

## Power steering pump, removing and installing

### Notes:

- ◆ *Power steering pumps cannot be repaired. If problems in the pump are suspected carry out pressure and leakage tests. Replace the pump if it is malfunctioning.*
- ◆ *Check steering system for leaks if the fluid level in the reservoir is low.*
- ◆ *If there are leaks at the line connections first tighten connections, wipe dry and then re-check for leaks.*
- ◆ *Checking the hydraulic fluid level ⇒ [page 48-22](#) .*
- ◆ *Bleeding the steering system ⇒ [page 48-24](#) .*
- ◆ *Checking the steering system for leaks ⇒ [page 48-25](#) .*
- ◆ *Type of hydraulic fluid: G 002 000*
- ◆ *Hydraulic system fluid capacity: 0.7-0.9 Liters*

(12-15 oz.)

**CAUTION!**

- ◆ ***Pumps supplied as replacement parts are not filled with fluid. Therefore it is essential to fill the pump with hydraulic fluid G 002 000 and to rotate pump several times by hand. Otherwise the pump may be damaged or be noisy during operation.***
  
- ◆ ***Part numbers are listed here for reference only. Always check with your Parts department for the latest information.***

## Power steering pump (4-cyl. engine), removing and installing

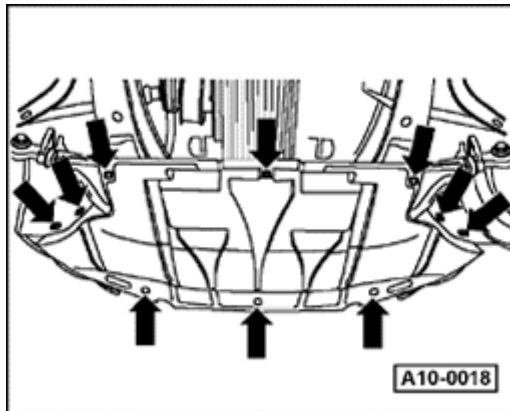
### Special tools, test equipment and auxiliary items

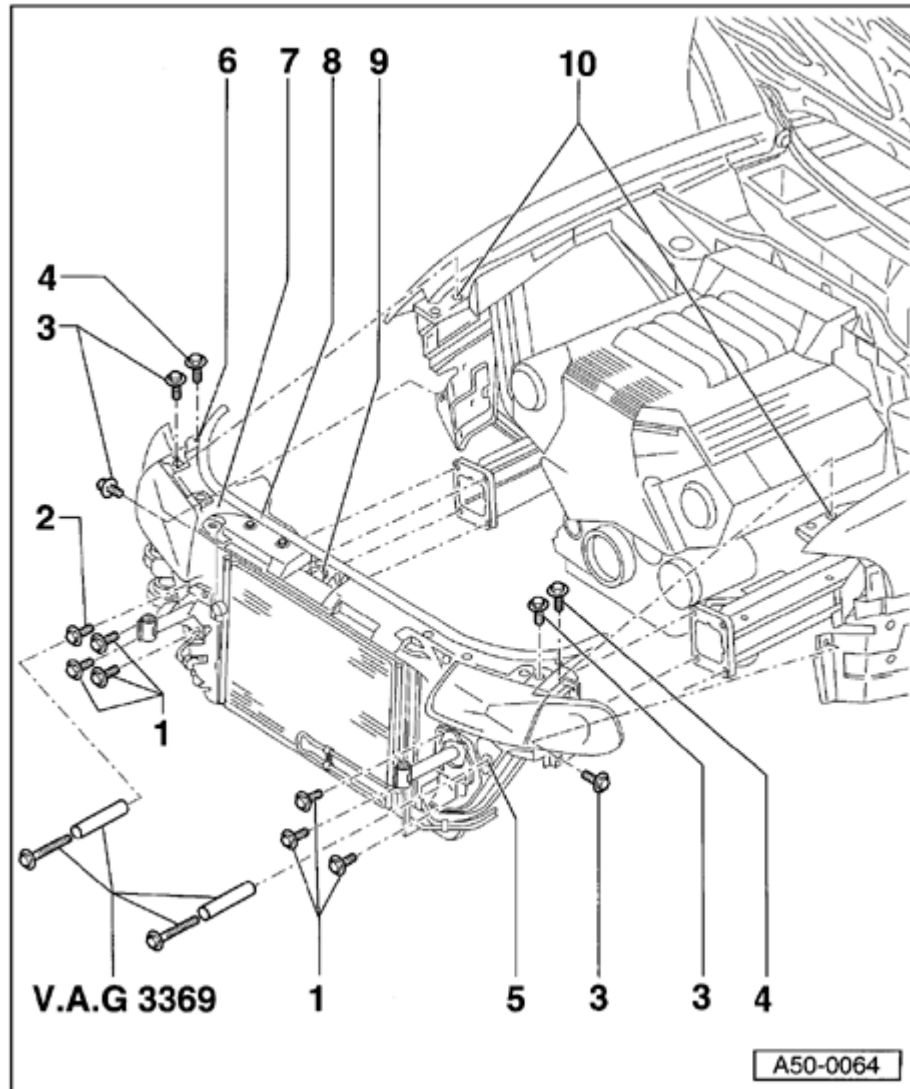
3204	3369	3094
VAG1590		
Repair Manual, Body Exterior		
Repair Manual, Body Interior		
Repair Manual, Engine Mechanical		

### Removing

A

- Remove noise insulation panel.
- Remove front bumper:  
⇒ [Repair Manual, Body Exterior, Repair Group 63](#)
- Move lock carrier to service position ⇒ [page 48-46](#) .





