

Workshop Manual

Audi A4 2008 ➤
Audi A5 Cabriolet 2009 ➤
Audi A5 Coupé 2008 ➤

Fuel supply system, petrol engines

Engine ID	CAB A	CAB B	CALA	CDH A	CDH B	CDN B	CDN C	CAB D	CAE B
	CAU A	CAE A	CAK A	CCB A	CAD A	CCU A	CDZ A	CFK A	CFS A
	CGW C	CGX C	CHM B	CMU A	CPM A	CJEB	CAE D	CPM B	CNC D
	CTU B	CUH A	CJED	CRE C	CRE D	CTD A	CUJA	CJEE	CNC E

Edition 07.2015

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List of Workshop Manual Repair Groups



Repair Group

00 - Technical data

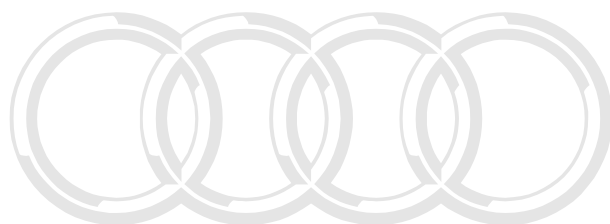
20 - Fuel supply system

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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.

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Audi

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00 – Technical data

1 Safety precautions

(ARL004324; Edition 07.2015)

⇒ **"1.1 Safety precautions when working on the fuel system", page 1**

⇒ **"1.2 Safety precautions when using testers and measuring instruments during a road test", page 3**

1.1 Safety precautions when working on the fuel system

When working on the fuel system note the following warnings:



WARNING

The fuel system operates at extremely high pressure. This can cause injury.

- ◆ *The fuel pressure in the high-pressure section of the injection system must be reduced to a residual pressure prior to opening the system.*
- ◆ *Wrap a clean cloth around the connection and carefully loosen the connection to allow the residual pressure to dissipate.*

- Procedure before opening high-pressure section of injection system ⇒ Rep. gr. 24 ; Injection system; Overview of fitting locations - injection system .

Observe the following to prevent injuries to persons and damage to the injection and ignition system:

- ◆ Always switch off the ignition before connecting or disconnecting electrical wiring for the injection or ignition system or tester cables.
- ◆ Always switch off ignition before washing engine.
- ◆ Erase any entries in event memory resulting from testing or installation ⇒ Vehicle diagnostic tester, Interrogate event memory, then Generate readiness code.



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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.*
- ◆ *Always switch off the ignition before disconnecting the battery.*

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

Perform the following steps before starting to work on the fuel supply system:



WARNING

Mobile phones can cause an explosion risk.

- ◆ *Ensure that any mobile phones are well clear of the work-bay.*



Caution

Electronic components are susceptible to damage.

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

- ◆ Disconnect battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- ◆ Briefly open filler cap for fuel tank and close again.

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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 fuel tank if there is too much fuel in tank. Procedure for rest-of-world vehicles with front-wheel drive ➔ [page 11](#) , rest-of-world vehicles with four-wheel drive ➔ [page 13](#) , USA vehicles with front-wheel drive and four-wheel drive ➔ [page 14](#) .
- ◆ 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 fuel tank if there is too much fuel in tank. Procedure for rest-of-world vehicles with front-wheel drive ➔ [page 11](#) , rest-of-world vehicles with four-wheel drive ➔ [page 13](#) , USA vehicles with front-wheel drive and four-wheel drive ➔ [page 14](#) .

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

Note the following if testers and measuring instruments have to be used during a road test:



WARNING

Accidents can be caused if the driver is distracted by test equipment while road-testing, or if test equipment is not properly secured.

Persons sitting in the front passenger's seat could be injured if the airbag is triggered in an accident.

- *The use of test equipment while driving causes distraction.*
- *There is an increased risk of injury if test equipment is not secured.*
- ◆ *Test equipment must always be secured on the rear seat with a strap and operated from the rear seat by a second person.*

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2 Repair instructions

⇒ [“2.1 Rules for cleanliness”, page 4](#)

⇒ [“2.2 Test conditions”, page 4](#)

⇒ [“2.3 Contact corrosion”, page 4](#)

2.1 Rules for cleanliness

Even small amounts of dirt can cause malfunctions. When working on the fuel supply system and injection system, pay careful attention to the following basic rules:

- ◆ Carefully clean connection points and the surrounding area with engine cleaner or brake cleaner and dry thoroughly before opening.
- ◆ Seal off open lines and connections with clean plugs or sealing caps immediately.
- ◆ Place parts that have been removed on a clean surface and cover them over. Do not use fluffy 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 parts that have been previously unpacked and stored away loose (e.g. in toolboxes, etc.).
- ◆ When the system is open: Do not work with compressed air. Do not move the vehicle unless absolutely necessary.
- ◆ Protect unplugged electrical connectors against dirt and moisture and make sure connections are dry when attaching.

2.2 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 ⇒ [page 151](#) ,
⇒ [page 151](#) .
- Fuel pump relay - J17- OK ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Fuel tank at least $\frac{1}{4}$ full.
- Fuel filter OK.
- Fuel lines OK (not obstructed or crushed).
- Ignition off.

2.3 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 used.

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 .

Note the following:

- ◆ 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 under warranty.



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20 – Fuel supply system

1 Fuel tank

⇒ [“1.1 Exploded view - fuel tank”, page 6](#)

⇒ [“1.2 Draining fuel tank”, page 11](#)

⇒ [“1.3 Removing and installing fuel tank”, page 16](#)

1.1 Exploded view - fuel tank

⇒ [“1.1.1 Exploded view - fuel tank, rest-of-world vehicles with front-wheel drive”, page 6](#)

⇒ [“1.1.2 Exploded view - fuel tank, rest-of-world vehicles with four-wheel drive”, page 8](#)

⇒ [“1.1.3 Exploded view - fuel tank, USA vehicles with front-wheel drive/four-wheel drive”, page 10](#)

1.1.1 Exploded view - fuel tank, rest-of-world vehicles with front-wheel drive

1 - Bolt

- ☐ Tightening torque ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers

2 - Mounting for exhaust system

3 - Securing strap

- ☐ Different lengths

4 - Fuel line

- ☐ From fuel filter to engine
- ☐ Do not kink
- ☐ Clipped onto fuel tank
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)

5 - Fuel line

- ☐ Only on vehicles with auxiliary heater: leading to metering pump for auxiliary heater
- ☐ Do not kink
- ☐ Clipped onto fuel tank
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)

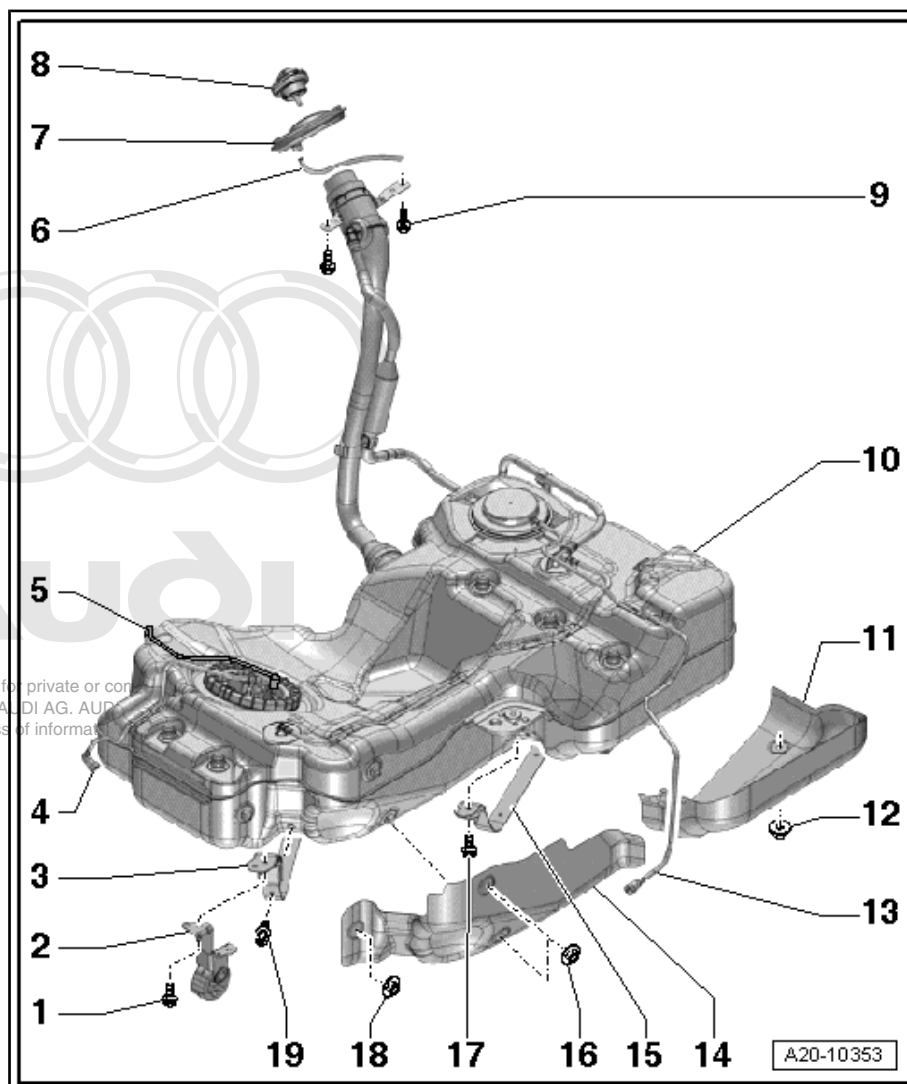
6 - Overflow hose

- ☐ Attached to bracket for bumper

7 - Rubber cup

8 - Filler cap

- ☐ Screw down until it clicks audibly
- ☐ Secured to tank flap unit



9 - Bolt

- ☐ To secure fuel filler neck
- ☐ To eliminate electrostatic charge ⇒ [page 8](#)
- ☐ 20 Nm

10 - Fuel tank

- ☐ Removing and installing ⇒ [page 16](#)

11 - Heat shield for fuel tank

12 - Nut

- ☐ 2 Nm

13 - Breather line

- ☐ To activated charcoal filter
- ☐ Do not kink
- ☐ Clipped onto fuel tank
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)

14 - Heat shield for fuel tank

15 - Securing strap

- ☐ Different lengths

16 - Nut

- ☐ 2 Nm

17 - Bolt

- ☐ 20 Nm

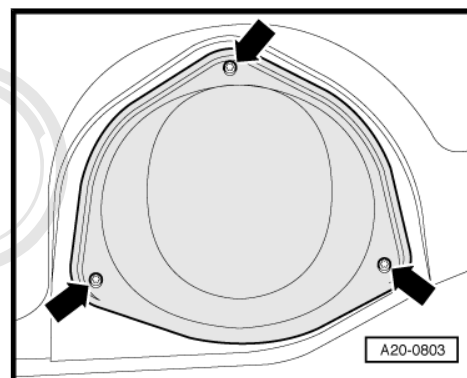
18 - Nut

- ☐ 2 Nm

19 - Fastener

Cover for flange on fuel tank - tightening torque

- Tighten bolts -arrows- to 1.5 Nm.



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Earth connection for fuel filler neck

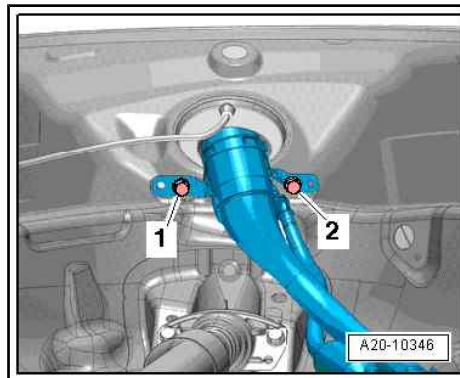
- Connections -1- and -2- on filler neck must be free of corrosion to ensure proper earth connection to body.



WARNING

Risk of explosion caused by electrostatic discharge.

- 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



1.1.2 Exploded view - fuel tank, rest-of-world vehicles with four-wheel drive

1 - Bolt

- Tightening torque ➔ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers

2 - Mounting for exhaust system

3 - Securing strap

4 - Fuel line

- From fuel filter to engine
- Do not kink
- Clipped onto fuel tank
- Press release tab on connection piece to disconnect ➔ [page 99](#)

5 - Fuel line

- Only on vehicles with auxiliary heater: leading to metering pump for auxiliary heater
- Do not kink
- Clipped onto fuel tank
- Press release tab on connection piece to disconnect ➔ [page 99](#)

6 - Overflow hose

- Attached to bracket for bumper

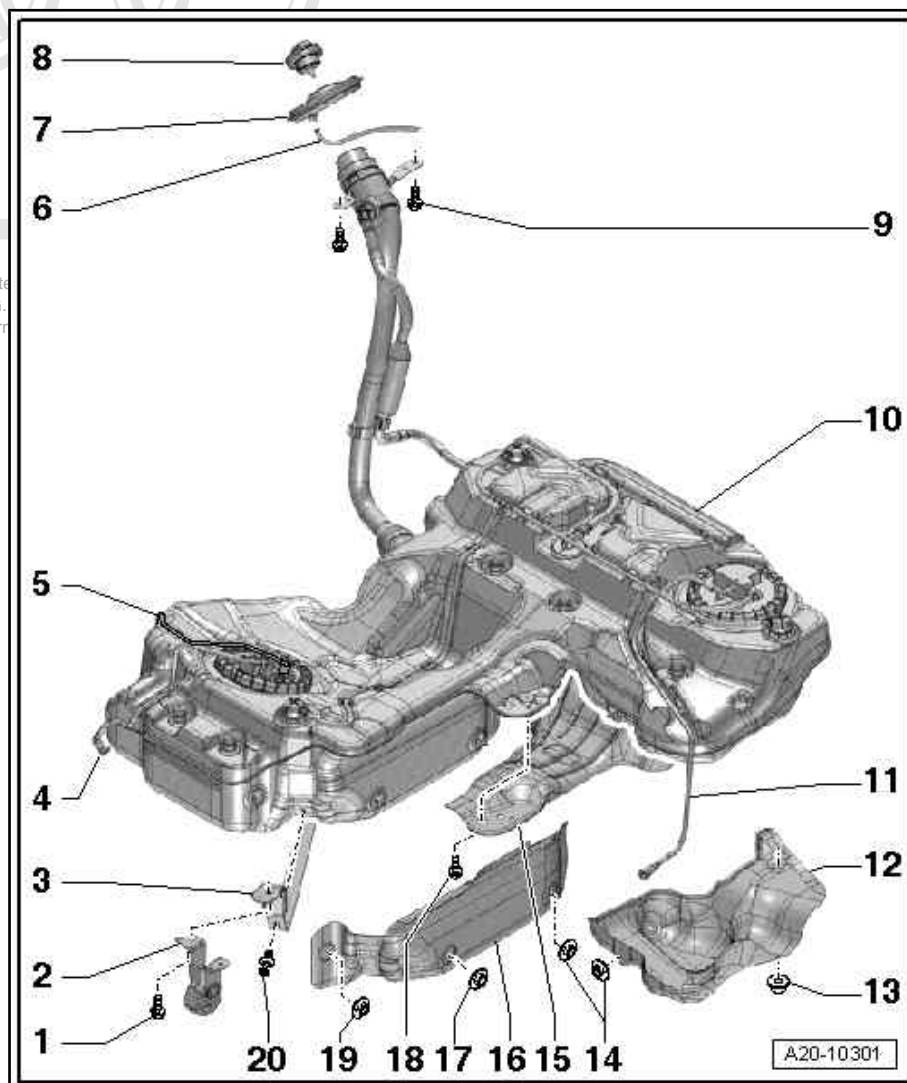
7 - Rubber cup

8 - Filler cap

- Screw down until it clicks audibly
- Secured to tank flap unit

9 - Bolt

- To secure fuel filler neck
- To eliminate electrostatic charge ➔ [page 9](#)
- 20 Nm



10 - Fuel tank

- ❑ Removing and installing ⇒ [page 21](#)

11 - Breather line

- ❑ To activated charcoal filter
- ❑ Do not kink
- ❑ Press release tab on connection piece to disconnect ⇒ [page 99](#)
- ❑ Clipped onto fuel tank

12 - Heat shield for fuel tank

13 - Nut

- ❑ 2 Nm

14 - Nut

- ❑ 2 Nm

15 - Support bracket

16 - Heat shield for fuel tank

17 - Nut

- ❑ 2 Nm

18 - Bolt

- ❑ 20 Nm

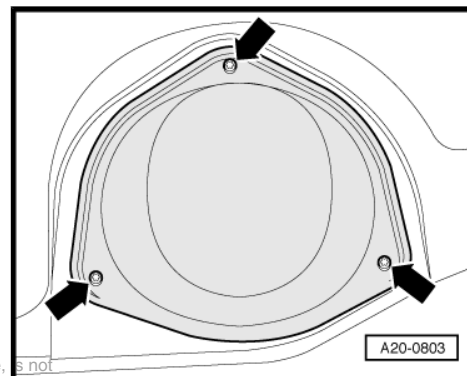
19 - Nut

- ❑ 2 Nm

20 - Fastener

Cover for flange on fuel tank - tightening torque

- Tighten bolts -arrows- to 1.5 Nm.



Earth connection for fuel filler neck

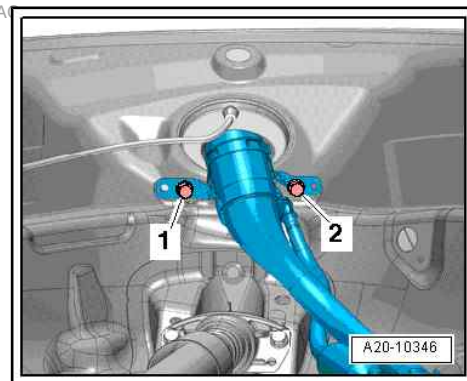
- Connections -1- and -2- on filler neck must be free of corrosion to ensure proper earth connection to body.



WARNING

Risk of explosion caused by electrostatic discharge.

- ◆ ***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***



1.1.3 Exploded view - fuel tank, USA vehicles with front-wheel drive/four-wheel drive

1 - Bolt

- ☐ Tightening torque ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers

2 - Mounting for exhaust system

3 - Securing strap

4 - Fuel line

- ☐ From fuel filter to engine
- ☐ Do not kink
- ☐ Clipped onto fuel tank
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)

5 - Bolt

- ☐ 6 Nm

6 - Protective plate

- ☐ For fuel filler neck

7 - Overflow hose

- ☐ Attached to bracket for bumper

8 - Rubber cup

9 - Filler cap

- ☐ Screw down until it clicks audibly
- ☐ Secured to tank flap unit

10 - Bolt

- ☐ To secure fuel filler neck
- ☐ To eliminate electrostatic charge ⇒ [page 11](#)
- ☐ 20 Nm

11 - Fuel tank

- ☐ Removing and installing ⇒ [page 26](#)

12 - Breather line

- ☐ To activated charcoal filter
- ☐ Do not kink
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)
- ☐ Clipped onto fuel tank

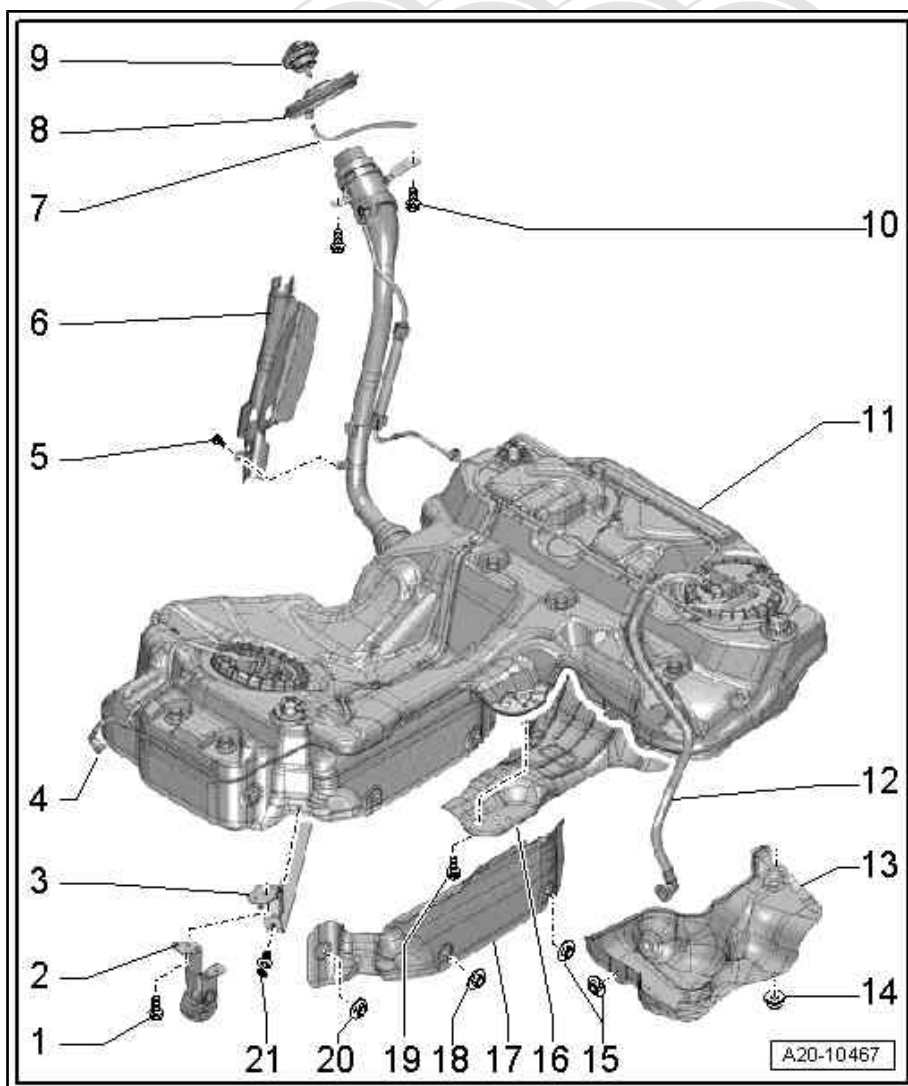
13 - Heat shield for fuel tank

14 - Nut

- ☐ 2 Nm

15 - Nut

- ☐ 2 Nm



16 - Support bracket

17 - Heat shield for fuel tank

18 - Nut

□ 2 Nm

19 - Bolt

□ 20 Nm

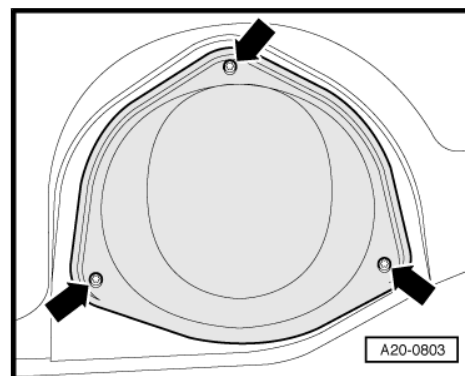
20 - Nut

□ 2 Nm

21 - Fastener

Cover for flange on fuel tank - tightening torque

- Tighten bolts -arrows- to 1.5 Nm.



Earth connection for fuel filler neck

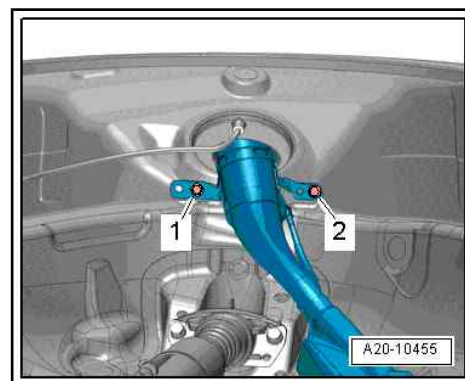
- Connections -1- and -2- on filler neck must be free of corrosion to ensure proper earth connection to body.



WARNING

Risk of explosion caused by electrostatic discharge.

- ◆ 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



1.2 Draining fuel tank

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⇒ "1.2.1 Draining fuel tank - rest-of-world vehicles with front-wheel drive", page 11

⇒ "1.2.2 Draining fuel tank - rest-of-world vehicles with four-wheel drive", page 13

⇒ "1.2.3 Draining fuel tank - USA vehicles with front-wheel drive/ four-wheel drive", page 14

1.2.1 Draining fuel tank - rest-of-world vehicles with front-wheel drive

Special tools and workshop equipment required

◆ Fuel extractor - VAS 5190A-



Procedure

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



Caution

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

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

- Disconnect battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .



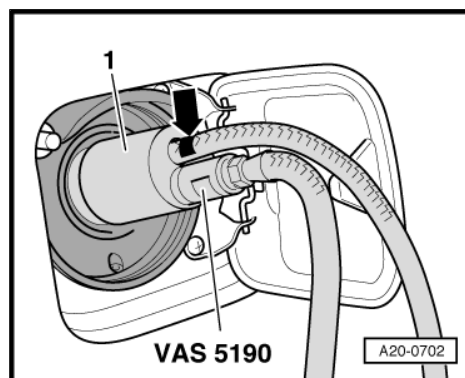
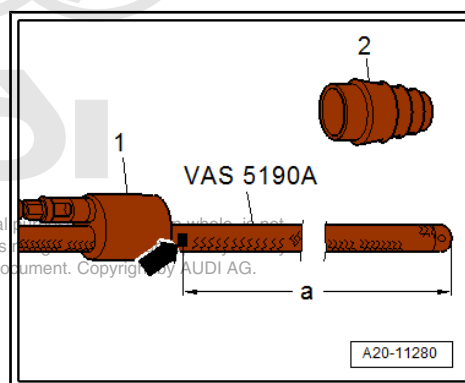
WARNING

Risk of explosion caused by electrostatic discharge.

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

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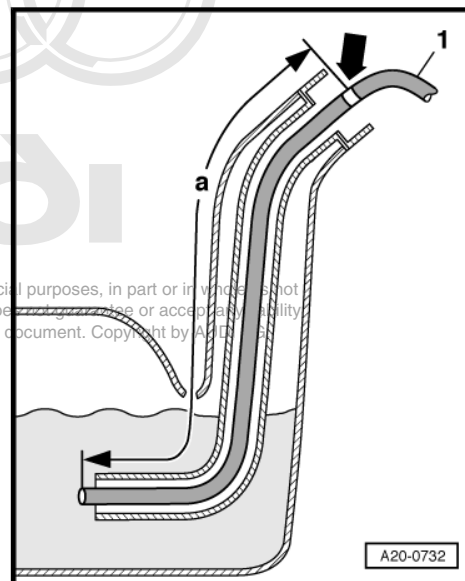
- Detach tapered adapter -2- from shaft end -1- of fuel extractor unit -VAS 5190A- .
- Use insulating tape to mark the extraction hose -arrow- at a distance of -a- = 1,300 mm from the end of the hose.
- Remove filler cap from fuel filler neck.
- Screw shaft end -1- of fuel extractor unit -VAS 5190A- onto fuel filler neck.
- Push extraction hose into fuel tank until marking on hose -arrow- coincides with shaft end.
- Extract fuel from tank via fuel filler neck.
- Pull out extraction hose carefully.





Note

- ◆ The procedure when using a fuel extractor without shaft end is basically the same.
- ◆ In this case, make a mark -arrow- on the hose at distance -a- = 1,235 mm from end of extraction hose -1- 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.



1.2.2 Draining fuel tank - rest-of-world vehicles with four-wheel drive

Special tools and workshop equipment required

- ◆ Fuel extractor - VAS 5190A-



Procedure

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



Caution

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

- ◆ Observe notes on procedure for disconnecting the battery.

- Disconnect battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

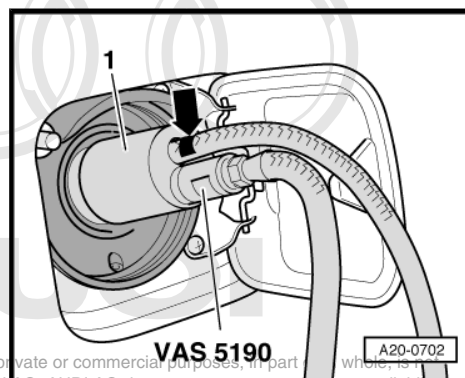
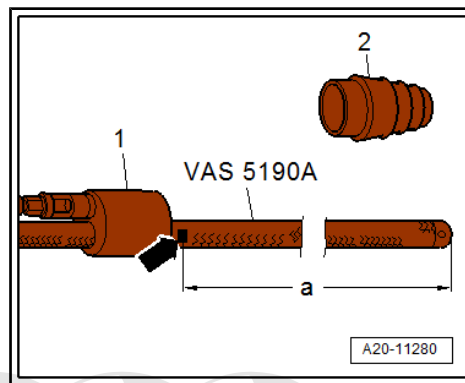


WARNING

Risk of explosion caused by electrostatic discharge.

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

- Detach tapered adapter -2- from shaft end -1- of fuel extractor unit -VAS 5190A- .
- Use insulating tape to mark the extraction hose -arrow- at a distance of -a- = 1,300 mm from the end of the hose.
- Remove filler cap from fuel filler neck.
- Screw shaft end -1- of fuel extractor unit -VAS 5190A- onto fuel filler neck.
- Push extraction hose into fuel tank until marking on hose -arrow- coincides with shaft end.
- Extract fuel from tank via fuel filler neck.
- Pull out extraction hose carefully.

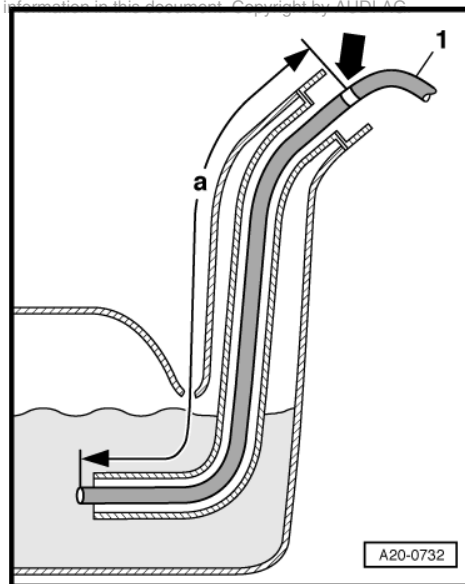


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Note

- ◆ *The procedure when using a fuel extractor without shaft end is basically the same.*
- ◆ *In this case, make a mark -arrow- on the hose at distance -a- = 1,235 mm from end of extraction hose -1- 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.*



1.2.3 Draining fuel tank - USA vehicles with front-wheel drive/four-wheel drive

Special tools and workshop equipment required

◆ Fuel extractor - VAS 5190A-



Procedure

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



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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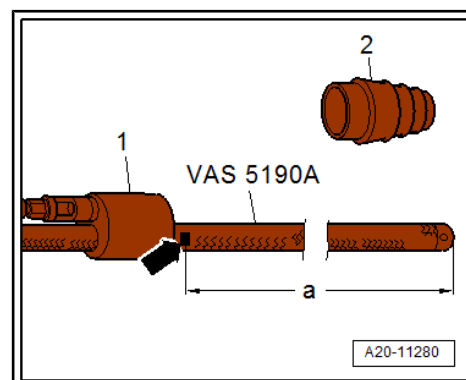
- Disconnect battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .



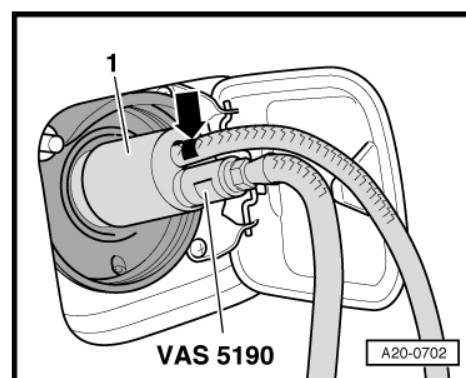
WARNING

Risk of explosion caused by electrostatic discharge.

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



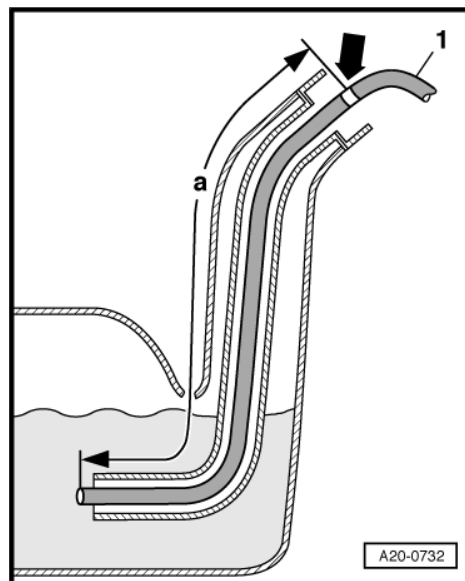
- Detach tapered adapter -2- from shaft end -1- of fuel extractor unit -VAS 5190A- .
- Use insulating tape to mark the extraction hose -arrow- at a distance of -a- = 1,300 mm from the end of the hose.
- Remove filler cap from fuel filler neck.
- Screw shaft end -1- of fuel extractor unit -VAS 5190A- onto fuel filler neck.
- Push extraction hose into fuel tank until marking on hose -arrow- coincides with shaft end.
- Extract fuel from tank via fuel filler neck.
- Pull out extraction hose carefully.





Note

- ◆ The procedure when using a fuel extractor without shaft end is basically the same.
- ◆ In this case, make a mark -arrow- on the hose at distance -a- = 1,235 mm from end of extraction hose -1- 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.



1.3 Removing and installing fuel tank

⇒ ["1.3.1 Removing and installing fuel tank with attached components - rest-of-world vehicles with front-wheel drive", page 16](#)

⇒ ["1.3.2 Removing and installing fuel tank with attached components - rest-of-world vehicles with four-wheel drive", page 21](#)

⇒ ["1.3.3 Removing and installing fuel tank with attached components - USA vehicles with front-wheel drive/four-wheel drive", page 26](#)

1.3.1 Removing and installing fuel tank with attached components - rest-of-world vehicles with front-wheel drive

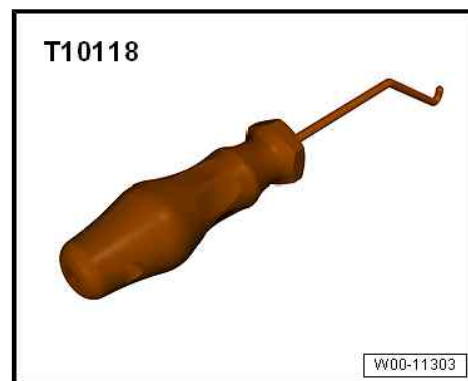
Special tools and workshop equipment required

- ◆ Engine and gearbox jack - VAS 6931-



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◆ Assembly tool - T10118-



Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



Caution

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

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

- Disconnect battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

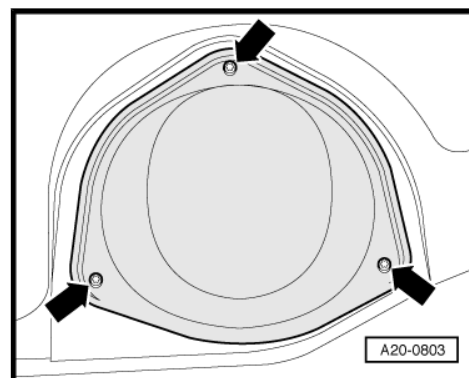


WARNING

Risk of accident caused by weight of fuel tank

- ◆ *Fuel tank must be empty when it is removed.*

- Drain fuel tank ➔ [page 11](#) .
- Remove rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.

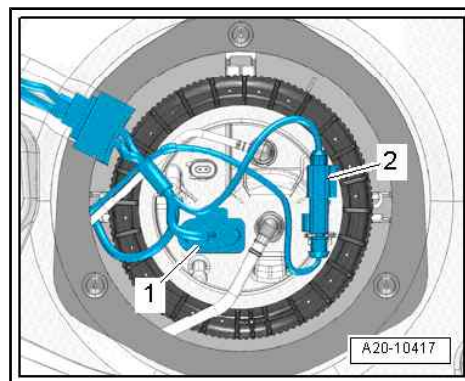


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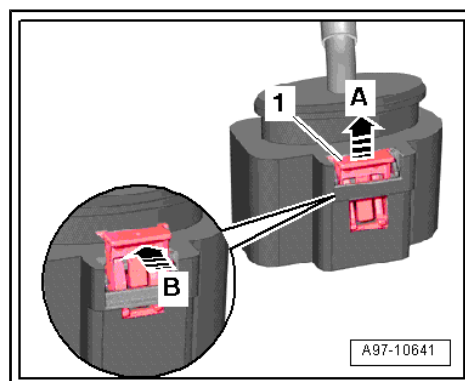
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A5 models up to model year 2011, A4 models up to model year 2012:

- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Unplug electrical connector -1- on flange.



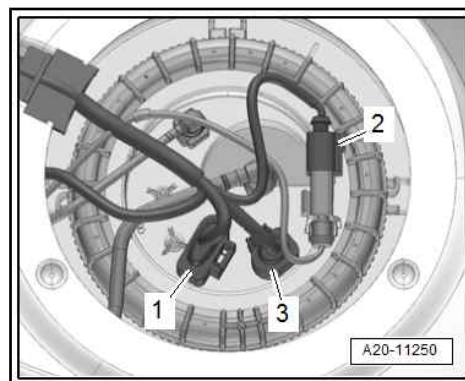
- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



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A5 models from model year 2012 onwards, A4 models from model year 2013 onwards:

- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Release retainer catches with assembly tool - T10118- and unplug electrical connectors -1 and 3- on flange.



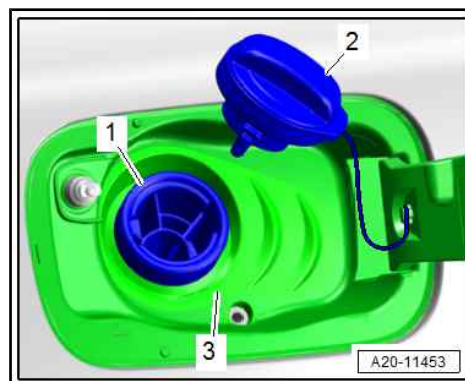
All vehicles (continued):

- Open tank flap.
- Clean area around fuel filler neck -1-.
- Remove filler cap -2- from fuel filler neck.



Note

- ◆ Seal off opening of fuel filler neck with a piece of clean foam to prevent dirt from dropping into the tank.
- ◆ Disregard -item 3-.



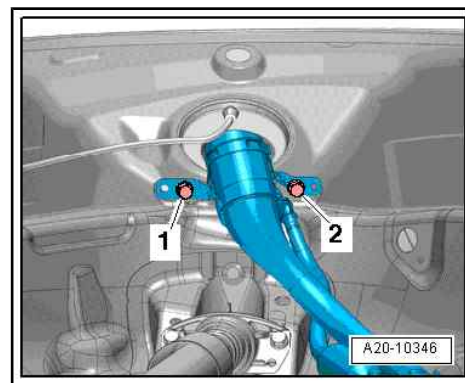
- Remove rear right wheel.
- Remove rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Remove bolts -1- and -2- for fuel filler neck.
- Remove rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencer; Exploded view - silencer .



WARNING

The vehicle can tip over on the lifting platform when the rear axle is removed.

- ◆ ***BEFORE loosening the subframe bolts, take steps to ensure that the vehicle does not tip forwards on the lifting platform (e.g. put a weight of about 50 kg in the luggage compartment).***



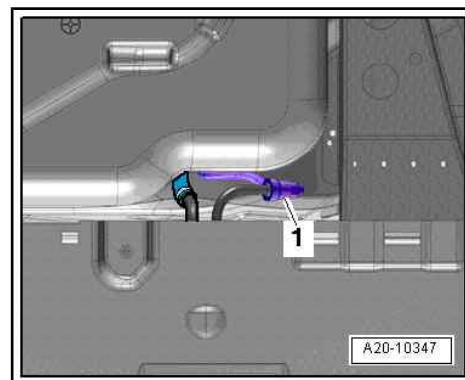
- Remove rear axle ⇒ Running gear, axles, steering; Rep. gr. 42 ; Rear axle; Removing and installing rear axle .



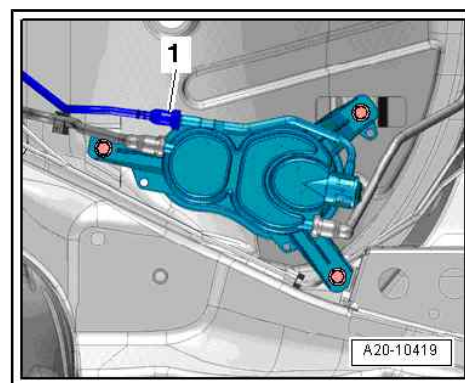
WARNING

Risk of injury - fuel system operates under high pressure.

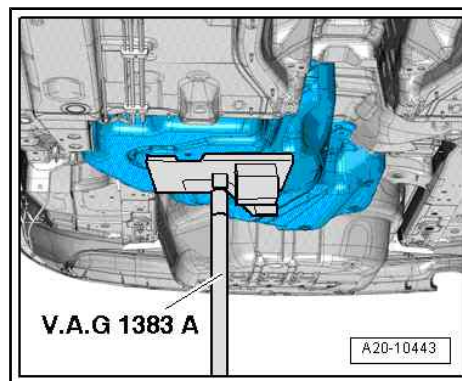
- ◆ ***To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.***



- Disconnect fuel line -1- at front right of fuel tank
 ⇒ [page 99](#) .
- If fitted, disconnect fuel line leading to auxiliary heater and unplug electrical connector at metering pump.
- Disconnect breather line -1- on left of activated charcoal filter
 ⇒ [page 99](#) .



- Position engine and gearbox jack below vehicle to support tank.
- Support fuel tank using engine and gearbox jack .



