

Workshop Manual Audi A3 2004 ➤

Fuel supply system, petrol engines

Engine ID	AXW	BGU	BDB	AXX	BAG	BLP	BHD	BLX	BLY
	BMB	BMJ	BPY	BLF	BLR	BSE	BSF	BUB	BVY
	BVZ	BWA	BHZ	BYT	BZB	BZC	CAX C	CBR A	CAW B
	CBF A	CCT A	CCS A	CCZ A	CDA A	CDL A	CDL C	BPU	CMS A
	CBZ B	CMX A	CEP A	CEP B					

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Edition 04.2017

List of Workshop Manual Repair Groups

Repair Group

00 - Technical data

20 - Fuel supply system



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

Contents

00 - Technical data	1
1 General repair instructions	1
1.1 Safety precautions when working on the fuel system	1
1.2 Safety precautions when working on vehicles with start/stop system	2
1.3 Safety precautions when using testers and measuring instruments during a road test	2
1.4 Rules for cleanliness	2
1.5 Test conditions	2
1.6 Contact corrosion	3
20 - Fuel supply system	4
1 Fuel tank - rest-of-world vehicles with front-wheel drive	4
1.1 Exploded view - fuel tank with attached components	4
1.2 Draining fuel tank	5
1.3 Removing and installing fuel tank with attached components	6
2 Fuel tank - USA vehicles with front-wheel drive	12
2.1 Exploded view - fuel tank with attached components	12
2.2 Draining fuel tank	13
2.3 Removing and installing fuel tank with attached components	15
3 Fuel delivery unit and fuel gauge sender - all vehicles with front-wheel drive	20
3.1 Exploded view - fuel delivery unit and fuel gauge sender	20
3.2 Checking fuel pump (electrical test) - all engines	21
3.3 Checking fuel pressure and residual pressure (up to high-pressure pump)	22
3.4 Checking fuel pump delivery rate - 1.6 ltr. engine (2 valve)	25
3.5 Checking fuel pump control unit J538 - FSI and TFSI engines	27
3.6 Checking fuel pump delivery rate - FSI and TFSI engines	27
3.7 Removing and installing fuel delivery unit	30
3.8 Adapting fuel pump after renewing fuel delivery unit - FSI and TFSI engines	33
3.9 Checking fuel gauge sender G	35
3.10 Removing and installing fuel gauge sender G - vehicles up to approx. 11.2004	38
3.11 Removing and installing fuel gauge sender G - vehicles from approx. 11.2004 onwards	38
4 Fuel tank - rest-of-world vehicles with four-wheel drive	41
4.1 Exploded view - fuel tank with attached components	41
4.2 Draining fuel tank	42
4.3 Removing and installing fuel tank with attached components	43
5 Fuel tank - USA vehicles with four-wheel drive	49
5.1 Exploded view - fuel tank with attached components	49
5.2 Draining fuel tank	50
5.3 Removing and installing fuel tank with attached components	52
6 Fuel delivery unit and fuel gauge senders - version 1 for vehicles with four-wheel drive	58
6.1 Exploded view - fuel delivery unit and fuel gauge senders	58
6.2 Checking fuel pump (electrical test) - TFSI and 6-cylinder engines	60
6.3 Checking fuel pump control unit J538 - TFSI engine	61
6.4 Checking fuel pump delivery rate - TFSI engine	62
6.5 Checking fuel pump delivery rate - 6-cylinder engine	64
6.6 Removing and installing fuel delivery unit	66
6.7 Adapting fuel pump after renewing fuel delivery unit - TFSI engine	69
6.8 Checking fuel gauge sender G	71
6.9 Removing and installing fuel gauge sender G - vehicles up to approx. 11.2004	75
6.10 Removing and installing fuel gauge sender G - vehicles from approx. 11.2004 onwards	76
6.11 Checking fuel gauge sender 2 G169	76
6.12 Removing and installing fuel gauge sender 2 G169	79
6.13 Suction-jet pump	82



6.14	Removing and installing suction-jet pump	82
7	Fuel delivery unit and fuel gauge senders - version 2 for vehicles with four-wheel drive	88
7.1	Exploded view - fuel delivery unit and fuel gauge senders	88
7.2	Checking fuel pump (electrical test) - TFSI and 6-cylinder engines	90
7.3	Checking fuel pump control unit J538 - TFSI engine	91
7.4	Removing and installing fuel pump control unit J538 - vehicles with 1.8 ltr./2.0 ltr. TFSI engine	92
7.5	Removing and installing fuel pump control unit J538 - vehicles with 2.5 ltr. TFSI engine	92
7.6	Checking fuel pump delivery rate - vehicles with 1.8 ltr./2.0 ltr. TFSI engine	94
7.7	Checking fuel pump delivery rate - vehicles with 2.5 ltr. TFSI engine	97
7.8	Checking fuel pump delivery rate - 6-cylinder engine	100
7.9	Removing and installing fuel delivery unit	102
7.10	Adapting fuel pump after renewing fuel delivery unit - TFSI engine	106
7.11	Checking fuel gauge sender G	108
7.12	Removing and installing fuel gauge sender G	110
7.13	Checking fuel gauge sender 2 G169	111
7.14	Removing and installing fuel gauge sender 2 G169	113
7.15	Suction-jet pump	116
7.16	Removing and installing suction-jet pump	116
8	Fuel filter - all vehicles	123
8.1	Exploded view - fuel filter with fuel pressure regulator, vehicles with MPI engine	123
8.2	Removing and installing fuel filter with fuel pressure regulator - vehicles with MPI engine	124
8.3	Exploded view - fuel filter for fuel system with return line, vehicles with FSI engine up to approx. 05.2004	124
8.4	Removing and installing fuel filter for fuel system with return line - vehicles with FSI engine up to approx. 05.2004	125
8.5	Exploded view - fuel filter with fuel pressure limiting valve, vehicles with FSI engine from approx. 06.2004 onwards and all vehicles with TFSI engine	126
8.6	Removing and installing fuel filter with fuel pressure limiting valve - vehicles with FSI engine from approx. 06.2004 onwards and all vehicles with TFSI engine	127
9	Activated charcoal filter system - rest-of-world vehicles	128
9.1	Exploded view - activated charcoal filter system	128
9.2	Removing and installing activated charcoal filter	128
10	Activated charcoal filter system/tank leak diagnostic system - USA vehicles	130
10.1	Exploded view - activated charcoal filter system/tank leak diagnostic system	130
10.2	Removing and installing activated charcoal filter	131
10.3	Routing of pipes/hoses for activated charcoal filter system/tank leak diagnostic system - TFSI engine	133
10.4	Routing of pipes/hoses for activated charcoal filter system/tank leak diagnostic system - 6-cylinder engine	135
10.5	Tank leak diagnostic system	136
10.6	Performing tank leak diagnosis	137
10.7	Removing and installing fuel system diagnostic pump V144	139
11	Accelerator mechanism	140
11.1	Exploded view - accelerator mechanism	140
11.2	Removing and installing accelerator pedal module with accelerator position sender	140
11.3	Adapting kick-down function - vehicles with automatic gearbox or dual clutch gearbox	142

00 – Technical data

1 General repair instructions

(ARL005202; Edition 04.2017)

1.1 Safety precautions when working on the fuel system

Risk of injury - fuel system operates under high pressure

The fuel system is pressurised. There is a risk of injury as fuel may spray out.

Before opening the fuel system:

- Put on safety goggles.
- Put on protective gloves.
- Release pressure (wrap a clean cloth around connection and open connection carefully).

Risk of fire due to escaping fuel

If the battery is connected, the door contact switch activates the fuel pump when the driver's door is opened. Escaping fuel may ignite, causing a fire.

- Before opening the fuel system, disconnect power supply to fuel pump.

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When removing and installing components from a full or partly full fuel tank, note the following:

- ◆ Fuel tank must not be full. The amount of fuel which can be left in the fuel tank is indicated in the corresponding procedure description. Drain the tank if necessary. Procedure for vehicles in rest-of-world (front-wheel drive) ⇒ [page 5](#), vehicles in rest-of-world (four-wheel drive) ⇒ [page 42](#), USA vehicles (front-wheel drive) ⇒ [page 13](#), USA vehicles (four-wheel drive) ⇒ [page 50](#).
- ◆ Before commencing work, switch on exhaust extraction system and place an extraction hose close to the opening in the fuel tank to extract escaping petrol fumes. If no exhaust extraction system is available, a radial fan with a displacement of at least 15 m³/h can be used (the fan motor must be clear of the air stream).
- ◆ Avoid skin contact with fuel. Wear fuel-resistant gloves.

When removing and installing the fuel tank, note the following:

- ◆ Fuel tank must be empty to reduce weight. Drain the tank if necessary. Procedure for vehicles in rest-of-world (front-wheel drive) ⇒ [page 5](#), vehicles in rest-of-world (four-wheel drive) ⇒ [page 42](#), USA vehicles (front-wheel drive) ⇒ [page 13](#), USA vehicles (four-wheel drive) ⇒ [page 50](#).

1.2 Safety precautions when working on vehicles with start/stop system

Risk of injury - engine may start unexpectedly

The engine can start unexpectedly if the vehicle's start/stop system is activated. A message in the instrument cluster indicates whether the start/stop system is activated.

- To deactivate the start/stop system, switch off the ignition.

1.3 Safety precautions when using testers and measuring instruments during a road test

Risk of injury if test equipment is not secured

If an accident occurs and the front passenger's airbag is triggered, test equipment which is not secured adequately may be catapulted through the vehicle with potentially serious consequences.

- Secure test equipment on the rear seat with a strap.

Or:

- Have a second mechanic operate test equipment on the rear seat.

1.4 Rules for cleanliness

Even small quantities of dirt can lead to defects. For this reason, please observe the following rules when working on the fuel supply system and injection system:

- ◆ Clean connections and surrounding area thoroughly with engine cleaner or brake cleaner and dry cleaned area before loosening.
- ◆ Plug open lines and connections with suitable protective caps immediately.
- ◆ After removal, place parts on a clean surface and cover them. Only use lint-free cloths.
- ◆ Carefully cover or seal open components if repairs cannot be carried out immediately.
- ◆ Only install clean components; replacement parts should only be unpacked immediately prior to installation. Do not use any parts that have been unpacked previously and stored away loosely (e.g. in a tool box).
- ◆ Do not work with compressed air when the system is open. If possible, do not move vehicle.
- ◆ Protect unplugged electrical connectors against dirt and moisture and make sure connections are dry when attaching.

1.5 Test conditions

- Battery voltage at least 12.5 V
- Fuel pump fuse OK ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Fuel pump control unit - J538- OK; checking via "Guided Fault Finding" ⇒ Vehicle diagnostic tester

- Fuel pump relay - J17- OK ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Fuel tank at least 1/4 full.
- Fuel filter OK.
- Fuel lines OK (not obstructed or crushed).
- Ignition switched off.

1.6 Contact corrosion

Contact corrosion can occur if unsuitable fasteners are used (e.g. bolts, nuts, washers, etc.).

For this reason, only fasteners with a special surface coating are fitted.

Additionally, all rubber and plastic parts and all adhesives are made of non-conductive materials.

Always install new parts if you are not sure whether used parts can be re-fitted ⇒ Electronic parts catalogue .

Please note:

- ◆ We recommend using only genuine replacement parts; these have been tested and are compatible with aluminium.
- ◆ We recommend the use of Audi accessories.
- ◆ Damage caused by contact corrosion is not covered by warranty.



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20 – Fuel supply system

1 Fuel tank - rest-of-world vehicles with front-wheel drive

1.1 Exploded view - fuel tank with attached components



Note

The illustration shows a fuel system without fuel return line.

1 - 26 Nm

2 - Securing strap

- ☐ Installation position: Fixing point (hole) points in direction of travel

3 - Heat shield for fuel tank

4 - Fuel line

- ☐ Black
- ☐ To engine
- ☐ Press release tab on connection piece to disconnect

5 - Breather line

- ☐ White
- ☐ From fuel filler neck to activated charcoal filter
- ☐ Clip onto fuel tank

6 - Electrical connector

- ☐ For fuel system pressurisation pump - G6- and fuel gauge sender - G-

7 - Seal

- ☐ Renew if damaged

8 - Filler cap

- ☐ Secured to tank flap unit

9 - Earth connection

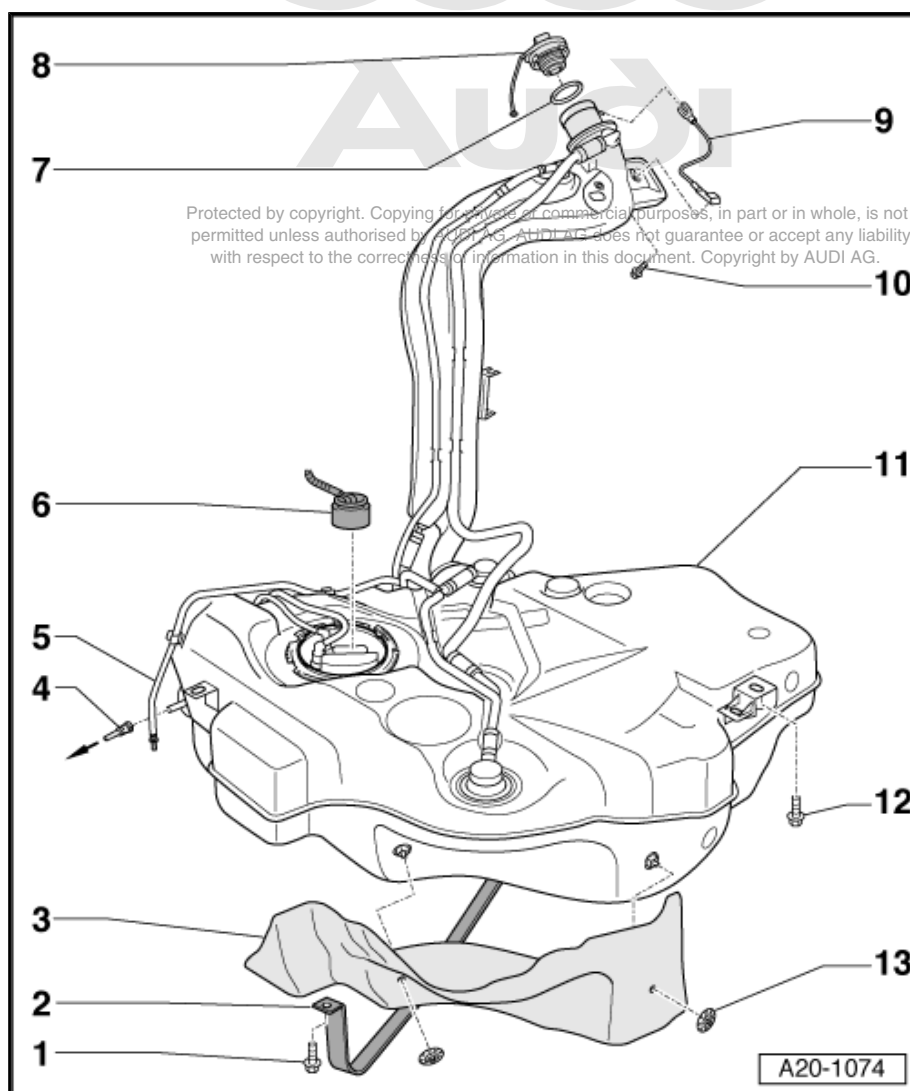
- ☐ To eliminate electrostatic charge
- ☐ Installation position
⇒ [page 5](#)

- ☐ Make sure connector is correctly seated and secure wire with flange bolt for fuel filler neck -item 10-.

- ☐ After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body – Specification: approx. 0 Ω

10 - Flange bolt, 11 Nm

- ☐ Secures fuel filler neck and earth connection -item 9-



11 - Fuel tank

- ☐ Removing and installing ⇒ [page 6](#)

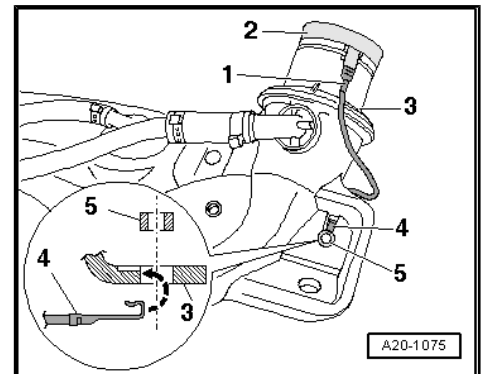
12 - 26 Nm

13 - Clamping washer

- ☐ Removing: turn anti-clockwise
- ☐ Installing: tighten to 2 Nm

Installation position of earth connection

- Route earth connection as shown in illustration.
- First engage contact tab -4- of earth connection in mounting hole on fuel tank -3- and then press in spacer bush -5-.
- Ensure that connector -1- for earth connection is firmly seated on metal ring -2- on fuel filler neck.



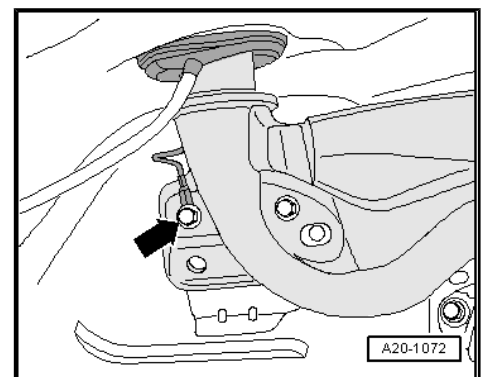
- Secure contact tab for earth connection with flange bolt -arrow- for fuel filler neck.



Caution

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

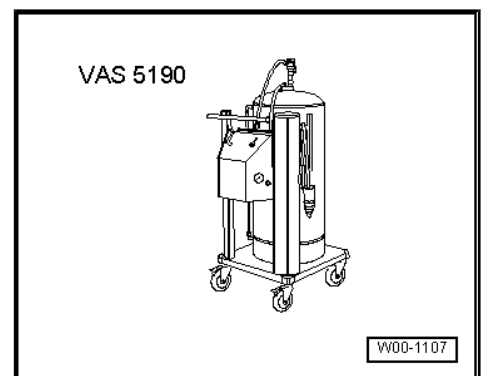
- *Specification: approx. 0 Ohm*



1.2 Draining fuel tank

Special tools and workshop equipment required

- ◆ Fuel extractor - VAS 5190-



Procedure

Observe safety precautions ⇒ [page 1](#).

Observe rules for cleanliness ⇒ [page 2](#).

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Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ⇒ Rep. gr. 27 .



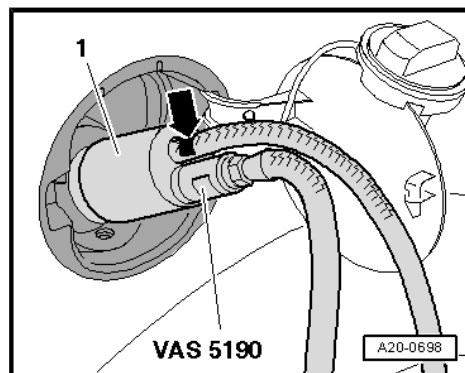
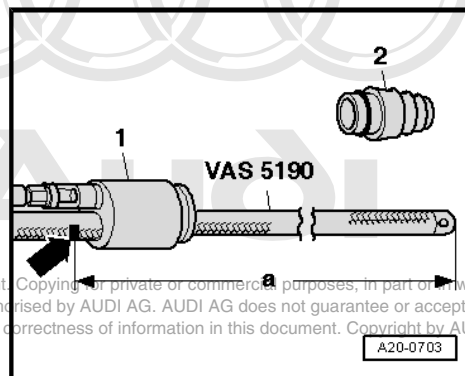
Caution

Secure earth wire of fuel extractor -VAS 5190- to a bare metal part on the body.

- Detach tapered adapter -2- from shaft end -1- of fuel extractor -VAS 5190- .

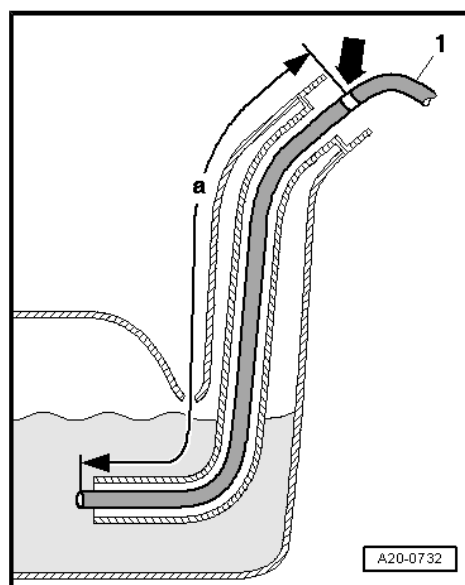
- Use insulating tape to mark the extraction hose -arrow- at a distance of -a- = 1,370 mm from the end of the hose.

- Remove filler cap from fuel filler neck.
- Screw shaft end -1- of fuel extractor -VAS 5190- onto fuel filler neck.
- Push extraction hose into fuel tank until marking on hose -arrow- coincides with shaft end.



Note

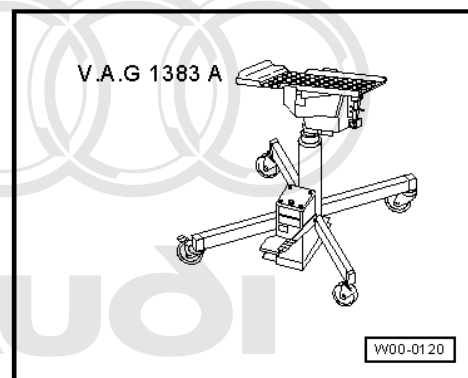
- ◆ *The procedure when using a fuel extractor without shaft end is basically the same.*
- ◆ *In this case, make a mark -arrow- on the extraction hose at distance -a- = 1,305 mm from the end of the hose using insulating tape. The extraction hose has been properly inserted when the affixed mark is level with the edge of the filler neck.*
- ◆ *If hose is difficult to insert, apply a thin coat of engine oil. DO NOT use silicone-based lubricant.*
- Drain fuel tank via fuel filler neck.
- Carefully remove extraction hose.
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .



1.3 Removing and installing fuel tank with attached components

Special tools and workshop equipment required

◆ Engine and gearbox jack - V.A.G 1383 A-



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Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- To reduce weight, the fuel tank must be empty when it is removed from the vehicle. Drain the tank if necessary. Procedure ⇒ [page 5](#)

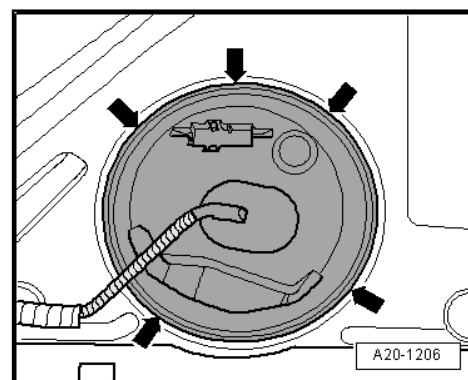


Caution

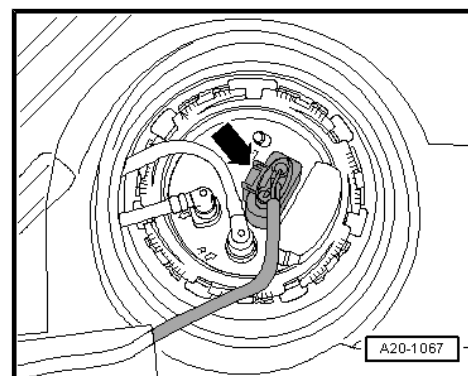
To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

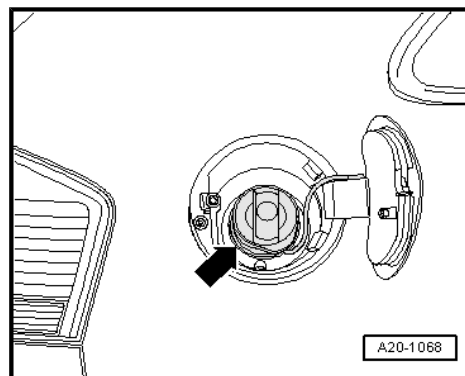
- Disconnect battery ⇒ Rep. gr. 27 .
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.



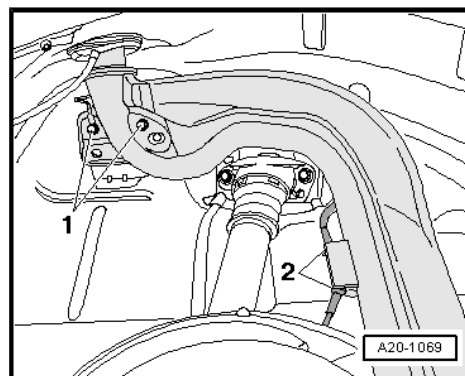
- Unplug electrical connector -arrow- at flange.



- Open the tank flap.
- Clean area around fuel filler neck.
- Remove filler cap -arrow- from fuel filler neck.
- Seal opening of fuel filler neck with a piece of clean foam or similar to prevent dirt from dropping into the tank.

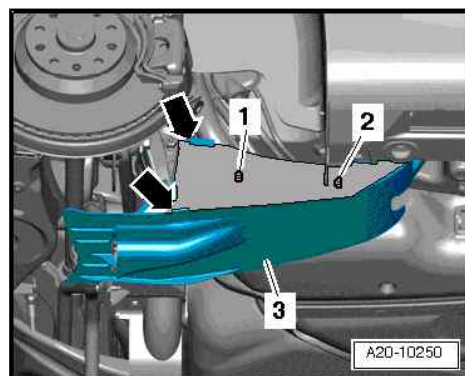


- Remove rear right wheel housing liner ⇒ Rep. gr. 66 .
- Unscrew bolts -1- for fuel filler neck.
- Detach electrical wire -2- for ABS speed sensor from bracket on fuel filler neck.

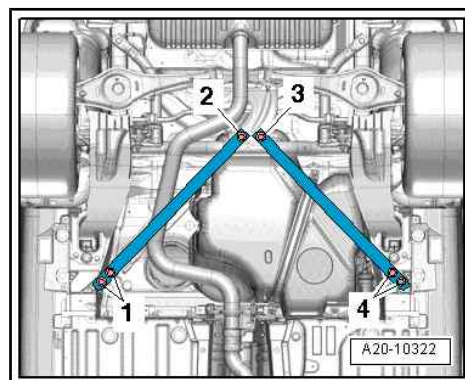


Audi A3 Cabriolet:

- Remove stone deflector -3- on trailing arm (right-side); to do so, press out spreader pins -1- and -2- and disengage stone deflector -arrows-.



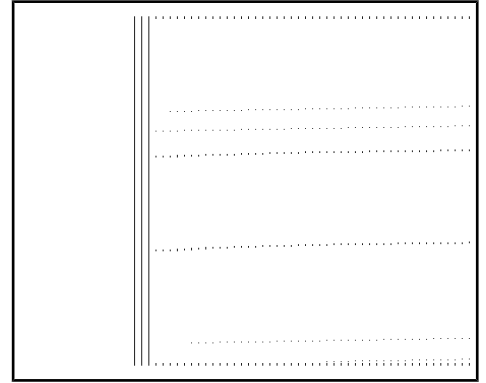
- Remove bolts -1 ... 4- and detach diagonal struts.



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Continued for all vehicles:

- Loosen nuts on clamp -arrows-.
- Push the clamp back in order to separate the exhaust system.



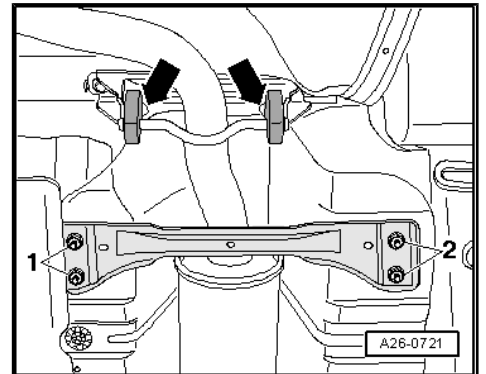
- Remove rear cross member for underbody; to do so, unscrew nuts -1- and -2-.



Note

A second person will be required for detaching rear section of exhaust system.

- Disengage exhaust system at rubber mountings -arrows-.
- Disengage rear silencer at the rubber mountings and remove rear section of exhaust system.



Fuel system without fuel return line:

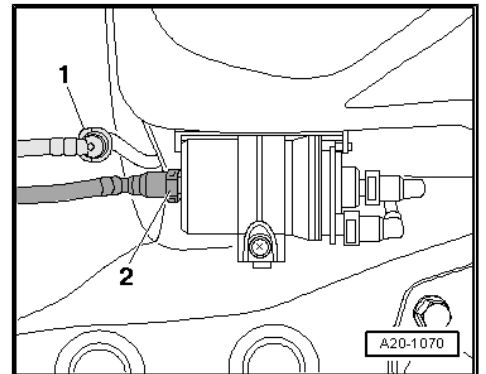


WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ ***To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.***

- Disconnect fuel line -2- (black) and breather line -1- (white) at front right of fuel tank (press release tabs).



Vehicles with auxiliary heater:

- In addition, disconnect fuel line leading to auxiliary heater at metering pump.

Fuel system with fuel return line:

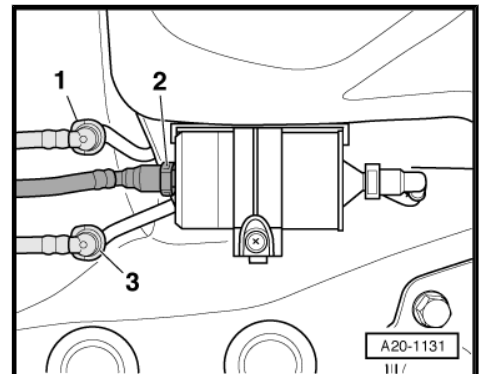


WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ ***To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.***

- Disconnect fuel return line -3- (blue), fuel supply line -2- (black) and breather line -1- (white) at front right of fuel tank (press release tabs).



Vehicles with auxiliary heater:

- In addition, disconnect fuel line leading to auxiliary heater at metering pump.

Continued for all vehicles:



WARNING

To reduce weight, fuel tank must be empty upon removal.

- First unscrew bolts -1- and -3-.
- Position engine and gearbox jack - V.A.G 1383 A- below vehicle to support tank.
- Remove bolts -2- and -4-.
- Remove fuel tank downwards (turning it sideways as required).

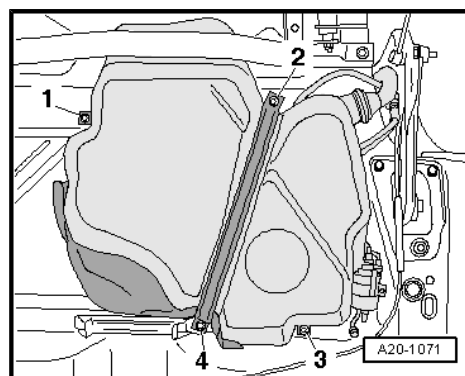
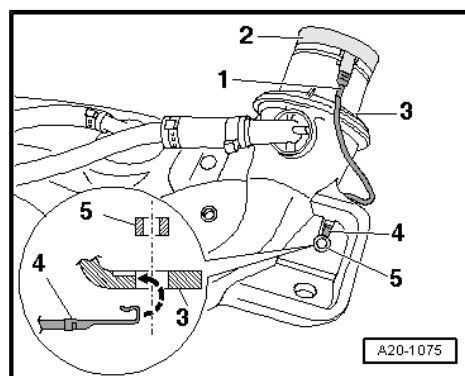
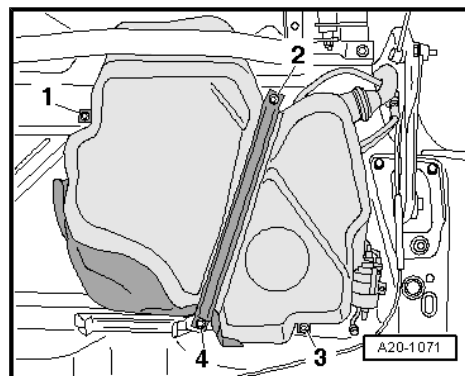
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Installing

- Tightening torques ⇒ [page 4](#)

Installation is carried out in the reverse order; note the following:

- Check the earth wiring at both ends for traces of oxidation and remove oxidation if necessary.
- Check installation position of earth connection:
 - Connector -1- must be seated securely on metal ring -2-.
 - Contact tab -4- must be attached to fuel tank -3- and secured with spacer bush -5-.
- Position fuel tank with securing strap on underbody, using engine and gearbox jack - V.A.G 1383 A- .
- When installing fuel tank, make sure that the fuel filler neck is correctly inserted into the opening on the body.
- Secure fuel tank by first tightening bolts at points -2- and -4-, then at points -1- and -3-.



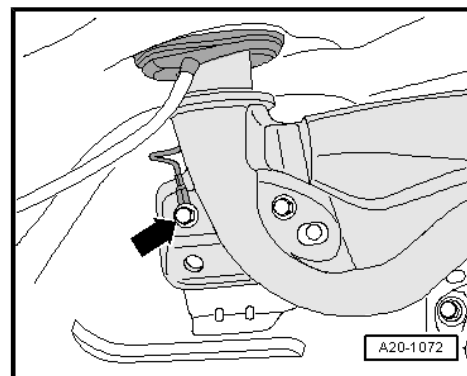
- Secure contact tab for earth connection with flange bolt -arrow- for fuel filler neck.



Caution

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

- *Specification: approx. 0 Ohm*



- Attach electrical wire for ABS speed sensor to bracket on fuel filler neck.
- Install rear section of exhaust system ⇒ Rep. gr. 26 .
- Install rear right wheel housing liner ⇒ Rep. gr. 66. .
- Install rear seat bench ⇒ Rep. gr. 72 .
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .

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2 Fuel tank - USA vehicles with front-wheel drive

2.1 Exploded view - fuel tank with attached components

1 - 26 Nm

2 - Securing strap

- ☐ Installation position: Fixing point (hole) points in direction of travel

3 - Heat shield for fuel tank

4 - Breather line

- ☐ White
- ☐ From activated charcoal filter to activated charcoal filter solenoid valve 1 - N80-
- ☐ Press release tab on connection piece to disconnect
- ☐ Clip onto fuel tank

5 - Fuel line

- ☐ Black
- ☐ To engine
- ☐ Press release tab on connection piece to disconnect

6 - Breather line

- ☐ Green
- ☐ From fuel system diagnostic pump - V144- to engine
- ☐ Press release tab on connection piece to disconnect
- ☐ Clip onto fuel tank

7 - Electrical connector

- ☐ For fuel system pressurisation pump - G6- and fuel gauge sender - G-

8 - 8 Nm

9 - Bracket

- ☐ Clip onto protective plate

10 - Protective plate

- ☐ For fuel filler neck

11 - Flange bolt, 11 Nm

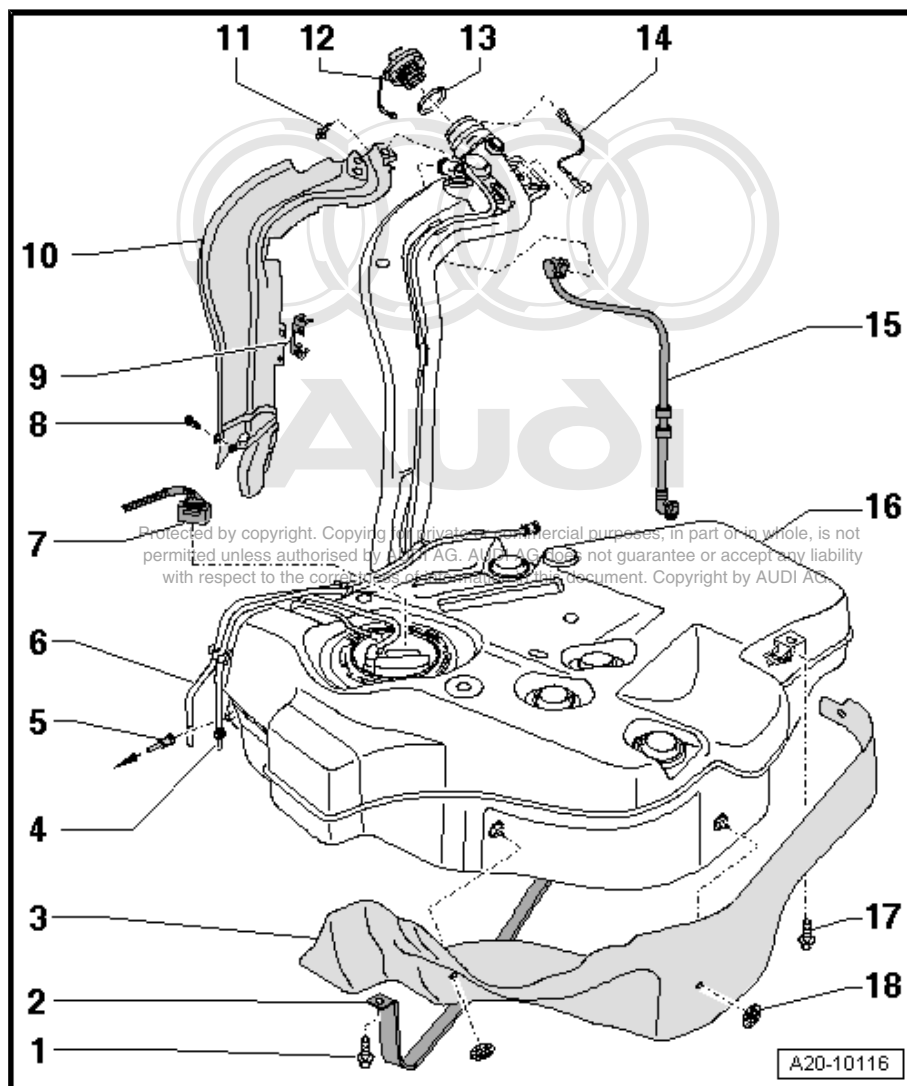
- ☐ Secures fuel filler neck and earth connection -item 14-

12 - Filler cap

- ☐ Secured to tank flap unit

13 - Seal

- ☐ Renew if damaged



14 - Earth connection

- ☐ To eliminate electrostatic charge
- ☐ Installation position ⇒ [page 13](#)
- ☐ Make sure connector is correctly seated and secure wire with flange bolt for fuel filler neck -item 11-.
- ☐ After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body – Specification: approx. 0 Ω

15 - Breather line

- ☐ From gravity valve to activated charcoal filter
- ☐ Clip onto bracket in wheel housing
- ☐ Press release tab on connection piece to disconnect

16 - Fuel tank

- ☐ Removing and installing ⇒ [page 15](#)

17 - 26 Nm

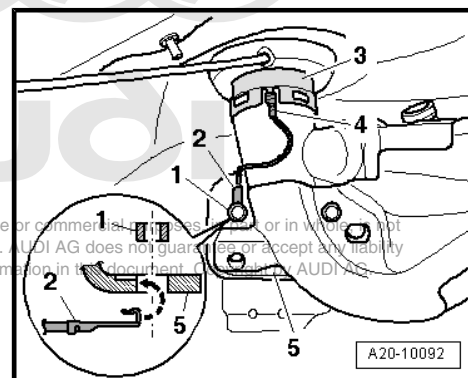
18 - Clamping washer

- ☐ Removing: turn anti-clockwise
- ☐ Installing: tighten to 2 Nm

Installation position of earth connection

- Route earth connection as shown in illustration.
- First engage contact tab -2- of earth connection in mounting hole on fuel tank -5- and then press in spacer bush -1-.
- Ensure that connector -4- for earth connection is firmly seated on metal ring -3- on fuel filler neck.

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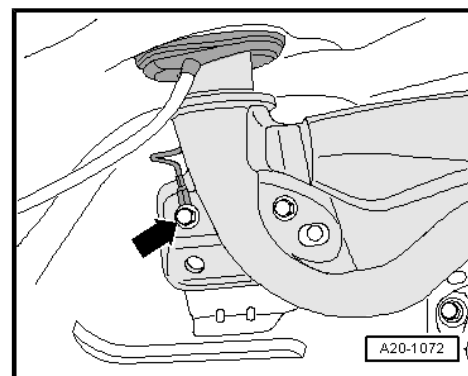
- Secure contact tab for earth connection with flange bolt -arrow- for fuel filler neck.



Caution

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

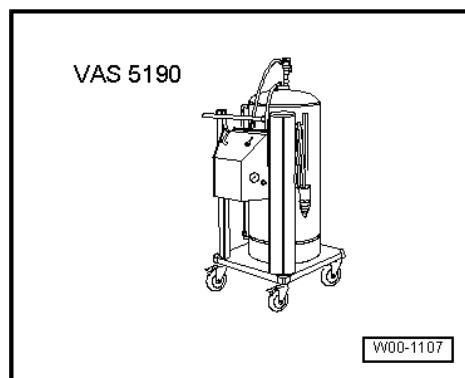
- **Specification: approx. 0 Ohm**



2.2 Draining fuel tank

Special tools and workshop equipment required

◆ Fuel extractor - VAS 5190-



Procedure

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- Release the tank flap.



Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ Observe notes on procedure for disconnecting the battery.

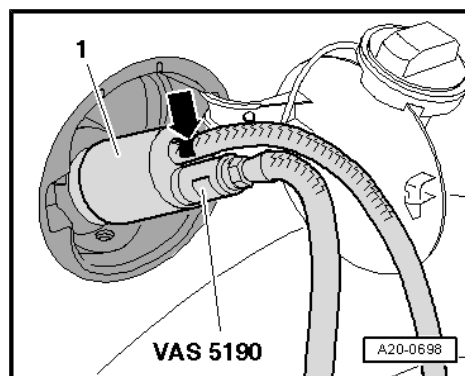
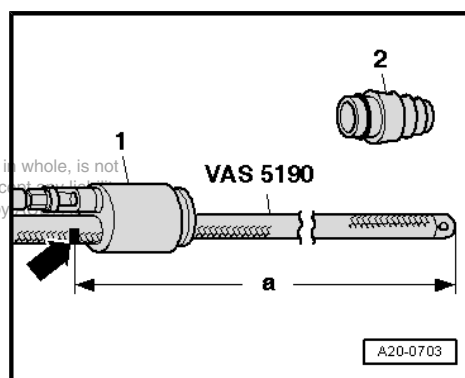
- Disconnect battery ⇒ Rep. gr. 27 .



Caution

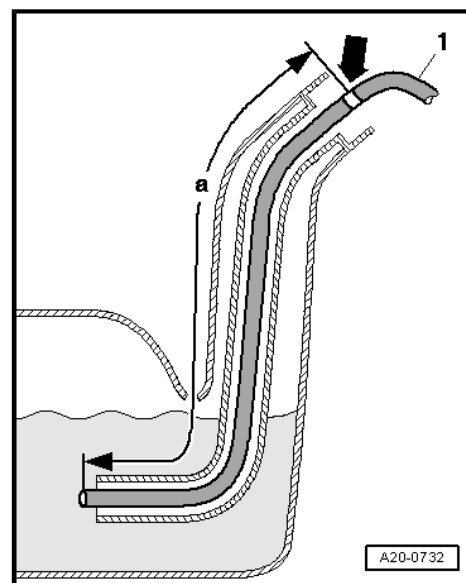
Secure earth wire of fuel extractor -VAS 5190- to a bare metal part on the body.

- Detach tapered adapter -2- from shaft end -1- of fuel extractor -VAS 5190- .
- Use insulating tape to mark the extraction hose -arrow- at a distance of -a- = 1,370 mm from the end of the hose.
- Remove filler cap from fuel filler neck.
- Screw shaft end -1- of fuel extractor -VAS 5190- onto fuel filler neck.
- Push extraction hose into fuel tank until marking on hose -arrow- coincides with shaft end.



 Note

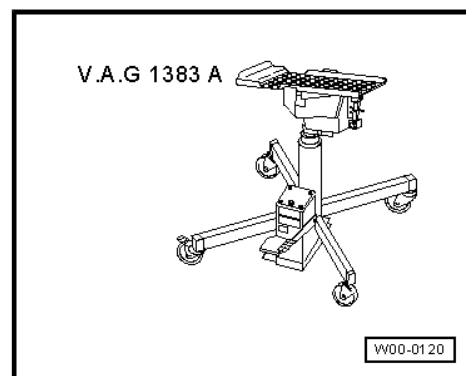
- ◆ *The procedure when using a fuel extractor without shaft end is basically the same.*
- ◆ *In this case, make a mark -arrow- on the extraction hose at distance -a- = 1,305 mm from the end of the hose using insulating tape. The extraction hose has been properly inserted when the affixed mark is level with the edge of the filler neck.*
- ◆ *If hose is difficult to insert, apply a thin coat of engine oil. DO NOT use silicone-based lubricant.*
- Drain fuel tank via fuel filler neck.
- Carefully remove extraction hose.
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .



2.3 Removing and installing fuel tank with attached components

Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-



Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- To reduce weight, the fuel tank must be empty when it is removed from the vehicle. Drain the tank if necessary. Procedure ⇒ [page 13](#)
- Release the tank flap.



Caution

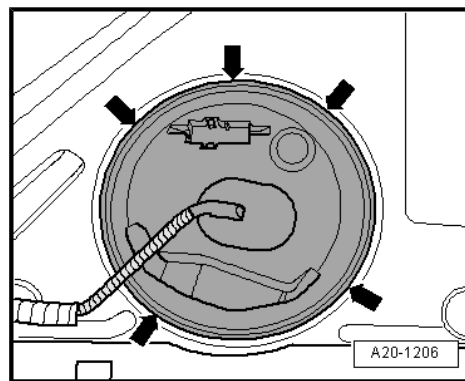
To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ **Observe notes on procedure for disconnecting the battery.**

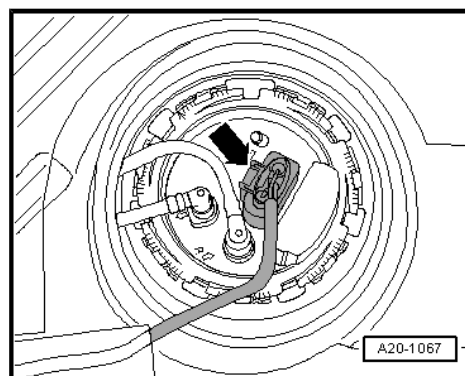
- Disconnect battery ⇒ Rep. gr. 27 .

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- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.

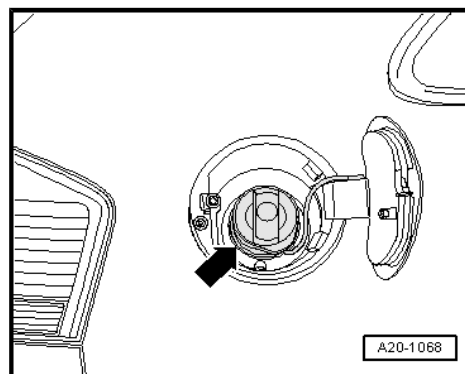


- Unplug electrical connector -arrow- at flange.