### Lock carrier, moving to service position

**1 - Bolt (6x)**

◆ 50 Nm (37 ft lb)

**2 - Bolt**

◆ 50 Nm (37 ft lb)

**3 - Bolts (4x)**

◆ 8 Nm (71 in. lb)

**4 - Bolts (2x)**

◆ 8 Nm (71 in. lb)

**5 - Access hole for 3369 support tool**

**6 - Hole in front end**

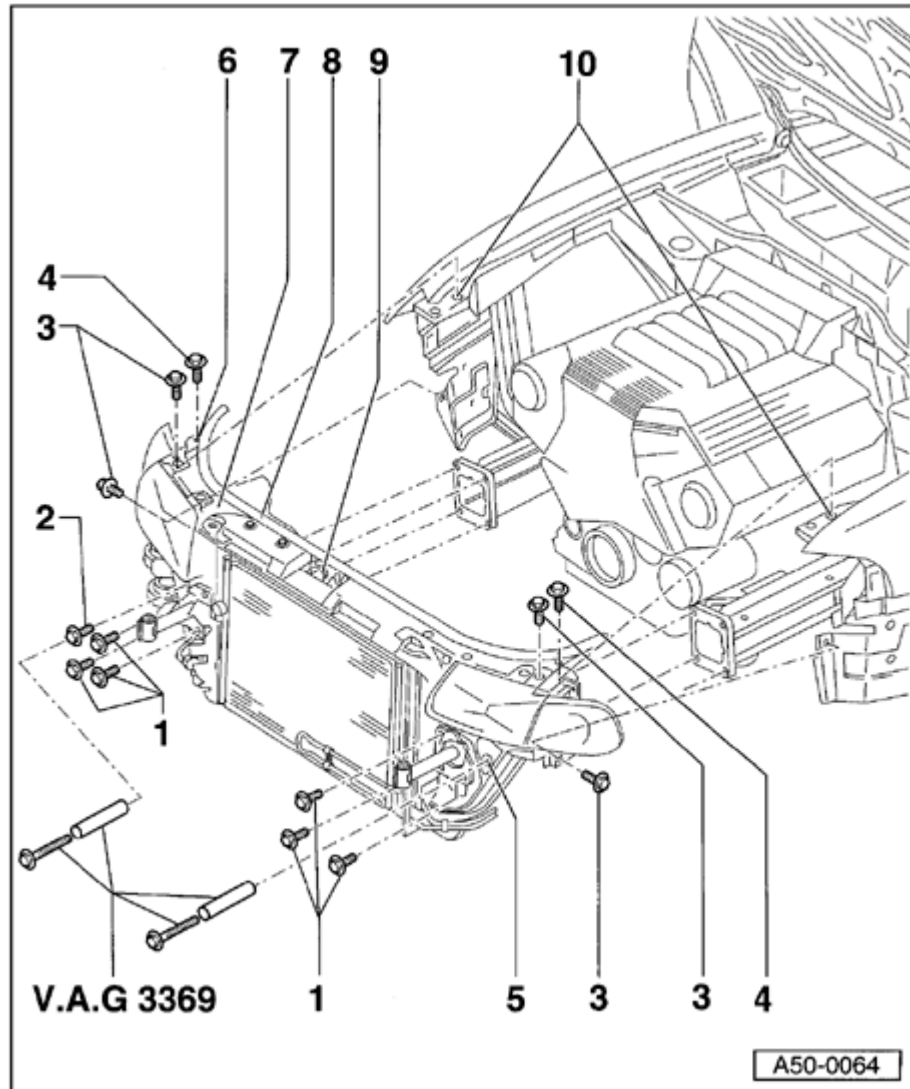
◆ For securing lock carrier in service position

**7 - Lock carrier**

**8 - Weather stripping for hood**

**9 - Bowden cable for hood**

**10 - Holes in side panel**



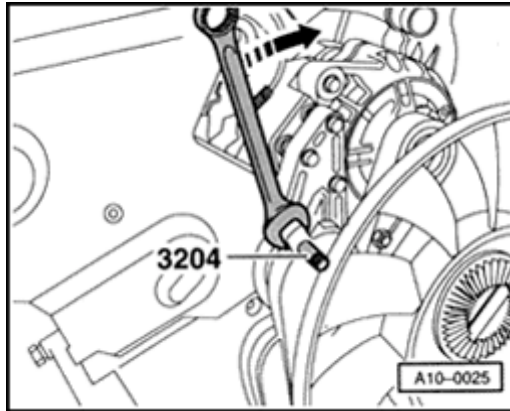
### Moving to service position

- Remove front bumper:

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

- Remove intake air duct located between lock carrier and air cleaner.
- Remove bolt - 2 - and install 3369 support tool on left and right-hand sides.
- Remove bolts - 1 -, - 3 - and - 4 - then pull lock carrier forward on 3369 support tool.

