

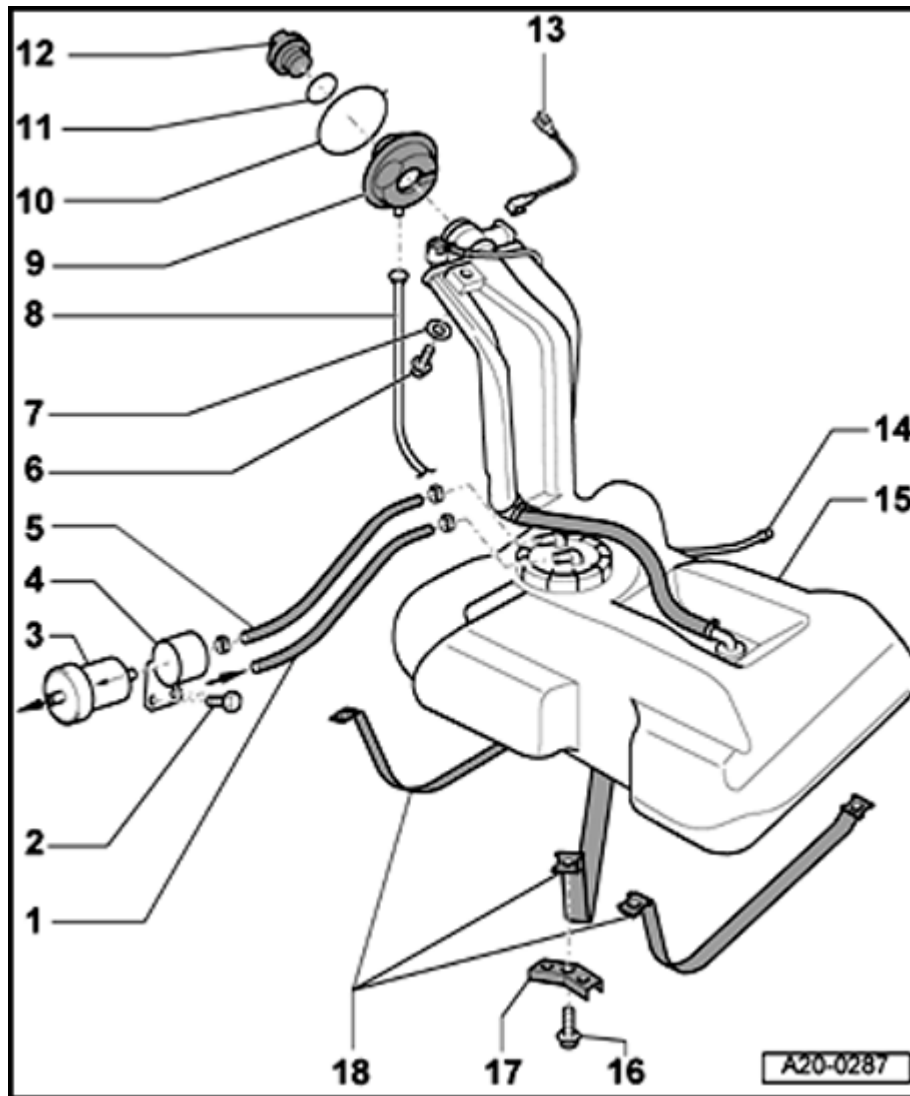
Fuel supply system, servicing (vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine)

Note:

- ◆ VAG1921 spring clamp pliers are recommended for installation
- ◆ Always replace seals, O-rings and gaskets during installation work.

CAUTION!

Always refer to the latest parts catalog to ensure that you use original equipment fuel hose clamps.



Fuel tank assembly, component overview

Note:

Always refer to the Parts Catalog for availability of individual items in an assembly.

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

1 - Return line

- ◆ From engine
- Mark before removing
- Note direction of arrow on connecting flange

2 - 20 Nm

3 - Fuel filter

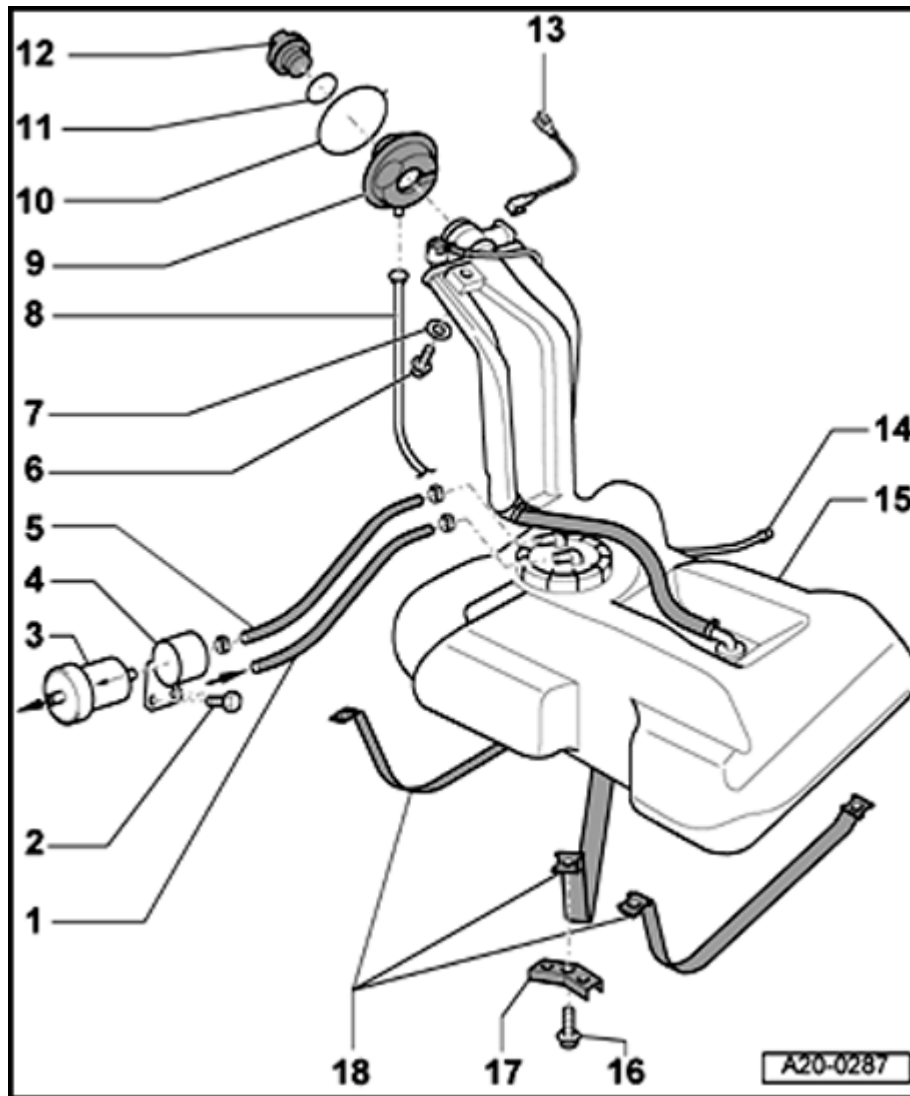
- ◆ Location: Arrow points in flow direction.

4 - Holding clamp

- ◆ For fuel filter

5 - Supply line

- ◆ To the fuel filter
- Mark before removal
- Note direction of arrow on connecting flange

**6 - Mounting screw**

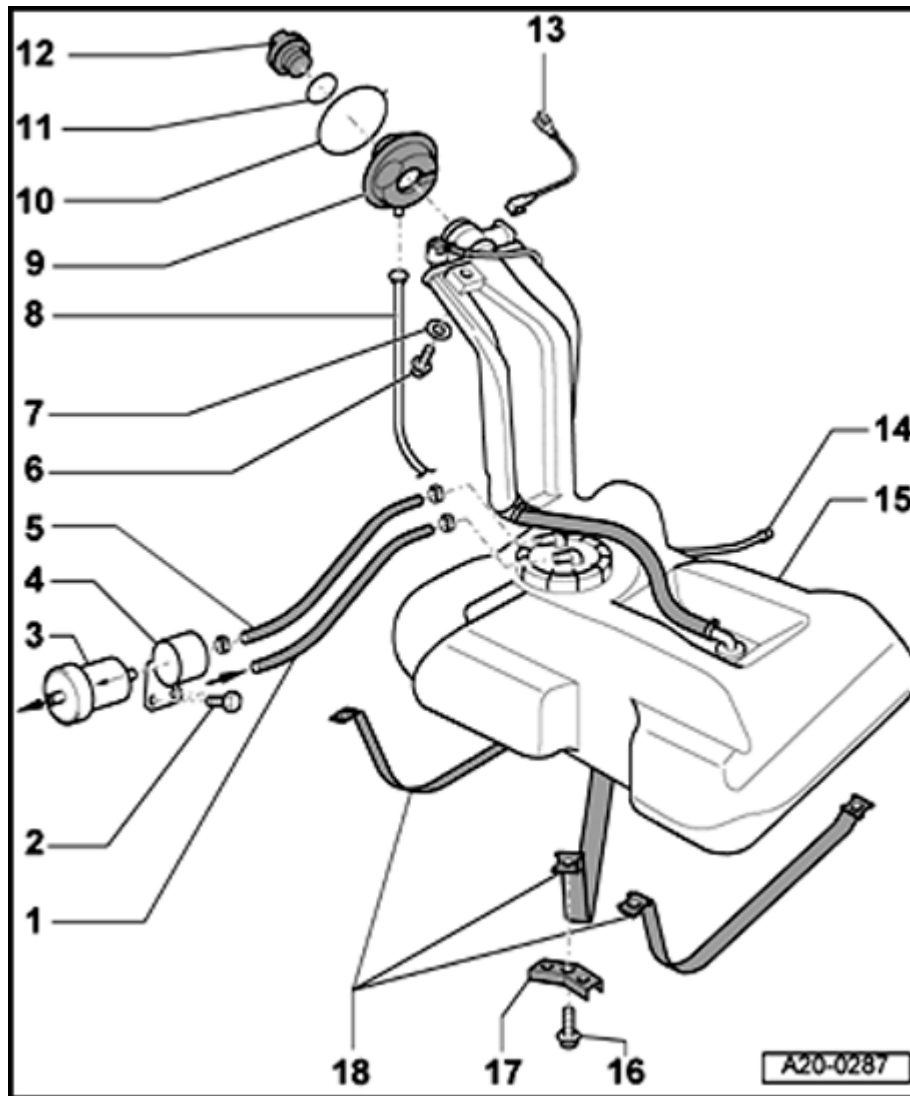
- ◆ 25 Nm
- ◆ To connect fuel-filler neck and Ground (item 13 ⇒ [Page 20-8](#))

7 - Washer**8 - Overflow hose****9 - Rubber cap****10 - Locking ring****11 - Sealing ring**

- Replace if damaged.