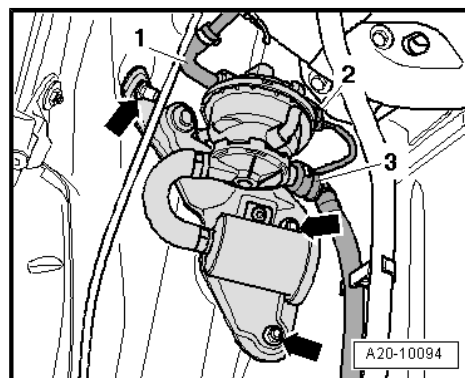


- Open the tank flap.
- Clean area around fuel filler neck.
- Remove filler cap -arrow- from fuel filler neck.
- Seal opening of fuel filler neck with a piece of clean foam or similar to prevent dirt from dropping into the tank.

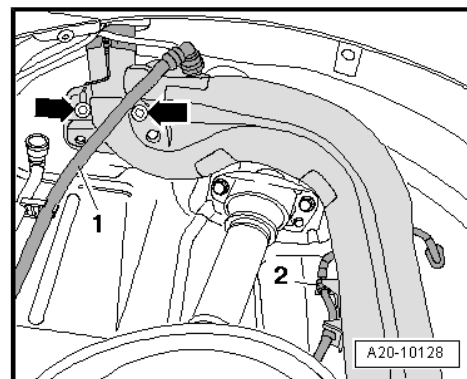
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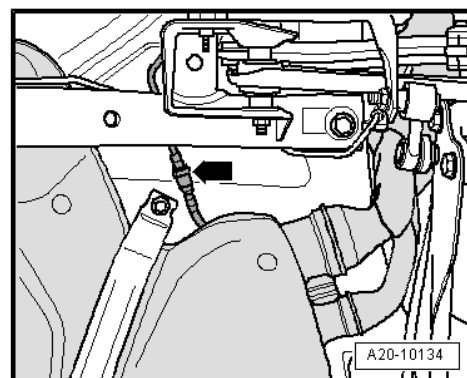
- Remove rear right wheel housing liner ⇒ Rep. gr. 66 .
- Detach breather line -1-.
- Unplug electrical connector -2-.
- Press release tab and disconnect breather line -3-.
- Unscrew nuts -arrows-.
- Detach diagnostic pump with bracket.



- Press release tab and remove breather line -1- leading to activated charcoal filter.
- Unclip breather line from bracket.
- Detach electrical wire -2- for ABS speed sensor from bracket on fuel filler neck.
- Unscrew bolts -arrows- for fuel filler neck.

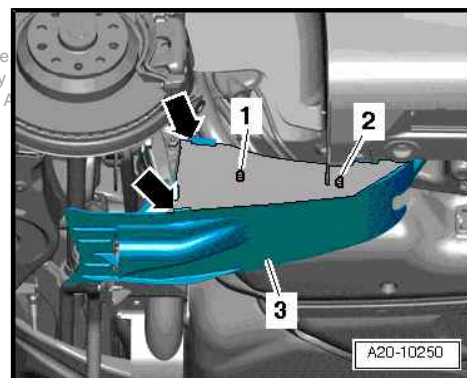


- Press release tab and disconnect breather line -arrow- leading to activated charcoal filter.

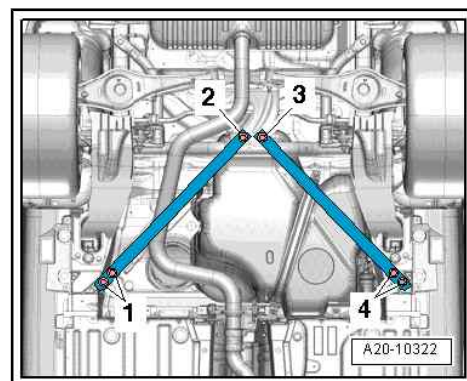


Audi A3 Cabriolet:

- Remove stone deflector -3- on trailing arm (right-side); to do so, press out spreader pins -1- and -2- and disengage stone deflector -arrows-.

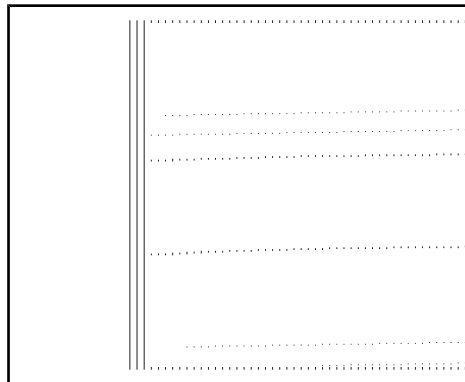


- Remove bolts -1 ... 4- and detach diagonal struts.



Continued for all vehicles:

- Loosen nuts on clamp -arrows-.
- Push the clamp back in order to separate the exhaust system.



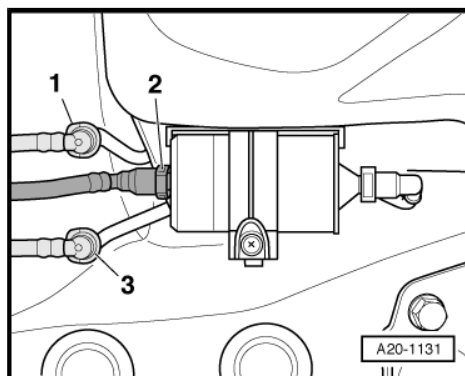
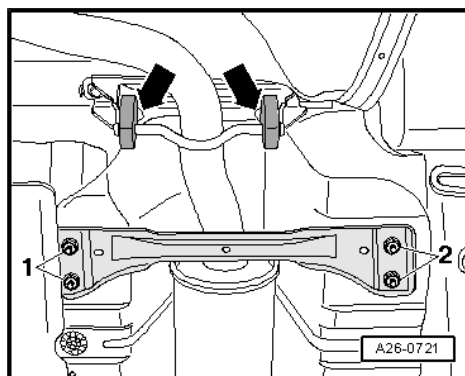
- Remove rear cross member for underbody; to do so, unscrew nuts -1- and -2-.



Note

A second person will be required for detaching rear section of exhaust system.

- Disengage exhaust system at rubber mountings -arrows-.
- Disengage rear silencer at the rubber mountings and remove rear section of exhaust system.
- Press release tabs and disconnect breather lines -1- (white) and -3- (green) at front right of fuel tank.



WARNING

The fuel system operates at high pressure - risk of injuries!

- ♦ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

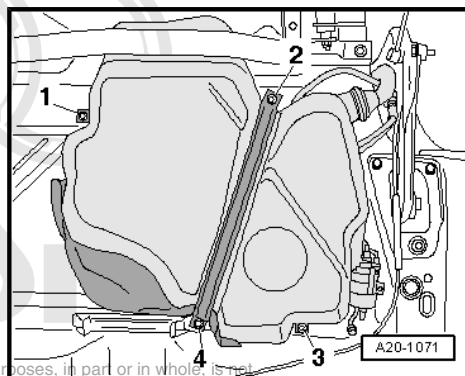
- Press release tab and disconnect fuel line -2- (black) at fuel filter.
- First unscrew bolts -1- and -3-.



WARNING

To reduce weight, fuel tank must be empty upon removal.

- Position engine and gearbox jack - V.A.G 1383 A- below vehicle to support tank.
- Remove bolts -2- and -4-.
- Remove fuel tank downwards (turning it sideways as required).

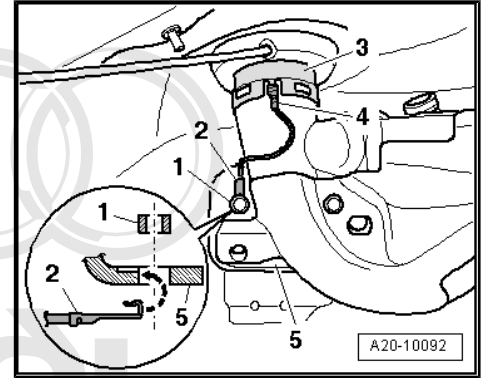


Installing

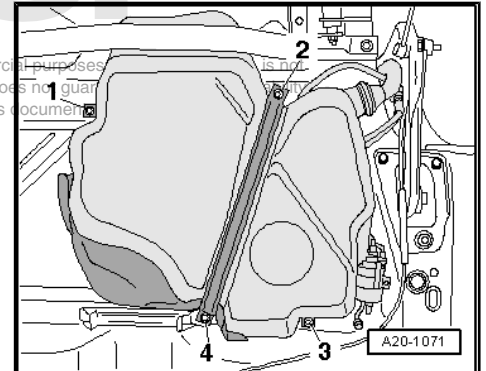
- Tightening torques ⇒ [page 12](#)

Installation is carried out in the reverse order; note the following:

- Check the earth wiring at both ends for traces of oxidation and remove oxidation if necessary.
- Check installation position of earth connection:
 - Connector -4- must be seated securely on metal ring -3-.
 - Contact tab -2- must be attached to fuel tank -5- and secured with spacer bush -1-.



- Position fuel tank with securing strap on underbody, using engine and gearbox jack - V.A.G 1383 A- .
- When installing fuel tank, make sure that the fuel filler neck is correctly inserted into the opening on the body.
- Secure fuel tank by first tightening bolts at points -2- and -4-, then at points -1- and -3-.



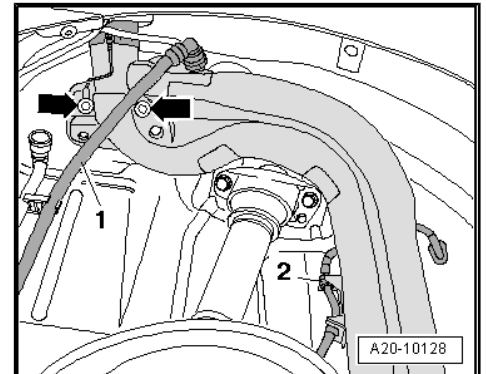
- Secure fuel filler neck by tightening two flange bolts -arrows- (rear bolt also secures contact tab for earth connection).



Caution

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

- **Specification: approx. 0 Ohm**



- Attach electrical wire -2- of ABS speed sensor at bracket on fuel filler neck.
- Install breather line -1- going to activated charcoal filter.
 - The breather line should engage audibly.
- Install diagnostic pump with bracket ⇒ [page 139](#) .
- Install rear section of exhaust system ⇒ Rep. gr. 26 .
- Install diagonal struts ⇒ Rep. gr. 42 .
- Install rear right wheel housing liner ⇒ Rep. gr. 66 .
- Install rear seat bench ⇒ Rep. gr. 72 .
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .

3 Fuel delivery unit and fuel gauge sender - all vehicles with front-wheel drive

3.1 Exploded view - fuel delivery unit and fuel gauge sender

1 - Fuel delivery unit

- ☐ Different versions available ⇒ Electronic parts catalogue
- ☐ Checking fuel pump (electrical test) ⇒ [page 21](#)
- ☐ Checking residual pressure ⇒ [page 22](#)
- ☐ Removing and installing ⇒ [page 30](#)

2 - Seal

- ☐ Renew
- ☐ Install dry

3 - Fuel supply line

- ☐ Black
- ☐ To fuel filter
- ☐ Do not kink
- ☐ Attached to connection marked "V" on flange
- ☐ To disconnect from flange, press release tab on connection piece

4 - Fuel return line

- ☐ Blue
- ☐ Do not kink
- ☐ Attached to connection marked "R" on flange
- ☐ To disconnect from flange, press release tab on connection piece

5 - Electrical connector

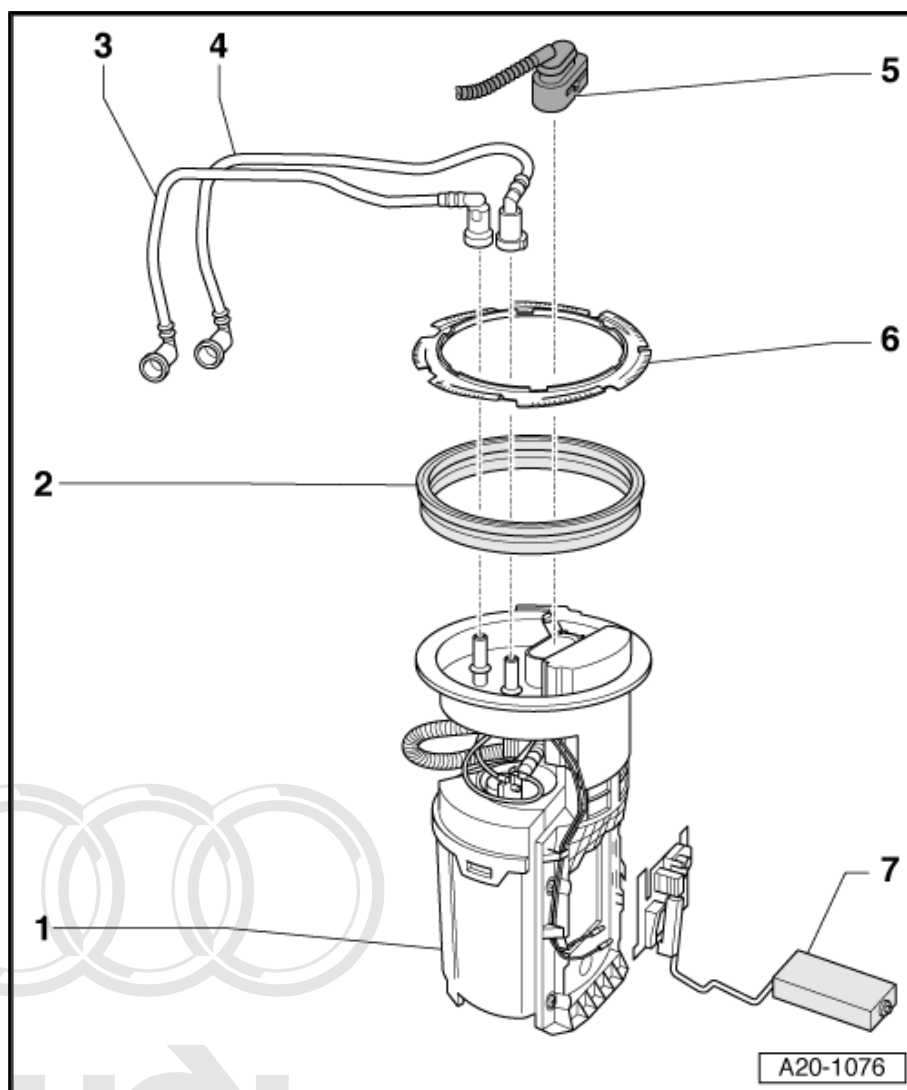
- ☐ For fuel system pressurisation pump - G6- and fuel gauge sender - G-

6 - Locking ring

- ☐ Remove and install using wrench - T10202
- ☐ Tighten to 110 Nm

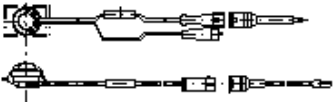
7 - Fuel gauge sender - G-

- ☐ Different versions available ⇒ Electronic parts catalogue
- ☐ Checking resistance values ⇒ [page 35](#)
- ☐ Removing and installing: vehicles up to approx. 11.2004 ⇒ [page 38](#) , vehicles from approx. 11.2004 onwards ⇒ [page 38](#)



3.2 Checking fuel pump (electrical test) - all engines

Special tools and workshop equipment required

V.A.G 1348/3A 	V.A.G 1526 B 
V.A.G 1594 C 	
	G20-0048

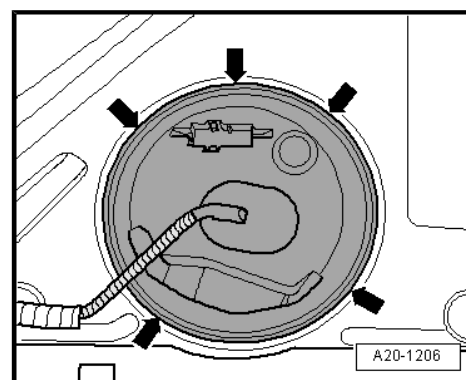
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- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-
- ◆ Hand-held multimeter - V.A.G 1526C-
- ◆ Auxiliary measuring set - V.A.G 1594C-

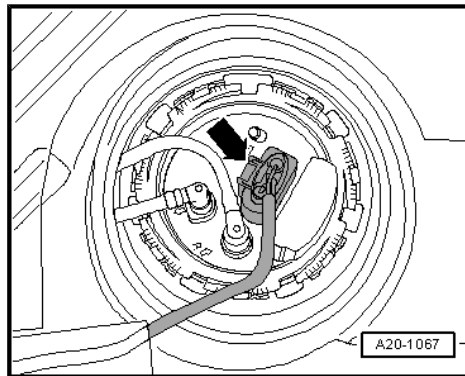
Procedure

Observe test conditions ⇒ [page 2](#) .

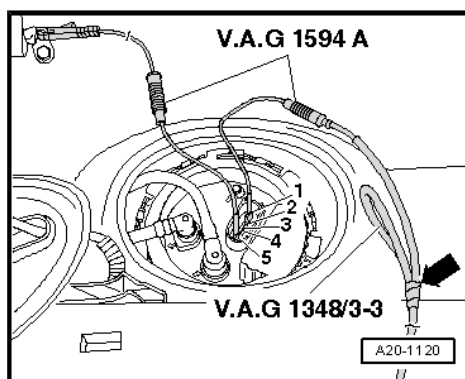
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+”.
- Press remote control button.
- Pump should start running audibly.



Note

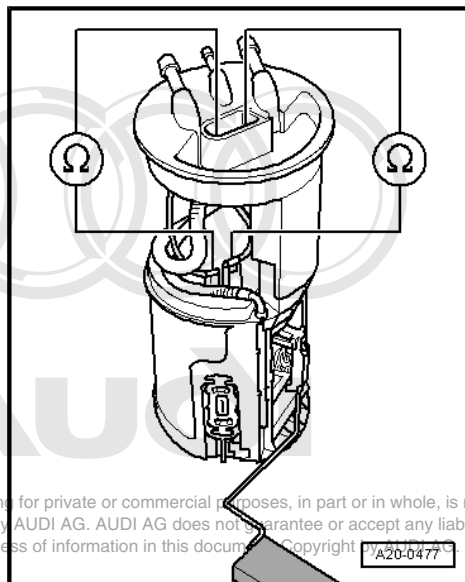
The fuel pump runs very quietly. Where possible, avoid noisy surroundings for this test.

If no noise can be heard from pump:

- Remove fuel delivery unit ⇒ [page 30](#) .
- Check that the electrical wires between flange and fuel pump are connected and test for continuity.

If no fault is found in wiring, fuel pump is defective. Renew fuel delivery unit.

- Install fuel delivery unit ⇒ [page 32](#) .

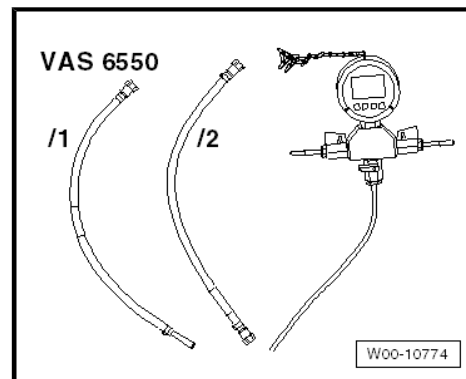


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3.3 Checking fuel pressure and residual pressure (up to high-pressure pump)

Special tools and workshop equipment required

- ◆ Pressure tester - VAS 6550- with adapters - VAS 6550/1- and -VAS 6550/2-



- ◆ Fuel-resistant measuring container

Test conditions

- Battery voltage at least 12.5 V
- Fuel filter OK.
- Fuel tank at least $\frac{1}{4}$ full.
- Fuel pump control unit - J538- OK (check)
- Ignition switched off.

Test sequence

 **WARNING**

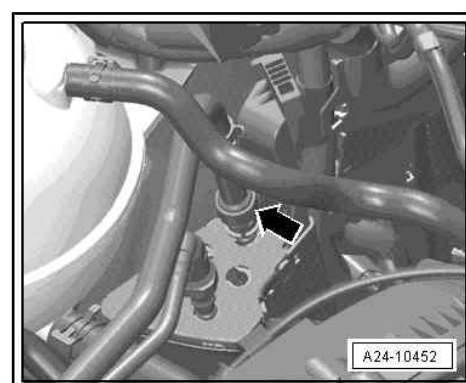
The fuel system is pressurised.

Risk of injury as fuel may spray out.

- *Put on safety goggles.*
- *Put on protective gloves.*
- *Release pressure (wrap a clean cloth around connection and open connection carefully).*

- Lift release tab and disconnect fuel supply line -arrow-.

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- Connect pressure tester - VAS 6550- with adapters - VAS 6550/1- and -VAS 6550/2- to fuel supply line.
- Make sure that drain tap (centre hose) is closed and cut-off valves (left and right) are open.
- Switch on ignition.
- Fuel pump will run for approx. 5 seconds and build up fuel pressure.
- Read fuel pressure off pressure tester - VAS 6550- .
- Specification: 4.0 ... 7.0 bar.

If specification is not obtained:

- Check delivery rate of fuel pump ⇒ [page 25](#) / ⇒ [page 27](#) .

Checking residual pressure

- Check system for leaks and check residual pressure by watching the drop in pressure on the pressure tester - VAS 6550- .
- After 10 minutes pressure should still be at least 3 bar.

If the residual pressure drops below 3 bar:

- ◆ Check union between pressure tester - VAS 6550- and fuel supply line for leaks.
- ◆ Check pressure tester - VAS 6550- for leaks.
- ◆ Check fuel lines and their connections for leaks.
- ◆ Renew fuel filter with integrated fuel pressure regulator ⇒ [page 123](#) . Then repeat the test.
- ◆ If fuel filter is OK, renew fuel pump ⇒ [page 30](#) .

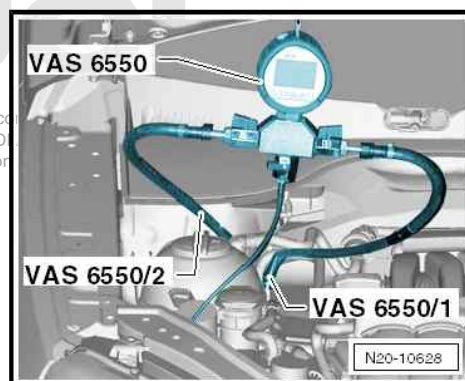
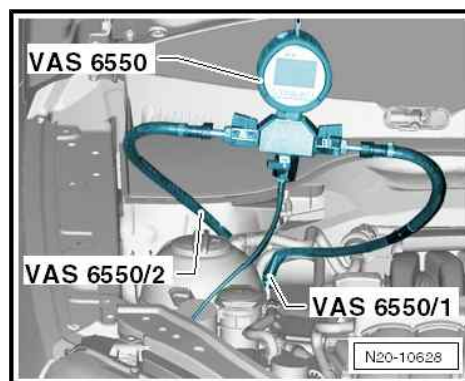
Assembly is carried out in the reverse order; note the following:

- The ignition must be switched off.

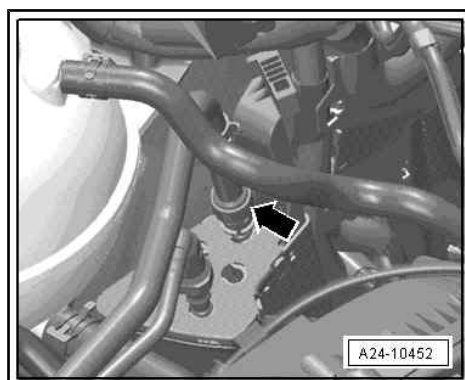


Note

Before removing the pressure tester, release the fuel pressure by opening the drain tap (centre hose). Hold end of hose into a measuring container.



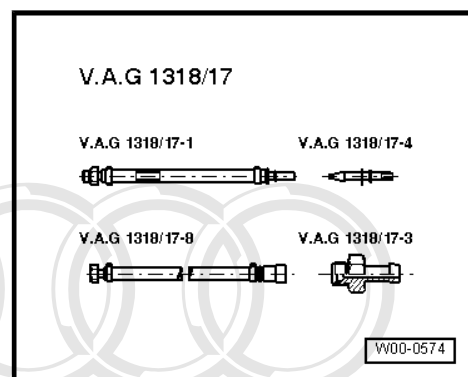
- Re-attach fuel supply line -arrow- (make sure that all parts are clean and that there are no leaks).



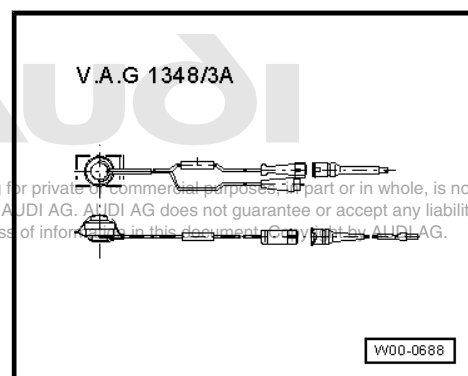
3.4 Checking fuel pump delivery rate - 1.6 ltr. engine (2 valve)

Special tools and workshop equipment required

- ◆ Adapter -V.A.G 1318/17-1- from adapter set - V.A.G 1318/17-



- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-



- ◆ Auxiliary measuring set - V.A.G 1594C-

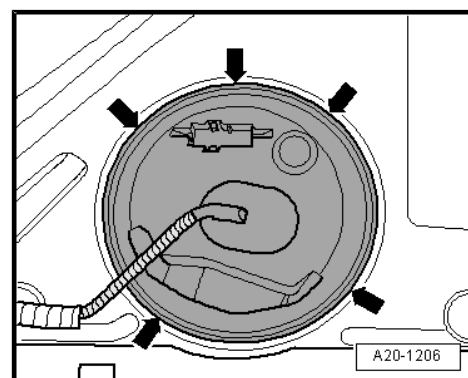


- ◆ Fuel-resistant measuring container

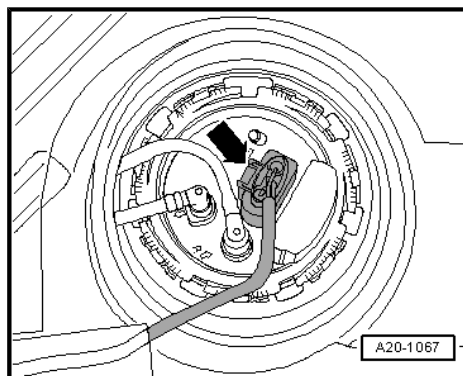
Procedure

Observe test conditions ⇒ [page 2](#) .

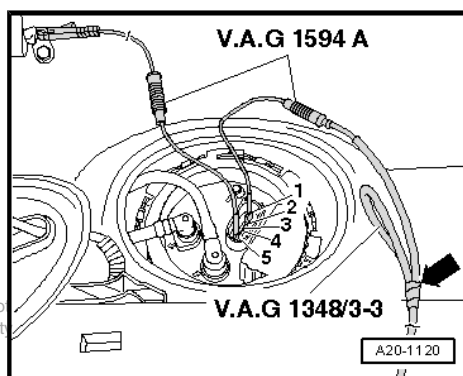
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+”
- Remove filler cap from fuel filler neck.



WARNING

The fuel system operates at high pressure - risk of injuries!

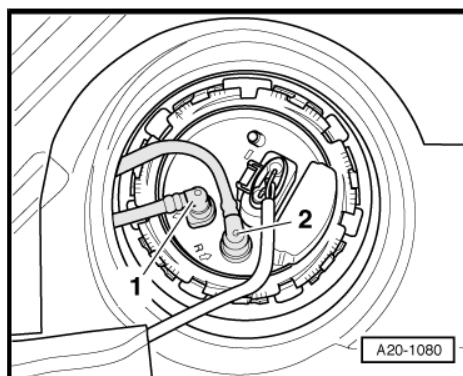
- ♦ To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.

- Press release tab and disconnect fuel return line -2-.

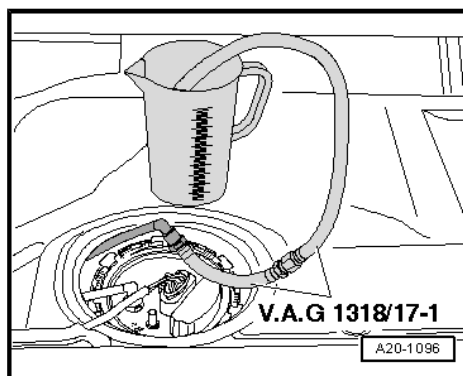


Note

Fuel supply line -1- remains connected.



- Fit adapter -V.A.G 1318/17-1- onto disconnected fuel return line and hold adapter hose in measuring container.
- Press remote control button for 15 seconds.



- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



Note

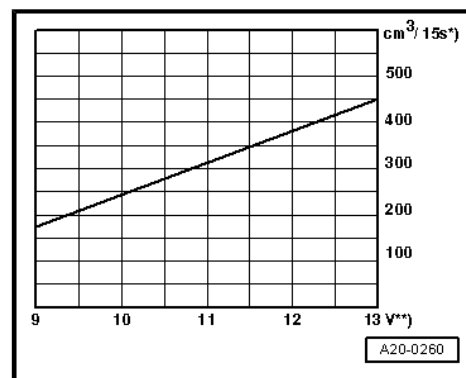
Voltage at fuel pump with engine stationary and pump running is approx. 2 volts less than battery voltage.

If minimum delivery rate is not reached, check for the following causes:

- ◆ Fuel lines have been crushed.
- ◆ Fuel filter is blocked.
- ◆ Fuel pump is defective

Assembly is carried out in the reverse order, note the following:

- Install rear seat bench ⇒ Rep. gr. 72 .

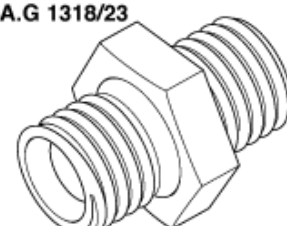
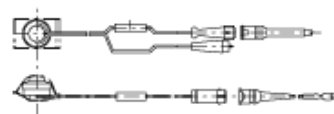
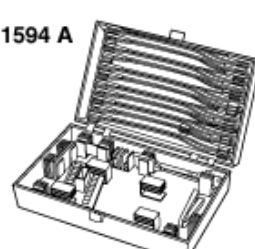


3.5 Checking fuel pump control unit - J538- - FSI and TFSI engines

- ◆ On vehicles with FSI and TFSI engines, the voltage for the fuel pump is supplied via fuel pump control unit - J538- .
- ◆ Check fuel pump control unit -J538- in "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

3.6 Checking fuel pump delivery rate - FSI and TFSI engines

Special tools and workshop equipment required

V.A.G 1318 	V.A.G 1318/11 
V.A.G 1318/17 V.A.G 1318/17-1 V.A.G 1318/17-4  V.A.G 1318/17-8 V.A.G 1318/17-3 	V.A.G 1318/23 
V.A.G 1348/3A 	V.A.G 1594 A  G20-0045

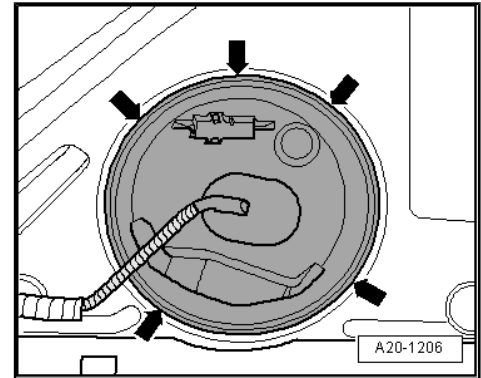
- ◆ K-Jetronic pressure tester - V.A.G 1318-
- ◆ Adapter - V.A.G 1318/11-
- ◆ Adapter -V.A.G 1318/17-1- from adapter set - V.A.G 1318/17-
- ◆ Connector - V.A.G 1318/23-
- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-
- ◆ Auxiliary measuring set - V.A.G 1594C-
- ◆ Fuel-resistant measuring container

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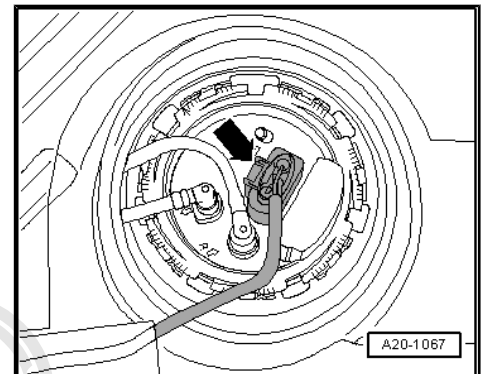
Procedure

Observe test conditions ⇒ [page 2](#) .

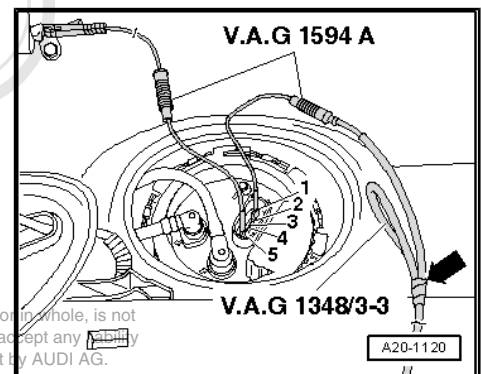
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+”.
- Remove filler cap from fuel filler neck.



WARNING

The fuel system operates at high pressure - risk of injuries!

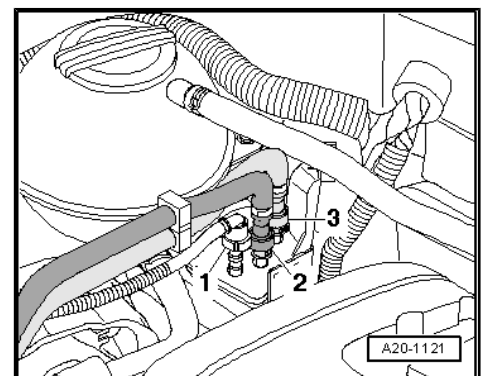
- ◆ ***To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.***

- Disconnect fuel supply line -3- (lift release tab).

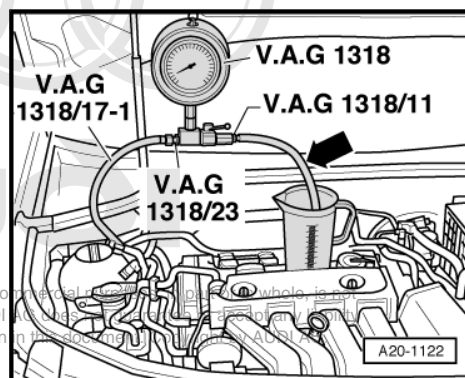


Note

The fuel return line -2- and vacuum line -1- remain connected (if fitted).



- Screw connector - V.A.G 1318/23- and adapter -V.A.G 1318/17-1- onto K-Jetronic pressure tester - V.A.G 1318- .
- Fit adapter -V.A.G 1318/17-1- onto disconnected fuel supply line.
- Screw adapter - V.A.G 1318/11- onto K-Jetronic pressure tester - V.A.G 1318- . Attach test hose -arrow- and hold end of hose in measuring container.
- Open cut-off valve on pressure tester. Lever must point in direction of flow.
- Build up pressure in fuel system by pressing the remote control and slowly closing the cut-off valve on the pressure tester.
- Specification: 4 bar
- From this point on do not move position of cut-off valve.
- Empty the measuring container.
- Press remote control button for 15 seconds.
- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



Note

Voltage at fuel pump with engine stationary and pump running is approx. 2 volts less than battery voltage.

If minimum delivery rate is not reached, check for the following causes:

- ◆ Fuel lines have been crushed.
- ◆ Fuel filter is blocked.
- ◆ Fuel pump is defective.

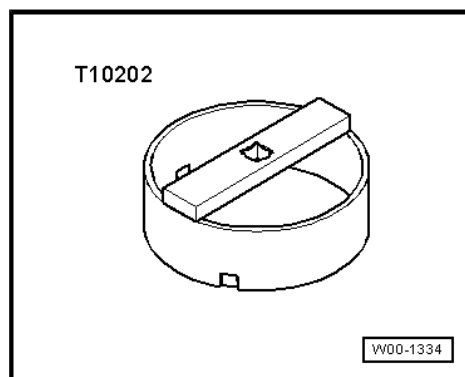
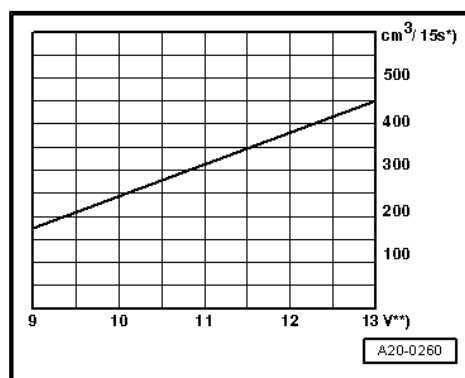
Assembly is carried out in the reverse order; note the following:

- Install rear seat bench ⇒ Rep. gr. 72 .

3.7 Removing and installing fuel delivery unit

Special tools and workshop equipment required

- ◆ Wrench - T10202-



Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- The fuel tank must not be more than $\frac{3}{4}$ full when removing the fuel delivery unit. Drain the tank if necessary. Procedure ➔ [page 5](#)

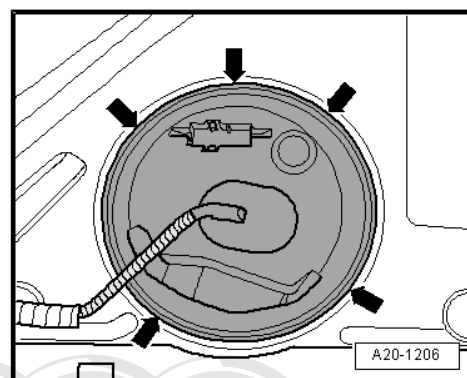


Caution

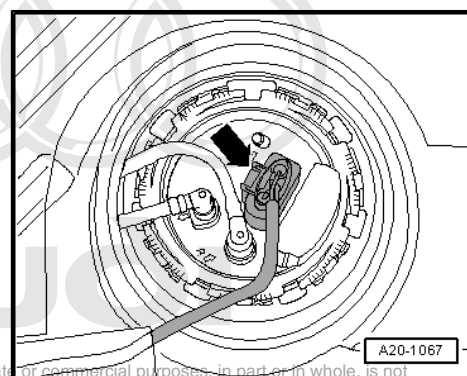
To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ➔ Rep. gr. 27 .
- Remove rear seat bench ➔ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.



- Unplug electrical connector -arrow- at flange.



- Mark fuel supply line -1- and fuel return line -2-.



WARNING

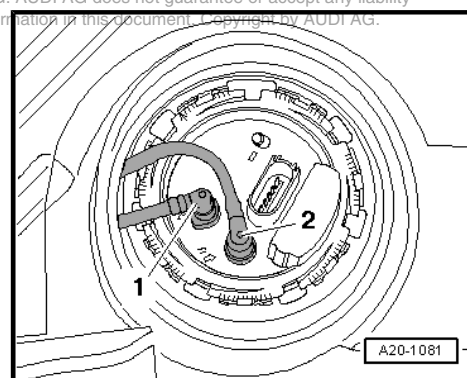
The fuel system operates at high pressure - risk of injuries!

- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

- Detach both lines from flange (press release tabs).

Vehicles with auxiliary heater:

- In addition, disconnect fuel supply line for auxiliary heater. For details of procedure, refer to ➔ Rep. gr. 82 .



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Continued for all vehicles:



Caution

The fuel tank must not be more than $\frac{3}{4}$ full when removing the fuel delivery unit. Otherwise a large amount of fuel will escape.

- Unscrew locking ring using wrench - T10202- .
- Pull fuel delivery unit with seal out of opening in fuel tank.



Note

- ♦ *When removing fuel delivery unit, make sure you do not bend float arm of fuel gauge sender -G- .*
- ♦ *Keep in mind that the fuel delivery unit still contains fuel.*

Installing

- Tightening torque ⇒ [page 20](#)

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Installation is carried out in the reverse order; note the following:



Note

- ♦ *Renew seal.*
- ♦ *Take care not to bend the fuel gauge sender when fitting fuel delivery unit.*

- Insert fuel delivery unit into fuel tank.
- Install new seal for flange (seal must be installed dry).
- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange must be between tabs -1- and -3- on fuel tank.



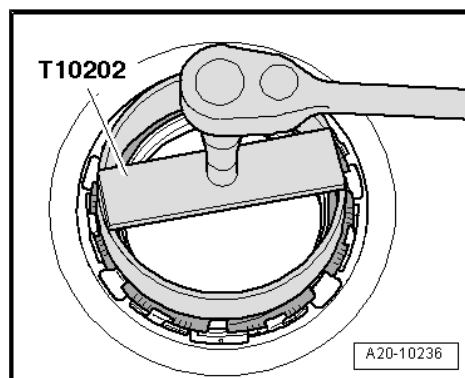
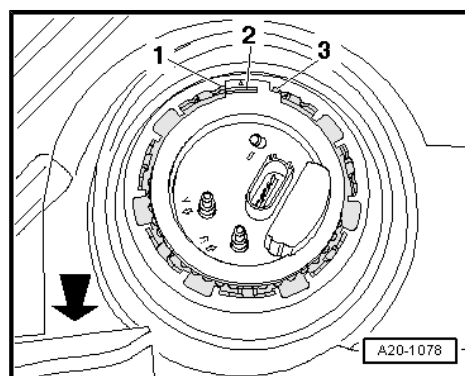
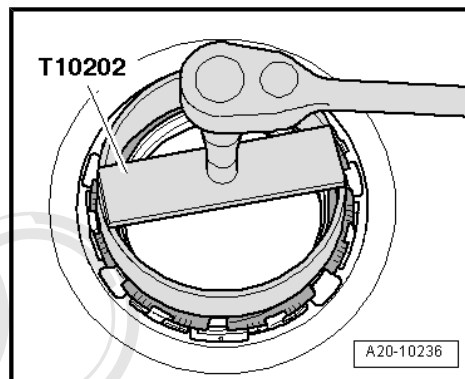
Note

-Arrow- points in direction of travel.

- Tighten locking ring.
- Install rear seat bench ⇒ Rep. gr. 72 .
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .

Vehicles with FSI and TFSI engines:

- After renewing the fuel delivery unit, the fuel pump must be adapted ⇒ [page 33](#) .



3.8 Adapting fuel pump after renewing fuel delivery unit - FSI and TFSI engines



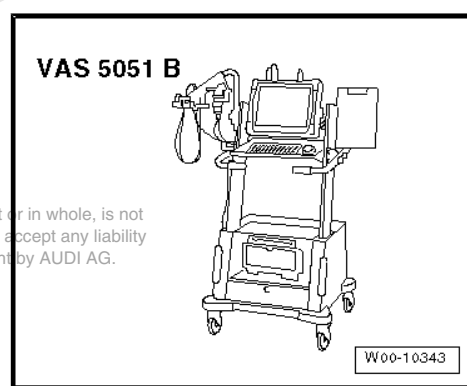
Note

- ◆ If the fuel pump is renewed on certain vehicles with an FSI or TFSI engine, the fuel pump has to be adapted to the engine control unit.
- ◆ On the 1.4 ltr. TFSI engine, the fuel pump does not have to be adapted.
- ◆ On the 1.6 ltr. FSI engine with engine code BLF from model year 2006 onwards, the fuel pump does not have to be adapted.

Special tools and workshop equipment required

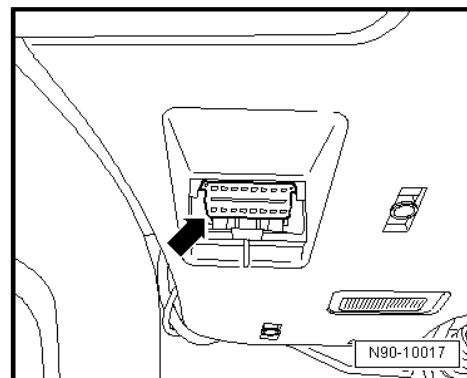
- ◆ Vehicle diagnostic, testing and information system - VAS 5051B-

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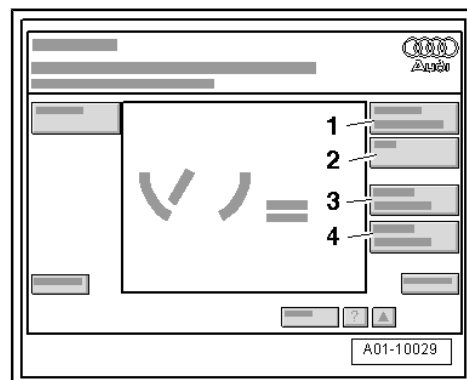
Procedure

- Vehicle diagnostic, testing and information system - VAS 5051B- connected to diagnostic connection -arrow-.
- No faults stored in event memory.
- Engine running at idling speed.



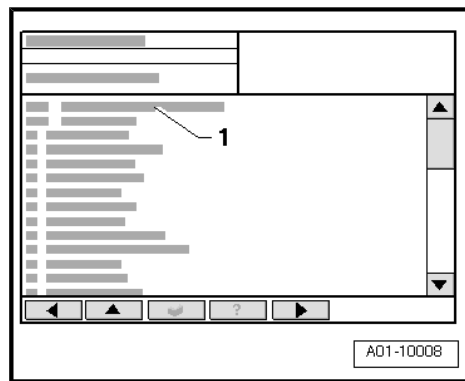
Display on -VAS 5051B- :

- Select Vehicle self-diagnosis from the list -item 1-.



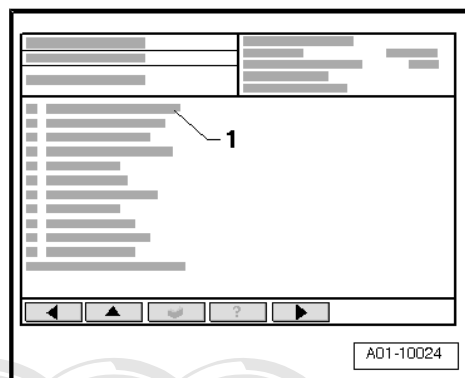
Display on -VAS 5051B- :

- From menu -1-, select vehicle system “Engine electronics” and press key to advance.



Display on -VAS 5051B- :

- From menu -1-, select function “Basic setting” and press key to advance.



Display on -VAS 5051B- :

Vehicles with 1.6 ltr. FSI engine:

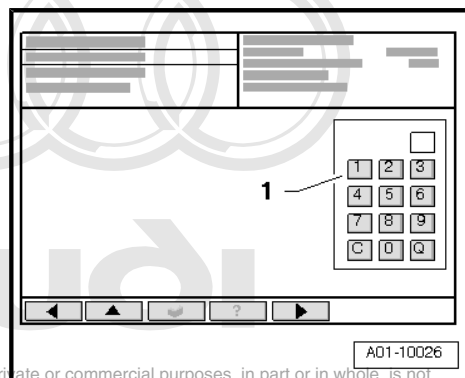
- Press keys on keypad -1- to select “Display group 238” and confirm entry by pressing key.

Vehicles with 1.8 ltr. TFSI engine:



Note

On the 1.8 ltr. TFSI engine, the fuel pump does not have to be adapted.



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Vehicles with 2.0 ltr. FSI engine:

- Press keys on keypad -1- to select “Display group 243” and confirm entry by pressing key.

Vehicles with 2.0 ltr. TFSI engine:

- Press keys on keypad -1- to select “Display group 103” and confirm entry by pressing key.

Continued for all vehicles:

- Activate basic setting by touching **Activate** key -A-.

Display on -VAS 5051B- :

- Check display in zone -4-.