### Removing ribbed belt on vehicles with 4-cyl. gasoline engine



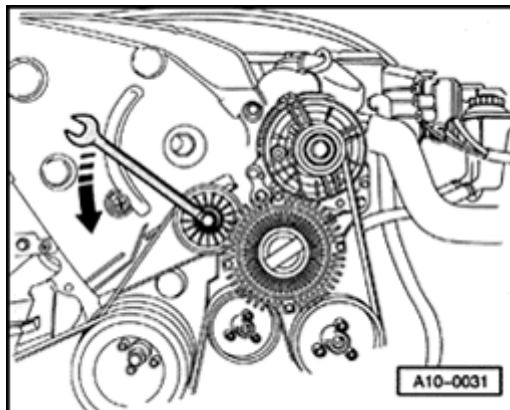
A

- Move tensioner in direction of arrow to loosen ribbed belt.
- Secure using 3204 drift.

#### **CAUTION!**

**Mark the running direction before removing. Reinstalling a used belt in reversed running direction could damage the belt.**

### Removing ribbed belt on vehicles with 4-cyl. Diesel engine



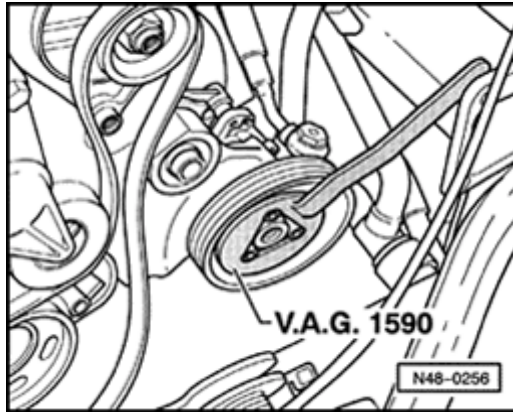
A

- Move tensioner in direction of arrow to loosen ribbed belt.

#### **CAUTION!**

**Mark the running direction before removing. Reinstalling a used belt in reversed running direction could damage the belt.**

### Removing power steering pump pulley (vehicles with 4-cyl. gasoline engine)



A

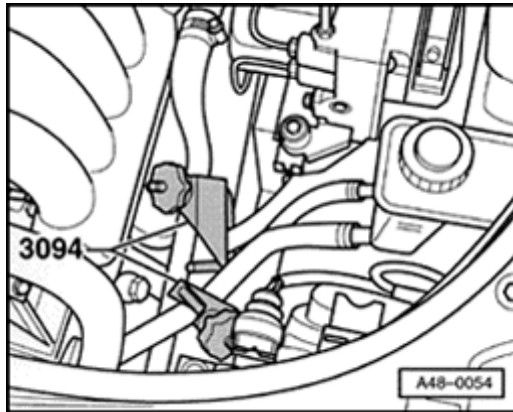
- Remove coolant pump pulley.
- Remove ribbed belt.

#### **CAUTION!**

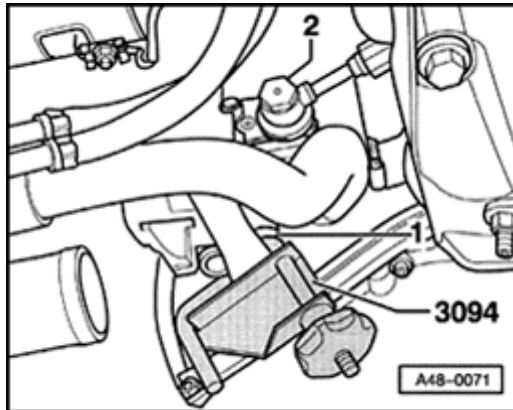
***Mark the running direction before removing. Reinstalling a used belt in reversed running direction could damage the belt.***

- Remove power steering pump pulley.
  - If necessary, file down corners of VAG1590 water pump wrench.

### Removing power steering pump (all engines)

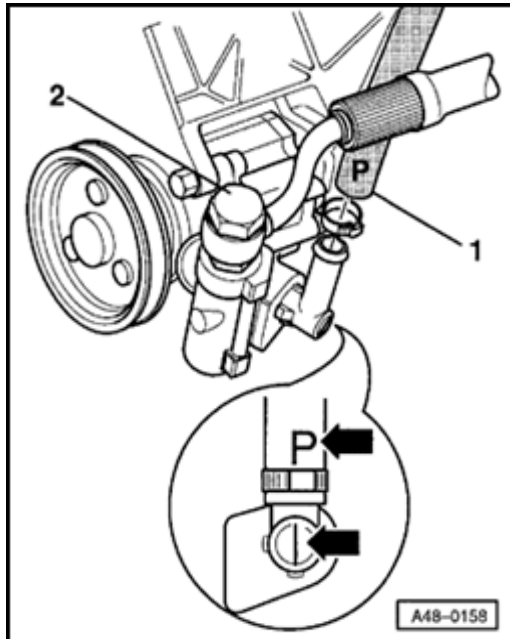
**A**

- Using 3094 hose clamps, pinch off suction and return hoses.
- Place oil catch pan in position.

