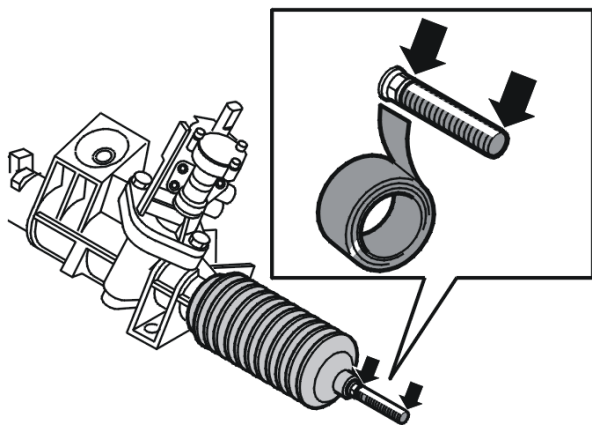
Check that the boot is undamaged.

Use a new boot if in any doubt.

Tape the threads on the inner steering arm to protect the boot when installing.

Install the boot using new clamps.

Remove the tape.



### Installing the steering arm

**Note!** Different tightening torques for steel and aluminum wheel spindles.

#### Install:

- the steering arm
- the steering arm on the wheel spindle. Use a counterhold and tighten. See: [Tightening torque](#)
- the wheel. See: [Installing wheels](#)
- Align the wheels. See: [Wheel alignment, checking / adjusting](#) .