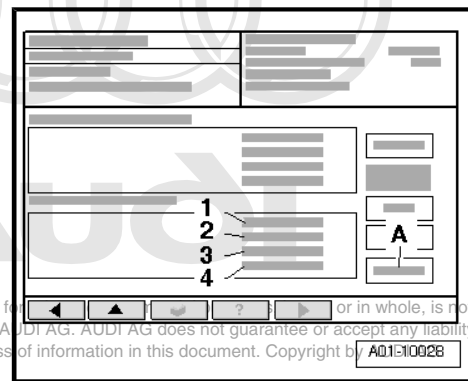
Indicated on display: "ADP runs". When the fuel pump has been successfully adapted, the display will show "ADP OK".



Note

If display shows "ADP n.OK": interrogate event memory.

- Exit "Basic setting" function by pressing key.
- Select function "End output".
- Switch off ignition and unplug diagnostic connector.



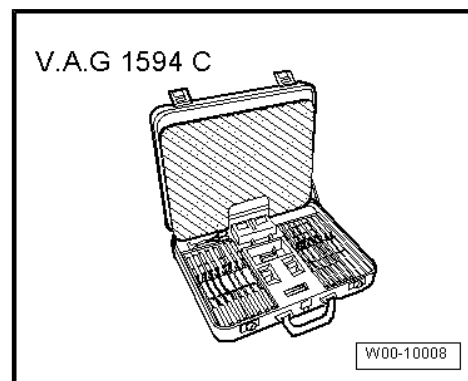
3.9 Checking fuel gauge sender - G-

Special tools and workshop equipment required

- ◆ Hand-held multimeter - V.A.G 1526C-

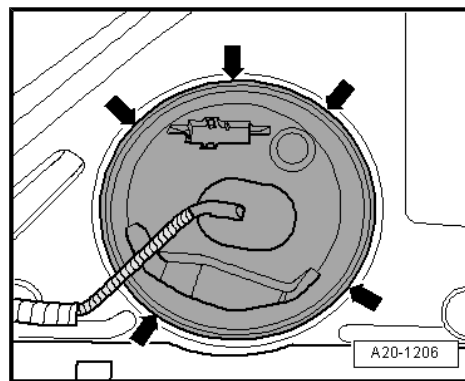


- ◆ Auxiliary measuring set - V.A.G 1594C-

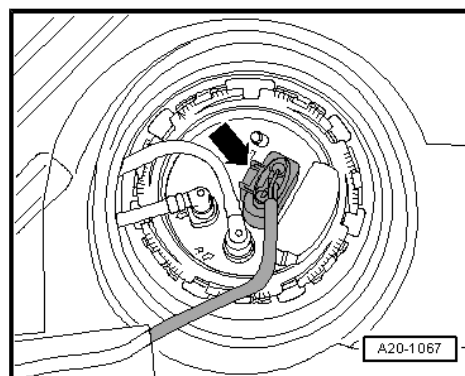


Procedure

- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.



- Unplug electrical connector -arrow- at flange.



Vehicles up to approx. 11.2004:



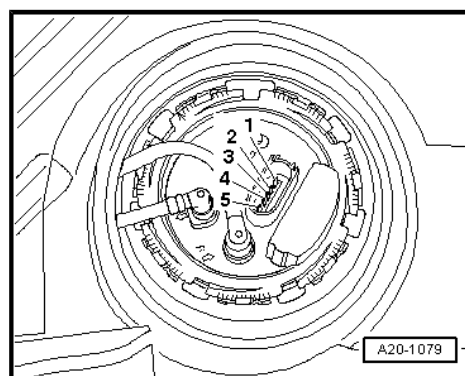
Note

In vehicles with two-wire sender, 4 contacts are connected in the connector for fuel gauge sender - G- .

- Connect multimeter (resistance test) between contacts -2- and -3-.

Fuel gauge sender - G- installed:

- Sender at lower stop: approx. 270 Ω.
- Sender at upper stop: approx. 70 Ω.



Note

- ♦ To test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel delivery unit ⇒ [page 30](#) and move the sender float all the way to its top or bottom position.

- ♦ If the resistance is 0 Ω, there is a short circuit. If the resistance is ∞ Ω, there is an open circuit in the wiring.

- ♦ The following values are obtained with the fuel gauge sender - G- removed, due to the greater travel of the float arm:

Fuel gauge sender - G- removed:

- Sender at lower stop: approx. 290 Ω.
- Sender at upper stop: approx. 54 Ω.

Assembly is carried out in the reverse order; note the following:

- Install rear seat bench ⇒ Rep. gr. 72 .

Vehicles from approx. 11.2004 onwards:

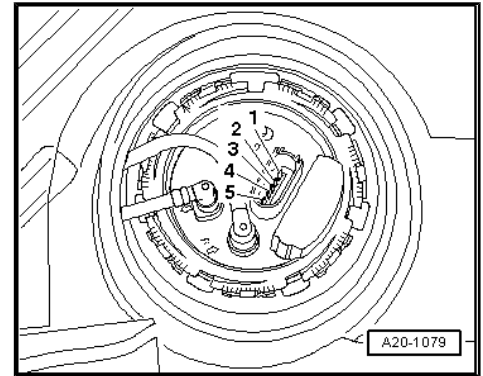
 Note

In vehicles with three-wire sender, 5 contacts are connected in the connector for fuel gauge sender - G-.

- Connect multimeter (resistance test) between contacts -2- and -3-.

Fuel gauge sender - G- installed:

- Sender at lower stop: approx. 270 Ω .
- Sender at upper stop: approx. 70 Ω .



 Note

- ◆ *To test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel delivery unit ⇒ page 30 and move the sender float all the way to its top or bottom position.*
- ◆ *If the resistance is 0 Ω , there is a short circuit. If the resistance is $\infty \Omega$, there is an open circuit in the wiring.*
- ◆ *The following values are obtained with the fuel gauge sender - G- removed, due to the greater travel of the float arm:*

Fuel gauge sender - G- removed:

- Sender at lower stop: approx. 290 Ω .
- Sender at upper stop: approx. 50 Ω .
- Connect multimeter (resistance test) between contacts -3- and -4-.

Fuel gauge sender - G- installed or removed:

- Sender in any position: approx. 340 Ω .

Assembly is carried out in the reverse order; note the following:

- Install rear seat bench ⇒ Rep. gr. 72 .

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3.10 Removing and installing fuel gauge sender - G- - vehicles up to approx. 11.2004

Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- Remove fuel delivery unit ⇒ [page 30](#) .



Caution

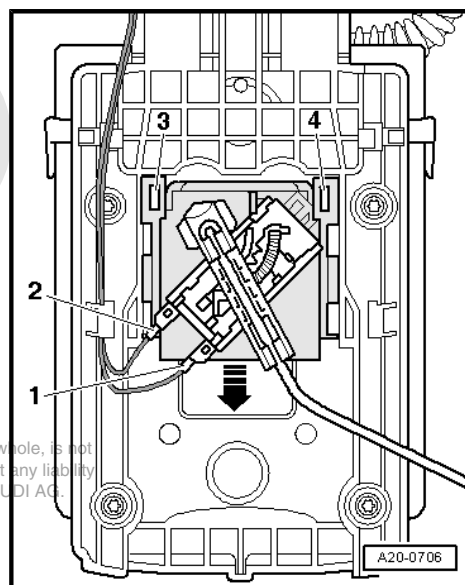
First release retaining tabs on connector contact before unplugging electrical connectors on fuel gauge sender - G- .

- Release and unplug electrical connectors -1- and -2-.
- Lift retaining tabs -3- and -4- with a screwdriver and pull fuel gauge sender - G- off downwards -arrow-.

Installing

Installation is carried out in the reverse order; note the following:

- Insert fuel gauge sender - G- into guides on fuel delivery unit and press upwards until it clicks into place.
- Plug in electrical connectors and check that they have engaged properly.
- Install fuel delivery unit ⇒ [page 32](#) ; observe instructions for connecting battery.



3.11 Removing and installing fuel gauge sender - G- - vehicles from approx. 11.2004 onwards

Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- Remove fuel delivery unit ⇒ [page 30](#) .

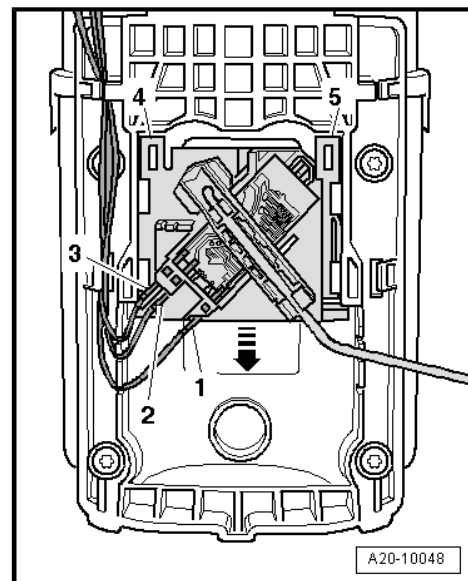
Version 1:



Caution

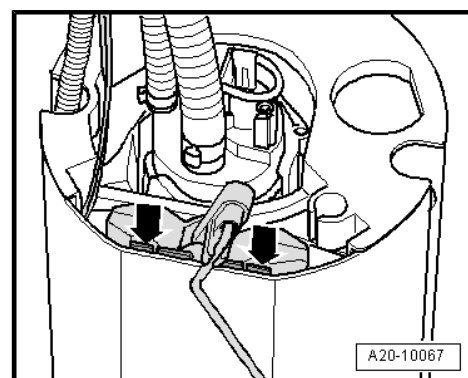
First release retaining tabs on connector contact before unplugging electrical connectors on fuel gauge sender - G- .

- Release and unplug electrical connectors -1 ... 3-.
- Lift retaining tabs -4- and -5- with a screwdriver and pull fuel gauge sender - G- off downwards -arrow-.



Version 2:

- Use screwdriver to release retaining tabs -arrows- and lift out fuel gauge sender - G- .



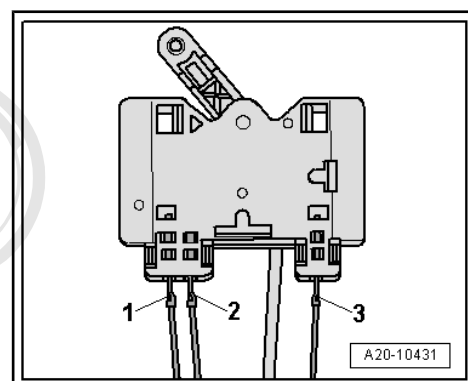
Caution

First release retaining tabs on connector contact before unplugging electrical connectors on fuel gauge sender - G- .

- Release and unplug electrical connectors -1 ... 3-.

Installing

Installation is carried out in the reverse order; note the following:

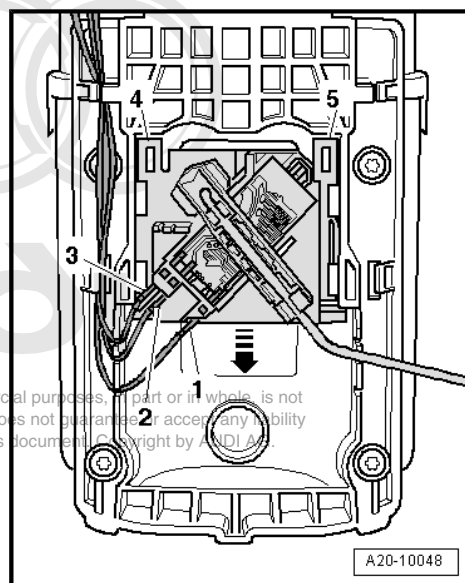


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Version 1:

- Insert fuel gauge sender - G- into guides on fuel delivery unit and press upwards until it clicks into place.
- Plug in electrical connectors -1 ... 3- and check that they have engaged properly.

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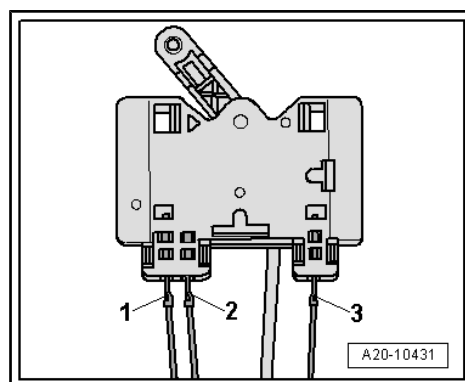


Version 2:

- Plug in electrical connectors -1 ... 3- and check that they have engaged properly.
- Insert fuel gauge sender - G- into guides on fuel delivery unit and press upwards until it clicks into place.

All versions (continued):

- Install fuel delivery unit ⇒ [page 32](#) ; observe instructions for connecting battery.



4 Fuel tank - rest-of-world vehicles with four-wheel drive

4.1 Exploded view - fuel tank with attached components



Note

The illustration shows a fuel system without fuel return line.

1 - Fuel line

- ☐ Black
- ☐ To engine
- ☐ Press release tab on connection piece to disconnect

2 - Breather line

- ☐ White
- ☐ From gravity valve to activated charcoal filter
- ☐ Clip onto fuel tank

3 - Electrical connector

- ☐ For fuel system pressurisation pump - G6- and fuel gauge sender - G-

4 - Seal

- ☐ Renew if damaged

5 - Filler cap

- ☐ Secured to tank flap unit

6 - Earth connection

- ☐ To eliminate electrostatic charge
- ☐ Installation position [⇒ page 42](#)
- ☐ Make sure connector is correctly seated and secure wire with flange bolt for fuel filler neck -item 7-.
- ☐ After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body – specification: approx. 0 Ω

7 - Flange bolt, 11 Nm

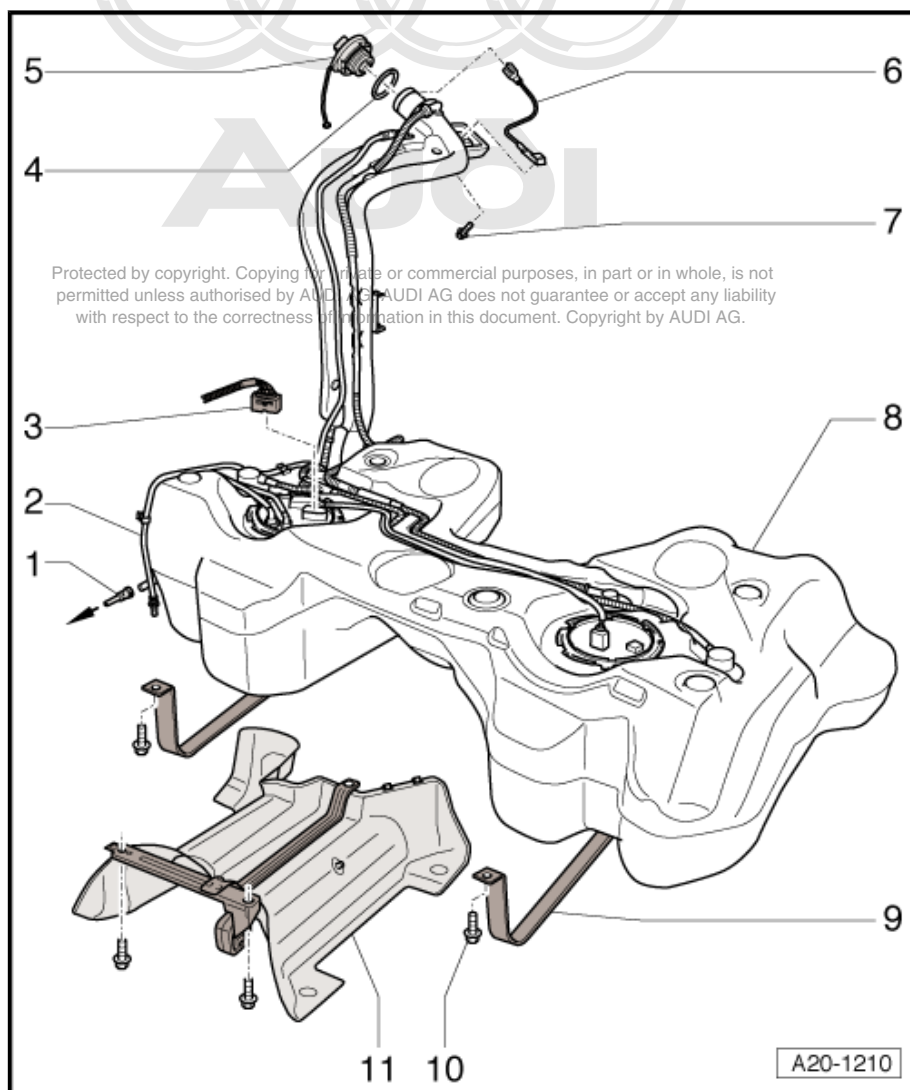
- ☐ Secures fuel filler neck and earth connection -item 6-

8 - Fuel tank

- ☐ Removing and installing [⇒ page 43](#)

9 - Securing strap

- ☐ Installation position: Fixing point (hole) points in direction of travel



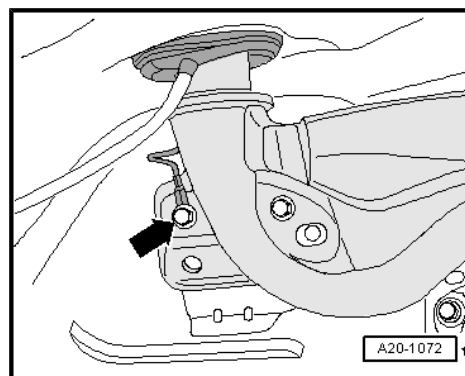
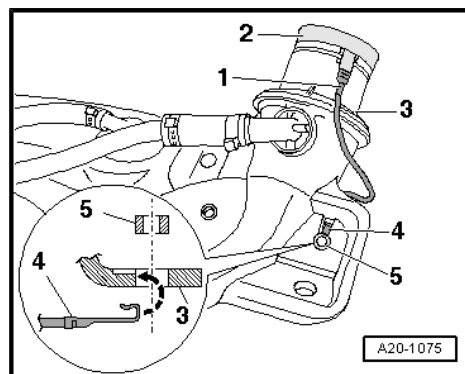
10 - 26 Nm

11 - Heat shield for fuel tank

- With support bracket

Installation position of earth connection

- Route earth connection as shown in illustration.
- First engage contact tab -4- of earth connection in mounting hole on fuel tank -3- and then press in spacer bush -5-.
- Ensure that connector -1- for earth connection is firmly seated on metal ring -2- on fuel filler neck.
- Secure contact tab for earth connection with securing bolt -arrow- for fuel filler neck.



Caution

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

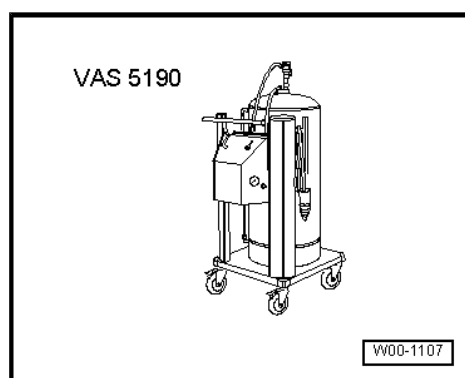
- *Specification: approx. 0 Ohm*

4.2 Draining fuel tank

Special tools and workshop equipment required

- ◆ Fuel extractor - VAS 5190-

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Procedure

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .



Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ⇒ Rep. gr. 27 .



Caution

Secure earth wire of fuel extractor -VAS 5190- to a bare metal part on the body.

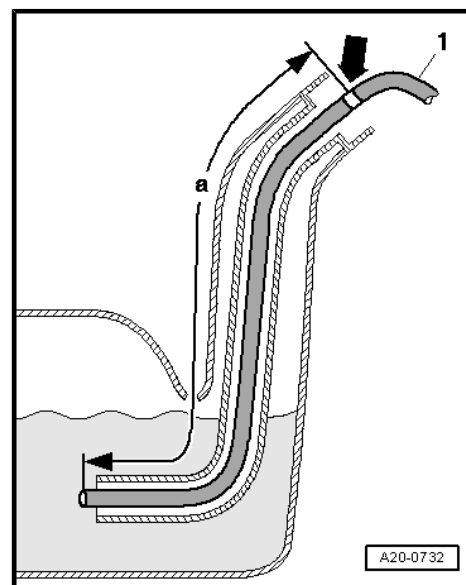
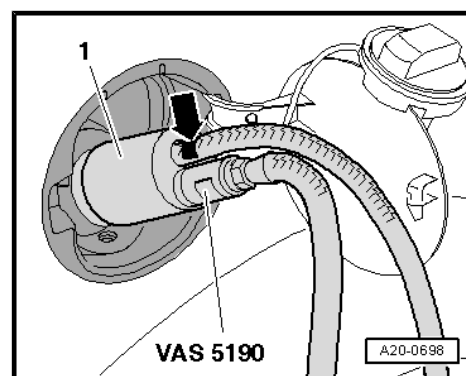
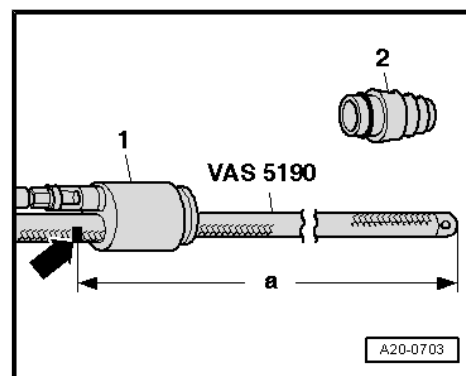
- Detach tapered adapter -2- from shaft end -1- of fuel extractor -VAS 5190- .
- Use insulating tape to mark the extraction hose -arrow- at a distance of -a- = 1,370 mm from the end of the hose.
- Remove filler cap from fuel filler neck.
- Screw shaft end -1- of fuel extractor -VAS 5190- onto fuel filler neck.
- Push extraction hose into fuel tank until marking on hose -arrow- coincides with shaft end.

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Note

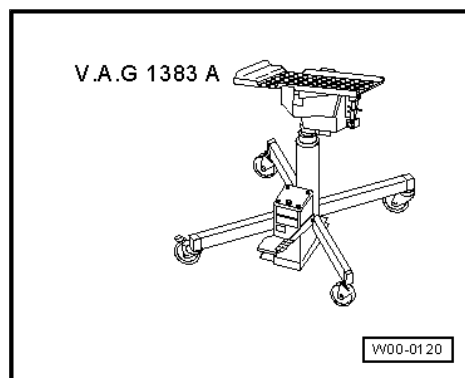
- ◆ *The procedure when using a fuel extractor without shaft end is basically the same.*
- ◆ *In this case, make a mark -arrow- on the extraction hose at distance -a- = 1,305 mm from the end of the hose using insulating tape. The extraction hose has been properly inserted when the affixed mark is level with the edge of the filler neck.*
- ◆ *If hose is difficult to insert, apply a thin coat of engine oil. DO NOT use silicone-based lubricant.*
- Drain fuel tank as much as possible through fuel filler neck.
- Carefully remove extraction hose.
- Remove fuel delivery unit ⇒ [page 66](#) .
- Extract remaining fuel from right chamber of fuel tank through opening for fuel delivery unit.
- Push hose into left chamber of fuel tank and extract remaining fuel.
- Re-install fuel delivery unit ⇒ [page 68](#) ; observe instructions for connecting battery.



4.3 Removing and installing fuel tank with attached components

Special tools and workshop equipment required

◆ Engine and gearbox jack - V.A.G 1383 A-



Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- To reduce weight, the fuel tank must be empty when it is removed from the vehicle. Drain the tank if necessary. Procedure ⇒ [page 42](#)

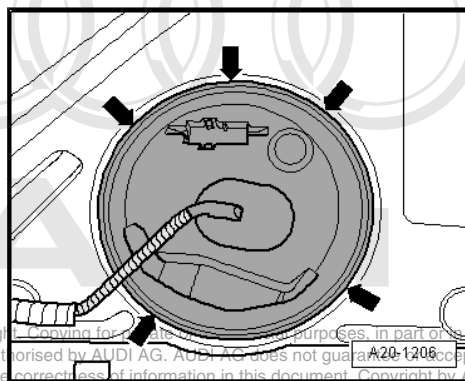


Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

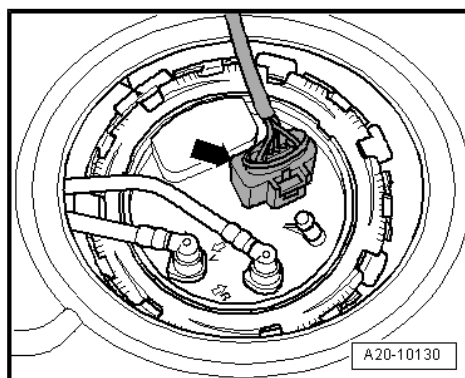
- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ⇒ Rep. gr. 27 .
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).

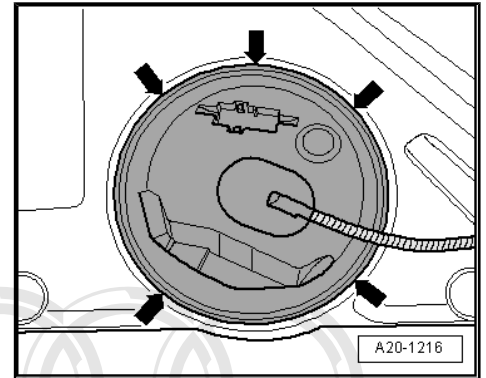


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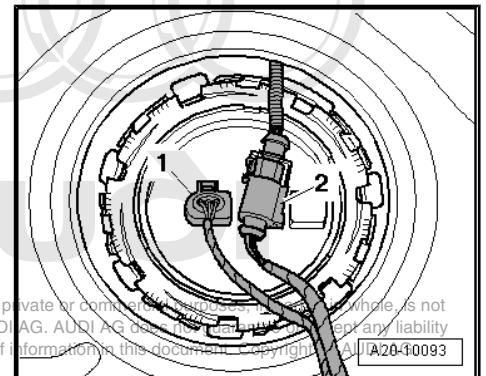
- Unplug electrical connector -arrow- at flange.



- Unclip the retaining tabs -arrows- for the flange cover (left-side).

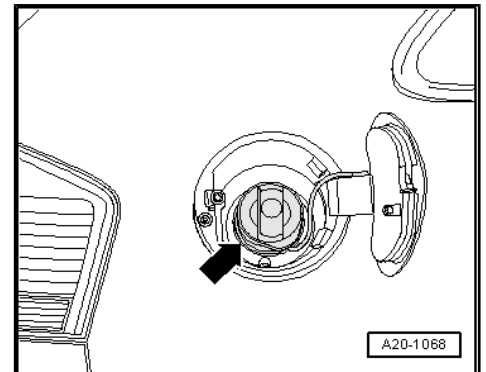


- Unplug electrical connector -1- at flange.
- Unplug electrical connector -2- for Haldex coupling.

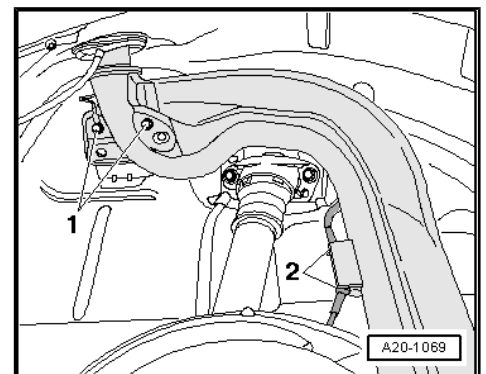


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- Open the tank flap.
- Clean area around fuel filler neck.
- Remove filler cap -arrow- from fuel filler neck.
- Seal opening of fuel filler neck with a piece of clean foam or similar to prevent dirt from dropping into the tank.



- Remove rear right wheel housing liner ⇒ Rep. gr. 66 .
- Unscrew bolts -1- for fuel filler neck.
- Detach electrical wire -2- for ABS speed sensor from bracket on fuel filler neck.



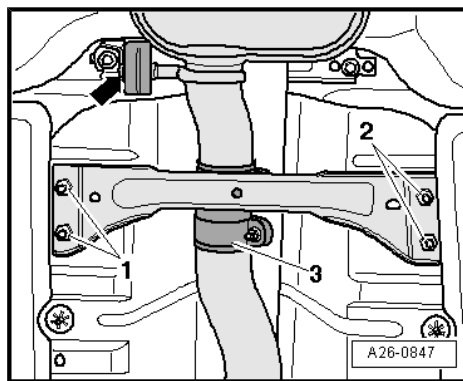
- Remove rear cross member for underbody; to do so, unscrew nuts -1- and -2-.



Caution

To protect flexible joints, secure front section of exhaust system to underbody with wire before you loosen bolt connections on clamp -3-.

- Disconnect exhaust system at clamp -3-.
- Unhook rear silencer at rubber mountings -arrow- and remove rear section of exhaust system.



Note

A second person will be required for detaching rear section of exhaust system.

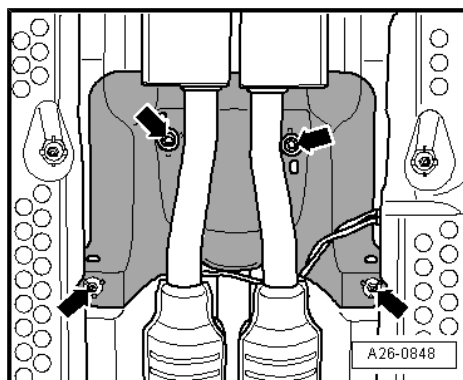
- Remove heat shield for propshaft -arrows-.
- Remove propshaft ⇒ Rep. gr. 39 .



WARNING

The fuel system operates at high pressure - risk of injuries!

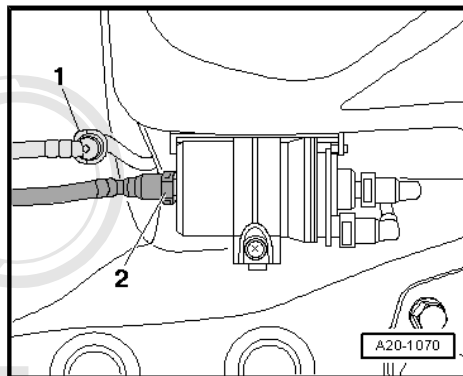
- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*



- Disconnect fuel line -2- (black) and breather line -1- (white) at front right of fuel tank (press release tabs).

Vehicles with auxiliary heater:

- In addition, disconnect fuel line leading to auxiliary heater at metering pump.



Continued for all vehicles:

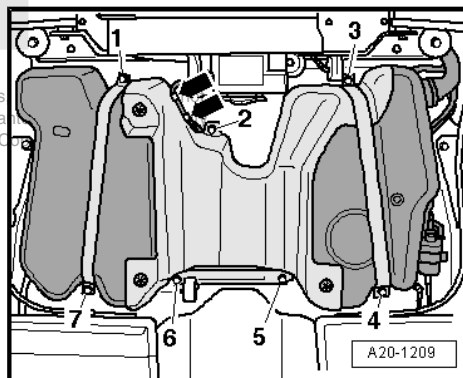


WARNING

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To reduce weight, fuel tank must be empty upon removal.

- First remove bolts -2-, 5- and -6-.
- Disengage wiring harness -arrows- and move clear.
- Position engine and gearbox jack - V.A.G 1383 A- below vehicle to support tank.
- Unscrew bolts -1, 3, 4- and -7-.



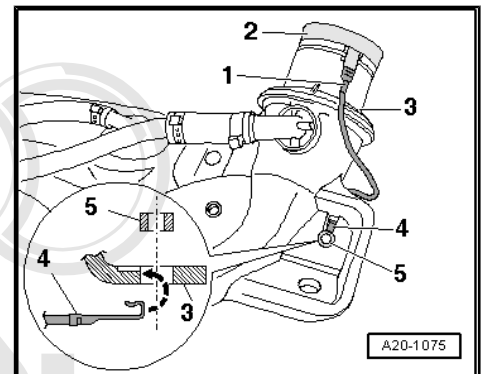
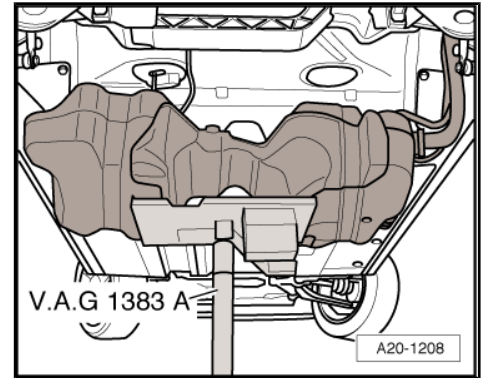
- Then lower fuel tank using engine and gearbox jack - V.A.G 1383 A- , simultaneously guiding fuel tank down by hand.
- Remove fuel tank downwards (turning it sideways as required).
- In addition, a 2nd mechanic will be required to guide the fuel filler neck on trailing arm out by hand.

Installing

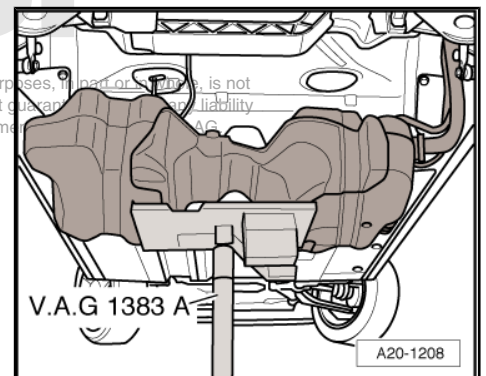
- Tightening torques ⇒ [page 41](#)

Installation is carried out in the reverse order; note the following:

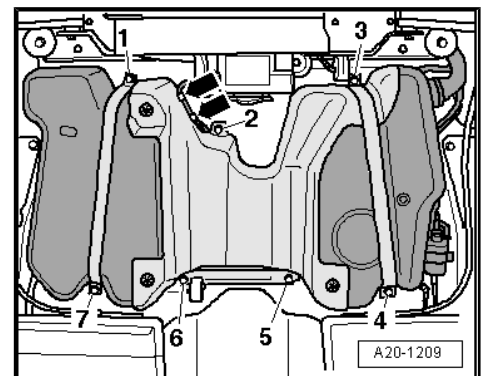
- Check the earth wiring at both ends for traces of oxidation and remove oxidation if necessary.
- Check installation position of earth connection:
 - Connector -1- must be seated securely on metal ring -2-.
 - Contact tab -4- must be attached to fuel tank -3- and secured with spacer bush -5-.



- Position fuel tank with securing straps on underbody using engine and gearbox jack - V.A.G 1383 A- .
- Attach wiring harness at top of fuel tank.
- When installing fuel tank, make sure that the fuel filler neck is correctly inserted into the opening on the body.



- Secure fuel tank by first tightening bolts at points -1, 3, 4- and -7-, then at points -2, 5- and -6-.

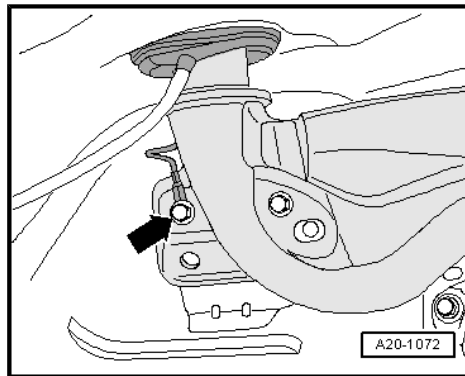


- Secure contact tab for earth connection with securing bolt -arrow- for fuel filler neck.

**Caution**

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

- *Specification: approx. 0 Ohm*



- Attach electrical wire for ABS speed sensor to bracket on fuel filler neck.
- Install rear right wheel housing liner ⇒ Rep. gr. 66 .
- Install propshaft ⇒ Rep. gr. 39 .
- Install rear section of exhaust system ⇒ Rep. gr. 26 .
- Install rear seat bench ⇒ Rep. gr. 72 .
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .

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5 Fuel tank - USA vehicles with four-wheel drive

5.1 Exploded view - fuel tank with attached components

1 - Breather line

- ☐ White
- ☐ From activated charcoal filter to activated charcoal filter solenoid valve 1 - N80-
- ☐ Do not kink
- ☐ Press release tab on connection piece to disconnect
- ☐ Clip onto fuel tank

2 - Fuel line

- ☐ Black
- ☐ From fuel filter
- ☐ To engine
- ☐ Press release tab on connection piece to disconnect

3 - Breather line

- ☐ Green
- ☐ From fuel system diagnostic pump - V144- to engine
- ☐ Press release tab on connection piece to disconnect
- ☐ Clip onto fuel tank

4 - Electrical connector

- ☐ For fuel system pressure sensor pump G6 and fuel gauge sender - G-

5 - 8 Nm

6 - Bracket

- ☐ Clip onto protective plate

7 - Protective plate

- ☐ For fuel filler neck

8 - Flange bolt, 11 Nm

- ☐ Secures fuel filler neck and earth connection -item 11-

9 - Filler cap

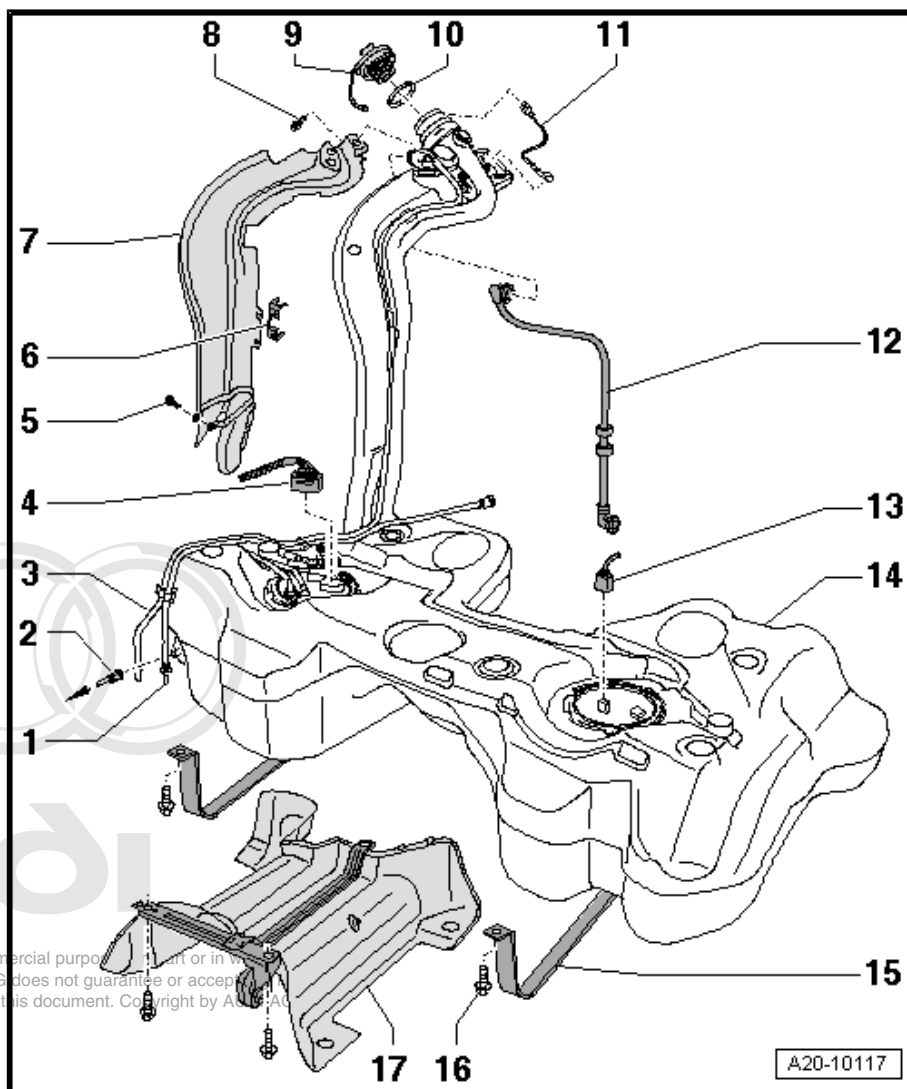
- ☐ Secured to tank flap unit

10 - Seal

- ☐ Renew if damaged

11 - Earth connection

- ☐ To eliminate electrostatic charge



- ❑ Installation position ⇒ [page 50](#)
- ❑ Make sure connector is correctly seated and secure wire with flange bolt for fuel filler neck -item 8-.
- ❑ After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body – specification: approx. 0 Ω

12 - Breather line

- ❑ From gravity valve to activated charcoal filter
- ❑ Clip onto bracket in wheel housing
- ❑ Press release tab on connection piece to disconnect

13 - Electrical connector

- ❑ For fuel gauge sender 2 - G169-

14 - Fuel tank

- ❑ Removing and installing ⇒ [page 52](#)

15 - Securing strap

- ❑ Installation position: Fixing point (hole) points in direction of travel

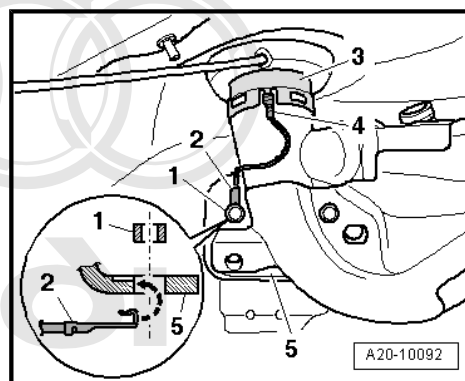
16 - 26 Nm

17 - Heat shield for fuel tank

- ❑ With support bracket

Installation position of earth connection

- Route earth connection as shown in illustration.
- First engage contact tab -2- of earth connection in mounting hole on fuel tank -5- and then press in spacer bush -1-.
- Ensure that connector -4- for earth connection is firmly seated on metal ring -3- on fuel filler neck.



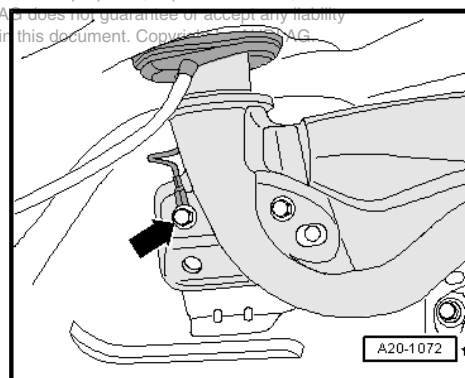
- Secure contact tab for earth connection with flange bolt -arrow- for fuel filler neck.



Caution

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

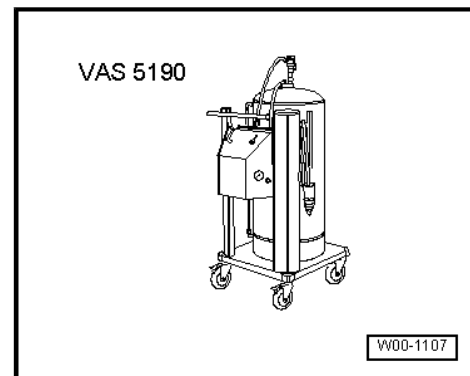
- **Specification: approx. 0 Ohm**



5.2 Draining fuel tank

Special tools and workshop equipment required

◆ Fuel extractor - VAS 5190-



Procedure

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- Release the tank flap.



Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

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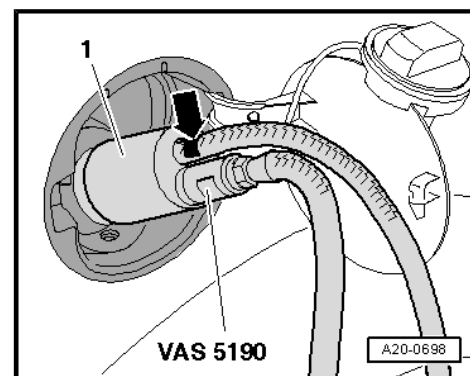
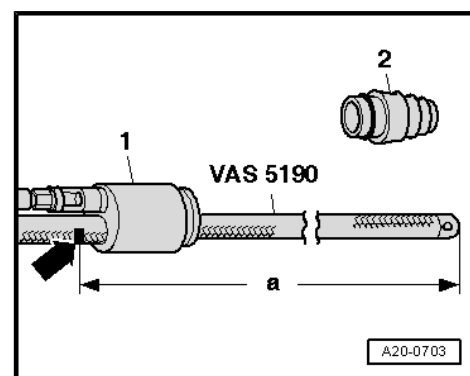
- **Disconnect battery** ⇒ [Rep gr 27](#)



Caution

Secure earth wire of fuel extractor -VAS 5190- to a bare metal part on the body.

- Detach tapered adapter -2- from shaft end -1- of fuel extractor -VAS 5190- .
- Use insulating tape to mark the extraction hose -arrow- at a distance of -a- = 1,370 mm from the end of the hose.
- Remove filler cap from fuel filler neck.
- Screw shaft end -1- of fuel extractor -VAS 5190- onto fuel filler neck.
- Push extraction hose into fuel tank until marking on hose -arrow- coincides with shaft end.

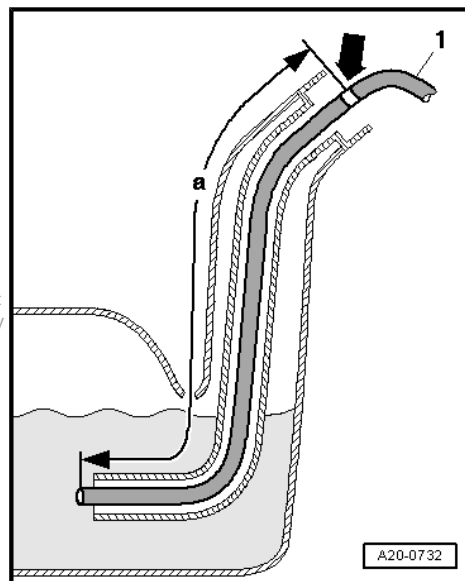




Note

- ◆ The procedure when using a fuel extractor without shaft end is basically the same.
- ◆ In this case, make a mark -arrow- on the extraction hose at distance -a- = 1,305 mm from the end of the hose using insulating tape. The extraction hose has been properly inserted when the affixed mark is level with the edge of the filler neck.
- ◆ If hose is difficult to insert, apply a thin coat of engine oil. **DO NOT use silicone-based lubricant.**

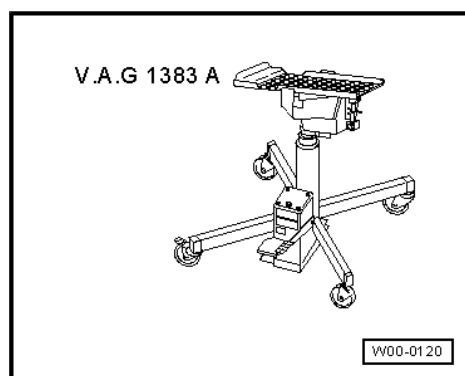
- Drain fuel tank as much as possible through fuel filler neck.
- Carefully remove extraction hose.
- Remove fuel delivery unit ⇒ [page 66](#) .
- Extract remaining fuel from right chamber of fuel tank through opening for fuel delivery unit.
- Push hose into left chamber of fuel tank and extract remaining fuel.
- Re-install fuel delivery unit ⇒ [page 68](#) ; observe instructions for connecting battery ⇒ Rep. gr. 27 .