12 - Cover**13 - Ground connection**

- ◆ Location ⇒ Fig. ⇒ [1](#) , ⇒ [Page 20-10](#)
- Connect wiring terminal with mounting screw (item 6) ⇒ [Page 20-8](#) .
- After installing, check continuity between metal ring on fuel filler neck and bare chassis Ground point. spec: approx. 0 Ω

**14 - Bleed line**

- ◆ To EVAP canister

15 - Fuel tank

- ◆ Removing and installing ⇒ [Page 20-19](#)

16 - 25 Nm

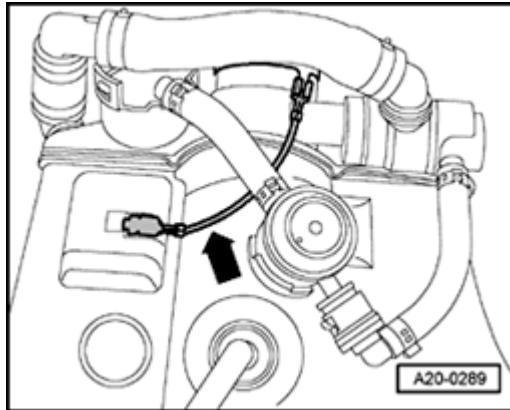
- Note tightening sequence ⇒ [Page 20-23](#)

17 - Bracket

- ◆ For clamp bands

18 - Clamp bands

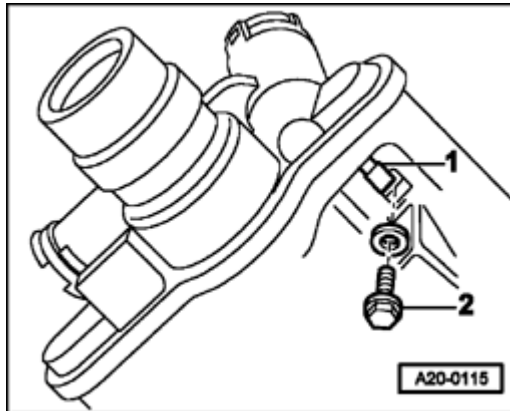
- ◆ Removing and installing ⇒ [Page 20-19](#)
- Note different lengths
- Note installation direction



A

Fig. 1 Ground connection installation position

- Route Ground connection -arrow-, as shown in illustration.
- Ensure tight fit of electrical Ground connection to fuel filler neck Ground clamp.



A

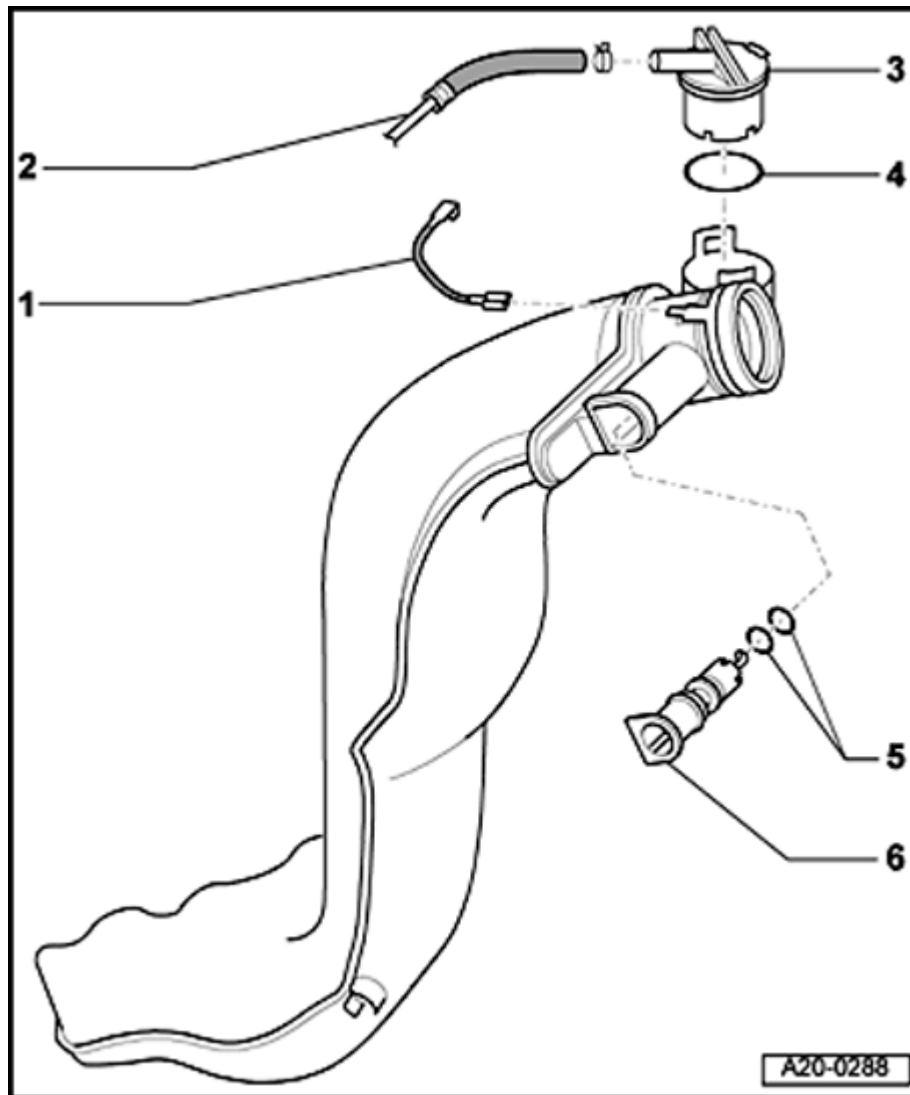
- Attach wiring terminal -1- with screw -2- for fuel filler neck.

CAUTION!

After installation, check for continuity between Ground clamp on filler neck and chassis Ground.

♦ **Specification: approximately 0 Ω.**

20-11



Fuel filler neck, component overview (vehicles without ORVR)

Vehicles with front wheel drive and 1.8 ltr. turbo
or 2.8 ltr. engine

1 - Ground connection

- ◆ Location ⇒ Fig. ⇒ [1](#) , ⇒ [Page 20-10](#)
 - Ensure tight fit of connector on filler neck ring
 - Connect wiring terminal with mounting screw for plastic fuel filler neck (item 6 ⇒ [Page 20-8](#))
 - After installing, check continuity between metal ring on fuel filler neck and chassis Ground. Specified: approx. 0 Ω

2 - Bleed line

- ◆ To EVAP canister

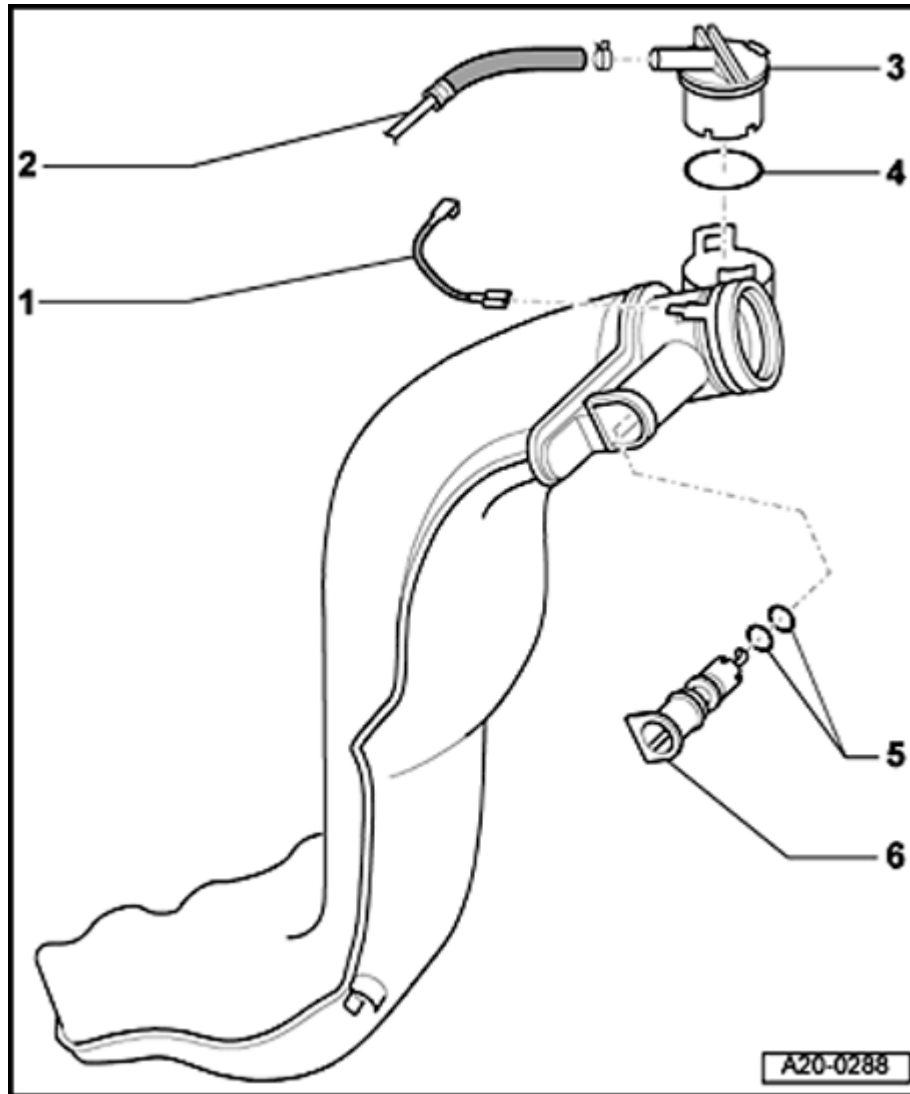
3 - Gravity valve

- ◆ To remove valve, unclip upward out of the filler neck

- Check valve for flow:

Valve vertical: open,

Valve tipped 45 ° : closed



4 - O-ring

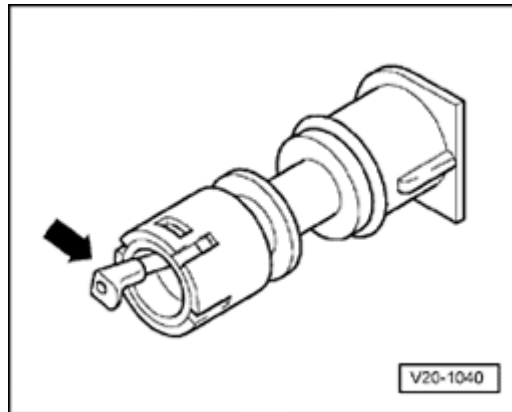
- Replace

5 - O-rings

- Replace

6 - Bleed valve

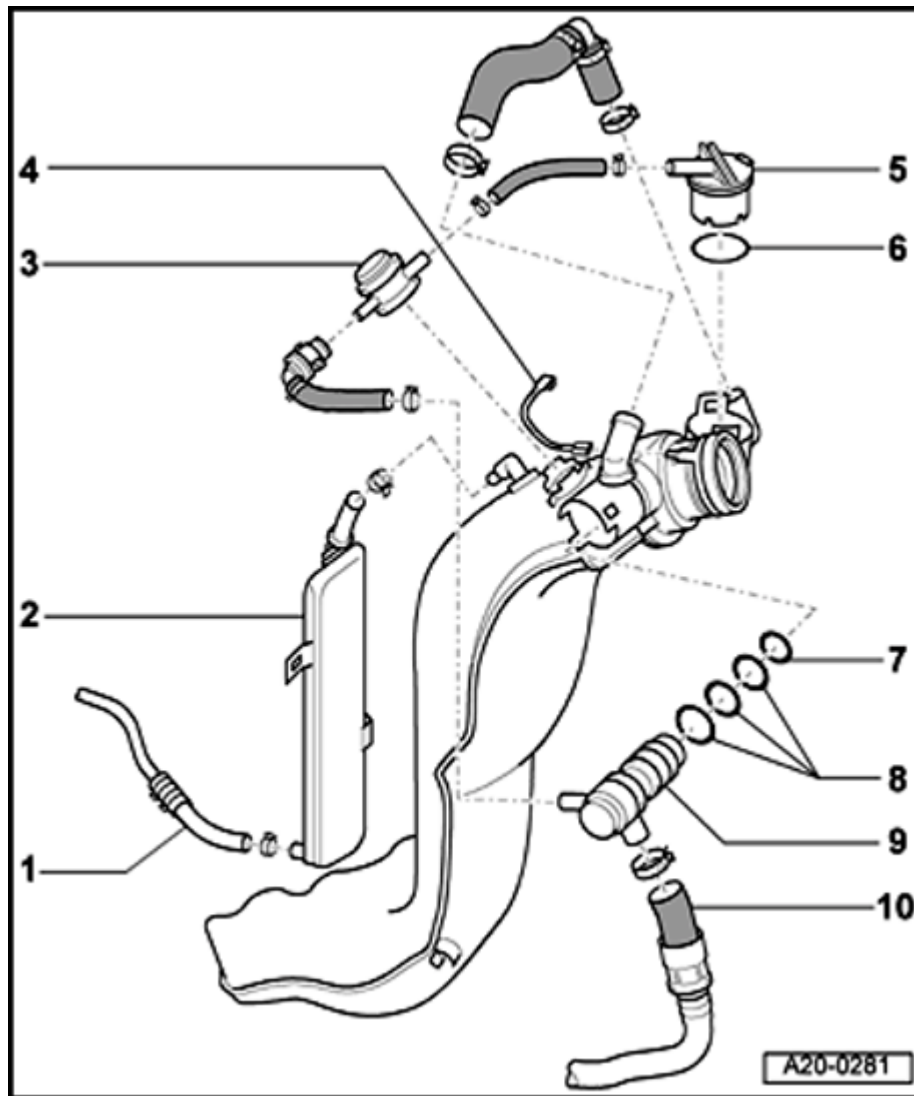
◆ Removing, installing, checking ⇒ Fig. ⇒ [1](#),
⇒ [Page 20-13](#)



A

Fig. 1 Bleed valve removing, installing, checking

- To remove, unclip valve from side of filler neck.
 - ◆ Lever in rest position: Valve closed
 - ◆ Lever pressed in direction of arrow: Valve open



Fuel filler neck, component overview (vehicles with ORVR)

Vehicles with front wheel drive and 1.8 ltr. turbo
or 2.8 ltr. engine

1 - Bleed line

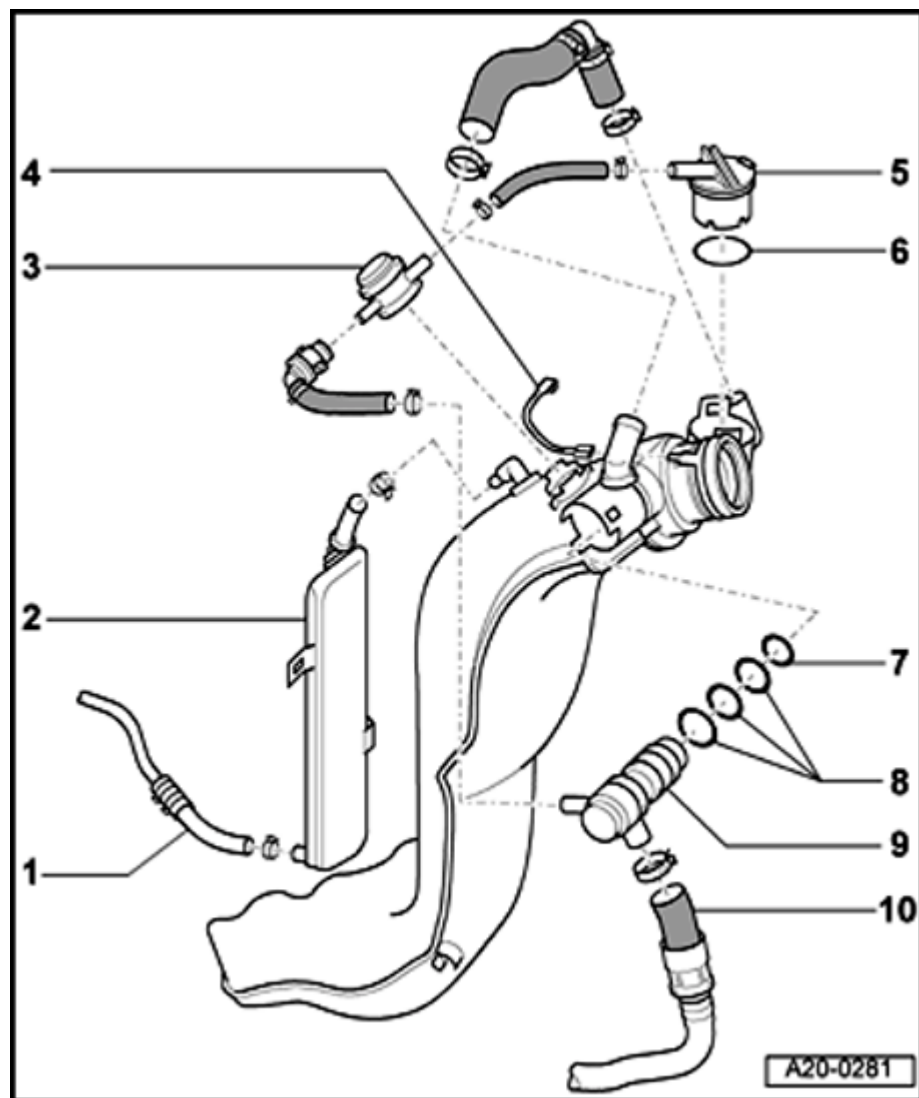
- ◆ To top of filler neck on fuel tank

2 - Expansion tank

- ◆ Clipped to fuel-filler neck

3 - Tank ventilation valve

- ◆ Clipped to fuel-filler neck
- ◆ Ventilates fuel tank for pressure compensation



4 - Ground connection

◆ Location ⇒ Fig. ⇒ [1](#) , ⇒ [Page 20-10](#)

- Ensure tight fit of connector on filler neck ring
- Connect wiring terminal with mounting screw for plastic fuel filler neck (item 6 ⇒ [Page 20-8](#)).
- After installing, check continuity between ring on fuel filler neck and chassis Ground, spec: approx. 0 Ω

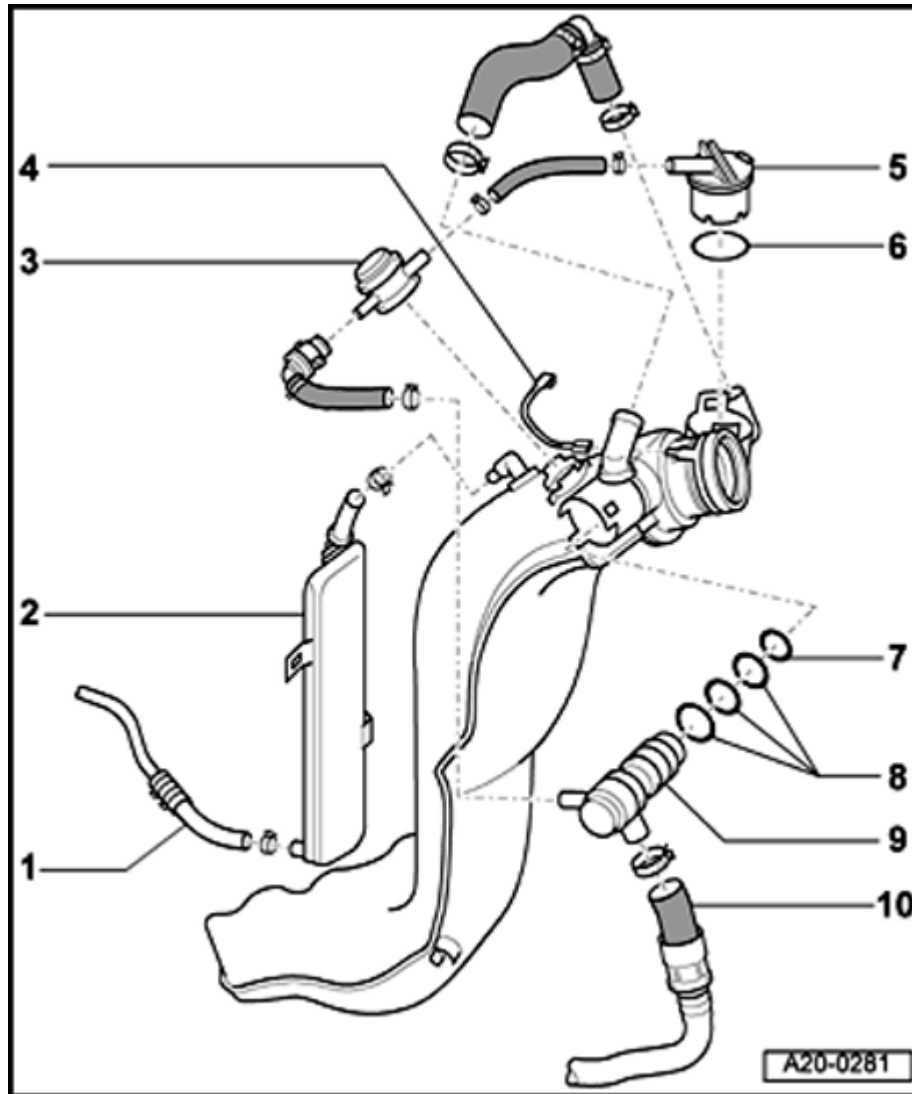
5 - Gravity valve

◆ To remove valve, unclip upward out of filler neck

- Check valve for flow:

Valve vertical: Flow

Valve tipped 45 ° : No Flow



6 - O-ring

- Replace

7 - Sealing ring

◆ Installation position: Sealing lip points to the fuel filler neck

8 - O-rings

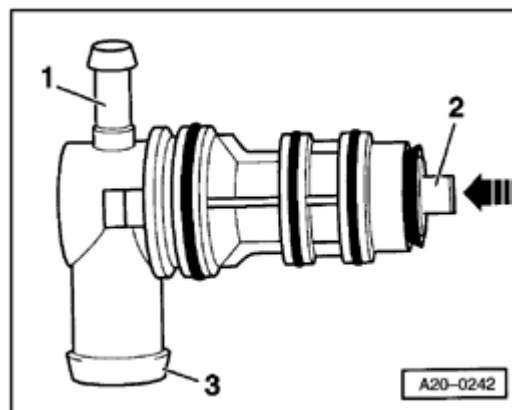
◆ Different sizes
- Replace

9 - Bleed valve

◆ Removing, installing, checking ⇒ Fig. ⇒ [1](#),
⇒ [Page 20-17](#)

10 - Bleed line

◆ To EVAP canister



A Fig. 1 Bleed valve, removing, installing, checking

Requirement

- Fuel tank removed
- To remove, unclip valve from side of filler neck.
- Plug port -3- by hand.
- Blow into port -1-

Tab -2- pressed in direction of arrow:

- Must be flow

Tab -2- in OFF position:

- Must NOT be flow.

