

## Fuel supply system components, removing and installing

### **WARNING!**

***Always be sure to comply with applicable safety precautions when working on the fuel system ⇒ [page 20-3](#) .***

Pay attention to rules of cleanliness ⇒ [page 20-2](#) .

Adjusting accelerator pedal cable ⇒ [page 20-15](#) .

### **Notes:**

- ◆ *Hose connections are secured with clamp-type, screw-type, spring-type clamps.*
- ◆ *Always replace clamp-type with spring-type or screw-type clamps.*

## Rules of cleanliness

### **CAUTION!**

***Whenever carrying out work on the fuel supply and fuel injection systems, carefully observe the following five rules of cleanliness.***

- 1 - Thoroughly clean fuel system line and hose connections and the surrounding area before disconnecting.
- 2 - Place removed components on a clean surface and cover. Use plastic sheeting or paper. Do not use fluffy rags that could leave lint!
- 3 - Carefully cover over or seal any components that have been opened if repairs are not carried out immediately.
- 4 - Install only clean parts:  
  
Do not remove replacement parts from the packaging until immediately before they are to be installed.  
  
Do not use parts that have been stored without packaging (e.g. in toolboxes, etc.).
- 5 - When the fuel system is opened:

Avoid working with compressed air whenever possible.

Avoid moving the vehicle if possible.

## Safety precautions

### **WARNING!**

***When removing and installing the fuel pump or fuel level sensor from a filled or partially filled fuel tank:***

- ♦ ***BEFORE beginning repairs, the suction pipe of an exhaust extraction system must be located near the fuel tank opening so that escaping fuel vapors can be immediately carried away.***
- ♦ ***If no exhaust extraction system is available, a radial fan (motor located outside airflow) with volume of at least 15 m<sup>3</sup>/hr (9 cfm) may be used.***
- ♦ ***Wear fuel-resistant gloves whenever working with open parts of the fuel system.***

***Be sure the ignition is switched OFF, when:***

- ♦ ***Disconnecting fuel injection system wiring***
- ♦ ***Connecting or disconnecting test equipment leads***

***BEFORE cranking the engine at starting RPM***

*(such as for compression testing) disable the ignition and fuel injection systems:*

- ♦ *Disconnect the ignition coil power output stage.*
- ♦ *Disconnect harness connectors from all fuel injectors.*
- ♦ *After the work is completed, erase Diagnostic Trouble Code (DTC) memory.*

**CAUTION!*****BEFORE disconnecting the battery:***

- ♦ ***Stop the engine.***
- ♦ ***Be sure the ignition is switched OFF (also applies when connecting the battery). Failure to do so may damage the Engine Control Module (ECM).***
- ♦ ***Be sure of the proper radio code (for vehicles equipped with coded anti-theft radio).***

***Be sure the battery negative (-) cable is disconnected, when:***

- ♦ ***Working on the electrical system***
- ♦ ***Resistance (spot) welding or electric arc welding anywhere on the vehicle.***

***When connecting and disconnecting electrical test equipment (LED voltage tester, multimeter, etc.):***

- ♦ ***Be sure the ignition is switched OFF.***
- ♦ ***Use correct adapters from the VW 1594***

***connector test kit.***

## Flange and fuel level sensor, removing and installing

- Observe safety measures ⇒ [page 20-3](#)
- Pay attention to rules of cleanliness ⇒ [page 20-2](#) .

### **WARNING!**

***Fire hazard. DO NOT smoke or work near heaters or have anything in the area that can ignite fuel!***

- Switch ignition on.
- Observe fuel gauge.