5.3 Removing and installing fuel tank with attached components

Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-



Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- To reduce weight, the fuel tank must be empty when it is removed from the vehicle. Drain the tank if necessary. Procedure ⇒ [page 50](#)
- Release the tank flap.



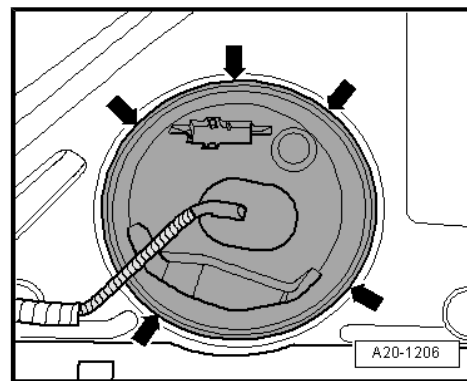
Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

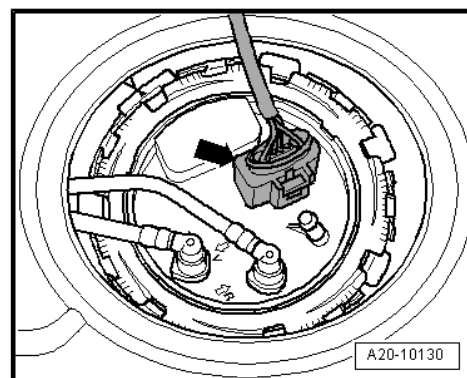
- ◆ Observe notes on procedure for disconnecting the battery.

- Disconnect battery ⇒ Rep. gr. 27 .

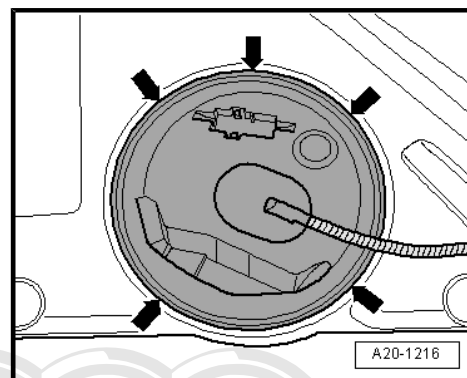
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



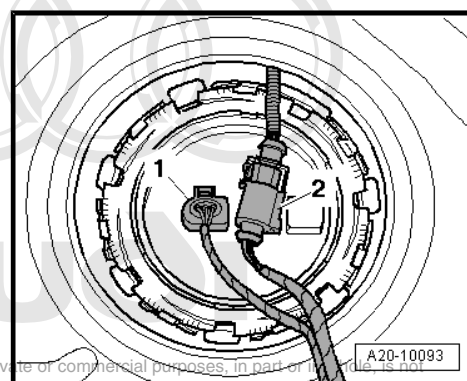
- Unplug electrical connector -arrow- at flange.



- Unclip the retaining tabs -arrows- for the flange cover (left-side).

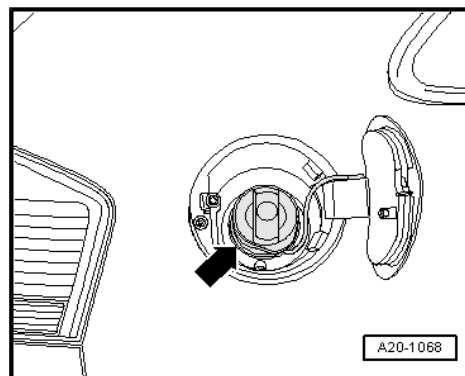


- Unplug electrical connector -1- at flange.
- Unplug electrical connector -2- for Haldex coupling.

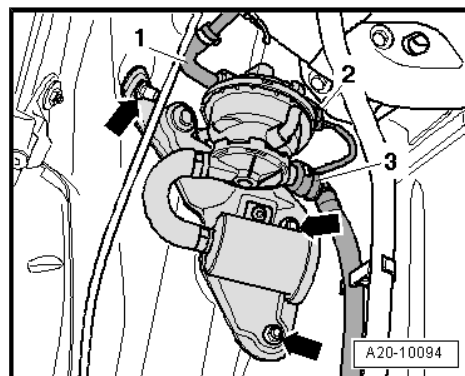


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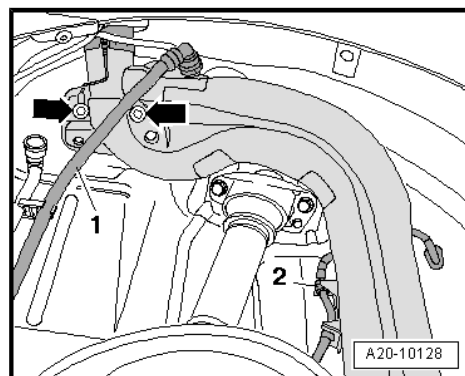
- Open the tank flap.
- Clean area around fuel filler neck.
- Remove filler cap -arrow- from fuel filler neck.
- Seal opening of fuel filler neck with a piece of clean foam or similar to prevent dirt from dropping into the tank.



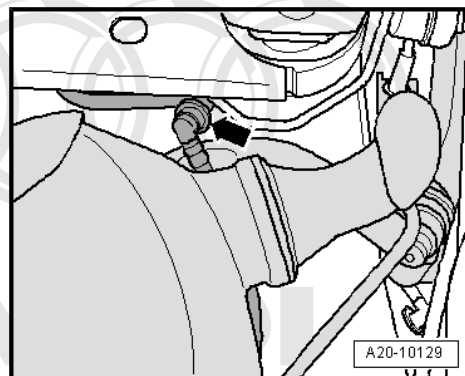
- Remove rear right wheel housing liner ⇒ Rep. gr. 66 .
- Detach breather line -1-.
- Unplug electrical connector -2-.
- Press release tab and disconnect breather line -3-.
- Unscrew nuts -arrows-.
- Detach diagnostic pump with bracket.



- Press release tab and remove breather line -1- leading to activated charcoal filter.
- Unclip breather line from bracket.
- Detach electrical wire -2- for ABS speed sensor from bracket on fuel filler neck.
- Unscrew bolts -arrows- for fuel filler neck.



- Press release tab and disconnect breather line -arrow- leading to activated charcoal filter.



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- Remove rear cross member for underbody; to do so, unscrew nuts -1- and -2-.



Caution

To protect flexible joints, secure front section of exhaust system to underbody with wire before you loosen bolt connections on clamp -3-.

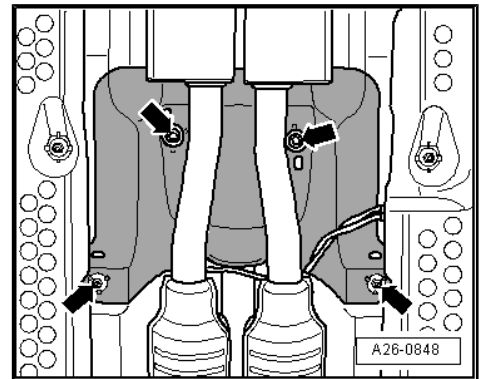
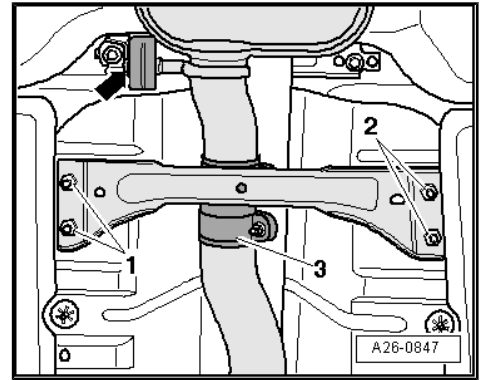
- Disconnect exhaust system at clamp -3-.
- Unhook rear silencer at rubber mountings -arrow- and remove rear section of exhaust system.



Note

A second person will be required for detaching rear section of exhaust system.

- Remove heat shield for propshaft -arrows-.
- Remove propshaft ⇒ Rep. gr. 39 .



- Press release tabs and disconnect breather lines -1- (white) and -3- (green) at front right of fuel tank.



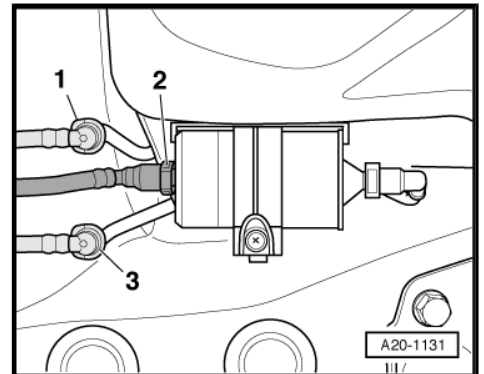
WARNING

The fuel system operates at high pressure - risk of injuries!

◆ ***To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.***

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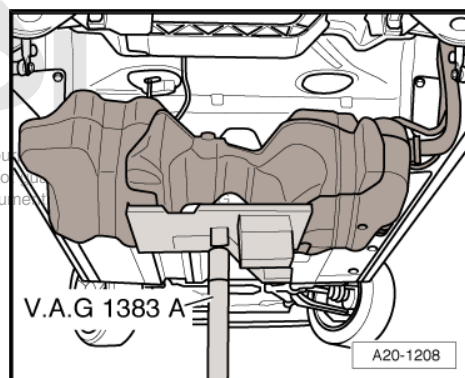
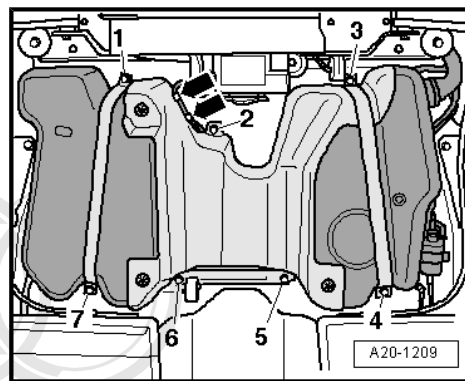
- Press release tab and disconnect fuel line -2- (black) at fuel filter.




WARNING

To reduce weight, fuel tank must be empty upon removal.

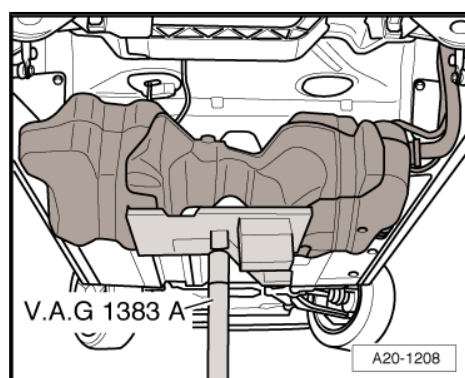
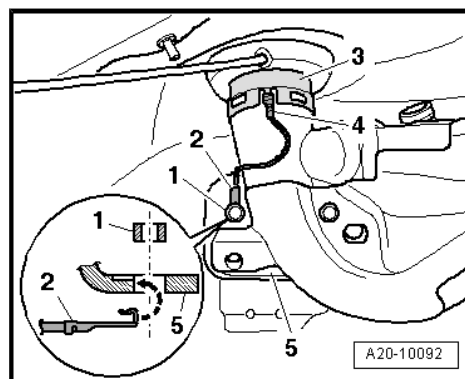
- First remove bolts -2, 5- and -6-.
- Disengage wiring harness -arrows- (if fitted) and move harness clear.
- Position engine and gearbox jack - V.A.G 1383 A- below vehicle to support tank.
- Unscrew bolts -1, 3, 4- and -7-.
- Then lower fuel tank using engine and gearbox jack - V.A.G 1383 A- , simultaneously guiding fuel tank down by hand.
- Remove fuel tank downwards (turning it sideways as required).
- In addition, a 2nd mechanic will be required to guide the fuel filler neck on trailing arm out by hand.


Installing

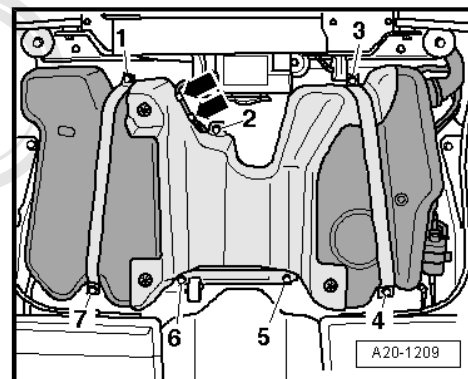
- Tightening torques ⇒ [page 49](#)

Installation is carried out in the reverse order; note the following:

- Check the earth wiring at both ends for traces of oxidation and remove oxidation if necessary.
- Check installation position of earth connection:
- Connector -4- must be seated securely on metal ring -3-.
- Contact tab -2- must be attached to fuel tank -5- and secured with spacer bush -1-.
- Position fuel tank with securing straps on underbody using engine and gearbox jack - V.A.G 1383 A- .
- Attach wiring harness at top of fuel tank.
- When installing fuel tank, make sure that the fuel filler neck is correctly inserted into the opening on the body.



- Secure fuel tank by first tightening bolts at points -1, 3, 4- and -7-, then at points -2, 5- and -6-.



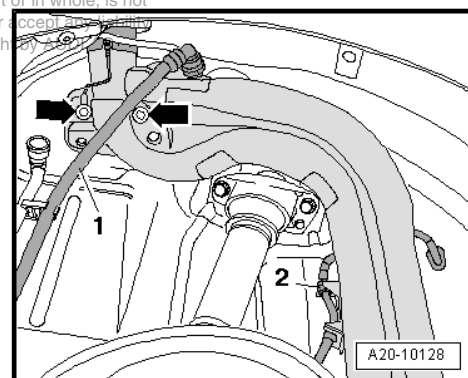
- Secure fuel filler neck by tightening two flange bolts -arrows- (rear bolt also secures contact tab for earth connection).



Caution

After installation, use an ohmmeter to check the electrical connection between the metal ring on the fuel filler neck and a bare metal part on the body:

- *Specification: approx. 0 Ohm*



- Install breather line -1- going to activated charcoal filter.
- The breather line should engage audibly.
- Attach electrical wire -2- of ABS speed sensor at bracket on fuel filler neck.
- Install diagnostic pump with bracket ⇒ [page 139](#) .
- Install rear right wheel housing liner ⇒ Rep. gr. 66 .
- Install propshaft ⇒ Rep. gr. 39 .
- Install rear section of exhaust system ⇒ Rep. gr. 26 .
- Install rear seat bench ⇒ Rep. gr. 72 .
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .

6 Fuel delivery unit and fuel gauge senders - version 1 for vehicles with four-wheel drive

6.1 Exploded view - fuel delivery unit and fuel gauge senders

1 - Fuel gauge sender - G-

- ☐ Checking resistance values ⇒ [page 71](#)
- ☐ Removing and installing: vehicles up to approx. 11.2004 ⇒ [page 75](#), vehicles from approx. 11.2004 onwards ⇒ [page 76](#)

2 - Fuel delivery unit with flange

- ☐ Checking fuel pump (electrical test) ⇒ [page 60](#)
- ☐ Checking residual pressure ⇒ [page 22](#)
- ☐ Removing and installing ⇒ [page 66](#)

3 - Seal

- ☐ Renew
- ☐ Install dry

4 - Fuel supply line

- ☐ Black
- ☐ To fuel filter
- ☐ Do not kink
- ☐ Attached to connection marked "V" on flange
- ☐ To disconnect from flange, press release tab on connection piece

5 - Fuel return line

- ☐ Blue
- ☐ From fuel filter
- ☐ Do not kink
- ☐ Attached to connection marked "R" on flange
- ☐ To disconnect from flange, press release tab on connection piece

6 - Electrical connector

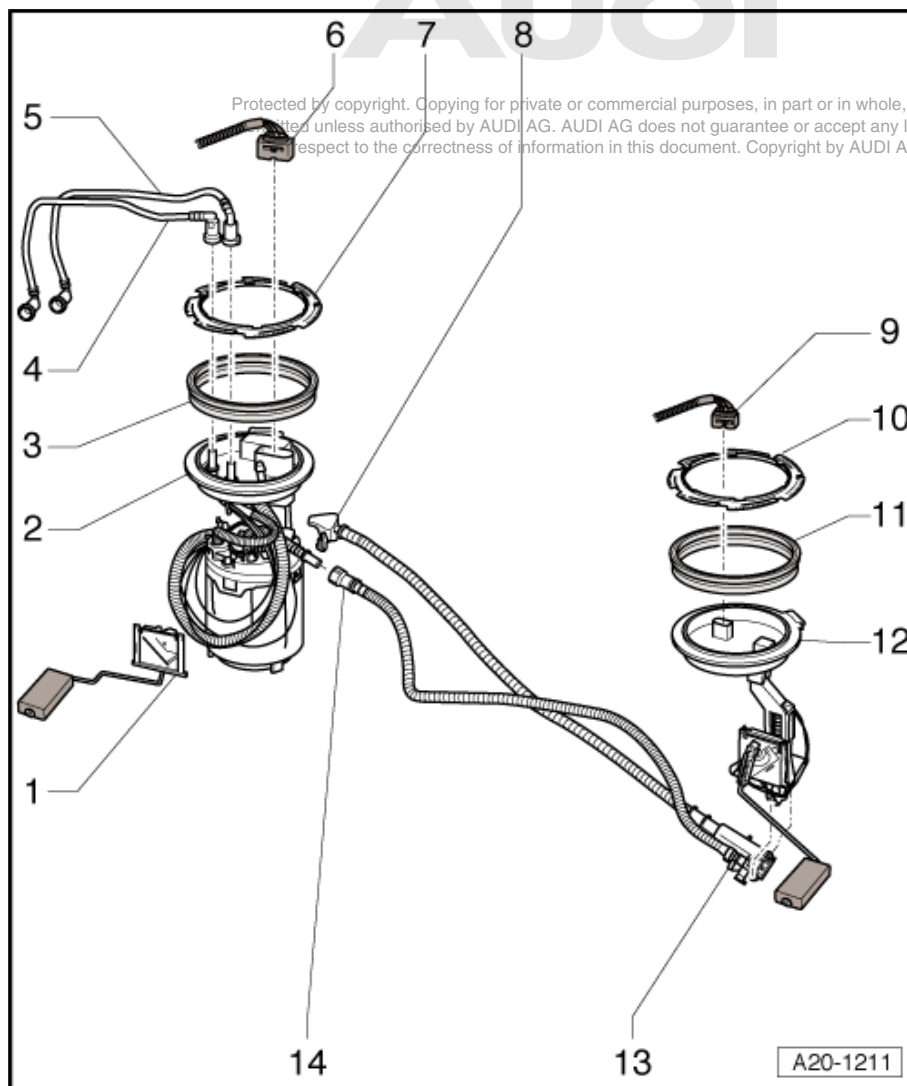
- ☐ For fuel system pressurisation pump - G6- and fuel gauge sender - G-

7 - Locking ring

- ☐ Remove and install using wrench - T10202-
- ☐ Tighten to 110 Nm

8 - Fuel supply line

- ☐ From suction-jet pump to fuel delivery unit
- ☐ Clipped onto fuel delivery unit



9 - Electrical connector

- ☐ For fuel gauge sender 2 - G169-

10 - Locking ring

- ☐ Remove and install using wrench - T10202-
- ☐ Tighten to 110 Nm

11 - Seal

- ☐ Renew
- ☐ Install dry

12 - Fuel gauge sender 2 - G169-

- ☐ Only available together with -item 13-
- ☐ Installation position ⇒ [page 81](#)
- ☐ Checking resistance values ⇒ [page 76](#)
- ☐ Removing and installing ⇒ [page 79](#)

13 - Suction-jet pump

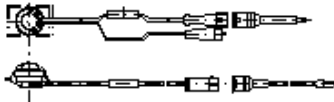
- ☐ With lines
- ☐ Only available together with -item 12-
- ☐ Removing and installing ⇒ [page 82](#)

14 - Supply line for suction-jet pump

- ☐ From fuel pump to suction-jet pump
- ☐ Press release tab on connection piece to disconnect

6.2 Checking fuel pump (electrical test) - TFSI and 6-cylinder engines

Special tools and workshop equipment required

V.A.G 1348/3A 	V.A.G 1526 B 
V.A.G 1594 C 	

G20-0048

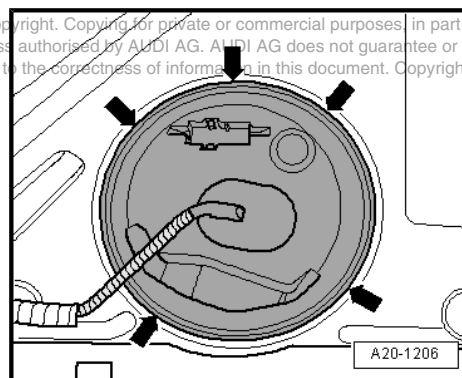
- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-
- ◆ Hand-held multimeter - V.A.G 1526C-
- ◆ Auxiliary measuring set - V.A.G 1594C-

Procedure

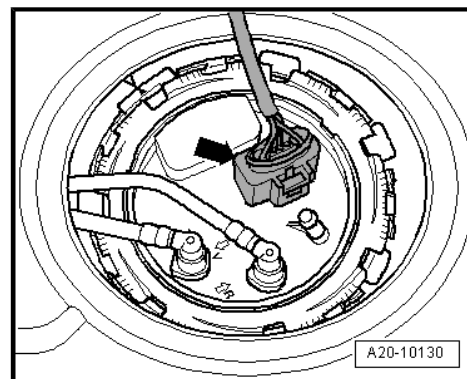
Observe test conditions ⇒ [page 2](#) .

- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).

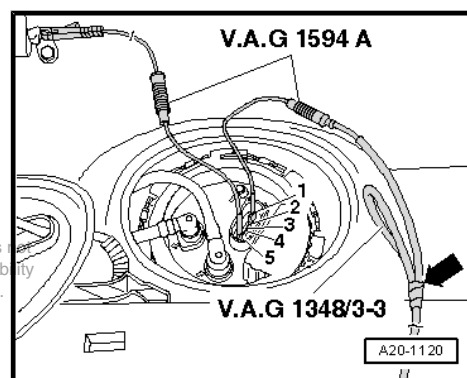
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- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set -V.A.G 1594C- .
- Connect crocodile clip to battery +.
- Press remote control button.
- Pump should start running audibly.



Note

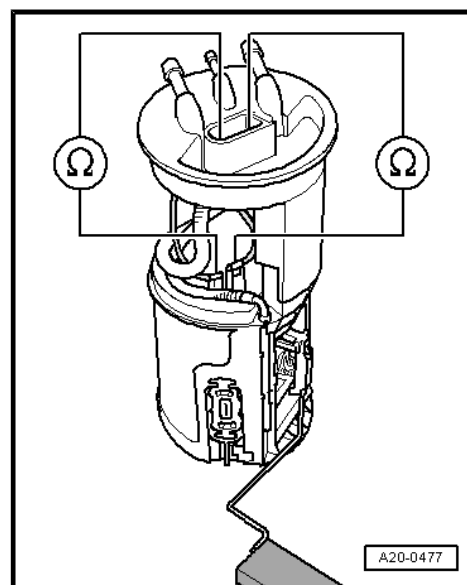
The fuel pump runs very quietly. Where possible, avoid noisy surroundings for this test.

If no noise can be heard from pump:

- Remove fuel delivery unit ⇒ [page 66](#) .
- Check that the electrical wires between flange and fuel pump are connected and test for continuity.

If no fault is found in wiring, fuel pump is defective. Renew fuel delivery unit.

- Install fuel delivery unit ⇒ [page 68](#) .

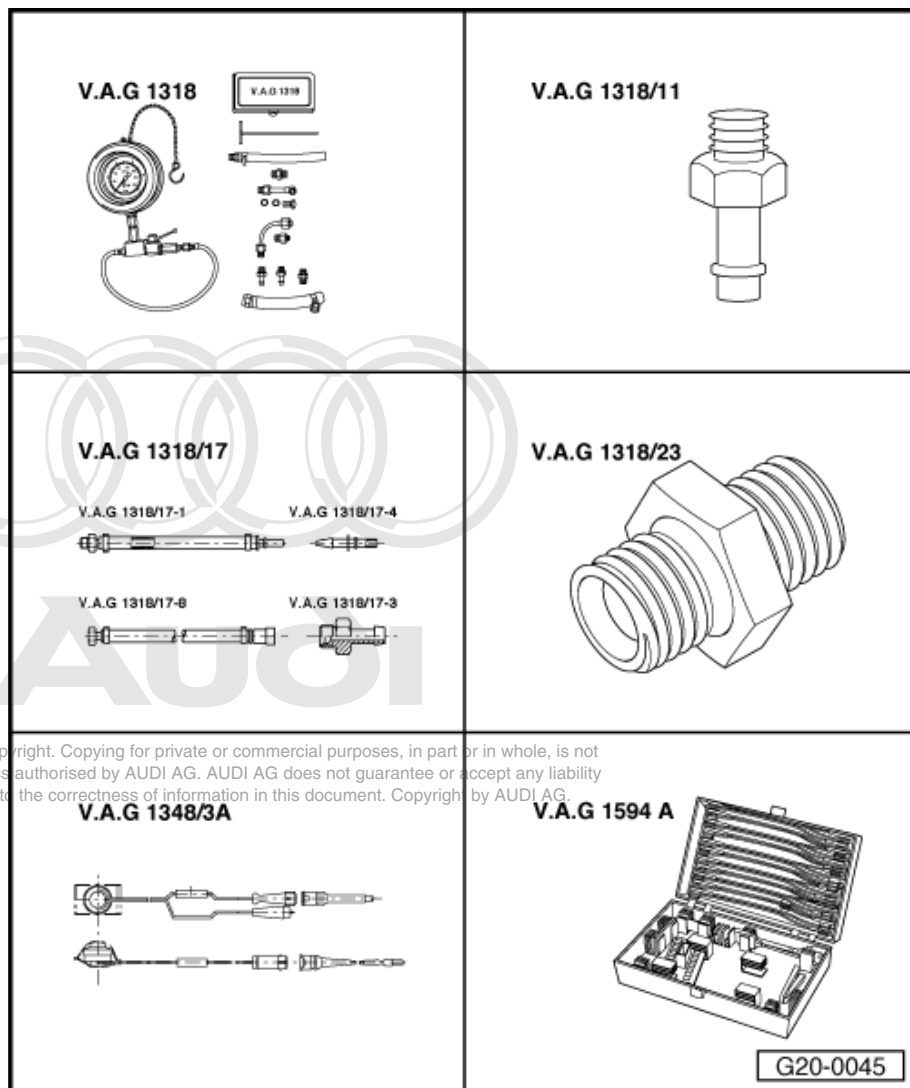


6.3 Checking fuel pump control unit - J538- - TFSI engine

- ◆ On vehicles with TFSI engine, voltage for the fuel pump is supplied via fuel pump control unit - J538- .
- ◆ Check fuel pump control unit -J538- in "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

6.4 Checking fuel pump delivery rate - TFSI engine

Special tools and workshop equipment required



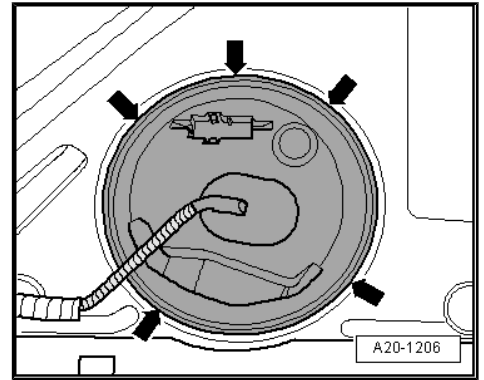
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- ◆ K-Jetronic pressure tester - V.A.G 1318-
- ◆ Adapter - V.A.G 1318/11-
- ◆ Adapter -V.A.G 1318/17-1- from adapter set - V.A.G 1318/17-
- ◆ Connector - V.A.G 1318/23-
- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-
- ◆ Auxiliary measuring set - V.A.G 1594C-
- ◆ Fuel-resistant measuring container

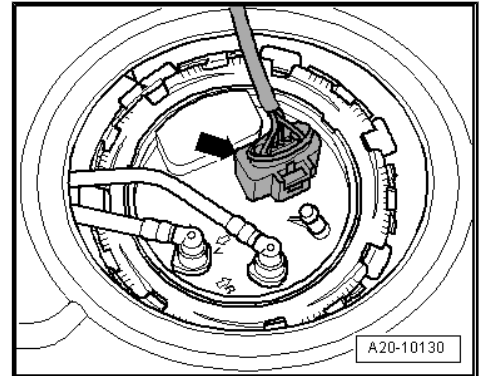
Procedure

Observe test conditions ⇒ [page 2](#) .

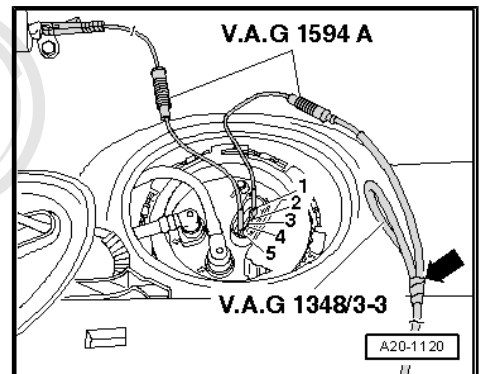
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+”.
- Remove filler cap from fuel filler neck.



WARNING

The fuel system operates at high pressure - risk of injuries!

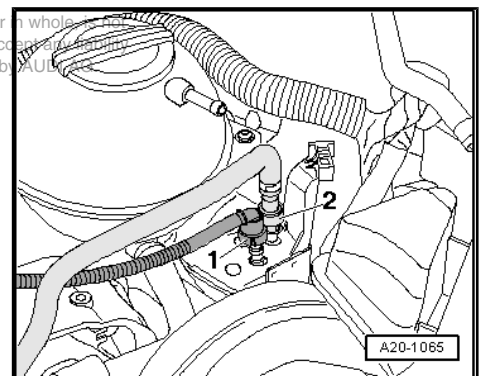
- ◆ ***To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.***

- Disconnect fuel line -2- (lift release tab).

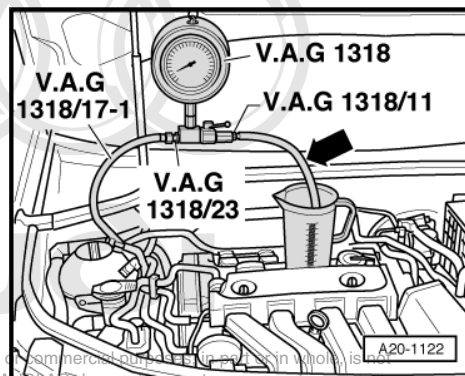


Note

Disregard -item 1-.



- Screw connector - V.A.G 1318/23- and adapter -V.A.G 1318/17-1- onto K-Jetronic pressure tester - V.A.G 1318- .
- Fit adapter -V.A.G 1318/17-1- onto disconnected fuel line.
- Screw adapter - V.A.G 1318/11- onto K-Jetronic pressure tester - V.A.G 1318- . Attach test hose -arrow- and hold end of hose in measuring container.
- Open cut-off valve on pressure tester. Lever must point in direction of flow.
- Build up pressure in fuel system by pressing the remote control and slowly closing the cut-off valve on the pressure tester.
- Specification: 4 bar
- From this point on do not move position of cut-off valve.
- Empty the measuring container.
- Press remote control button for 15 seconds.
- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



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Note

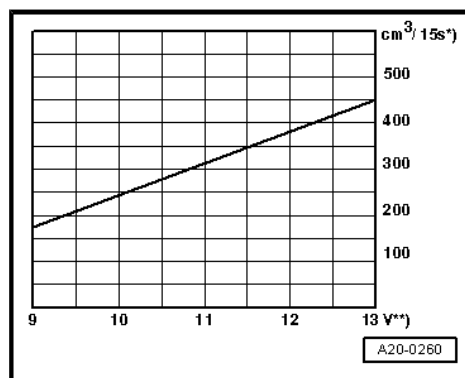
Voltage at fuel pump with engine stationary and pump running is approx. 2 volts less than battery voltage.

If minimum delivery rate is not reached, check for the following causes:

- ◆ Fuel lines have been crushed.
- ◆ Fuel filter is blocked.
- ◆ Fuel pump is defective.

Assembly is carried out in the reverse order; note the following:

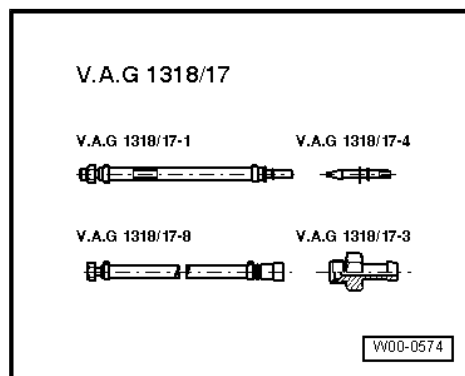
- Install rear seat bench ⇒ Rep. gr. 72 .



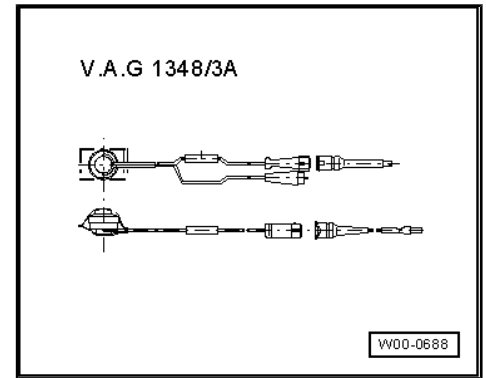
6.5 Checking fuel pump delivery rate - 6-cylinder engine

Special tools and workshop equipment required

- ◆ Adapter -V.A.G 1318/17-1- from adapter set - V.A.G 1318/17-



- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-

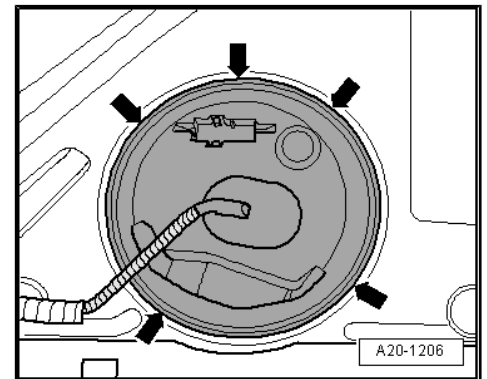


- ◆ Fuel-resistant measuring container

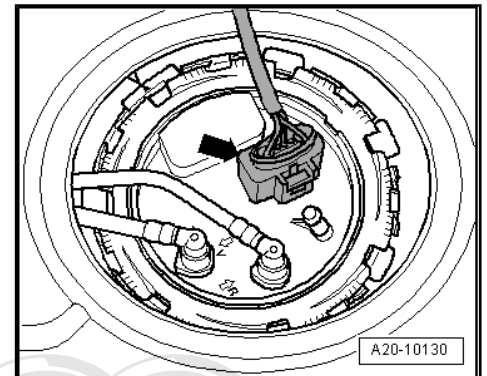
Procedure

Observe test conditions ⇒ [page 2](#) .

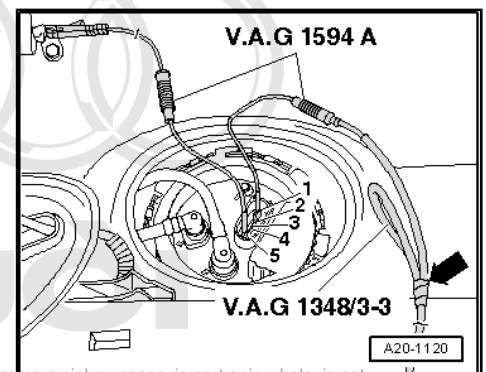
- Remove filler cap from fuel filler neck.
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+”.



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WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

- Press release tab and disconnect fuel return line -arrow-.
- Fit adapter -V.A.G 1318/17-1- onto disconnected fuel return line and hold adapter hose in measuring container.
- Press remote control button for 15 seconds.



- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



Note

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If minimum delivery rate is not reached, check for the following causes:

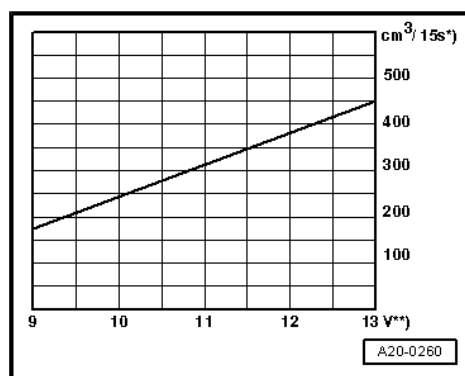
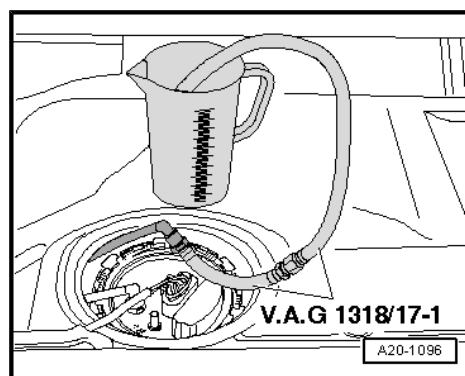
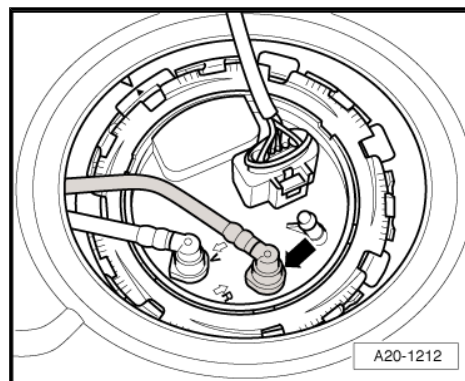
- ◆ Fuel lines have been crushed.
- ◆ Fuel filter is blocked.
- ◆ Fuel pump is defective.

Assembly is carried out in the reverse order; note the following:

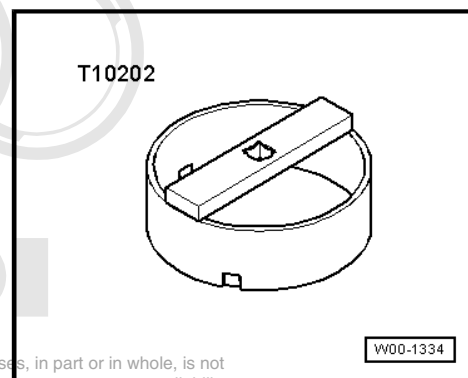
- Install rear seat bench ⇒ Rep. gr. 72 .

6.6 Removing and installing fuel delivery unit

Special tools and workshop equipment required



◆ Wrench - T10202-



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Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel delivery unit. Drain the tank if necessary. Procedure ⇒ [page 42](#)

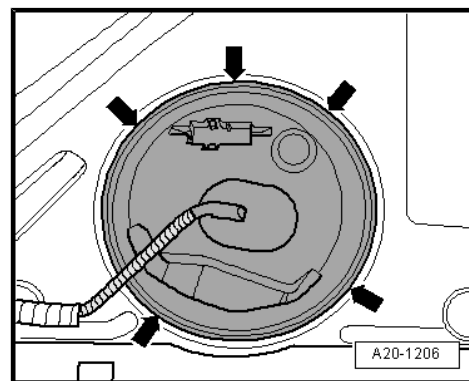


Caution

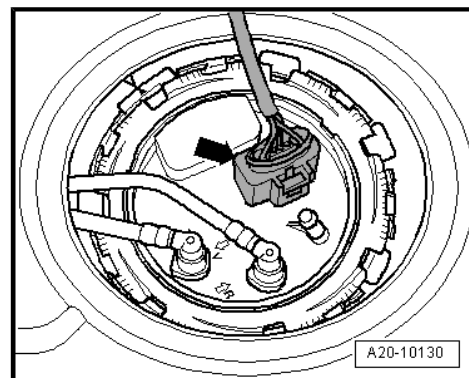
To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ⇒ Rep. gr. 27 .
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Mark fuel supply line -1- and fuel return line -2-.



WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ **To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.**

- Detach both lines from flange (press release tabs).

Vehicles with auxiliary heater:

- In addition, disconnect fuel supply line for auxiliary heater. For details of procedure, refer to ⇒ Rep. gr. 82 .

Continued for all vehicles:



Caution

The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel delivery unit. Otherwise a large amount of fuel will escape.

- Unscrew locking ring using wrench - T10202- .
- Take flange (right-side) and seal of fuel delivery unit out of opening in fuel tank and move clear, leaving pipes connected.
- In opening in fuel tank, press release tab to disconnect supply line -2- to suction-jet pump.
- Disconnect fuel supply line -1- (press release catch -arrow-).
- Remove fuel delivery unit.



Note

- ◆ **When removing fuel delivery unit, make sure you do not bend float arm of fuel gauge sender -G- .**
- ◆ **Keep in mind that the fuel delivery unit still contains fuel.**

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Installing

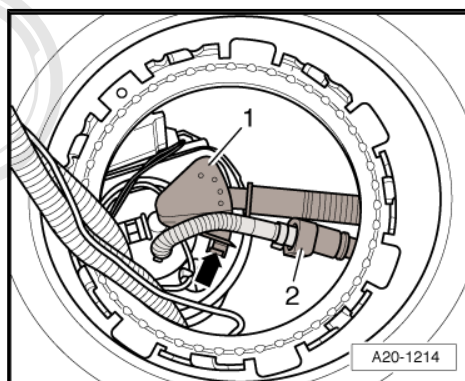
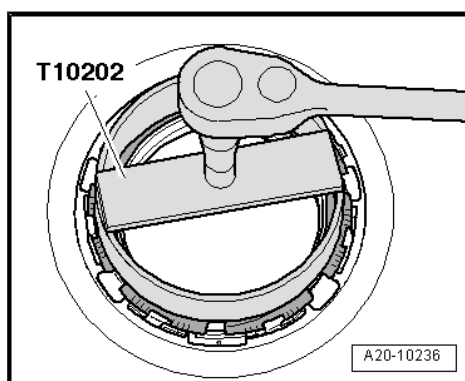
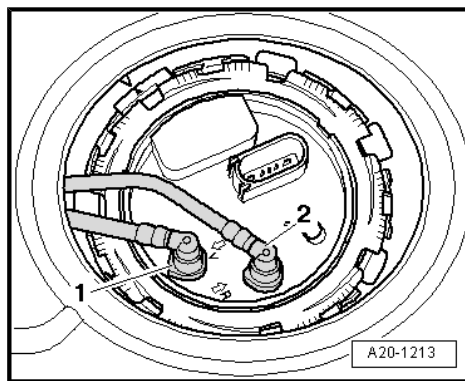
- Tightening torque ⇒ [page 58](#)

Installation is carried out in the reverse order; note the following:

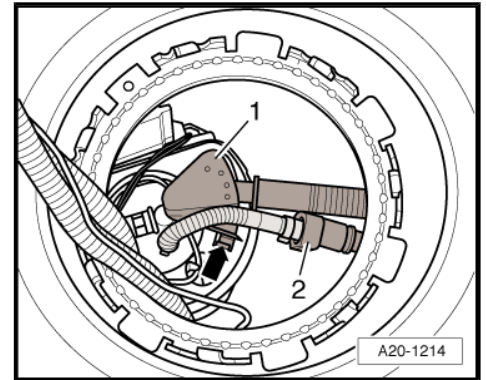


Note

- ◆ **Renew seal.**
- ◆ **Take care not to bend the fuel gauge sender - G- when fitting the fuel delivery unit.**
- ◆ **Ensure that fuel hoses are securely seated.**



- Insert fuel delivery unit into fuel tank, with flange set aside.
- Fit fuel supply line -1-, so that it engages (you should hear it click into place).
- Fit supply line -2- leading to suction-jet pump so that it engages audibly.
- Install new seal for flange (seal must be installed dry).
- Slot guide sleeve on flange into guide sleeve on fuel delivery unit; make sure spring is not damaged.

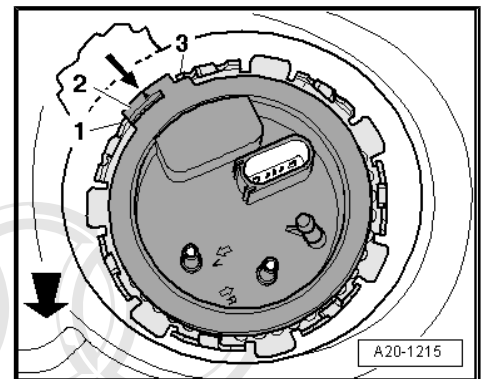


- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards arrow marking, and must be between tabs -1- and -3- on fuel tank.



Note

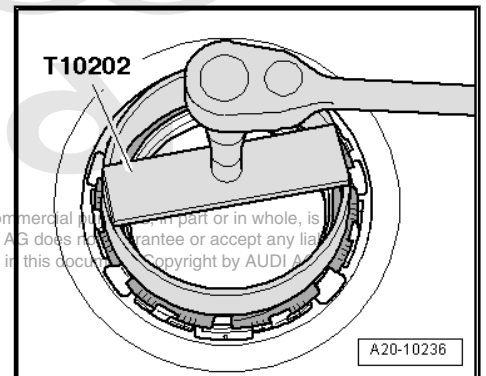
-Arrow- points in direction of travel.



- Tighten locking ring.
- Install rear seat bench ⇒ Rep. gr. 72 .
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .

Vehicles with FSI engine:

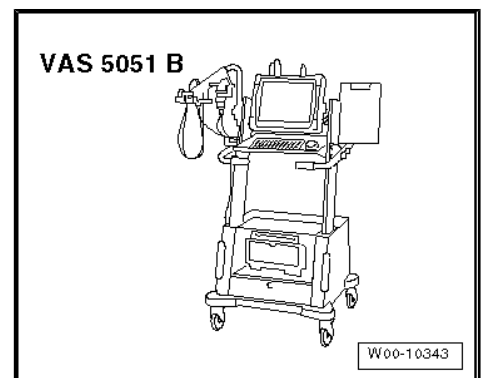
- After renewing the fuel delivery unit, the fuel pump must be adapted ⇒ [page 69](#) .



6.7 Adapting fuel pump after renewing fuel delivery unit - TFSI engine

Special tools and workshop equipment required

- ◆ Vehicle diagnostic, testing and information system - VAS 5051B-





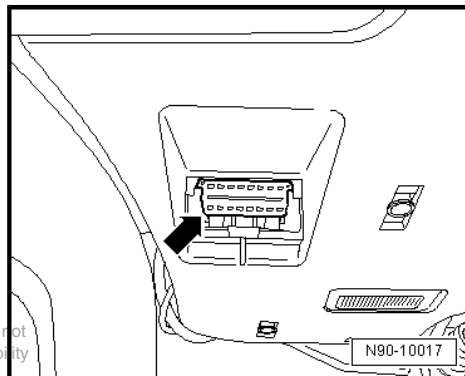
Note

If the fuel pump is renewed on vehicles with an FSI or TFSI engine, the fuel pump has to be adapted to the engine control unit.

Procedure

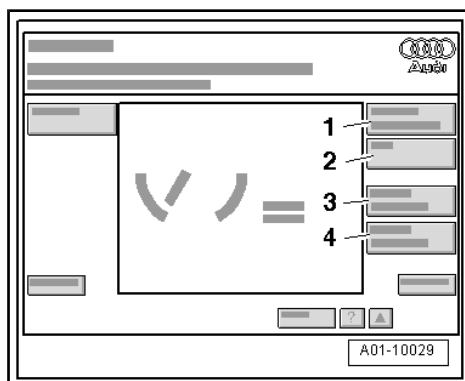
- Vehicle diagnostic, testing and information system - VAS 5051B- connected to diagnostic connection -arrow-.
- No faults stored in event memory.
- Engine running at idling speed.