Fuel tank, draining

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

WARNING!

Fire hazard! Do NOT have anything in the area that can ignite gasoline!

Observe Safety measures ⇒ [Page 20-1](#) .

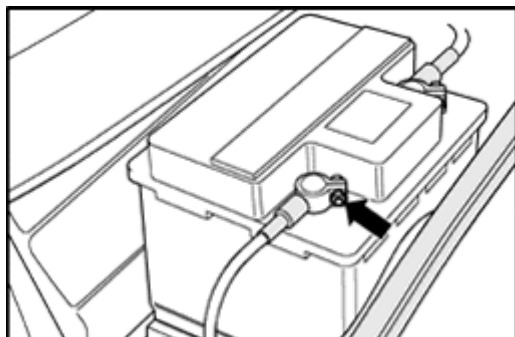
Observe Rules of cleanliness ⇒ [Page 20-4](#) .

Auxiliary equipment required

- ◆ FM 3000 fuel cart (or equivalent)

CAUTION!

Obtain the radio Anti-theft code from the customer before disconnecting the Battery Ground strap.



A

- Disconnect Battery Ground strap with ignition switched OFF.
- Remove filler cap from fuel filler neck.
- Empty fuel tank as completely as possible through the filler neck.

Fuel tank assembly, removing and installing

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

Observe Safety measures ⇒ [Page 20-1](#) .

Observe Rules of cleanliness ⇒ [Page 20-4](#) .

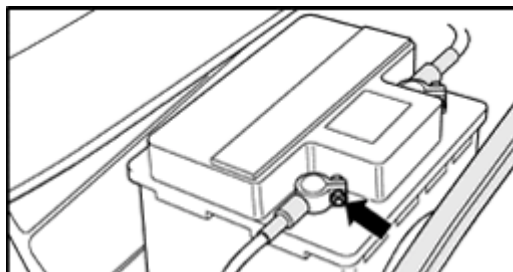
Required special tools, testing equipment and auxiliary equipment

- ◆ VAG1359/2 Universal holder
- ◆ VAG1383 A Engine / transmission jack

Removing

CAUTION!

Obtain the radio Anti-theft code from the customer before disconnecting the Battery Ground strap.



A

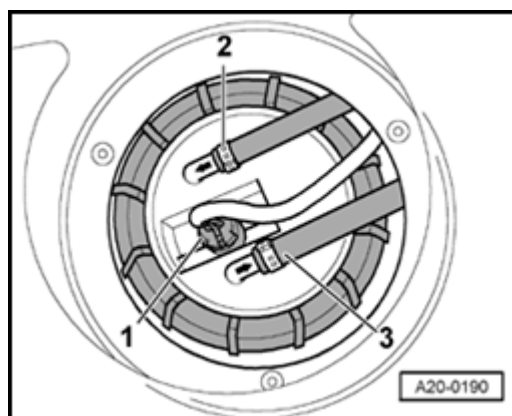
- Disconnect Battery Ground strap with ignition switched OFF.
- Open fuel tank cover briefly and close again.

- If necessary, drain fuel tank using fuel cart ⇒ [Page 20-18](#) .

Note:

For handling reasons, fuel tank must be empty before removing.

- Remove connector flange cover under luggage compartment trim.



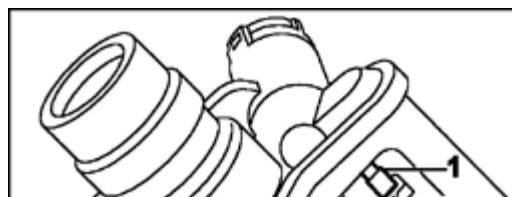
A

- Unlatch and disconnect 4-pin harness connector -1-.

Note:

Return line -2- and supply line -3- stay connected.

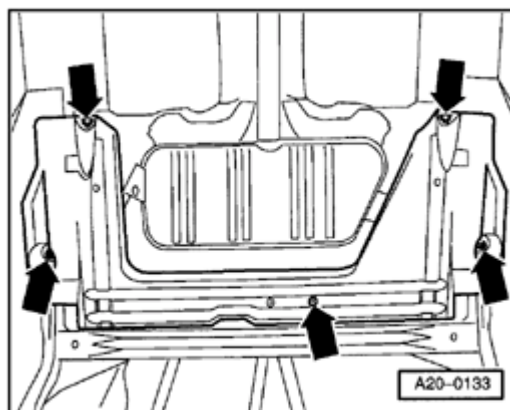
- Clean area around fuel filler neck.
- With filler cap removed, pry out clamping ring on rubber seal (around filler neck).
- Push rubber seal toward inside.
- Remove right rear wheel.
- Remove right rear wheel house liner.



A

- Remove screw -2- for fuel filler neck under wheel house liner.

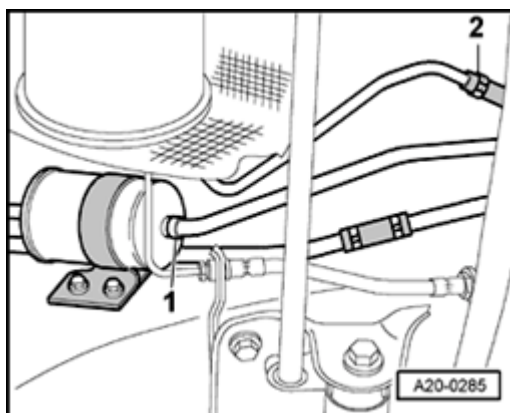
20-21



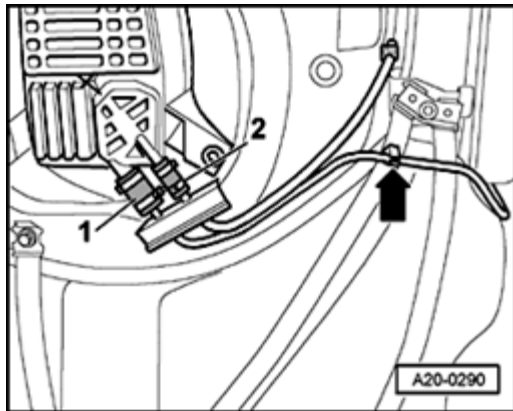
- A
- If present, remove the aerodynamic trim panel from the rear axle - arrows-

WARNING!

Fuel system is under pressure! Before opening, place clean cloths around the connections to be opened. Carefully loosen the connections to relieve pressure.



- A
- Mark and remove the supply line -1- and return line -2- .
 - On bottom of vehicle



A

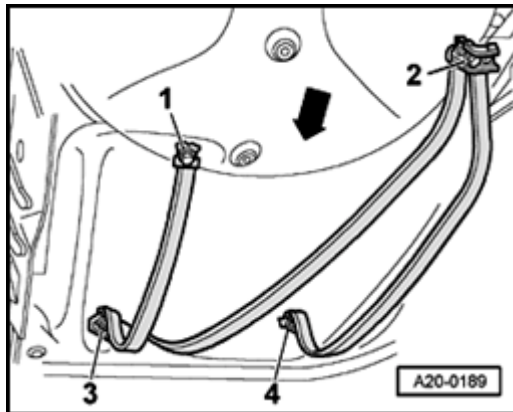
- Remove EVAP canister cover on bottom of spare tire well ⇒ [Page 20-130](#) .

- Loosen hose connection -1- on bleed line to fuel filler neck.
- Unclip line out from bracket -arrow-.

Note:

Bleed line -2- to the EVAP canister purge regulator valve remains connected.

- Place VAG1383A engine / transmission jack under fuel tank for support.
- Mark installation position of clamp bands.



A

- Remove clamp bands -1- to -4-.
- Lower fuel tank.

Note:

Arrow points in driving direction.

Installing

Installation is performed in the reverse order of the removal procedure, during installation, note the following:

CAUTION!

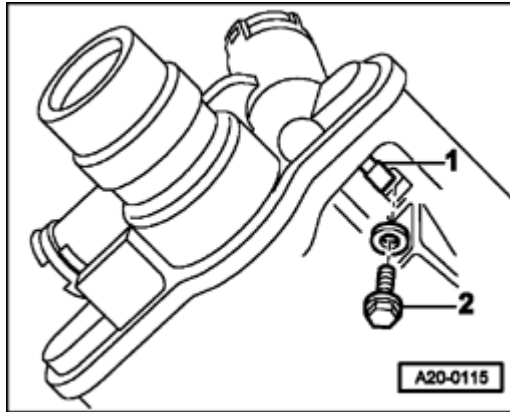
Always refer to the latest parts catalog to ensure that you use original equipment fuel hose clamps.

Note:

- ◆ *Replace all adhesive tapes removed during disassembly in the original location during installation.*
- ◆ *Use VAG1921 hose clamp pliers to install spring clamps,*
- ◆ *Always replace sealing rings and gaskets during installation work.*
- Position fuel tank using clamp strips with VAG1383 A engine / transmission jack on vehicle floor pan.
- Push fuel tank all the way to the left.



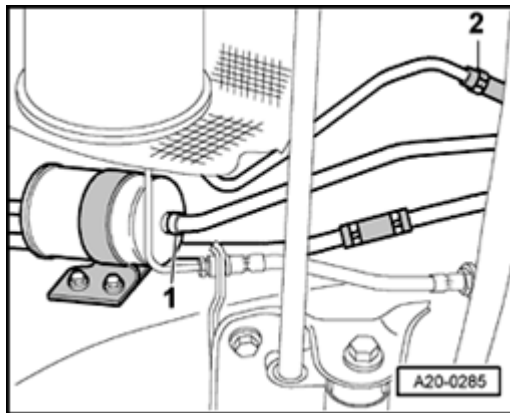
- ↳ - First tighten screws -1- and -2-, then screws -3- and -4-.
 - 25 Nm



- A
- Attach wiring terminal -1- with screw -2- for fuel filler neck.

CAUTION!

Ensure that the Ground connection is unfastened and the connector is securely fitted into the fuel filler neck ⇒ Fig. ⇒ [1](#) , ⇒ [Page 20-10](#) .