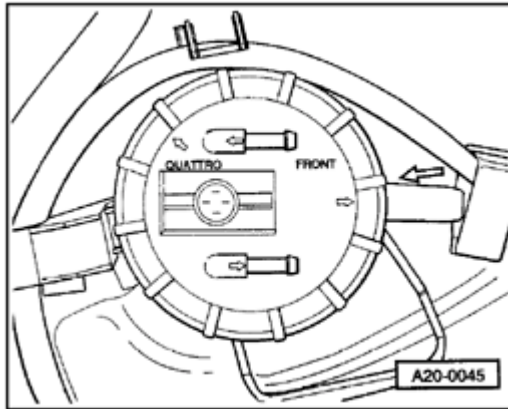
### **CAUTION!**

- ♦ ***The fuel tank should not be more than 2/3 full. Empty fuel tank, if necessary, using an approved fuel cart.***
- ♦ ***Determine correct radio anti-theft coding before disconnecting the battery.***

## Removing



- Disconnect battery Ground (GND) strap.
- Remove cover for fuel pump module flange (under luggage compartment trim).
- Disconnect harness connector for fuel level sensor and fuel pump.



- Detach blue return line and feed line.
- Use special tool 3217 to loosen sealing ring.
- Carefully pull flange out and detach.
- Unclip fuel level sensor and remove.

### Installing

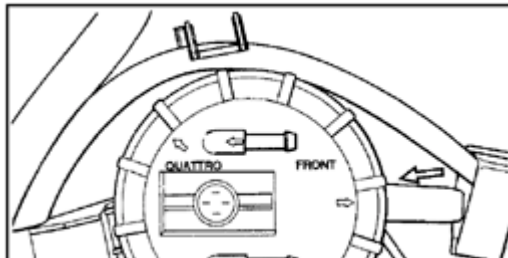
- Installation is in reverse order of removal.

#### Front-wheel-drive vehicles:

- Fuel level sensor wiring must be routed between return line and fuel tank housing.

#### All-wheel-drive vehicles:

- Fuel level sensor wiring must be routed between line of fuel transfer pump and fuel tank housing.



- When installing, make sure that arrows are aligned.

Note different alignment arrows for FRONT-wheel-drive and QUATTRO

## Fuel pump, removing and installing

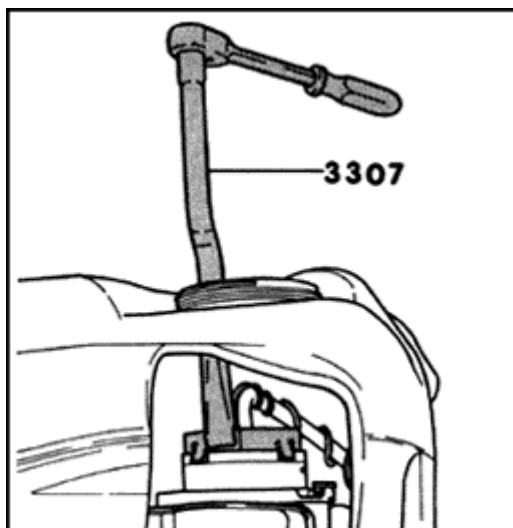
- Observe safety measures ⇒ [page 20-3](#)
- Pay attention to rules of cleanliness ⇒ [page 20-2](#) .

Removing and installing sealing flange and fuel level sensor ⇒ [page 20-5](#)

### **WARNING!**

**Fire hazard. DO NOT smoke or work near heaters or have anything in the area that can ignite fuel!**

### Removing



- Insert fuel pump wrench 3307 through fuel tank opening and position at inner part of fuel reservoir housing.
- Turn inner part of reservoir housing about 15° to left as far as stop and remove fuel pump along with inner part of reservoir housing.

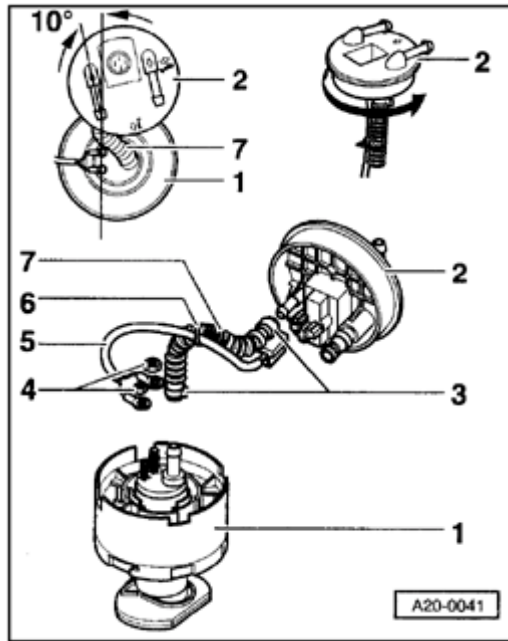
### Installing

Installation is in reverse order of removal.