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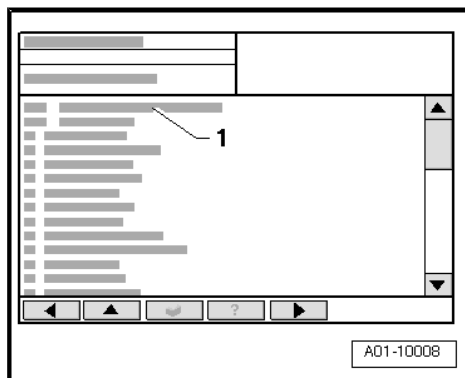
Display on -VAS 5051B- :

- Select Vehicle self-diagnosis from the list -item 1-.



Display on -VAS 5051B- :

- From menu -1-, select vehicle system "Engine electronics" and press key to advance.



Display on -VAS 5051B- :

- From menu -1-, select function "Basic setting" and press key to advance.



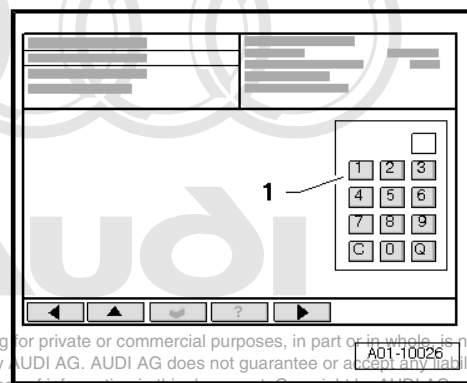
Display on -VAS 5051B- :

Vehicles with 2.0 ltr. FSI engine:

- Press keys **2 4 3** on keypad -1- to select “Display group 243” and confirm entry by pressing **Q** key.

Vehicles with 2.0 ltr. TFSI engine:

- Press keys **1 0 3** on keypad -1- to select “Display group 103” and confirm entry by pressing **Q** key.



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Continued for all vehicles:

- Activate basic setting by touching **Activate** key -A-.

Display on -VAS 5051B- :

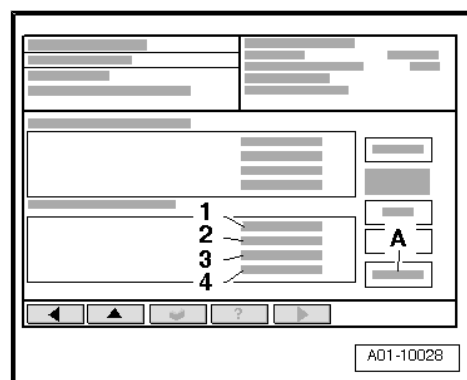
- Check display in zone -4-.

Indicated on display: “ADP runs”. When the fuel pump has been successfully adapted, the display will show “ADP OK”.



Note

If display shows “ADP n.OK”: interrogate event memory.

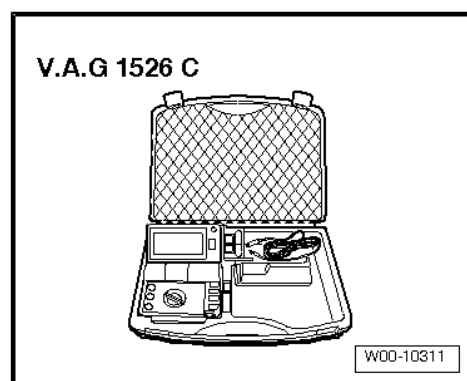


- Exit “Basic setting” function by pressing **Q** key.
- Select function “End output”.
- Switch off ignition and unplug diagnostic connector.

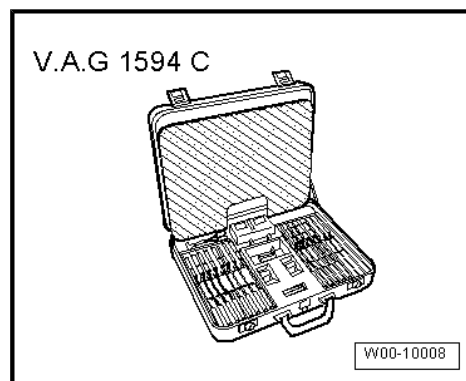
6.8 Checking fuel gauge sender - G-

Special tools and workshop equipment required

- ◆ Hand-held multimeter - V.A.G 1526C-

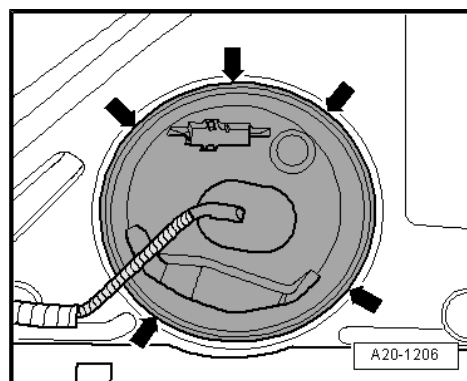


- ◆ Auxiliary measuring set - V.A.G 1594C-

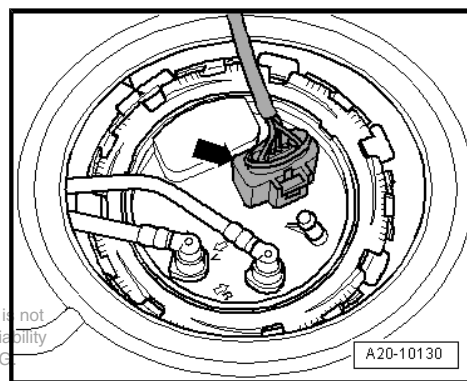


Test sequence

- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



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Vehicles up to approx. 11.2004:

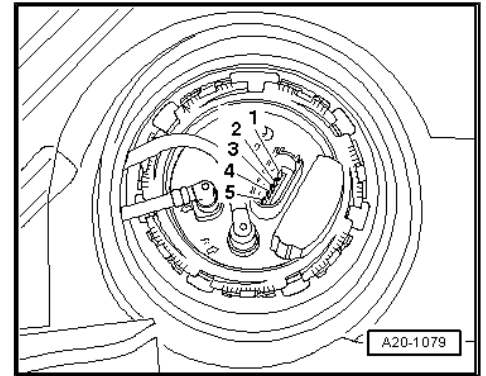
i Note

In vehicles with two-wire sender, 4 contacts are connected in the connector for fuel gauge sender - G- .

- Connect multimeter (resistance test) between contacts -2- and -3-.

Fuel gauge sender - G- installed:

- Sender at lower stop: 265 ... 295 Ω .
- Sender at upper stop: 57 ... 73 Ω .



i Note

- ◆ *To test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel delivery unit ⇒ page 66 and move the sender float all the way to its top or bottom position.*
- ◆ *If the resistance is 0 Ω , there is a short circuit. If the resistance is $\infty \Omega$, there is an open circuit in the wiring.*
- ◆ *The following values are obtained with the fuel gauge sender - G- removed, due to the greater travel of the float arm:*

Fuel gauge sender - G- removed:

- Sender at lower stop: approx. 299 Ω .
- Sender at upper stop: approx. 86.4 Ω .

Assembly is carried out in the reverse order; note the following:

- Install rear seat bench ⇒ Rep. gr. 72 .

Vehicles from approx. 11.2004 onwards:



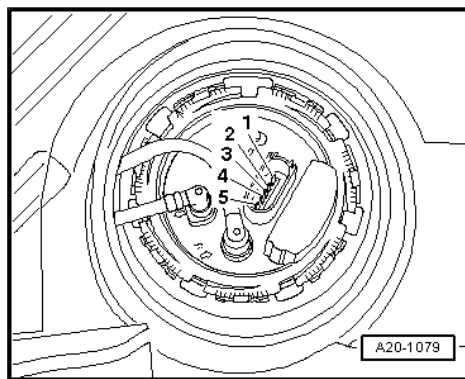
Note

In vehicles with three-wire sender, 5 contacts are connected in the connector for fuel gauge sender - G- .

- Connect multimeter (resistance test) between contacts -2- and -3-.

Fuel gauge sender - G- installed:

- Sender at lower stop: approx. 270 Ω .
- Sender at upper stop: approx. 70 Ω .



Note

- ◆ *To test the maximum and minimum resistance values for “tank full” and “tank empty”, remove the fuel delivery unit [⇒ page 66](#) and move the sender float all the way to its top or bottom position.*
- ◆ *If the resistance is 0 Ω , there is a short circuit. If the resistance is $\infty \Omega$, there is an open circuit in the wiring.*
- ◆ *The following values are obtained with the fuel gauge sender - G- removed, due to the greater travel of the float arm:*

Fuel gauge sender - G- removed:

- Sender at lower stop: approx. 290 Ω .
- Sender at upper stop: approx. 60 Ω .
- Connect multimeter (resistance test) between contacts -3- and -4-.

Fuel gauge sender - G- installed or removed:

- Sender in any position: approx. 340 Ω .

Assembly is carried out in the reverse order; note the following:

- Install rear seat bench $\Rightarrow$ Rep. gr. 72 .

6.9 Removing and installing fuel gauge sender - G- - vehicles up to approx. 11.2004

Removing

Observe safety precautions ➔ [page 1](#) .

Observe rules for cleanliness ➔ [page 2](#) .

– Remove fuel delivery unit ➔ [page 66](#) .



Caution

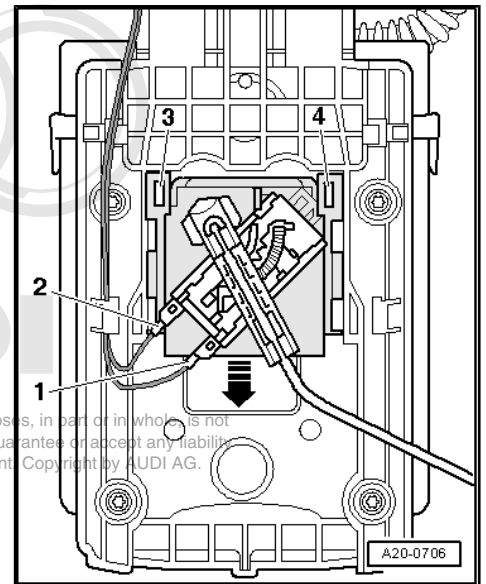
First release retaining tabs on connector contact before unplugging electrical connectors on fuel gauge sender - G- .

- Release and unplug electrical connectors -1- and -2-.
- Lift retaining tabs -3- and -4- with a screwdriver and pull fuel gauge sender - G- off downwards -arrow-.

Installing

Installation is carried out in the reverse order; note the following:

- Insert fuel gauge sender - G- into guides on fuel delivery unit and press upwards until it clicks into place.
- Plug in electrical connectors and check that they have engaged properly.
- Install fuel delivery unit ➔ [page 68](#) ; observe instructions for connecting battery.



6.10 Removing and installing fuel gauge sender - G- - vehicles from approx. 11.2004 onwards

Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

– Remove fuel delivery unit ⇒ [page 66](#) .



Caution

First release retaining tabs on connector contact before unplugging electrical connectors on fuel gauge sender - G- .

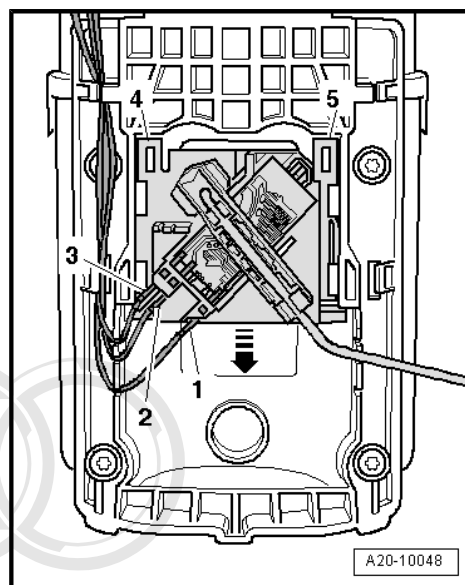
- Release and unplug electrical connectors -1 ... 3-.
- Lift retaining tabs -4- and -5- with a screwdriver and pull fuel gauge sender - G- off downwards -arrow-.

Installing

Installation is carried out in the reverse order; note the following:

- Insert fuel gauge sender - G- into guides on fuel delivery unit and press upwards until it clicks into place.
- Plug in electrical connectors and check that they have engaged properly.
- Install fuel delivery unit ⇒ [page 68](#) ; observe instructions for connecting battery.

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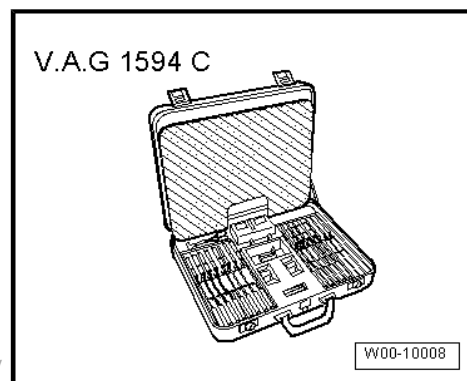
6.11 Checking fuel gauge sender 2 - G169-

Special tools and workshop equipment required

- ♦ Hand-held multimeter - V.A.G 1526C-



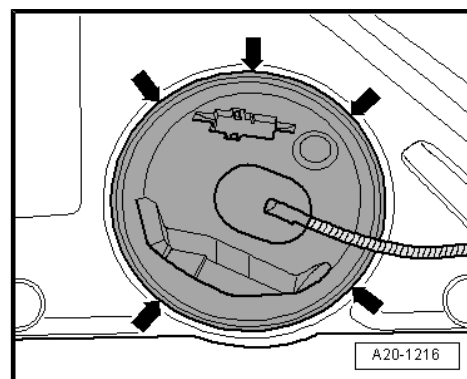
◆ Auxiliary measuring set - V.A.G 1594C-



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Test sequence

- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (left-side).

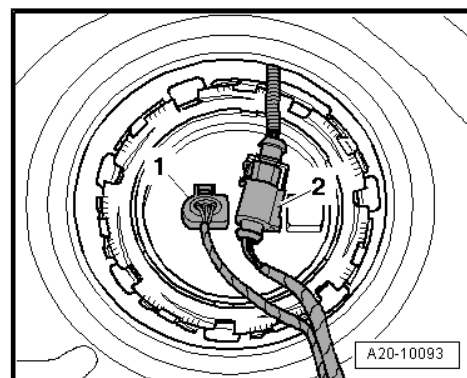


- Unplug electrical connector -1- at flange.



Note

Disregard -item 2-.



Vehicles up to approx. 11.2004:



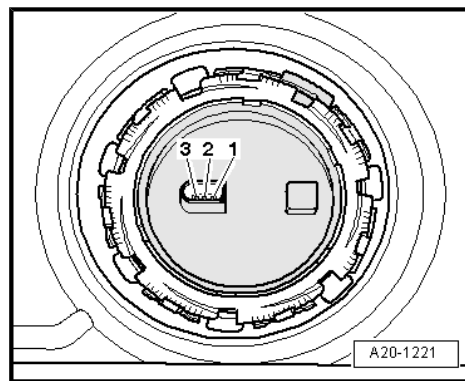
Note

In vehicles with two-wire sender, 2 contacts are connected in the electrical connector for fuel gauge sender 2 - G169- .

- Connect multimeter (resistance test) between contacts -1- and -2-.

With fuel gauge sender 2 - G169- installed:

- Sender at lower stop: 265 ... 291 Ω .
- Sender at upper stop: 47.5 ... 73 Ω .



Note

- ◆ *In order to test the maximum and minimum values for "tank full" and "tank empty", remove the fuel gauge sender 2 - G169- [⇒ page 79](#) and move the float all the way to its top or bottom position.*
- ◆ *If the resistance is 0 Ω , there is a short circuit. If the resistance is $\infty \Omega$, there is an open circuit in the wiring.*
- ◆ *The following values are obtained with the fuel gauge sender 2 - G169- removed, due to the greater travel of the float arm:*

With fuel gauge sender 2 - G169- removed:

- Sender at lower stop: approx. 299 Ω .
- Sender at upper stop: approx. 36.6 Ω .

Assembly is carried out in the reverse order; note the following:

- Install rear seat bench $\Rightarrow$ Rep. gr. 72 .



Vehicles from approx. 11.2004 onwards:



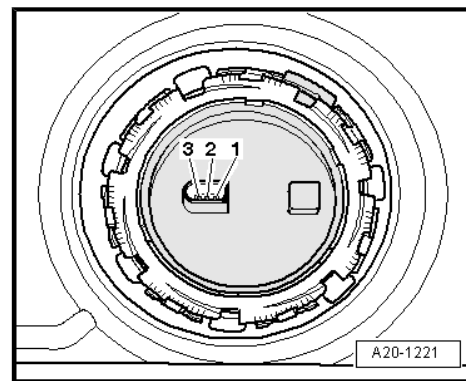
Note

In vehicles with three-wire sender, 3 contacts are connected in the electrical connector for fuel gauge sender 2 - G169-.

- Connect multimeter (resistance test) between contacts -1- and -2-.

With fuel gauge sender 2 - G169- installed:

- Sender at lower stop: approx. 270 Ω .
- Sender at upper stop: approx. 70 Ω .



Note

- ◆ *In order to test the maximum and minimum values for "tank full" and "tank empty", remove the fuel gauge sender 2 - G169- [⇒ page 79](#) and move the float all the way to its top or bottom position.*
- ◆ *If the resistance is 0 Ω , there is a short circuit. If the resistance is $\infty \Omega$, there is an open circuit in the wiring.*
- ◆ *The following values are obtained with the fuel gauge sender 2 - G169- removed, due to the greater travel of the float arm:*

With fuel gauge sender 2 - G169- removed:

- Sender at lower stop: approx. 286 Ω .
- Sender at upper stop: approx. 50 Ω .
- Connect multimeter (resistance test) between contacts -2- and -3-.

With fuel gauge sender 2 - G169- installed or removed:

- Sender in any position: approx. 340 Ω .

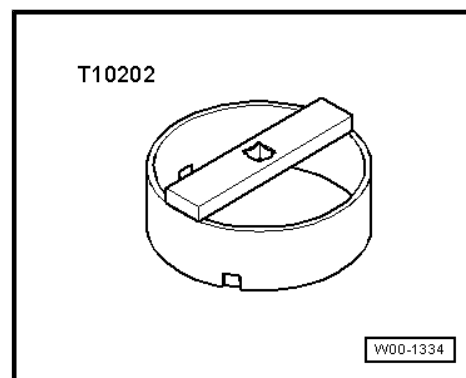
Assembly is carried out in the reverse order; note the following:

- Install rear seat bench $\Rightarrow$ Rep. gr. 72.

6.12 Removing and installing fuel gauge sender 2 - G169-

Special tools and workshop equipment required

- ◆ Wrench - T10202-



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Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- The fuel tank must not be more than $\frac{1}{3}$ full when removing fuel gauge sender 2 - G169- . Drain the tank if necessary.
Procedure ⇒ [page 42](#)

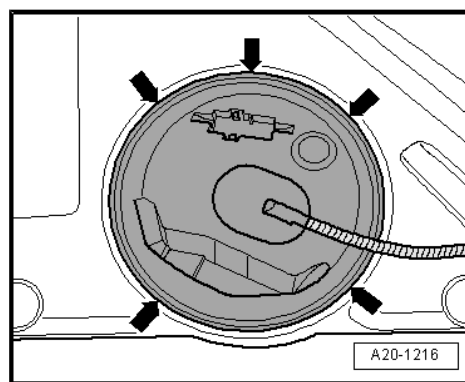


Caution

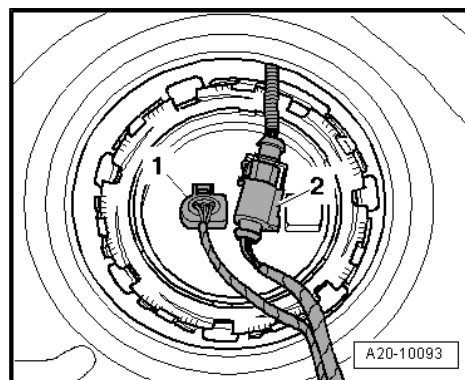
To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ⇒ Rep. gr. 27 .
- Briefly open filler cap for fuel tank and close again.
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (left-side).



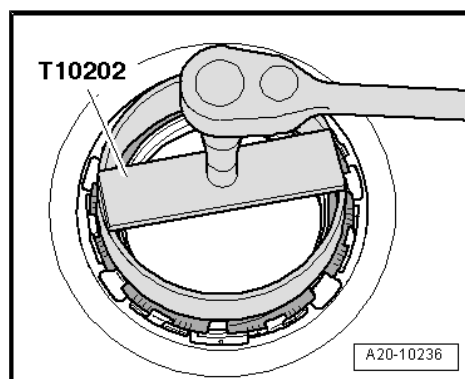
- Unplug electrical connector -1- at flange.
- Disengage electrical connector -2- and move it clear to the side.



Caution

The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel gauge sender 2 - G169- . Otherwise a large amount of fuel will escape.

- Unscrew locking ring using wrench - T10202-

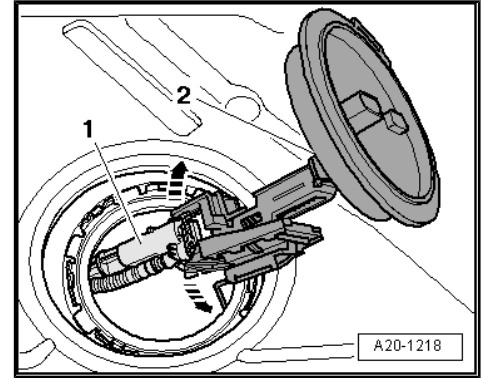


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- Carefully pull fuel gauge sender 2 - G169- -item 2- together with suction-jet pump -1- just slightly out of opening in fuel tank.
- Detach seal.
- Unclip suction-jet pump from flange -arrows-.

 Note

When removing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .



Installing

- Tightening torque ⇒ [page 58](#)

Installation is carried out in the reverse order; note the following:

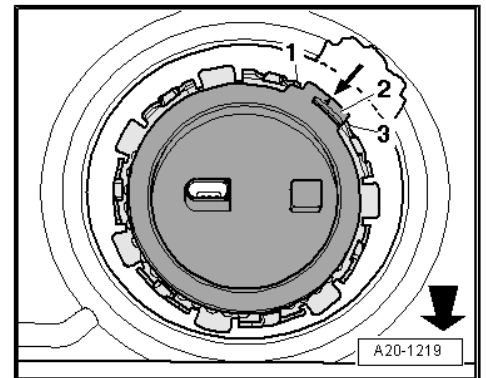
 Note

- ◆ *Renew seal.*
- ◆ *When installing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .*

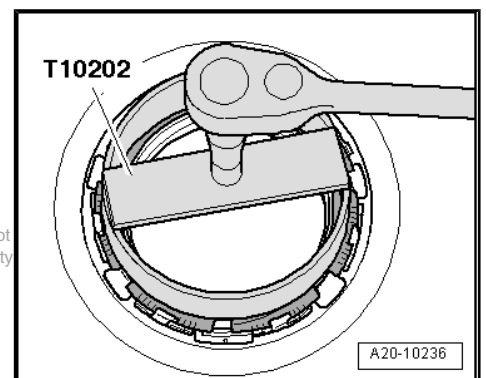
- Carefully insert fuel gauge sender 2 - G169- -item 2- into opening in fuel tank.
- Clip suction-jet pump -1- onto flange -2-, so that you hear it click into place (press jaws of retainer apart slightly -arrows- at flange).
- Install new seal for flange (seal must be installed dry).
- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards arrow marking, and must be between tabs -1- and -3- on fuel tank.

 Note

-Arrow- points in direction of travel.



- Tighten locking ring.
- Install rear seat bench ⇒ Rep. gr. 72 .
- Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .



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6.13 Suction-jet pump

On vehicles with four-wheel drive the fuel tank is divided into a left and a right chamber. A so-called suction-jet pump -1- is used for delivering the fuel from the left fuel tank chamber -3- to the baffle housing of the fuel delivery unit -2- on the right.

Suction-jet pump: operation

The suction-jet pump operates according to the principle of fluid entrainment: the stream of fuel from the electric fuel pump is passed through a nozzle in the suction-jet pump, and is thus accelerated. The accelerated stream of fuel draws off the surrounding fuel and delivers it to the baffle housing of the fuel delivery unit.

Faults caused by defective suction-jet pump



Note

If the suction-jet pump is defective, the engine can stop due to fuel starvation when the tank is still $\frac{1}{4}$ full.

If the suction-jet pump is not working, up to 15 litres of fuel (up to about $\frac{1}{4}$ of tank capacity) may remain in the left chamber of the tank, where it cannot be drawn into the fuel delivery unit.

If the engine stops due to fuel starvation with the tank up to about $\frac{1}{4}$ full, proceed as follows:

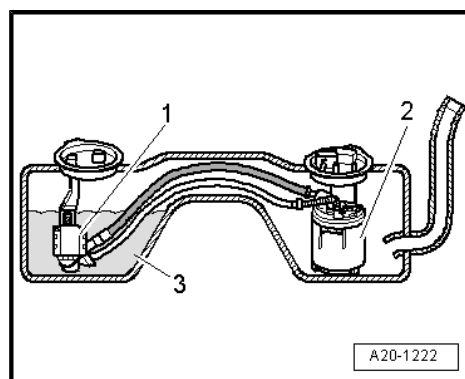
- Check fuel pump ⇒ [page 60](#) .

If fuel pump is OK, but no fuel is delivered:

- Put another 5 litres (approx.) of fuel into tank.
- Start engine.

If engine now starts:

- Renew suction-jet pump ⇒ [page 82](#) .

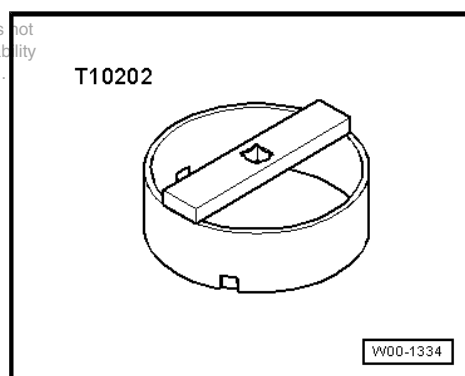


6.14 Removing and installing suction-jet pump

Special tools and workshop equipment required

- ◆ Wrench - T10202

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Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- The fuel tank must not be more than $\frac{1}{3}$ full when removing the suction-jet pump. Drain the tank if necessary. Procedure [⇒ page 42](#)



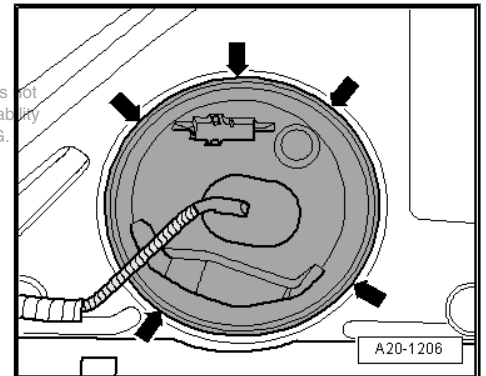
Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

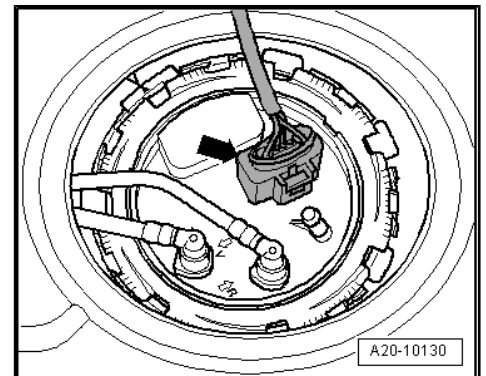
- ◆ **Observe notes on procedure for disconnecting the battery.**

- Disconnect battery ⇒ Rep. gr. 27 .
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).

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- Unplug electrical connector -arrow- at flange.



- Mark fuel supply line -1- and fuel return line -2-.



WARNING

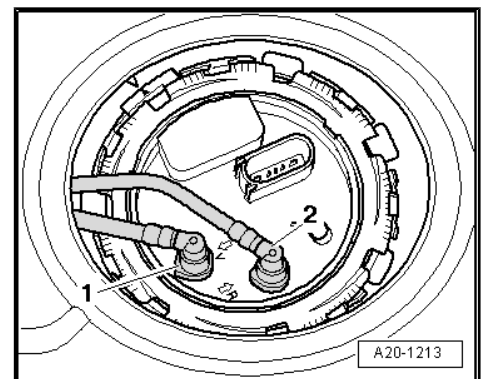
The fuel system operates at high pressure - risk of injuries!

- ◆ **To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.**

- Detach both lines from flange (press release tabs).

Vehicles with auxiliary heater:

- In addition, disconnect fuel supply line for auxiliary heater. For details of procedure, refer to ⇒ Rep. gr. 82 .



Continued for all vehicles:



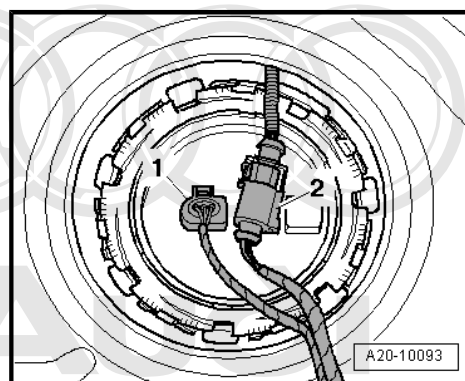
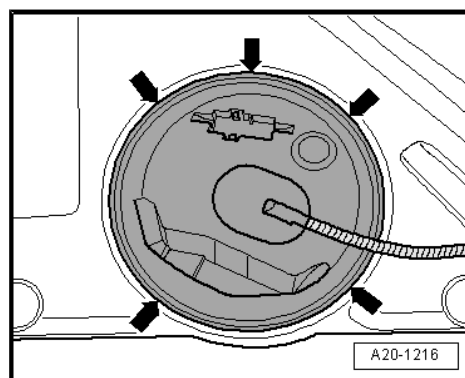
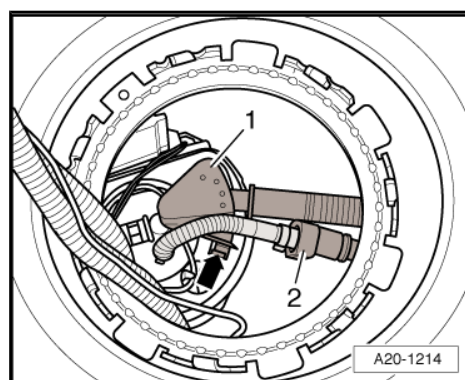
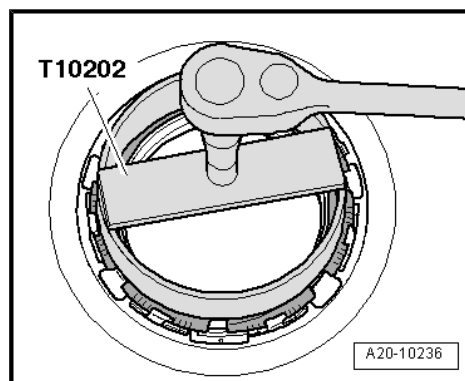
Caution

The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel delivery unit. Otherwise a large amount of fuel will escape.

- Unscrew locking ring using wrench - T10202- .
- Take flange and seal of fuel delivery unit out of opening in fuel tank and move clear, leaving pipes connected.
- In opening in fuel tank, press release tab to disconnect supply line -2- to suction-jet pump.
- Disconnect fuel supply line -1- (press release catch -arrow-).

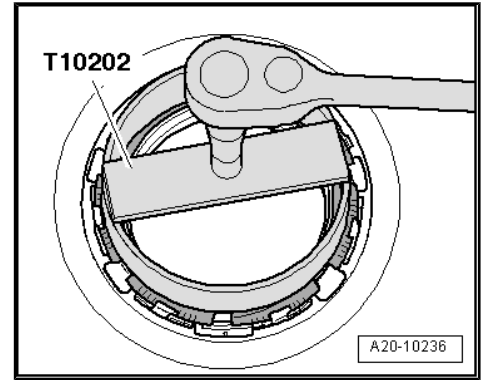
- Unclip the retaining tabs -arrows- for the flange cover (left-side).

- Unplug electrical connector -1- at flange.
- Disengage electrical connector -2- and move it clear to the side.



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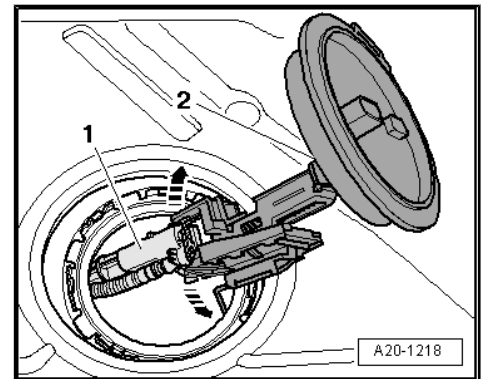
- Unscrew locking ring using wrench - T10202- .



- Carefully pull fuel gauge sender 2 - G169- -item 2- together with suction-jet pump -1- just slightly out of opening in fuel tank.
- Detach seal.
- Unclip suction-jet pump from flange -arrows-.

 Note

When removing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .



- Reach into fuel tank opening on left side of vehicle and pull out suction-jet pump, with pipes pointing towards the left.

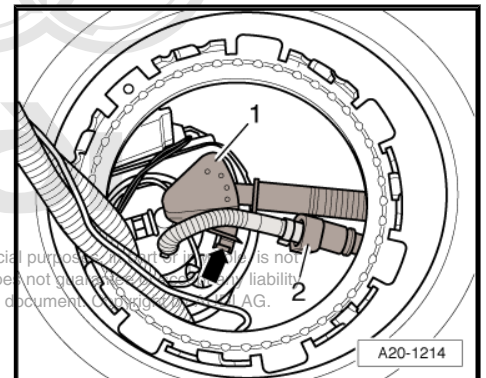
Installing

- Tightening torque ⇒ [page 58](#)

Installation is carried out in the reverse order; note the following:

 Note

- ◆ *Renew seals.*
- ◆ *When installing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .*
- Push suction-jet pump (with pipes attached) into fuel tank opening on left side of vehicle.
- Reach into fuel tank opening on right side of vehicle and pull suction-jet pump with pipes into the installation position.
- Fit supply line -1- so that it engages (you should hear it click into place).
- Fit supply line -2- leading to suction-jet pump so that it engages audibly.
- Install new seal for flange (seal must be installed dry).
- Slot guide sleeve on flange into guide sleeve on fuel delivery unit; make sure spring is not damaged.

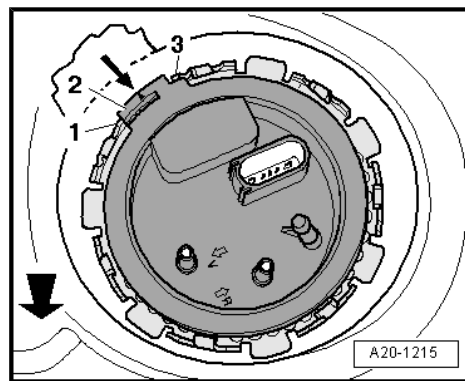


- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards arrow marking, and must be between tabs -1- and -3- on fuel tank.

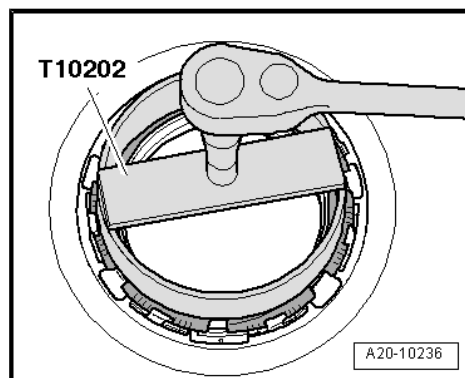


Note

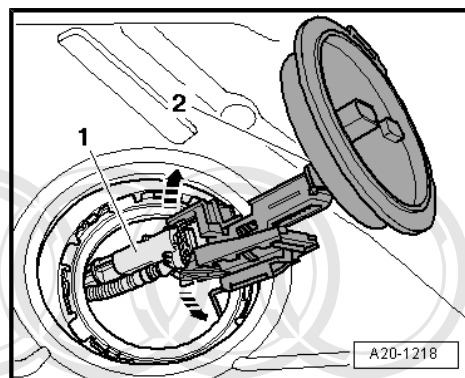
-Arrow- points in direction of travel.



- Tighten locking ring.



- Carefully insert fuel gauge sender 2 - G169- -item 2- into opening in fuel tank.
- Clip suction-jet pump -1- onto flange -2-, so that you hear it click into place (press jaws of retainer apart slightly -arrows- at flange).

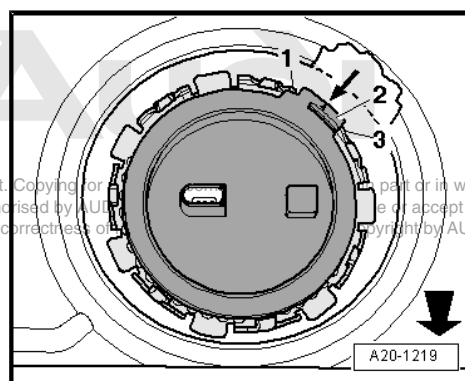


- Install new seal for flange (seal must be installed dry).
- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards arrow marking, and must be between tabs -1- and -3- on fuel tank.



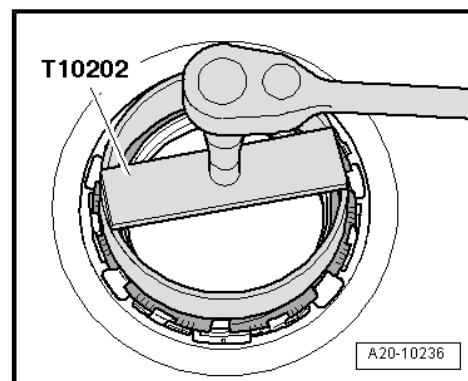
Note

-Arrow- points in direction of travel.



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- Tighten locking ring.
- Install rear seat bench ⇒ Rep. gr. 72 .
- Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .



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7 Fuel delivery unit and fuel gauge senders - version 2 for vehicles with four-wheel drive

7.1 Exploded view - fuel delivery unit and fuel gauge senders

1 - Fuel gauge sender - G-

- ☐ Checking resistance values ⇒ [page 108](#)
- ☐ Removing and installing ⇒ [page 110](#)

2 - Fuel delivery unit with flange

- ☐ Checking fuel pump (electrical test) ⇒ [page 90](#)
- ☐ Checking residual pressure ⇒ [page 22](#)
- ☐ Removing and installing ⇒ [page 102](#)

3 - Seal

- ☐ Renew
- ☐ Install dry

4 - Fuel supply line

- ☐ Black
- ☐ To fuel filter
- ☐ Do not kink
- ☐ Attached to connection marked "V" on flange
- ☐ To disconnect from flange, press release tab on connection piece

5 - Fuel return line

- ☐ Blue
- ☐ From fuel filter
- ☐ Do not kink
- ☐ Attached to connection marked "R" on flange
- ☐ To disconnect from flange, press release tab on connection piece

6 - Electrical connector

- ☐ For fuel system pressurisation pump - G6- and fuel gauge sender - G-

7 - Locking ring

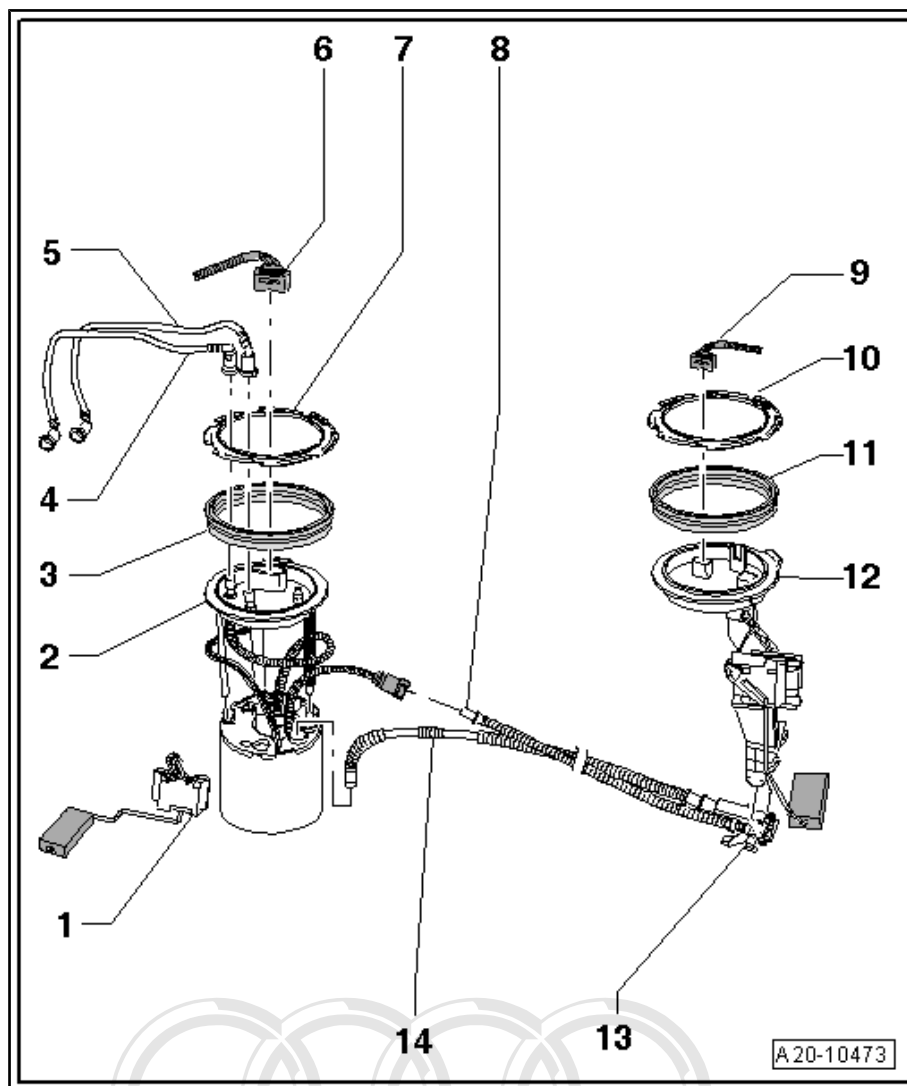
- ☐ Remove and install using wrench - T10202-
- ☐ Tighten to 110 Nm

8 - Fuel supply line

- ☐ From suction-jet pump to fuel delivery unit
- ☐ Clipped onto fuel delivery unit

9 - Electrical connector

- ☐ For fuel gauge sender 2 - G169-



10 - Locking ring

- ☐ Remove and install using wrench - T10202-
- ☐ Tighten to 110 Nm

11 - Seal

- ☐ Renew
- ☐ Install dry

12 - Fuel gauge sender 2 - G169-

- ☐ Only available together with -item 13-.
- ☐ Installation position ⇒ [page 115](#)
- ☐ Checking resistance values ⇒ [page 111](#)
- ☐ Removing and installing ⇒ [page 113](#)

13 - Suction-jet pump

- ☐ With lines
- ☐ Only available together with -item 12-.
- ☐ Removing and installing ⇒ [page 116](#)

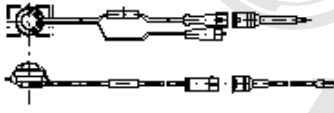
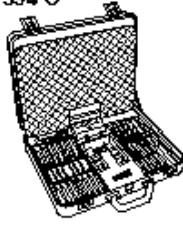
14 - Supply line for suction-jet pump

- ☐ From fuel pump to suction-jet pump
- ☐ Press release tab on connection piece to disconnect

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7.2 Checking fuel pump (electrical test) - TFSI and 6-cylinder engines

Special tools and workshop equipment required

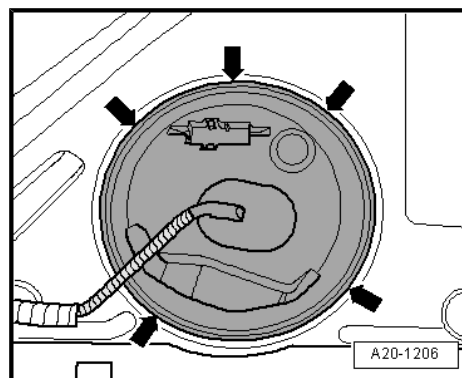
V.A.G 1348/3A 	V.A.G 1526 B 
V.A.G 1594 C 	Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
	G20-0048

- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-
- ◆ Hand-held multimeter - V.A.G 1526C-
- ◆ Auxiliary measuring set - V.A.G 1594C-

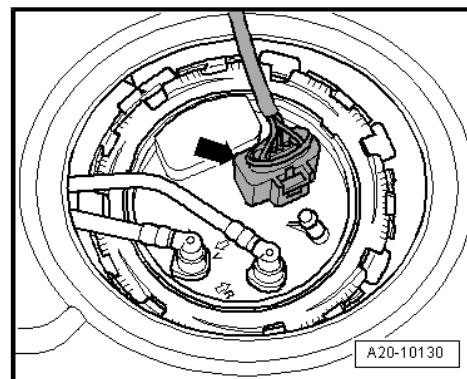
Procedure

Observe test conditions ⇒ [page 2](#) .

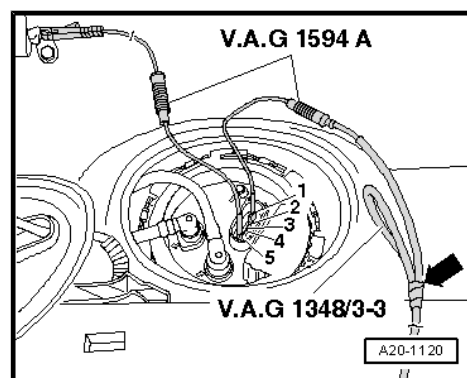
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+”.
- Press remote control button.
- Pump should start running audibly.



Note

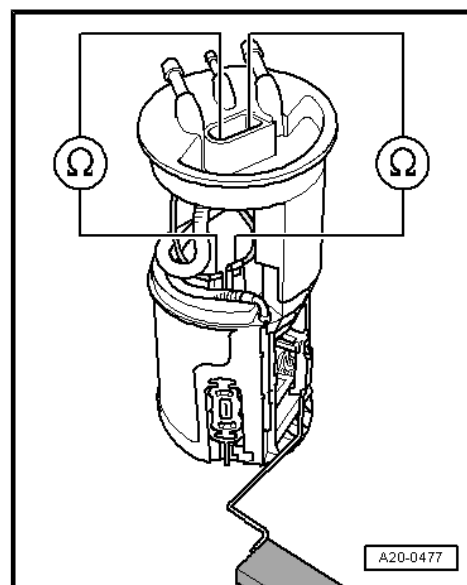
The fuel pump runs very quietly. Where possible, avoid noisy surroundings for this test.