- A
- Connect lines according to marks:
 - 1 - Supply line
 - 2 - Return line
 - Connect fuel pump and sender for fuel gauge -G harness connectors.

CAUTION!

After installation, check for continuity between Ground clamp on filler neck and chassis Ground.

♦ **Specification: approximately 0 Ω .**

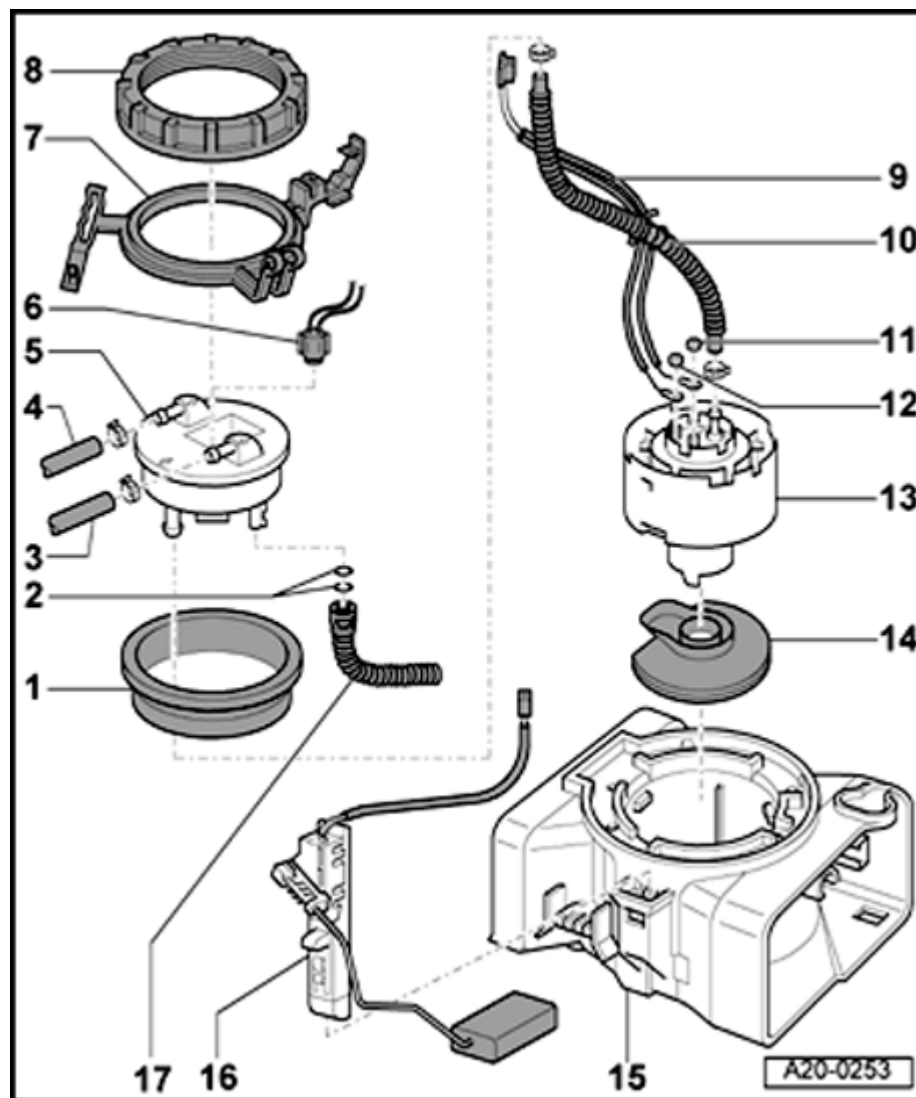
- With ignition switched OFF, connect Battery Ground strap.
- After connecting Battery, input Radio anti-theft coding

⇒ *Radio operating instructions*

- Run door windows up to stop with window switches.
- Operate all window lifters again for at least 1 second in "closed" position to activate the automatic up/down.
- Set the clock.

Tightening torques

Component	Nm
Clamp bands for fuel tank on body	25
Aerodynamic trim (on body) in front of rear axle	10
Cover on spare wheel well	10



Fuel supply unit and sender for fuel gauge -G, component overview

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

1 - Sealing ring

- Replace

◆ Installing: insert (dry) into fuel tank opening

2 - O-rings

- Always replace.

- Check installation position

3 - Return line

◆ From fuel distributor

- Mark before removal

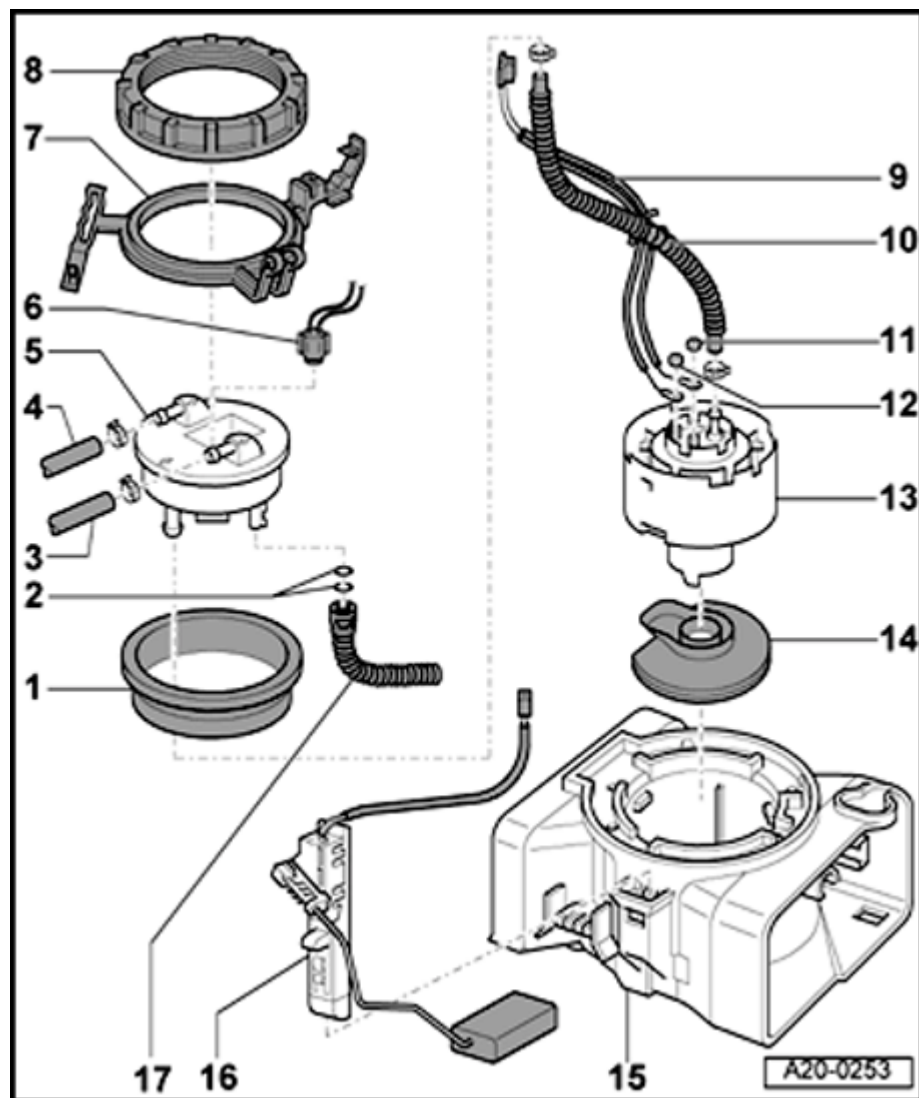
- Note direction of arrow on connecting flange

4 - Supply line

◆ To fuel distributor

- Mark before removal

- Note direction of arrow on connecting flange



5 - Cover flange

- ◆ Removing and installing ⇒ [Page 20-40](#)
- ◆ Location: Note arrow Mark ⇒ [Page 20-46](#)

6 - Harness connector

- ◆ For fuel pump and sender for fuel gauge -G

7 - Hose guide

- ◆ Installed position as shown.
- ◆ Must be kept in position while union nut is being tightened.

8 - Union nut

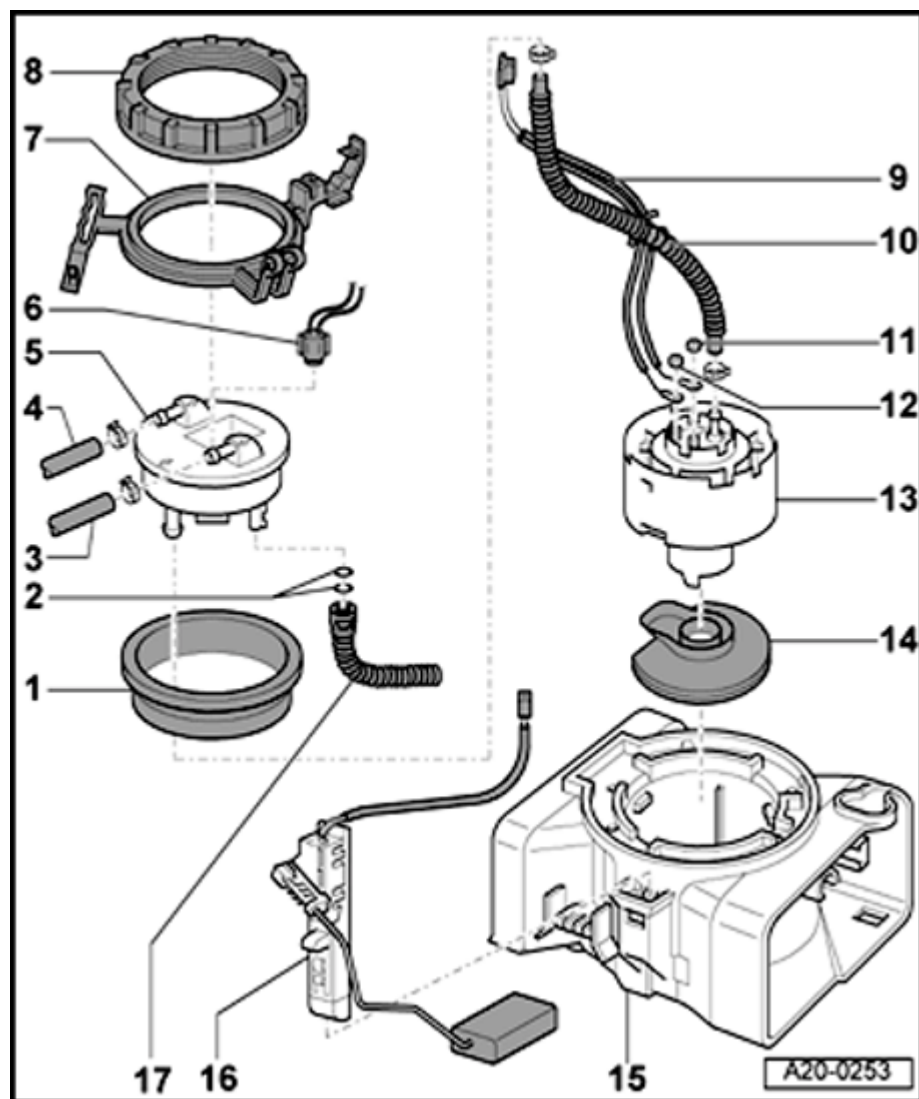
- ◆ 60 Nm
- Remove and install using 3217 wrench