#### **Note:**

- ◆ *Moisten the flange seal with fuel before installing.*

◆ *Flange installation position* ⇒ [page 20-6](#) .

**Front-wheel-drive vehicles**

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- Turn hose -7- and wiring harness -5- into position as shown at upper left of illustration; when installing flange, turn in direction of arrow as shown at upper right of illustration.

- Compress clamp -3- with pliers, VAG 1275.

1 - Reservoir housing

2 - Flange

3 - Clamp

4 - Securing bolt

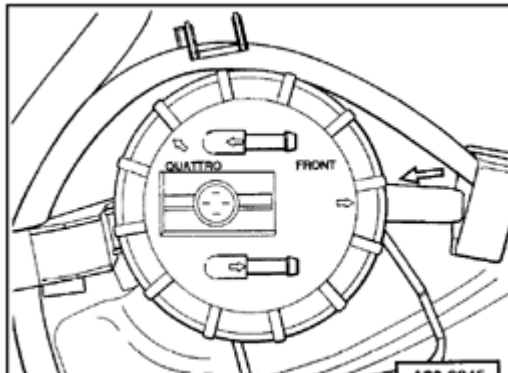
5 - Wiring

6 - Cable strap

7 - Hose

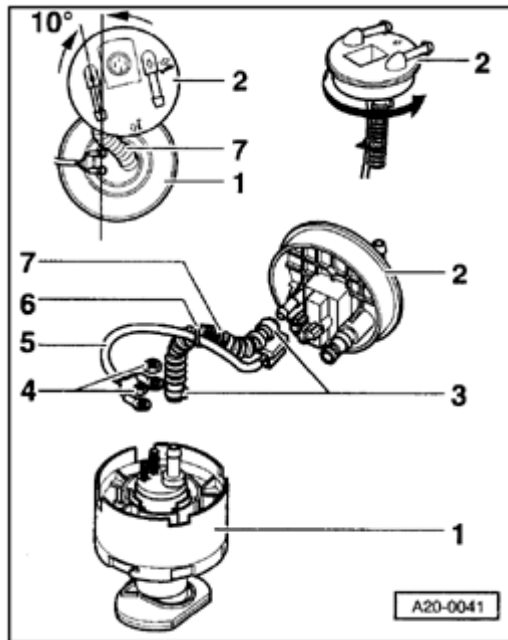
- Install reservoir housing with flange into fuel tank.

- Wiring for fuel level sensor must be routed between return line and fuel tank housing.



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- Turn flange to left until arrows (FRONT) are aligned.

**All wheel-drive-vehicles**

A

- Turn hose -7- and wiring harness -5- into position as shown in upper left of illustration; when installing flange, turn in direction of arrow as shown at upper right of illustration.

- Compress clamp -3- with pliers VAG 1275.

1 - Reservoir housing

2 - Flange

3 - Clamp

4 - Securing bolt

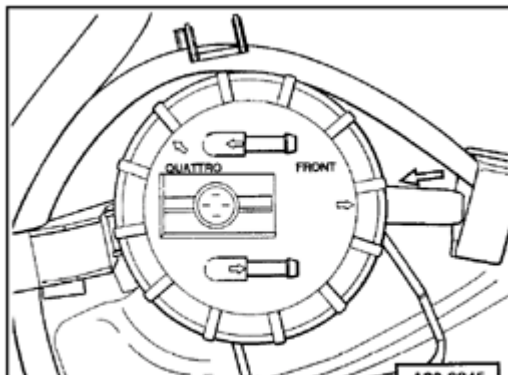
5 - Wiring

6 - Cable strap

7 - Hose

- Install reservoir housing with flange into fuel tank.