WARNING

Risk of accident caused by weight of fuel tank

- ◆ *Fuel tank must be empty when it is removed.*

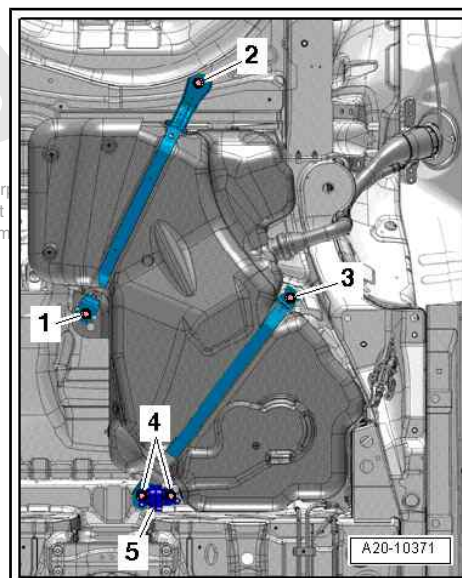
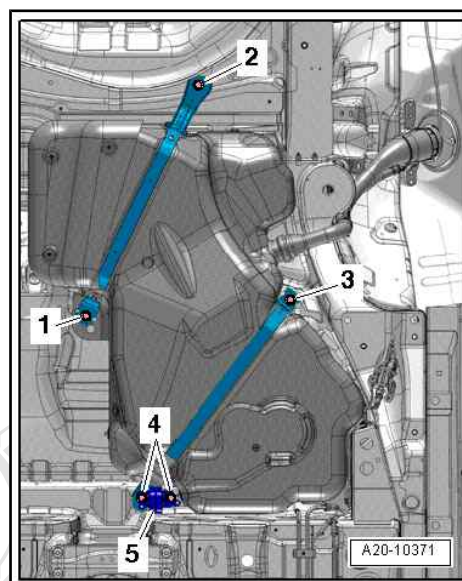
- Remove bolts -1 ... 4- and detach bracket -5- for exhaust system.
- Then lower fuel tank using engine and gearbox jack , simultaneously guiding fuel tank down by hand.

Installing

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

- Tightening torque
⇒ "1.1.1 Exploded view - fuel tank, rest-of-world vehicles with front-wheel drive", page 6
- Check that fuel lines are clipped onto fuel tank.
- Position fuel tank and securing straps on underbody using engine and gearbox jack .
- When installing fuel tank, make sure that fuel filler neck is correctly inserted into opening on body.
- Attach bracket -5- for exhaust system and tighten securing strap bolts -1 ... 4-.

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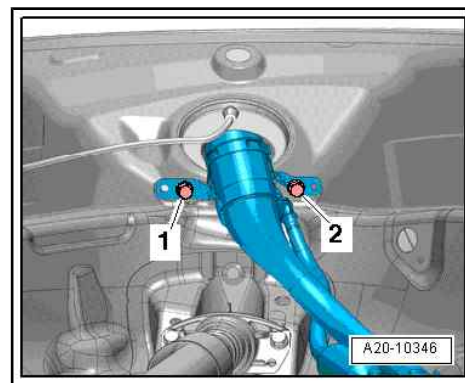
- Connections -1- and -2- on filler neck must be free of corrosion to ensure proper earth connection to body.
- Tighten bolts -1- and -2- for fuel filler neck.



WARNING

Risk of explosion caused by electrostatic discharge.

- ◆ *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*



- Install rear axle ⇒ Running gear, axles, steering; Rep. gr. 42 ; Rear axle; Removing and installing rear axle .
- Install rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencer; Exploded view - silencer .
- Install rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Tightening torque for wheel bolts .
- Install cover for flange ⇒ [page 7](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Vehicles with auxiliary heater: Bleed fuel supply line leading to metering pump ⇒ [page 122](#) .

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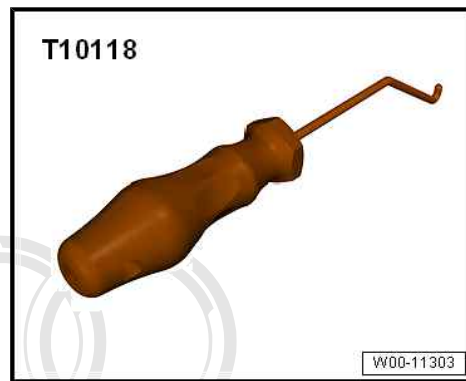
1.3.2 Removing and installing fuel tank with attached components - rest-of-world vehicles with four-wheel drive

Special tools and workshop equipment required

- ◆ Engine and gearbox jack - VAS 6931-



- ◆ Assembly tool - T10118-



Removing

- Observe safety precautions ➤ [page 1](#) .
- Observe rules for cleanliness ➤ [page 4](#) .



Caution

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

- ◆ Observe notes on procedure for disconnecting the battery.

- Disconnect battery ➤ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

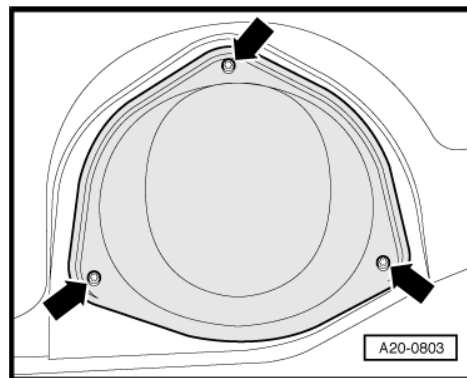


WARNING

Risk of accident caused by weight of fuel tank

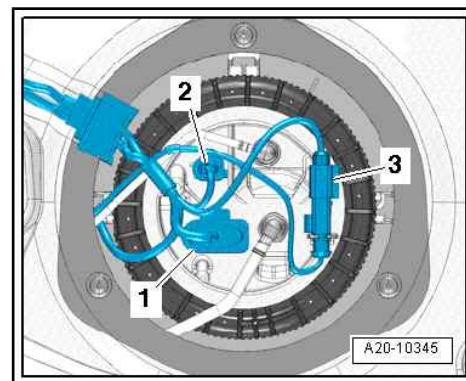
- ◆ Fuel tank must be empty when it is removed.

- Drain fuel tank ➤ [page 13](#) .
- Remove rear seat bench ➤ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.

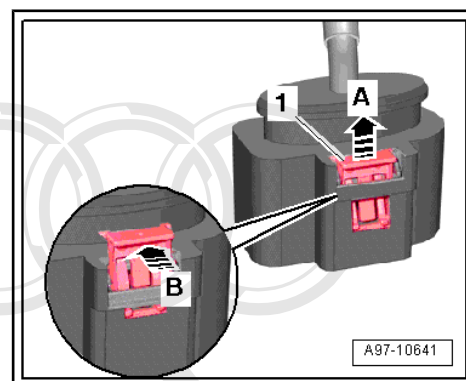


A5 models up to model year 2011, A4 models up to model year 2012:

- If fitted, unplug electrical connector -3- for metering pump for auxiliary heater on flange.
- Release retainer catch with assembly tool - T10118- and unplug electrical connector -2- on flange.
- Unplug electrical connector -1- on flange.

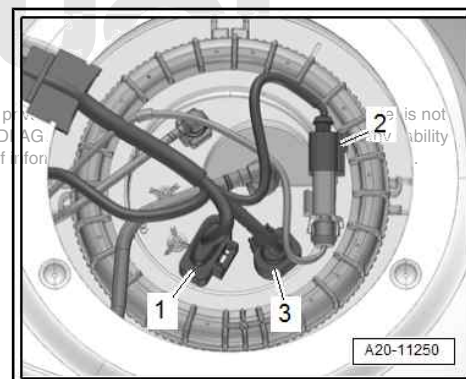


- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



A5 models from model year 2012 onwards, A4 models from model year 2013 onwards:

- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Release retainer catches with assembly tool - T10118- and unplug electrical connectors -1 and 3- on flange.



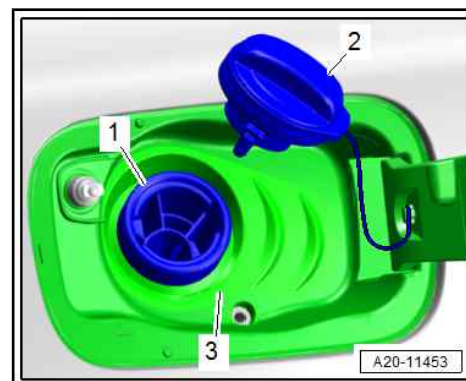
All vehicles (continued):

- Open tank flap.
- Clean area around fuel filler neck -1-.
- Remove filler cap -2- from fuel filler neck.



Note

- ◆ Seal off opening of fuel filler neck with a piece of clean foam to prevent dirt from dropping into the tank.
- ◆ Disregard -item 3-.



- Remove rear right wheel.
- Remove rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Remove bolts -1- and -2- for fuel filler neck.
- Remove rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencer; Exploded view - silencer .

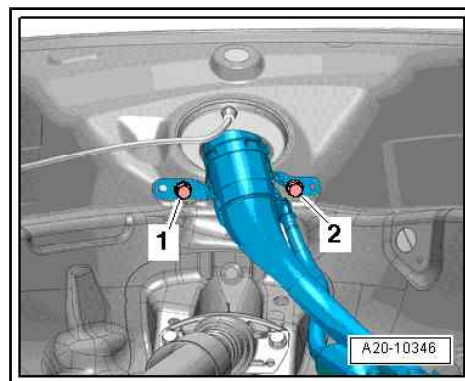


WARNING

The vehicle can tip over on the lifting platform when the rear axle is removed.

- ◆ **BEFORE loosening the subframe bolts, take steps to ensure that the vehicle does not tip forwards on the lifting platform (e.g. put a weight of about 50 kg in the luggage compartment).**

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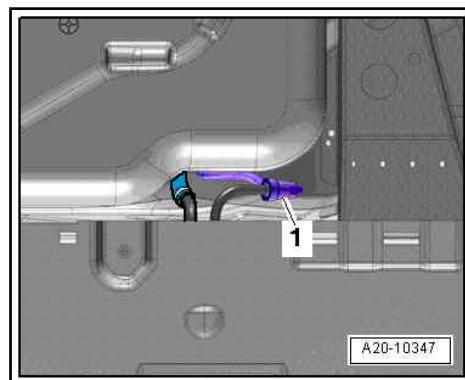
- Remove rear axle ⇒ Running gear, axles, steering; Rep. gr. 42 ; Rear axle; Removing and installing rear axle .



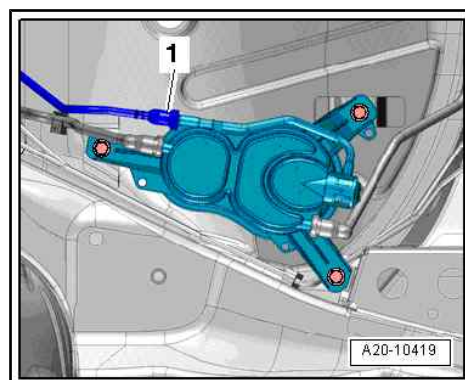
WARNING

Risk of injury - fuel system operates under high pressure.

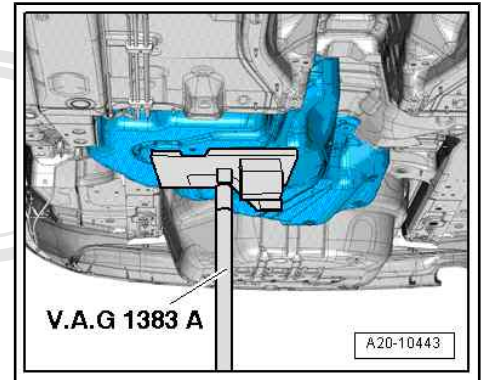
- ◆ **To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.**



- Disconnect fuel line -1- at front right of fuel tank
⇒ [page 99](#) .
- If fitted, disconnect fuel line leading to auxiliary heater and unplug electrical connector at metering pump.
- Disconnect breather line -1- on left of activated charcoal filter
⇒ [page 99](#) .



- Position engine and gearbox jack below vehicle to support tank.
- Support fuel tank using engine and gearbox jack .



WARNING

Risk of accident caused by weight of fuel tank

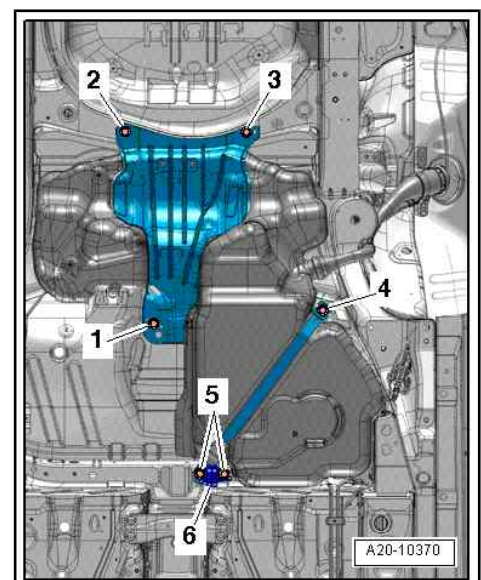
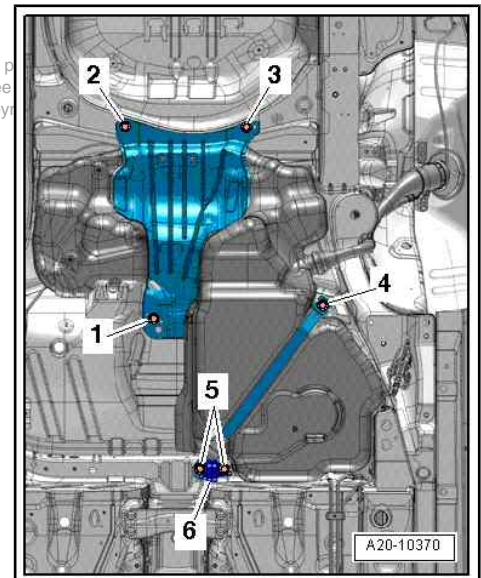
◆ *Fuel tank must be empty when it is removed.*

- Remove bolts -1 ... 5- and detach bracket -6- for exhaust system.
- Then lower fuel tank using engine and gearbox jack , simultaneously guiding fuel tank down by hand.

Installing

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

- Tightening torque
 ⇒ "1.1.2 Exploded view - fuel tank, rest-of-world vehicles with four-wheel drive", page 8
- Check that fuel lines and breather lines are clipped onto fuel tank.
- Position fuel tank with securing strap and support bracket on underbody using engine and gearbox jack .
- When installing fuel tank, make sure that fuel filler neck is correctly inserted into opening on body.
- Attach bracket -6- for exhaust system and tighten bolts -1 ... 5- for securing strap and support bracket.



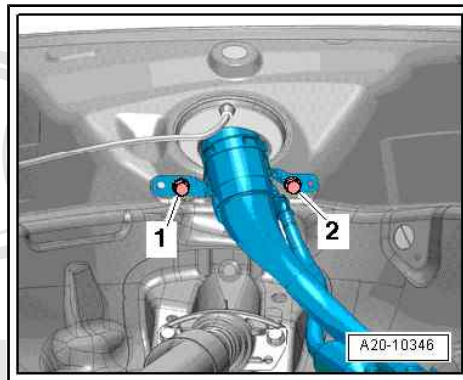
- Connections -1- and -2- on filler neck must be free of corrosion to ensure proper earth connection to body.
- Tighten bolts -1- and -2- for fuel filler neck.



WARNING

Risk of explosion caused by electrostatic discharge.

- ◆ *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*



- Install rear axle ⇒ Running gear, axles, steering; Rep. gr. 42 ; Rear axle; Removing and installing rear axle
- Install rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencer; Exploded view - silencer .
- Install rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Tightening torque for wheel bolts .
- Install cover for flange ⇒ [page 9](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Vehicles with auxiliary heater: Bleed fuel supply line leading to metering pump ⇒ [page 122](#) .

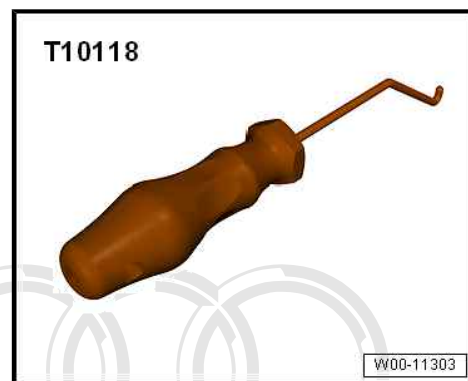
1.3.3 Removing and installing fuel tank with attached components - USA vehicles with front-wheel drive/four-wheel drive

Special tools and workshop equipment required

- ◆ Engine and gearbox jack - VAS 6931-



- ◆ Assembly tool - T10118-



Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



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 ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

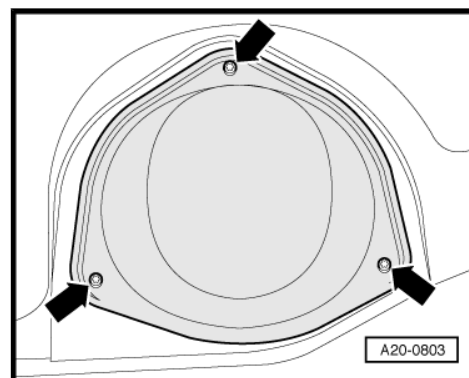


WARNING

Risk of accident caused by weight of fuel tank

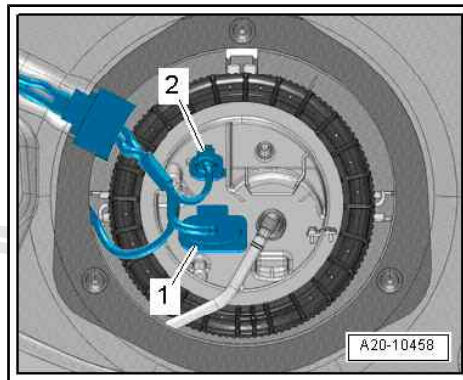
- ◆ **Fuel tank must be empty when it is removed.**

- Drain fuel tank ➔ [page 14](#) .
- Remove rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.

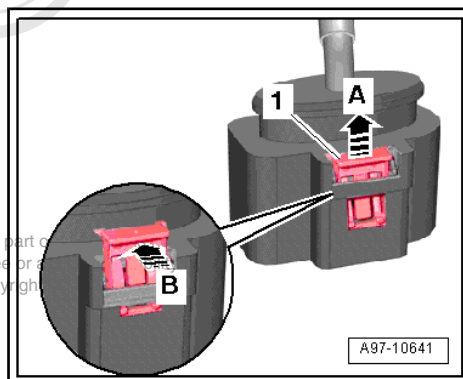


A5 models up to model year 2011, A4 models up to model year 2012:

- Release retainer catch with assembly tool - T10118- and unplug electrical connector -2- on flange.
- Unplug electrical connector -1- on flange.



- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



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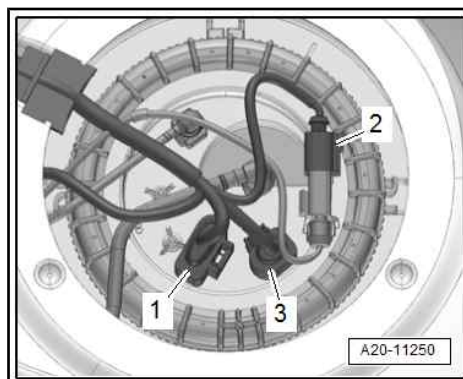
A5 models from model year 2012 onwards, A4 models from model year 2013 onwards:

- Release retainer catches with assembly tool - T10118- and unplug electrical connectors -1 and 3- on flange.



Note

Disregard -item 2-.



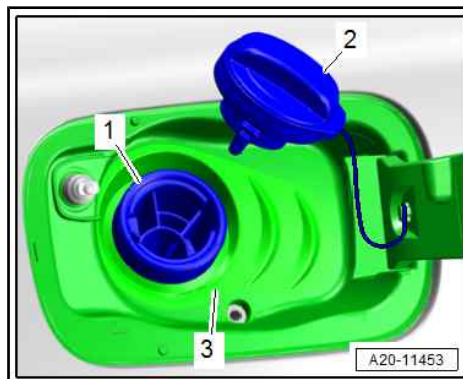
All vehicles (continued):

- Open tank flap.
- Clean area around fuel filler neck -1-.
- Remove filler cap -2- from fuel filler neck.



Note

- ◆ Seal off opening of fuel filler neck with a piece of clean foam to prevent dirt from dropping into the tank.
- ◆ Disregard -item 3-.



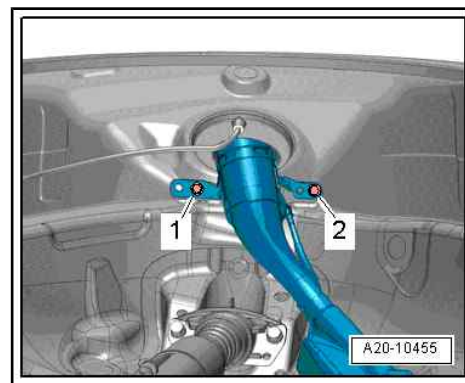
- Remove rear right wheel.
- Remove rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Remove bolts -1- and -2- for fuel filler neck.
- Remove rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencer; Exploded view - silencer .



WARNING

The vehicle can tip over on the lifting platform when the rear axle is removed.

- ◆ *BEFORE loosening the subframe bolts, take steps to ensure that the vehicle does not tip forwards on the lifting platform (e.g. put a weight of about 50 kg in the luggage compartment).*



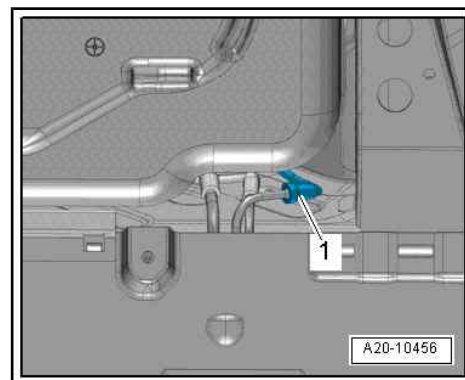
- Remove rear axle ⇒ Running gear, axles, steering; Rep. gr. 42 ; Rear axle; Removing and installing rear axle .



WARNING

Risk of injury - fuel system operates under high pressure.

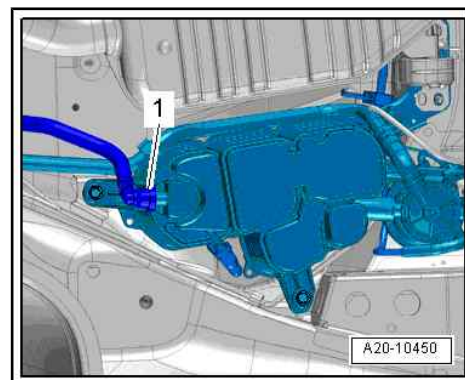
- ◆ *To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.*



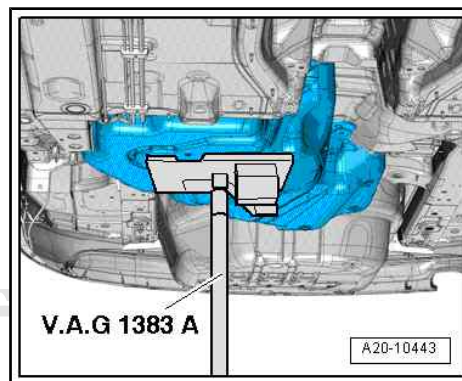
- Disconnect fuel line -1- at front right of fuel tank
 ⇒ [page 99](#) .

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- Disconnect breather line -1- on left of activated charcoal filter
 ⇒ [page 99](#) .



- Position engine and gearbox jack below vehicle to support tank.
- Support fuel tank using engine and gearbox jack .

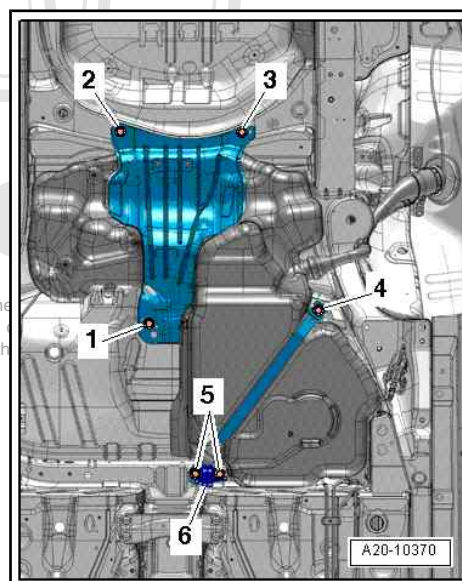


WARNING

Risk of accident caused by weight of fuel tank

♦ *Fuel tank must be empty when it is removed.*

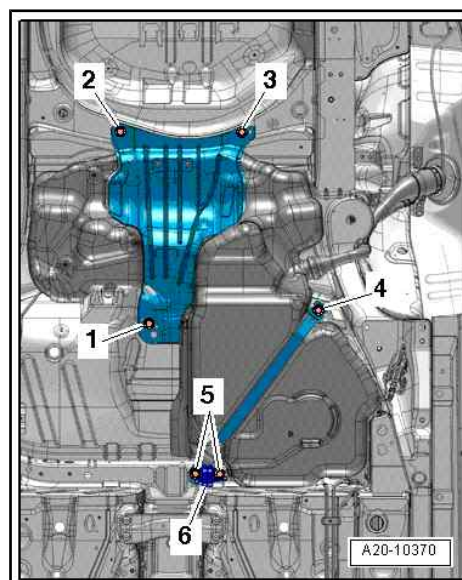
- Remove bolts -1 ... 5- and detach bracket -6- for exhaust system.
- Then lower fuel tank using engine and gearbox jack , simultaneously guiding fuel tank down by hand.



Installing

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

- Tightening torque
⇒ ["1.1.3 Exploded view - fuel tank, USA vehicles with front-wheel drive/four-wheel drive", page 10](#)
- Check that fuel lines and breather lines are clipped onto fuel tank.
- Position fuel tank with securing strap and support bracket on underbody using engine and gearbox jack .
- When installing fuel tank, make sure that fuel filler neck is correctly inserted into opening on body.
- Attach bracket -6- for exhaust system and tighten bolts -1 ... 5- for securing strap and support bracket.



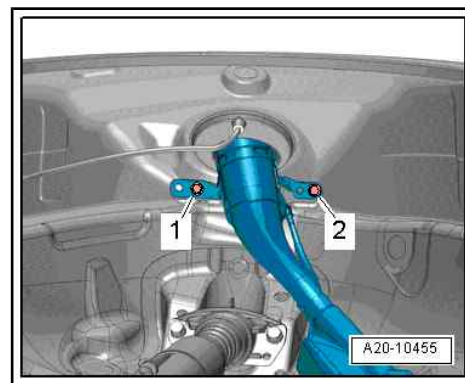
- Connections -1- and -2- on filler neck must be free of corrosion to ensure proper earth connection to body.
- Tighten bolts -1- and -2- for fuel filler neck.



WARNING

Risk of explosion caused by electrostatic discharge.

- ◆ *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*



- Install rear axle ⇒ Running gear, axles, steering; Rep. gr. 42 ; Rear axle; Removing and installing rear axle .
- Install rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencer; Exploded view - silencer
- Install rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Tightening torque for wheel bolts .
- Install cover for flange ⇒ [page 11](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

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2 Fuel delivery unit/fuel gauge senders

⇒ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders", page 32](#)

⇒ ["2.2 Removing and installing fuel delivery unit/fuel gauge sender", page 40](#)

⇒ ["2.3 Checking fuel gauge sender G ", page 65](#)

⇒ ["2.4 Removing and installing fuel gauge sender G ", page 76](#)

⇒ ["2.5 Checking fuel gauge sender 2 G169 ", page 80](#)

⇒ ["2.6 Removing and installing fuel gauge sender 2 G169 ", page 87](#)

2.1 Exploded view - fuel delivery unit/fuel gauge senders

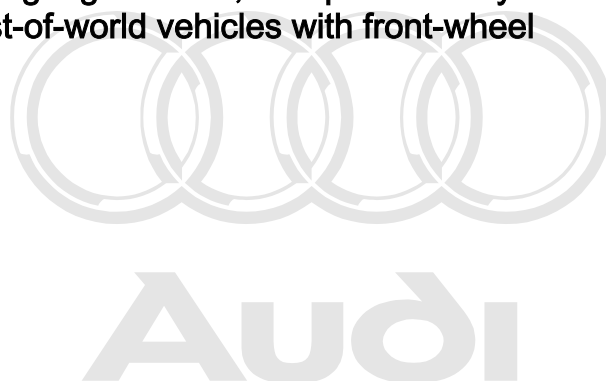
⇒ ["2.1.1 Exploded view - fuel delivery unit/fuel gauge sender, A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with front-wheel drive", page 32](#)

⇒ ["2.1.2 Exploded view - fuel delivery unit/fuel gauge sender, A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with front-wheel drive", page 34](#)

⇒ ["2.1.3 Exploded view - fuel delivery unit/fuel gauge senders, A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 36](#)

⇒ ["2.1.4 Exploded view - fuel delivery unit/fuel gauge senders, A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 38](#)

2.1.1 Exploded view - fuel delivery unit/fuel gauge sender, A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with front-wheel drive



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1 - Threaded ring

2 - Seal

- ☐ Renew
- ☐ Install dry

3 - Speed nut

4 - Fuel pump control unit - J538-

- ☐ Removing and installing
 ⇒ [page 140](#)

5 - Bolt

- ☐ 2.5 Nm

6 - Electrical connector

- ☐ For fuel pump control unit - J538-

7 - Electrical connector

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

8 - Electrical connector

- ☐ Only on vehicles with auxiliary heater: for metering pump for auxiliary heater

9 - Fuel line

- ☐ To engine
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece
 ⇒ [page 99](#)
- ☐ Clipped onto fuel tank

10 - Fuel line

- ☐ Only on vehicles with auxiliary heater: leading to metering pump for auxiliary heater
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece ⇒ [page 99](#)
- ☐ Clipped onto fuel tank

11 - Cap

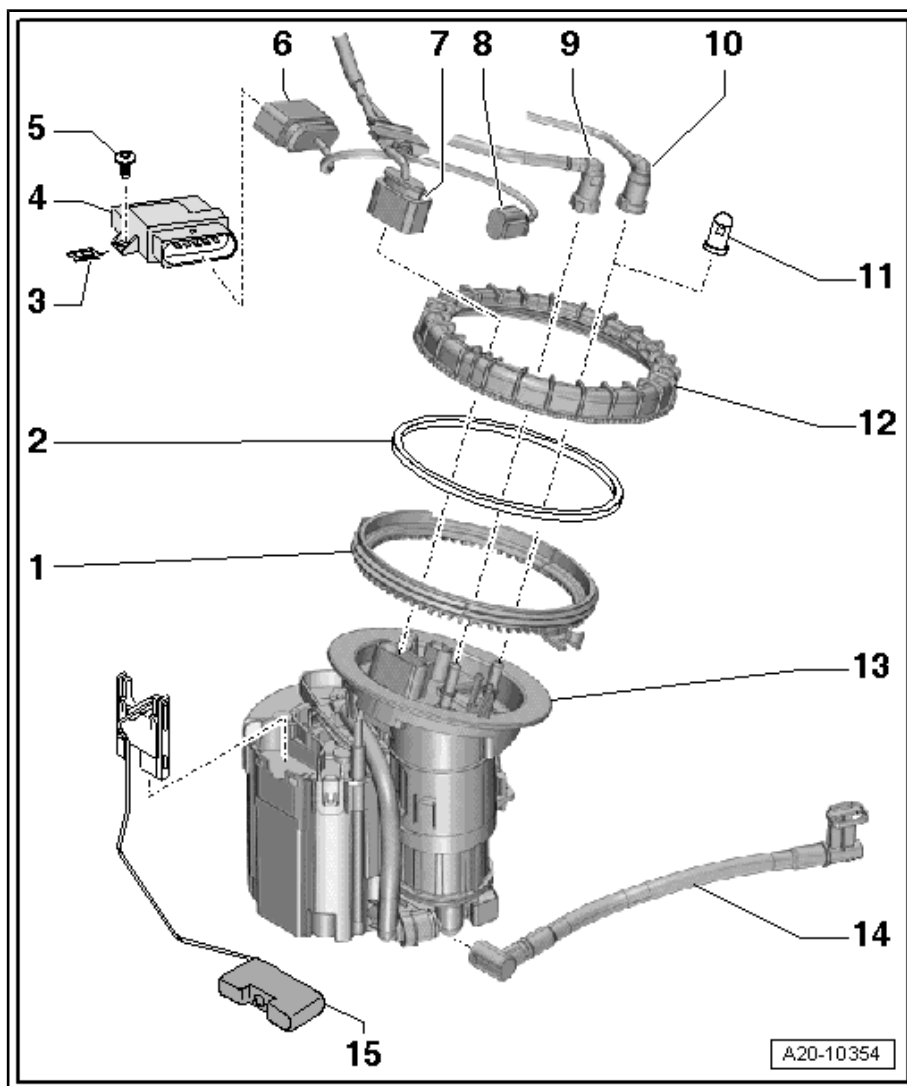
- ☐ For vehicles without auxiliary heater

12 - Union nut

- ☐ Renew
- ☐ 120 Nm
- ☐ Loosen and tighten with union nut tool - T40068A-

13 - Fuel delivery unit

- ☐ Checking fuel pump (electrical test) ⇒ [page 124](#)
- ☐ Checking fuel pressure and residual pressure ⇒ [page 124](#)
- ☐ Checking delivery rate of fuel pump ⇒ [page 124](#)
- ☐ Removing and installing ⇒ [page 40](#)
- ☐ Put at least 5 litres of fuel into tank after installing



14 - Suction pipe

15 - Fuel gauge sender - G-

- ☐ Checking resistance values ➤ [page 65](#)
- ☐ Removing and installing ➤ [page 76](#)

2.1.2 Exploded view - fuel delivery unit/fuel gauge sender, A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with front-wheel drive

1 - Fuel gauge sender - G-

- ☐ Checking resistance values ➤ [page 65](#)
- ☐ Removing and installing ➤ [page 76](#)

2 - Fuel pump control unit - J538-

- ☐ Removing and installing ➤ [page 140](#)

3 - Bolt

- ☐ 2.5 Nm

4 - Electrical connector

- ☐ For fuel system pressurisation pump - G6-

5 - Electrical connector

- ☐ For fuel pump control unit - J538-

6 - Electrical connector

- ☐ Only on vehicles with auxiliary heater: for metering pump for auxiliary heater

7 - Electrical connector

- ☐ For fuel gauge sender - G-

8 - Fuel line

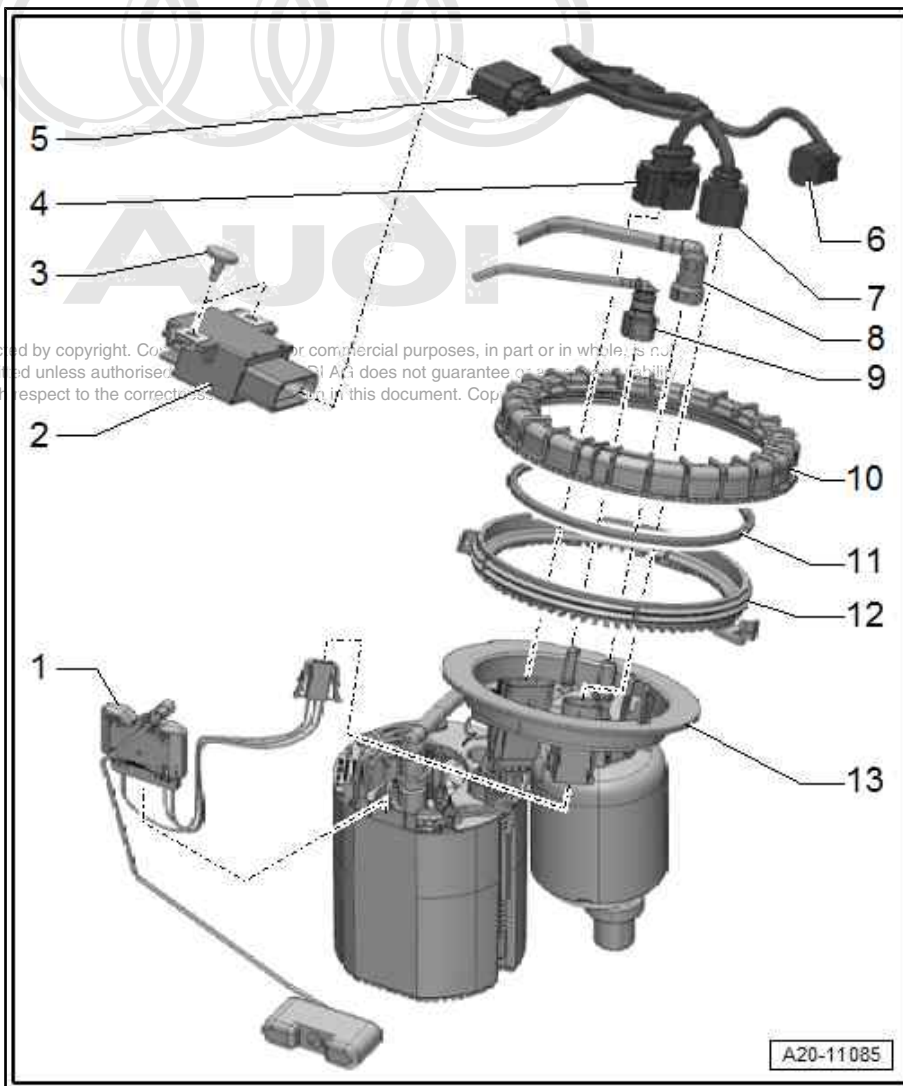
- ☐ To engine
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece ➤ [page 99](#)
- ☐ Clipped onto fuel tank

9 - Fuel line

- ☐ Only on vehicles with auxiliary heater: leading to metering pump for auxiliary heater
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece ➤ [page 99](#)
- ☐ Clipped onto fuel tank

10 - Union nut

- ☐ Renew
- ☐ 120 Nm



- ❑ Loosen and tighten with union nut tool - T40068A-

11 - Seal

- ❑ Renew
- ❑ Install dry

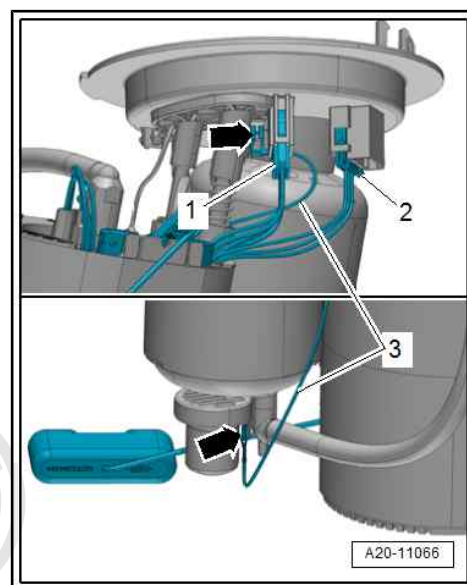
12 - Threaded ring

13 - Fuel delivery unit

- ❑ Checking fuel pump (electrical test) ⇒ [page 124](#)
- ❑ Checking fuel pressure and residual pressure ⇒ [page 124](#)
- ❑ Checking delivery rate of fuel pump ⇒ [page 124](#)
- ❑ Removing and installing ⇒ [page 40](#)
- ❑ Put at least 5 litres of fuel into tank after installing

Connector for fuel delivery unit

- Route earth connection -3- as shown in illustration.
- Make sure that the following connectors are securely seated:
 - ◆ Connectors -arrows- for earth connection on fuel pressure regulator and flange
 - ◆ Connector -1- for fuel system pressurisation pump - G6- on flange
 - ◆ Connector -2- for fuel gauge sender - G- on flange
- Make sure connectors are attached properly; pull to check that they are correctly engaged.