9 - Wiring to fuel pump

- Attach with fuel resistant cable ties (item 10)

10 - Supply line

- ◆ Fuel pump/surge housing
- ◆ Location ⇒ [Page 20-43](#)
- ◆ 2 Nm
- Install toothed washer beneath

**11 - Nut M4**

- ◆ 1.5 Nm
- Install toothed washer beneath

12 - Nut M5**13 - Fuel supply unit**

- ◆ Removing and installing ⇒ [Page 20-40](#)
- Electrically check fuel pump ⇒ [Page 20-31](#)
- Check the residual pressure

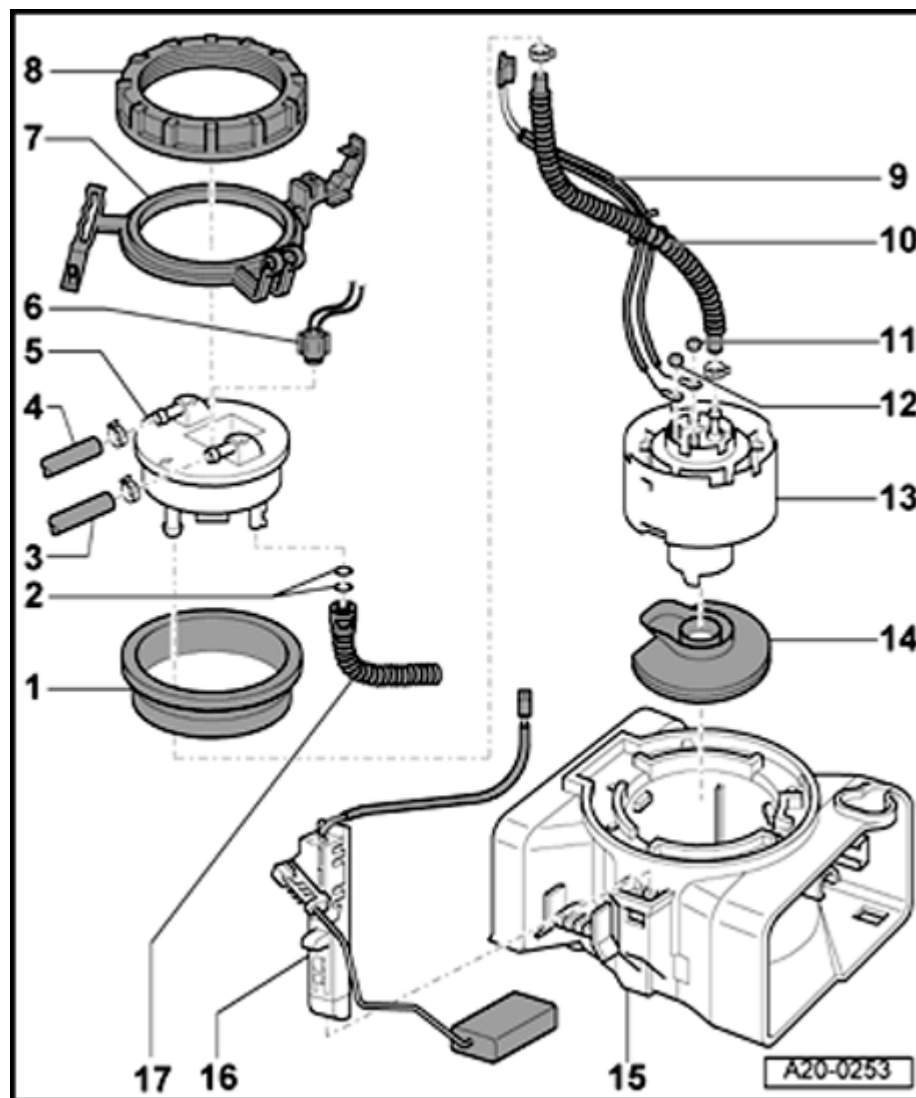
⇒ *Repair Manual, Fuel Injection & Ignition, Repair Group 24*

14 - Fuel strainer

- ◆ Connected to fuel supply unit
- ◆ Can not be individually replaced
- Clean if dirty

15 - Surge housing lower section

- ◆ Mounted in fuel tank
- ◆ Can not be removed
- ◆ Disconnecting: press unlatching buttons on connector piece



16 - Sender for fuel gauge -G

- ◆ Float is cube shaped
- ◆ Checking ⇒ [Page 20-48](#)
- ◆ Removing and installing ⇒ [Page 20-50](#)

17 - Return line

- ◆ Installed inside cover flange

Fuel pump, electrical checking

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

Required special tools, testing equipment and auxiliary equipment

- ◆ VAG1348/3A Remote control using VAG1348/3-2 adaptor cable

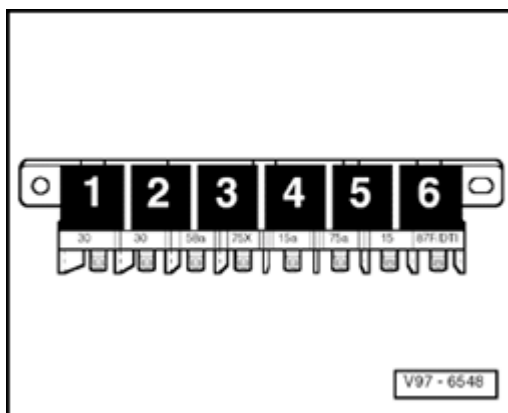
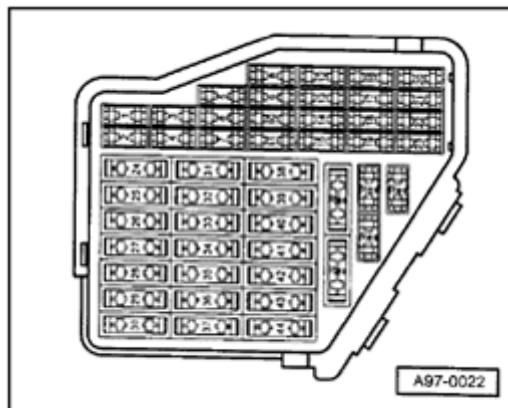
- ◆ Fluke 83 multimeter

- ◆ VW 1594 Adaptor kit

Checking requirements

◆ Battery Voltage 12 Volts minimum

◆ Fuse 28 OK



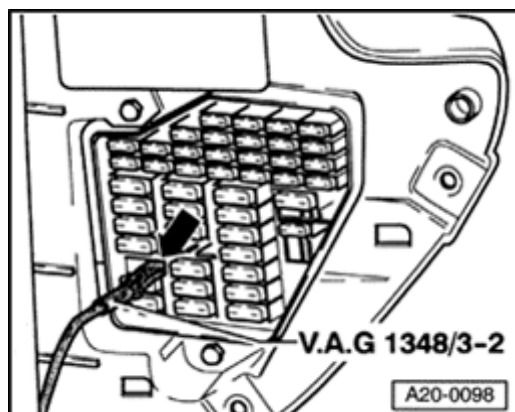
◆ Relay 6 in Fuse/Relay panel OK

◆ Fuel filter OK

◆ Ignition switched OFF.

Test sequence

- Open fuse box cover on left side of instrument panel.
- Pull fuse 28 from fuse holder (left row, 5Th fuse from top)



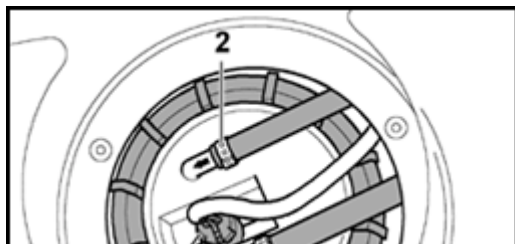
- A - Connect VAG1348/3A remote control on right side of fuse holder 28 using VAG1348/3-2 adaptor wire -arrow-.
- Connect test lead to Battery +.
- Press remote control switch.
 - Fuel pump running noise must be audible

Note:

The fuel pump runs very quietly. Avoid ambient background noise as much as possible during fuel pump checks.

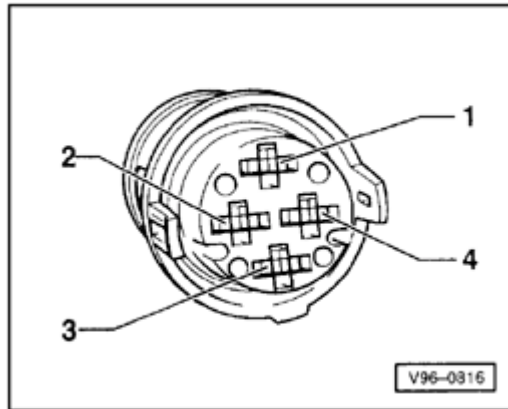
If running noise not audible

- Remove connector flange cover under luggage compartment trim.



- A - Unlatch and disconnect 4-pin harness connector -1-.

20-34



A

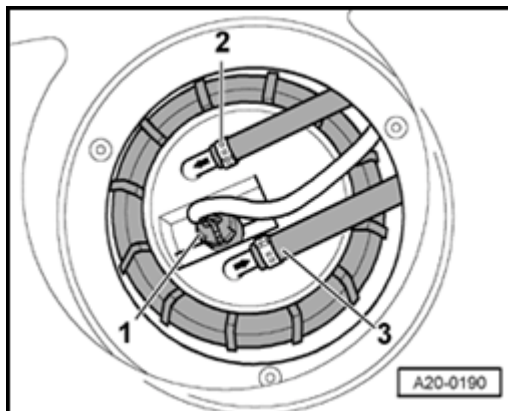
- Switch Fluke 83 multimeter to 20 Volt range and connect to terminal 1 (green/yellow) and 4 (brown) of harness connector using jumper wires from VW 1594 Adaptor kit.
- Press remote control switch continuously while reading Voltage.
 - Specified value: approx. Battery Voltage.

If specified value obtained but no running noise audible from pump

- Remove cover flange as follows:

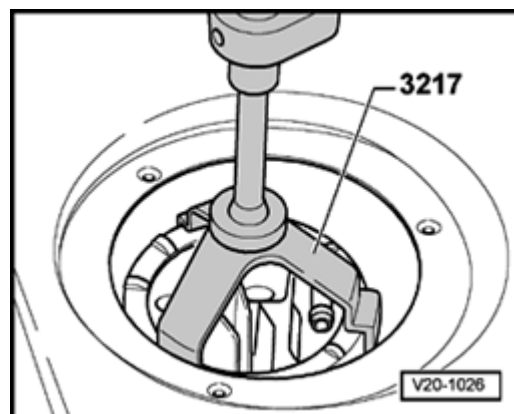
WARNING!