If no noise can be heard from pump:

- Remove fuel delivery unit ⇒ [page 102](#) .
- Check that the electrical wires between flange and fuel pump are connected and test for continuity.

If no fault is found in wiring, fuel pump is defective. Renew fuel delivery unit.

- Install fuel delivery unit ⇒ [page 104](#) .



7.3 Checking fuel pump control unit - J538- - TFSI engine

- ◆ On vehicles with TFSI engine voltage for the fuel pump is supplied via fuel pump control unit - J538- .
- ◆ Check fuel pump control unit -J538- in “Guided Fault Finding” ⇒ Vehicle diagnostic tester.

7.4 Removing and installing fuel pump control unit - J538- - vehicles with 1.8 ltr./ 2.0 ltr. TFSI engine

Removing

TT Coupé:

- Remove rear seat bench ⇒ Rep. gr. 72 .

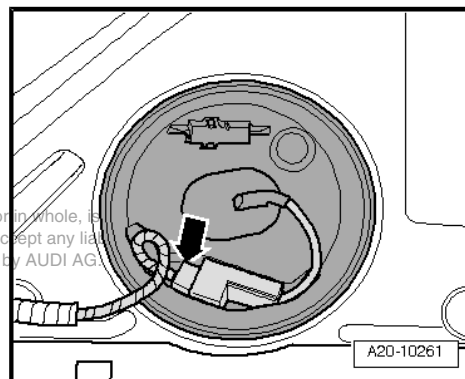
TT Roadster:

- Remove back panel side trim (right-side) ⇒ Rep. gr. 70 .

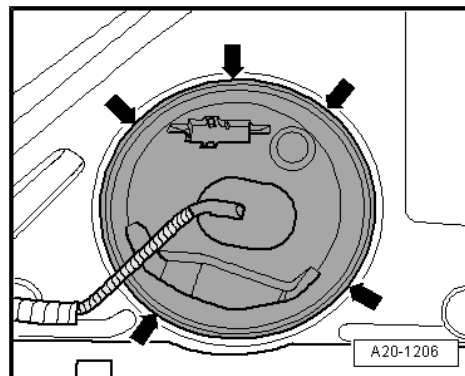
Continued for all vehicles:

- Remove fuel pump control unit - J538- from cover for flange and unplug electrical connector -arrow-.

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- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.

Installing

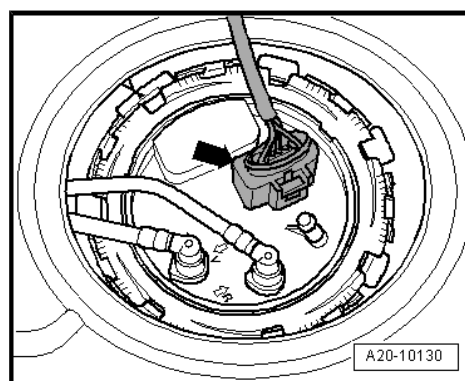
Installation is carried out in the reverse order; note the following:

TT Coupé:

- Install rear seat bench ⇒ Rep. gr. 72 .

TT Roadster:

- Install back panel side trim (right-side) ⇒ Rep. gr. 70 .



7.5 Removing and installing fuel pump control unit - J538- - vehicles with 2.5 ltr. TFSI engine

Removing

TT Coupé:

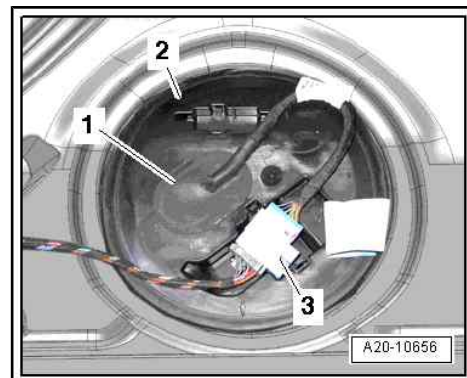
- Remove rear seat bench ⇒ Rep. gr. 72 .

TT Roadster:

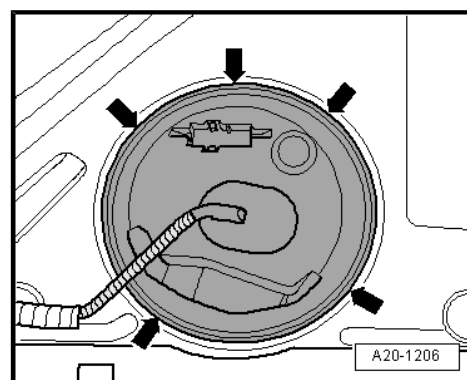
- Remove back panel side trim (right-side) ⇒ Rep. gr. 70 .

Continued for all vehicles:

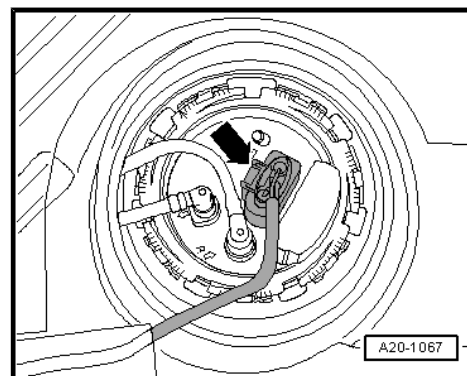
- Take electrical connector -3- out of flange cover and unplug (press release tab).
- Pull grommet -1- off flange cover -2-.



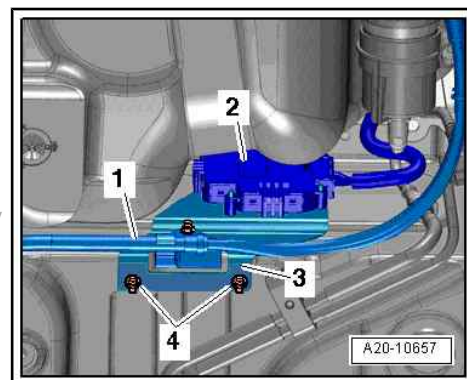
- Unclip retaining tabs -arrows- for flange cover.
- Detach flange cover.



- Unplug electrical connector -arrow- at flange.



- Disengage handbrake cable -1- from bracket.
- Remove bolts -4-.



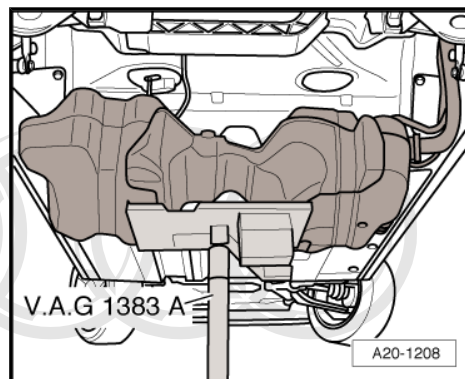
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Caution

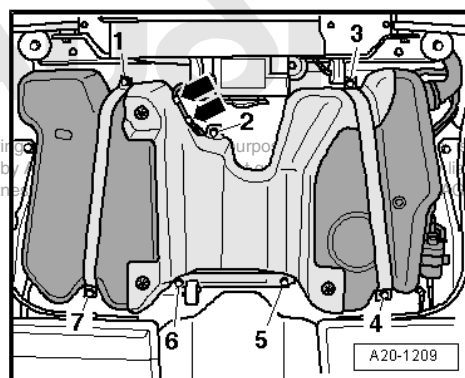
Risk of overstretching electrical wiring.

- ◆ *Lower fuel tank using engine and gearbox jack - V.A.G 1383 A- by max. 20 mm so that fuel pump control unit can be detached together with electrical wiring harness and connector.*



- Remove bolts -3, 4, 5-.
- Lower fuel tank with engine and gearbox jack - V.A.G 1383 A- by max. 20 mm.

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- Detach bracket -3- with control unit -2-, and at the same time guide out electrical connector and wiring harness for fuel pump control unit.

Installing

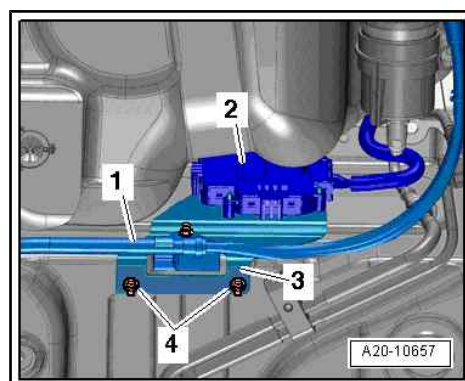
Installation is carried out in the reverse order; note the following:

TT Coupé:

- Install rear seat bench ⇒ Rep. gr. 72 .

TT Roadster:

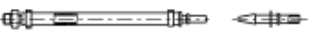
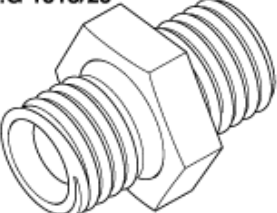
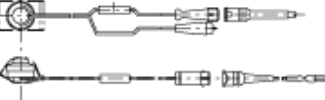
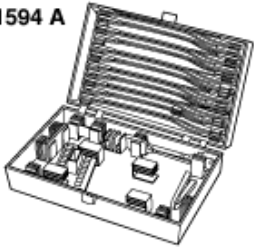
- Install back panel side trim (right-side) ⇒ Rep. gr. 70 .



7.6 Checking fuel pump delivery rate - vehicles with 1.8 ltr./2.0 ltr. TFSI engine

Special tools and workshop equipment required

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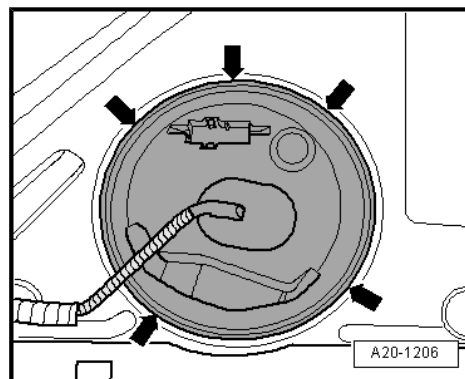
V.A.G 1318 	V.A.G 1318/11 
V.A.G 1318/17 V.A.G 1318/17-1 V.A.G 1318/17-4  V.A.G 1318/17-6 V.A.G 1318/17-3 	V.A.G 1318/23 
V.A.G 1348/3A 	V.A.G 1594 A  G20-0045

- ◆ K-Jetronic pressure tester - V.A.G 1318-
- ◆ Adapter - V.A.G 1318/11-
- ◆ Adapter -V.A.G 1318/17-1- from adapter set - V.A.G 1318/17-
- ◆ Connector - V.A.G 1318/23-
- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-
- ◆ Auxiliary measuring set - V.A.G 1594C-
- ◆ Fuel-resistant measuring container

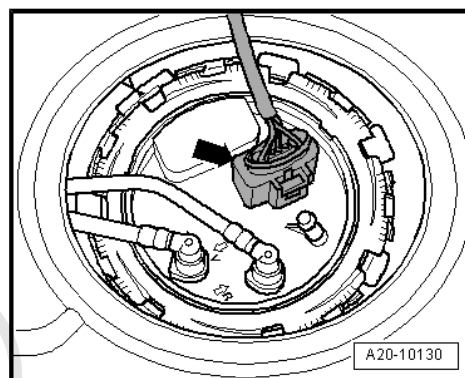
Procedure

Observe test conditions ⇒ [page 2](#) .

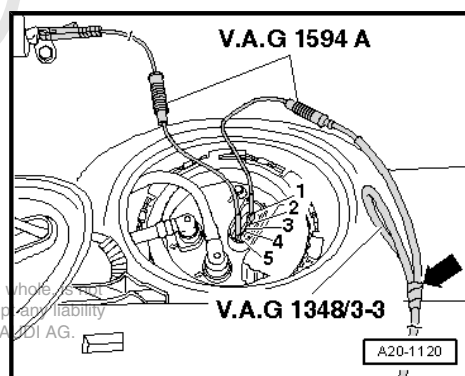
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery +
- Remove filler cap from fuel filler neck.



WARNING

The fuel system operates at high pressure - risk of injuries!

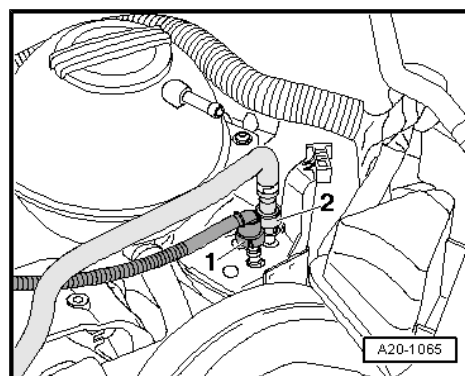
- ◆ **To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.**

- Disconnect fuel line -2- (lift release tab).

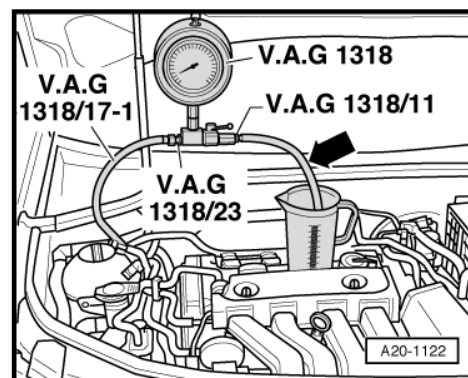


Note

Disregard -item 1-.



- Screw connector - V.A.G 1318/23- and adapter -V.A.G 1318/17-1- onto K-Jetronic pressure tester - V.A.G 1318- .
- Fit adapter -V.A.G 1318/17-1- onto disconnected fuel line.
- Screw adapter - V.A.G 1318/11- onto K-Jetronic pressure tester - V.A.G 1318- . Attach test hose -arrow- and hold end of hose in measuring container.
- Open cut-off valve on pressure tester. Lever must point in direction of flow.
- Build up pressure in fuel system by pressing the remote control and slowly closing the cut-off valve on the pressure tester.
- Specification: 4 bar
- From this point on do not move position of cut-off valve.
- Empty the measuring container.
- Press remote control button for 15 seconds.
- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



Note

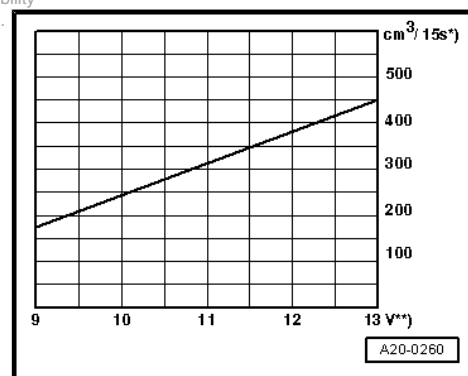
Voltage at fuel pump with engine stationary and pump running is approx. 2 volts less than battery voltage.

If minimum delivery rate is not reached, check for the following causes:

- ◆ Fuel lines have been crushed.
- ◆ Fuel filter is blocked.
- ◆ Fuel pump is defective.

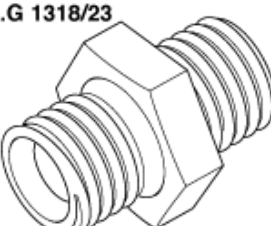
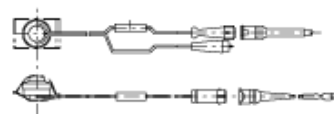
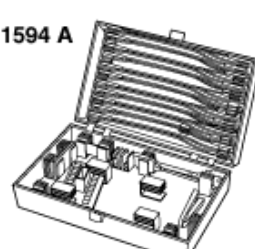
Assembly is carried out in the reverse order; note the following:

- Install rear seat bench ⇒ Rep. gr. 72 .



7.7 Checking fuel pump delivery rate - vehicles with 2.5 ltr. TFSI engine

Special tools and workshop equipment required

V.A.G 1318 	V.A.G 1318/11 
V.A.G 1318/17 V.A.G 1318/17-1 V.A.G 1318/17-4  V.A.G 1318/17-8 V.A.G 1318/17-3 	V.A.G 1318/23 
V.A.G 1348/3A 	V.A.G 1594 A  G20-0045

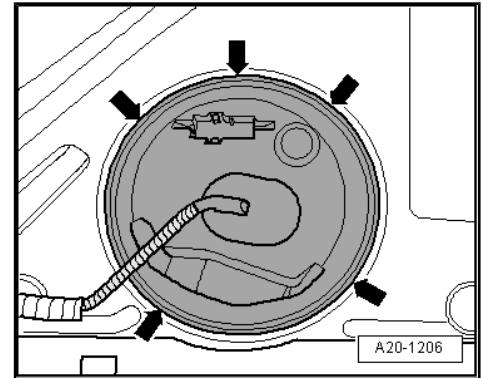
- ◆ K-Jetronic pressure tester - V.A.G 1318-
- ◆ Adapter - V.A.G 1318/11-
- ◆ Adapter -V.A.G 1318/17-1A-
- ◆ Connector - V.A.G 1318/23-
- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-
- ◆ Auxiliary measuring set - V.A.G 1594C-
- ◆ Fuel-resistant measuring container

Procedure

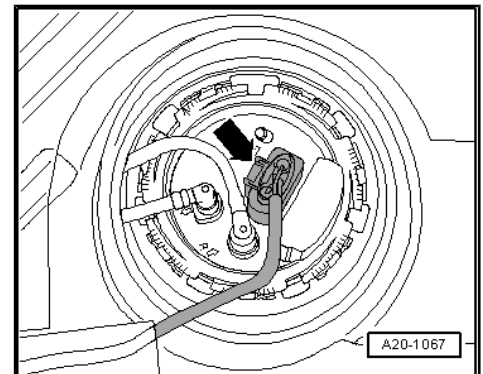
Observe test conditions ⇒ [page 2](#)

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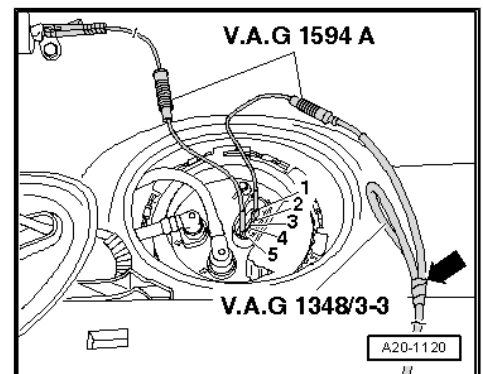
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip retaining tabs -arrows- for flange cover.



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable -V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+” (positive terminal in engine compartment).
- Remove filler cap from fuel filler neck.



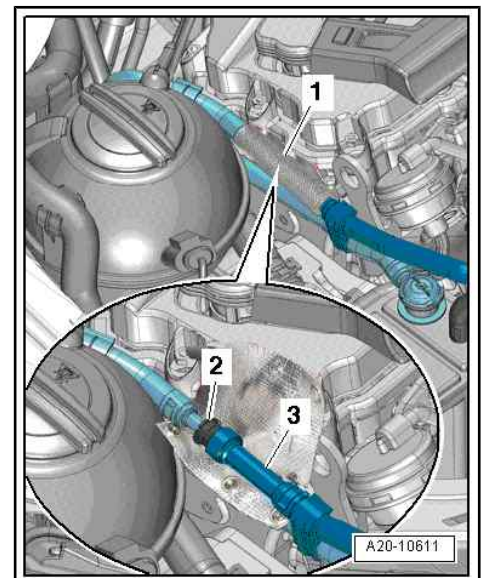
- Detach fuel line from retainer and remove heat insulation sleeve -1- at fuel line connection.



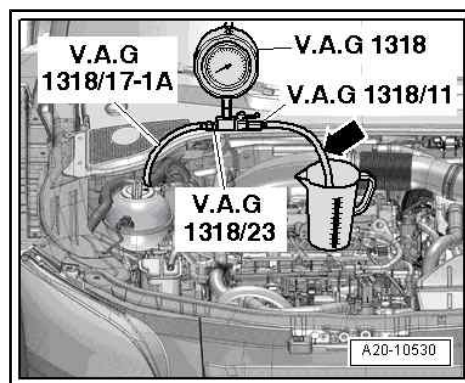
WARNING

The fuel system operates at high pressure - risk of injuries!
 ♦ **To reduce the pressure in the fuel system, wrap a clean cloth around the connection and loosen the connection carefully.**

- Disconnect fuel line -3- by pulling release ring -2-.



- Screw connector - V.A.G 1318/23- and adapter -V.A.G 1318/17-1A- onto K-Jetronic pressure tester - V.A.G 1318- .
- Fit adapter -V.A.G 1318/17-1A- onto disconnected fuel line.
- Screw adapter - V.A.G 1318/11- onto K-Jetronic pressure tester - V.A.G 1318- .
- Attach test hose -arrow- and hold end of hose in measuring container.
- Open cut-off valve on pressure tester.
- Lever must point in direction of flow.
- Build up pressure in fuel system by pressing the remote control button and slowly closing the cut-off valve on the pressure tester.
- Specification: 4 bar
- From this point on do not move position of cut-off valve.
- Empty the measuring container.
- Press remote control button for 15 seconds.
- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



Note

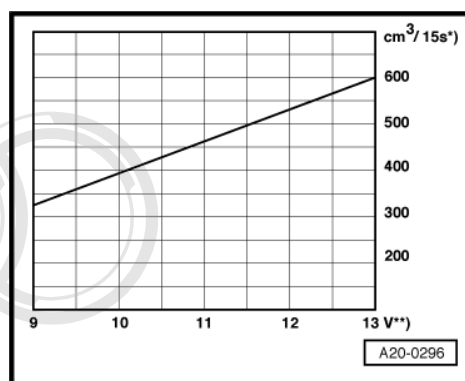
Voltage at fuel pump with engine stationary and pump running is approx. 2 volts less than battery voltage.

If minimum delivery rate is not reached, check for the following causes:

- ◆ Fuel lines have been crushed.
- ◆ Fuel filter is blocked.
- ◆ Fuel pump is defective.

Assembly is carried out in the reverse order; note the following:

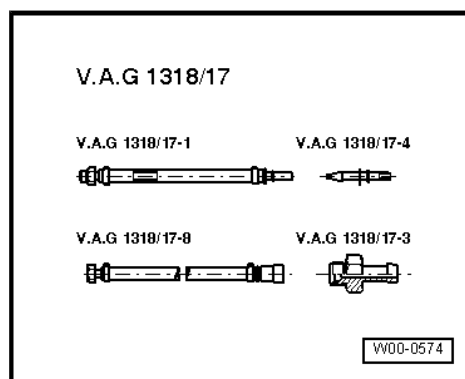
- Install rear seat bench ⇒ Rep. gr. 72



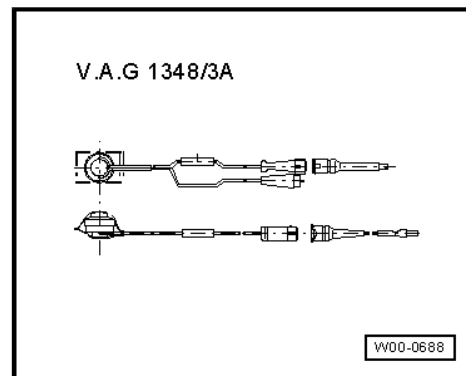
7.8 Checking fuel pump delivery rate - 6-cylinder engine

Special tools and workshop equipment required

- ◆ Adapter -V.A.G 1318/17-1- from adapter set - V.A.G 1318/17-



- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-

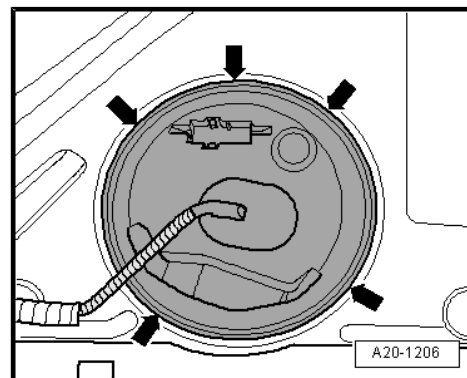


- ◆ Fuel-resistant measuring container

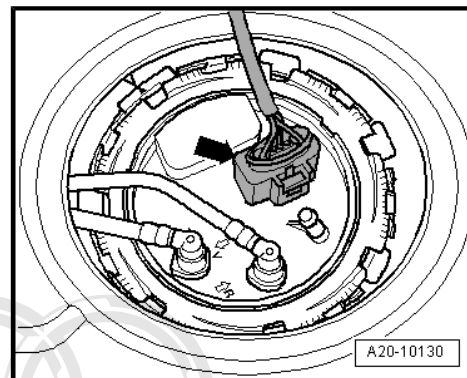
Procedure

Observe test conditions ⇒ [page 2](#) .

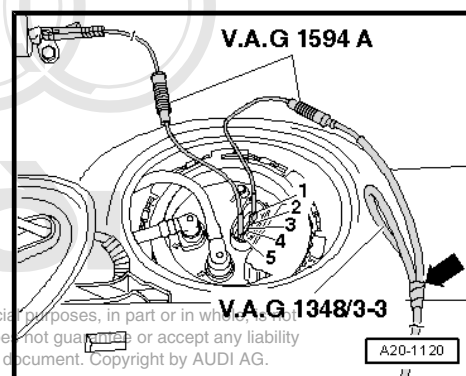
- Remove filler cap from fuel filler neck.
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable - V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to the body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect crocodile clip to battery “+”.



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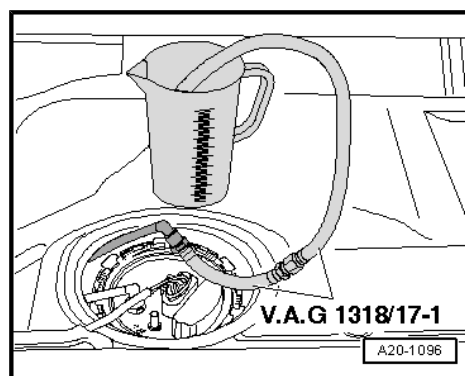
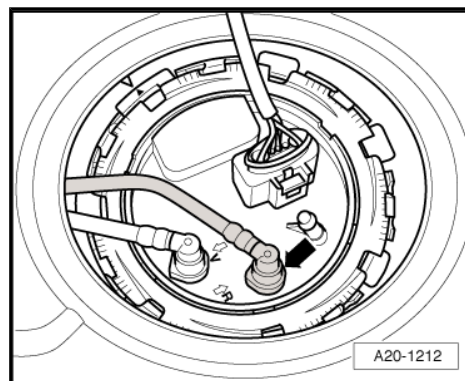


WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

- Press release tab and disconnect fuel return line -arrow-.
- Fit adapter -V.A.G 1318/17-1- onto disconnected fuel return line and hold adapter hose in measuring container.
- Press remote control button for 15 seconds.



- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



Note

Voltage at fuel pump with engine stationary and pump running is approx. 2 volts less than battery voltage.

If minimum delivery rate is not reached, check for the following causes:

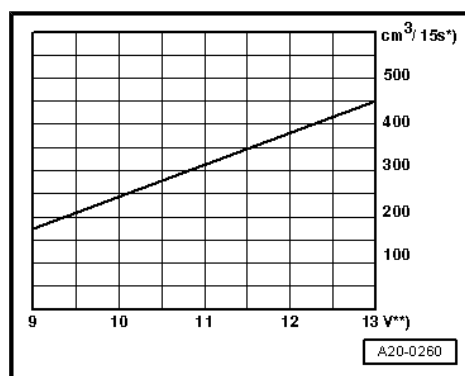
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- ◆ **Fuel lines have been crushed.**

- ◆ Fuel filter is blocked.
- ◆ Fuel pump is defective.

Assembly is carried out in the reverse order; note the following:

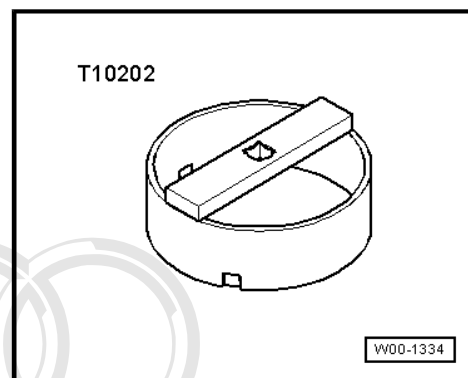
- Install rear seat bench ⇒ Rep. gr. 72 .



7.9 Removing and installing fuel delivery unit

Special tools and workshop equipment required

◆ Wrench - T10202-



Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel delivery unit. Drain the tank if necessary. Procedure ⇒ [page 42](#)



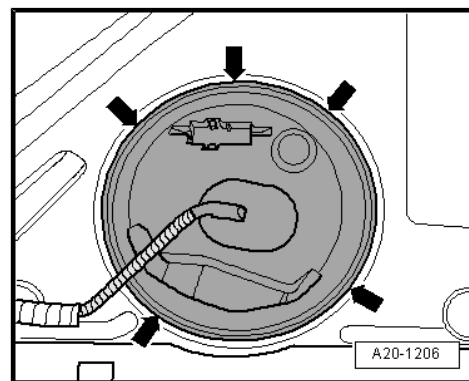
Caution

To prevent irreparable damage to the electronic components when disconnecting the battery:

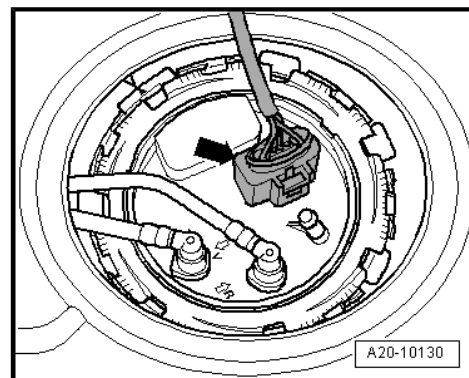
- ◆ **Observe notes on procedure for disconnecting the battery.**

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- Disconnect battery ⇒ Rep. gr. 27 .
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Mark fuel supply line -1- and fuel return line -2-.



WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ **To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.**

- Detach both lines from flange (press release tabs).

Vehicles with auxiliary heater:

- In addition, disconnect fuel supply line for auxiliary heater. For details of procedure, refer to ⇒ Rep. gr. 82 .

Continued for all vehicles:



Caution

The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel delivery unit. Otherwise a large amount of fuel will escape.

- Unscrew locking ring using wrench - T10202- .
- Take flange (right-side) and seal of fuel delivery unit out of opening in fuel tank and move clear, leaving pipes connected.
- In opening in fuel tank, press release tab to disconnect supply line -1- to suction-jet pump.
- Disconnect fuel supply line -2- (press release catch -arrow-).
- Remove fuel delivery unit.



Note

- ◆ **When removing fuel delivery unit, make sure you do not bend float arm of fuel gauge sender -G- .**
- ◆ **Keep in mind that the fuel delivery unit still contains fuel.**

Installing

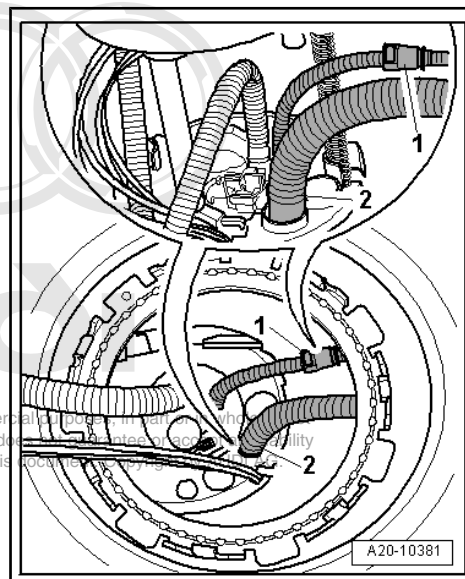
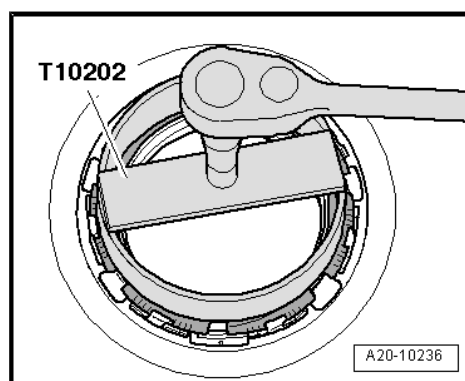
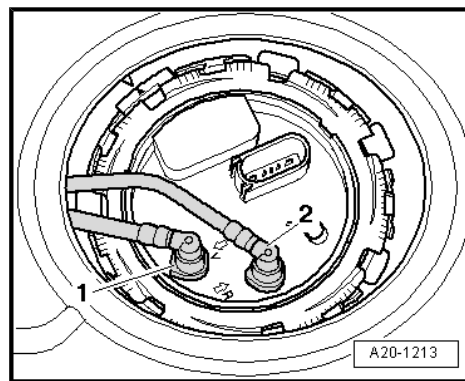
- Tightening torque ⇒ [page 88](#)

Installation is carried out in the reverse order; note the following:



Note

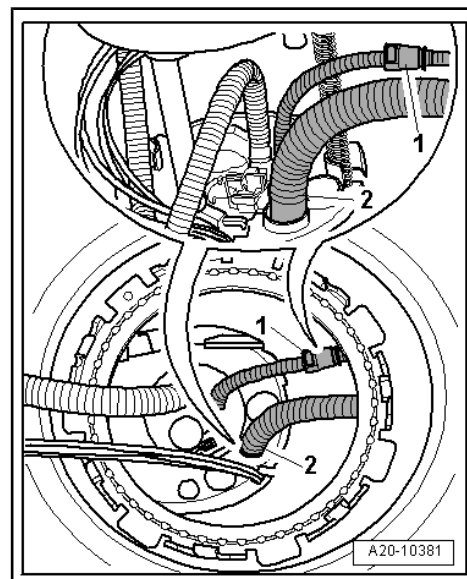
- ◆ **Renew seal.**
- ◆ **Take care not to bend the fuel gauge sender - G- when fitting the fuel delivery unit.**
- ◆ **Ensure that fuel hoses are securely seated.**



- Insert fuel delivery unit into fuel tank, with flange set aside.
- Fit fuel supply line -2-, so that it engages (you should hear it click into place).
- Fit supply line -1- leading to suction-jet pump so that it engages audibly.

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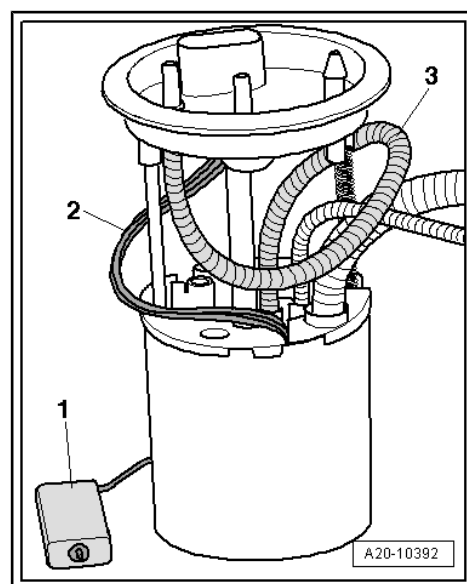
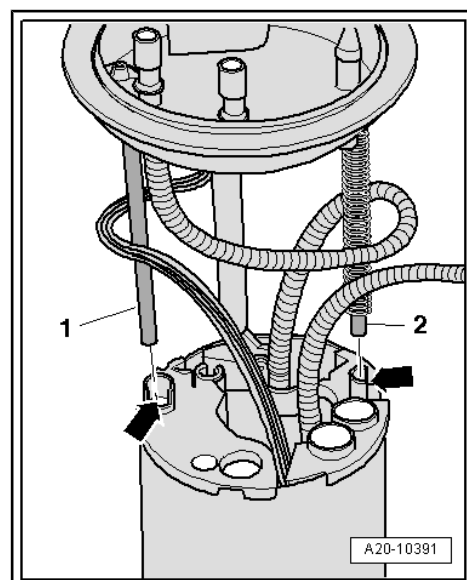
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Note

The fuel delivery unit is shown without the fuel tank in the next two illustrations.

- Fit new seal for flange in fuel tank opening (seal should be dry).
- Insert guide tubes -1- and -2- on flange into corresponding holes -arrows- in fuel delivery unit.
- Make sure that electrical wiring -2- and fuel supply line -3- are positioned as shown so they do not obstruct lever -1- of fuel gauge sender.

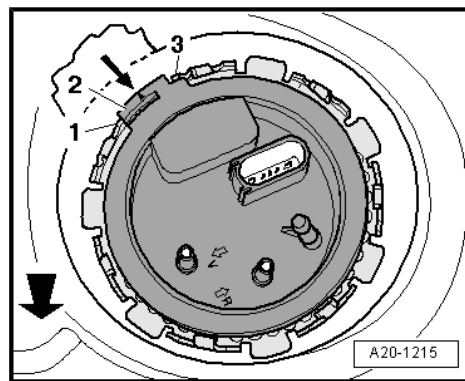


- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards -arrow- marking, and must be between tabs -1- and -3- on fuel tank.



Note

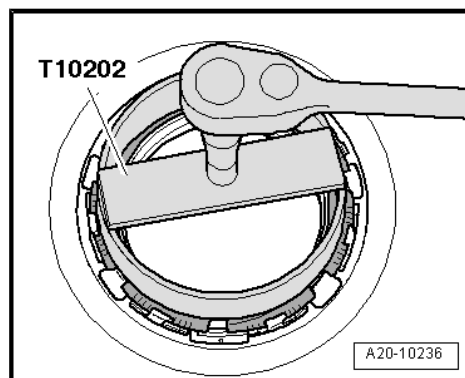
-Arrow- points in direction of travel.



- Tighten locking ring.
- Install rear seat bench ⇒ Rep. gr. 72 .
- Connect battery. Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .

Vehicles with FSI engine:

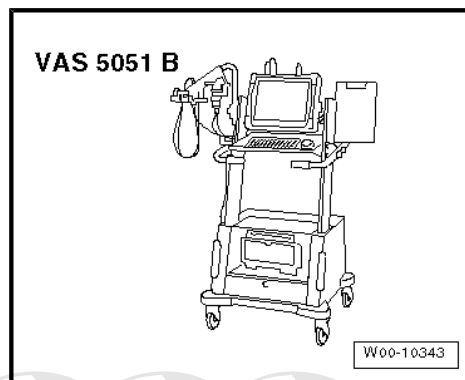
- After renewing the fuel delivery unit, the fuel pump must be adapted ⇒ [page 106](#) .



7.10 Adapting fuel pump after renewing fuel delivery unit - TFSI engine

Special tools and workshop equipment required

- ♦ Vehicle diagnostic, testing and information system - VAS 5051B-

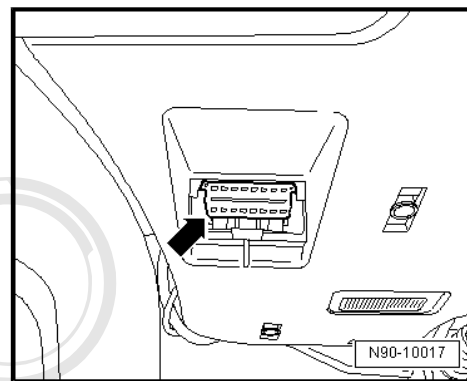


Note

If the fuel pump is renewed on vehicles with an FSI or TFSI engine, the fuel pump has to be adapted to the engine control unit.

Procedure

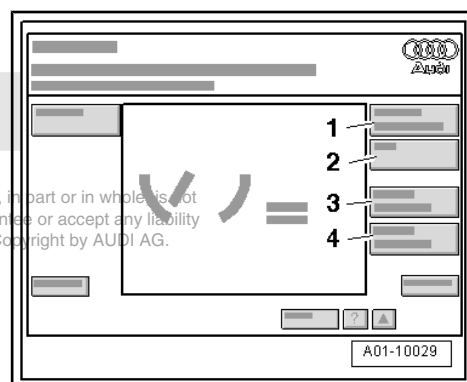
- Vehicle diagnostic, testing and information system - VAS 5051B- connected to diagnostic connection -arrow-.
- No faults stored in event memory.
- Engine running at idling speed.



Display on -VAS 5051B- :

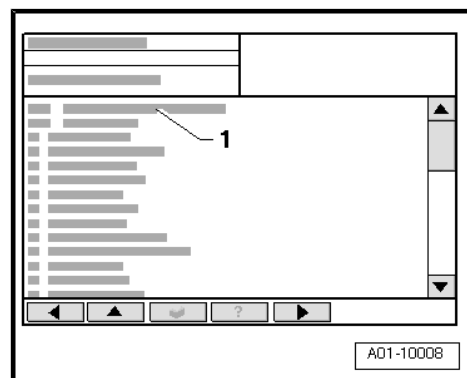
- Select **Vehicle self-diagnosis** from the list -item 1-.

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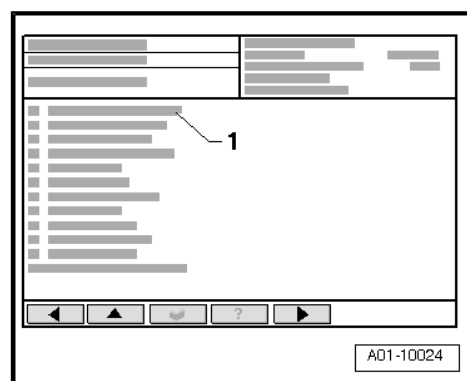
Display on -VAS 5051B- :

- From menu -1-, select vehicle system "Engine electronics" and press  key to advance.



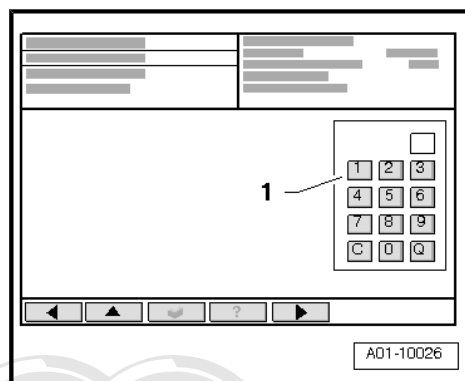
Display on -VAS 5051B- :

- From menu -1-, select function "Basic setting" and press  key to advance.



Display on -VAS 5051B- :

- Press keys **1** **0** **3** on keypad -1- to select “Display group 103” and confirm entry by pressing **Q** key.



- Activate basic setting by touching **Activate** key -A-.

Display on -VAS 5051B- :

- Check display in zone -4-.

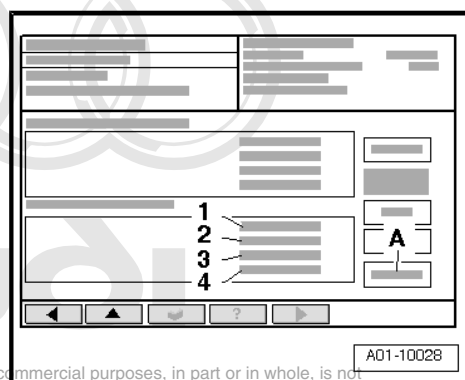
Indicated on display: “ADP runs”. When the fuel pump has been successfully adapted, the display will show “ADP OK”.



Note

If display shows “ADP n.OK”: interrogate event memory.

- Exit “Basic setting” function by pressing **Q** key.
- Select function “End output”.
- Switch off ignition and unplug diagnostic connector.

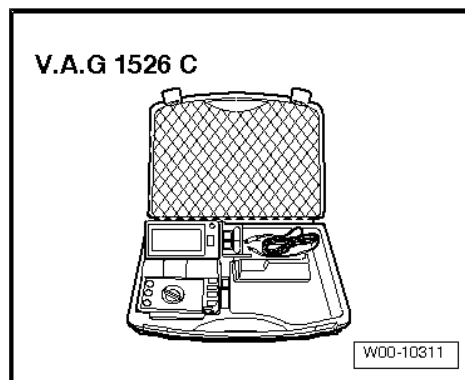


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7.11 Checking fuel gauge sender - G-

Special tools and workshop equipment required

- ◆ Hand-held multimeter - V.A.G 1526C-

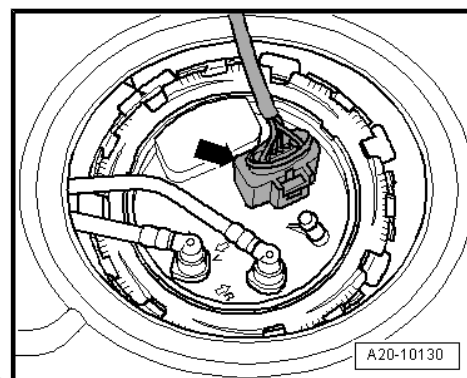
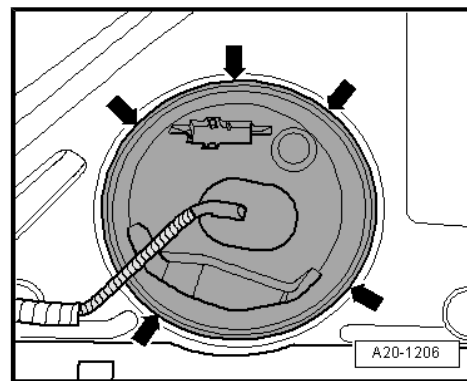


- ◆ Auxiliary measuring set - V.A.G 1594C-



Test sequence

- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).
- Unplug electrical connector -arrow- at flange.



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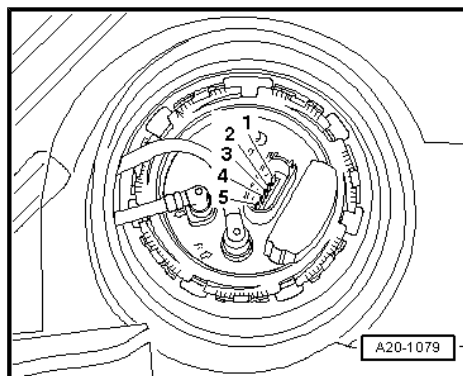
Note

In vehicles with three-wire sender, 5 contacts are connected in the connector for fuel gauge sender - G- .

- Connect multimeter (resistance test) between contacts -2- and -3-.

Fuel gauge sender - G- installed:

- Sender at lower stop: approx. 270 Ω .
- Sender at upper stop: approx. 70 Ω .



Note

- ◆ To test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel delivery unit [⇒ page 102](#) and move the sender float all the way to its top or bottom position.
- ◆ If the resistance is 0 Ω , there is a short circuit. If the resistance is $\infty \Omega$, there is an open circuit in the wiring.
- ◆ The following values are obtained with the fuel gauge sender - G- removed, due to the greater travel of the float arm:

Fuel gauge sender - G- removed:

- Sender at lower stop: approx. 290 Ω .
- Sender at upper stop: approx. 60 Ω .
- Connect multimeter (resistance test) between contacts -3- and -4-.

Fuel gauge sender - G- installed or removed:

- Sender in any position: approx. 340 Ω .

Assembly is carried out in the reverse order; note the following:

- Install rear seat bench $\Rightarrow$ Rep. gr. 72 .

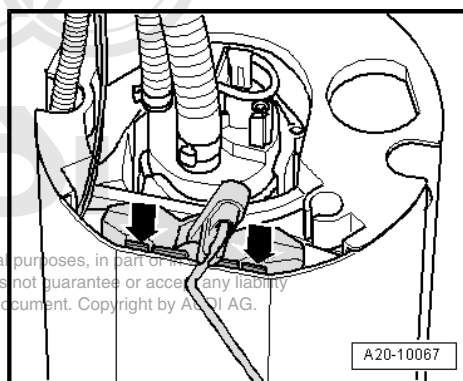
7.12 Removing and installing fuel gauge sender - G-

Removing

Observe safety precautions [⇒ page 1](#) .