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2.1.3 Exploded view - fuel delivery unit/fuel gauge senders, A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

1 - Fuel delivery unit

- ☐ Checking fuel pump (electrical test)
⇒ [page 124](#)
- ☐ Checking fuel pressure and residual pressure
⇒ [page 124](#)
- ☐ Checking delivery rate of fuel pump
⇒ [page 124](#)
- ☐ Removing and installing
⇒ [page 40](#)
- ☐ Put at least 5 litres of fuel into tank after installing

2 - Threaded ring

3 - Seal

- ☐ Renew
- ☐ Install dry

4 - Union nut

- ☐ Renew
- ☐ 120 Nm
- ☐ Loosen and tighten with union nut tool - T40068A-

5 - Fuel line

- ☐ To engine
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece
⇒ [page 99](#)
- ☐ Clipped onto fuel tank

6 - Electrical connector

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

7 - Electrical connector

- ☐ For fuel pump control unit - J538-

8 - Speed nut

9 - Fuel pump control unit - J538-

- ☐ Removing and installing ⇒ [page 145](#)

10 - Bolt

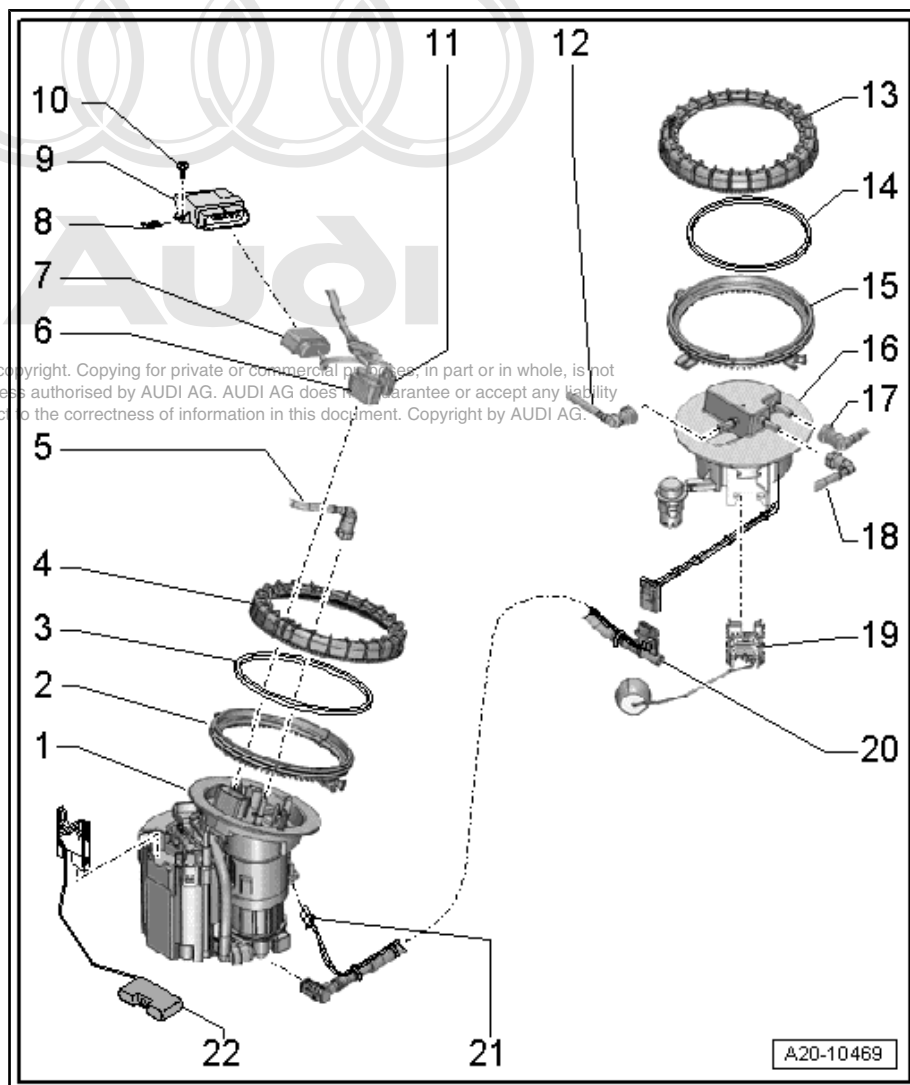
- ☐ 2.5 Nm

11 - Electrical connector

- ☐ For fuel gauge sender 2 - G169-

12 - Breather line

- ☐ To activated charcoal filter
- ☐ Do not kink



- ☐ To disconnect from flange, press release tab on connection piece ➔ [page 99](#)
- ☐ Clipped onto fuel tank

13 - Union nut

- ☐ Renew
- ☐ 120 Nm
- ☐ Loosen and tighten with union nut tool - T40068A-

14 - Seal

- ☐ Renew
- ☐ Install dry

15 - Threaded ring

16 - Flange

- ☐ With fuel gauge sender 2 - G169-

17 - Breather line

- ☐ Only on USA vehicles
- ☐ To disconnect from flange, press release tab on connection piece ➔ [page 99](#)
- ☐ Clipped onto fuel tank

18 - Breather line

- ☐ To disconnect from flange, press release tab on connection piece ➔ [page 99](#)
- ☐ Clipped onto fuel tank

19 - Fuel gauge sender 2 - G169-

- ☐ Checking resistance values ➔ [page 80](#)
- ☐ Removing and installing ➔ [page 87](#)
- ☐ Put at least 5 litres of fuel into tank after installing

20 - Suction pipe

- ☐ Removing and installing ➔ [page 139](#)
- ☐ Put at least 5 litres of fuel into tank after installing

21 - Electrical connector

- ☐ For fuel gauge sender 2 - G169-

22 - Fuel gauge sender - G-

- ☐ Checking resistance values ➔ [page 65](#)
- ☐ Removing and installing ➔ [page 76](#)

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2.1.4 Exploded view - fuel delivery unit/fuel gauge senders, A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

1 - Fuel gauge sender - G-

- ☐ Checking resistance values ➤ [page 65](#)
- ☐ Removing and installing ➤ [page 76](#)

2 - Fuel delivery unit

- ☐ Checking fuel pump (electrical test) ➤ [page 124](#)
- ☐ Checking fuel pressure and residual pressure ➤ [page 124](#)
- ☐ Checking delivery rate of fuel pump ➤ [page 124](#)
- ☐ Removing and installing ➤ [page 40](#)
- ☐ Put at least 5 litres of fuel into tank after installing

3 - Threaded ring

4 - Seal

- ☐ Renew
- ☐ Install dry

5 - Union nut

- ☐ Renew
- ☐ 120 Nm
- ☐ Loosen and tighten with union nut tool - T40068A-

6 - Fuel line

- ☐ To metering pump (on vehicles with auxiliary heater)
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece ➤ [page 99](#)
- ☐ Clipped onto fuel tank

7 - Fuel line

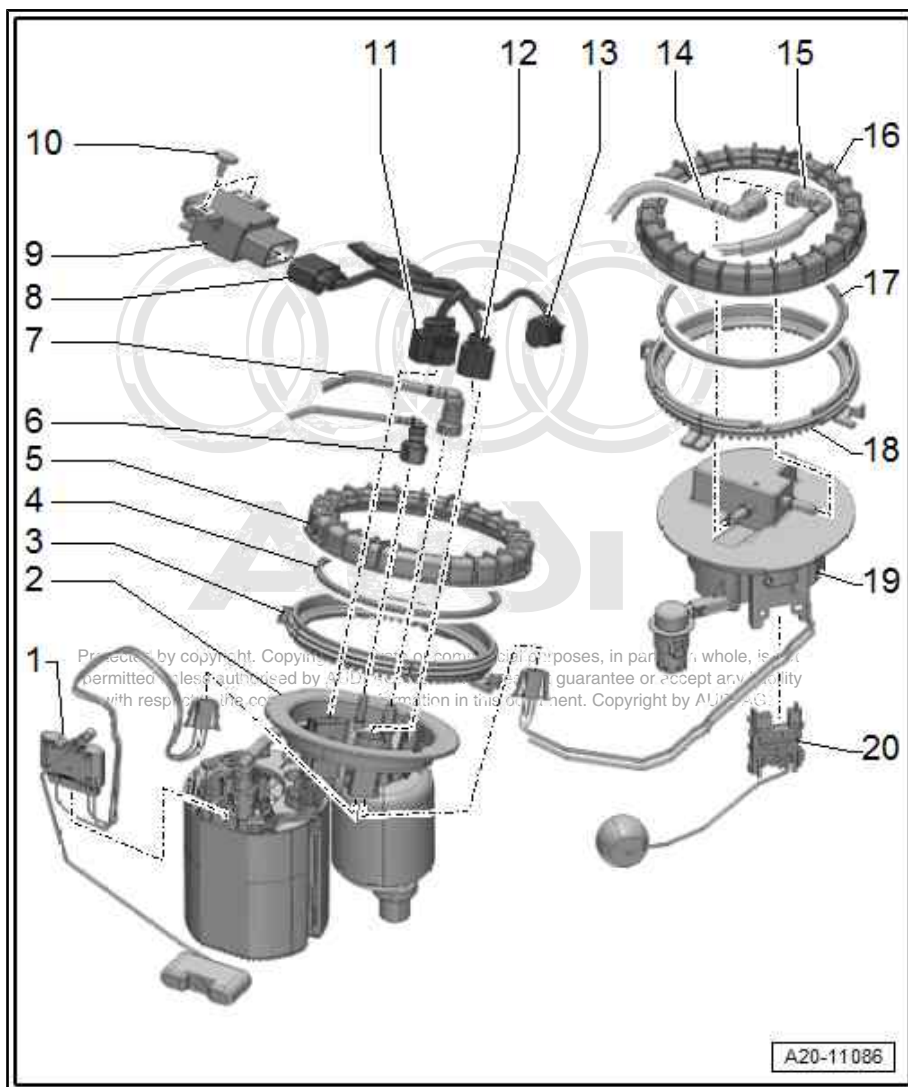
- ☐ To engine
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece ➤ [page 99](#)
- ☐ Clipped onto fuel tank

8 - Electrical connector

- ☐ For fuel pump control unit - J538-

9 - Fuel pump control unit - J538-

- ☐ Removing and installing ➤ [page 145](#)



10 - Bolt

- ☐ 2.5 Nm

11 - Electrical connector

- ☐ For fuel system pressurisation pump - G6-

12 - Electrical connector

- ☐ For fuel gauge sender - G- and fuel gauge sender 2 - G169-

13 - Electrical connector

- ☐ Only on vehicles with auxiliary heater: for metering pump for auxiliary heater

14 - Breather line

- ☐ To activated charcoal filter
- ☐ Do not kink
- ☐ To disconnect from flange, press release tab on connection piece ➔ [page 99](#)
- ☐ Clipped onto fuel tank

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15 - Breather line

- ☐ To disconnect from flange, press release tab on connection piece ➔ [page 99](#)
- ☐ Clipped onto fuel tank

16 - Union nut

- ☐ Renew
- ☐ 120 Nm
- ☐ Loosen and tighten with union nut tool - T40068A-

17 - Seal

- ☐ Renew
- ☐ Install dry

18 - Threaded ring

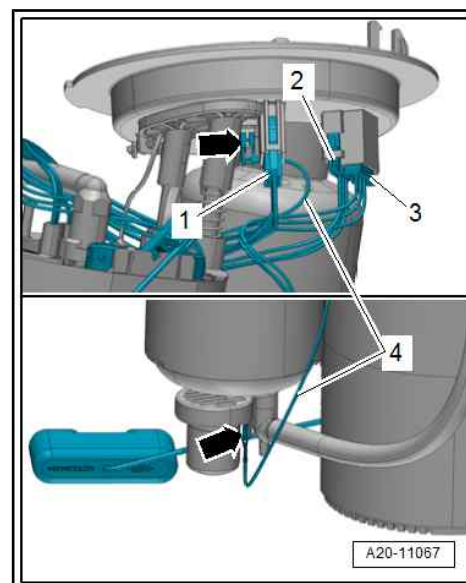
19 - Flange

20 - Fuel gauge sender 2 - G169-

- ☐ Checking resistance values ➔ [page 80](#)
- ☐ Removing and installing ➔ [page 93](#)
- ☐ Put at least 5 litres of fuel into tank after installing

Connector for fuel delivery unit

- Route earth connection -4- as shown in illustration.
- Make sure that the following connectors are securely seated:
 - ◆ Connectors -arrows- for earth connection on fuel pressure regulator and flange
 - ◆ Connector -1- for fuel system pressurisation pump - G6- on flange
 - ◆ Connector -2- for fuel gauge sender - G- on flange
 - ◆ Connector -3- for fuel gauge sender 2 - G169- on flange
- Make sure connectors are attached properly; pull to check that they are correctly engaged.



2.2 Removing and installing fuel delivery unit/fuel gauge sender

⇒ "2.2.1 Removing and installing fuel delivery unit - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with front-wheel drive", page 40

⇒ "2.2.2 Removing and installing fuel delivery unit - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with front-wheel drive", page 46

⇒ "2.2.3 Removing and installing fuel delivery unit - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 52

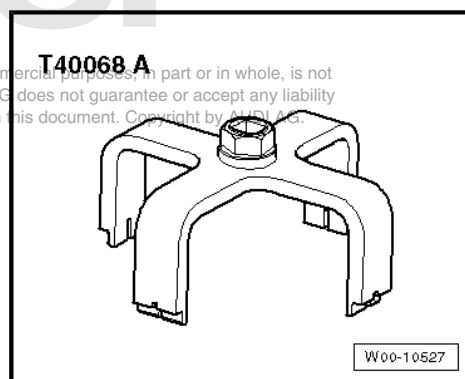
⇒ "2.2.4 Removing and installing fuel delivery unit - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 59

2.2.1 Removing and installing fuel delivery unit - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with front-wheel drive

Special tools and workshop equipment required

- ◆ Union nut tool - T40068A-

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Removing

- Observe safety precautions ⇒ [page 1](#) .
- Observe rules for cleanliness ⇒ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.***

- Drain fuel tank if necessary ⇒ [page 11](#) .
- Move passenger's seat as far to front as possible (if necessary).



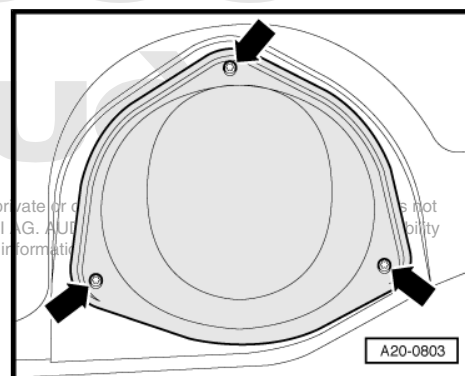
Caution

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

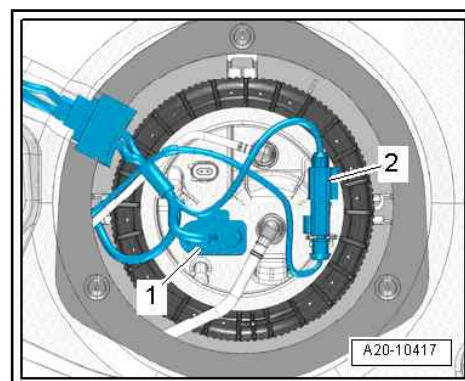
◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.

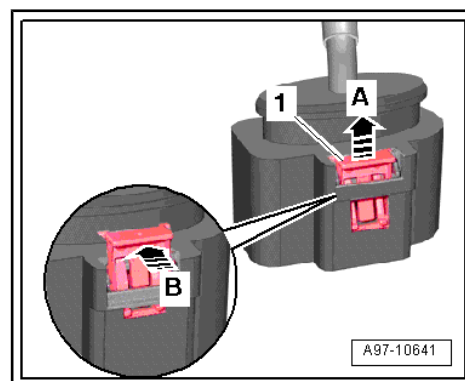
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- If fitted, disengage electrical connector -2- for metering pump for auxiliary heater on flange and move clear.
- Unplug electrical connector -1- on flange.



- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



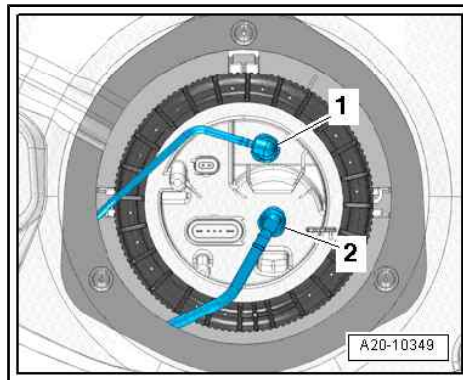


WARNING

Risk of injury - fuel system operates under high pressure.

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

- Disconnect fuel line -2- from flange ➔ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ➔ [page 99](#) .

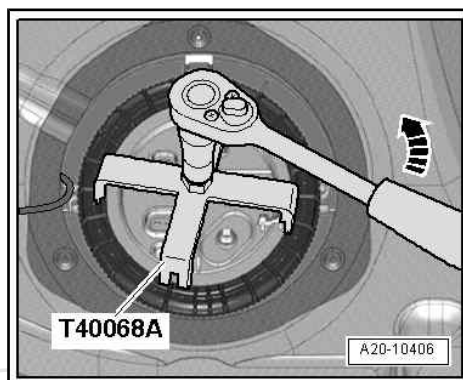


WARNING

Danger! Fuel may escape.

- ◆ *The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.*

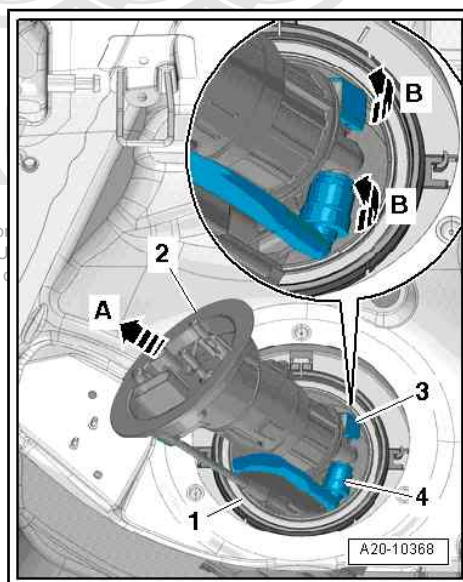
- Unscrew union nut using union nut tool - T40068A- -arrow-.



Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.

- Pull flange -2- with fuel filter out of tank and swivel slightly to left side of vehicle.
- Remove seal -1-.
- Pull flange with fuel filter slightly away from fuel delivery unit -arrow A-.
- At the same time pivot flange with fuel filter out of fuel tank -arrows B-. When doing this, pay particular attention to retaining plate with earth connection -3- and fuel line -4-.



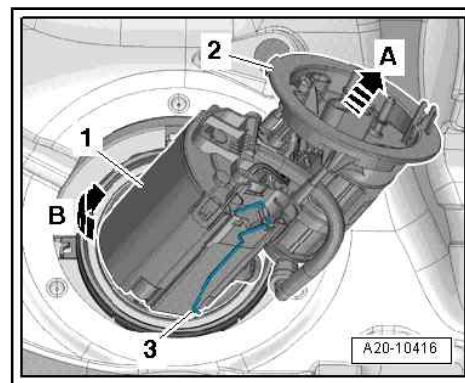


WARNING

Safety risk from escaping fuel: the fuel delivery unit is still filled.

◆ **Use a cloth to catch escaping fuel.**

- Pull flange -2- with fuel filter a bit further away from fuel delivery unit -1- -arrow A-.
- Swivel fuel delivery unit to left side of vehicle -arrow B- and tilt slightly out of fuel tank.



Note

When removing fuel delivery unit, make sure you do not bend float arm of fuel gauge sender -G- .

- Guide fuel gauge sender - G- -item 3- out of opening in fuel tank and remove fuel delivery unit with suction pipe from fuel tank.

Installing

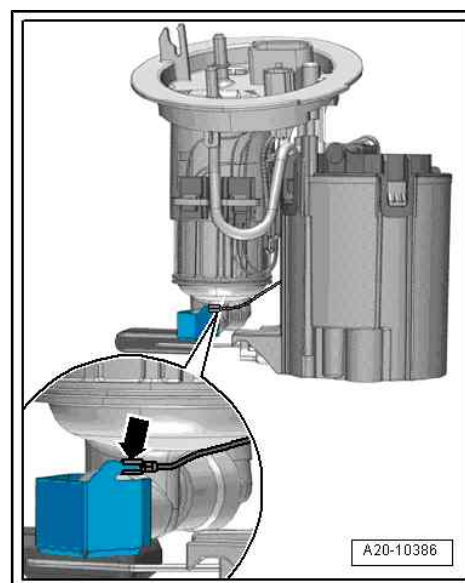
Installation is carried out in the reverse order; note the following:

- Tightening torque
 ⇒ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders", page 32](#)



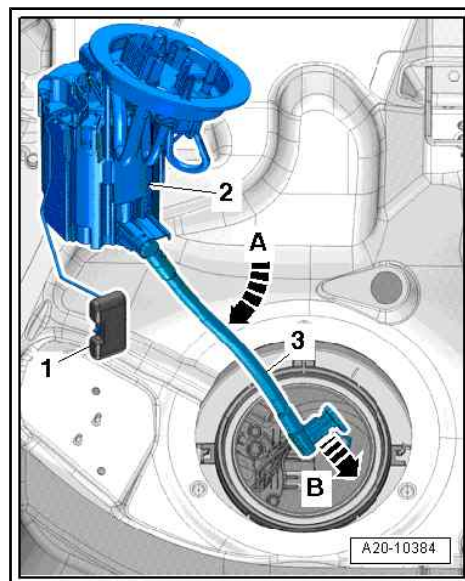
Note

- ◆ *Renew seal and union nut.*
- ◆ *When installing fuel delivery unit, take care not to bend float arm of fuel gauge sender -G- .*
- ◆ *Make sure that fuel lines are securely fitted.*
- Make sure that earth connection -arrow- is securely fitted to retaining plate for fuel pressure regulator.

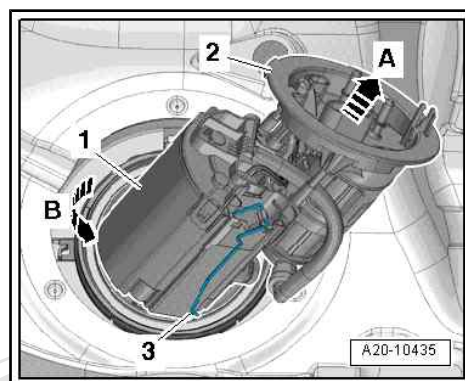


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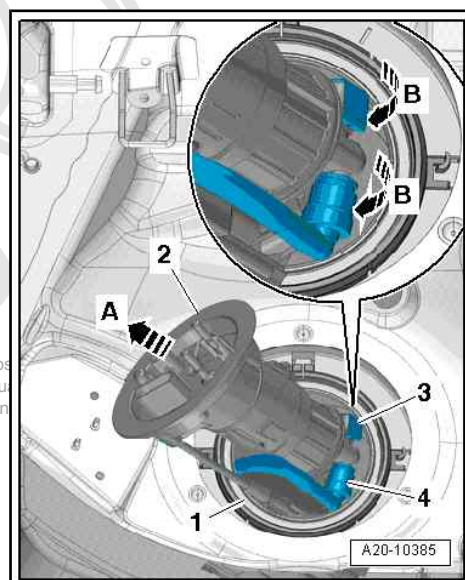
- Pivot suction pipe -3- on fuel delivery unit -2- downwards -arrow A-.
- First guide suction pipe into fuel tank -arrow B-.
- Then insert float -1- on fuel gauge sender - G- into fuel tank.



- Pull flange -2- with fuel filter slightly away from fuel delivery unit -1- -arrow A-.
- Swivel fuel delivery unit to left side of vehicle and guide into fuel tank -arrow B- (make sure fuel gauge sender -3- is not damaged).

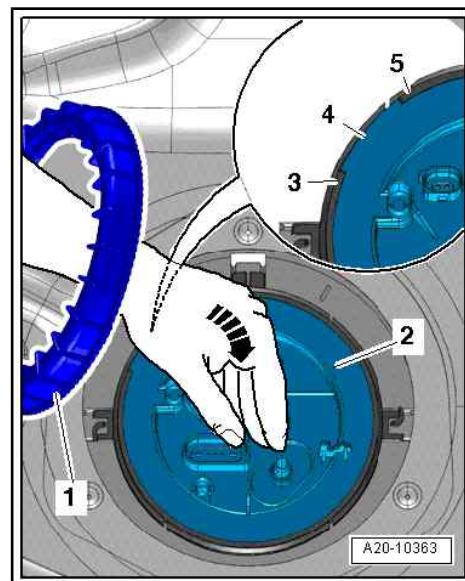


- Pull flange -2- with fuel filter slightly away from fuel delivery unit -arrow A-.
- At the same time pivot flange with fuel filter into fuel tank -arrows B-. When doing this, pay particular attention to retaining plate with earth connection -3- and fuel line -4-.
- Slip new seal -1- onto flange and insert in groove on fuel tank.

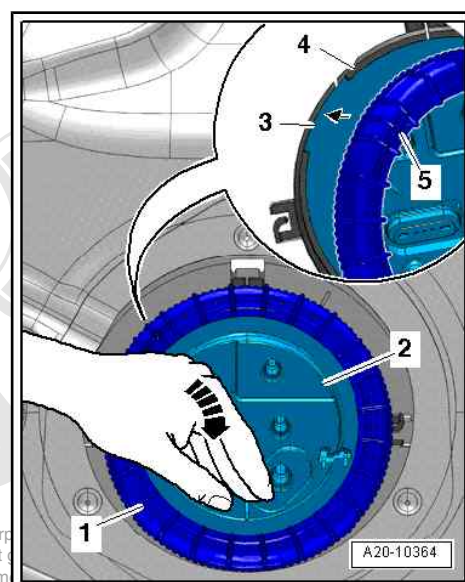


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- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.

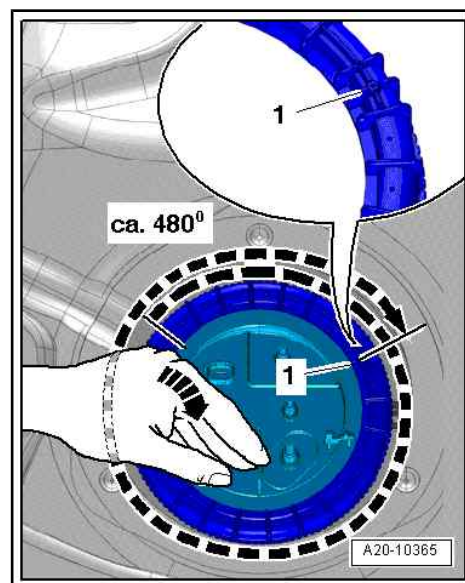


- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. "ten o'clock position"). This will make union nut engage immediately with beginning of thread -4- when tightening.



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- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. "two o'clock position" and at the same time keep on pressing flange downwards firmly with your left hand.





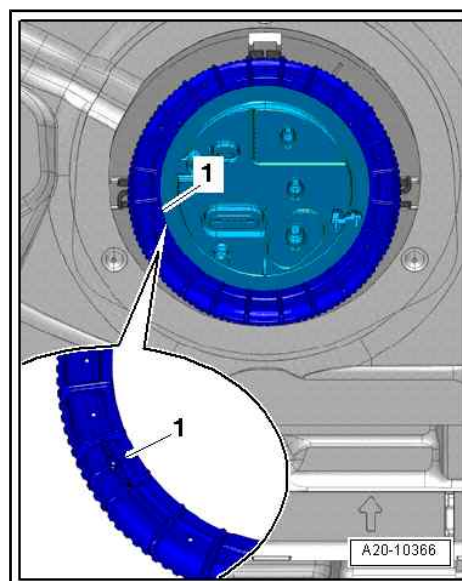
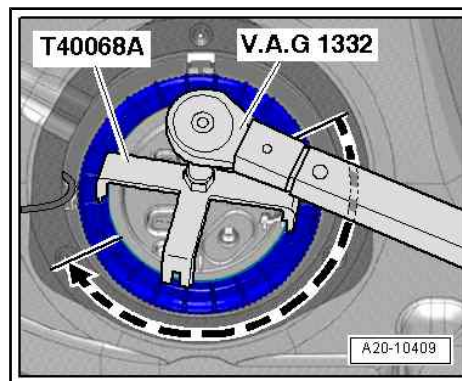
Caution

Take care to avoid leakage at flange.

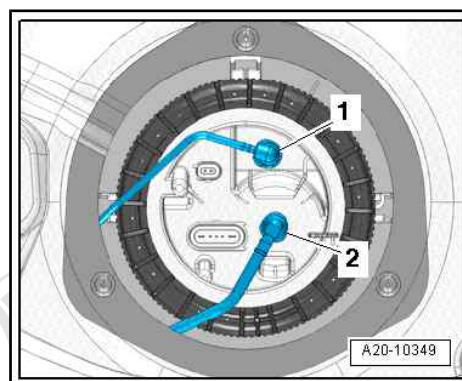
- ◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*

- Tighten union nut for flange using union nut tool - T40068A- .

- Checking: Double ridge -1- must now be aligned between "seven o'clock and eight o'clock position".



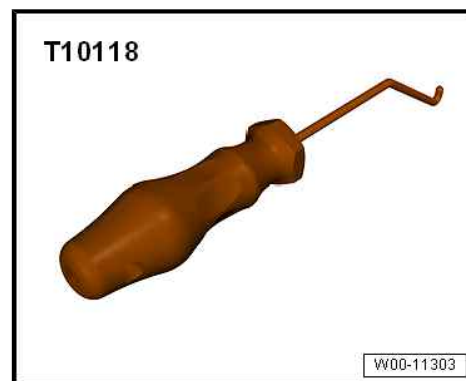
- Connect fuel lines -1- and -2- so they engage audibly.
- Press fuel line in again and then pull to check that plug-in connector is correctly engaged.
- Connect electrical connectors.
- Install cover for flange ⇒ [page 7](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Put at least 5 litres of fuel into tank after installing fuel delivery unit.
- Vehicles with auxiliary heater: Bleed fuel supply line leading to metering pump ⇒ [page 122](#) .



2.2.2 Removing and installing fuel delivery unit - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with front-wheel drive

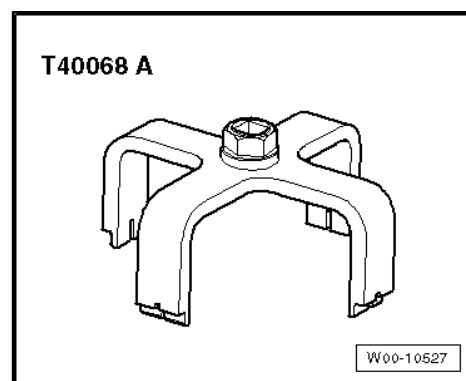
Special tools and workshop equipment required

◆ Assembly tool - T10118-



◆ Union nut tool - T40068A-

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Removing

- Observe safety precautions ⇒ [page 1](#) .
- Observe rules for cleanliness ⇒ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.***

- Drain fuel tank if necessary ⇒ [page 11](#) .
- Move passenger's seat as far to front as possible (if necessary).



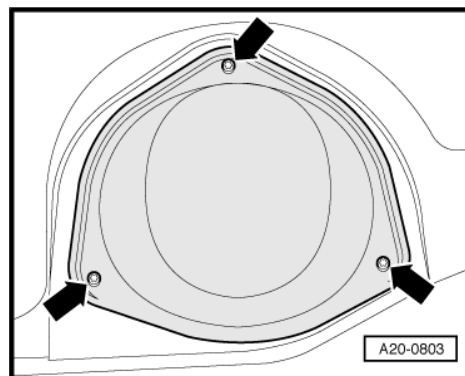
Caution

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

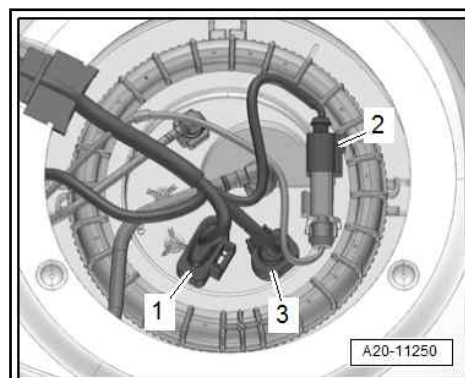
- ◆ ***Observe notes on procedure for disconnecting the battery.***

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

- Remove rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.



- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Release retainer catches with assembly tool - T10118- and unplug electrical connectors -1 and 3- on flange.

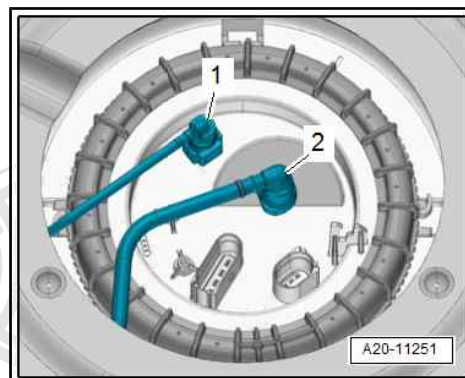


WARNING

Risk of injury - fuel system operates under high pressure.

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

- Disconnect fuel line -2- from flange ⇒ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ⇒ [page 99](#) .



WARNING

Danger! Fuel may escape.

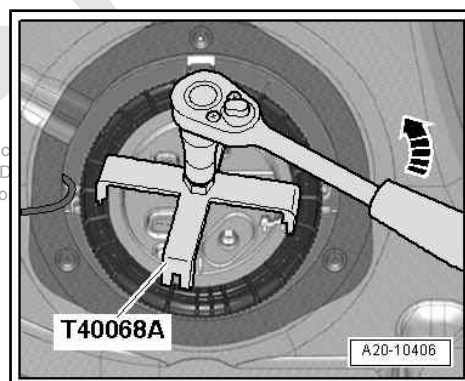
- ♦ *The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.*

- Unscrew union nut using union nut tool - T40068A- -arrow-.

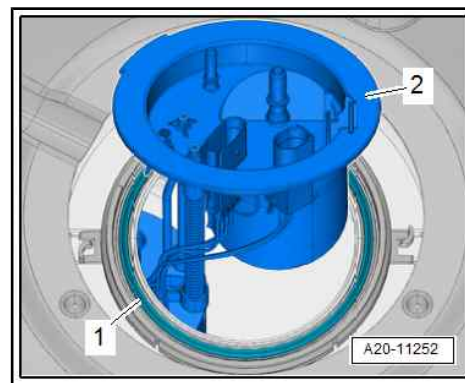


Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.



- Pull flange -2- with fuel filter slightly out of fuel tank and detach seal -1- for flange.



WARNING

Safety risk from escaping fuel: the fuel delivery unit is still filled.

- ◆ *Use a cloth to catch escaping fuel.*

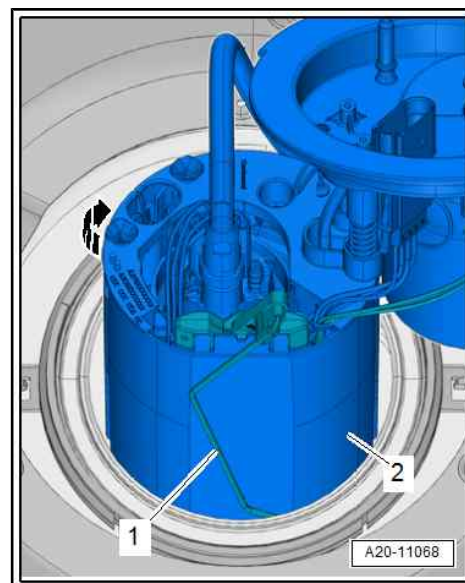
- Pull fuel delivery unit -2- slightly out of fuel tank, swivel it to left side of vehicle -arrow- and take it out.



Note

When removing fuel delivery unit, make sure you do not bend float arm of fuel gauge sender -G- .

- Guide fuel gauge sender - G- -item 1- out of opening in fuel tank.



Installing

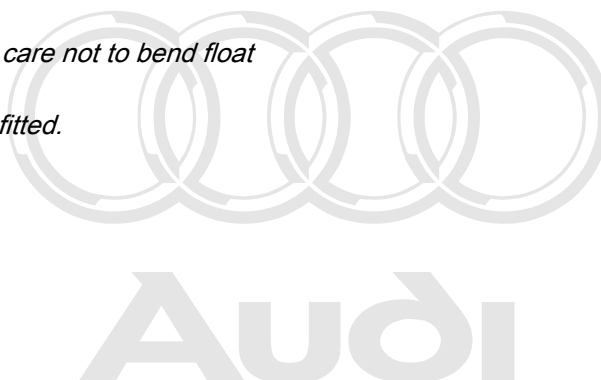
Installation is carried out in the reverse order; note the following:

- Tightening torque
⇒ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders", page 32](#)



Note

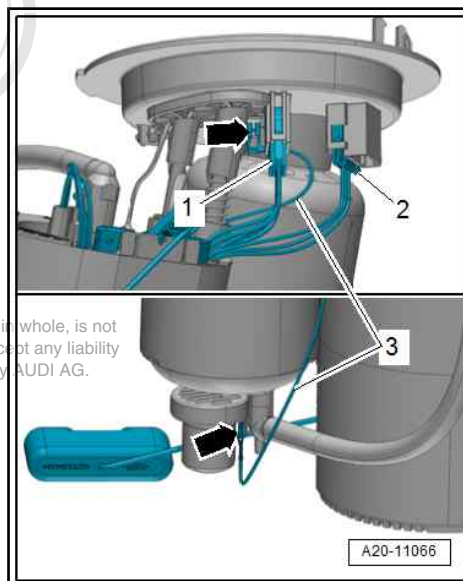
- ◆ *Renew seal and union nut.*
- ◆ *When installing fuel delivery unit, take care not to bend float arm of fuel gauge sender -G- .*
- ◆ *Make sure that fuel lines are securely fitted.*



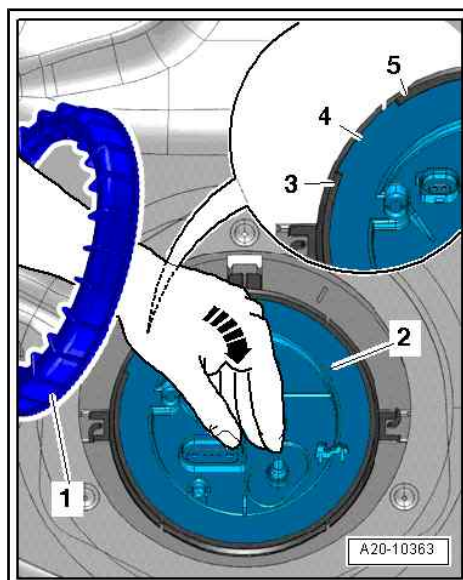
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- Make sure that earth connection -3- is securely attached to fuel pressure regulator and flange -arrows-.
- Check that the following connectors are securely seated:
 - Connectors -1 and 2- must be seated securely on flange.
- Make sure connectors are attached properly; pull to check that they are correctly engaged.
- Insert fuel gauge/fuel delivery unit in fuel tank.
- Slip new seal onto flange and insert in groove on fuel tank.

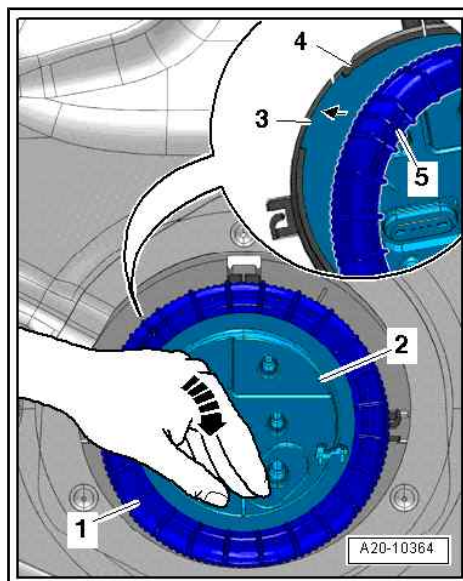
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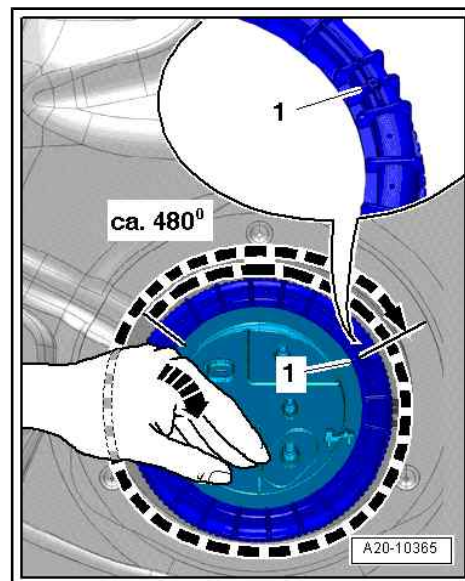
- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.



- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. "ten o'clock position"). This will make union nut engage immediately with beginning of thread -4- when tightening.



- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. “two o'clock position” and at the same time keep on pressing flange downwards firmly with your left hand.

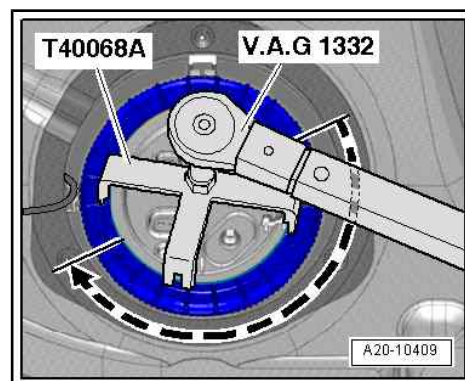


Caution

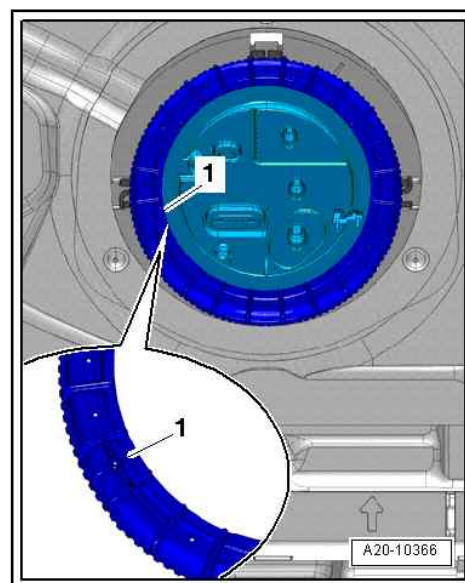
Take care to avoid leakage at flange.

- ◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*

- Tighten union nut for flange using union nut tool - T40068A- .

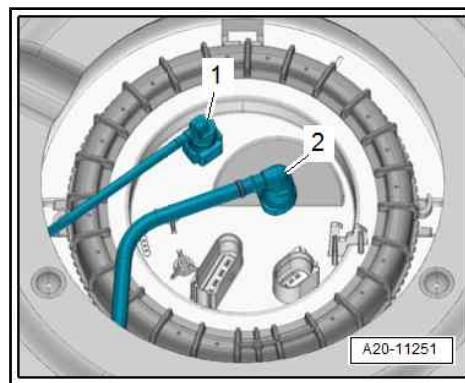


- Checking: Double ridge -1- must now be aligned between “seven o'clock and eight o'clock position”.



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- Connect fuel lines -1- and -2- so they engage audibly.
- Press fuel line in again and then pull to check that plug-in connector is correctly engaged.
- Connect electrical connectors.
- Install cover for flange ➔ [page 7](#) .
- Install rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Put at least 5 litres of fuel into tank after installing fuel delivery unit.
- Vehicles with auxiliary heater: Bleed fuel supply line leading to metering pump ➔ [page 122](#) .



2.2.3 Removing and installing fuel delivery unit - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

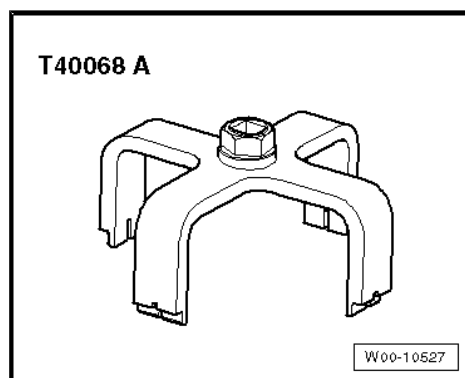
Special tools and workshop equipment required

- ◆ Assembly tool - T10118-

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- ◆ Union nut tool - T40068A-



Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.***

- Drain fuel tank if necessary: Rest-of-world vehicles
 ⇒ [page 13](#) , USA vehicles ⇒ [page 14](#) .
- Move passenger's seat as far to front as possible (if necessary).