- Wiring for fuel level sensor must be routed between fuel transfer pump line and fuel tank housing.



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- Turn flange to left until arrows (QUATTRO) are aligned.

## Fuel pump, testing

### **WARNING!**

***Fire hazard! DO NOT smoke or work near heaters or have anything in area that can ignite fuel!***

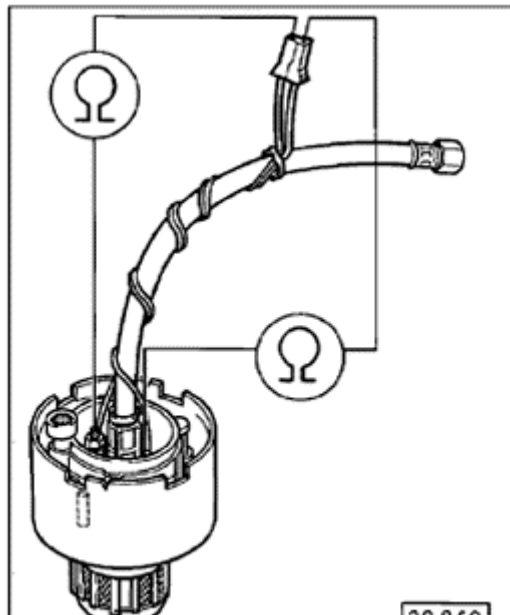
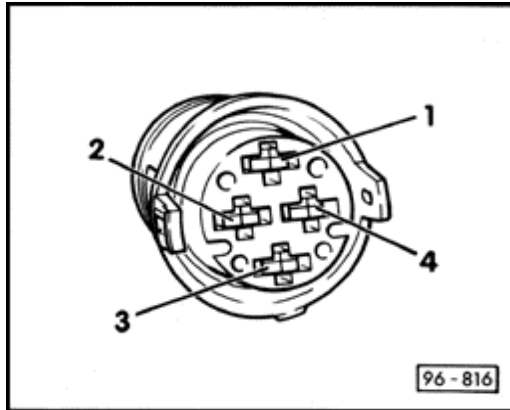
### Checking power supply

- Battery fully charged
  - Fuse 28 OK
  - Test voltage supply to fuse 28 ⇒ Repair Manual, 2.8 Liter V-6 OBD II Fuel Injection and Ignition, Repair Group 24
  - Fuel supply OK
- Switch ignition on.
- Fuel pump must be heard to run briefly.  
(Second person will be required for this if surrounding noise level is too high).

If fuel pump does NOT run:

- Remove cover for fuel pump module (under luggage compartment trim, right rear).
- Disconnect harness connector for fuel pump and fuel level sensor.





- Supply voltage to fuel pump using VAG 1551 scan tool and "Output Diagnostic Test Mode" function 03.

⚠

- Connect multimeter between connector terminal 1 (green wire) and terminal 4 (brown wire) using adapter cables from VW 1594 connector test kit.

Specified value: approx. battery positive voltage (B+)

- If specified value is obtained, reconnect harness connector.

⚠

- Using ohmmeter, check for continuity between connector (outside of housing), harness connector and fuel pump.

If wiring is OK:

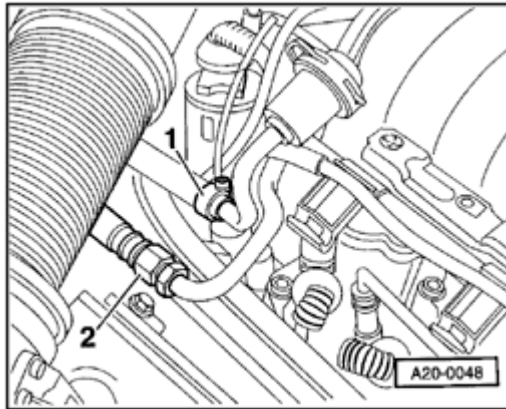
- Replace fuel pump ⇒ [page 20-7](#) .
- Install cover for fuel pump module.