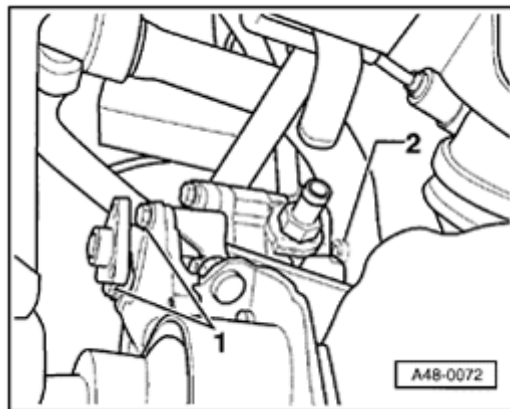
**A**

- Remove hose clamp -1- from suction hose.
- Remove suction hose, press out of retainer and lay to side.
- Remove pressure line -2-.



**Removing power steering pump (power steering pump FP-4) m.y. 1997**

- Remove hose clamp from suction hose -1-.
- Remove suction hose and lay to side.
- Remove expansion hose -2-.

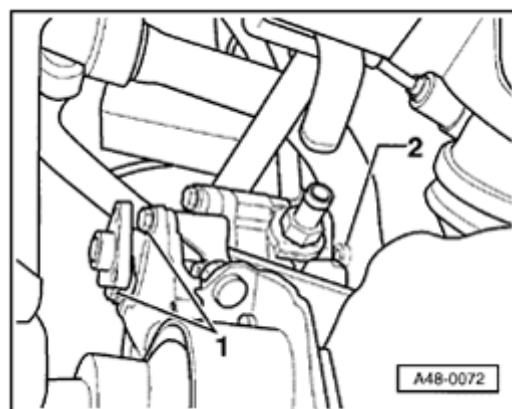


- Remove bolts -1- and socket-head bolt -2-.
- Remove pump.

## Installing

### ***Installation note:***

*Before installing a new power steering pump, add hydraulic fluid to the suction end and turn the pump by hand until fluid emerges from the discharge end.*

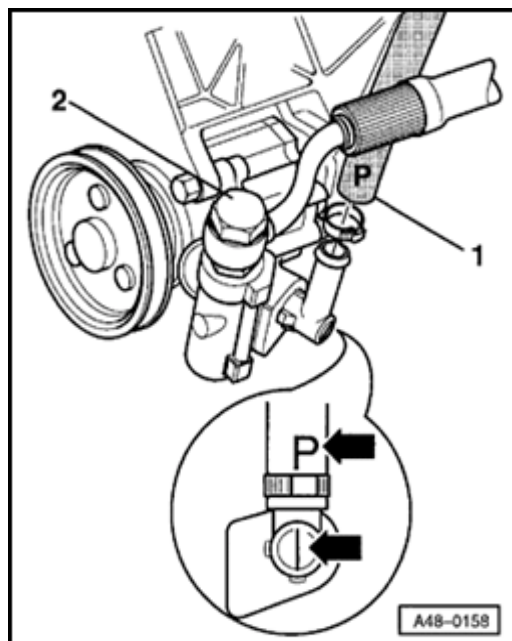


**A**

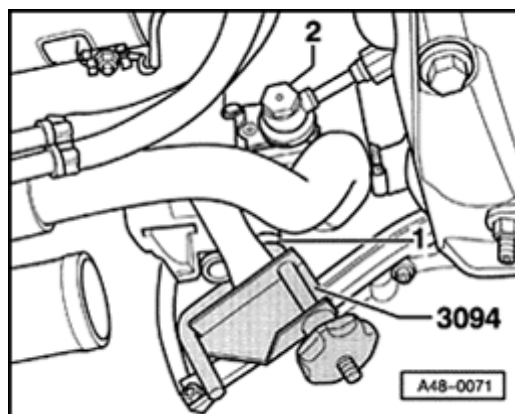
- Turn pump by hand until fluid emerges from discharge end.
- Tighten bolts -1- and -2-.

Tightening torque: 20 Nm (15 ft lb)

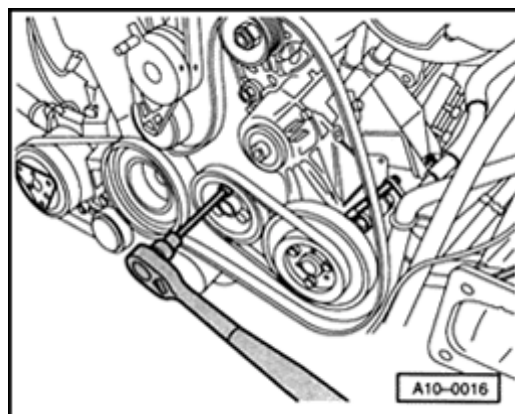
### Installing power steering pump (power steering pump FP-4) m.y. 1997

**A**

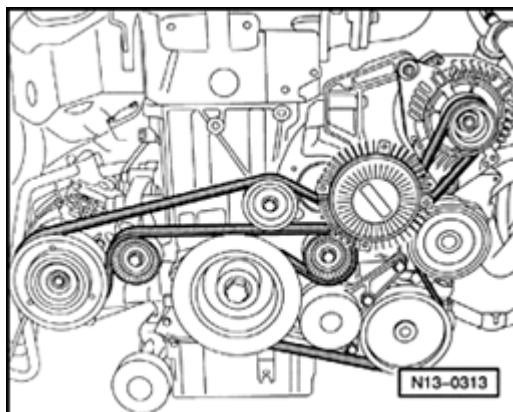
- Install pressure line and tighten banjo bolt -2-.
  - ◆ Always replace seals
  - ◆ Tightening torque: 50 Nm (37 ft lb)
- Install suction hose -1-.
  - Mark -P- (upper arrow) must align with seam on pump (lower arrow)
- Remove 3094 hose clamps.