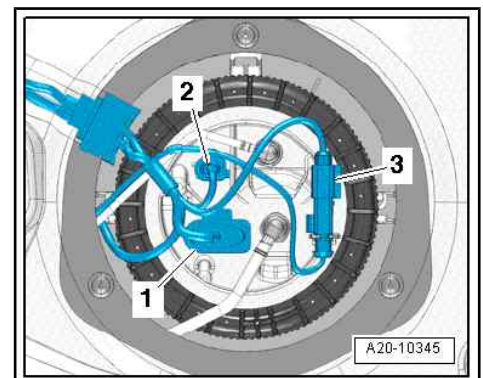
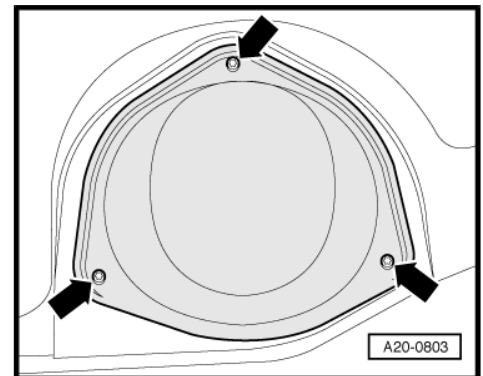
Caution

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

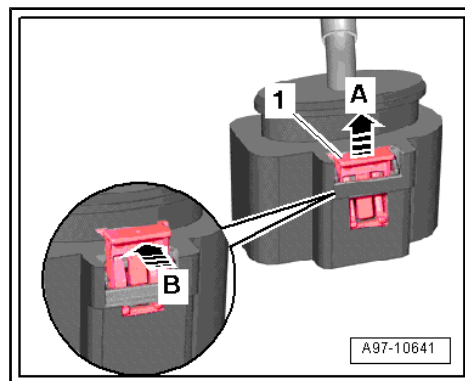
- ◆ ***Observe notes on procedure for disconnecting the battery.***

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove rear seat bench ⇒ General body repairs, interior; Rep gr. 72; Rear seats; Removing and installing seat bench/individual seats .
- Unscrew cover for flange -arrows-.

- If fitted, disengage electrical connector -3- for metering pump for auxiliary heater on flange and move clear.
- Release retainer catch with assembly tool - T10118- and unplug electrical connector -2- on flange.
- Unplug electrical connector -1- on flange.



- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.

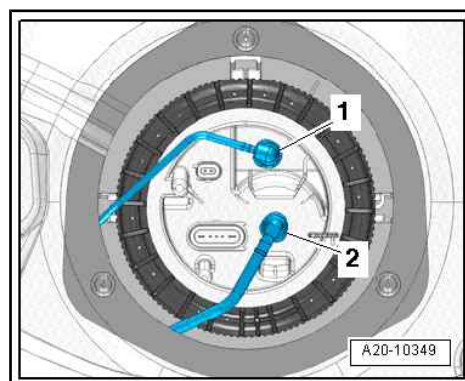


WARNING

Risk of injury - fuel system operates under high pressure.

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

- Disconnect fuel line -2- from flange ➤ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ➤ [page 99](#) .



WARNING

Danger! Fuel may escape.

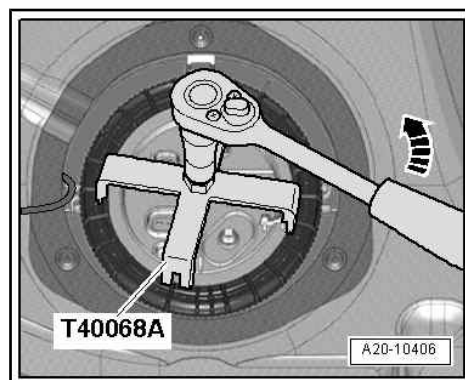
- ◆ *The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.*

- Unscrew union nut using union nut tool - T40068A- -arrow-.



Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.



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- Pull flange -2- with fuel filter out of tank and swivel slightly to left side of vehicle.
- Remove seal -1-.
- Pull flange with fuel filter slightly away from fuel delivery unit -arrow A-.
- At the same time pivot flange with fuel filter out of fuel tank -arrows B-. When doing this, pay particular attention to retaining plate with earth connection -3- and fuel line -4-.

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WARNING

Safety risk from escaping fuel: the fuel delivery unit is still filled.

◆ ***Use a cloth to catch escaping fuel.***

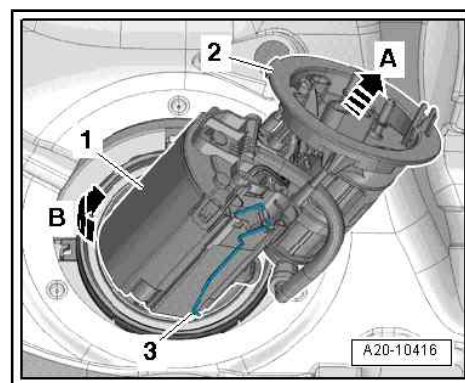
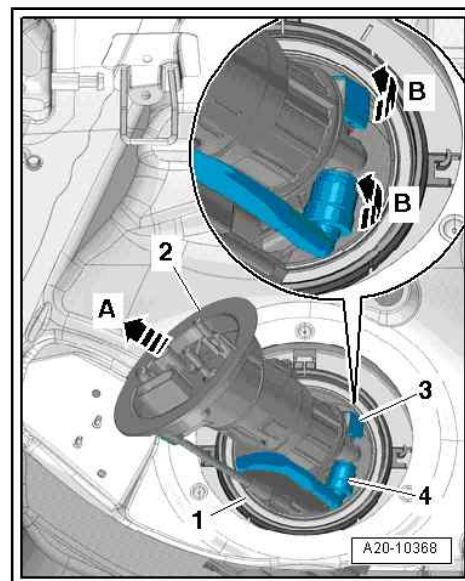
- Pull flange -2- with fuel filter a bit further away from fuel delivery unit -1- -arrow A-.
- Swivel fuel delivery unit to left side of vehicle -arrow B- and tilt slightly out of fuel tank.



Note

When removing fuel delivery unit, make sure you do not bend float arm of fuel gauge sender -G-.

- Take out fuel gauge sender - G- -item 3- from opening in fuel tank.



- Detach suction pipe -3- ➔ [page 99](#) .
- Press release tab -arrow- and unplug electrical connector -2- for fuel gauge sender 2 - G169- .



Note

The fuel delivery unit is shown without the fuel tank for illustration purposes.

Installing

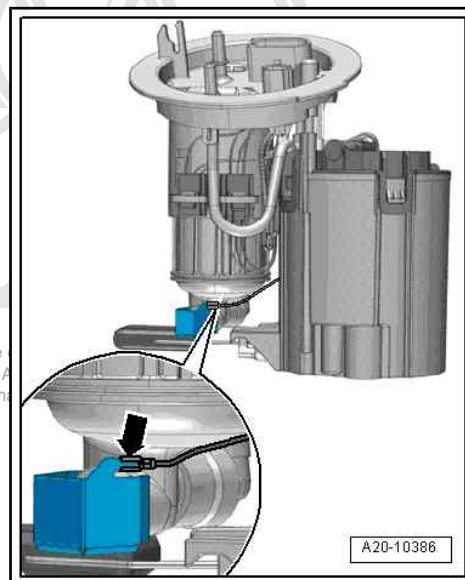
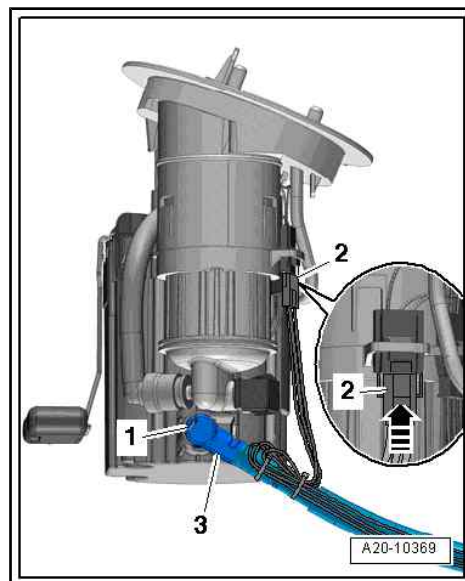
Installation is carried out in the reverse order; note the following:

- Tightening torque
➔ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders"](#),
[page 32](#)



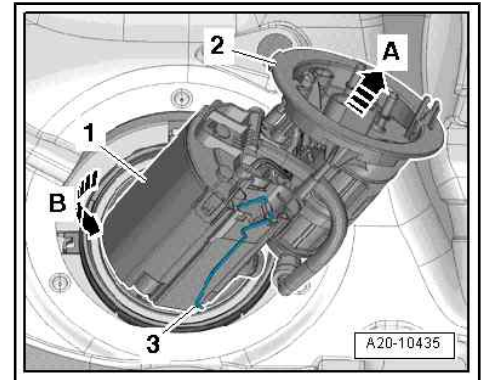
Note

- ◆ Renew seal and union nut.
- ◆ When installing fuel delivery unit, take care not to bend float arm of fuel gauge sender -G- .
- ◆ Make sure that fuel hoses are securely fitted.
- Guide suction pipe -3- out of fuel tank and connect suction pipe so it engages audibly.
- Plug in electrical connector -2- for fuel gauge sender 2 - G169- .
- Make sure that earth connection -arrow- is securely fitted to retaining plate for fuel pressure regulator.

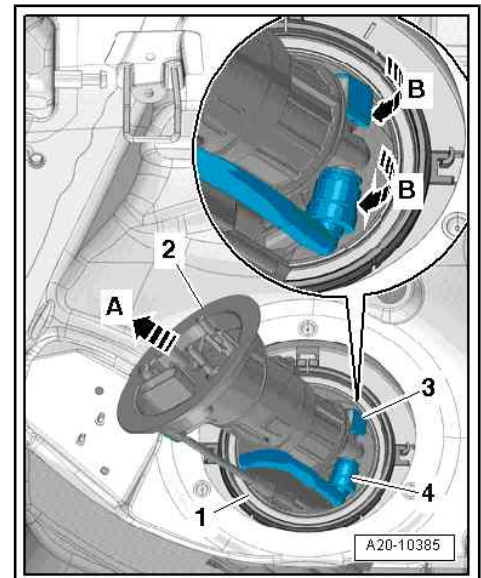


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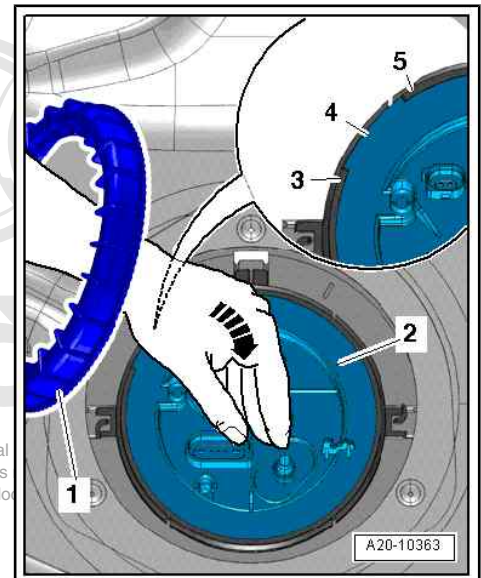
- Insert fuel gauge sender - G- -item 3- in fuel tank.
- Pull flange -2- with fuel filter slightly away from fuel delivery unit -1- -arrow A-.
- Swivel fuel delivery unit to left side of vehicle and guide into fuel tank -arrow B- (make sure fuel gauge sender -3- is not damaged).



- Pull flange -2- with fuel filter slightly away from fuel delivery unit -arrow A-.
- At the same time pivot flange with fuel filter into fuel tank -arrows B-. When doing this, pay particular attention to retaining plate with earth connection -3- and fuel line -4-.
- Slip new seal -1- onto flange and insert in groove on fuel tank.

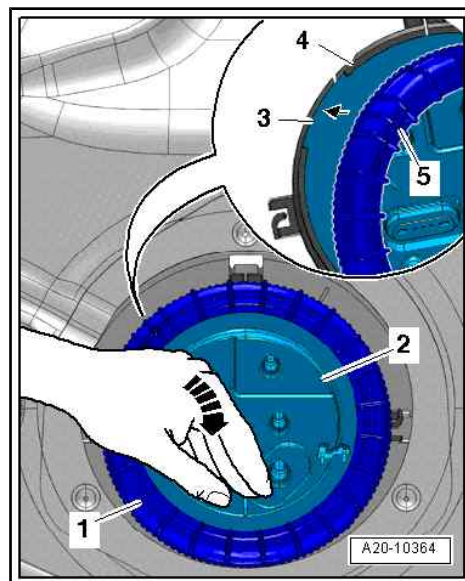


- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.

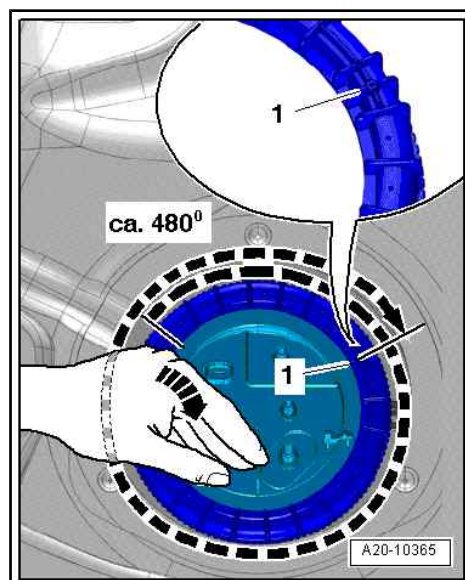


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 with respect to the correctness of information in this do

- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. “ten o'clock position”). This will make union nut engage immediately with beginning of thread -4- when tightening.



- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. “two o'clock position” and at the same time keep on pressing flange downwards firmly with your left hand.

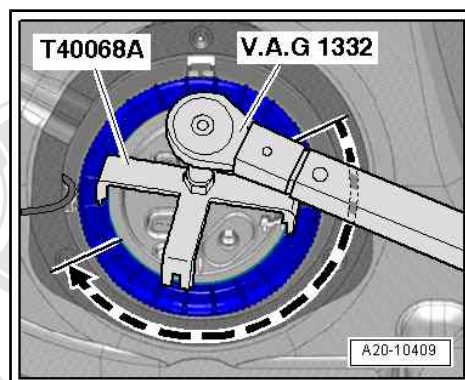


Caution

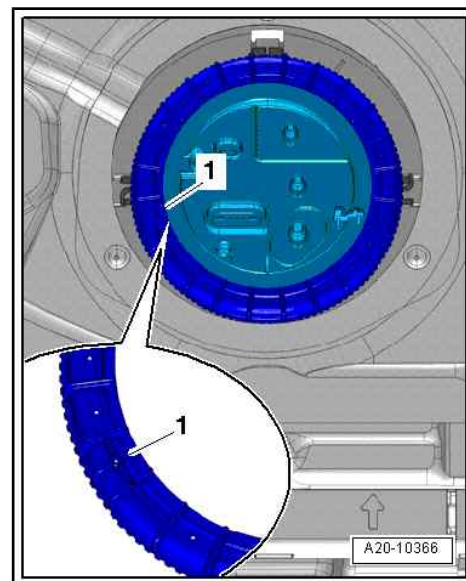
Take care to avoid leakage at flange.

- ◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*

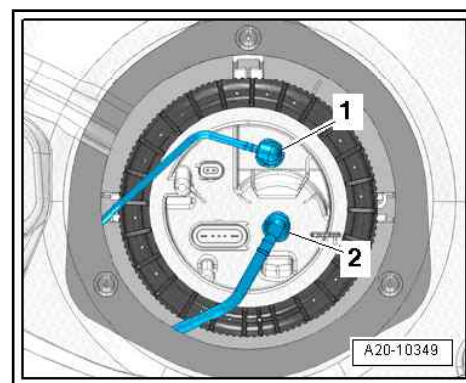
- Tighten union nut for flange using union nut tool - T40068A- .



- Checking: Double ridge -1- must now be aligned between “seven o'clock and eight o'clock position”.



- Connect fuel lines -1- and -2- so they engage audibly.
- Press fuel line in again and then pull to check that plug-in connector is correctly engaged.
- Connect electrical connectors.
- Install cover for flange ⇒ [page 9](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Put at least 5 litres of fuel into tank after installing fuel delivery unit.
- Vehicles with auxiliary heater: Let auxiliary heater run with full load for 10 minutes to bleed fuel line leading to metering pump.

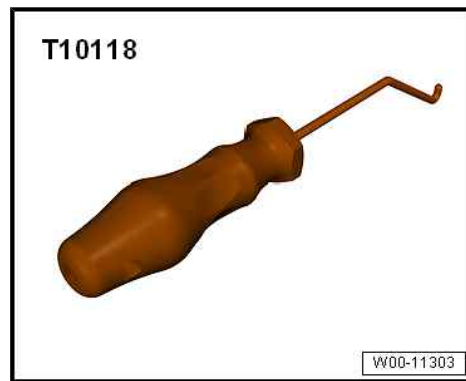


2.2.4 Removing and installing fuel delivery unit - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/ four-wheel drive

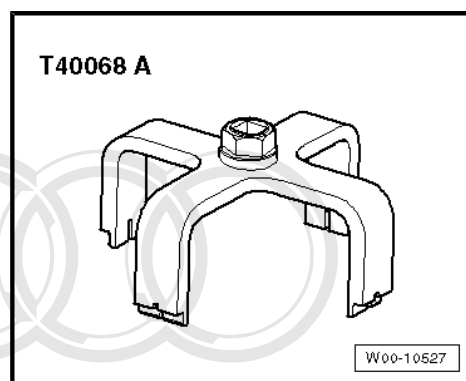
Special tools and workshop equipment required

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◆ Assembly tool - T10118-



◆ Union nut tool - T40068A-



Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.***

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- Drain fuel tank if necessary: Rest-of-world vehicles ➔ [page 13](#) , USA vehicles ➔ [page 14](#) .
- Move passenger's seat as far to front as possible (if necessary).



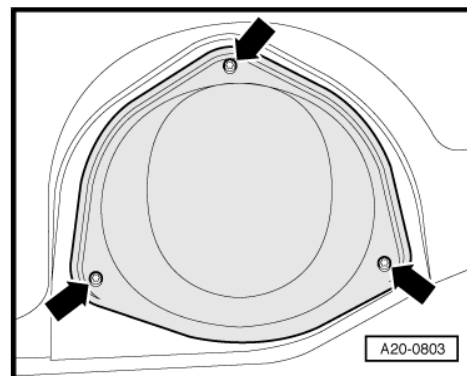
Caution

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

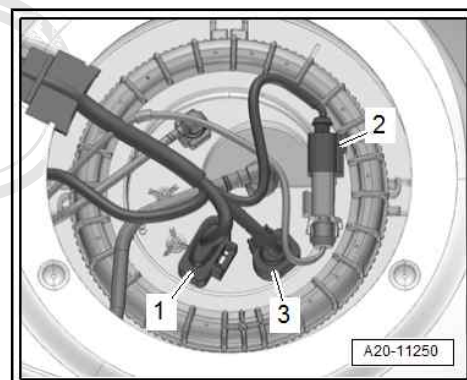
- ◆ ***Observe notes on procedure for disconnecting the battery.***

- Disconnect battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

- Remove rear seat bench ⇒ General body repairs, interior;
Rep. gr. 72 ; Rear seats; Removing and installing seat bench/
individual seats .
- Unscrew cover for flange -arrows-.



- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Release retainer catches with assembly tool - T10118- and unplug electrical connectors -1 and 3- on flange.

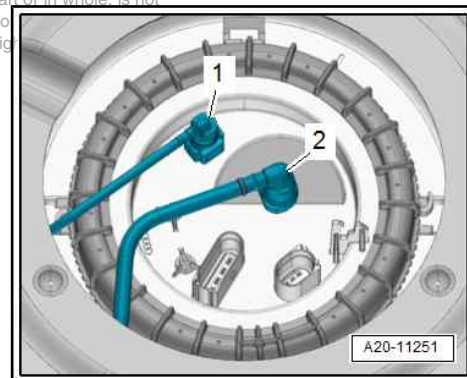


WARNING

Risk of injury - fuel system operates under high pressure.

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

- Disconnect fuel line -2- from flange ⇒ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ⇒ [page 99](#) .



WARNING

Danger! Fuel may escape.

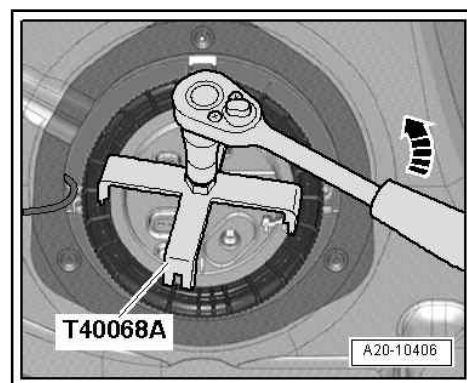
- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.***

- Unscrew union nut using union nut tool - T40068A- -arrow-.

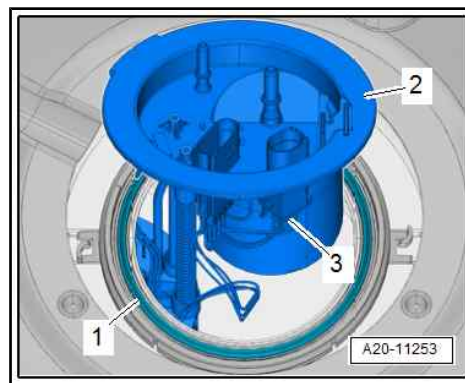


Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.



- Pull flange -2- with fuel filter slightly out of fuel tank and detach seal -1- for flange.
- Press release tab and unplug electrical connector -3- for fuel gauge sender 2 - G169- .



WARNING

Safety risk from escaping fuel: the fuel delivery unit is still filled.

- ◆ **Use a cloth to catch escaping fuel.**

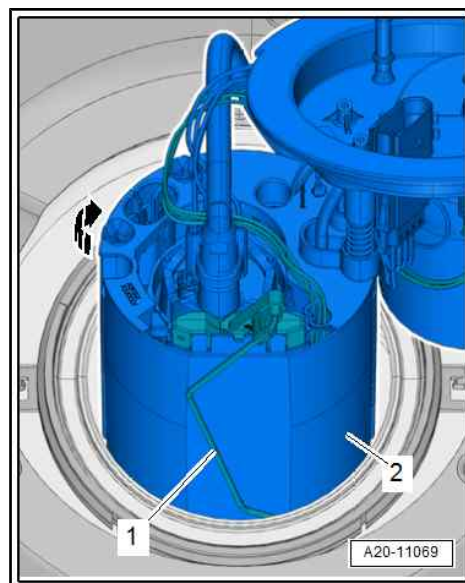
- Pull fuel delivery unit -2- slightly out of fuel tank, swivel it to left side of vehicle -arrow- and take it out.



Note

When removing fuel delivery unit, make sure you do not bend float arm of fuel gauge sender -G- .

- Guide fuel gauge sender - G- -item 1- out of opening in fuel tank.



Installing

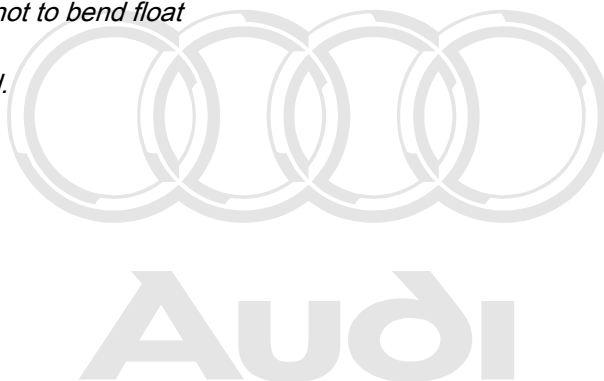
Installation is carried out in the reverse order; note the following:

- Tightening torque
⇒ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders", page 32](#)



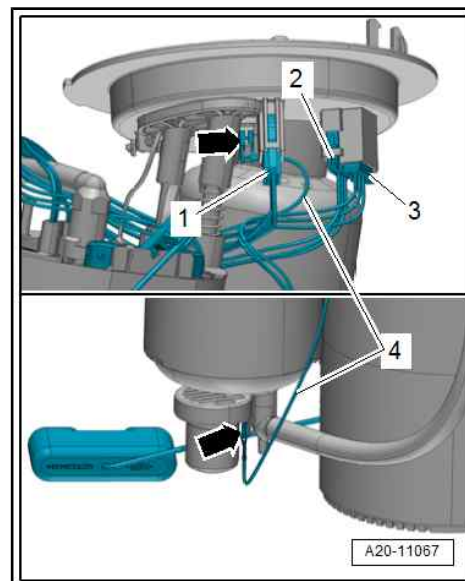
Note

- ◆ *Renew seal and union nut.*
- ◆ *When installing fuel delivery unit, take care not to bend float arm of fuel gauge sender -G- .*
- ◆ *Make sure that fuel hoses are securely fitted.*

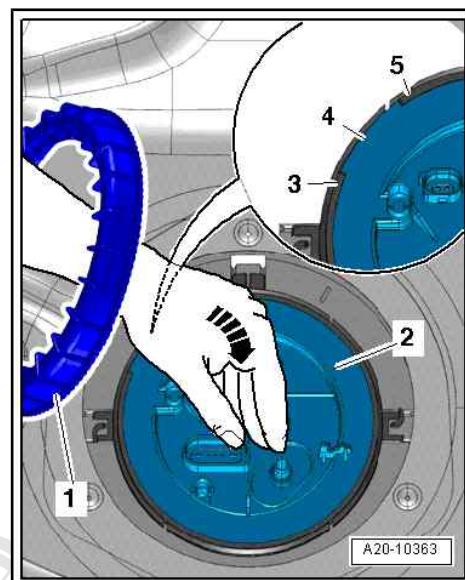


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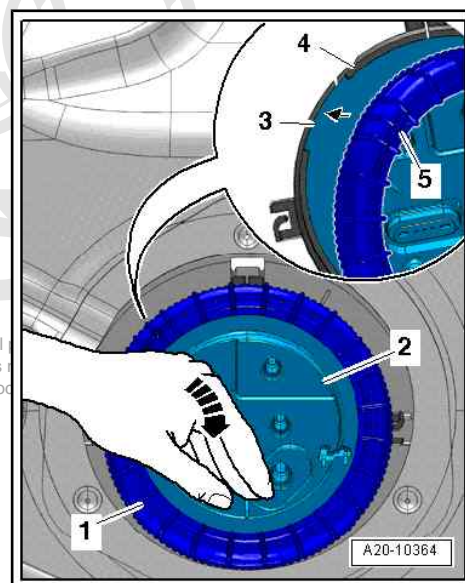
- Make sure that earth connection -4- is securely attached to fuel pressure regulator and flange -arrows-.
- Check that the following connectors are securely seated:
 - Connectors -1, 2, 3- must be seated securely on flange.
- Make sure connectors are attached properly; pull to check that they are correctly engaged.
- Insert fuel gauge/fuel delivery unit in fuel tank.
- Slip new seal onto flange and insert in groove on fuel tank.



- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.

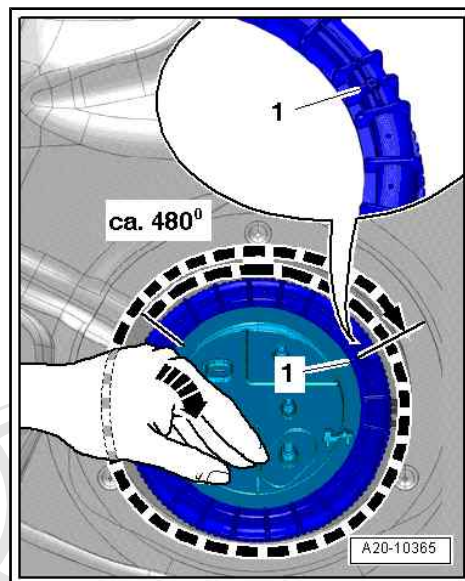


- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. "ten o'clock position"). This will make union nut engage immediately with beginning of thread -4- when tightening.



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- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. "two o'clock position" and at the same time keep on pressing flange downwards firmly with your left hand.



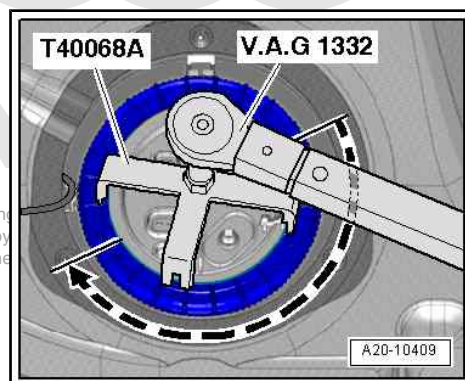
Caution

Take care to avoid leakage at flange.

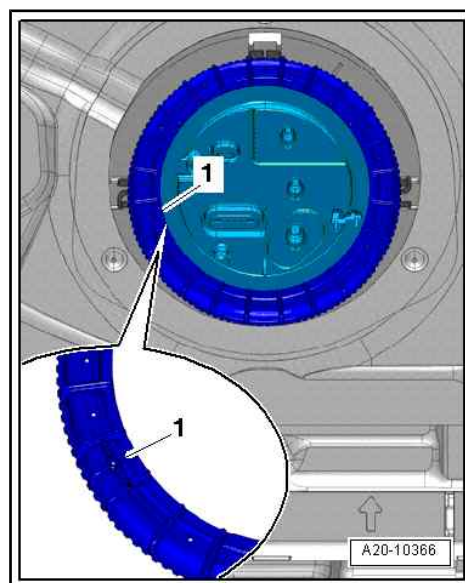
- ◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*

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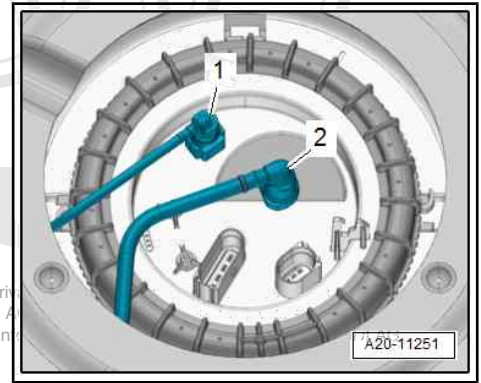
- Tighten union nut for flange using union nut tool - T40068A- .



- Checking: Double ridge -1- must now be aligned between "seven o'clock and eight o'clock position".



- Connect fuel lines -1- and -2- so they engage audibly.
- Press fuel line in again and then pull to check that plug-in connector is correctly engaged.
- Connect electrical connectors.
- Install cover for flange ⇒ [page 9](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Put at least 5 litres of fuel into tank after installing fuel delivery unit.
- Vehicles with auxiliary heater: Let auxiliary heater run with full load for 10 minutes to bleed fuel line leading to metering pump.



2.3 Checking fuel gauge sender - G-

⇒ [“2.3.1 Checking fuel gauge sender G - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with front-wheel drive”, page 65](#)

⇒ [“2.3.2 Checking fuel gauge sender G - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with front-wheel drive”, page 67](#)

⇒ [“2.3.3 Checking fuel gauge sender G - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive”, page 70](#)

⇒ [“2.3.4 Checking fuel gauge sender G - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive”, page 73](#)

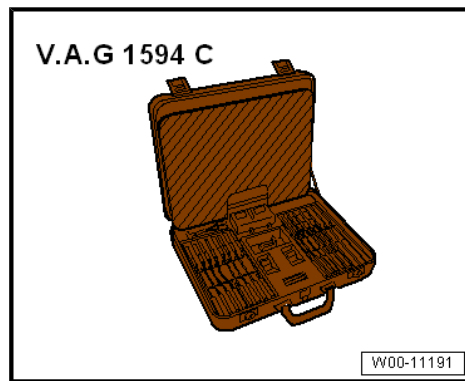
2.3.1 Checking fuel gauge sender - G- - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with front-wheel drive

Special tools and workshop equipment required

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

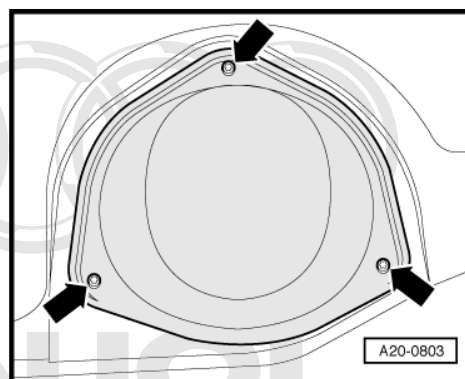


◆ Auxiliary measuring set - V.A.G 1594C-



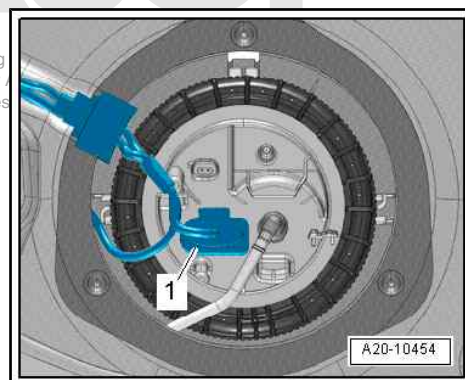
Procedure

- Remove rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.

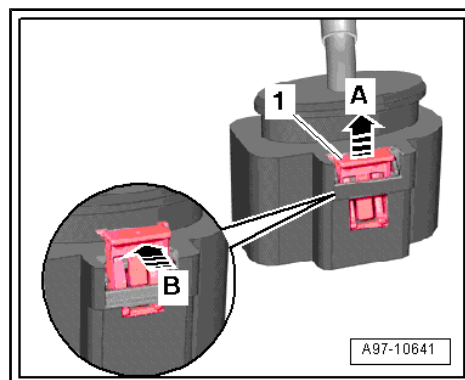


- Unplug electrical connector -1- on flange.

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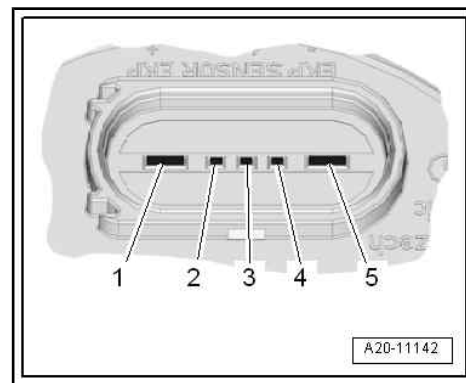


- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



Fuel gauge sender - G- installed:

- Connect multimeter (resistance test) between contacts -2- and -3-.
- Tank empty: approx. 60 Ω.
- Tank full: approx. 275 Ω.
- Connect multimeter (resistance test) between contacts -2- and -4-.
- Tank empty: approx. 280 Ω.
- Tank full: approx. 65 Ω.
- Connect multimeter (resistance test) between contacts -3- and -4-.
- Sender in any position: approx. 340 Ω.



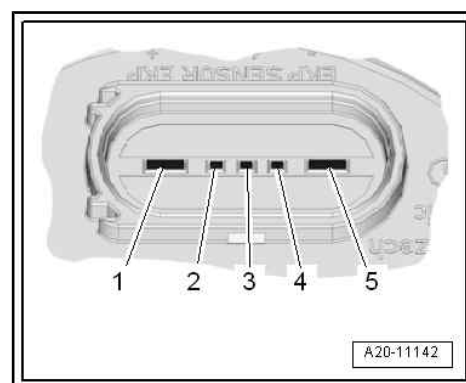
Fuel gauge sender - G- removed:



Note

- ◆ *In order to test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel gauge sender - G- ➔ [page 40](#) and move the float all the way to its top or bottom position.*
- ◆ *The following values are obtained with the fuel gauge sender removed, due to the greater travel of the float arm:*

- Connect multimeter (resistance test) between contacts -2- and -3-.
- Sender at lower stop: approx. 52 Ω.
- Sender at upper stop: approx. 283 Ω.
- Connect multimeter (resistance test) between contacts -2- and -4-.
- Sender at lower stop: approx. 288 Ω.
- Sender at upper stop: approx. 57 Ω.
- Connect multimeter (resistance test) between contacts -3- and -4-.
- Sender in any position: approx. 340 Ω.



Fuel gauge sender - G- is defective in the following cases:

- ◆ Large differences in test readings
- ◆ Reading: 0 Ω (short circuit)
- ◆ Reading: ∞ Ω (open circuit)
- ◆ No fault in electrical wiring
- Install fuel delivery unit ➔ [page 40](#) .
- Install cover for flange ➔ [page 7](#) .

- Install rear seat bench ➔ General body repairs interior; Repair gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

2.3.2 Checking fuel gauge sender - G- - A5 from model year 2012 onwards, A4 from

model year 2013 onwards, rest-of-world vehicles with front-wheel drive

Special tools and workshop equipment required

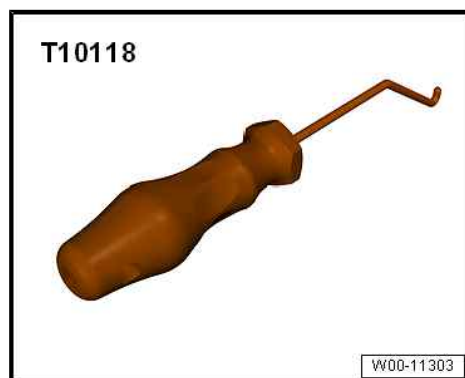
- ◆ Hand-held multimeter - V.A.G 1526E-



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

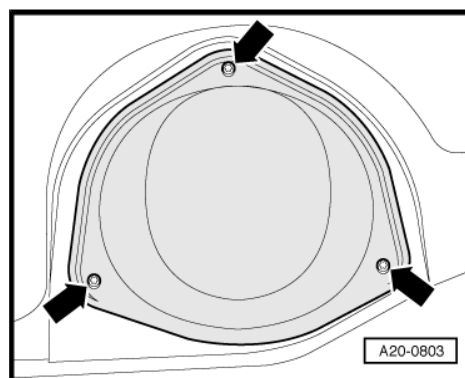


- ◆ Assembly tool - T10118-



Procedure

- Remove rear seat bench ⇒ General body repairs, interior;
Rep. gr. 72 ; Rear seats; Removing and installing seat bench/
individual seats .
- Unscrew cover for flange -arrows-.

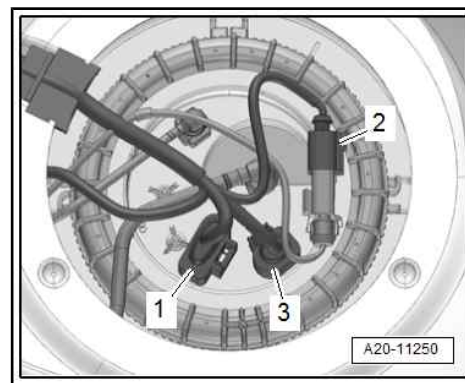


- Release retainer catch with assembly tool - T10118- and unplug electrical connector -3- on flange.



Note

Disregard -items 1, 2-.



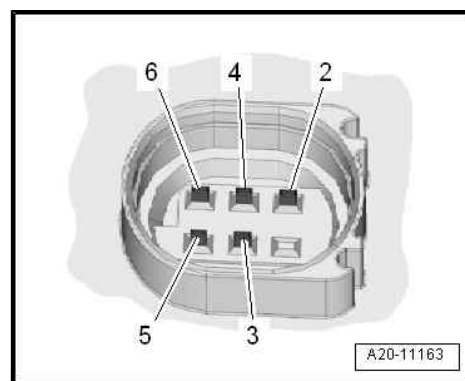
Fuel gauge sender - G- installed:



Note

To obtain an exact measurement of the resistance value for the specification "Tank full", the fuel tank must be completely full. For this, drive for at least 500 metres after filling the tank to let air bubbles escape from the fuel tank; then add fuel again.

- Connect multimeter (resistance test) between contacts -2- and -4-.
- Tank empty: approx. 280 Ω.
- Tank full: approx. 65 Ω.
- Connect multimeter (resistance test) between contacts -2- and -6-.
- Tank empty: approx. 60 Ω.
- Tank full: approx. 275 Ω.
- Connect multimeter (resistance test) between contacts -4- and -6-.
- Sender in any position: approx. 340 Ω.



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Fuel gauge sender - G- removed:



Note

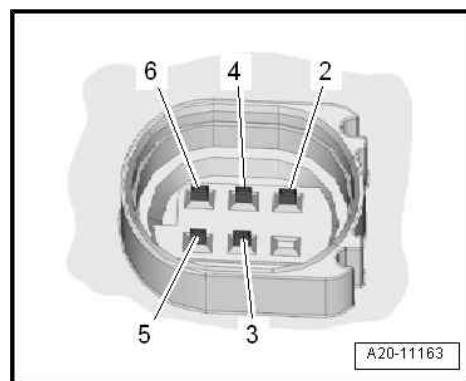
- ◆ In order to test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel gauge sender - G- ➔ [page 40](#) and move the float all the way to its top or bottom position.
- ◆ The following values are obtained with the fuel gauge sender removed, due to the greater travel of the float arm:

- Connect multimeter (resistance test) between contacts -2- and -4-.
- Sender at lower stop: approx. 288 Ω.
- Sender at upper stop: approx. 57 Ω.
- Connect multimeter (resistance test) between contacts -2- and -6-.
- Sender at lower stop: approx. 52 Ω.
- Sender at upper stop: approx. 283 Ω.
- Connect multimeter (resistance test) between contacts -4- and -6-.
- Sender in any position: approx. 340 Ω.

Fuel gauge sender - G- is defective in the following cases:

- ◆ Large differences in test readings
- ◆ Reading: 0 Ω (short circuit)
- ◆ Reading ∞ Ω (open circuit)
- ◆ No fault in electrical wiring

- Install fuel delivery unit ➔ [page 40](#) .
- Install cover for flange ➔ [page 7](#) .
- Install rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .



2.3.3 Checking fuel gauge sender - G- - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

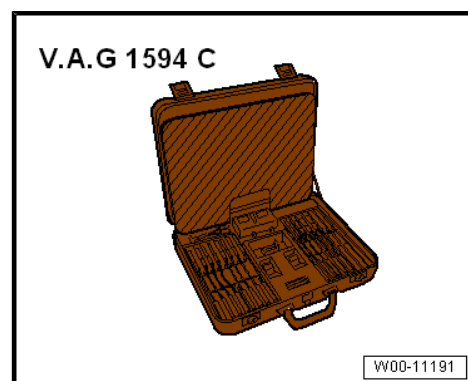
Special tools and workshop equipment required

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◆ Hand-held multimeter - V.A.G 1526E-

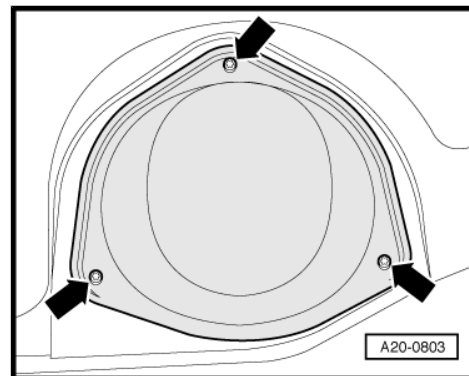


◆ Auxiliary measuring set - V.A.G 1594C-



Procedure

- Remove rear seat bench ⇒ General body repairs, interior;
 Rep. gr. 72 ; Rear seats; Removing and installing seat bench/
 individual seats .
- Unscrew cover for flange -arrows-.