Observe rules for cleanliness [⇒ page 2](#) .

- Remove fuel delivery unit [⇒ page 102](#) .
- Use screwdriver to release retaining tabs -arrows- and lift out fuel gauge sender - G- .



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Caution

First release retaining tabs on connector contact before unplugging electrical connectors on fuel gauge sender - G-.

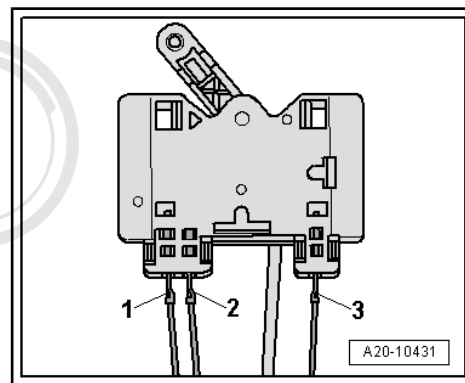
- Release retaining tabs on electrical connectors -1 ... 3- and then unplug electrical connectors.

Installing

Installation is carried out in the reverse order; note the following:

- Insert fuel gauge sender - G- into guides on fuel delivery unit and press upwards until it clicks into place.
- Plug in electrical connectors and check that they have engaged properly.
- Install fuel delivery unit → [page 104](#) ; observe instructions for connecting battery.

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7.13 Checking fuel gauge sender 2 - G169-

Special tools and workshop equipment required

- ◆ Hand-held multimeter - V.A.G 1526C-

V.A.G 1526 C



W00-10311

- ◆ Auxiliary measuring set - V.A.G 1594C-

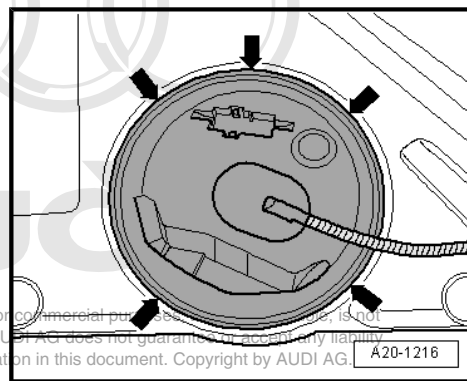
V.A.G 1594 C



W00-10008

Test sequence

- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (left-side).

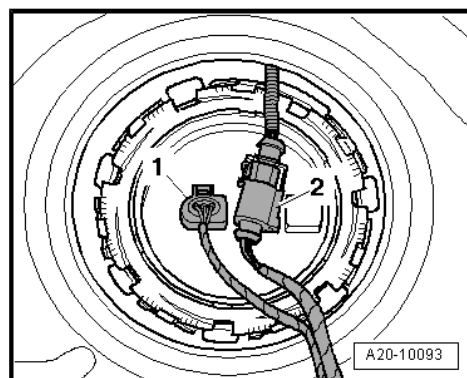


- Unplug electrical connector -1- at flange.



Note

Disregard -item 2-.



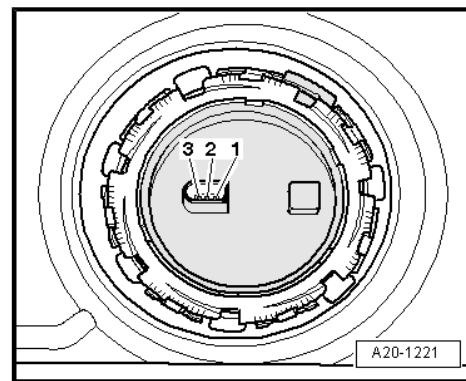
 Note

In vehicles with three-wire sender, 3 contacts are connected in the electrical connector for fuel gauge sender 2 - G169-.

- Connect multimeter (resistance test) between contacts -1- and -2-.

With fuel gauge sender 2 - G169- installed:

- Sender at lower stop: approx. 270 Ω .
- Sender at upper stop: approx. 70 Ω .



 Note

- ◆ *In order to test the maximum and minimum values for "tank full" and "tank empty", remove the fuel gauge sender 2 - G169- [⇒ page 113](#) and move the float all the way to its top or bottom position.*
- ◆ *If the resistance is 0 Ω , there is a short circuit. If the resistance is $\infty \Omega$, there is an open circuit in the wiring.*
- ◆ *The following values are obtained with the fuel gauge sender 2 - G169- removed, due to the greater travel of the float arm:*

With fuel gauge sender 2 - G169- removed:

- Sender at lower stop: approx. 286 Ω .
- Sender at upper stop: approx. 50 Ω .
- Connect multimeter (resistance test) between contacts -2- and -3-.

With fuel gauge sender 2 - G169- installed or removed:

- Sender in any position: approx. 340 Ω .

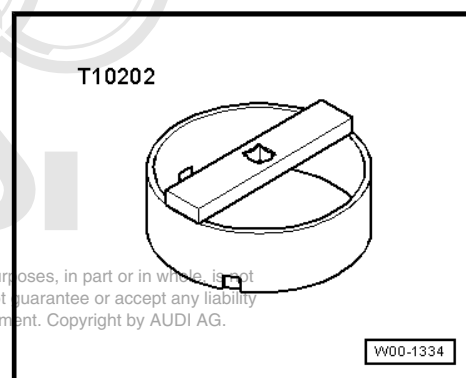
Assembly is carried out in the reverse order; note the following:

- Install rear seat bench $\Rightarrow$ Rep. gr. 72 .

7.14 Removing and installing fuel gauge sender 2 - G169-

Special tools and workshop equipment required

- ◆ Wrench - T10202-



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Removing

Observe safety precautions [⇒ page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- The fuel tank must not be more than $\frac{1}{3}$ full when removing fuel gauge sender 2 - G169- . Drain the tank if necessary.
Procedure ⇒ [page 42](#)

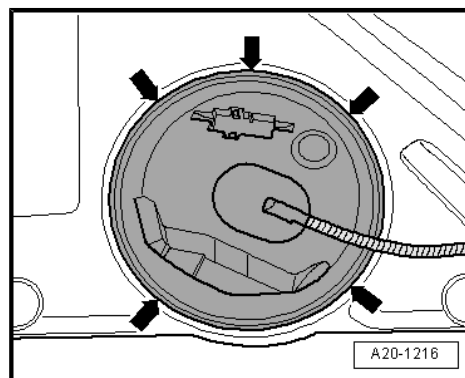


Caution

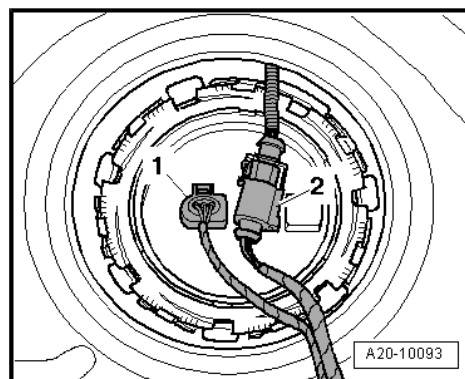
To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ Observe notes on procedure for disconnecting the battery.

- Disconnect battery ⇒ Rep. gr. 27 .
- Briefly open filler cap for fuel tank and close again.
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (left-side).



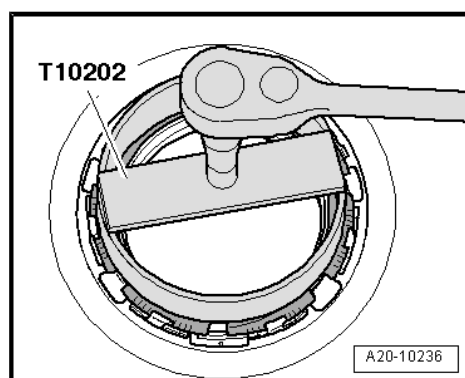
- Unplug electrical connector -1- at flange.
- Disengage electrical connector -2- and move it clear to the side.



Caution

The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel gauge sender 2 - G169- . Otherwise a large amount of fuel will escape.

- Unscrew locking ring using wrench - T10202- .

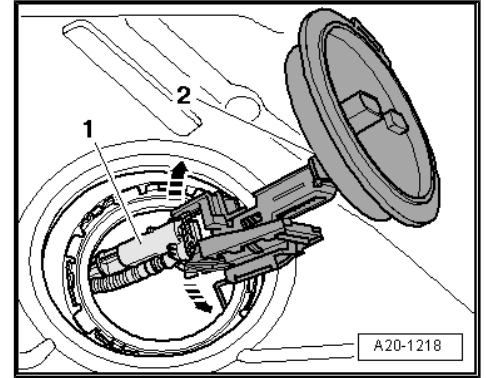


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- Carefully pull fuel gauge sender 2 - G169- -item 2- together with suction-jet pump -1- just slightly out of opening in fuel tank.
- Detach seal.
- Unclip suction-jet pump from flange -arrows-.

 Note

When removing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .



Installing

- Tightening torque ⇒ [page 88](#)

Installation is carried out in the reverse order; note the following:

 Note

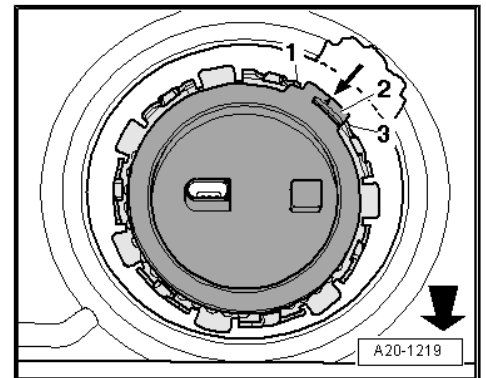
- ◆ *Renew seal.*
- ◆ *When installing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .*

- Carefully insert fuel gauge sender 2 - G169- -item 2- into opening in fuel tank.
- Clip suction-jet pump -1- onto flange -2-, so that you hear it click into place (press jaws of retainer apart slightly -arrows- at flange).
- Install new seal for flange (seal must be installed dry).
- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards arrow marking, and must be between tabs -1- and -3- on fuel tank.

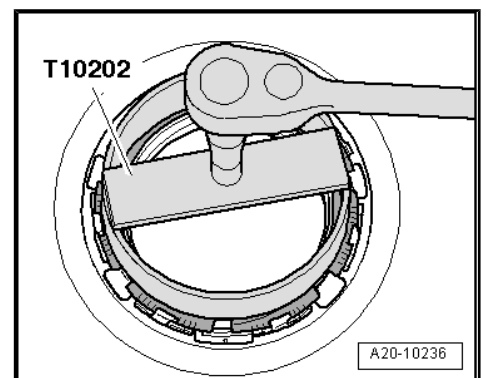
 Note

-Arrow- points in direction of travel.

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- Tighten locking ring.
- Install rear seat bench ⇒ Rep. gr. 72 .
- Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .



7.15 Suction-jet pump

On vehicles with four-wheel drive the fuel tank is divided into a left and a right chamber. A so-called suction-jet pump -1- is used for delivering the fuel from the left fuel tank chamber -3- to the baffle housing of the fuel delivery unit -2- on the right.

Suction-jet pump: operation

The suction-jet pump operates according to the principle of fluid entrainment: the stream of fuel from the electric fuel pump is passed through a nozzle in the suction-jet pump, and is thus accelerated. The accelerated stream of fuel draws off the surrounding fuel and delivers it to the baffle housing of the fuel delivery unit.

Faults caused by defective suction-jet pump



Note

If the suction-jet pump is defective, the engine can stop due to fuel starvation when the tank is still $\frac{1}{4}$ full.

If the suction-jet pump is not working, up to 15 litres of fuel (up to about $\frac{1}{4}$ of tank capacity) may remain in the left chamber of the tank, where it cannot be drawn into the fuel delivery unit.

If the engine stops due to fuel starvation with the tank up to about $\frac{1}{4}$ full, proceed as follows:

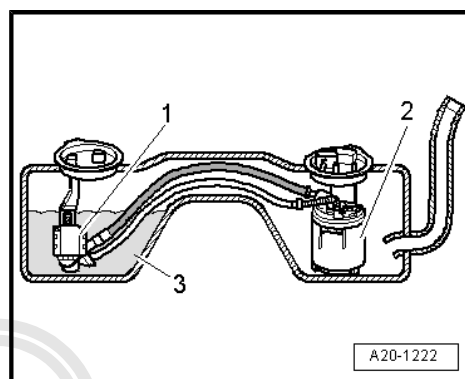
- Check fuel pump ⇒ [page 90](#) .

If fuel pump is OK, but no fuel is delivered:

- Put another 5 litres (approx.) of fuel into tank.
- Start engine.

If engine now starts:

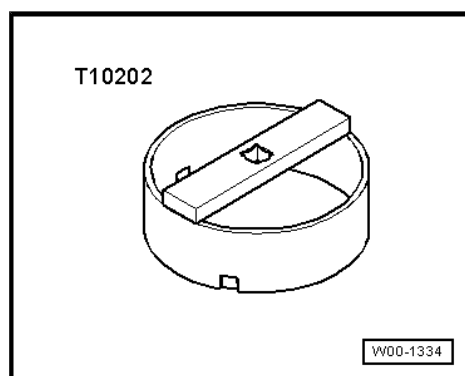
- Renew suction-jet pump ⇒ [page 116](#) .



7.16 Removing and installing suction-jet pump

Special tools and workshop equipment required

- ◆ Wrench - T10202-



Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- The fuel tank must not be more than $\frac{1}{3}$ full when removing the suction-jet pump. Drain the tank if necessary. Procedure [⇒ page 42](#)

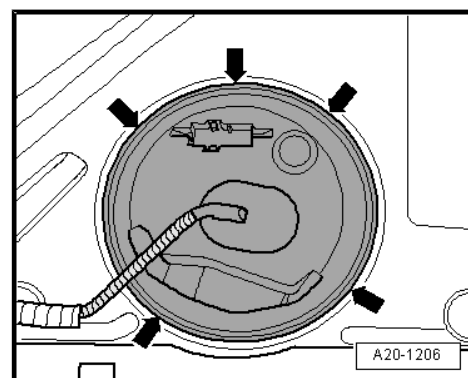


Caution

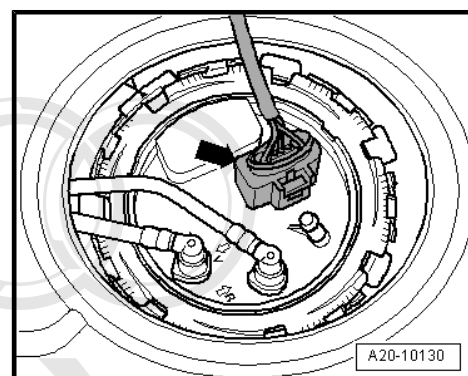
To prevent irreparable damage to the electronic components when disconnecting the battery:

- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ⇒ Rep. gr. 27 .
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



- Unplug electrical connector -arrow- at flange.



- Mark fuel supply line -1- and fuel return line -2-.



WARNING

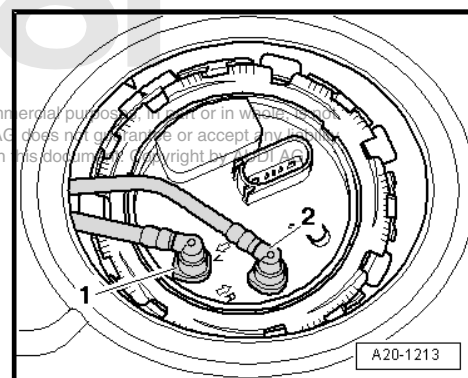
The fuel system operates at high pressure - risk of injuries!

- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

- Detach both lines from flange (press release tabs).

Vehicles with auxiliary heater:

- In addition, disconnect fuel supply line for auxiliary heater. For details of procedure, refer to ⇒ Rep. gr. 82 .



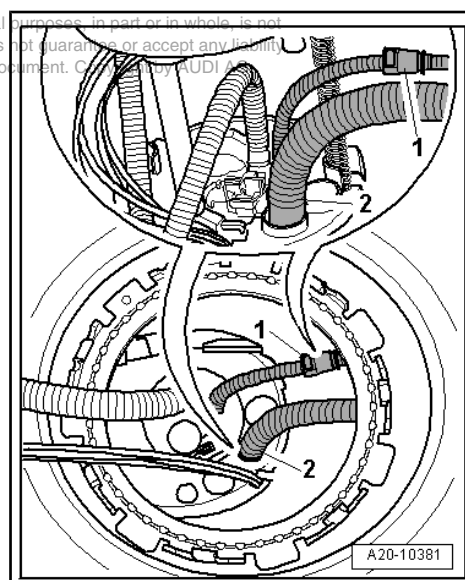
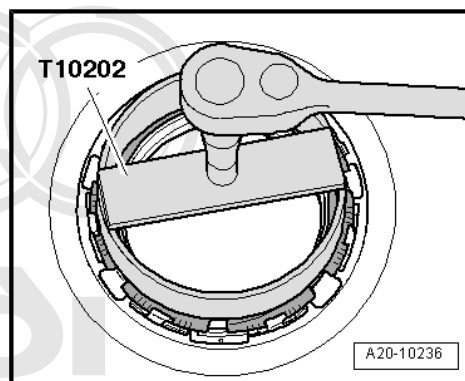
Continued for all vehicles:



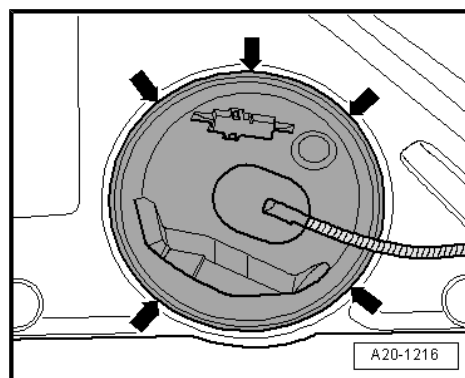
Caution

The fuel tank must not be more than $\frac{1}{3}$ full when removing the fuel delivery unit. Otherwise a large amount of fuel will escape.

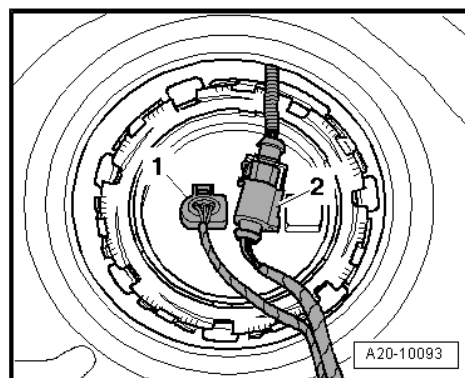
- Unscrew locking ring using wrench - T10202- .
- Take flange and seal of fuel delivery unit out of opening in fuel tank and move clear, leaving pipes connected.
- In opening in fuel tank, press release tab to disconnect supply line -1- to suction-jet pump.
- Disconnect fuel supply line -2- (press release catch -arrow-).



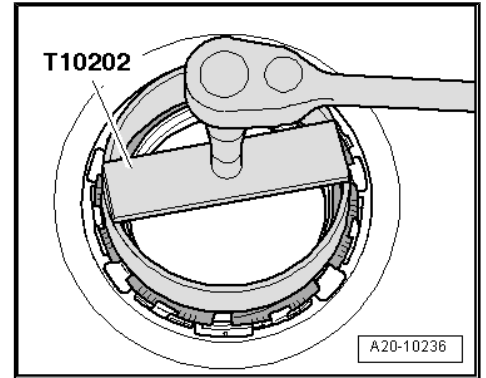
- Unclip the retaining tabs -arrows- for the flange cover (left-side).



- Unplug electrical connector -1- at flange.
- Disengage electrical connector -2- and move it clear to the side.



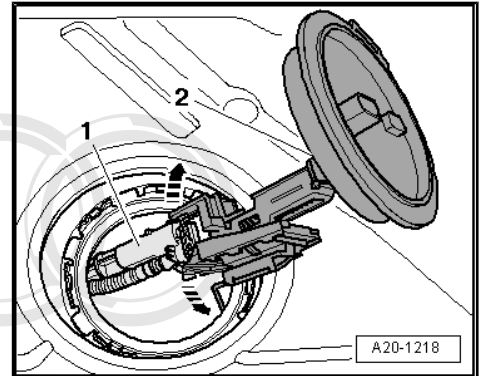
- Unscrew locking ring using wrench - T10202- .



- Carefully pull fuel gauge sender 2 - G169- -item 2- together with suction-jet pump -1- just slightly out of opening in fuel tank.
- Detach seal.
- Unclip suction-jet pump from flange -arrows-.

 Note

When removing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .



- Reach into fuel tank opening on left side of vehicle and pull out suction-jet pump, with pipes pointing towards the left.

Installing

- Tightening torque ⇒ [page 88](#)

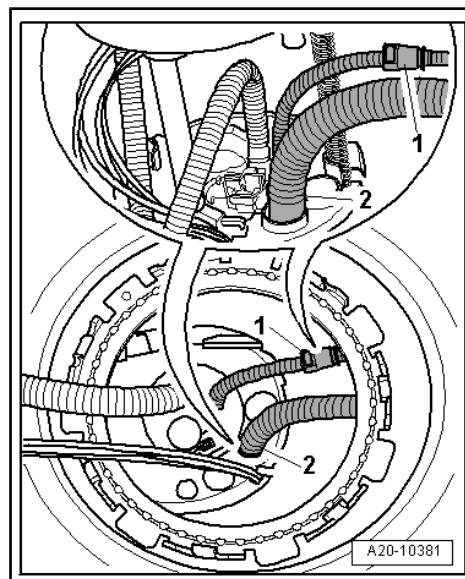
Installation is carried out in the reverse order, note the following:

 Note

- ◆ *Renew seals.*
- ◆ *When installing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .*
- Push suction-jet pump (with pipes attached) into fuel tank opening on left side of vehicle.

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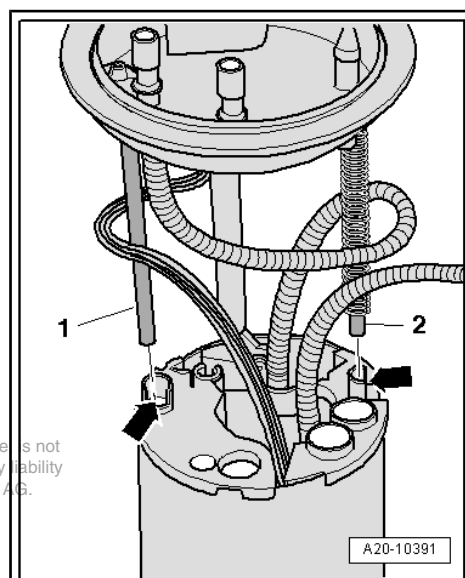
- Reach into fuel tank opening on right side of vehicle and pull suction-jet pump with pipes into the installation position.
- Fit fuel supply line -2-, so that it engages (you should hear it click into place).
- Fit supply line -1- leading to suction-jet pump so that it engages audibly.



Note

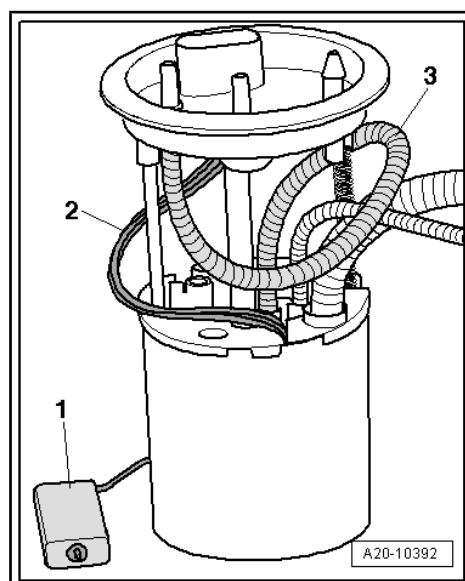
The fuel delivery unit is shown without the fuel tank in the next two illustrations.

- Fit new seal for flange in fuel tank opening (seal should be dry).
- Insert guide tubes -1- and -2- on flange into corresponding holes -arrows- in fuel delivery unit.



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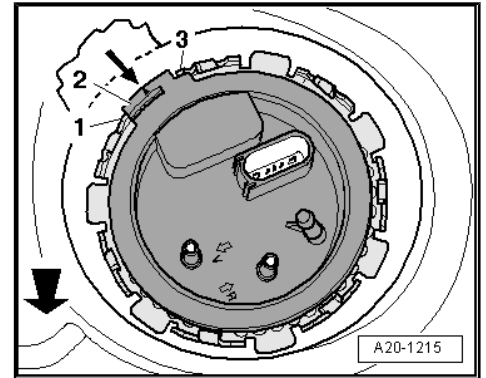
- Make sure that electrical wiring -2- and fuel supply line -3- are positioned as shown so they do not obstruct lever -1- of fuel gauge sender.



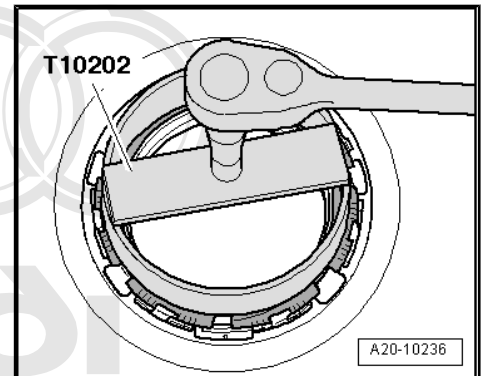
- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards arrow marking, and must be between tabs -1- and -3- on fuel tank.

 Note

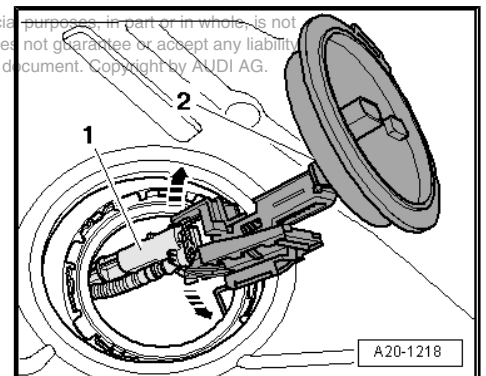
-Arrow- points in direction of travel.



- Tighten locking ring.



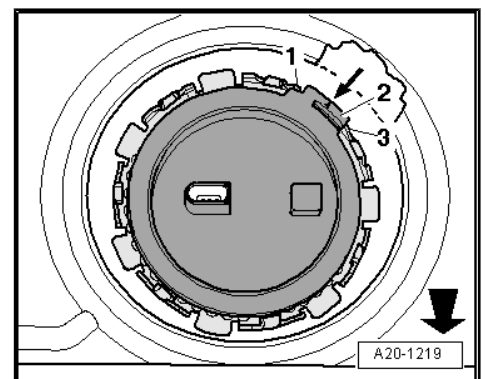
- Carefully insert fuel gauge sender 2- G169- item 2- into opening in fuel tank.
- Clip suction-jet pump -1- onto flange -2-, so that you hear it click into place (press jaws of retainer apart slightly -arrows- at flange).



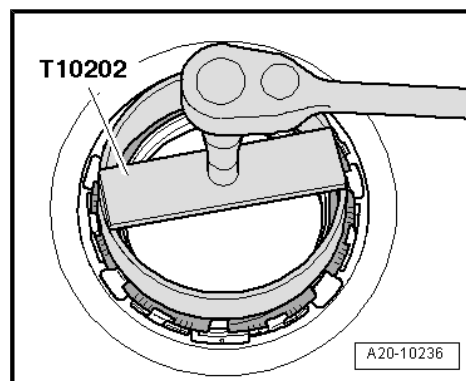
- Install new seal for flange (seal must be installed dry).
- Press flange down against spring pressure, and turn flange to installation position.
- Lug -2- on flange points towards arrow marking, and must be between tabs -1- and -3- on fuel tank.

 Note

-Arrow- points in direction of travel.



- Tighten locking ring.
- Install rear seat bench ⇒ Rep. gr. 72 .
- Observe notes on procedures required after connecting battery ⇒ Rep. gr. 27 .



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8 Fuel filter - all vehicles

8.1 Exploded view - fuel filter with fuel pressure regulator, vehicles with MPI engine

In vehicles where the fuel system has no fuel return line (MPI engines), the fuel pressure regulator is located in the fuel filter. In this system, only the fuel supply line is routed to the front, to the engine compartment. Excess fuel flows from the filter directly back to the tank via a return line.

1 - Fuel filter

- ☐ Flow direction is marked by arrows
- ☐ Do not interchange connections
- ☐ Installation position: Pin on filter housing must engage in opening on filter bracket guide
⇒ [page 124](#)
- ☐ Removing and installing
⇒ [page 124](#)

2 - Retaining clip

- ☐ For fuel pressure regulator

3 - Fuel supply line

- ☐ Black
- ☐ From fuel tank
- ☐ Press release tab on connection piece to disconnect

4 - Fuel return line

- ☐ Blue
- ☐ To fuel tank
- ☐ Press release tab on connection piece to disconnect

5 - Fuel pressure regulator

6 - Seal

- ☐ Renew

7 - O-ring

- ☐ Renew

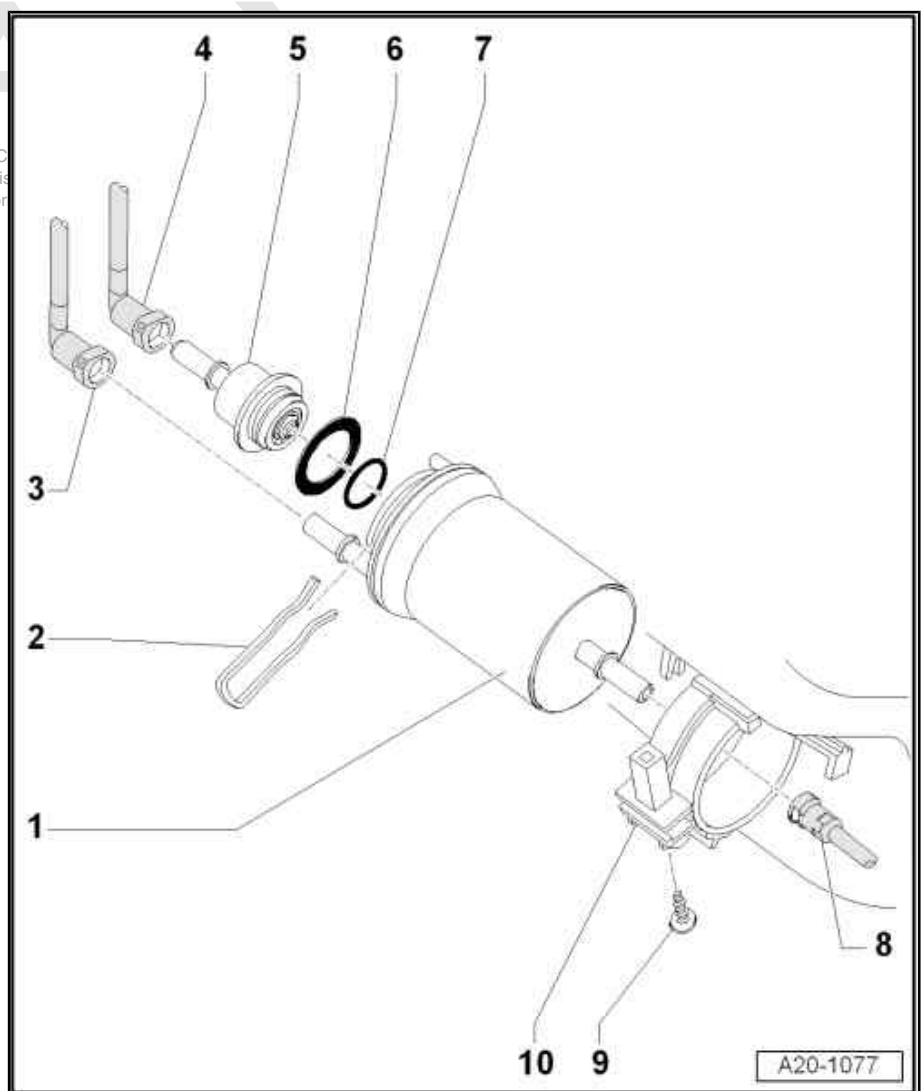
8 - Fuel line

- ☐ Black
- ☐ To engine
- ☐ Press release tab on connection piece to disconnect

9 - 3 Nm

10 - Bracket for fuel filter

- ☐ Attached to fuel tank



8.2 Removing and installing fuel filter with fuel pressure regulator - vehicles with MPI engine

Special tools and workshop equipment required

- ◆ Reservoir

Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- Place drip tray below fuel filter.

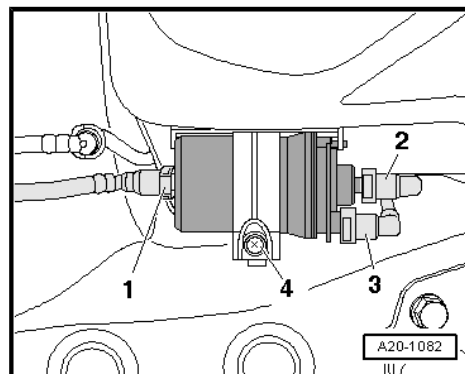


WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

- Disconnect fuel lines -1-, -2- and -3- by pressing release tabs.
- Remove bolt -4-.
- Remove fuel filter.



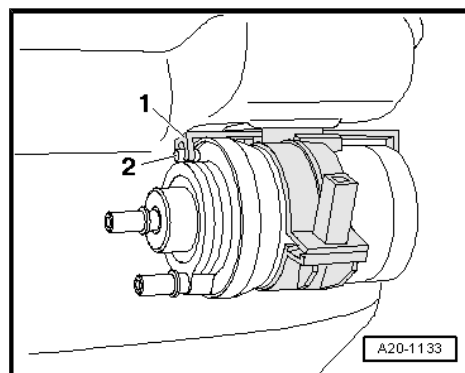
Installing

- Tightening torque ⇒ [page 123](#)

Installation is carried out in the reverse order; note the following:

Installation position:

- Flow direction is marked with arrows on filter housing.
- Pin -2- on filter housing must engage in opening on filter bracket guide -1-.



8.3 Exploded view - fuel filter for fuel system with return line, vehicles with FSI engine up to approx. 05.2004

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1 - Fuel filter

- ☐ Flow direction is marked by arrows
- ☐ Do not interchange connections
- ☐ Removing and installing
 ⇒ [page 125](#)

2 - Fuel line

- ☐ Black
- ☐ From fuel tank
- ☐ Press release tab on connection piece to disconnect

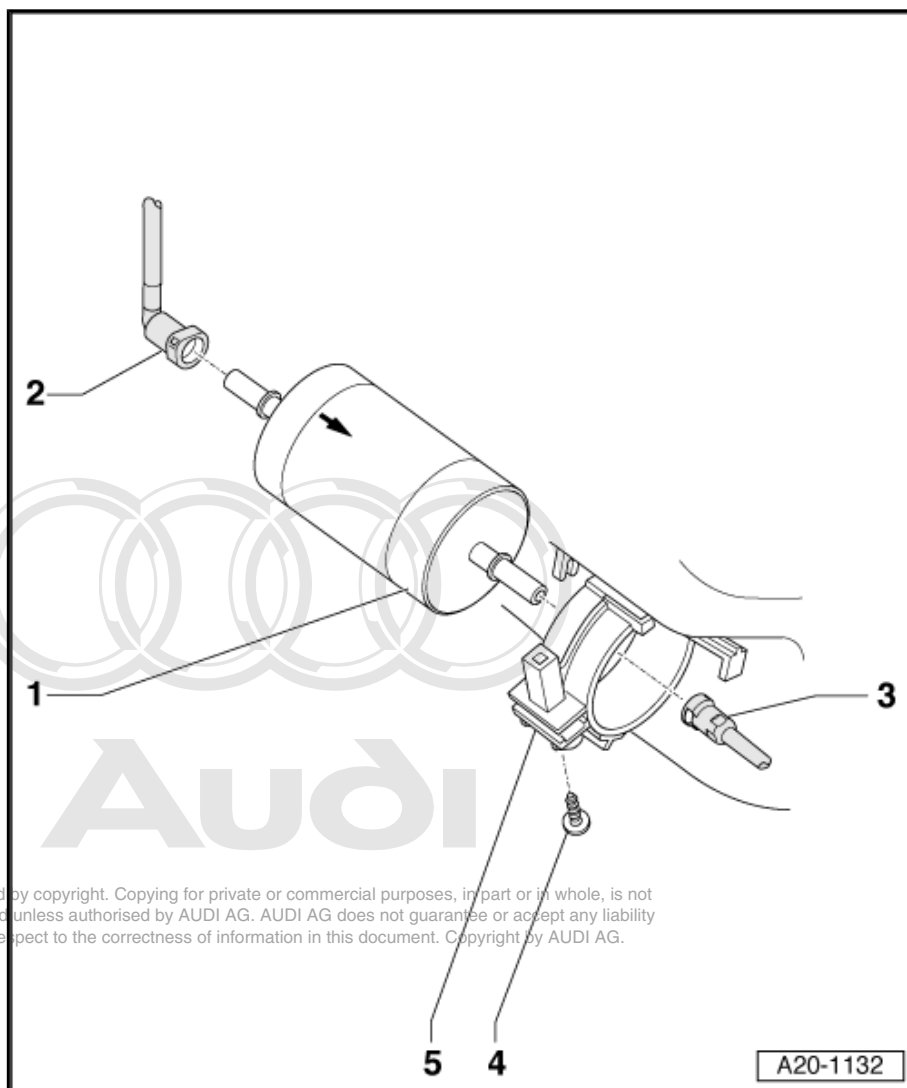
3 - Fuel line

- ☐ Black
- ☐ To engine
- ☐ Press release tab on connection piece to disconnect

4 - 3 Nm

5 - Bracket for fuel filter

- ☐ Attached to fuel tank



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8.4 Removing and installing fuel filter for fuel system with return line - vehicles with FSI engine up to approx. 05.2004

Special tools and workshop equipment required

- ◆ Reservoir

Removing

Observe safety precautions ⇒ [page 1](#) .

Observe rules for cleanliness ⇒ [page 2](#) .

- Place drip tray below fuel filter.



WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

- Disconnect fuel lines -1- and -2- by pressing release tabs.
- Remove bolt -3-.
- Remove fuel filter.

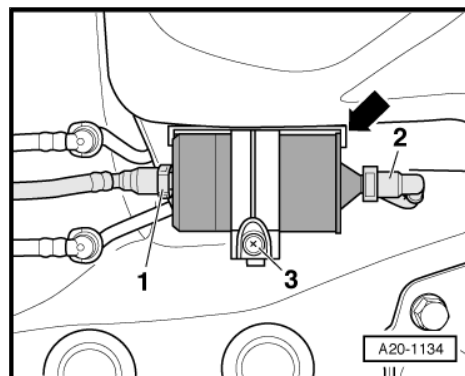
Installing

- Tightening torque ⇒ [page 124](#)

Installation is carried out in the reverse order; note the following:

Installation position:

- Flow direction is marked with arrows on filter housing.
- The filter housing must rest against the guide -arrow-.



8.5 Exploded view - fuel filter with fuel pressure limiting valve, vehicles with FSI engine from approx. 06.2004 onwards and all vehicles with TFSI engine

In vehicles where the fuel system has no return line (FSI engines from approx. 06.2004 onwards and TFSI engines) the fuel filter incorporates a fuel pressure limiting valve. In this system, only the supply line is routed to the front, to the engine compartment. The fuel pressure limiting valve opens when the pressure in the fuel supply line rises above 6 ... 6.8 bar. Excess fuel flows from the filter directly back to the tank via a return line.

1 - Fuel filter

- ☐ With fuel pressure limiting valve, 6 ... 6.8 bar
- ☐ Flow direction is marked by arrows
- ☐ Do not interchange connections
- ☐ Installation position: Pin on filter housing must engage in opening on filter bracket guide ⇒ [page 127](#)
- ☐ Removing and installing ⇒ [page 127](#)

2 - Fuel supply line

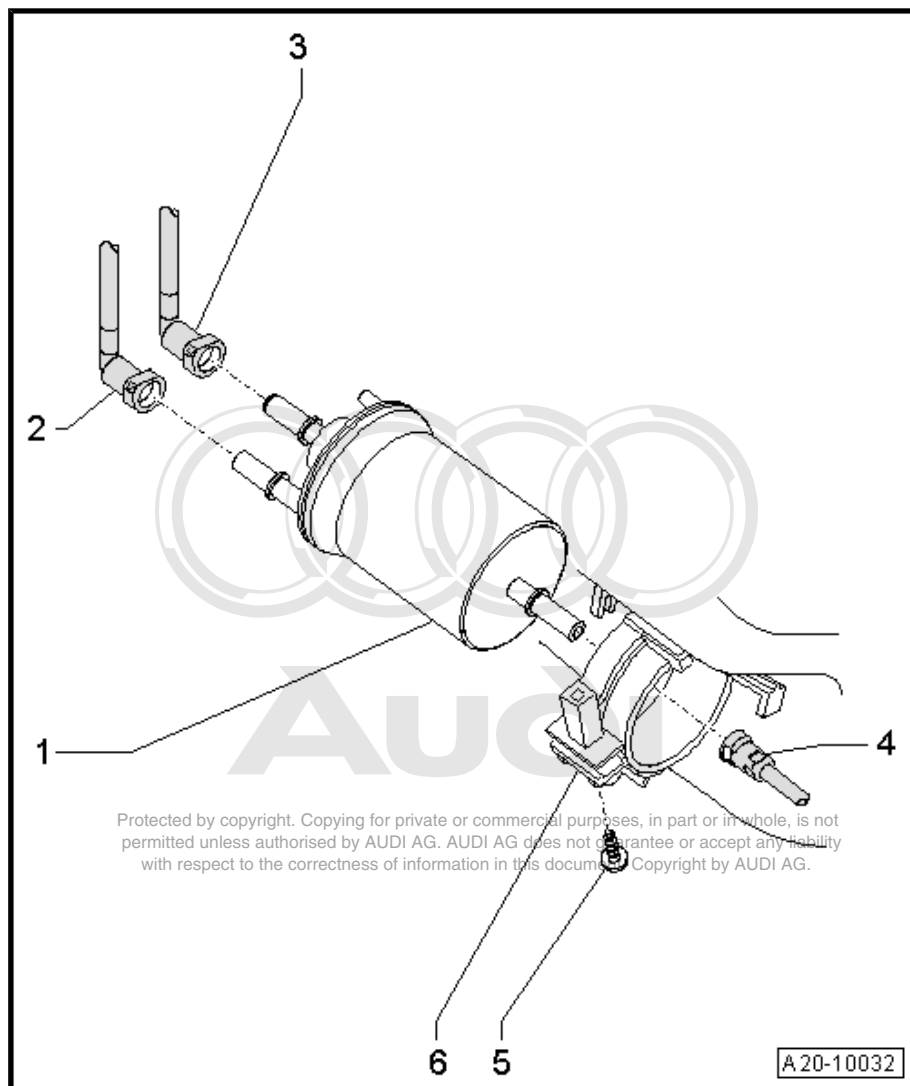
- ☐ Black
- ☐ From fuel tank
- ☐ Press release tab on connection piece to disconnect

3 - Fuel return line

- ☐ Blue
- ☐ To fuel tank
- ☐ Press release tab on connection piece to disconnect

4 - Fuel line

- ☐ Black
- ☐ To engine
- ☐ Press release tab on connection piece to disconnect



5 - 3 Nm

6 - Bracket for fuel filter

- ☐ Attached to fuel tank

8.6 Removing and installing fuel filter with fuel pressure limiting valve - vehicles with FSI engine from approx. 06.2004 onwards and all vehicles with TFSI engine

Special tools and workshop equipment required

- ◆ Reservoir

Removing

Observe safety precautions ⇒ [page 1](#).

Observe rules for cleanliness ⇒ [page 2](#).
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- Place drip tray below fuel filter.

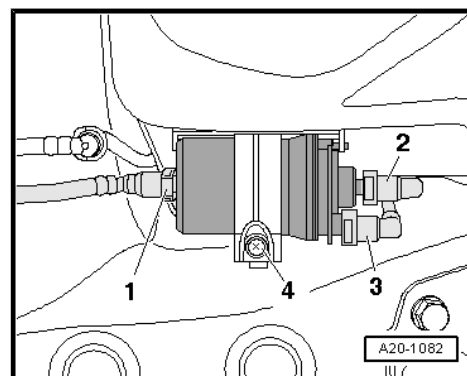


WARNING

The fuel system operates at high pressure - risk of injuries!

- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*

- Disconnect fuel lines -1-, -2- and -3- by pressing release tabs.
- Remove bolt -4-.
- Remove fuel filter.

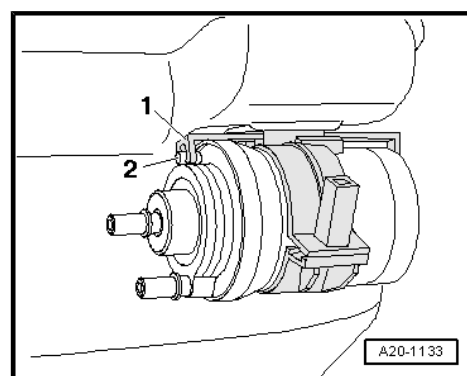


Installing

Installation is carried out in the reverse order; note the following:

Installation position:

- Tightening torque ⇒ [page 126](#)
- Flow direction is marked with arrows on filter housing.
- Pin -2- on filter housing must engage in opening on filter bracket guide -1-.