- A**
- Install pressure line and tighten banjo bolt -2-.
    - ◆ Always replace seals
    - ◆ Tightening torque: 50 Nm (37 ft lb)
  - Install suction hose -1-.



- A**
- Tighten socket-head bolts for coolant pump pulley.  
Tightening torque: 25 Nm (18 ft lb)
  - Install fan at viscous coupling.  
Tightening torque: 10 Nm (7 ft lb)



- A
- Install ribbed belt.

**CAUTION!**

- ♦ **Mark the running direction before removing. Reinstalling a used belt in reversed running direction could damage the belt.**
- ♦ **Make sure that the belt is correctly seated in the pulleys.**

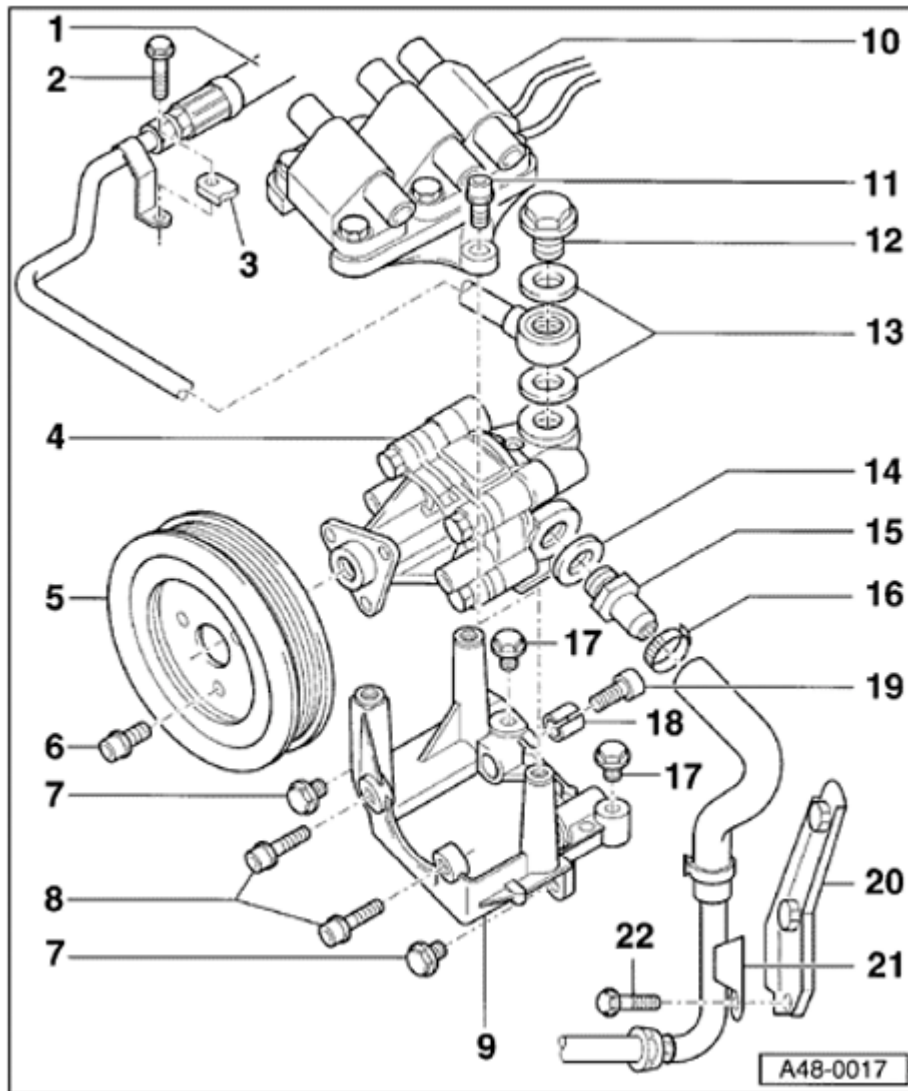
**Note:**

*Illustration is shown without the lock carrier installed for greater clarity.*

- Top off hydraulic fluid ⇒ [page 48-22](#) .
- Install bumper:

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

- Start engine and make sure ribbed belt runs properly.
- Check hydraulic fluid level ⇒ [page 48-22](#) .
- Bleed steering system ⇒ [page 48-24](#) .
- Check steering system for leaks ⇒ [page 48-25](#) .



## Power steering pump (6-cyl. engine), removing and installing

### Notes:

- ◆ Always replace seals.
- ◆ Do not reuse hydraulic fluid.
- ◆ The power steering system uses hydraulic fluid, Part No. G 002 000.
- ◆ System hydraulic fluid capacity: approx. 1 liter (1 qt).