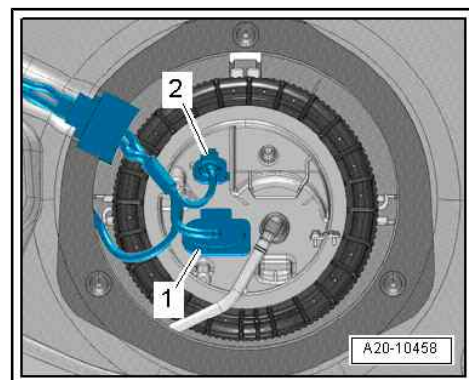
- Unplug electrical connector -1- on flange.



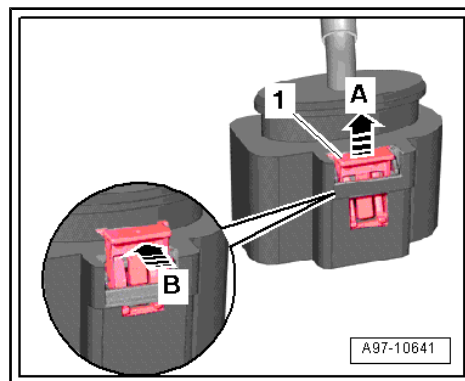
Note

Disregard -item 2-.

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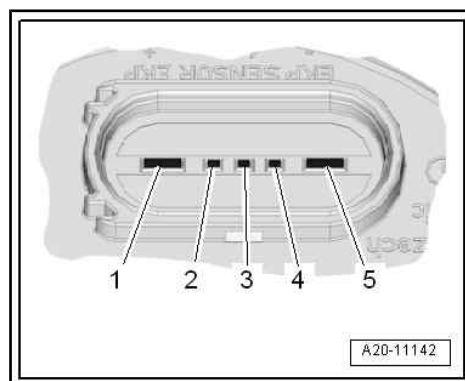


- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



Fuel gauge sender - G- installed:

- Connect multimeter (resistance test) between contacts -2- and -3-.
- Tank empty: approx. 60 Ω .
- Tank full: approx. 275 Ω .
- Connect multimeter (resistance test) between contacts -2- and -4-.
- Tank empty: approx. 280 Ω .
- Tank full: approx. 65 Ω .
- Connect multimeter (resistance test) between contacts -3- and -4-.
- Sender in any position: approx. 340 Ω .



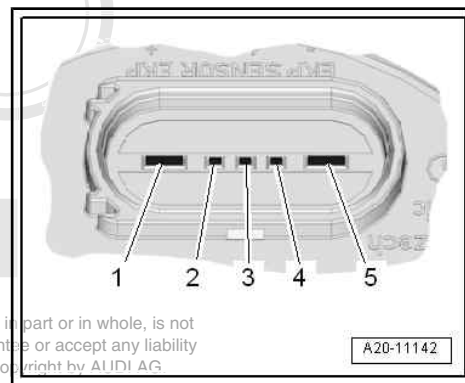
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Fuel gauge sender - G- removed:



Note

- ◆ *In order to test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel gauge sender - G- ➔ [page 40](#) and move the float all the way to its top or bottom position.*
- ◆ *The following values are obtained with the fuel gauge sender removed, due to the greater travel of the float arm:*
 - Connect multimeter (resistance test) between contacts -2- and -3-.
 - Sender at lower stop: approx. 52 Ω.
 - Sender at upper stop: approx. 283 Ω.
 - Connect multimeter (resistance test) between contacts -2- and -4-.
 - Sender at lower stop: approx. 288 Ω.
 - Sender at upper stop: approx. 57 Ω.
 - Connect multimeter (resistance test) between contacts -3- and -4-.
 - Sender in any position: approx. 340 Ω.



Fuel gauge sender - G- is defective in the following cases:

- ◆ Large differences in test readings
- ◆ Reading: 0 Ω (short circuit)
- ◆ Reading ∞ Ω (open circuit)
- ◆ No fault in electrical wiring
- Install fuel delivery unit ➔ [page 40](#) .
- Install cover for flange ➔ [page 9](#) .
- Install rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

2.3.4 Checking fuel gauge sender - G- - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

Special tools and workshop equipment required

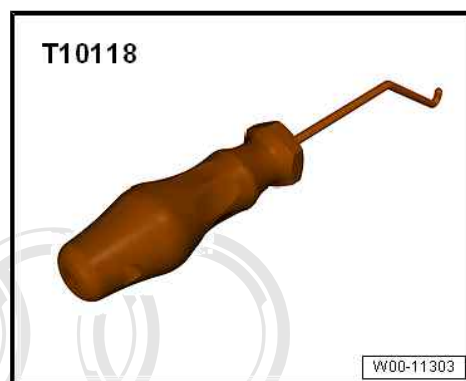
◆ Hand-held multimeter - V.A.G 1526E-



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



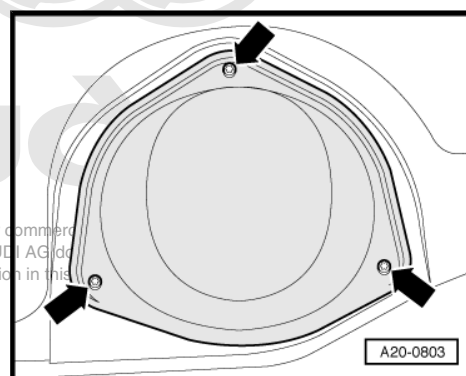
◆ Assembly tool - T10118-



Procedure

- Remove rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.

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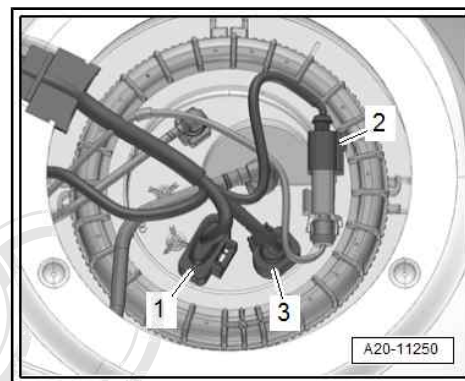


- Release retainer catch with assembly tool - T10118- and unplug electrical connector -3- on flange.



Note

Disregard -items 1, 2-.



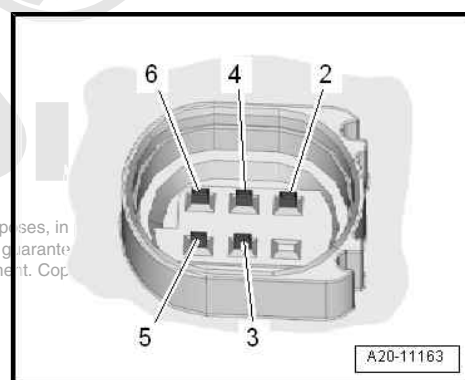
Fuel gauge sender - G- installed:



Note

To obtain an exact measurement of the resistance value for the specification "Tank full", the fuel tank must be completely full. For this, drive for at least 500 metres after filling the tank to let air bubbles escape from the fuel tank; then add fuel again.

- Connect multimeter (resistance test) between contacts -2- and -4-.
- Tank empty: approx. 280 Ω .
- Tank full: approx. 65 Ω .
- Connect multimeter (resistance test) between contacts -2- and -6-.
- Tank empty: approx. 60 Ω .
- Tank full: approx. 275 Ω .
- Connect multimeter (resistance test) between contacts -4- and -6-.
- Sender in any position: approx. 340 Ω .

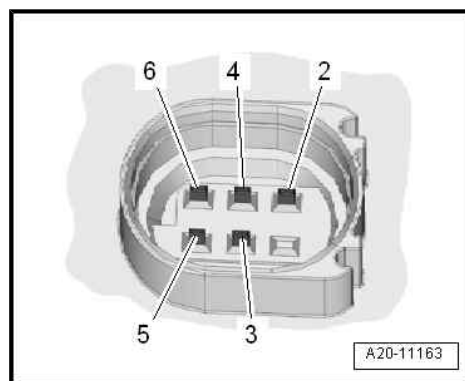


Fuel gauge sender - G- removed:



Note

- ◆ In order to test the maximum and minimum resistance values for "tank full" and "tank empty", remove the fuel gauge sender - G- ➔ [page 40](#) and move the float all the way to its top or bottom position.
- ◆ The following values are obtained with the fuel gauge sender removed, due to the greater travel of the float arm:
 - Connect multimeter (resistance test) between contacts -2- and -4-.
 - Sender at lower stop: approx. 288 Ω.
 - Sender at upper stop: approx. 57 Ω.
 - Connect multimeter (resistance test) between contacts -2- and -6-.
 - Sender at lower stop: approx. 52 Ω.
 - Sender at upper stop: approx. 283 Ω.
 - Connect multimeter (resistance test) between contacts -4- and -6-.
 - Sender in any position: approx. 340 Ω.



Fuel gauge sender - G- is defective in the following cases:

- ◆ Large differences in test readings
- ◆ Reading: 0 Ω (short circuit)
- ◆ Reading ∞ Ω (open circuit)
- ◆ No fault in electrical wiring
- Install fuel delivery unit ➔ [page 40](#) .
- Install cover for flange ➔ [page 9](#) .
- Install rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

2.4 Removing and installing fuel gauge sender - G-

⇒ ["2.4.1 Removing and installing fuel gauge sender G - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with front-wheel drive", page 76](#)

⇒ ["2.4.2 Removing and installing fuel gauge sender G - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with front-wheel drive", page 77](#)

⇒ ["2.4.3 Removing and installing fuel gauge sender G , A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 78](#)

⇒ ["2.4.4 Removing and installing fuel gauge sender G - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 79](#)

2.4.1 Removing and installing fuel gauge sender - G- - A5 up to model year 2011,

A4 up to model year 2012, rest-of-world vehicles with front-wheel drive

Removing

- Observe safety precautions ➤ [page 1](#) .
- Observe rules for cleanliness ➤ [page 4](#) .



Note

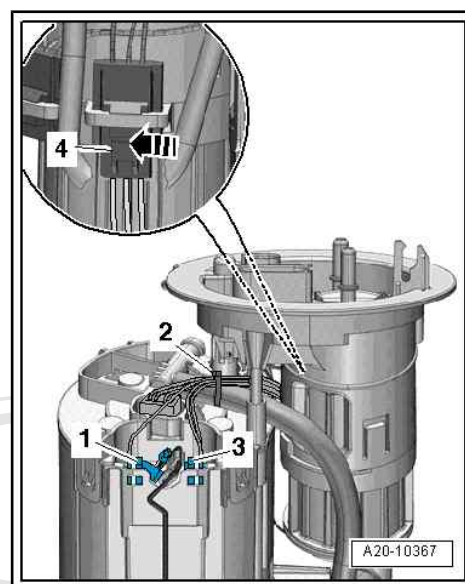
Fit cable tie in the original position when installing.

- Remove fuel delivery unit ➤ [page 40](#) .
- Press release tab -arrow- and unplug electrical connector -4-.
- Cut through cable tie -2- and move electrical connector clear.
- Release retaining tabs -1- and -3- and lift out fuel gauge sender - G- .

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 downwards until it clicks into place.
- Plug in electrical connector and make sure it is correctly engaged.
- Install fuel delivery unit ➤ [page 43](#) ; observe notes on procedure for connecting battery.

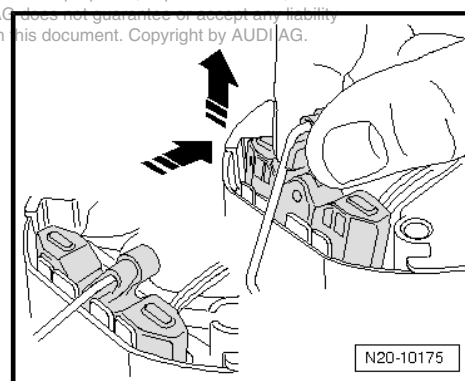


2.4.2 Removing and installing fuel gauge sender - G- - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with front-wheel drive

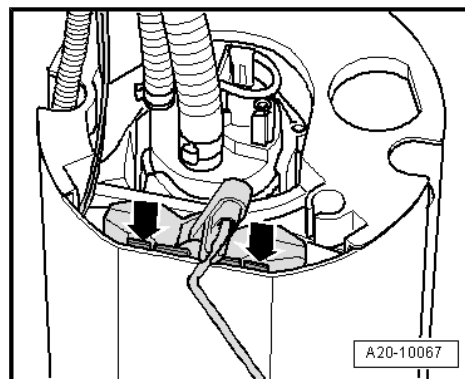
Removing

- Observe safety precautions ➤ [page 1](#) .
- Observe rules for cleanliness ➤ [page 4](#) .
- Remove fuel delivery unit ➤ [page 40](#) .
- Pull fuel gauge sender - G- inwards slightly and then lift out -arrows-.

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- If necessary, release retaining tabs -arrows- using a screw-driver.



Caution

Risk of damage.

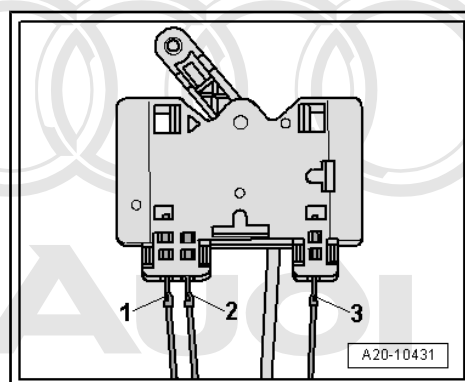
- ◆ *First release retainer tabs on connector contact before detaching electrical connectors on fuel gauge sender - G-.*

- Release and unplug electrical connectors -1 ... 3-.
- Or: Unplug electrical connector on flange.

Installing

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

- 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 downwards until it clicks into place.
- Install fuel delivery unit ➔ [page 49](#) ; observe notes on procedure for connecting battery.



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2.4.3 Removing and installing fuel gauge sender - G- , A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



Note

Fit cable tie in the original position when installing.

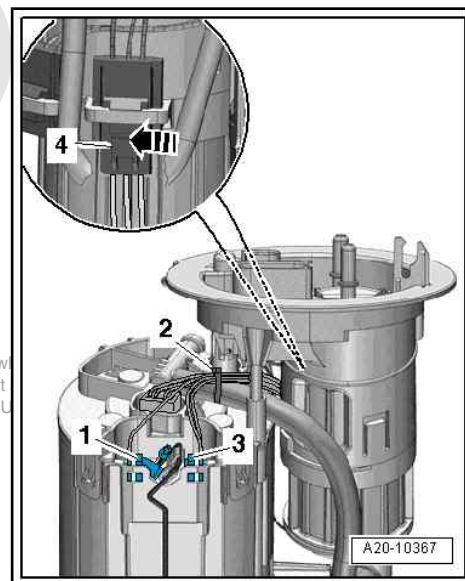
- Remove fuel delivery unit ➔ [page 40](#) .

- Press release tab -arrow- and unplug electrical connector -4-.
- Cut through cable tie -2- and move electrical connector clear.
- Release retaining tabs -1- and -3- and lift out fuel gauge sender - G- .

Installing

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

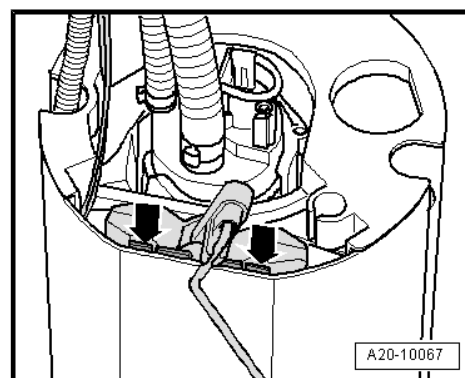
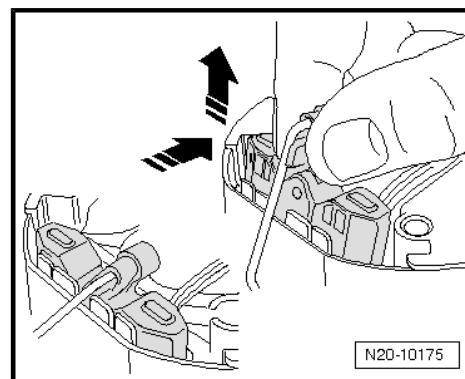
- Insert fuel gauge sender - G- into guides on fuel delivery unit and press downwards until it clicks into place.
- Plug in electrical connector and make sure it is correctly engaged.
- Install fuel delivery unit ➔ [page 56](#) ; observe notes on procedure for connecting battery.



2.4.4 Removing and installing fuel gauge sender - G- - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .
- Remove fuel delivery unit ➔ [page 40](#) .
- Pull fuel gauge sender - G- inwards slightly and then lift out -arrows-.
- If necessary, release retaining tabs -arrows- using a screw-driver.





Caution

Risk of damage.

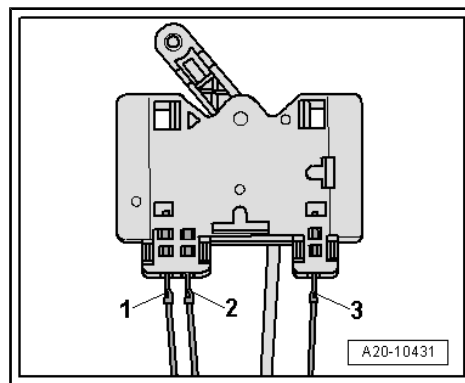
- ◆ *First release retainer tabs on connector contact before detaching electrical connectors on fuel gauge sender - G-.*

- Release and unplug electrical connectors -1 ... 3-.
- Or: Unplug electrical connector on flange.

Installing

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

- 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 downwards until it clicks into place.
- Install fuel delivery unit ➔ [page 62](#) ; observe notes on procedure for connecting battery.



2.5 Checking fuel gauge sender 2 - G169-

➔ **"2.5.1 Checking fuel gauge sender 2 G169 - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 80**

➔ **"2.5.2 Checking fuel gauge sender 2 G169 - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 83**

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2.5.1 Checking fuel gauge sender 2 - G169- - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

Special tools and workshop equipment required

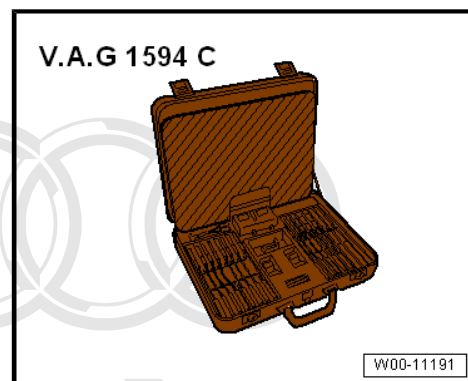
- ◆ Hand-held multimeter - V.A.G 1526E-

V.A.G 1526 E



W00-11266

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



◆ Assembly tool - T10118-



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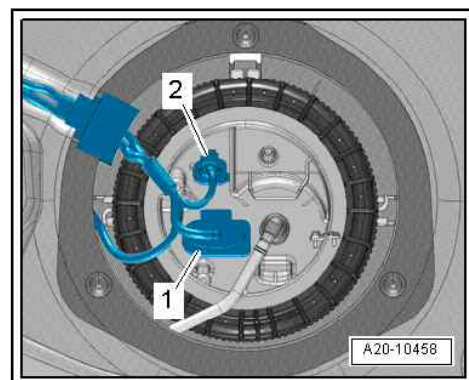
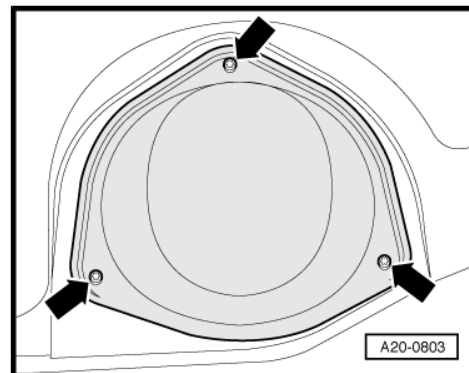
Procedure



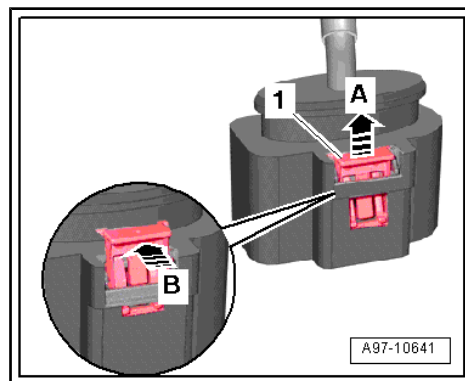
Note

The electrical wiring for the fuel gauge sender 2 - G169- is routed to the fuel pump flange along the inside of the fuel tank.

- Remove rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.
- Release retainer catch with assembly tool - T10118- and unplug electrical connector -2- on flange.
- Unplug electrical connector -1- on flange.

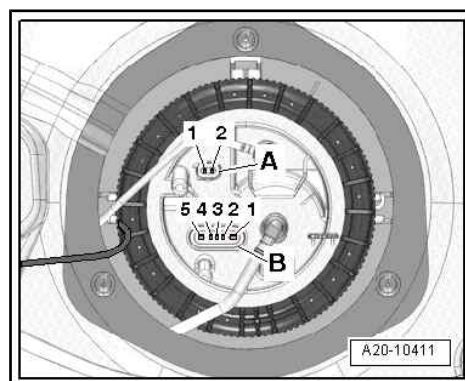


- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



With fuel gauge sender 2 - G169- installed:

- Connect multimeter (resistance test) between contact -1- on connector -A- and contact -2- on connector -B-.
- Tank empty: approx. 50 Ω .
- Tank full: approx. 295 Ω .
- Connect multimeter (resistance test) between contact -2- on connector -A- and contact -2- on connector -B-.
- Tank empty: approx. 290 Ω .
- Tank full: approx. 45 Ω .
- Connect multimeter (resistance test) between contacts -1- and -2- on connector -A-.
- Sender in any position: approx. 340 Ω .



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With fuel gauge sender 2 - G169- removed:

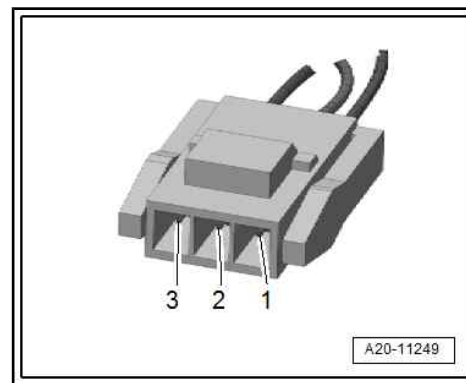


Note

- ◆ In order to test the maximum and minimum values for "tank full" and "tank empty", remove the fuel gauge sender 2 - G169- ➔ [page 87](#) , and move the float all the way to its top or bottom position.
- ◆ The following values are obtained with the fuel gauge sender removed, due to the greater travel of the float arm:
 - Connect multimeter (resistance test) between contacts -1- and -2-.
 - Sender at lower stop: approx. 290 Ω.
 - Sender at upper stop: approx. 16 Ω.
 - Connect multimeter (resistance test) between contacts -1- and -3-.
 - Sender at lower stop: approx. 50 Ω.
 - Sender at upper stop: approx. 324 Ω.
 - Connect multimeter (resistance test) between contacts -2- and -3-.
 - Sender in any position: approx. 340 Ω.

Fuel gauge sender 2 - G169- is defective in the following cases:

- ◆ Large differences in test readings
- ◆ Reading: 0 Ω (short circuit)
- ◆ Reading ∞ Ω (open circuit)
- ◆ No fault in electrical wiring
- Install fuel gauge sender 2 - G169- ➔ [page 87](#) .
- Install cover for flange ➔ [page 9](#) .
- Install rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .



2.5.2 Checking fuel gauge sender 2 - G169- - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/ four-wheel drive

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Special tools and workshop equipment required

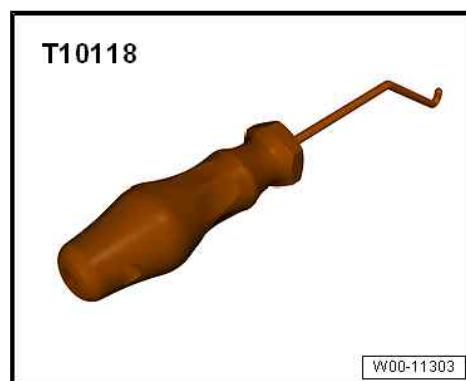
◆ Hand-held multimeter - V.A.G 1526E-



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



◆ Assembly tool - T10118-



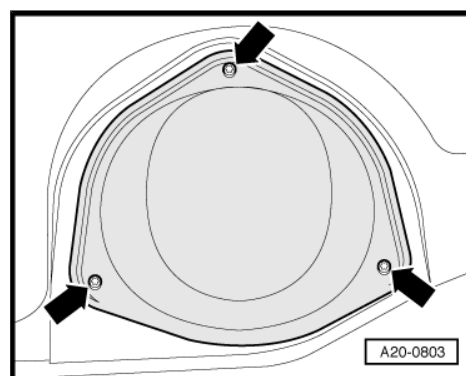
Procedure



Note

The electrical wiring for the fuel gauge sender 2 - G169- is routed to the fuel pump flange along the inside of the fuel tank.

- Remove rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.



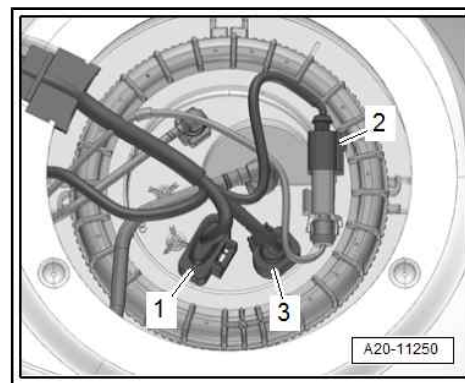
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- Release retainer catch with assembly tool - T10118- and unplug electrical connector -3- on flange.



Note

Disregard -items 1, 2-.



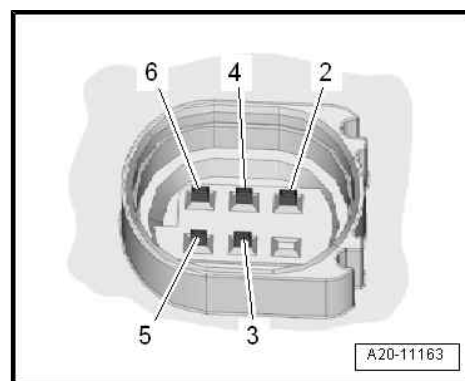
With fuel gauge sender 2 - G169- installed:



Note

To obtain an exact measurement of the resistance value for the specification "Tank full", the fuel tank must be completely full. For this, drive for at least 500 metres after filling the tank to let air bubbles escape from the fuel tank; then add fuel again.

- Connect multimeter (resistance test) between contacts -2- and -3-.
- Tank empty: approx. 290 Ω .
- Tank full: approx. 45 Ω .
- Connect multimeter (resistance test) between contacts -2- and -5-.
- Tank empty: approx. 50 Ω .
- Tank full: approx. 295 Ω .
- Connect multimeter (resistance test) between contacts -3- and -5-.
- Sender in any position: approx. 340 Ω .



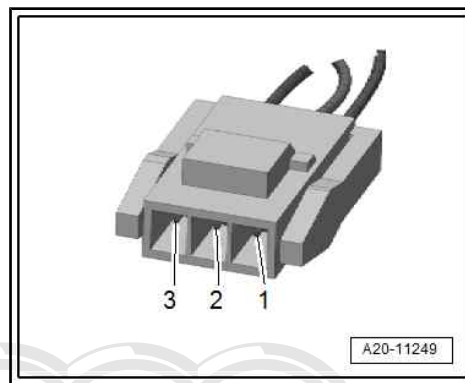
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With fuel gauge sender 2 - G169- removed:



Note

- ◆ In order to test the maximum and minimum values for "tank full" and "tank empty", remove the fuel gauge sender 2 - G169- ➔ [page 87](#) , and move the float all the way to its top or bottom position.
- ◆ The following values are obtained with the fuel gauge sender removed, due to the greater travel of the float arm:
 - Connect multimeter (resistance test) between contacts -2- and -3-.
 - Sender at lower stop: approx. 290 Ω .
 - Sender at upper stop: approx. 16 Ω .
 - Connect multimeter (resistance test) between contacts -1- and -3-.
 - Sender at lower stop: approx. 50 Ω .
 - Sender at upper stop: approx. 324 Ω .
 - Connect multimeter (resistance test) between contacts -1- and -2-.
 - Sender in any position: approx. 340 Ω .



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Fuel gauge sender 2 - G169- is defective in the following cases:

- ◆ Large differences in test readings
- ◆ Reading: 0 Ω (short circuit)
- ◆ Reading ∞ Ω (open circuit)
- ◆ No fault in electrical wiring
- Install fuel gauge sender 2 - G169- ➔ [page 87](#) .
- Install cover for flange ➔ [page 9](#) .
- Install rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

2.6 Removing and installing fuel gauge sender 2 - G169-

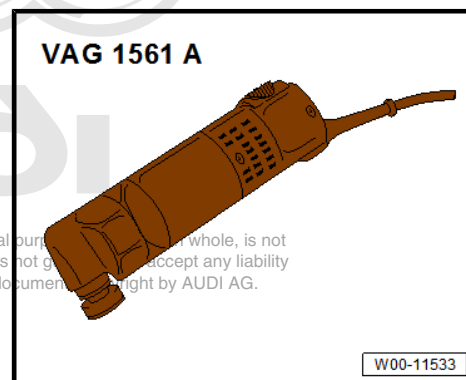
⇒ "2.6.1 Removing and installing fuel gauge sender 2 G169 - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 87

⇒ "2.6.2 Removing and installing fuel gauge sender 2 G169 - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 93

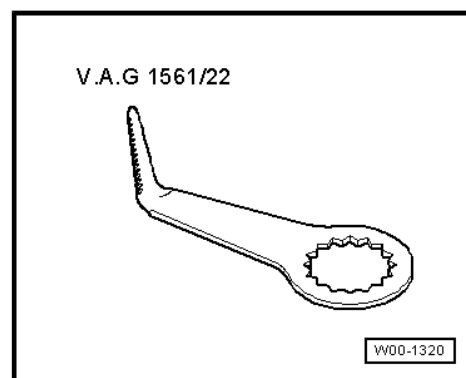
2.6.1 Removing and installing fuel gauge sender 2 - G169- - A5 up to model year 2011, A4 up to model year 2012, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

Special tools and workshop equipment required

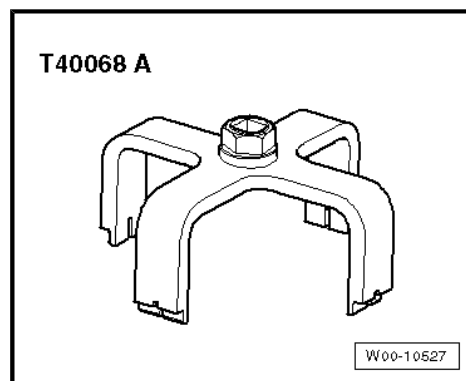
- ◆ Electric cutter - V.A.G 1561A-



- ◆ Blade (L-shaped, 25.4 mm) - V.A.G 1561/22-



- ◆ Union nut tool - T40068A-



- ◆ Adhesive sealant ⇒ Electronic parts catalogue

Removing

- Observe safety precautions ⇒ [page 1](#) .
- Observe rules for cleanliness ⇒ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel gauge sender, otherwise a large amount of fuel will escape.***

- Drain fuel tank if necessary: Rest-of-world vehicles ⇒ [page 13](#) , USA vehicles ⇒ [page 14](#) .



Caution

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

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

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Fold backrest of rear seat forwards.

A4 saloon, A5 Cabriolet and A5 Coupé:

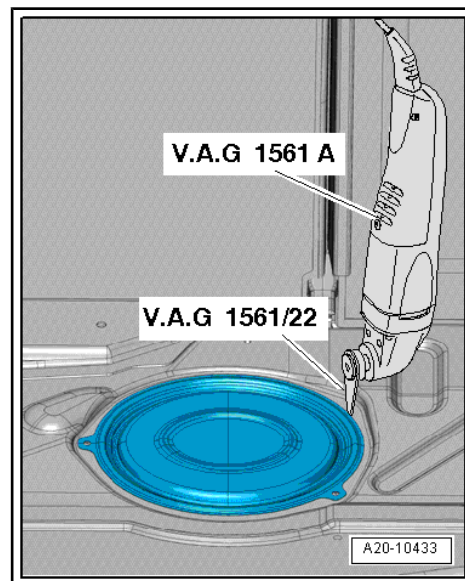
- Remove mounting frame for loading aid ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing mounting frame for loading aid .

A4 Avant:

- Remove luggage compartment floor (front) (holder for vehicle tool kit) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Exploded view - luggage compartment floor .

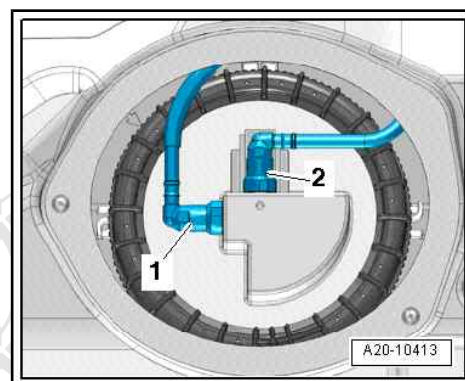
All vehicles (continued):

- Use electric cutter - V.A.G 1561A- and blade (L-shaped, 25.4 mm) - V.A.G 1561/22- to cut through adhesive sealant around cover for flange.
- Detach cover for flange.
- Repair painted surfaces ⇒ Paintwork manual .
- Apply anti-corrosion coating as necessary ⇒ Surface treatment/chemical materials .



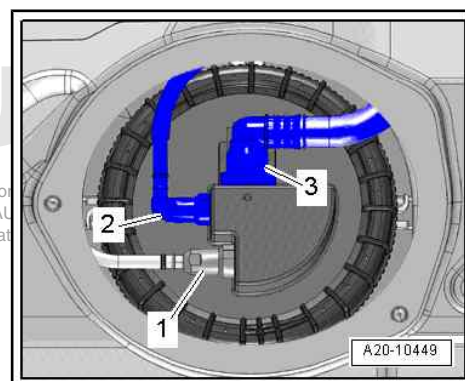
Rest-of-world vehicles:

- Disconnect breather lines -1 and 2- on flange ⇒ [page 99](#) .



USA vehicles:

- Disconnect breather lines -1, 2, 3- on flange ⇒ [page 99](#) .



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All vehicles (continued):



WARNING

Danger! Fuel may escape.

- ◆ The fuel tank must not be more than $\frac{1}{4}$ full when removing the fuel gauge sender, otherwise a large amount of fuel will escape.

- Unscrew union nut using union nut tool - T40068A- -arrow-.



Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.

- Carefully take fuel gauge sender 2 - G169- -item 3- out of opening in fuel tank.



Note

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

- Press release tab -arrow A- and unplug electrical connector -2-.
- Use long-nose pliers to compress catches -arrows B- and pull off suction pipe -1-.

Installing

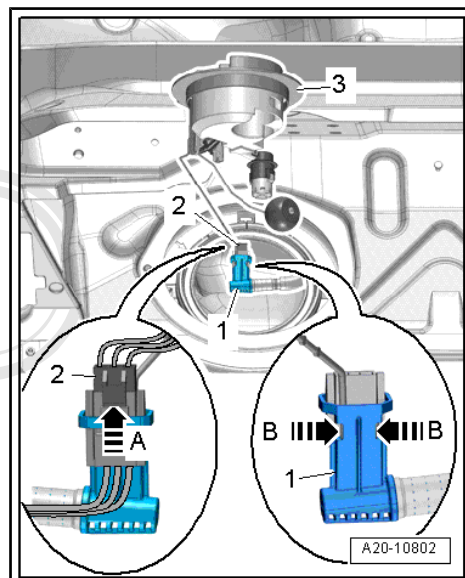
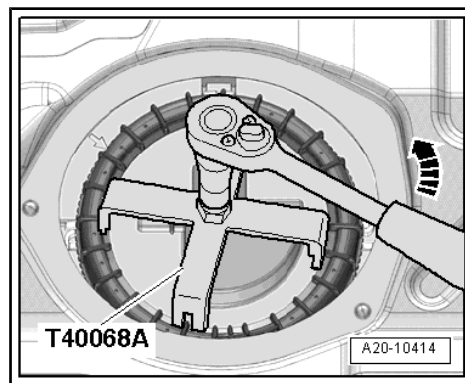
Installation is carried out in the reverse order; note the following:

- Tightening torque
⇒ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders", page 32](#)



Note

Renew seal and union nut.



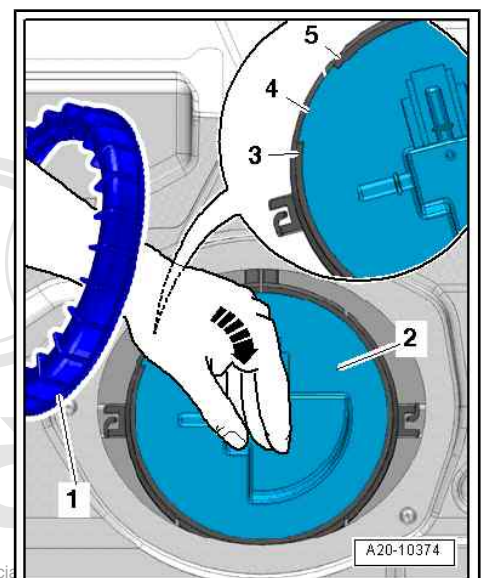
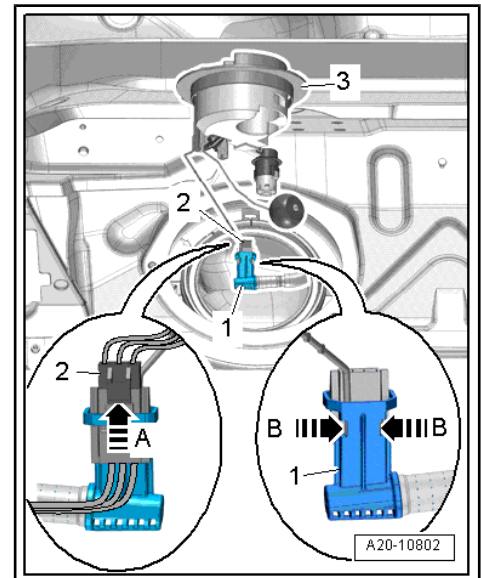
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- Connect suction pipe -1- so it engages audibly.
- Plug in electrical connector -2- and make sure it is correctly engaged.

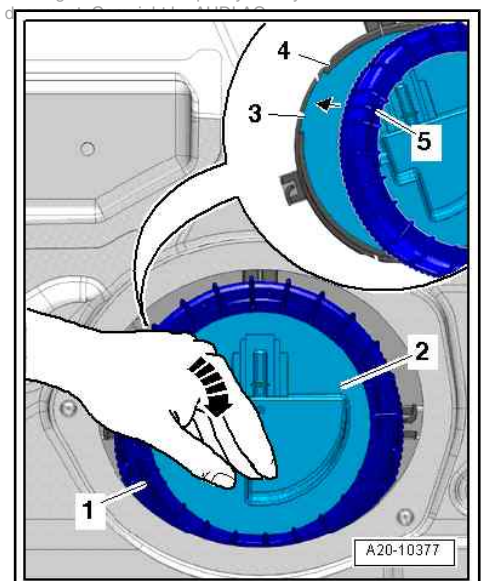
 Note

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

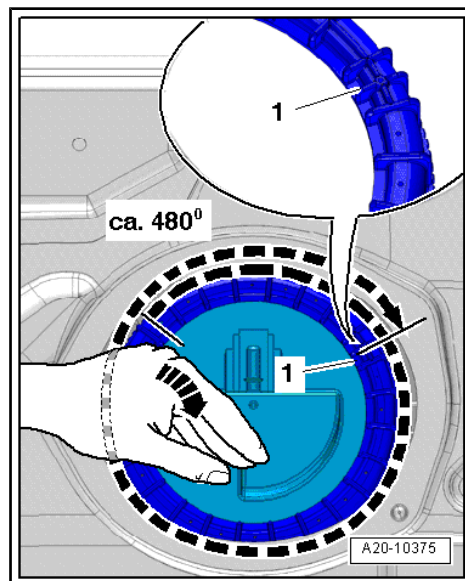
- Carefully insert fuel gauge sender 2 - G169- -item 3- into opening in fuel tank.
- Slip new seal onto flange and insert in groove on fuel tank.
- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.



- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. "ten o'clock position"). This will make union nut engage immediately with beginning of thread -4- when tightening.



- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. "two o'clock position" and at the same time keep on pressing flange downwards firmly with your left hand.

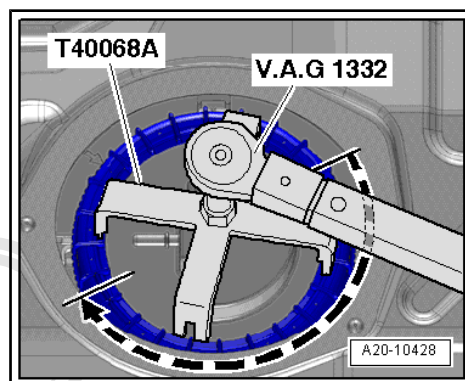


Caution

Take care to avoid leakage at flange.

- ◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*

- Tighten union nut for flange using union nut tool - T40068A- .



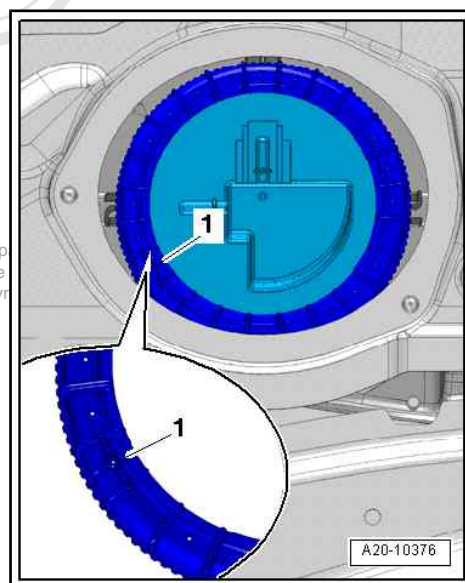
- Checking: Double ridge -1- must now be aligned between "seven o'clock and eight o'clock position".
- Just before re-installing cover for flange, trim down remaining adhesive sealing material on cover for flange and on body with carpet knife to give a smooth surface; do NOT remove sealant completely.