### Checking fuel delivery

- Fuse 28 OK
- Relay in relay position 6 OK

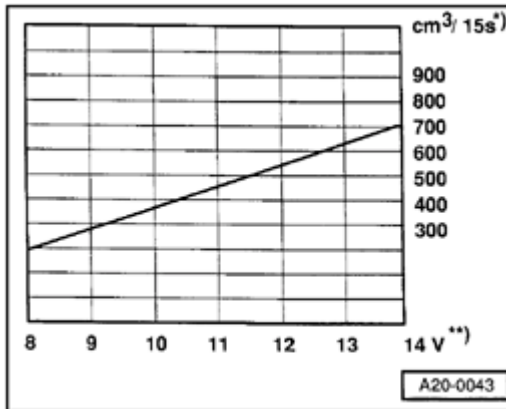
- Fuel filter OK
- Battery fully charged

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- Disconnect fuel return line -1- at engine compartment bulkhead and hold in measuring container.
- Connect remote control VAG 1348/3A with auxiliary cable VAG 1348/2 to fuse 28, connect positive (+) cable to battery.
- Operate remote control for 15 seconds (hold down button).

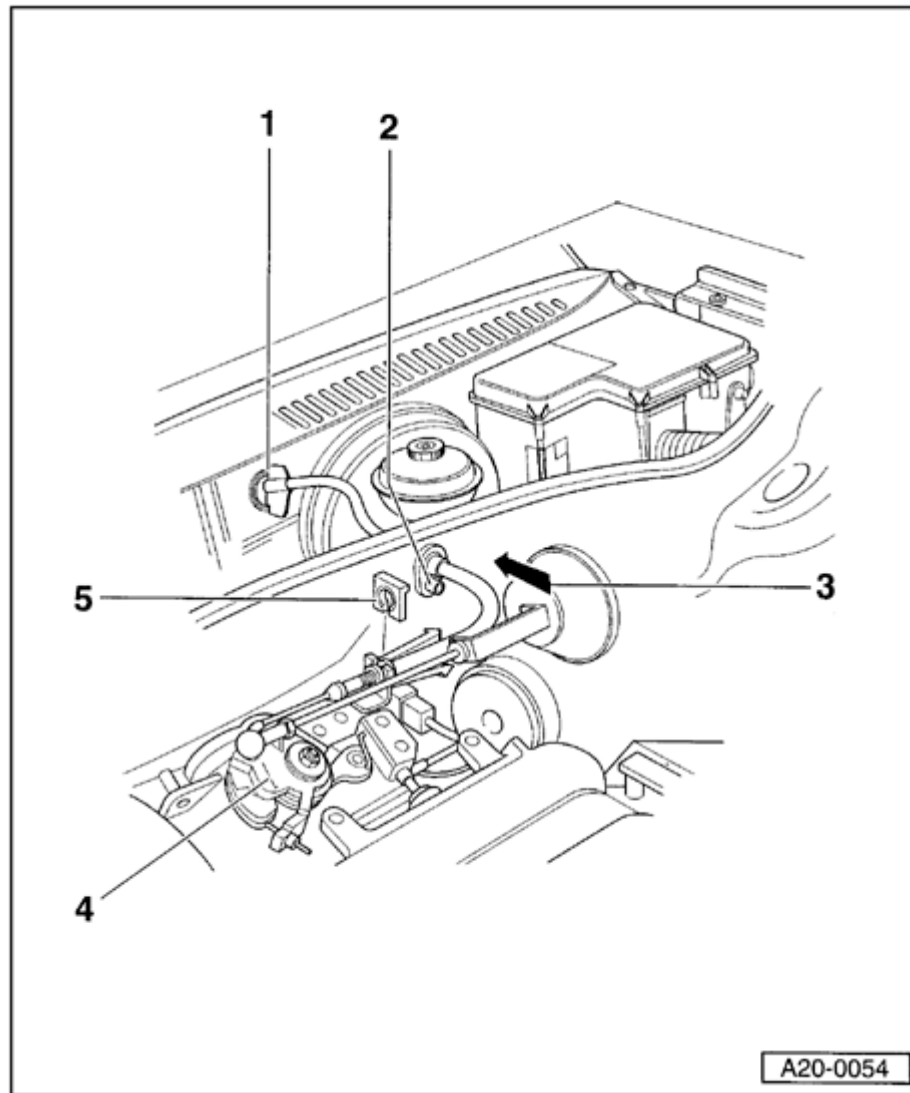


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- Compare quantity of fuel delivered with specified values for minimum fuel delivery rate in graph, according to actual voltage at fuel pump.
  - \*) - Minimum fuel delivery rate-fuel volume in cm<sup>3</sup> (ml) delivered in 15 seconds
  - \*\*) - Voltage (V) at fuel pump with engine stopped, fuel pump running- approx. 2 volts less than battery positive voltage (B+)

### Fuel pump check valve, checking

Testing check valve ⇒ Repair Manual, 2.8 Liter V-6 OBD II Fuel Injection & Ignition, Repair Group 24



### Accelerator pedal cable and linkage, servicing

1 - Cable attachment

2 - 10 Nm (7ft lb)

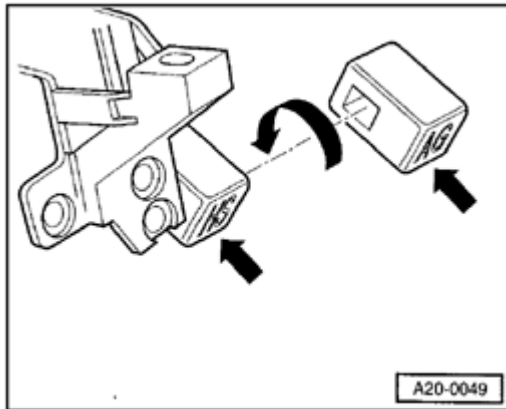
3 - Cable installation direction

◆ Arrow

4 - Cam

◆ Adjusting ⇒ [page 20-15](#)

5 - Cable securing clip



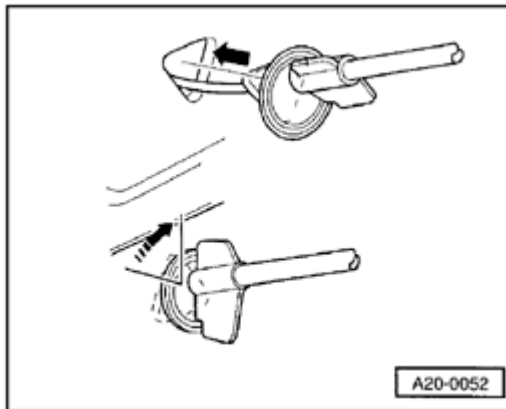
#### ✦ Installation position of stop buffer

Identification:

HS - Manual transmission

AG -Automatic transmission

- Marking -HS- or -AG- must be readable



#### ✦ Attachment of cable sleeve

- Push throttle cable through engine compartment bulkhead.
- Push cable attachment into bulkhead and turn counterclockwise approx. 90°.

## Accelerator pedal cable, adjusting

### **CAUTION!**

- ♦ *The accelerator pedal cable is easily damaged (kinked) and therefore must be handled carefully.*
- ♦ *A single slight kink can lead to cable failure while the vehicle is being driven.*
- ♦ *A KINKED CABLE MUST NOT BE INSTALLED.*
- ♦ *When installing the cable, make sure that it is aligned between its supporting mounts and the attachment points.*

- Pull off cable locking plate at throttle body.
- Depress accelerator pedal to wide open throttle position.

### **Note:**

*A second person is required for this step.*

Vehicles with manual transmission

- Pull cable sleeve away from cam at throttle body until throttle valve has opened fully, then hold tight in this position.

#### Vehicles with automatic transmission

- Pull cable sleeve back toward wide open throttle position until throttle valve is fully open and kickdown switch is actuated (clicks), then hold tight in this position.

- Insert securing clip for cable sleeve.
- Release accelerator pedal.

**Note:**

*After adjusting the cable, check idle speed and check the wide open throttle stop at the throttle valve.*