**1 - Pressure line with hose**

**2 - Bolt**

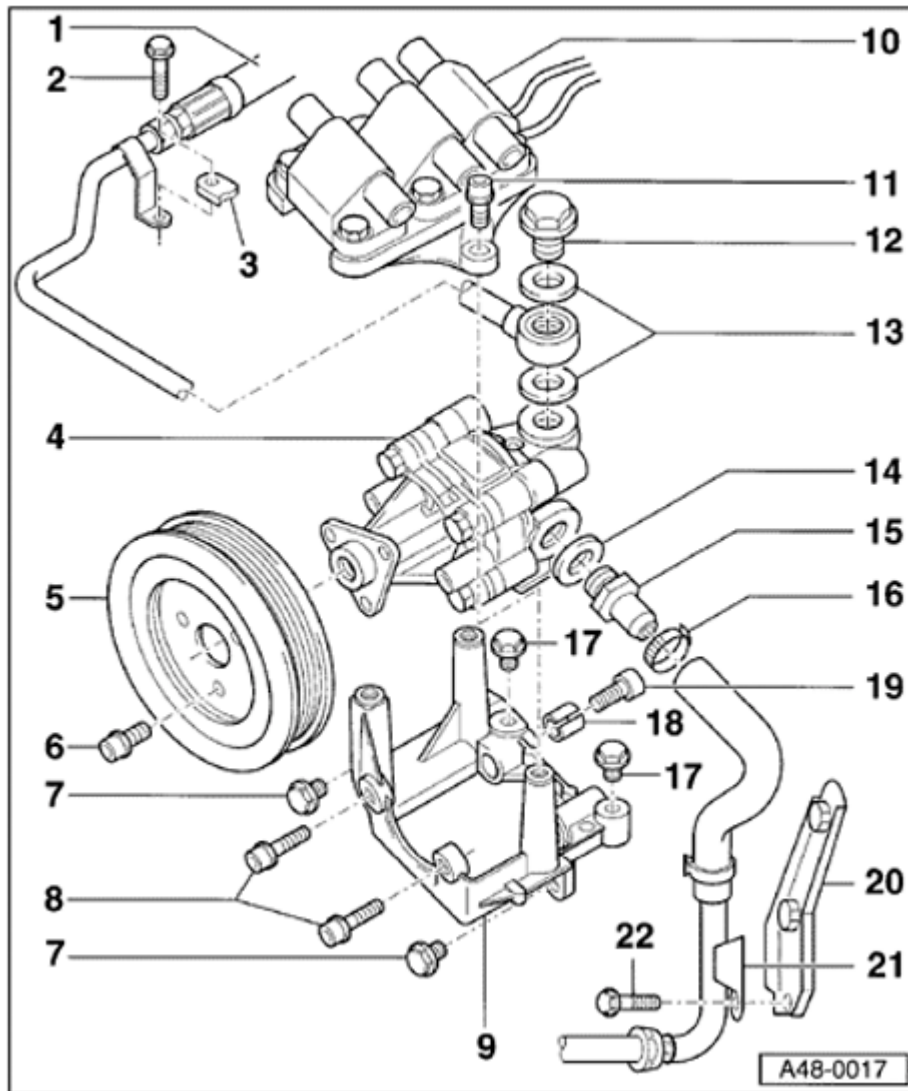
- ◆ 8 Nm (71 in. lb)

**3 - Plate with mounting hole**

- ◆ At intake manifold
- ◆ For mounting line - 1 -

**4 - Power steering pump**

- ◆ Fill with hydraulic fluid before installing ⇒ [Notes, page 48-27](#)

**5 - Belt pulley****6 - Socket-head bolts**

◆ 25 Nm (18 ft lb)

◆ Counterhold using VAG1590 (if applicable) while loosening and tightening

**7 - Bolts**

◆ 25 Nm (18 ft lb)

**8 - Socket-head bolts**

◆ 25 Nm (18 ft lb)

**9 - Power steering pump bracket****10 - Ignition coils with bracket****11 - Socket-head bolt**

◆ 25 Nm (18 ft lb)

**12 - Banjo bolt**

◆ 40 Nm (30 ft lb)