Note

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The remaining material serves as a bonding surface when applying the new adhesive sealing material.

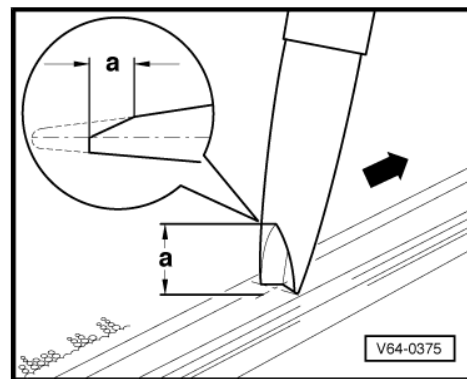


Caution

Apply adhesive thoroughly to ensure safe bonding.

- ◆ *Keep bonding surface clean and free from grease.*
- ◆ *Do not trim bonding surface until shortly before installation.*
- ◆ *Do not prime bonding surface and do not treat with cleaning fluid.*
- ◆ *Application of primer is only required when fitting a new cover for flange.*

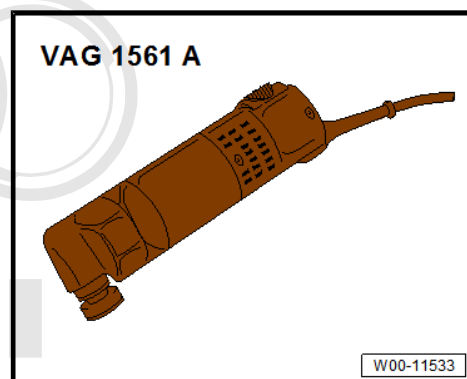
- Cut off tip of nozzle of adhesive sealant cartridge as shown in illustration.
- Dimension -a- = 7 mm
- Apply new sealant bead onto trimmed-down adhesive sealant on cover for flange and fit cover.
- Arrow on cover points in direction of travel.
- Install mounting frame for loading aid ➔ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing mounting frame for loading aid .
- Connect battery and perform steps required after re-connecting battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Put at least 5 litres of fuel into tank after installing fuel gauge sender 2 -G169- .



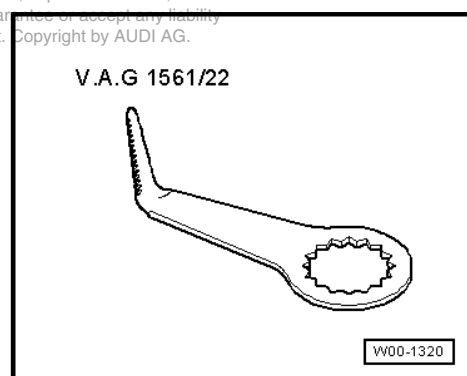
2.6.2 Removing and installing fuel gauge sender 2 - G169- - A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

Special tools and workshop equipment required

- ◆ Electric cutter - V.A.G 1561A-

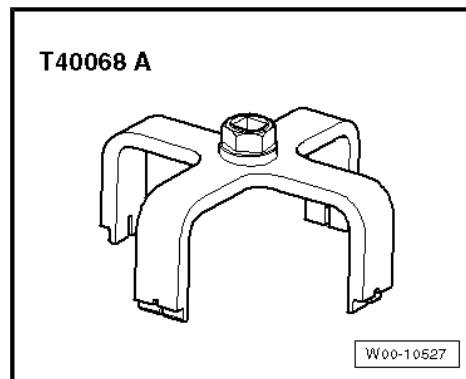


- ◆ Blade (L-shaped, 25.4 mm) - V.A.G 1561/22-



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- ◆ Union nut tool - T40068A-



- ◆ Adhesive sealant ⇒ Electronic parts catalogue

Removing

- Observe safety precautions ⇒ [page 1](#) .
- Observe rules for cleanliness ⇒ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel gauge sender, otherwise a large amount of fuel will escape.***

- Drain fuel tank if necessary: Rest-of-world vehicles ⇒ [page 13](#) , USA vehicles ⇒ [page 14](#) .



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 ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Fold backrest of rear seat forwards.

A4 saloon, A5 Cabriolet and A5 Coupé:

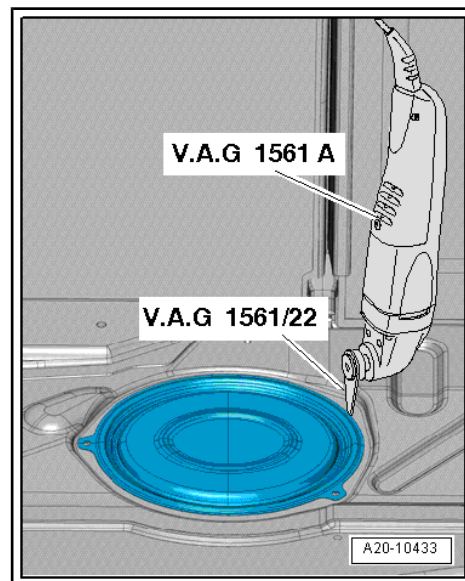
- Remove mounting frame for loading aid ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing mounting frame for loading aid .

A4 Avant:

- Remove luggage compartment floor (front) (holder for vehicle tool kit) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Exploded view - luggage compartment floor .

All vehicles (continued):

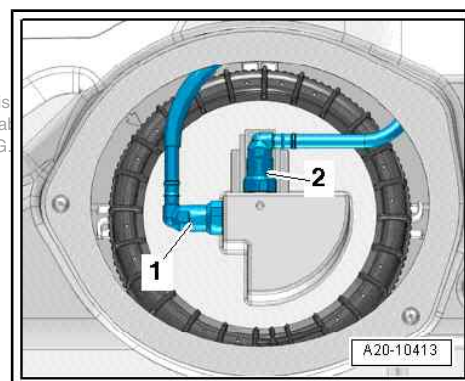
- Remove fuel delivery unit ➔ [page 59](#) .
- Use electric cutter - V.A.G 1561A- and blade (L-shaped, 25.4 mm) - V.A.G 1561/22- to cut through adhesive sealant around cover for flange.
- Detach cover for flange.
- Repair painted surfaces ➔ Paintwork manual .
- Apply anti-corrosion coating as necessary ➔ Surface treatment/chemical materials .



Rest-of-world vehicles:

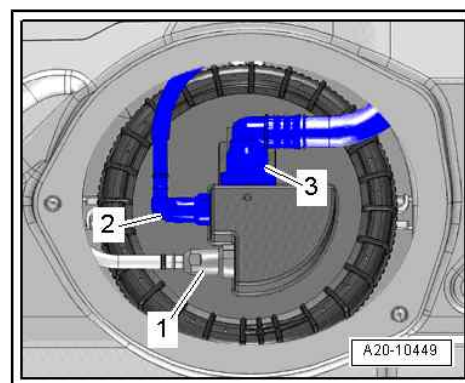
- Disconnect breather lines -1 and 2- on flange ➔ [page 99](#) .

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USA vehicles:

- Disconnect breather lines -1, 2, 3- on flange ➔ [page 99](#) .



All vehicles (continued):



WARNING

Danger! Fuel may escape.

- ◆ *The fuel tank must not be more than 1/4 full when removing the fuel gauge sender, otherwise a large amount of fuel will escape.*

- Unscrew union nut using union nut tool - T40068A- -arrow-.



Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.

- Lift out flange with fuel gauge sender 2 - G169- and move electrical wiring clear.
- Unclip fuel gauge sender 2 - G169- -item 1- from flange.



Note

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

Installing

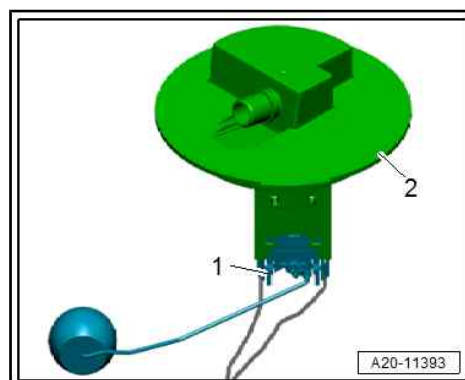
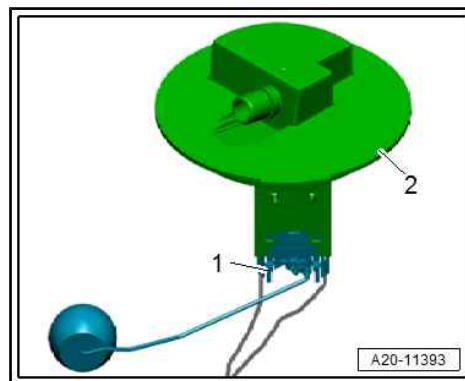
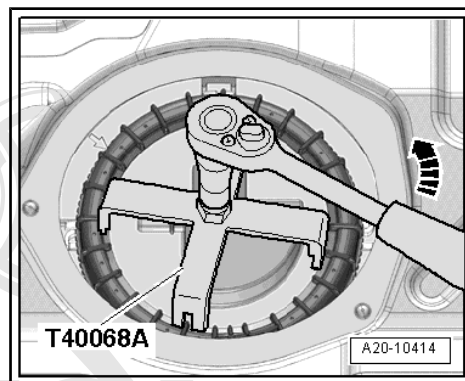
Installation is carried out in the reverse order; note the following:

- Tightening torque
⇒ ["2.1.4 Exploded view - fuel delivery unit/fuel gauge senders, A5 from model year 2012 onwards, A4 from model year 2013 onwards, rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 38](#)
- Clip fuel gauge sender 2 - G169- -item 1- onto flange.
- Route electrical wiring from fuel gauge sender 2 - G169- to fuel delivery unit.

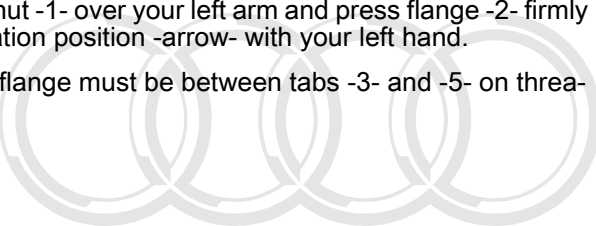


Note

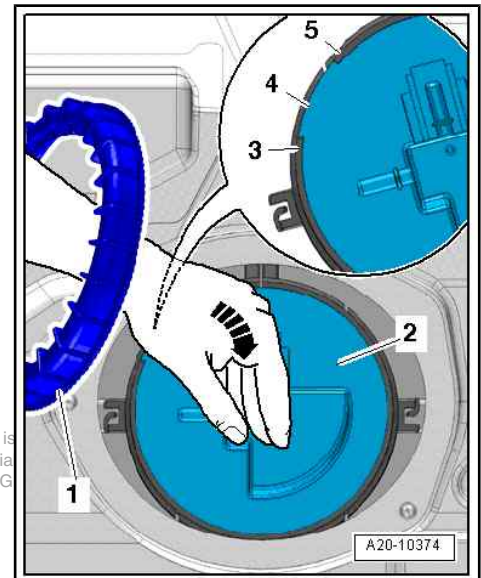
- ◆ *Renew seal and union nut.*
- ◆ *When installing, make sure you do not bend float arm of fuel gauge sender 2 -G169- .*
- Carefully insert fuel gauge sender 2 - G169- into opening in fuel tank.
- Slip new seal onto flange and insert in groove on fuel tank.



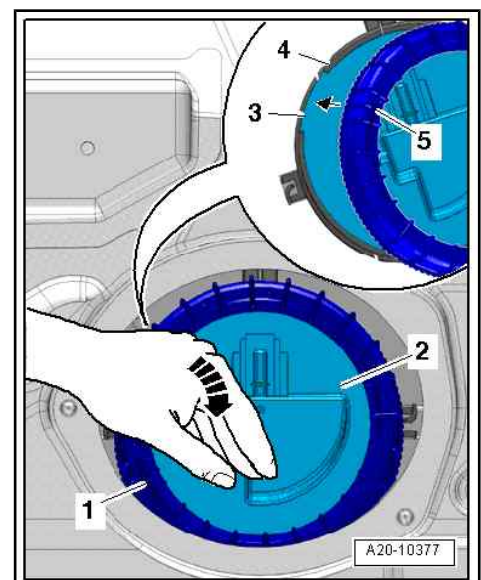
- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.


 Audi

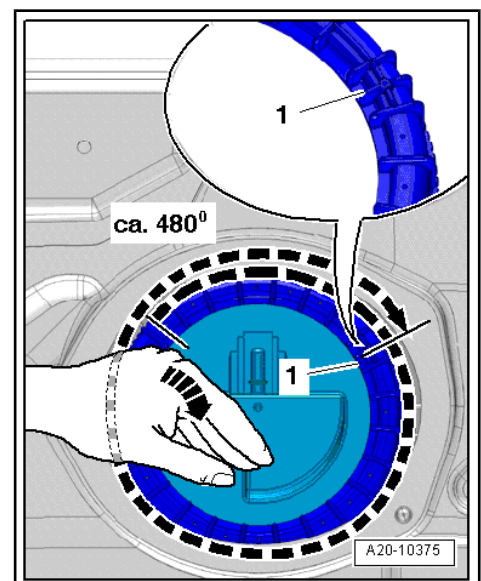
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- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. "ten o'clock position"). This will make union nut engage immediately with beginning of thread -4- when tightening.



- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. "two o'clock position" and at the same time keep on pressing flange downwards firmly with your left hand.



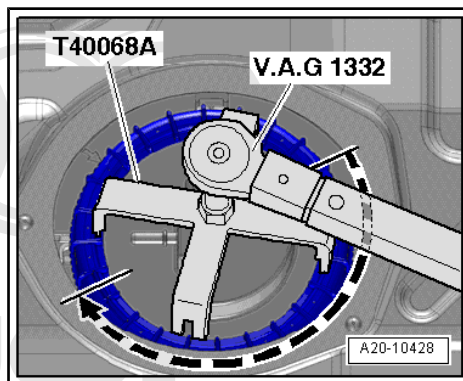


Caution

Take care to avoid leakage at flange.

- ◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*

- Tighten union nut for flange using union nut tool - T40068A- .

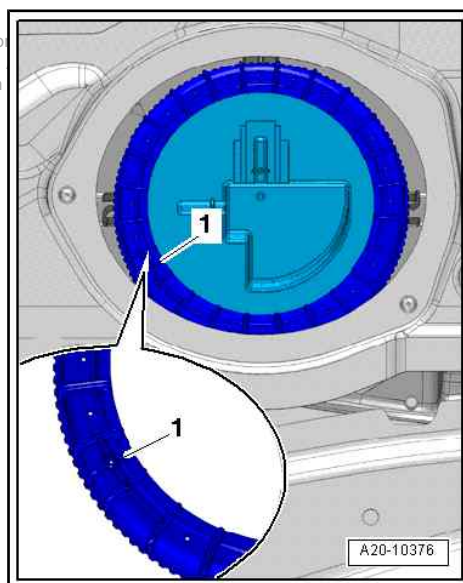


- Checking: Double ridge -1- must now be aligned between "seven o'clock and eight o'clock position".
- Just before re-installing cover for flange, trim down remaining adhesive sealing material on cover for flange and on body with carpet knife to give a smooth surface; do NOT remove sealant completely.



Note

The remaining material serves as a bonding surface when applying the new adhesive sealing material.

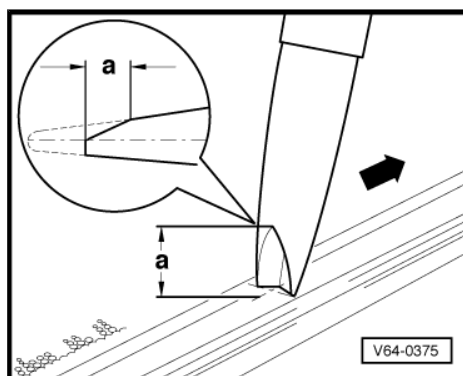


Caution

Apply adhesive thoroughly to ensure safe bonding.

- ◆ *Keep bonding surface clean and free from grease.*
- ◆ *Do not trim bonding surface until shortly before installation.*
- ◆ *Do not prime bonding surface and do not treat with cleaning fluid.*
- ◆ *Application of primer is only required when fitting a new cover for flange.*

- Cut off tip of nozzle of adhesive sealant cartridge as shown in illustration.
- Dimension -a- = 7 mm
- Apply new sealant bead onto trimmed-down adhesive sealant on cover for flange and fit cover.
- Arrow on cover points in direction of travel.
- Install fuel delivery unit ➔ [page 59](#) .
- Install mounting frame for loading aid ➔ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing mounting frame for loading aid .
- Connect battery and perform steps required after re-connecting battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Put at least 5 litres of fuel into tank after installing fuel gauge sender 2 -G169- .



3 Plug-in connectors

⇒ [“3.1 Disconnecting plug-in connectors”, page 99](#)

3.1 Disconnecting plug-in connectors

Special tools and workshop equipment required

- ◆ Lever - T10468-



Allocation of plug-in connectors



Note

- ◆ *The plug-in connectors for the fuel lines, vacuum lines, and breather lines are colour coded. There is either a coloured marking on the plug-in connector, or the release tab is the corresponding colour ⇒ [page 99](#).*
- ◆ *Plug-in connectors should engage audibly when connecting.*
- ◆ *Check that plug-in connector is securely seated by pulling at it.*

Colour coding

Plug-in connector	Colour coding on plug-in connector
Fuel supply	Black
Fuel return line	Blue
Breather	White-beige
Vacuum	Green



WARNING

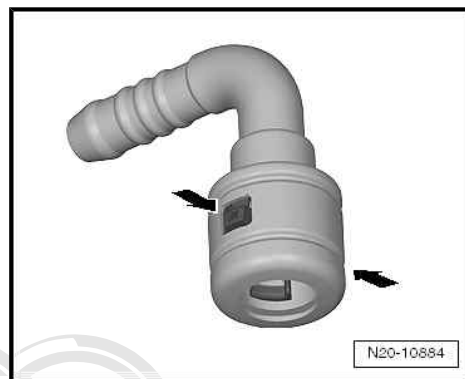
Fuel line is pressurised.

Risk of injury to eyes and skin caused by fuel.

Wear safety goggles and protective clothing to avoid possible injury and skin contact. Before opening hose connections wrap a cloth around the connection. Then relieve pressure by carefully opening the connection.

Version 1

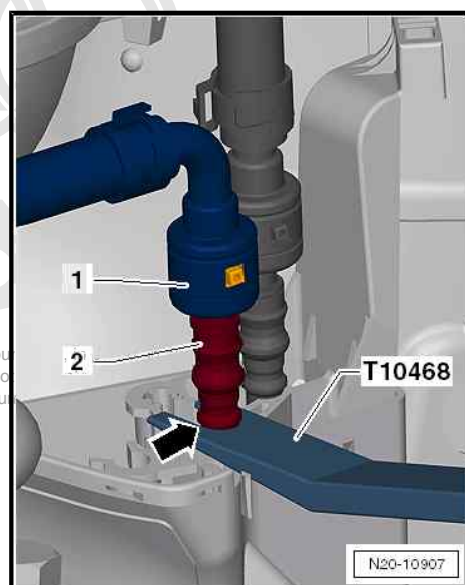
Plug-in connector with release tabs -arrows- on both sides



Disconnecting

Counter-hold connection point for fuel -1- in engine compartment.

- Insert lever - T10468- between heat shield and stop -arrow- of fuel line -2- and counter-hold.



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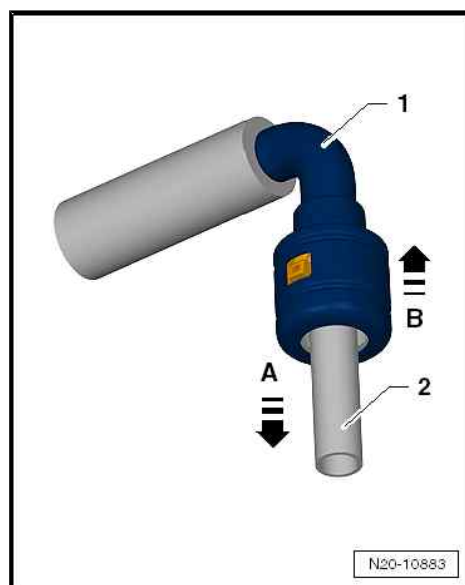
Continued for all connection points in fuel system:

- Press plug-in connector -1- in direction of -arrow A-.
- Press and hold release tabs.
- Unplug plug-in connector -1- from fuel line -2- in direction of -arrow B-.

When installing observe colour coding ⇒ [page 99](#) .

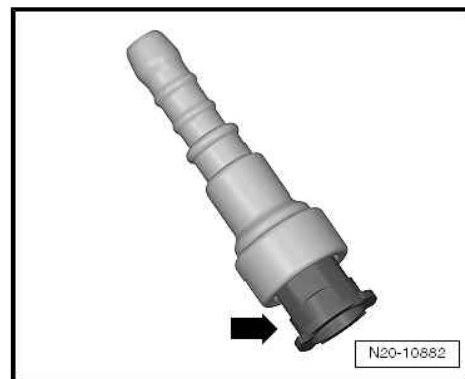
Plug-in connectors should engage audibly when connecting.

- Check that plug-in connector is securely seated by pulling at it.



Version 2

Plug-in connector with pull release -arrow-:



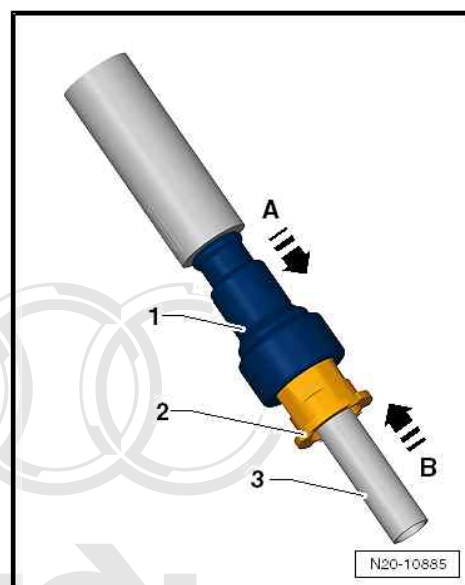
Disconnecting

- Press plug-in connector -1- in direction of -arrow A-.
- Pull the pull release catch -2- in direction of -arrow B-.
- Unplug plug-in connector -1- from fuel line -3- in direction of -arrow B-.

When installing observe colour coding ➔ [page 99](#) .

Plug-in connectors should engage audibly when connecting.

- Check that plug-in connector is securely seated by pulling at it.



Version 3

Plug-in connector with release tab at front -arrow-:

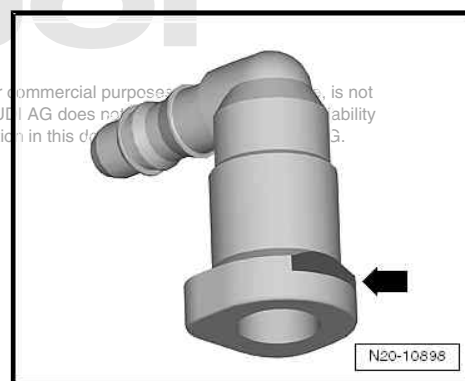
Disconnecting

- Press release tab -arrow- and disconnect plug-in connectors.

When installing observe colour coding ➔ [page 99](#) .

Plug-in connectors should engage audibly when connecting.

- Check that plug-in connector is securely seated by pulling at it.



Version 4

Plug-in connector with release tab -arrows- on both sides:

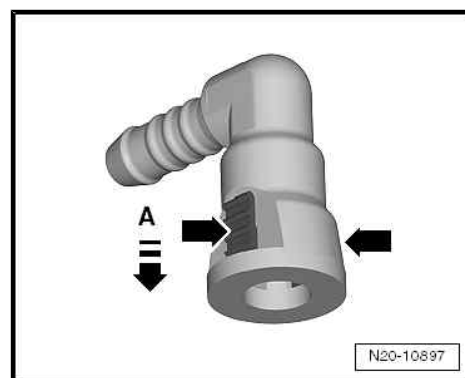
Disconnecting

- Press plug-in connector in direction of -arrow A-.
- Press release tabs -arrows- and disconnect plug-in connector.

When installing observe colour coding ➔ [page 99](#) .

Plug-in connectors should engage audibly when connecting.

- Check that plug-in connector is securely seated by pulling at it.



Version 5

Plug-in connector with release tabs -arrows- on both sides:

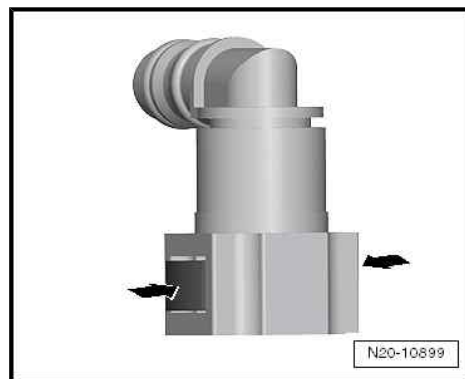
Disconnecting

- Press release tabs -arrows- and disconnect plug-in connector.

When installing observe colour coding ⇒ [page 99](#) .

Plug-in connectors should engage audibly when connecting.

- Check that plug-in connector is securely seated by pulling at it.



Version 6

Plug-in connector with release tabs -arrows- on both sides:

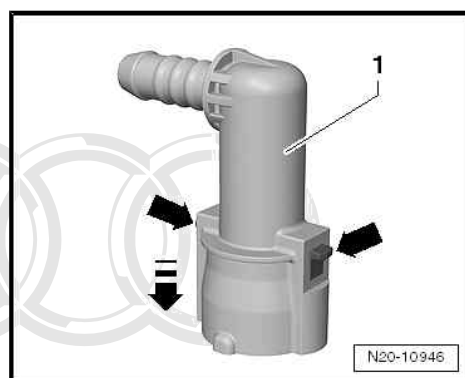
Disconnecting

- Press and hold plug-in connector -1- in direction of -arrow -.
- Press release tabs -arrows- and disconnect plug-in connector.

When installing observe colour coding ⇒ [page 99](#) .

Plug-in connectors should engage audibly when connecting.

- Check that plug-in connector is securely seated by pulling at it.



Version 7

Plug-in connector -1- with release tabs -2- on both sides:

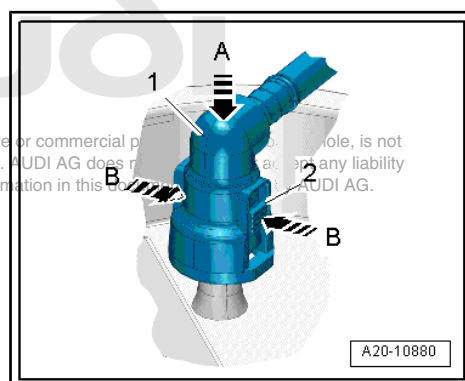
Disconnecting

- Press and hold plug-in connector -1- in direction of arrow A.
- Press release tabs -2- in direction of -arrow B- and unplug plug-in connector -1-.

When installing observe colour coding ⇒ [page 99](#) .

Plug-in connectors should engage audibly when connecting.

- Check that plug-in connector is securely seated by pulling at it.



4 Fuel filter

⇒ [“4.1 Exploded view - fuel filter”, page 103](#)

⇒ [“4.2 Removing and installing fuel filter”, page 105](#)

4.1 Exploded view - fuel filter

⇒ [“4.1.1 Exploded view - fuel filter, A5 up to model year 2011, A4 up to model year 2012”, page 103](#)

⇒ [“4.1.2 Exploded view - fuel filter, A5 from model year 2012 onwards, A4 from model year 2013 onwards”, page 104](#)

4.1.1 Exploded view - fuel filter, A5 up to model year 2011, A4 up to model year 2012

1 - Fuel line

- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)

2 - O-ring

- ☐ Renew

3 - Flange

4 - Fuel delivery unit

5 - Fuel filter

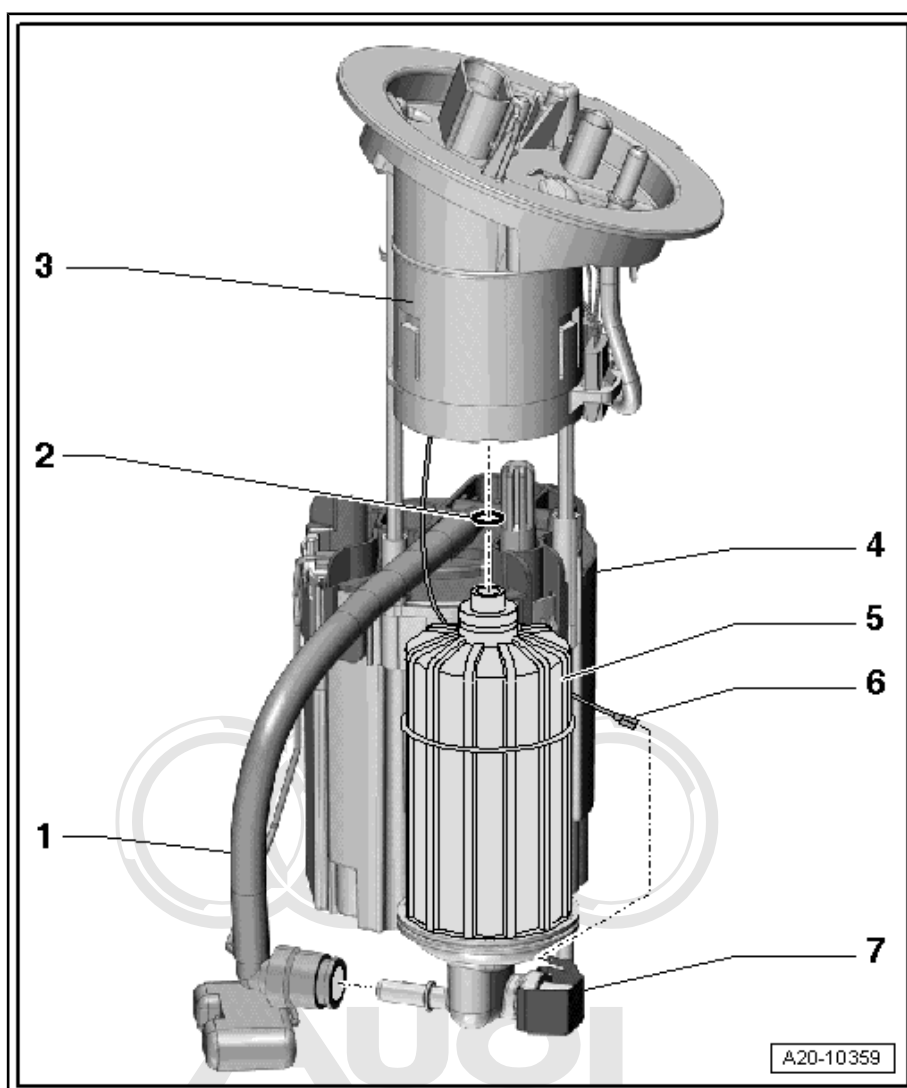
- ☐ Removing and installing
⇒ [page 105](#)

6 - Earth wire

- ☐ Attach to retaining plate

7 - Retaining plate for fuel pressure regulator

- ☐ With earth connection



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4.1.2 Exploded view - fuel filter, A5 from model year 2012 onwards, A4 from model year 2013 onwards

1 - Fuel delivery unit

2 - Assembly aid

- ☐ Attached to flange

3 - Fuel line

- ☐ To engine
- ☐ Do not kink
- ☐ Press release tab on connection piece to disconnect ➔ [page 99](#)
- ☐ Connect so it engages audibly
- ☐ Press in again and then pull to check that plug-in connector is correctly engaged

4 - Flange

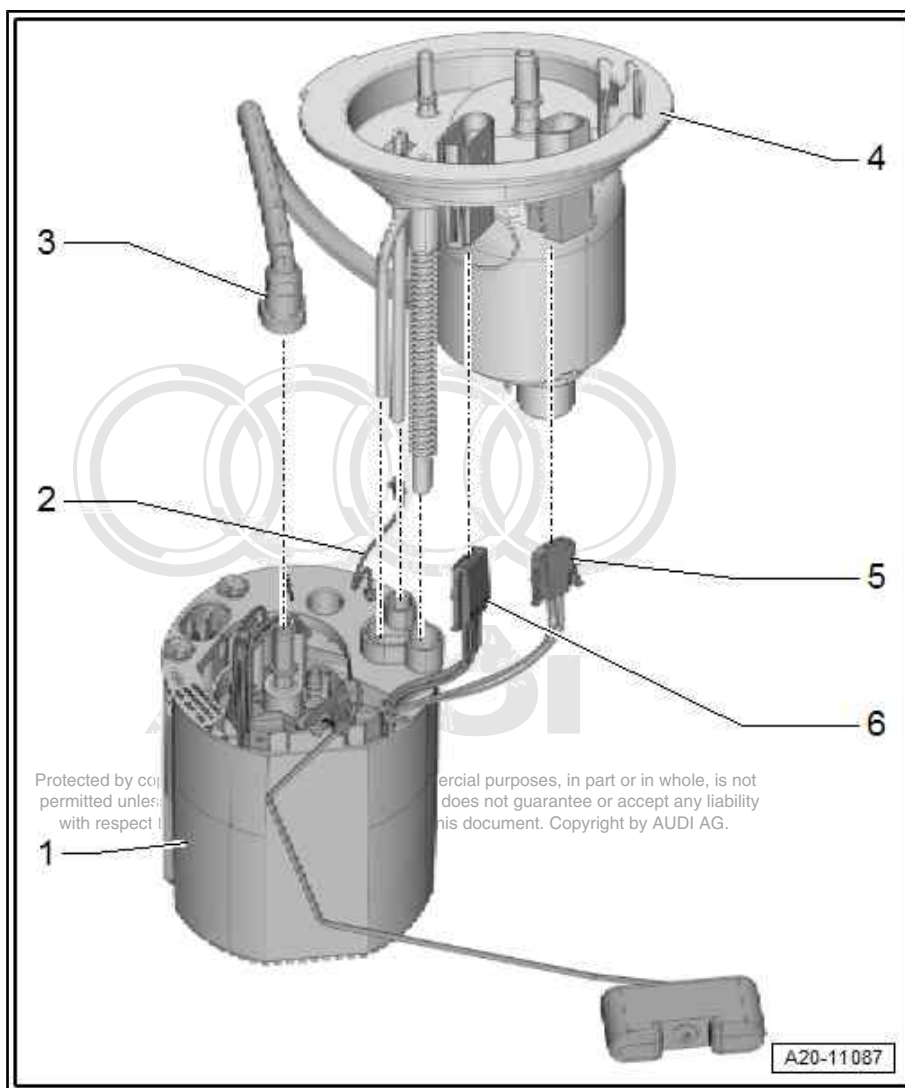
- ☐ With integrated fuel pressure regulator and fuel filter
- ☐ Fuel pressure regulator and fuel filter cannot be renewed separately
- ☐ Removing and installing ➔ [page 105](#)

5 - Electrical connector

- ☐ For fuel gauge sender - G-
- ☐ Make sure it is engaged properly; pull to check that plug-in connector is correctly engaged

6 - Electrical connector

- ☐ For fuel system pressurisation pump - G6-
- ☐ Make sure it is engaged properly; pull to check that plug-in connector is correctly engaged



4.2 Removing and installing fuel filter

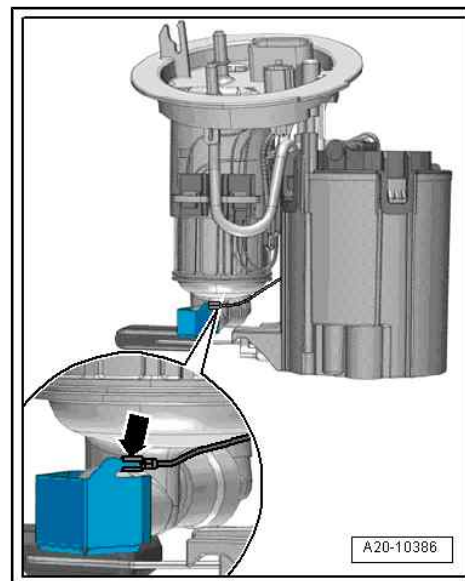
⇒ [“4.2.1 Removing and installing fuel filter - A5 up to model year 2011, A4 up to model year 2012”, page 105](#)

⇒ [“4.2.2 Removing and installing fuel filter - A5 from model year 2012 onwards, A4 from model year 2013 onwards”, page 106](#)

4.2.1 Removing and installing fuel filter - A5 up to model year 2011, A4 up to model year 2012

Removing

- Observe safety precautions ⇒ [page 1](#) .
- Observe rules for cleanliness ⇒ [page 4](#) .
- Remove fuel delivery unit: vehicles with front-wheel drive ⇒ [page 40](#) , vehicles with four-wheel drive ⇒ [page 40](#) .
- Unplug earth connection -arrow- on retaining plate for fuel pressure regulator.



- Disconnect fuel line -1- ⇒ [page 99](#) .
- Unplug electrical connector -6- for fuel gauge sender - G- .
- Unplug electrical connector for fuel pump on fuel pump.
- Lift flange -4- with fuel filter off fuel delivery unit -3-.
- Release a total of 3 retaining tabs -5- by inserting a total of 3 release strips -7- (included in fuel filter repair kit) -arrow-.
- Pull fuel filter -2- downwards out of flange.

Installing

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



Note

Renew O-ring.

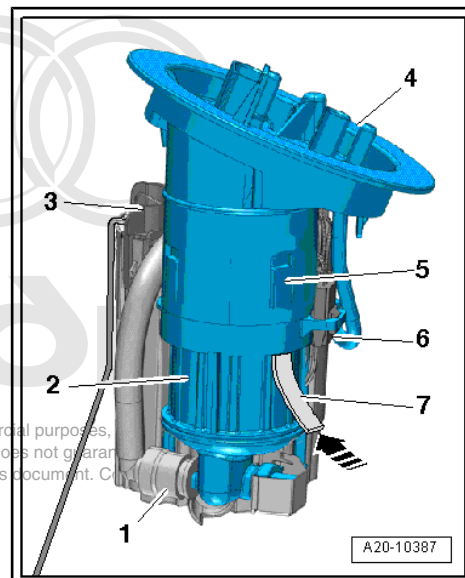
- Insert fuel filter into guides on flange and press in until it engages.



Note

The fuel filter can only be inserted in one position.

- Install fuel delivery unit: vehicles with front-wheel drive ⇒ [page 43](#) , vehicles with four-wheel drive ⇒ [page 56](#) .



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4.2.2 Removing and installing fuel filter - A5 from model year 2012 onwards, A4 from model year 2013 onwards



Note

The fuel pressure regulator and the fuel filter are integrated in the flange. They can only be renewed together with the flange for fuel delivery unit.

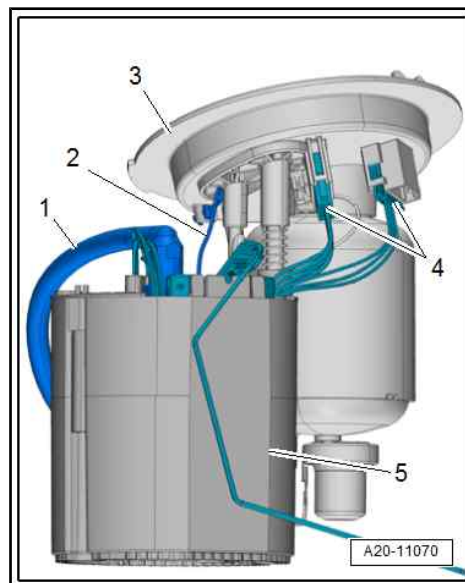
Removing

- Remove fuel delivery unit: vehicles with front-wheel drive ➔ [page 40](#) , vehicles with four-wheel drive ➔ [page 40](#) .
- Unplug electrical connectors -4-.
- Disconnect fuel line -1- ➔ [page 99](#) .
- Disengage assembly aid -2- at flange.
- Detach flange -3- from fuel delivery unit -5-.

Installing

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

- Install fuel delivery unit: vehicles with front-wheel drive ➔ [page 43](#) , vehicles with four-wheel drive ➔ [page 56](#) .
- Check that spring is fitted on guide tube.