9 Activated charcoal filter system - rest-of-world vehicles

9.1 Exploded view - activated charcoal filter system

1 - Activated charcoal filter

2 - Breather line

- ☐ To fuel tank
- ☐ Press release tab on connection piece to disconnect

3 - From fuel tank

4 - Breather line

- ☐ To activated charcoal filter solenoid valve 1 - N80-

5 - Spring-type clip

6 - Activated charcoal filter solenoid valve 1 - N80-

7 - To throttle valve housing

8 - Bracket for activated charcoal filter solenoid valve 1 - N80-

- ☐ Version for 1.6 ltr. engine (2 valve)

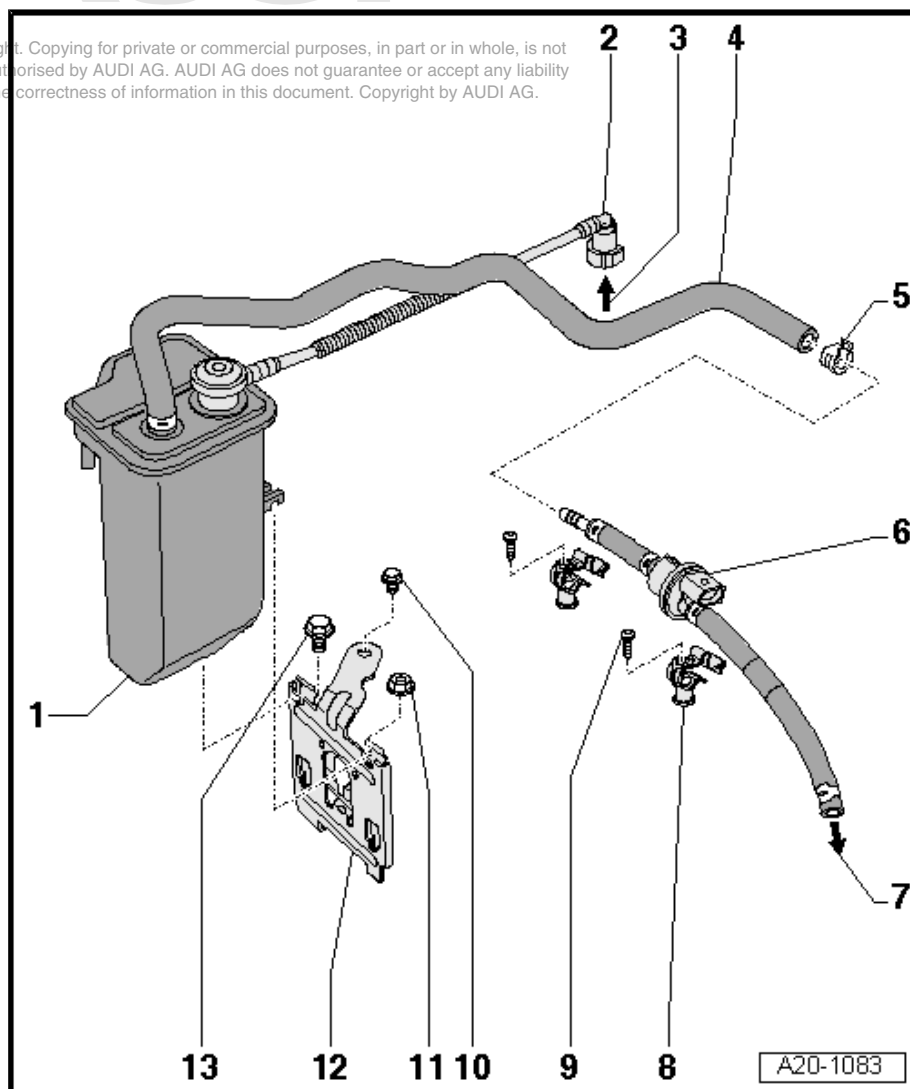
9 - Torx socket head bolt, 3 Nm

10 - 8 Nm

11 - 8 Nm

12 - Bracket for activated charcoal filter

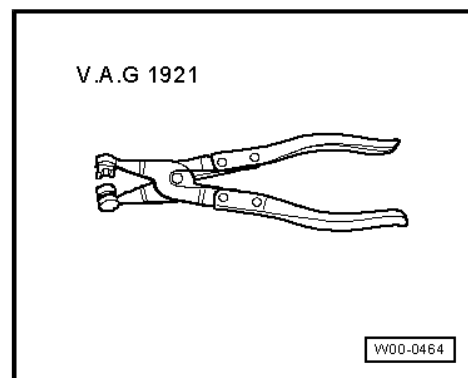
13 - 20 Nm



9.2 Removing and installing activated charcoal filter

Special tools and workshop equipment required

◆ Hose clip pliers - V.A.G 1921-



Removing

Observe safety precautions ⇒ [page 1](#) .

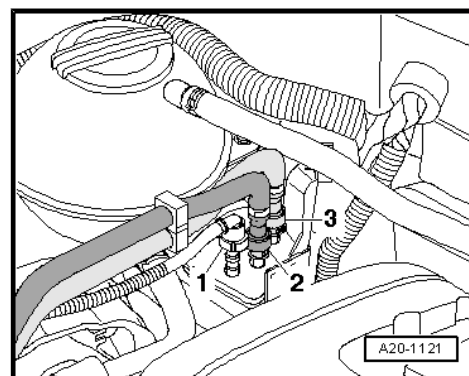
Observe rules for cleanliness ⇒ [page 2](#) .

- Disconnect vacuum line -1- by pressing release tab.



Note

The fuel supply line -3- and fuel return line -2- (if fitted) remain connected.



- Disconnect vacuum line -1- from activated charcoal filter.
- Lift out activated charcoal filter from retainer with pipes connected -arrow-.

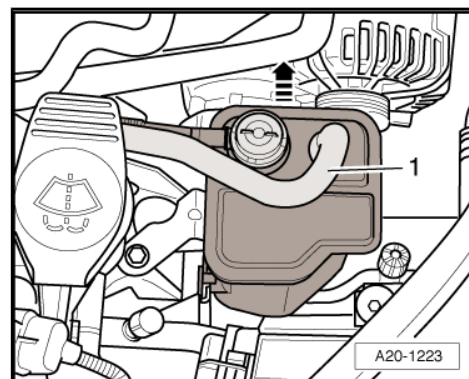
Installing

Installation is carried out in the reverse order; note the following:



Note

Secure all hose connections with the correct type of hose clips (same as original equipment) ⇒ Electronic parts catalogue .



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10 Activated charcoal filter system/tank leak diagnostic system - USA vehicles

10.1 Exploded view - activated charcoal filter system/tank leak diagnostic system

1 - Activated charcoal filter

- ☐ Depending on equipment

2 - 8 Nm

3 - Bush

4 - Activated charcoal filter (canister)

- ☐ Fitting location: at bottom of spare wheel well
- ☐ Removing and installing
⇒ [page 131](#)

5 - 6 Nm

6 - Bracket

7 - Mounting

8 - Bracket

9 - 4 Nm

10 - Rubber grommet

11 - Washer

12 - 8 Nm

13 - Vacuum line

- ☐ To engine

14 - Fuel system diagnostic pump - V144-

- ☐ Fitting location: in wheel housing (rear right) behind wheel housing liner
- ☐ Checking: in "Guided Fault Finding" mode
⇒ Vehicle diagnostic tester

- ☐ Removing and installing ⇒ [page 139](#)

15 - 4 Nm

16 - Connecting hose

17 - Hose clip

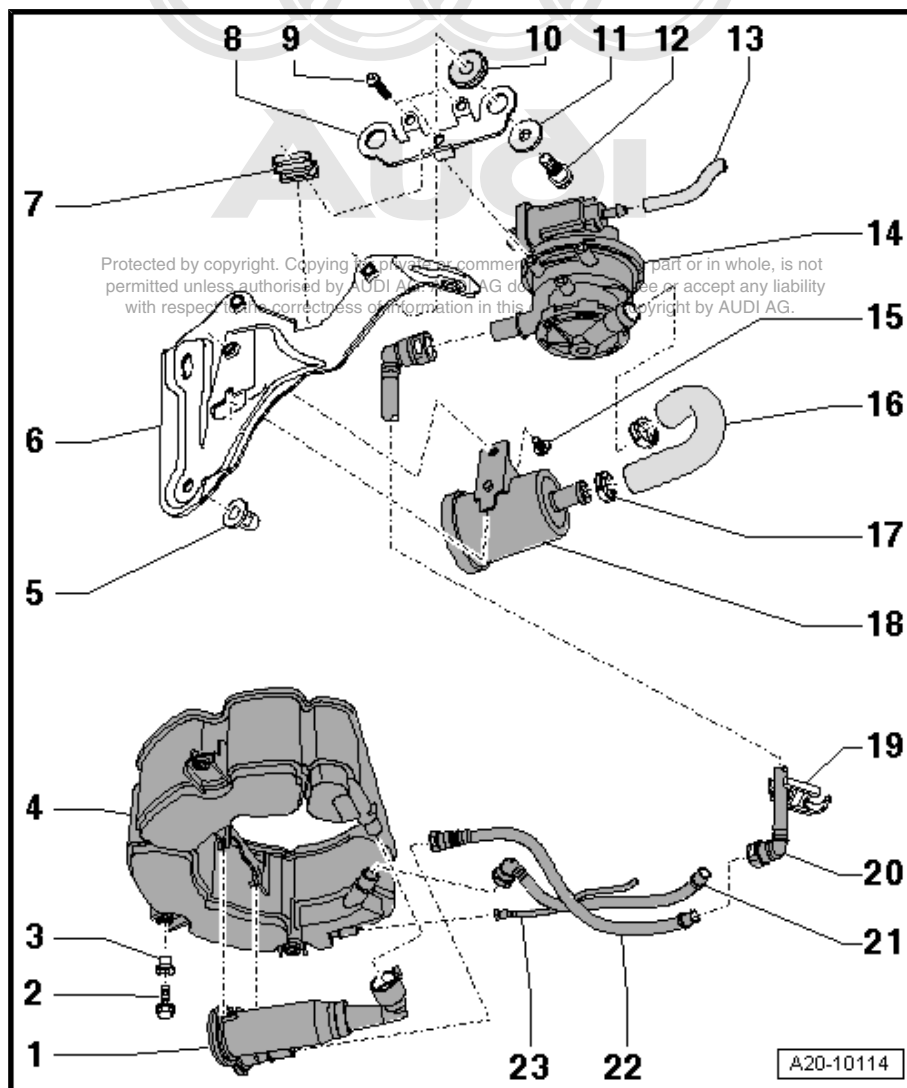
18 - Air filter

- ☐ For fuel system diagnostic pump - V144-
- ☐ Maintenance-free

19 - Bracket

20 - Connecting pipe

- ☐ Clip onto bracket



- ☐ Press release tab on connection piece to disconnect

21 - Breather line

- ☐ To filler neck on fuel tank
- ☐ Press release tab on connection piece to disconnect

22 - Breather line

- ☐ Press release tab on connection piece to disconnect

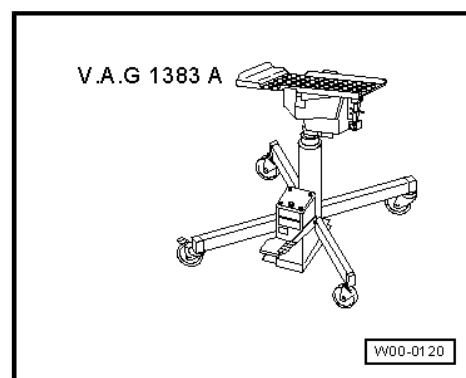
23 - Breather line

- ☐ To activated charcoal filter solenoid valve 1 - N80-
- ☐ Press release tab on connection piece to disconnect

10.2 Removing and installing activated charcoal filter

Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-

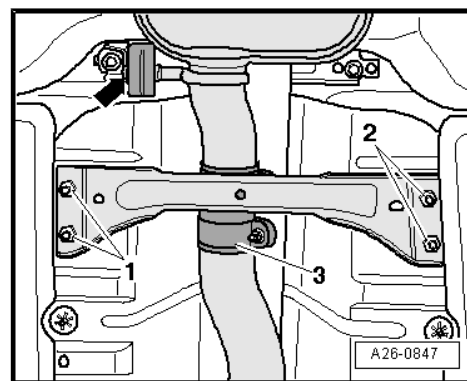


Removing



Note

- ◆ All steps are illustrated for a vehicle with four-wheel drive.
- ◆ Check for leaks
 ⇒ ["10.6 Performing tank leak diagnosis", page 137](#).
- Remove rear cross member for underbody; to do so, unscrew nuts -1- and -2-.



Caution

To protect flexible joints, secure front section of exhaust system to underbody with wire before you loosen bolt connections on clamp -3-.

- Disconnect exhaust system at clamp -3-.
- Disengage exhaust system at rubber mountings -arrow-.

Vehicles with 6-cylinder engine:

- Release heat shield -1-, press in direction of -arrow- and then detach vacuum unit -2- for exhaust flap from tailpipe.
- Disengage operating rod -3- at lever for exhaust flap.

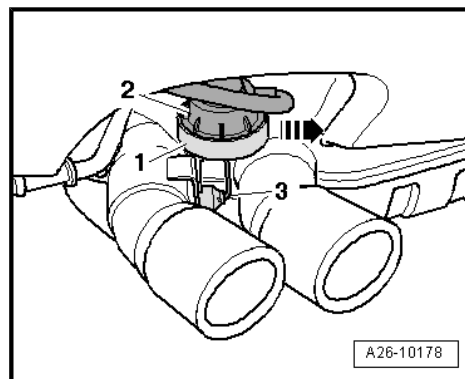
Continued for all vehicles:



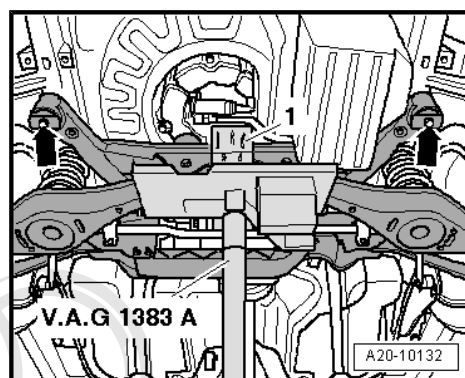
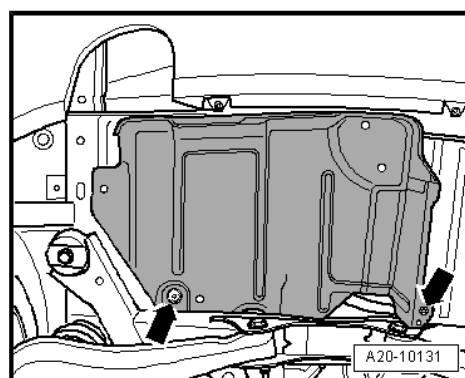
Note

A second person will be required for detaching rear section of exhaust system.

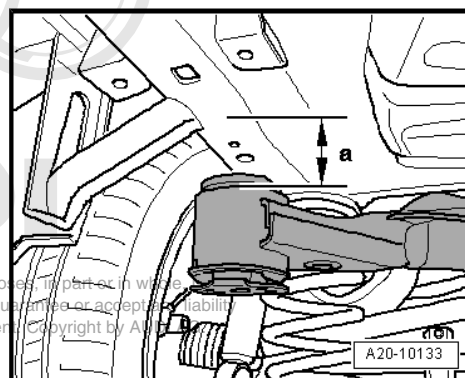
- Unbolt rear mountings of rear silencer and detach rear section of exhaust system.
- Remove heat shield -arrows-.



- Set up engine and gearbox jack - V.A.G 1383 A- below sub-frame to provide support.
- Place a suitable block of wood -1- between engine and gearbox jack - V.A.G 1383 A- and subframe.
- Remove rear subframe bolts -arrows- on both sides.



- Lower subframe slowly using engine and gearbox jack - V.A.G 1383 A- until distance between subframe (left-side) and body reaches dimension -a-.
- Dimension -a- = 45 ± 50 mm



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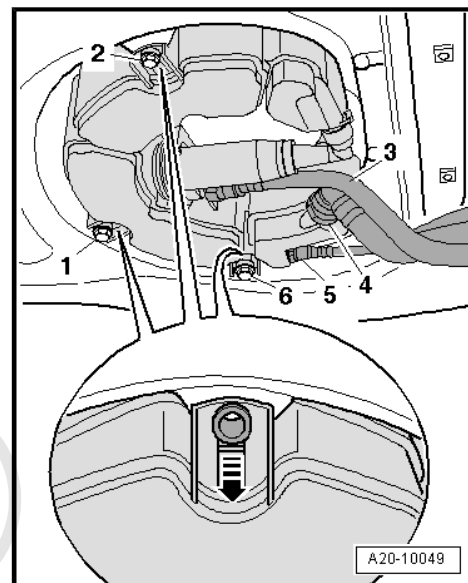
- Disconnect breather lines -3-, -4- and -5- (press release tabs).
- Unscrew bolts -1-, -2- and -6-.
- Use screwdriver to release retaining tabs in direction of -arrow- and take off activated charcoal filter.

Installing

- Tightening torque ⇒ [page 130](#)

Installation is carried out in the reverse order; note the following:

- Fit breather lines so that they engage audibly.
- Install rear axle ⇒ Rep. gr. 42 .
- Install rear section of exhaust system ⇒ Rep. gr. 26 .



10.3 Routing of pipes/hoses for activated charcoal filter system/tank leak diagnostic system - TFSI engine

1 - Connection point

- ☐ In engine compartment (front left) below coolant expansion tank

2 - Breather line

- ☐ White
- ☐ From activated charcoal filter to activated charcoal filter solenoid valve 1 - N80-
- ☐ Installation position: on underside of vehicle (right-side)
- ☐ Section running along fuel tank is secured to fuel tank

3 - Vacuum line

- ☐ Green
- ☐ Fuel system diagnostic pump - V144- /engine
- ☐ Installation position: on underside of vehicle (right-side)
- ☐ Section running along fuel tank is secured to fuel tank

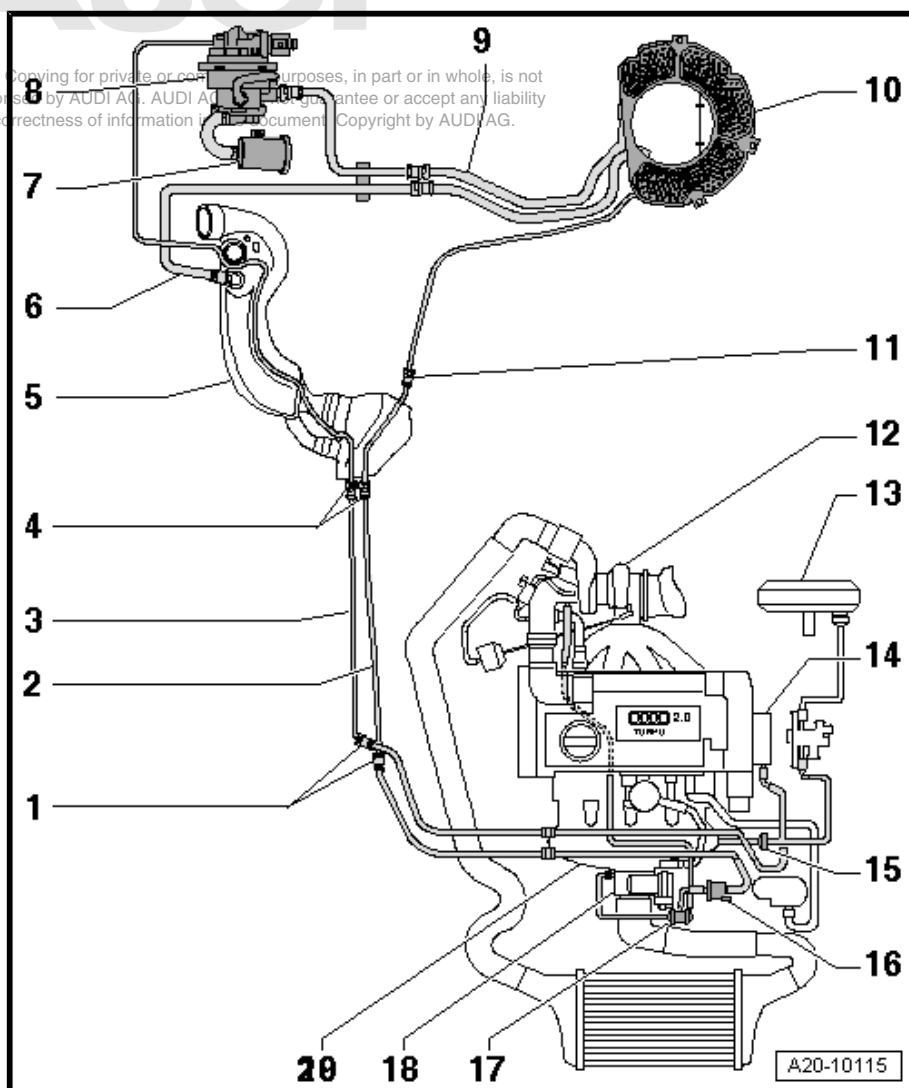
4 - Connection point

- ☐ At front of fuel tank (right-side), near fuel filter

5 - Filler neck

6 - Breather line

- ☐ Filler neck/activated charcoal filter





- ☐ Clip onto bracket

7 - Air filter

- ☐ For fuel system diagnostic pump - V144-

8 - Fuel system diagnostic pump - V144-

- ☐ Fitting location: in wheel housing (rear right) behind wheel housing liner
- ☐ Checking: in "Guided Fault Finding" mode ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 139](#)

9 - Connecting pipe

- ☐ Fuel system diagnostic pump - V144- /activated charcoal filter
- ☐ Clip onto bracket

10 - Activated charcoal filter

- ☐ Fitting location: at bottom of spare wheel well
- ☐ Removing and installing ⇒ [page 131](#)

11 - Connection point

- ☐ At rear of fuel tank (right-side)

12 - Turbocharger

13 - Brake servo

14 - Vacuum pump

15 - Non-return valve

- ☐ Installation position: -arrow- points in through-flow direction

16 - Activated charcoal filter solenoid valve 1 - N80-

- ☐ Fitting location: engine compartment (front)

17 - Dual non-return valve

18 - Throttle valve module - J338-

19 - Intake manifold



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10.4 Routing of pipes/hoses for activated charcoal filter system/tank leak diagnostic system - 6-cylinder engine

1 - Connection point

- ☐ In engine compartment (front left) below coolant expansion tank

2 - Breather line

- ☐ White
- ☐ From activated charcoal filter to activated charcoal filter solenoid valve 1 - N80-
- ☐ Installation position: on underside of vehicle (right-side)
- ☐ Section running along fuel tank is secured to fuel tank

3 - Vacuum line

- ☐ Green
- ☐ Fuel system diagnostic pump - V144- /engine
- ☐ Installation position: on underside of vehicle (right-side)
- ☐ Section running along fuel tank is secured to fuel tank

4 - Connection point

- ☐ At front of fuel tank (right-side), near fuel filter

5 - Filler neck

6 - Breather line

- ☐ Filler neck/activated charcoal filter

7 - Air filter

- ☐ For fuel system diagnostic pump - V144-

8 - Fuel system diagnostic pump - V144-

- ☐ Fitting location: in wheel housing (rear right) behind wheel housing liner
- ☐ Checking: in "Guided Fault Finding" mode ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 139](#)

9 - Connecting pipe

- ☐ Activated charcoal filter/ fuel system diagnostic pump - V144-
- ☐ Clip onto bracket

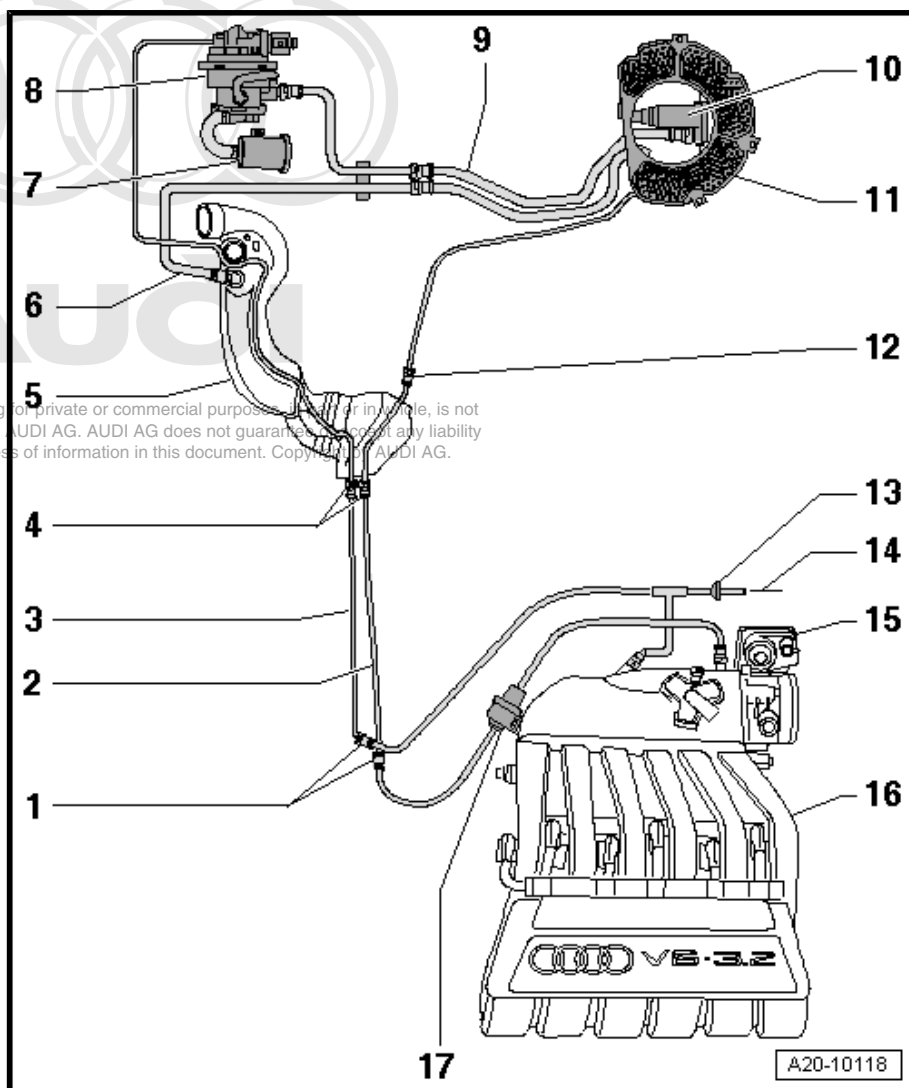
10 - Activated charcoal filter

11 - Activated charcoal filter (canister)

- ☐ Fitting location: at bottom of spare wheel well
- ☐ Removing and installing ⇒ [page 131](#)

12 - Connection point

- ☐ At rear of fuel tank (right-side)



13 - Non-return valve

- ❑ Installation position: -arrow- points in through-flow direction

14 - To vacuum unit for exhaust flap**15 - Throttle valve module - J338-****16 - Intake manifold (top section)****17 - Activated charcoal filter solenoid valve 1 - N80-**

- ❑ Fitting location: engine compartment (front)

10.5 Tank leak diagnostic system

How the system works

The tank leak diagnostic system detects leaks in the entire fuel system, including the fuel tank, activated charcoal filter and activated charcoal filter solenoid valve 1 - N80- .

The mechanical components of the tank leak diagnostic system consist primarily of a vacuum-driven diaphragm pump, with a reed contact located on the operating rod of the pump diaphragm. The vacuum required is supplied to the pump from the mechanical vacuum pump or from the engine intake.

- ◆ The diaphragm pump delivers a pressure of 20 ... 30 mbar to the fuel system when the tank leak diagnostic system starts up. In this condition the pump diaphragm is extended, so the reed contact located on the operating rod is in the "open" position.
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- ◆ The diagnostic system detects whether the reed contact remains open for 15 seconds. In this case the fuel system is free of leaks.
- ◆ If the pressure drops (indicating a leak), the diaphragm returns and the reed contact closes.
- ◆ If the reed contact closes within 15 seconds, a further test is performed. The diaphragm pump is then activated for another 4 strokes. For each of these strokes the engine control unit measures the period of time it takes for the reed contact to close again after pressure delivery. In this way the control unit can distinguish between a "small leak" (smaller than 1 mm diameter) and a "large leak".

The automatic diagnosis function is activated shortly after every cold start (below 35°C) when the vehicle reaches a constant speed above 10 km/h. Any faults detected are stored in the memory. A fault message is displayed in the instrument cluster if the fault is detected during two consecutive road trips. The diagnosis function can also be activated with the vehicle diagnostic, testing and information system - VAS 5051B- ➔ [page 137](#) .

**Note**

- ◆ *The diagnosis can be repeated up to 10 times during the first 20 minutes after a cold start.*
- ◆ *By selecting measured value block 071 with vehicle diagnostic, testing and information system - VAS 5051B- connected, you can see whether the automatic tank leak diagnosis is being performed ➔ [page 137](#) .*

10.6 Performing tank leak diagnosis

Check the fuel tank leak diagnosis system using the “Guided Fault Finding” function ⇒ Vehicle diagnostic tester.

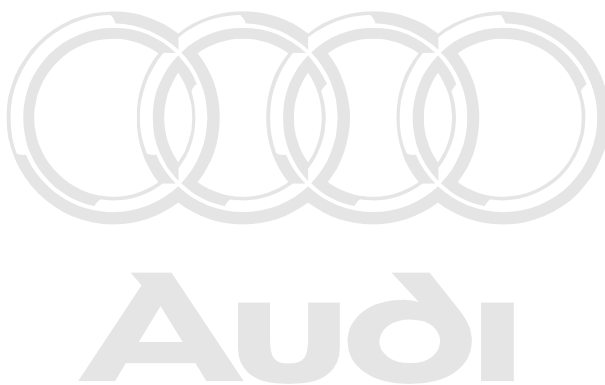
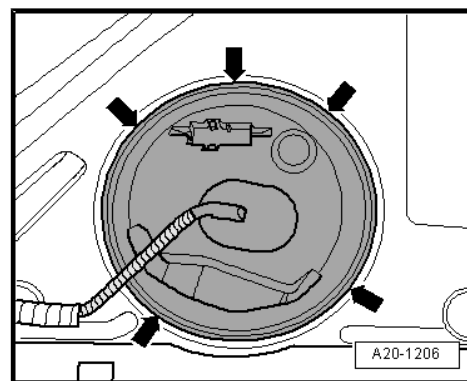
Checking fuel tank system and tank breather system for leaks



Note

The following locations/components must be checked when checking the fuel tank system and tank breather system for leaks. Initiate a tank leak diagnosis after eliminating a suspected leak to make sure the diagnosed leak has been eliminated.

- Switch off ignition.
- Check whether the filler cap of the fuel tank was properly closed when performing the diagnosis.
- Check whether the seal of the filler cap is damaged or deformed. Renew if necessary.
- Remove rear seat bench ⇒ Rep. gr. 72 .
- Unclip the retaining tabs -arrows- for the flange cover (right-side).



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Vehicles with four-wheel drive:

- Unclip the retaining tabs -arrows- for the flange cover (left-side).

Continued for all vehicles:



Note

Observe notes on installing flanges ⇒ [page 32](#) and ⇒ [page 68](#).

- Check that the seals under the fuel tank flanges are undamaged and that the locking rings on the flanges are properly tightened. Also check whether the fuel lines are connected properly.
- Perform a visual check on all pipe/hose connections of the fuel tank system and replace leaking pipes/hoses, e.g.:
 - ◆ Line between activated charcoal filter and activated charcoal filter solenoid valve 1 - N80-
 - ◆ Lines between activated charcoal filter and fuel system diagnostic pump - V144-
 - ◆ Line between fuel tank and activated charcoal filter (below heat shield for activated charcoal filter)
 - ◆ Fuel tank breather lines behind wheel housing liner (rear right)
 - ◆ Fuel lines to engine



Note

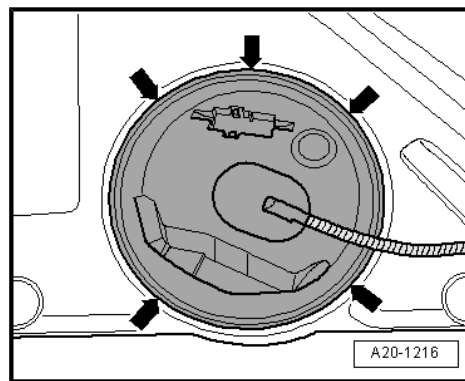
Leaks in pipes and components of the fuel tank system can sometimes be detected by applying a non-flammable, environment-friendly leak detecting spray. Initiate a tank leak diagnosis repeatedly to build up pressure in the system. Bubbles will form at the leak.

- Perform a visual check on the components of the fuel tank system/fuel tank breather system:
 - ◆ Fuel tank
 - ◆ Activated charcoal filter
 - ◆ Fuel system diagnostic pump - V144-
 - ◆ Activated charcoal filter solenoid valve 1 - N80-



Note

Due to the shape or function of these components it is not always possible to detect leaks by applying leak detecting spray. If this is the case, clamp off hoses going to the respective component using hose clamps up to Ø 25 mm - 3094- and initiate tank leak diagnosis. If no leak is then found after clamping off the hoses, the corresponding component is defective. If the hoses are clamped off directly at the diagnostic pump and a leak is still indicated, there is a leak in the diagnostic pump itself.



10.7 Removing and installing fuel system diagnostic pump - V144-

Removing

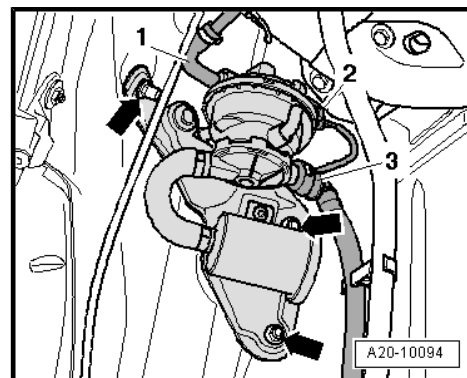
- Remove rear right wheel housing liner ⇒ Rep. gr. 66 .
- Detach breather line -1-.
- Unplug electrical connector -2-.
- Press release tab and disconnect breather line -3-.
- Unscrew nuts -arrows-.
- Detach diagnostic pump with bracket.

Installing

- Tightening torque ⇒ [page 130](#)

Installation is carried out in the reverse order; note the following:

- The breather line -3- should engage audibly.
- Install rear right wheel housing liner ⇒ Rep. gr. 66 .



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11 Accelerator mechanism

11.1 Exploded view - accelerator mechanism

1 - Cable guide

- Attached to accelerator pedal module

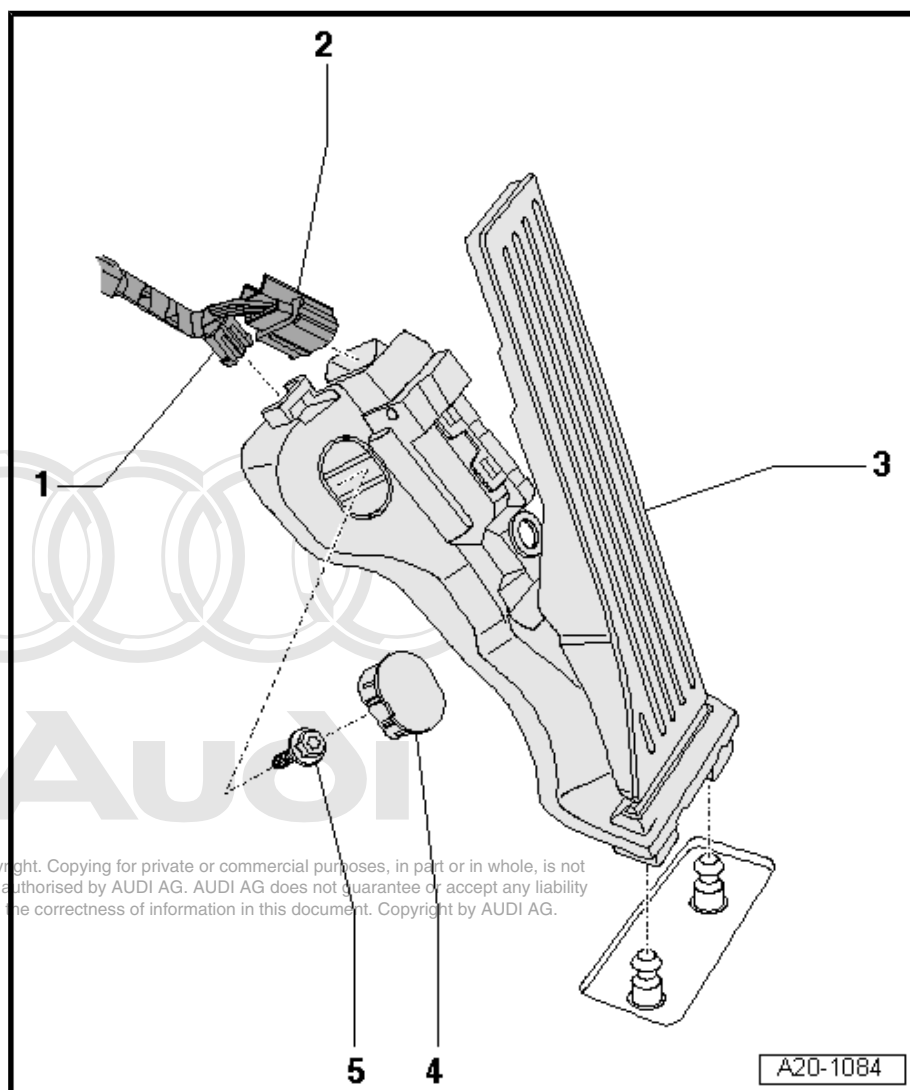
2 - Electrical connector

3 - Accelerator pedal module

- With accelerator position sender - G79- and accelerator position sender 2 - G185-
- Removing and installing
⇒ [page 140](#)

4 - Cap

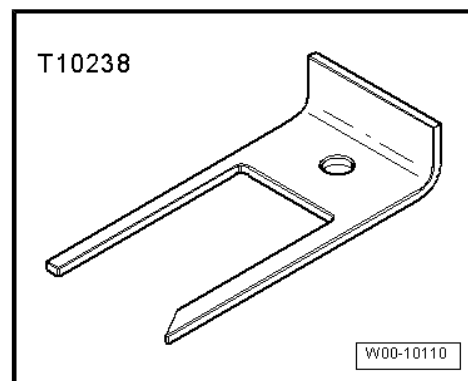
5 - 9 Nm



11.2 Removing and installing accelerator pedal module with accelerator position sender

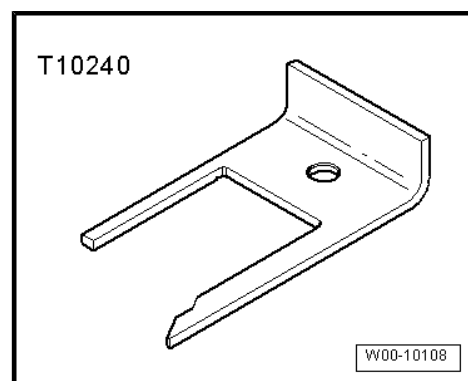
Special tools and workshop equipment required

- ◆ For LHD vehicles: release tool - T10238-



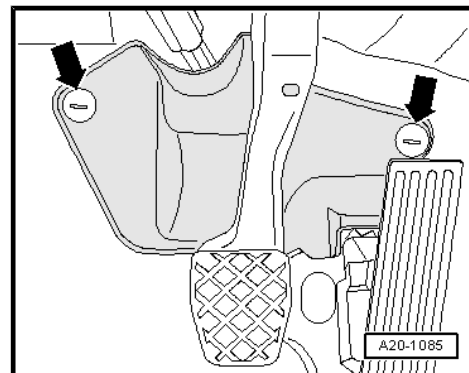
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- ◆ For RHD vehicles: release tool - T10240-

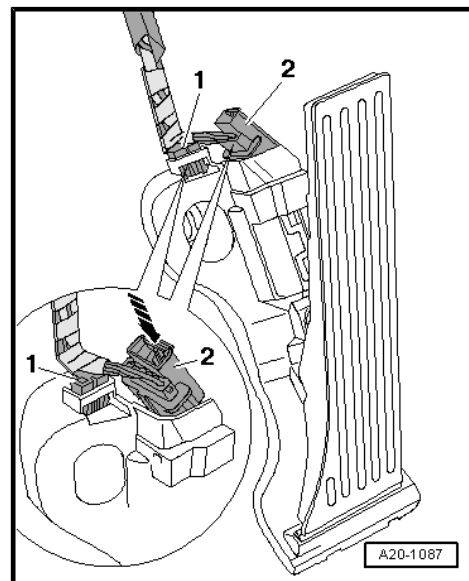


Removing

- Remove cover for steering column -arrows-.



- Detach electrical connector -2- by pressing release tab as far the stop -arrow-.
- If fitted, detach cable guide clip -1- at accelerator pedal module.

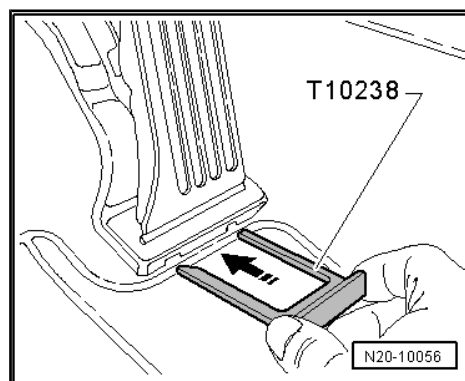
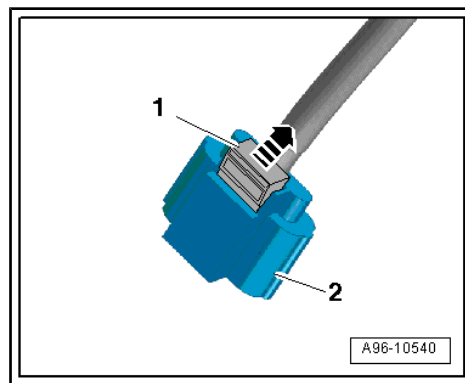


Audi A3 Cabriolet:

- Pull out release tab -1- as far as stop in direction of -arrow- and unplug electrical connector -2- at accelerator pedal module.

Continued for all vehicles:

- Use screwdriver to prise off cap.
- Remove bolt.
- Push release tool - T10238- (or release tool - T10240- for RHD vehicles) fully into the slots provided, as illustrated -arrow-, and take off accelerator pedal module.

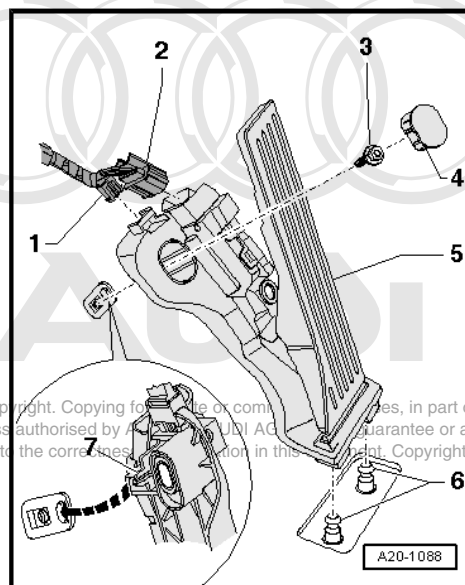


Installing

- Tightening torque ⇒ [page 140](#)

Installation is carried out in the reverse order; note the following:

- Attach cable guide clip -1- and electrical connector -2- to accelerator pedal module -5-.
- The connector must audibly engage.
- Press accelerator pedal module onto retaining studs -6-.
- Insert centring pin -7- into hole in underbody.
- Secure accelerator pedal module with bolt -3- and press on cap -4-.



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11.3 Adapting kick-down function - vehicles with automatic gearbox or dual clutch gearbox

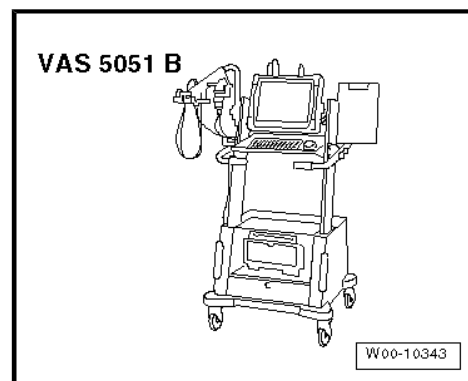


Note

If the accelerator pedal module or engine control unit is renewed on vehicles with an automatic gearbox or dual clutch gearbox, the kick-down function must be adapted.

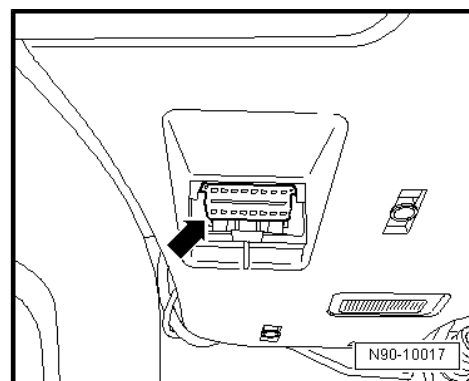
Special tools and workshop equipment required

◆ Vehicle diagnostic, testing and information system - VAS 5051B-



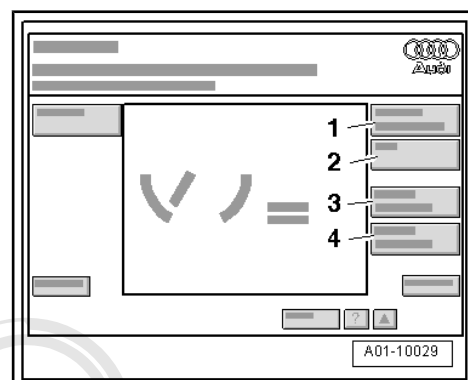
Procedure

- Vehicle diagnostic, testing and information system - VAS 5051B- connected to diagnostic connection -arrow-.
- No faults stored in event memory.
- Engine stopped, ignition switched on



Display on -VAS 5051B- :

- Select Vehicle self-diagnosis from the list -item 1-.



Display on -VAS 5051B- :

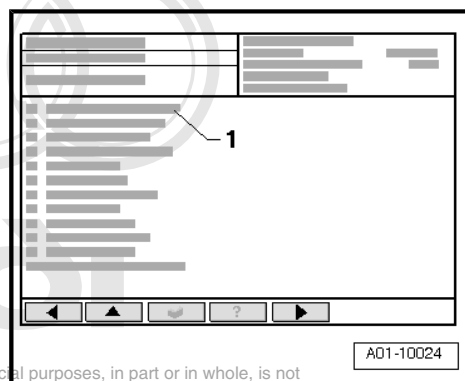
- From menu -1-, select vehicle system "Engine electronics" and press key to advance.



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Display on -VAS 5051B- :

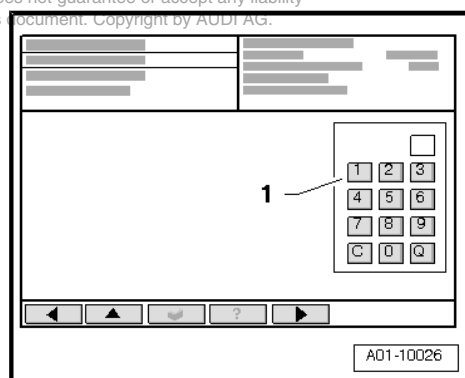
- From menu -1-, select function “Basic setting” and press key to advance.



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Display on -VAS 5051B- :

- Press buttons on keypad -1- to select “Display group 063” and confirm entry by pressing key.



- Activate basic setting by touching key -A-.

Display on -VAS 5051B- :

- Check display in zones -3- and -4-.

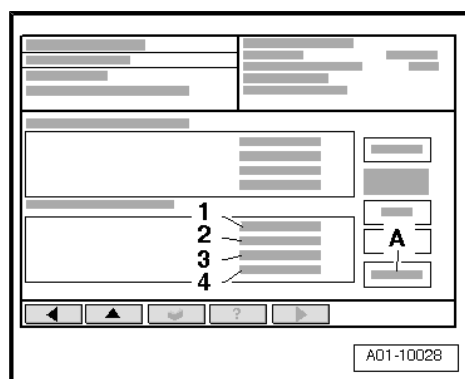
Display shows: “Operate kickdown”

- Fully depress accelerator pedal beyond kickdown point and keep it pressed.

Display shows: “Kickdown ADP runs”.

- Check the readout in display zones -3- and -4-.

Display shows: Kickdown ADP OK



Note

- ◆ If display shows “Kickdown ERROR”: interrogate event memory.
- ◆ “ERROR” is indicated, for example, if the accelerator pedal is not pressed immediately after requested by the tester or if the accelerator pedal is released before the adaption process is finished. Exit function “Basic setting” by pressing key and restart adaption.
- Exit “Basic setting” function by pressing key.
- Select function “End output”.
- Switch off ignition and unplug diagnostic connector.