Fuel system is under pressure! Before opening, place clean cloths around the connections to be opened. Carefully loosen the connections to relieve pressure.

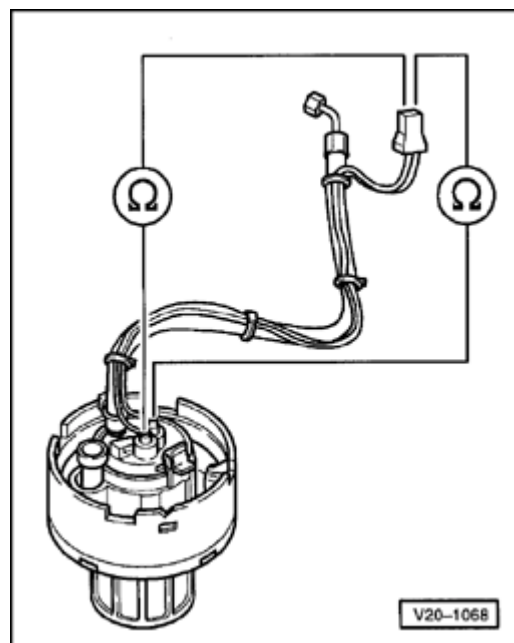


A

- Mark supply line -2- and return line -3- and remove from cover flange.



- A
- Unscrew union nut using 3217 wrench.
 - Remove cover flange and sealing ring from fuel tank opening.



- A
- Check wiring for continuity between flange and fuel pump.

If wiring OK; fuel pump is faulty

- Replace fuel supply unit ⇒ [Page 20-40](#)
- Re-install cover flange ⇒ [Page 20-44](#)

Fuel pump delivery volume, checking

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

Required special tools, testing equipment and auxiliary equipment

- ◆ VAG1348/3A Remote control using VAG1348/3-2 adaptor cable

- ◆ Calibrated measuring container

Checking requirements

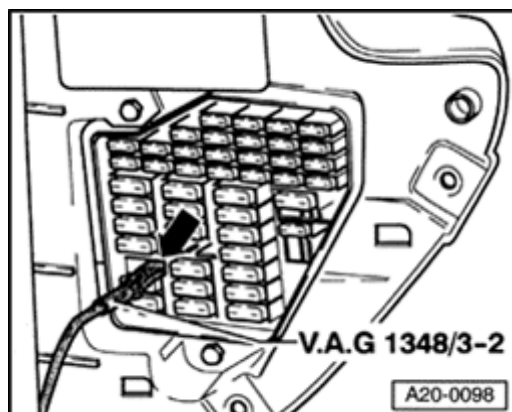
- Battery Voltage: 12 Volts minimum

- Fuel filter OK

- Ignition switched OFF.

Test sequence

- Open fuse box cover on left side of instrument panel.
- Remove fuse 28 from fuse holder (left row, 5th fuse from top).

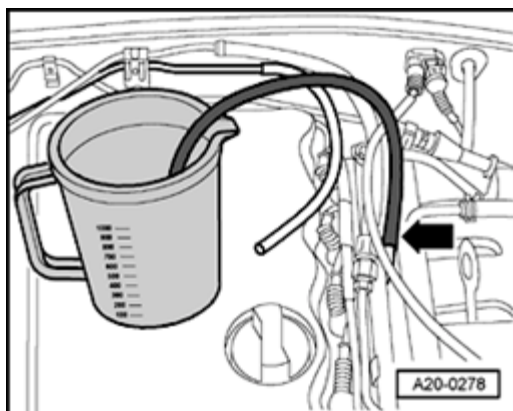
**A**

- Connect remote control to right side of fuse 28 holder using adaptor cable -arrow-.
- Connect tester lead to Battery +.
- Remove fuel filler cap.
- Remove engine cover.

Vehicles with 1.8 ltr. turbo engine

WARNING!

Fuel system is under pressure! Before opening, place clean cloths around the connections to be opened. Carefully loosen the connections to relieve pressure.

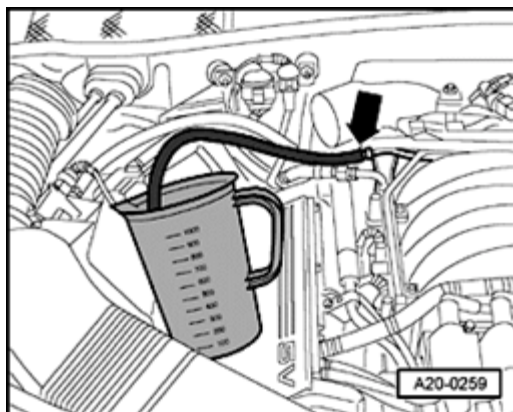
**A**

- Disconnect fuel return hose from connection on fuel distributor line.
- Connect auxiliary hose -arrow- to distributor line and hold in measuring container.

Vehicles with 2.8 ltr. engine

WARNING!

Fuel system is under pressure! Before opening, place clean cloths around the connections to be opened. Carefully loosen the connections to relieve pressure.

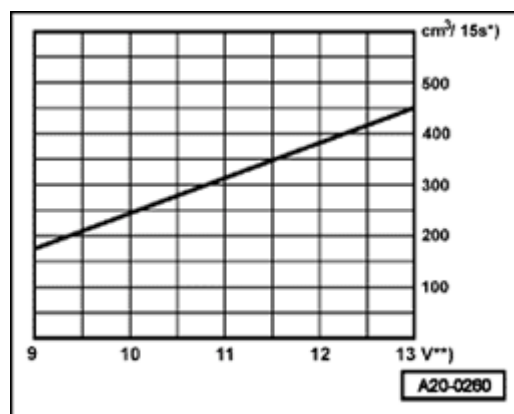
**A**

- Disconnect fuel return hose from hose connection on fuel distributor line.
- Connect auxiliary hose -arrow- to distributor line and hold in measuring container.

All vehicles

- Operate remote control for 15 seconds.

- Press remote button continuously



- Compare fuel quantity pumped to specified value.

*) Minimum supply quantity cm³/15 s

***) Voltage on fuel pump with engine off and pump running (approx. 2 Volts less than Battery Voltage).

Fuel supply unit, removing and installing

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

Observe Safety measures ⇒ [Page 20-1](#) .

Observe Rules of cleanliness ⇒ [Page 20-4](#) .

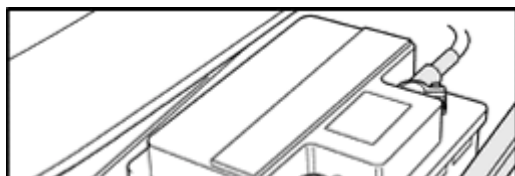
Required special tools, testing equipment and auxiliary equipment

- ◆ 3217 Union nut wrench
- ◆ 3307 fuel pump wrench
- ◆ VAG1275 Hose clamp pliers

Removing

CAUTION!

Obtain the radio Anti-theft code from the customer before disconnecting the Battery Ground strap.



A

- Disconnect Battery Ground strap with ignition switched OFF.

- Open fuel-filler cap briefly and close again.
- If necessary, drain fuel tank using fuel cart ⇒ [Page 20-18](#) .

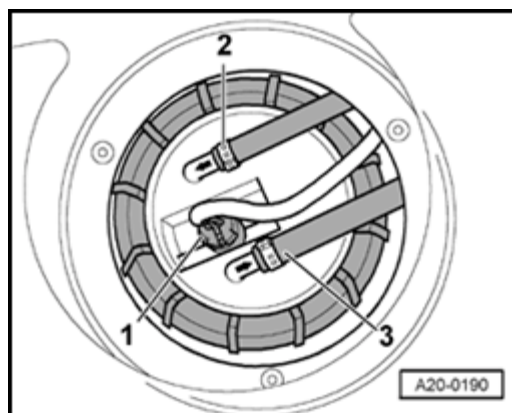
Note:

The fuel tank must not be filled more than $\frac{1}{3}$ maximum.

- Remove connector flange cover under luggage compartment trim.

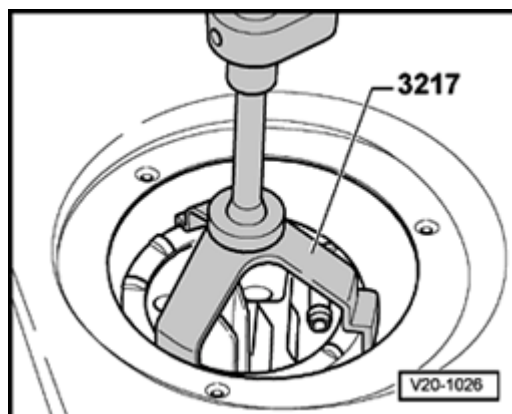
WARNING!

Fuel system is under pressure! Before opening, place clean cloths around the connections to be opened. Carefully loosen the connections to relieve pressure.

**A**

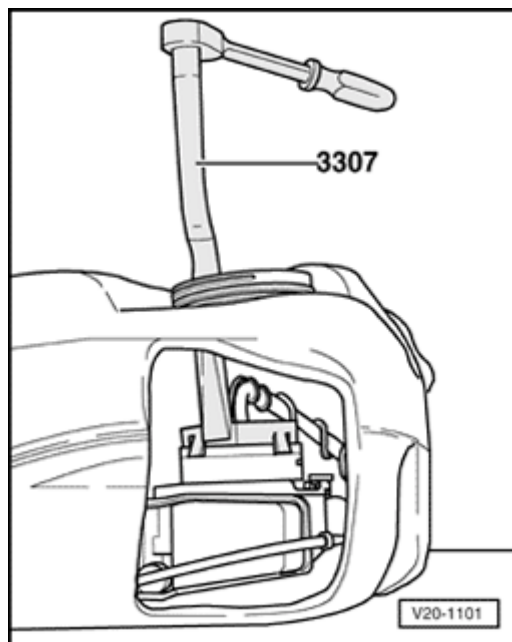
- Mark return line -2- and supply line -3- and pull off of cover flange.
- Unlatch and disconnect 4-pin harness connector -1-.

20-42



A

- Unscrew union nut with 3217 wrench.
- Remove cover flange and sealing ring from fuel tank opening.
- Disconnect sender for fuel gauge -G harness connector on inside of cover flange.
- Disconnect return line on inside of cover flange by pressing unlatch buttons.



A

- Insert 3307 fuel pump wrench through fuel tank opening and place on inner section of surge housing.
- Using wrench 3307, turn surge housing inner section approx. 15° to the left up to the stop and take fuel pump out complete with inner section of housing.

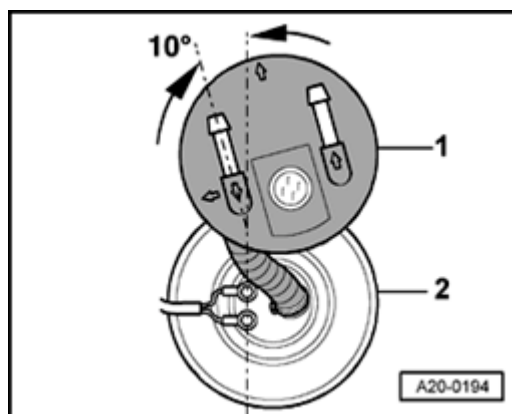
Note:

If the supply unit is replaced, empty the old supply unit of any remaining fuel before properly disposing of it.