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5 Activated charcoal filter system

⇒ [“5.1 Connection diagram - activated charcoal filter system”, page 107](#)

⇒ [“5.2 Exploded view - activated charcoal filter system”, page 111](#)

⇒ [“5.3 Removing and installing activated charcoal filter”, page 113](#)

⇒ [“5.4 Checking fuel system for leaks”, page 114](#)

⇒ [“5.5 Removing and installing fuel system diagnostic pump”, page 117](#)

⇒ [“5.6 Removing and installing control unit for fuel tank leak detection with integrated tank pressure sensor”, page 117](#)

⇒ [“5.7 Removing and installing air filter for tank leak diagnostic system”, page 117](#)

⇒ [“5.8 Tank leak diagnostic system”, page 118](#)

5.1 Connection diagram - activated charcoal filter system

⇒ [“5.1.1 Connection diagram - activated charcoal filter system with tank leak diagnostic system, vehicles with 4-cylinder engine, USA vehicles”, page 107](#)

⇒ [“5.1.2 Connection diagram - activated charcoal filter system with tank leak diagnostic system, vehicles with 6-cylinder engine, USA vehicles”, page 109](#)

⇒ [“5.1.3 Connection diagram - activated charcoal filter system with tank leak diagnostic system, vehicles with 8-cylinder engine, USA vehicles”, page 110](#)

5.1.1 Connection diagram - activated charcoal filter system with tank leak diagnostic system, vehicles with 4-cylinder engine, USA vehicles

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1 - Activated charcoal filter solenoid valve 1 - N80-

2 - Breather line

- ☐ From flange for fuel tank to activated charcoal filter
- ☐ Clipped onto retainers on underbody

3 - Flange for fuel tank

4 - Air filter

- ☐ For fuel system diagnostic pump - V144-

5 - Connecting line

- ☐ From fuel system diagnostic pump - V144- to air filter
- ☐ Clipped onto retainers on underbody

6 - Activated charcoal filter

- ☐ Fitting location: below luggage compartment floor
- ☐ Removing and installing ⇒ [page 114](#)

7 - Fuel system diagnostic pump - V144-

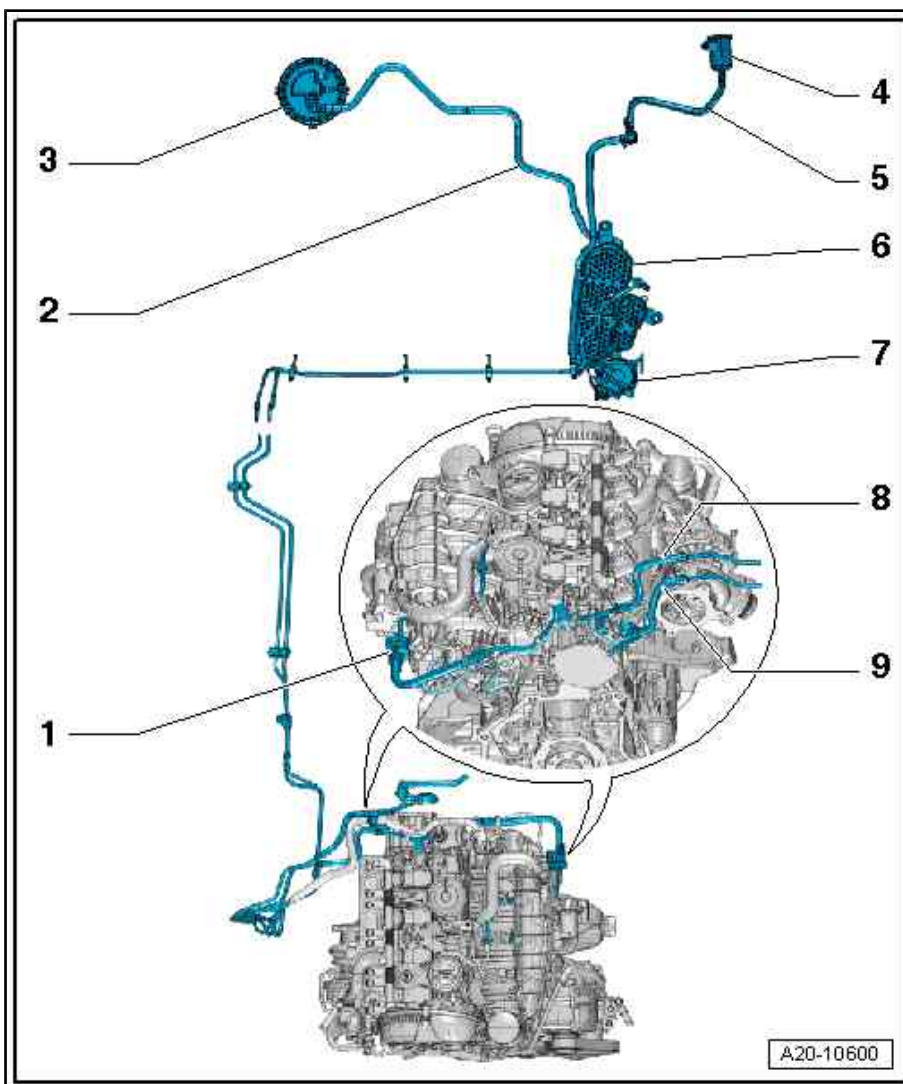
- ☐ From model year 2013 onwards replaced by control unit for fuel tank leak detection - J909- with integrated tank pressure sensor - G400-
- ☐ Fitting location: at activated charcoal filter below luggage compartment floor
- ☐ Checking in Guided Fault Finding mode ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 117](#)

8 - Breather line

- ☐ From activated charcoal filter to activated charcoal filter solenoid valve 1 - N80-
- ☐ Clipped onto retainers on underbody

9 - Vacuum line

- ☐ From engine to fuel system diagnostic pump - V144-
- ☐ Clipped onto retainers on underbody



5.1.2 Connection diagram - activated charcoal filter system with tank leak diagnostic system, vehicles with 6-cylinder engine, USA vehicles



Note

The illustration shows the diagram of connections for the 3.2 ltr. FSI engine.

1 - Breather line

- ☐ From activated charcoal filter to activated charcoal filter solenoid valve 1 - N80-
- ☐ Clipped onto retainers on underbody

2 - Vacuum line

- ☐ From engine to fuel system diagnostic pump - V144-
- ☐ Clipped onto retainers on underbody

3 - Breather line

- ☐ From flange for fuel tank to activated charcoal filter
- ☐ Clipped onto retainers on underbody

4 - Flange for fuel tank

5 - Air filter

- ☐ For fuel system diagnostic pump - V144-

6 - Connecting line

- ☐ From fuel system diagnostic pump - V144- to air filter
- ☐ Clipped onto retainers on underbody

7 - Activated charcoal filter

- ☐ Fitting location: below luggage compartment floor

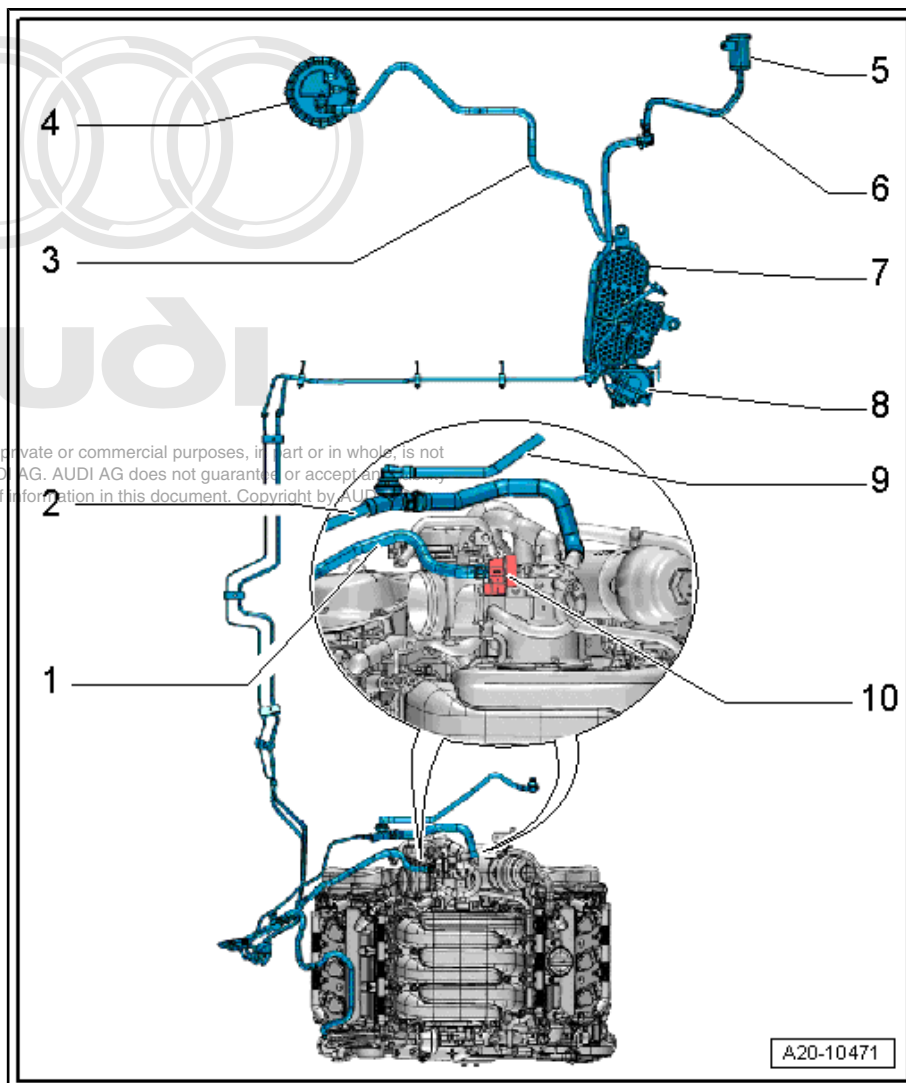
- ☐ Removing and installing ⇒ [page 114](#)

8 - Fuel system diagnostic pump - V144-

- ☐ From model year 2013 onwards replaced by control unit for fuel tank leak detection - J909- with integrated tank pressure sensor - G400-
- ☐ Fitting location: at activated charcoal filter below luggage compartment floor
- ☐ Checking in [Guided Fault Finding](#) mode ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 117](#)

9 - To brake servo

10 - Activated charcoal filter solenoid valve 1 - N80-



5.1.3 Connection diagram - activated charcoal filter system with tank leak diagnostic system, vehicles with 8-cylinder engine, USA vehicles

1 - Vacuum line

- ❑ From engine to fuel system diagnostic pump - V144-
- ❑ Clipped onto retainers on underbody

2 - Breather line

- ❑ From flange for fuel tank to activated charcoal filter
- ❑ Clipped onto retainers under luggage compartment floor

3 - Flange for fuel tank

4 - Air filter

- ❑ For fuel system diagnostic pump - V144-

5 - Connecting line

- ❑ From fuel system diagnostic pump - V144- to activated charcoal filter
- ❑ Clipped onto retainers on underbody

6 - Activated charcoal filter

- ❑ Fitting location: below luggage compartment floor
- ❑ Removing and installing ⇒ [page 114](#)

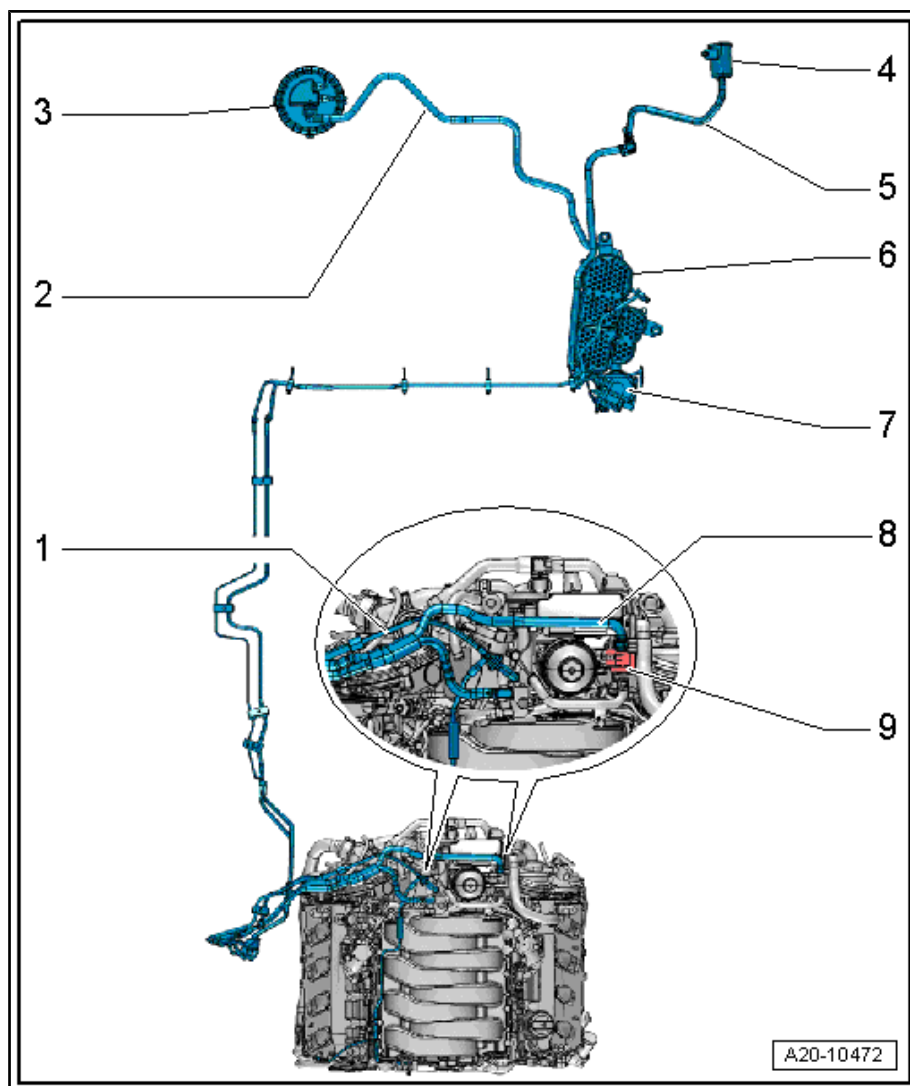
7 - Fuel system diagnostic pump - V144-

- ❑ From model year 2013 onwards replaced by control unit for fuel tank leak detection - J909- with integrated tank pressure sensor - G400-
- ❑ Fitting location: at activated charcoal filter below luggage compartment floor
- ❑ Checking in [Guided Fault Finding](#) mode ⇒ Vehicle diagnostic tester
- ❑ Removing and installing ⇒ [page 117](#)

8 - Breather line

- ❑ From activated charcoal filter to activated charcoal filter solenoid valve 1 - N80-
- ❑ Clipped onto retainers on underbody

9 - Activated charcoal filter solenoid valve 1 - N80-



5.2 Exploded view - activated charcoal filter system

⇒ ["5.2.1 Exploded view - activated charcoal filter system, rest-of-world vehicles", page 111](#)

⇒ ["5.2.2 Exploded view - activated charcoal filter system and tank leak diagnostic system, USA vehicles", page 112](#)

5.2.1 Exploded view - activated charcoal filter system, rest-of-world vehicles

1 - Breather line

- ☐ To activated charcoal filter solenoid valve 1 - N80-
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)
- ☐ Clipped onto retainers on underbody

2 - O-ring

3 - Valve

4 - Breather line

- ☐ From fuel tank
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)

5 - Vent line

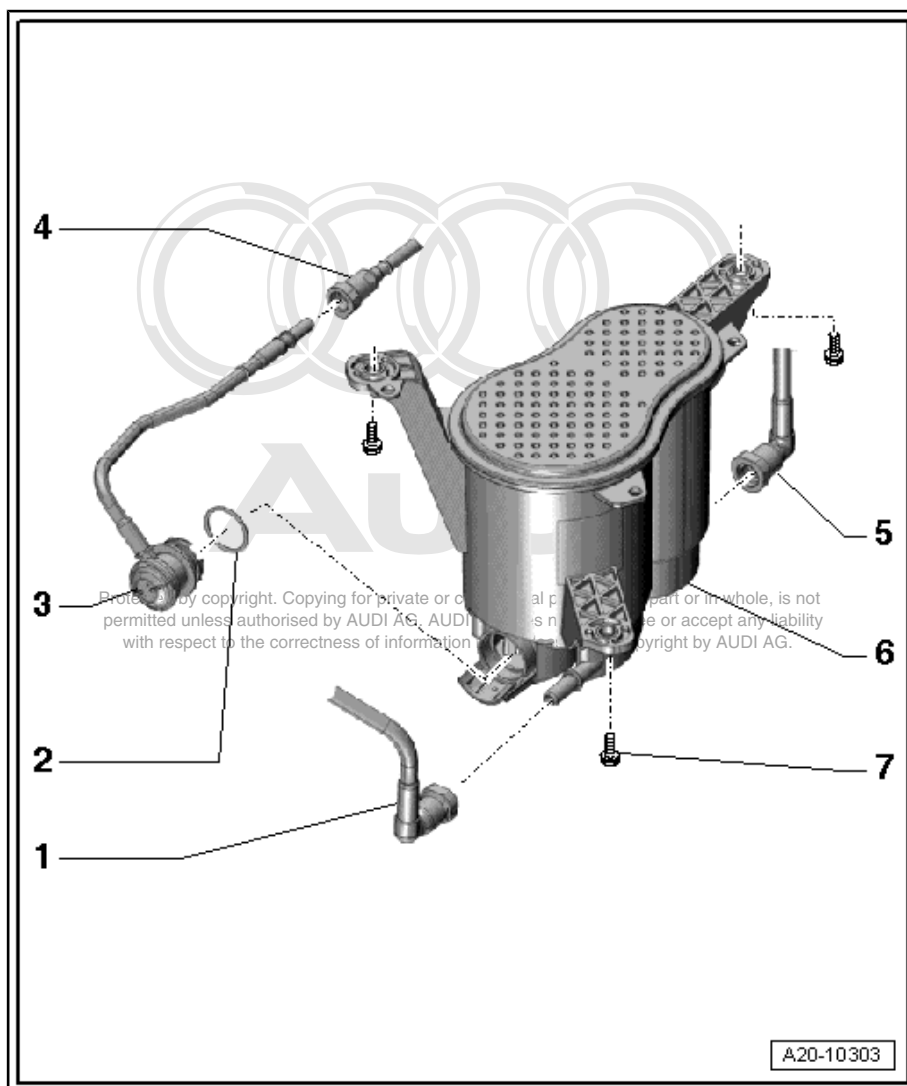
- ☐ Open to atmosphere at rear left of vehicle below wheel housing liner

6 - Activated charcoal filter

- ☐ Fitting location: rear left on underbody behind cover
- ☐ Removing and installing ⇒ [page 113](#)

7 - Bolt

- ☐ 16 Nm



5.2.2 Exploded view - activated charcoal filter system and tank leak diagnostic system, USA vehicles



Note

- ♦ Fuel system diagnostic pump - V144- ➔ [Item 1 \(page 112\)](#) was fitted in vehicles up to model year 2012.
- ♦ Control unit for fuel tank leak detection - J909- with integrated tank pressure sensor - G400- is installed from model year 2013 onwards ➔ [Item 1 \(page 112\)](#) .

1 - Fuel system diagnostic pump - V144-

- ❑ From model year 2013 onwards: control unit for fuel tank leak detection - J909- with integrated tank pressure sensor - G400-
- ❑ Fitting location: rear left on underbody behind cover
- ❑ Checking in [Guided Fault Finding](#) mode ➔ [Vehicle diagnostic tester](#)
- ❑ Removing and installing -V144- ➔ [page 117](#) ; control unit for fuel tank leak detection - J909- with integrated tank pressure sensor - G400- ➔ [page 117](#)
- ❑ Removing and installing air filter for tank leak diagnostic system ➔ [page 117](#)

2 - Clip

- ❑ Use correct type of clip (as original equipment) ➔ [Electronic parts catalogue](#)

3 - Vent line

4 - Bolt

- ❑ 4 Nm

5 - Bolt

- ❑ 16 Nm

6 - Rubber grommet

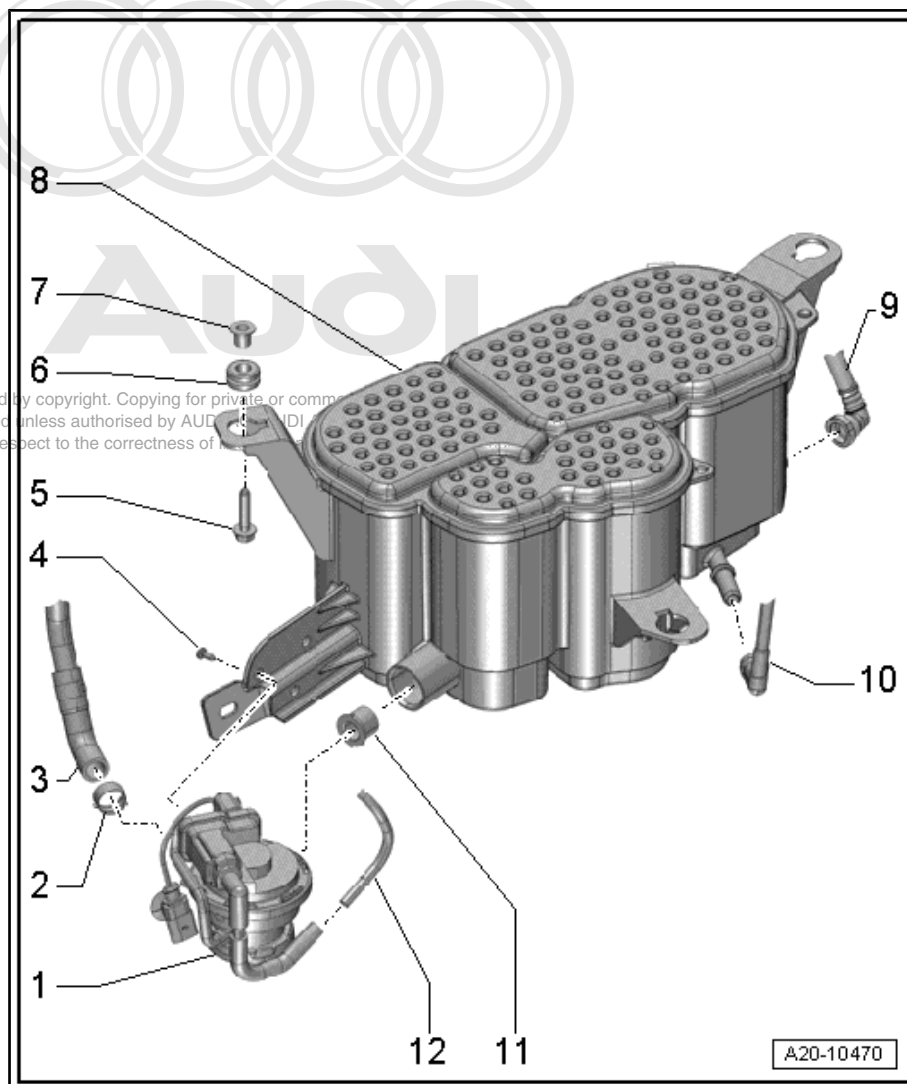
7 - Bush

8 - Activated charcoal filter

- ❑ Fitting location: at bottom of spare wheel well
- ❑ Removing and installing ➔ [page 114](#)

9 - Breather line

- ❑ To flange on fuel tank
- ❑ Press release tab on connection piece to disconnect ➔ [page 99](#)



10 - Breather line

- ☐ To activated charcoal filter solenoid valve 1 - N80-
- ☐ Press release tab on connection piece to disconnect ⇒ [page 99](#)

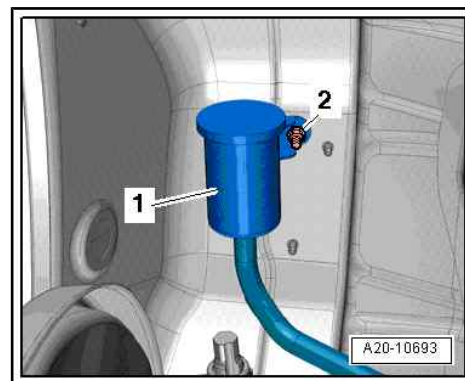
11 - Seal

12 - Vacuum line

- ☐ To engine

Air filter for fuel system diagnostic pump - V144- - tightening torque

- Tighten nut -2- to 5 Nm.



5.3 Removing and installing activated charcoal filter

⇒ ["5.3.1 Removing and installing activated charcoal filter - rest-of-world vehicles", page 113](#)

⇒ ["5.3.2 Removing and installing activated charcoal filter - USA vehicles", page 114](#)

5.3.1 Removing and installing activated charcoal filter - rest-of-world vehicles

Removing

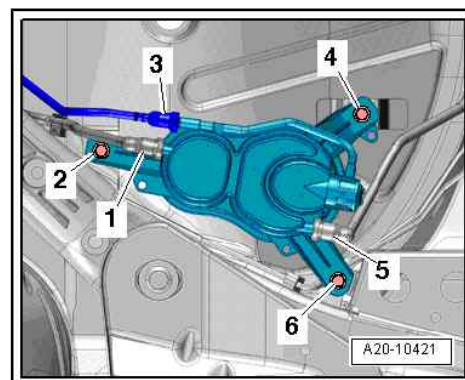
- Observe safety precautions ⇒ [page 1](#).
- Observe rules for cleanliness ⇒ [page 4](#).
- Remove underbody trim (rear left) ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view - underbody trim .
- Detach vent line -1- ⇒ [page 99](#) .
- Detach breather line -3- leading to fuel tank ⇒ [page 99](#) .
- Disconnect breather line -5- leading to solenoid valve 1 for activated charcoal filter system - N80- by pressing release tab.
- Unscrew bolts -2, 4 and 6- and remove activated charcoal filter.

Installing

- Tightening torque
⇒ ["5.2.1 Exploded view - activated charcoal filter system, rest-of-world vehicles", page 111](#)

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

- Connect vent and breather lines so they engage audibly.



5.3.2 Removing and installing activated charcoal filter - USA vehicles



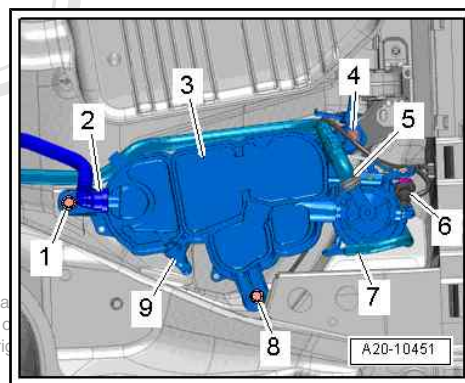
Note

Checking for leaks

⇒ ["5.4.1 Performing tank leak diagnosis - vehicles up to model year 2012, USA vehicles", page 114](#)

Removing

- Observe safety precautions ⇒ [page 1](#) .
- Observe rules for cleanliness ⇒ [page 4](#) .
- Remove underbody trim (rear left) ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view - underbody trim .
- Unplug electrical connector -6-.
- Detach vent line -5-.
- Detach breather line -7-.
- Disconnect breather line -9- leading to solenoid valve 1 for activated charcoal filter system - N80- by pressing release tab.
- Disconnect breather line -2- leading to fuel tank by pressing release tab.
- Unscrew bolts -1, 4, 8- and remove activated charcoal filter.



Installing

- Tightening torque
⇒ ["5.2.2 Exploded view - activated charcoal filter system and tank leak diagnostic system, USA vehicles", page 112](#)

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

- Connect vent and breather lines so they engage audibly.

5.4 Checking fuel system for leaks

⇒ ["5.4.1 Performing tank leak diagnosis - vehicles up to model year 2012, USA vehicles", page 114](#)

5.4.1 Performing tank leak diagnosis - vehicles up to model year 2012, USA vehicles

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

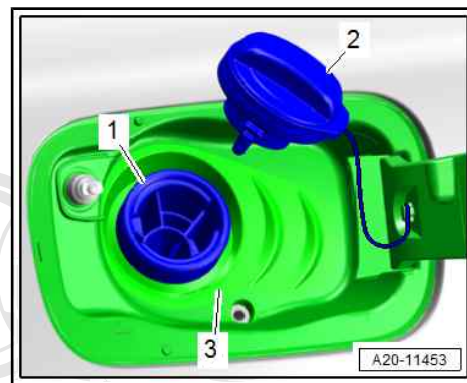
The following locations/components must be checked when checking the fuel tank system and tank breather system for leaks. Initiate a tank leak diagnosis after eliminating a suspected leak to make sure the diagnosed leak has been eliminated.

- Switch off ignition.
- Check whether filler cap -2- of fuel tank was closed properly during diagnosis.
- Check whether seal between filler cap and fuel filler neck -1- is damaged or deformed; renew if necessary.



Note

Disregard -item 3-.



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- Remove rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/ individual seats .
- Unscrew cover for flange -arrows-.

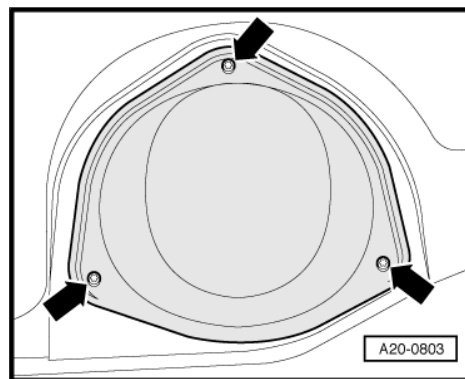


Note

Observe notes on installing flanges ⇒ [page 43](#) and ⇒ [page 56](#) .

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- 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 renew 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 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.

5.5 Removing and installing fuel system diagnostic pump

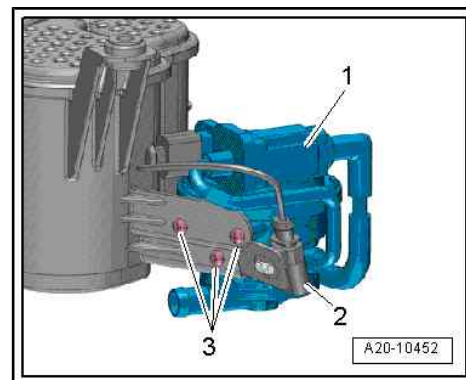
Removing

- Remove activated charcoal filter ➤ [page 114](#) .
- Unplug electrical connector -2- and move clear.
- Remove bolts -3-.
- Unclip diagnostic pump -1- from bracket at activated charcoal filter.

Installing

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

- Tightening torque
➤ ["5.2.2 Exploded view - activated charcoal filter system and tank leak diagnostic system, USA vehicles"](#), [page 112](#)



Note

Renew seal.

- Install activated charcoal filter ➤ [page 114](#) .

5.6 Removing and installing control unit for fuel tank leak detection with integrated tank pressure sensor

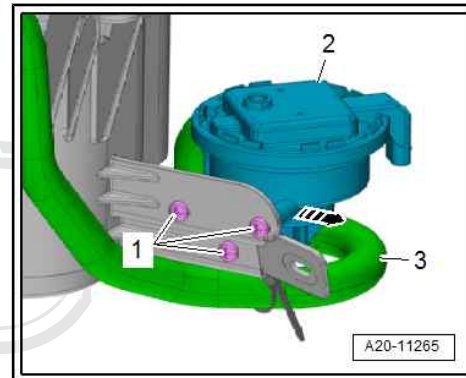
Removing

- Remove activated charcoal filter ➤ [page 114](#) .
- Release hose clip and detach vent hoses -3-.
- Remove bolts -1-.
- Pull control unit for fuel tank leak detection - J909- with integrated tank pressure sensor - G400- -item 2- off activated charcoal filter in direction of -arrow-.

Installing

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

- Tightening torque
➤ ["5.2.2 Exploded view - activated charcoal filter system and tank leak diagnostic system, USA vehicles"](#), [page 112](#)



Note

Renew seal.

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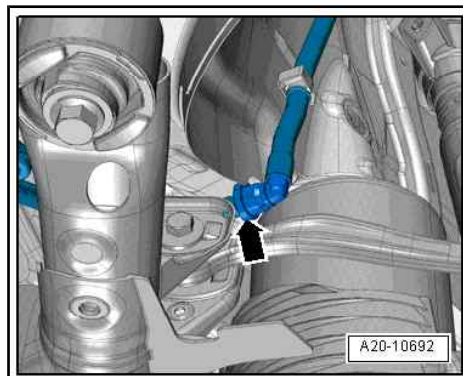
- Install activated charcoal filter ➤ [page 114](#) .

5.7 Removing and installing air filter for tank leak diagnostic system

Removing

- Observe safety precautions ➤ [page 1](#) .
- Observe rules for cleanliness ➤ [page 4](#) .

- Remove rear left wheel.
- Remove rear left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Press release tab and disconnect vent line -arrow-.

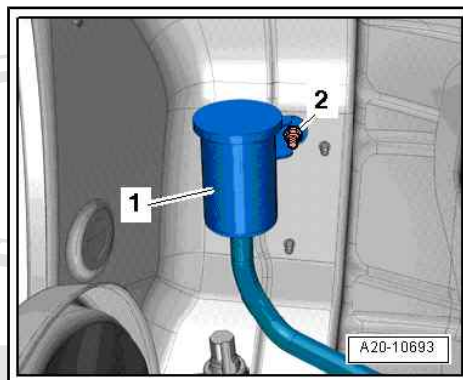


- Remove nut -2- and detach air filter -1- for fuel system diagnostic pump - V144- .

Installing

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

- Tighten nut for air filter for fuel system diagnostic pump - V144- ⇒ [page 113](#) .
- Install rear left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear) .
- Fit rear wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Tightening torque for wheel bolts .



5.8 Tank leak diagnostic system

⇒ [“5.8.1 Tank leak diagnostic system, vehicles up to model year 2012, USA vehicles”, page 118](#)

⇒ [“5.8.2 Tank leak diagnostic system, vehicles from model year 2013 onwards, USA vehicles”, page 119](#)

5.8.1 Tank leak diagnostic system, vehicles up to model year 2012, USA vehicles

Function

The tank leak diagnostic system detects leaks in the complete fuel system, including 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.
- ◆ 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 event 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 tester ➔ [page 114](#) .



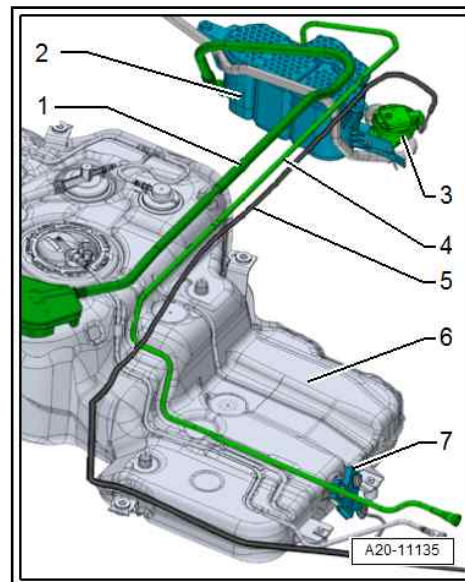
Note

- ◆ *The diagnosis can be repeated up to 10 times during the first 20 minutes after a cold start.*
- ◆ *By selecting measured value block 071 on the vehicle diagnostic tester, you can see whether the automatic tank leak diagnosis is being performed ➔ [page 114](#) .*

5.8.2 Tank leak diagnostic system, vehicles from model year 2013 onwards, USA vehicles

- ◆ The tank leak diagnostic system makes use of the fact that a partial vacuum is formed inside the fuel system when fuel in the tank -6- cools down.
- ◆ The control unit for fuel tank leak detection - J909- -item 3- with integrated tank pressure sensor - G400- registers the vacuum and the temperature in the fuel tank. The system is judged to be leak-tight when a vacuum of 2.5 mbar is measured.
- ◆ If no vacuum is formed, there is a leak in the fuel system. In this case a fault will be stored in the event memory of the engine control unit.

- 1 - Breather line
- 2 - Activated charcoal filter
- 4 - Breather line to engine
- 5 - Signal wire to engine control unit - J623-
- 7 - Not fitted



6 Accelerator mechanism

⇒ ["6.1 Exploded view - accelerator pedal module", page 120](#)

⇒ ["6.2 Removing and installing accelerator pedal module with accelerator position sender G79 / G185", page 121](#)

6.1 Exploded view - accelerator pedal module

1 - Accelerator pedal module

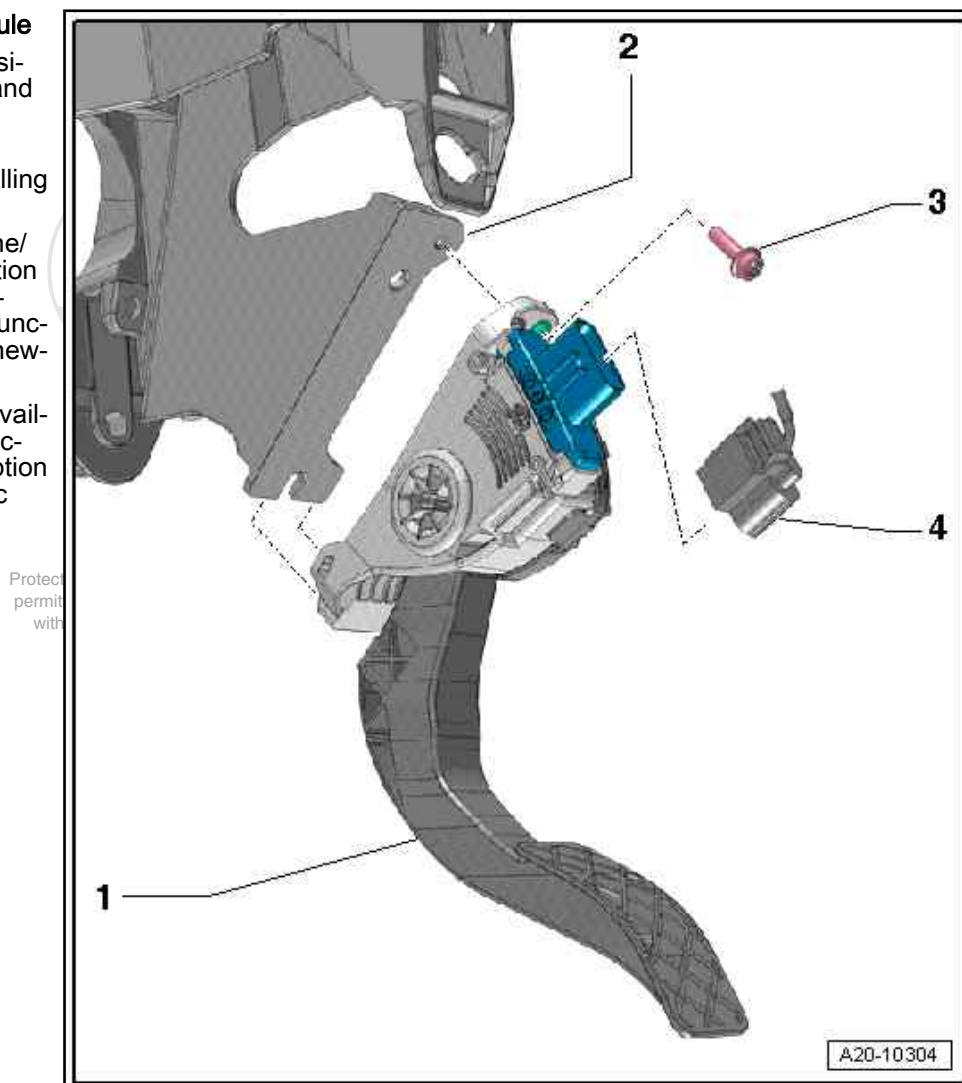
- ☐ With accelerator position sender - G79- and accelerator position sender 2 - G185-
- ☐ Removing and installing
⇒ [page 121](#)
- ☐ Depending on engine/ gearbox type, adaption may need to be performed in "Guided Functions" mode after renewal
- ☐ If this menu item is available in "Guided Functions", perform adaption
⇒ Vehicle diagnostic tester.

2 - Pedal bracket

3 - Bolt

- ☐ 8 Nm

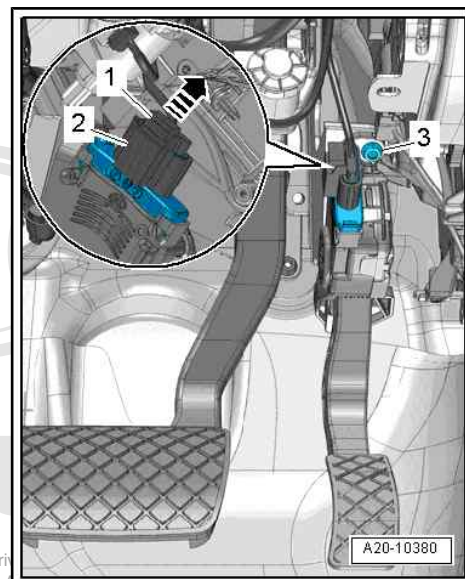
4 - Electrical connector



6.2 Removing and installing accelerator pedal module with accelerator position sender -G79- / -G185-

Removing

- Remove dash panel cover (bottom) on driver's side ⇒ General body repairs, interior; Rep. gr. 68 ; Shelves / trim panels; Overview of fitting locations - shelves/covers/trim panels .
- Push release tab -1- upwards -arrow- and unplug electrical connector -2-.
- Remove bolt -3- and take out accelerator pedal module downwards.

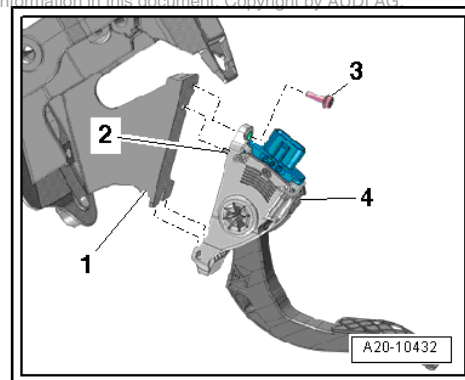


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Installing

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

- Tightening torque
 ⇒ ["6.1 Exploded view - accelerator pedal module", page 120](#)
- Attach accelerator pedal module -4- to bottom of pedal bracket -1-, insert centring pin -2- and tighten bolt -3-.
- Install dash panel cover (bottom) on driver's side ⇒ General body repairs, interior; Rep. gr. 68 ; Shelves / trim panels; Overview of fitting locations - shelves/covers/trim panels .



Note

- ◆ Depending on engine/gearbox type, adaption may need to be performed in "Guided Functions" mode after renewal.
- ◆ If this menu item is available in "Guided Functions", perform adaption ⇒ Vehicle diagnostic tester.

7 Bleeding fuel system

⇒ ["7.1 Bleeding fuel system", page 122](#)

⇒ ["7.2 Bleeding fuel supply line leading to metering pump", page 122](#)

7.1 Bleeding fuel system

- ◆ Due to the design of the engine, with a fuel system pressurisation pump located in the fuel tank, it is not necessary to bleed the fuel system.
- ◆ The fuel system bleeds itself when the starter is operated.

7.2 Bleeding fuel supply line leading to metering pump

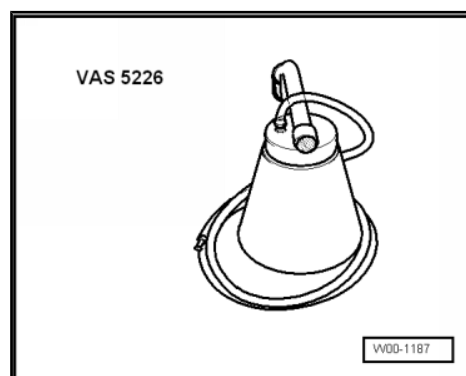


Note

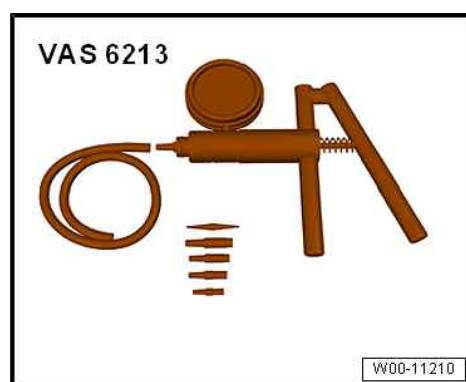
On vehicles with auxiliary heater, it is important to bleed the fuel supply line leading to the metering pump after working on the fuel delivery unit.