**13 - Seals 16 x 22**

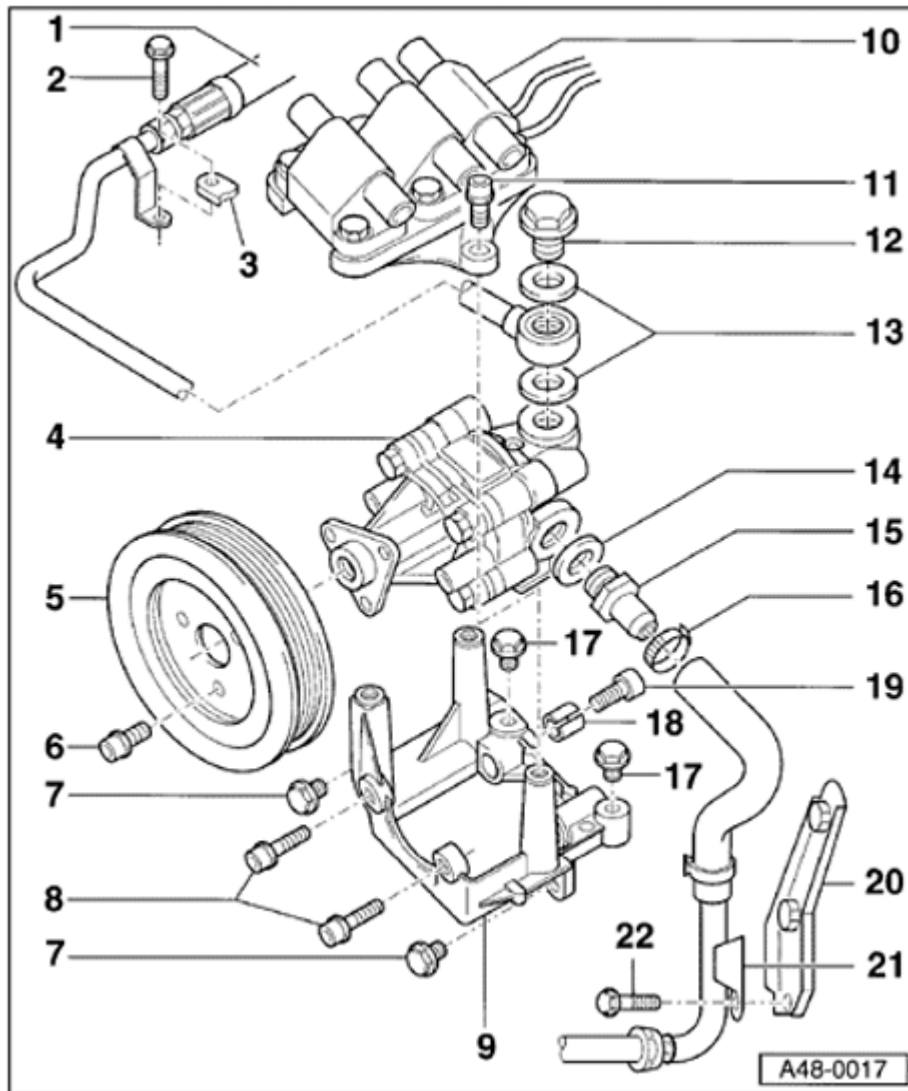
◆ Always replace

**14 - Seal 18 x 24**

◆ Always replace

◆ 6 cyl. 2V gasoline engine only



**15 - Line union**

- ◆ 50 Nm (37 ft lb)
- ◆ Vehicles with V6 2V gasoline engine
- ◆ Vehicles with power steering pump: FP-3

**16 - Clamp**

- ◆ Always replace
- ◆ Use VAG1275 to tighten

**17 - Bolts**

- ◆ 25 Nm (18 ft lb)

**18 - Slotted bushing****19 - Socket-head bolt**

- ◆ 25 Nm (18 ft lb)

**20 - Bracket****21 - Suction line with hose****22 - Bolt**

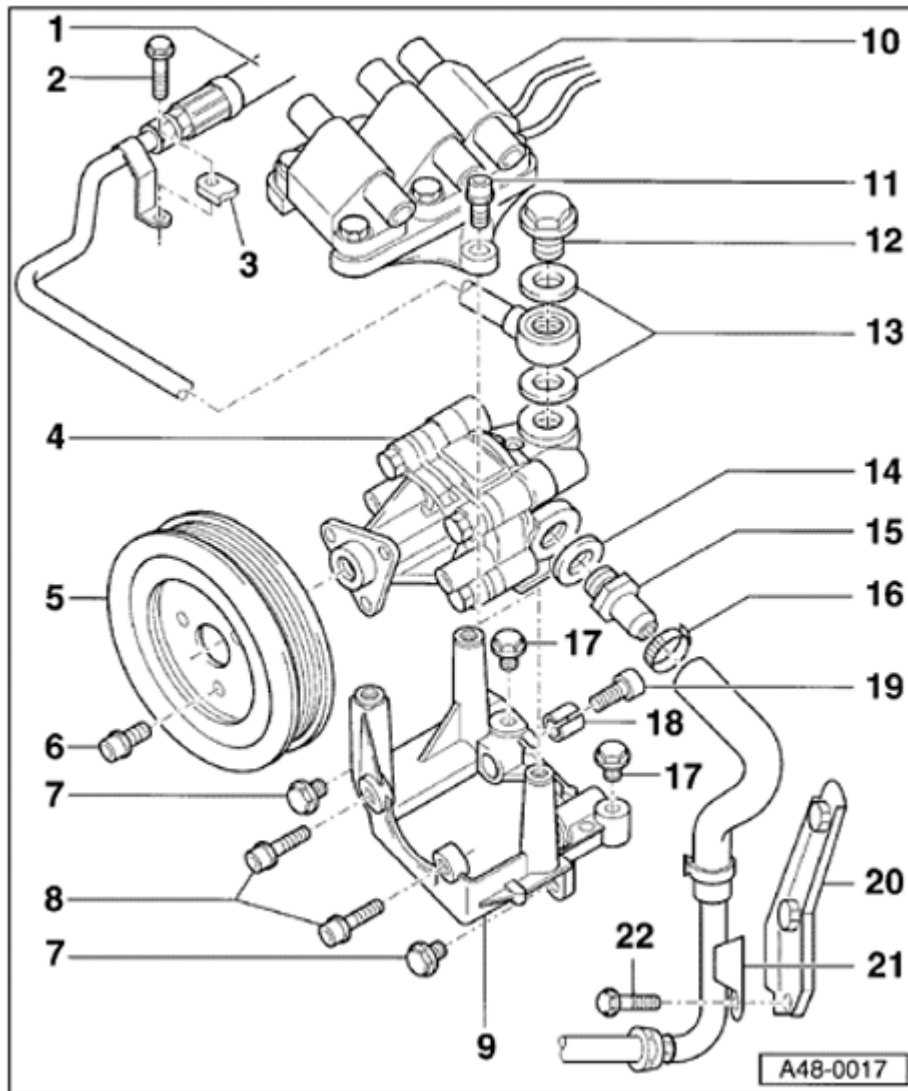
- ◆ 8 Nm (71 in. lb)

**Removing**

- Unclip and remove engine cover ⇒ [Fig. 1](#).
- Unbolt and remove cover for ribbed belt



⇒ [Fig. 2](#) .