Cover flange and surge housing inner section, pre-assembling

If cover flange and supply unit were separated

- Pre-assemble parts ⇒ [Page 20-27](#) .



A

- Angle position cover flange to inner section of surge housing 10°
- Press together clamps for supply line (between pump and cover flange) using VAG1275 pliers.
- Attach wiring to fuel pump
 - M4: 1.5 Nm
 - M5: 2 Nm

Note:

Install a toothed washer beneath each of the nuts.

- Attach wiring using fuel-resistant cable ties.

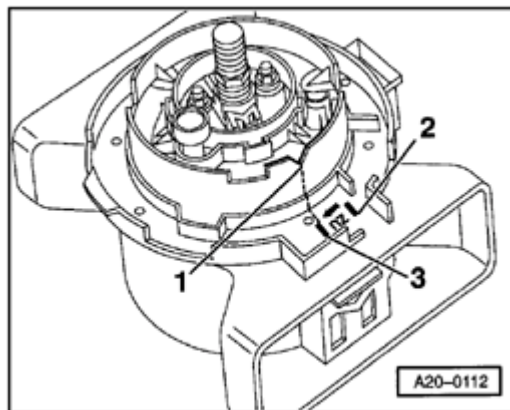
Installing

Installation is performed in the reverse order of the removal procedure, during installation note the following:

CAUTION!

Always refer to the latest parts catalog to ensure that you use original equipment fuel hose clamps.

- Install surge housing inner section, supply hose and cover flange in fuel tank.

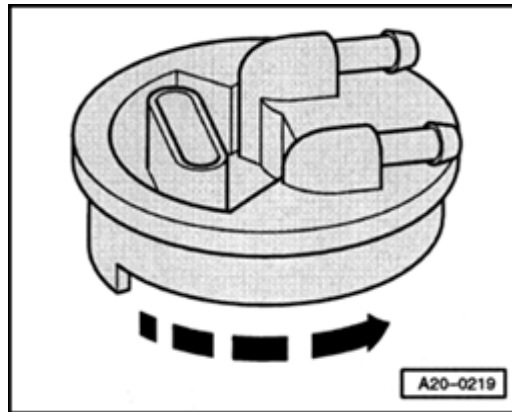


A

- Place inner section of surge housing into outer section of surge housing (in tank) in such a way that notch 1 on inner section of surge housing matches mark 2 on outer section of surge housing.
 - The inner section of the surge housing can be pressed downward until it is clearly heard to engage.
- Put fuel pump wrench 3307 in place and turn surge housing inner section with pump to the right approx. 15° to the stop. The notch -1- will then be in front of the marking -3- (bayonet closure).

Note:

For clarity, the inner and outer surge housing sections are shown without the tank.

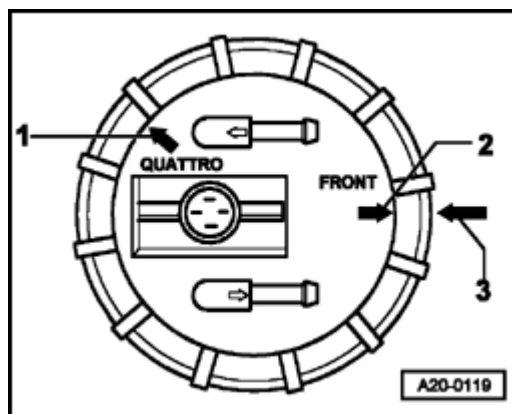


A

- When installing, turn the cover flange in direction of arrow as shown in illustration.
- Connect the return line inside on the cover flange.

Note:

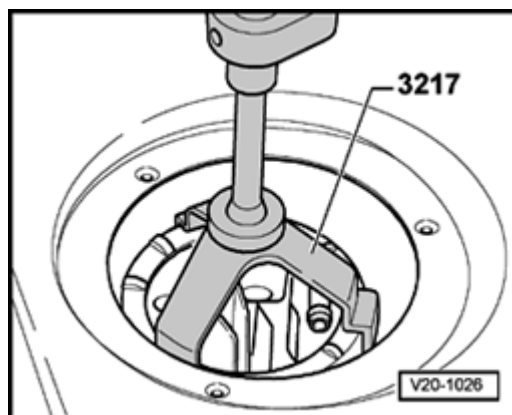
- ◆ *Always use new O-rings.*
 - ◆ *Lubricate O-rings with fuel or coat with a lubricant.*
 - ◆ *Place the new gasket (dry) for the cover flange into the opening of the fuel tank.*
- Wrap sender for fuel gauge -G wiring once around the supply line (in fuel tank) and install on cover flange.



- A**
- Connect cover flange to fuel tank
 - Installation for vehicles with Front-Wheel Drive: -arrow 2- must be opposite -arrow 3-.

Note:

-Arrow 1- applies to vehicles with All-Wheel Drive (Not applicable).



- A**
- Tighten union nut with 3217 wrench.
 - 60 Nm

Note:

Ensure that hose guide (item 7 ⇒ [Page 20-28](#)) is kept in position while tightening the union nut.

- Connect wiring and harness connector.

Note:

Ensure that fuel hoses fit tight.

- Connect Ground strap to Battery with ignition switched OFF.
- After connecting Battery, input radio anti-theft code

⇒ *Radio operating instructions*

- Run door windows up to stop using the window switches.
- Operate all window lifters again for at least 1 second in "closed" position to activate automatic up/down.
- Set the clock.

Tightening torque

Component	Nm
Union nut for cover flange	60

Sender for fuel gauge -G, checking

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

Note:

Checking signal between sender for fuel gauge - G and fuel gauge.

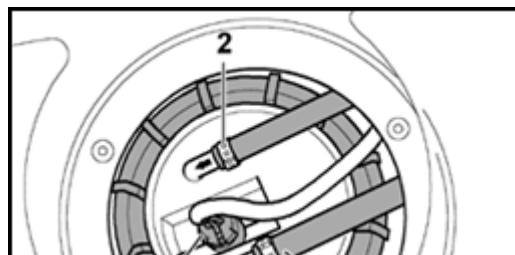
⇒ [Repair Manual, Electrical Equipment, Repair Group 90](#)

Required special tools, testing equipment and auxiliary equipment

◆ Fluke 83 Multimeter

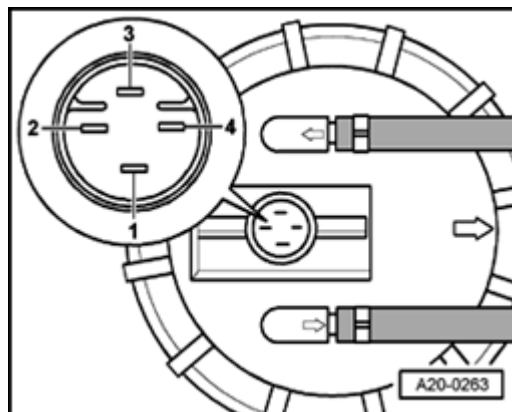
◆ VW 1594 Adaptor kit

- Remove connector flange cover under luggage compartment trim.



A

- Unlatch and disconnect 4-pin harness connector -1-.



A

- Measure resistance at terminals -2- and -3- on cover flange:

Sensor	Tank full	Tank empty
Sender for fuel gauge -G	40 Ω	280 Ω

Fuel level between "Tank full" and "Tank empty" must cause a resistance value that falls between the two specified values.

If 0 Ω or ∞ Ω is measured

- There is an open or short circuit in the tank wiring.

Note:

To check the resistance values for "Tank full" or "Tank empty" remove the sender for fuel gauge (\Rightarrow [Page 20-50](#)) and swing the sensor float to the top or bottom stop.

Sender for fuel gauge -G, removing and installing

Vehicles with front wheel drive and 1.8 ltr. turbo or 2.8 ltr. engine

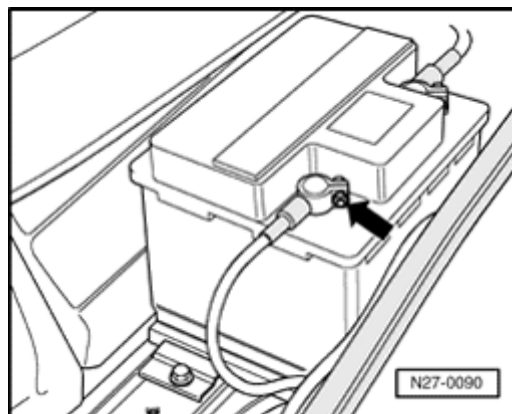
Observe Safety measures ⇒ [Page 20-1](#) .

Observe Rules of cleanliness ⇒ [Page 20-4](#) .

Removing

CAUTION!

Obtain the radio Anti-theft code from the customer before disconnecting the Battery Ground strap.



A

- Disconnect Battery Ground strap with ignition switched OFF.
- Open fuel tank cover briefly and close again.
- If necessary, drain fuel tank using fuel cart ⇒ [Page 20-18](#) .

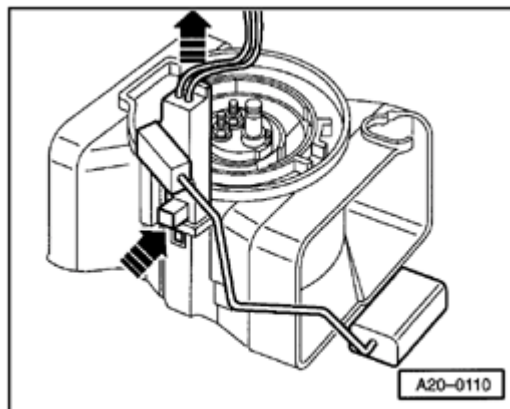
Note:

The fuel tank must not be filled more than $\frac{1}{3}$ maximum.

- Fuel supply unit, removing, starting ⇒ [Page 20-40](#) .

- Carefully pull cover flange out and push to the side with hoses connected.

- Disconnect harness connector for fuel level display on inside of cover flange.

**A**

- Pull sensor out of surge housing in fuel tank while simultaneously pressing latching tab -arrow-.

Note:

For clarity, surge housing illustration is shown without tank.

Installing

Installation is performed in the reverse order of the removal procedure, when installing, note the following:

- Install the sender for fuel gauge in the guide on the surge housing outer section and press down until it engages.
- Wrap sender for fuel gauge wiring once around return line (in tank).
 - Cover flange, installing ⇒ [Page 20-45](#) .
- Connect Ground strap to Battery with ignition switched OFF.
- After connecting Battery, input radio anti-theft coding.

⇒ *Radio operating instructions*

- Run door windows up to stop with electric window lifters.
- Operate all window lifters again for at least 1

second in "closed" position to activate automatic up/down.

- Set the clock.