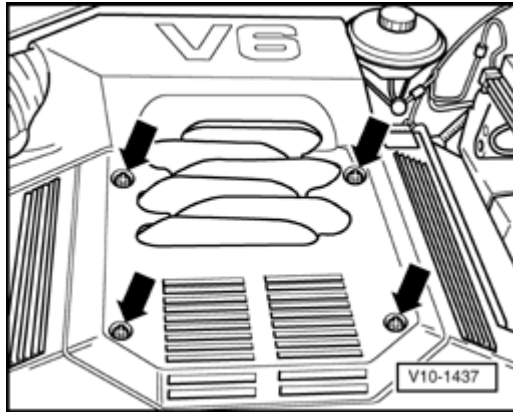
- Loosen and remove ribbed belt ⇒ [Fig. 3](#) .
- Counterhold belt pulley - 5 - using VAG1590 (if applicable) and remove.
- Disconnect ignition wires from ignition coils - 10 - .
- Pinch off suction hose using 3094 hose clamp.
- Remove pressure and suction lines.
- Unbolt bracket - 9 - and remove together with pump - 4 - .
- Remove bolts mounting pump to bracket and remove pump.

### Installing

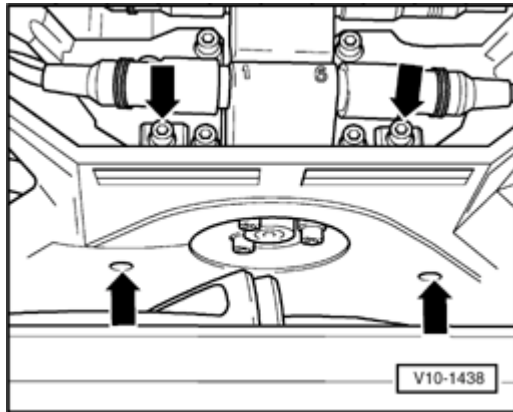
- Install in reverse order of removal.

### Note:

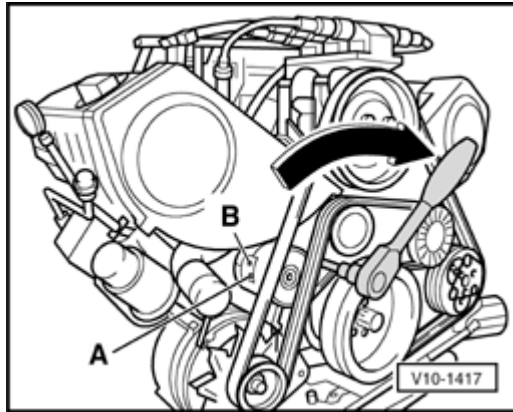
*The ignition wires must be correctly reinstalled in the correct firing order ⇒ [Fig. 4](#) .*



**A** Fig. 1 Unclipping and removing top engine cover



**A** Fig. 2 Unbolting ribbed belt cover



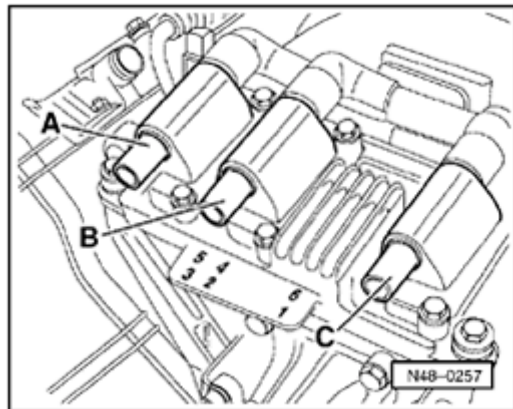
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### Fig. 3 Loosening and removing ribbed belt

- Using 17 mm hex wrench, turn clockwise (arrow) to loosen ribbed belt.
- Align holes -A- and -B-.
- Insert 3204 drift to lock tensioner in position.
- Remove ribbed belt from belt pulley.

### **CAUTION!**

**Mark the running direction before removing. Reinstalling a used belt in reversed running direction could damage the belt.**



A

### Fig. 4 Assignment of ignition wires to ignition coils

- A - Ignition coil for cylinders 5 and 3
- B - Ignition coil for cylinders 4 and 2
- C - Ignition coil for cylinders 6 and 1

The ignition wires are numbered from 1 to 6:

- Connect ignition wires 5 and 3 to ignition coil -A-.
- Connect ignition wires 4 and 2 to ignition coil -B-.
- Connect ignition wires 6 and 1 to ignition coil -C-.