Special tools and workshop equipment required

- ◆ Diesel extractor - VAS 5226-



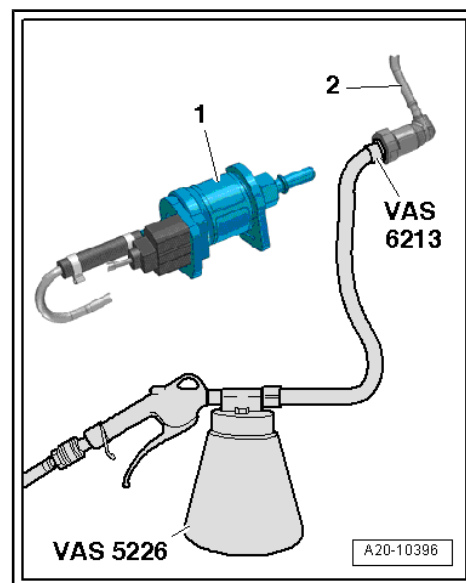
- ◆ Hand vacuum pump - VAS 6213-



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Procedure

- Auxiliary heater switched off.
- Connect diesel extractor - VAS 5226- to compressed air.
- Remove fuel supply line -2- from fuel tank at metering pump -1-.
- Connect diesel extractor - VAS 5226- to fuel supply line with adapter from hand vacuum pump - VAS 6213- and bleed fuel supply line by operating extractor briefly.
- Re-attach fuel supply line to metering pump.
- Switch auxiliary heating on and run at full load for approx. 10 minutes.



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8 Fuel pump

⇒ ["8.1 Checking fuel system pressurisation pump G6", page 124](#)

⇒ ["8.2 Removing and installing suction pipe", page 139](#)

⇒ ["8.3 Removing and installing fuel pump control unit J538", page 140](#)

⇒ ["8.4 Checking fuel pump control unit J538", page 151](#)

8.1 Checking fuel system pressurisation pump - G6-

⇒ ["8.1.1 Checking fuel system pressurisation pump G6 - A5/S5/RS 5 up to model year 2011, A4 up to model year 2012", page 124](#)

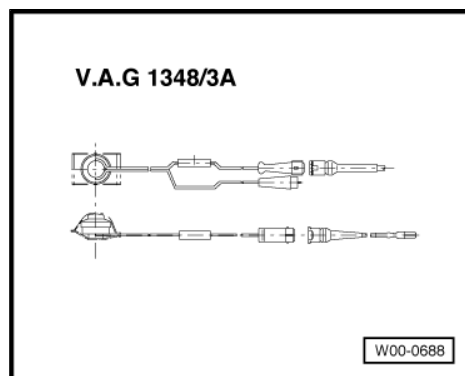
⇒ ["8.1.2 Checking fuel system pressurisation pump G6 - A5 from model year 2012 onwards, A4 with 4-cyl. and 6-cyl. engines from model year 2013 onwards, RS 5 from model year 2012 onwards, RS 4", page 133](#)

8.1.1 Checking fuel system pressurisation pump - G6- - A5/S5/RS 5 up to model year 2011, A4 up to model year 2012

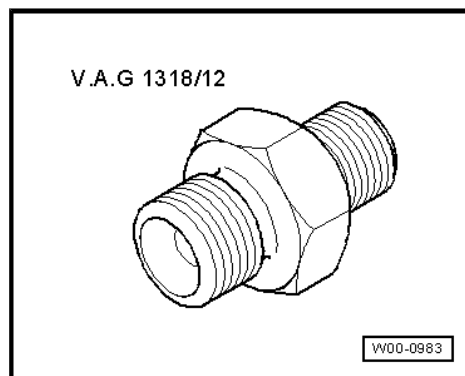
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Special tools and workshop equipment required

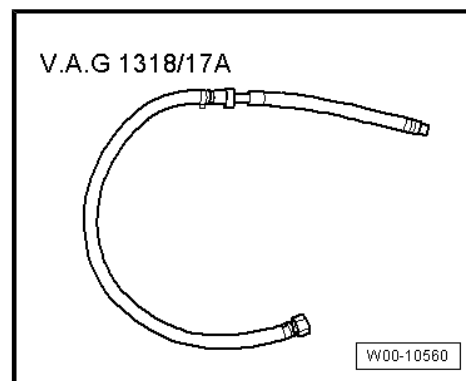
- ◆ Remote control - V.A.G 1348/3A- for V.A.G 1348 with adapter cable -V.A.G 1348/3-3-



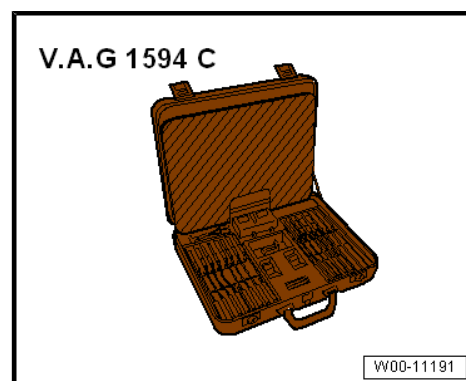
- ◆ Adapter -V.A.G 1318/12- for S5 (8-cylinder)



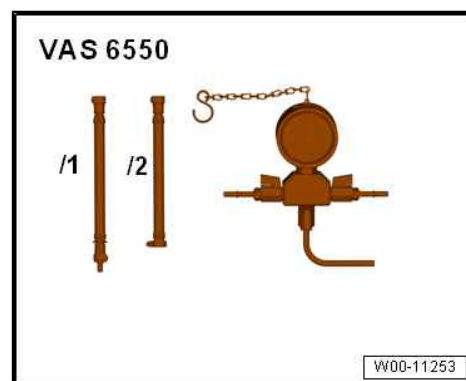
- ◆ Adapter set - V.A.G 1318/17A- for S5 (8-cylinder)



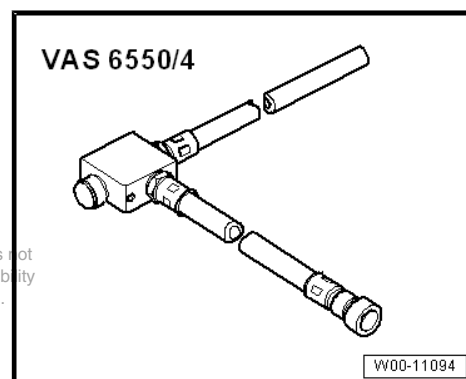
- ◆ Auxiliary measuring set - V.A.G 1594C-



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



- ◆ Pressure control valve - VAS 6550/4-

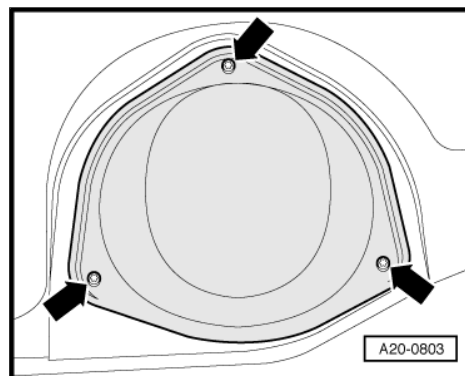


- ◆ Fuel-resistant measuring container

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A - Checking fuel delivery rate

- Observe test conditions ➔ [page 4](#) .
- Remove rear seat bench ➔ General body repairs, interior;
Rep. gr. 72 ; Rear seats; Removing and installing seat bench/
individual seats .
- Unscrew cover for flange -arrows-.

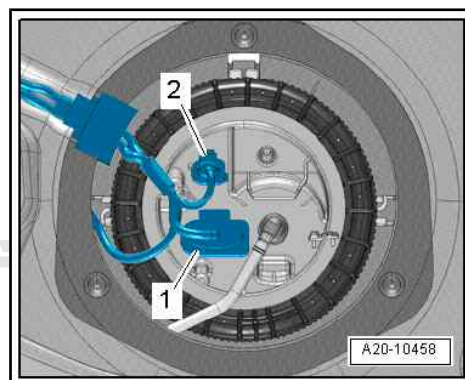


- Unplug electrical connector -1- on flange.

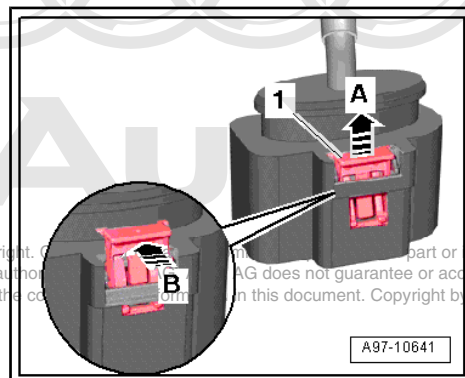


Note

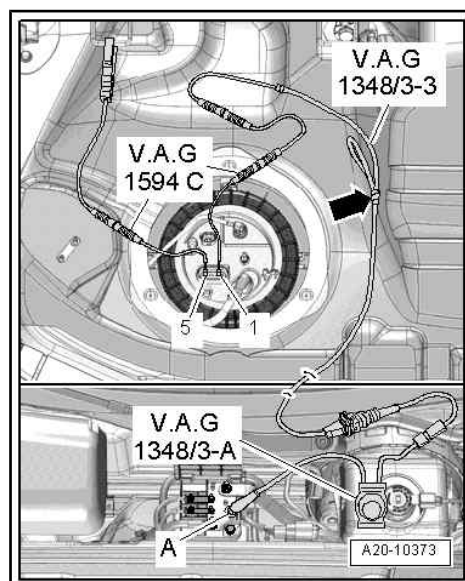
Disregard -item 2-.



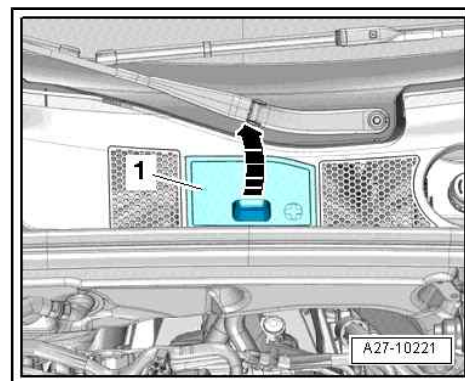
- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



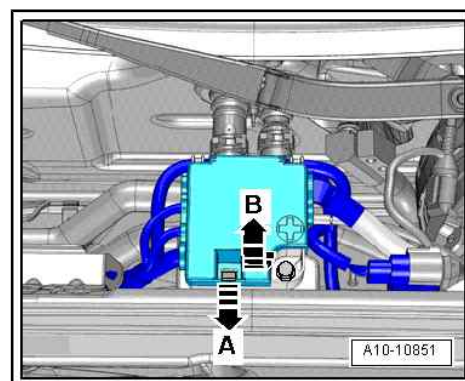
- Connect remote control - V.A.G 1348/3A- for V.A.G 1348 to contact -1- using adapter cable -V.A.G 1348/3-3- and test lead from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of adapter cable -V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -5- to vehicle body (earth) using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Move switch of remote control - V.A.G 1348/3A- for V.A.G 1348 to front of engine compartment.



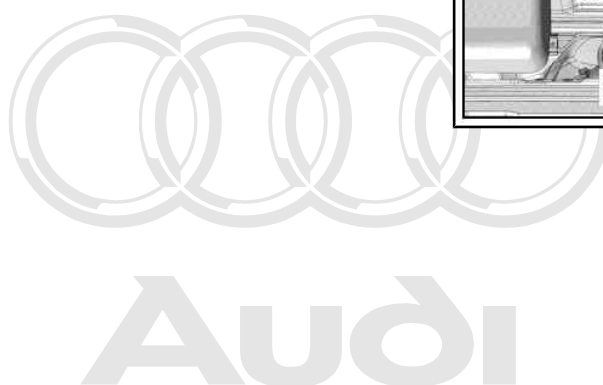
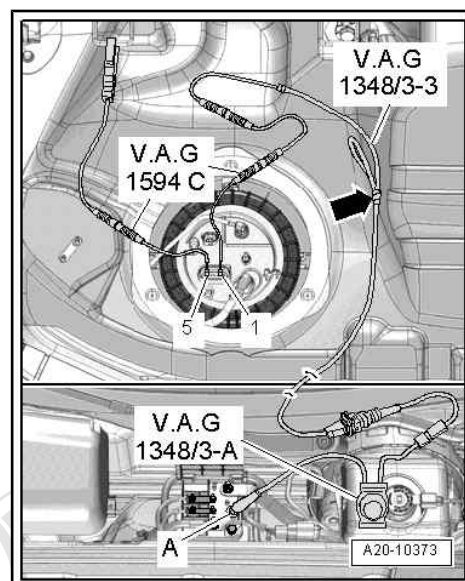
- Remove plenum chamber cover (centre) ⇒ General body repairs, exterior; Rep. gr. 50 ; Plenum chamber partition panel; Removing and installing plenum chamber cover .



- Release retainer -arrow A- and open cover -arrow B-.



- Connect crocodile clip to jump start socket - U6- -item A- in terminal 30 wiring junction 2 - TV22- located in plenum chamber.



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- Release and open tank flap.
- Remove filler cap -2- for fuel filler neck -1-.



Note

Disregard -item 3-.



WARNING

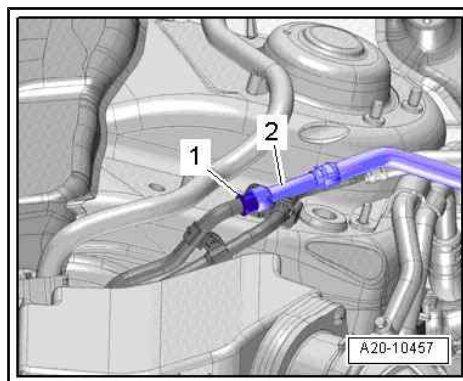
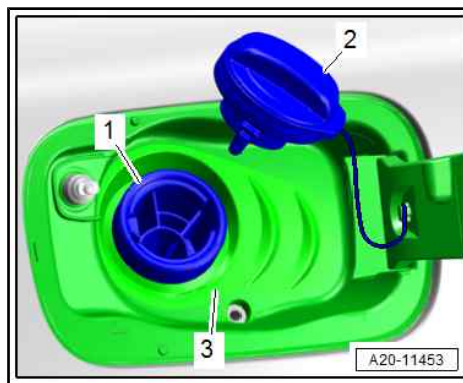
Risk of injury - fuel system operates under high pressure.

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

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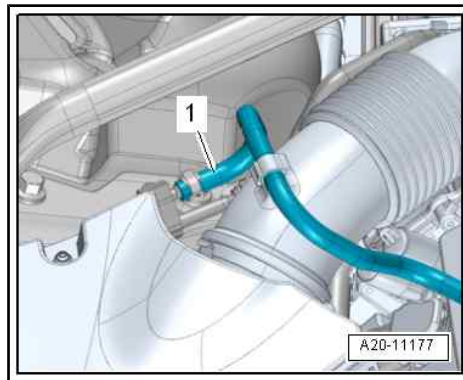
Vehicles with 4-cyl. engine:

- Disconnect fuel line -2-. Disconnecting plug-in connectors
⇒ [page 99](#)

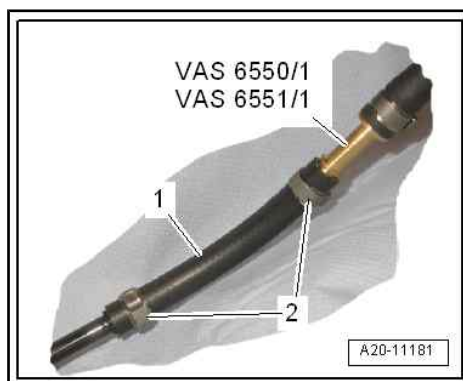


Vehicles with 6-cyl. FSI and TFSI engines:

- Release hose clip and detach fuel line -1-.

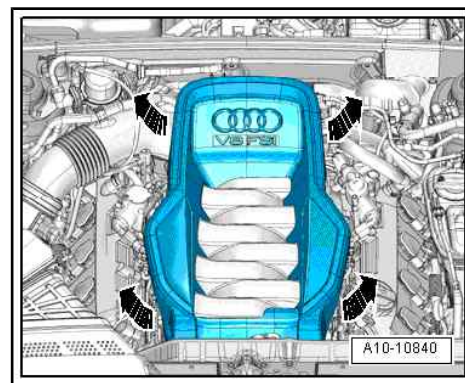


- Connect hose - VAS 6550/1- to fuel supply line with test hose -1- and secure with hose clips -2-.

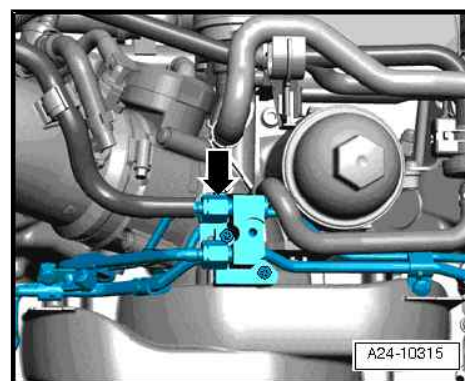


S5 with 8-cyl. engine:

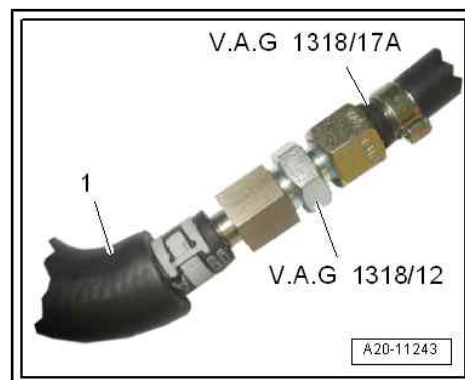
- Remove engine cover panel -arrows-.



- Disconnect fuel line -arrow-.



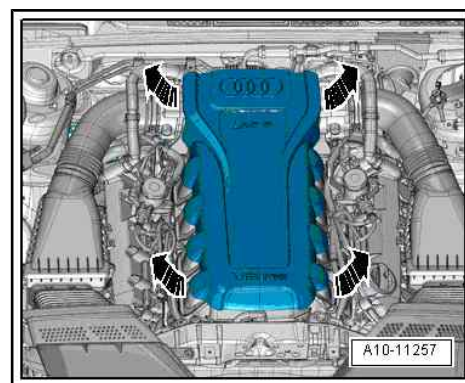
- Using adapter -V.A.G 1318/12-, connect hose -V.A.G 1318/17A- to fuel line -1-.



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RS 5: with respect to the correctness of information in this document. Copyright by AUDI AG.

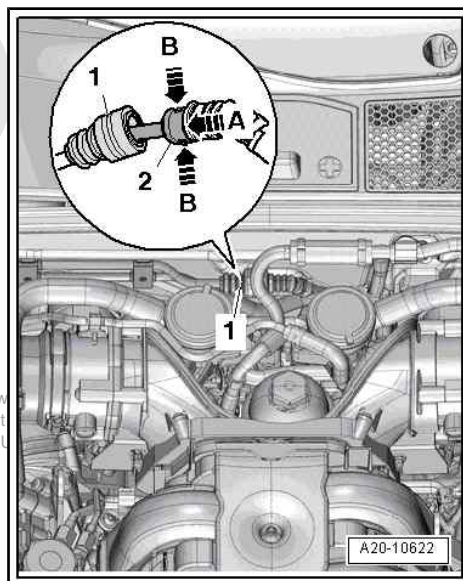
- Remove engine cover panel -arrows-.



- Push down protective sleeve -1- and disconnect hose connector -2- ➤ [page 99](#) .

Audi

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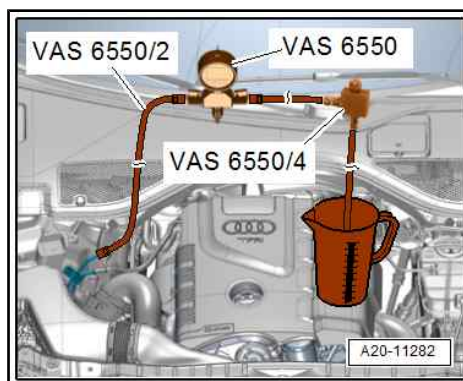
All vehicles (continued):

- Connect pressure tester - VAS 6550- to fuel supply line with hose - VAS 6550/2- .
- Attach pressure control valve - VAS 6550/4- and hold end of hose into fuel-resistant measuring container.



Note

Illustration shows measuring equipment connected on a 4-cyl. engine as an example.



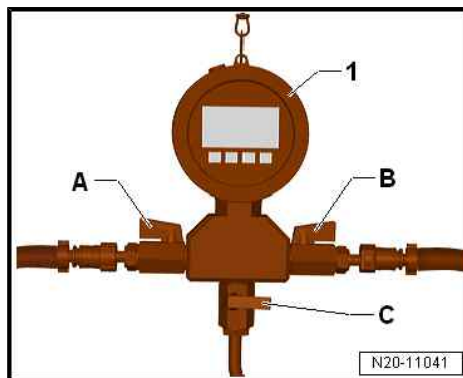
- Switch on pressure tester - VAS 6550- -item 1- by pressing **On/Off** button.
- Open cut-off valves -A and B-.
- Levers must point in direction of flow.



Caution

Risk of fuel escaping.

- ◆ **Cut-off valve -C- must be closed.**
- ◆ **The lever should point perpendicular to direction of flow.**

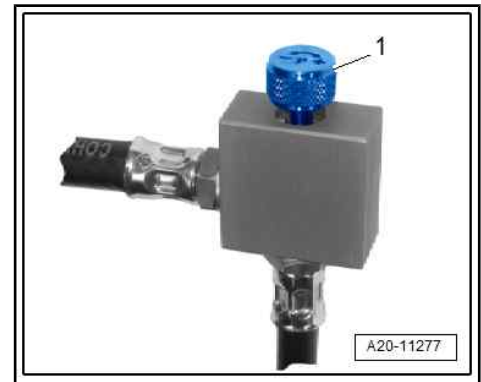


Note

To measure the fuel delivery rate, pressure must first be built up in the fuel line; the fuel pump must then operate against this pressure during the measurement. This pressure can be built up using the pressure tester - VAS 6550- as follows:

- Press remote control switch; fuel pump will start running.

- Build up pressure in fuel system by turning adjuster screw -1- on pressure control valve - VAS 6550/4- until correct pressure is reached.
- Specification: 4.0 bar
- Let go of remote control switch.
- From this point on, do not turn adjuster screw -1-.
- Drain measuring container.



- Press remote control switch for 15 seconds.
- Compare amount of fuel delivered with minimum delivery shown in diagram (cm³/15 sec.).



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

If the minimum delivery rate is attained:

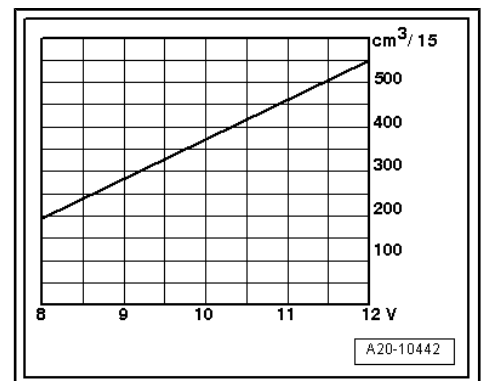
- ◆ Fuel delivery unit with fuel filter, fuel pressure regulator and fuel supply line OK.

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

- ◆ Fuel delivery unit is defective.
- ◆ Fuel filter is blocked.
- ◆ Fuel pressure regulator is defective.
- ◆ Fuel supply line crushed.



To find the precise cause of the fault, a pressure test must be performed on the fuel supply line as described below.



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B - Pressure test on fuel supply line

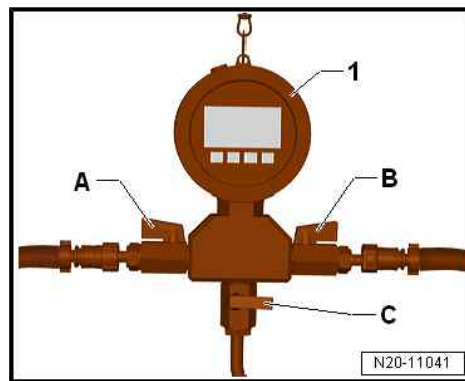
- Leave measuring equipment connected in the same way as for measuring the fuel delivery rate.
- Switch on pressure tester - VAS 6550- -item 1- by pressing **On/Off** button.
- Open cut-off valves -A and B-.
- Levers must point in direction of flow.



Caution

Risk of fuel escaping.

- ◆ **Cut-off valve -C- must be closed.**
- ◆ **The lever should point perpendicular to direction of flow.**



- Press remote control switch; fuel pump will start running.
- When fuel emerging is free of bubbles, close cut-off valve -B- to allow fuel pressure to build up.
- The lever should point perpendicular to direction of flow.
- Read fuel pressure off pressure tester - VAS 6550- :
- Specification: 5.0 ... 8.0 bar

If specification is attained although fuel delivery rate was not OK:

- ◆ Blocked fuel filter or crushed fuel supply line.

If specification is not attained:

- ◆ Fuel delivery unit or fuel pressure regulator (on fuel filter) defective.

C - Checking residual pressure

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

If the residual pressure drops below 3 bar:

- ◆ Check fuel lines and their connections for leaks.
- ◆ Non-return valve in fuel pump is leaking, renew fuel delivery unit ➔ [page 40](#) .

Assembling

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

- The ignition must be switched off.
- Remove remote control.

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Note

Before removing the pressure tester -1-, release the fuel pressure by opening the cut-off valves -B, C- and allowing fuel to drain off into a measuring container.

- Detach pressure tester - VAS 6550- together with connection leads.
- Connect fuel supply line:

Vehicles with 6-cyl. FSI and TFSI engines:

- Secure fuel supply line with hose clip (refer to ⇒ Electronic parts catalogue) and then pull to check that line is properly secured.

Vehicles with 4-cyl. engine and RS 5:

- Connect fuel supply line, making sure it engages audibly.
- Press fuel supply line in again and then pull to check that plug-in connector is correctly engaged.

S5 with 8-cyl. engine:

- Secure fuel line to fuel rail ⇒ Rep. gr. 24 ; Injectors; Exploded view - fuel rail with injectors .

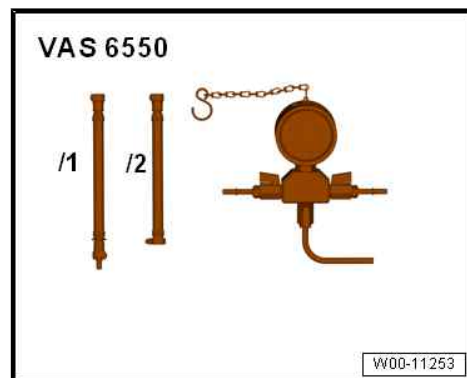
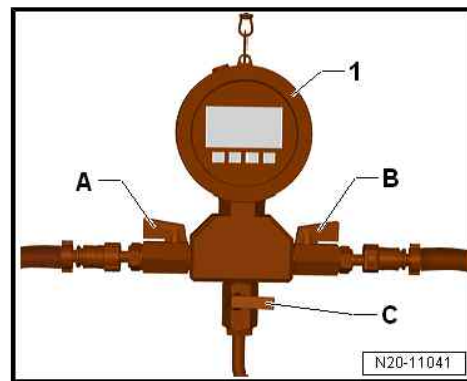
All vehicles (continued):

- Install cover for flange ⇒ [page 7](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

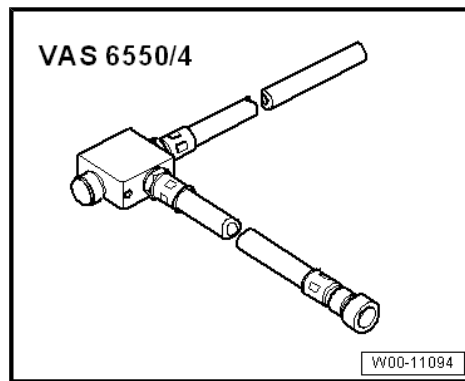
8.1.2 Checking fuel system pressurisation pump - G6- - A5 from model year 2012 onwards, A4 with 4-cyl. and 6-cyl. engines from model year 2013 onwards, RS 5 from model year 2012 onwards, RS 4

Special tools and workshop equipment required

- ◆ Pressure tester - VAS 6550- with hoses - VAS 6550/2-



◆ Pressure control valve - VAS 6550/4-



- ◆ Vehicle diagnostic tester
- ◆ Fuel-resistant measuring container

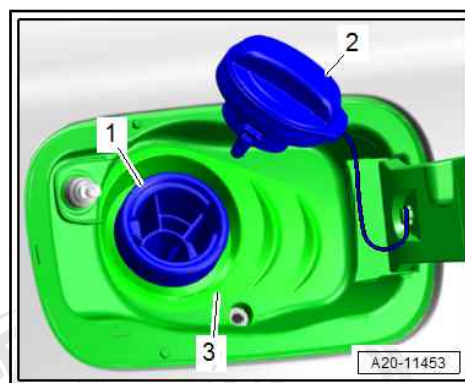
A - Checking fuel delivery rate

- Observe test conditions ➔ [page 4](#) .
- Release and open tank flap.
- Remove filler cap -2- for fuel filler neck -1-.



Note

Disregard -item 3-.



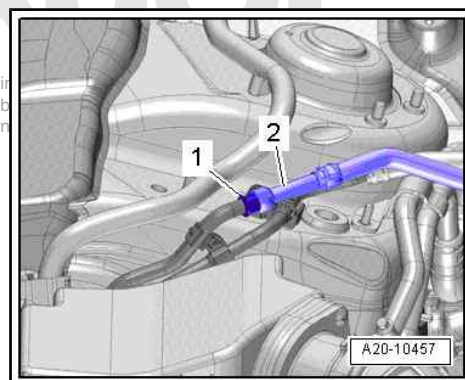
WARNING

Risk of injury - fuel system operates under high pressure.

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

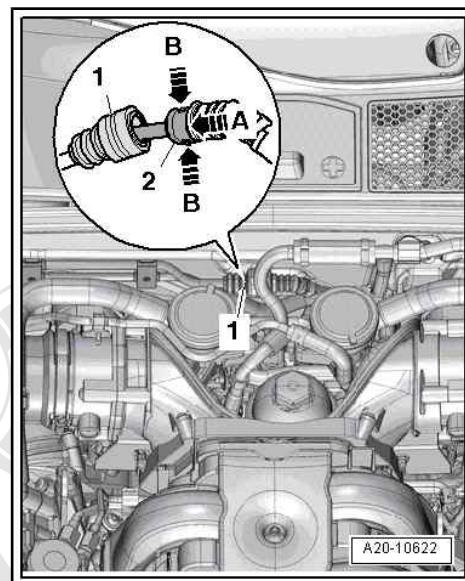
Vehicles with 4-cyl. and 6-cyl. engines:

- Disconnect fuel line -2-. Disconnecting plug-in connectors ➔ [page 99](#)



RS 4, RS 5:

- Push down protective sleeve -1- and disconnect hose connector -2- ➔ [page 99](#) .



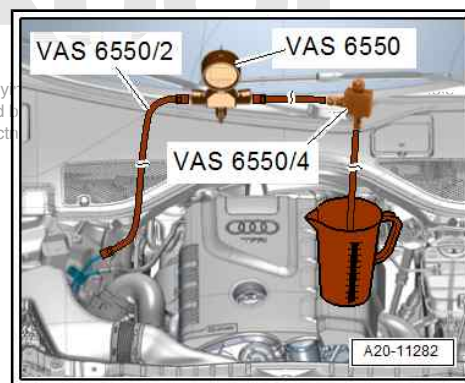
All vehicles (continued):

- Connect pressure tester - VAS 6550- to fuel supply line with hose - VAS 6550/2- .
- Attach pressure control valve - VAS 6550/4- and hold end of hose into fuel-resistant measuring container.



Note

Illustration shows measuring equipment connected on a 4-cyl. engine as an example.

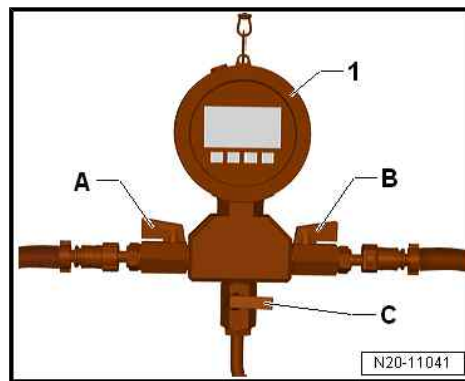


- Switch on pressure tester - VAS 6550- -item 1- by pressing **On/Off** button.
- Open cut-off valves -A and B-.
- Levers must point in direction of flow.

**Caution**

Risk of fuel escaping.

- ◆ *Cut-off valve -C- must be closed.*
- ◆ *The lever should point perpendicular to direction of flow.*

**Note**

To measure the fuel delivery rate, pressure must first be built up in the fuel line; the fuel pump must then operate against this pressure during the measurement. This pressure can be built up using the pressure control valve - VAS 6550/4- as follows:

- Connect vehicle diagnostic tester .
- Switch on the ignition and select the following menu options on the vehicle diagnostic tester :
 - ◆ **Vehicle self-diagnosis**
 - ◆ **Engine electronics**
 - ◆ **Basic setting**
 - ◆ **Empty fuel tank**
- Press **Start**: The fuel pump will start running.



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- Build up pressure in fuel system by turning adjuster screw -1- on pressure control valve - VAS 6550/4- until correct pressure is reached.
- Specification: 4.3 bar
- From this point on, do not turn adjuster screw -1-.
- Press **Stop**.
- Drain measuring container.
- For measurement, press **Start** again and let fuel pump run for 15 seconds.
- Press **Stop** after 15 seconds.
- Check amount of fuel delivered in measuring container.
- Specification: minimum delivery rate 800 cm³/15 sec.

If the minimum delivery rate is attained:

- ◆ Fuel delivery unit with fuel filter, fuel pressure regulator and fuel supply line OK.

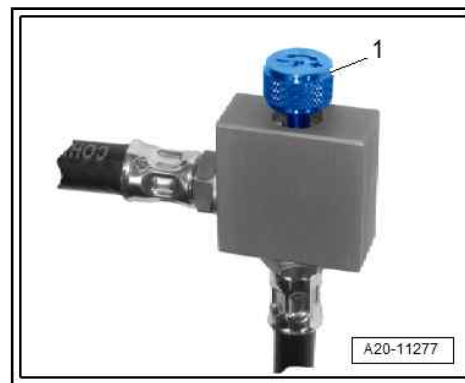
If minimum delivery rate is not achieved, check for the following causes:

- ◆ Fuel delivery unit is defective.
- ◆ Fuel filter blocked or fuel pressure regulator defective (both in flange).
- ◆ Fuel supply line crushed.



Note

To find the precise cause of the fault, a pressure test must be performed on the fuel supply line as described below.



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B - Pressure test on fuel supply line

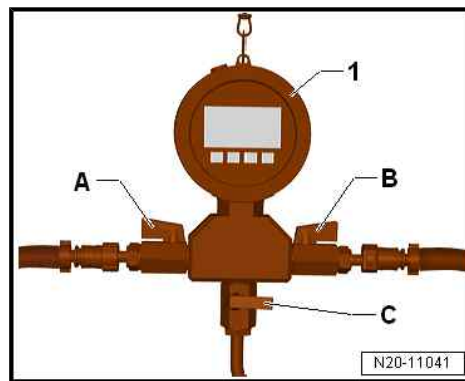
- Leave measuring equipment connected in the same way as for measuring the fuel delivery rate.
- Vehicle diagnostic tester still connected.
- Switch on pressure tester - VAS 6550- -item 1- by pressing **On/Off** button.
- Open cut-off valves -A and B-.
- Levers must point in direction of flow.



Caution

Risk of fuel escaping.

- ◆ **Cut-off valve -C- must be closed.**
- ◆ **The lever should point perpendicular to direction of flow.**



- Press **Start** on vehicle diagnostic tester display to start the fuel pump.
- When fuel emerging is free of bubbles, close cut-off valve -B- to allow fuel pressure to build up.
- The lever should point perpendicular to direction of flow.
- Read fuel pressure off pressure tester - VAS 6550- :
- Specification: 5.0 ... 8.0 bar
- Press **Stop**.

If specification is attained although fuel delivery rate was not OK:

- ◆ Fuel filter in flange blocked or fuel supply line crushed.

If specification is not attained:

- ◆ Fuel delivery unit or fuel pressure regulator (on flange) defective.

C - Checking residual pressure

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

If the residual pressure drops below 3 bar:

- ◆ Check fuel lines and their connections for leaks.
- ◆ Non-return valve in fuel pump is leaking, renew fuel delivery unit ⇒ [page 40](#) .

Assembling

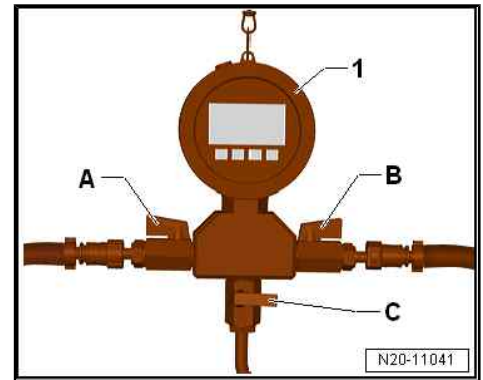
Installation is carried out in the reverse order; note the following:

- The ignition must be switched off.

i Note

Before removing the pressure tester -1-, release the fuel pressure by opening the cut-off valves -B, C- and allowing fuel to drain off into a measuring container.

- Detach pressure tester - VAS 6550- together with connection leads.
- Connect fuel supply line, making sure it engages audibly.
- Press fuel supply line in again and then pull to check that plug-in connector is correctly engaged.



8.2 Removing and installing suction pipe

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i Note

A suction pipe is only fitted on four-wheel drive A5 models up to model year 2011 and A4 models up to model year 2012.

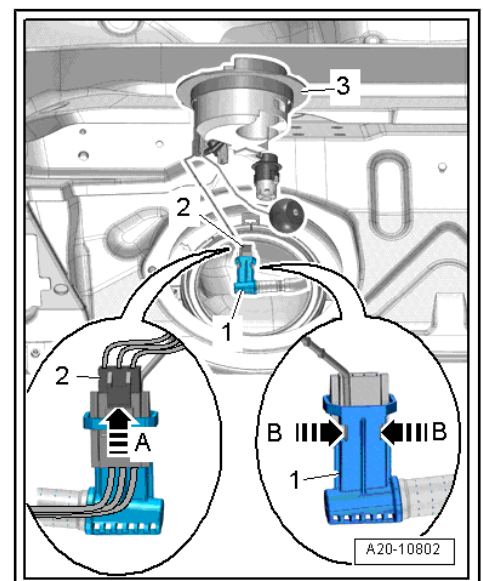
Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .
- Remove fuel delivery unit ➔ [page 40](#) .
- Remove fuel gauge sender 2 - G169- ➔ [page 87](#) .
- Carefully take fuel gauge sender 2 - G169- -item 3- with suction pipe -1- out of opening in fuel tank.

i Note

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

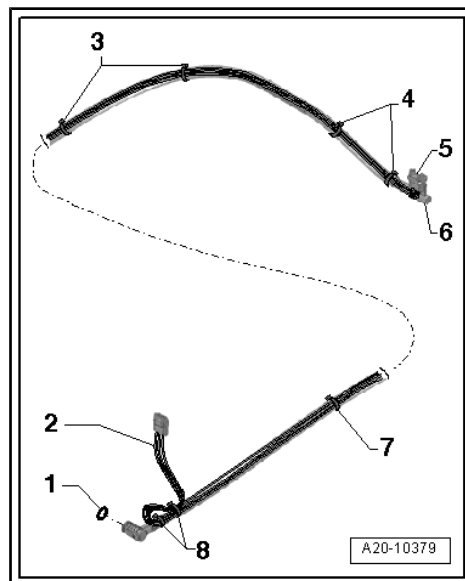
- Press release tab -arrow A- and unplug electrical connector -2-.
- Use long-nose pliers to compress catches -arrows B- and pull off suction pipe.



Installing

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

- Prepare suction pipe -6- for fitting:
- Clip electrical connector -5- onto suction pipe -6- as shown in illustration.
- Secure wiring -2- and suction pipe with a total of 7 cable ties -items 3, 4, 7, 8-.
- Attach O-ring -1- to suction pipe.



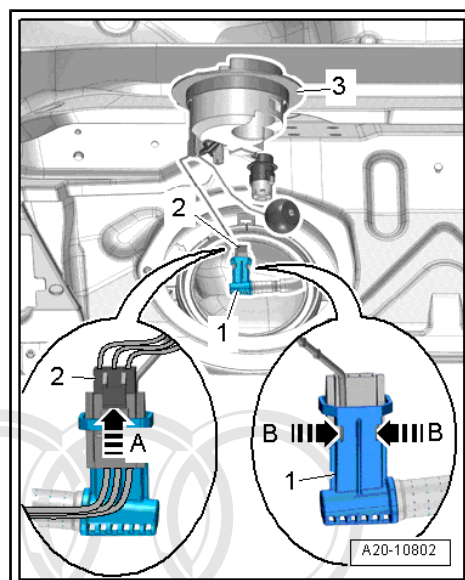
- Connect suction pipe -1- so it engages audibly.
- Plug in electrical connector -2- and make sure it is correctly engaged.



Note

When installing, take care not to bend float arm of fuel gauge sender 2 -G169- -item 3-.

- Working from luggage compartment, guide suction pipe into opening in fuel tank.
- Slip new seal onto flange and insert in groove on fuel tank.
- Reach into front fuel tank opening and move suction pipe into installation position.
- Install fuel gauge sender 2 - G169- ➔ [page 87](#) .
- Install fuel delivery unit ➔ [page 40](#) .
- Connect battery and perform steps required after re-connecting battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Put at least 5 litres of fuel into tank after installing suction pipe.
- Vehicles with auxiliary heater: Let auxiliary heater run with full load for 10 minutes to bleed fuel line leading to metering pump.



8.3 Removing and installing fuel pump control unit - J538-

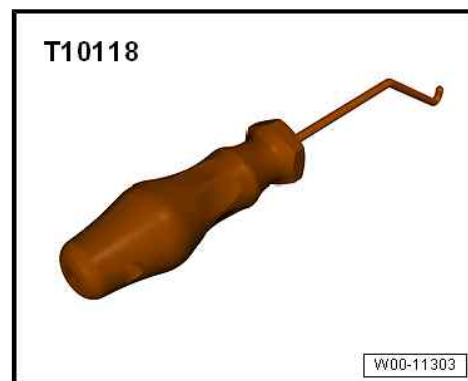
➔ ["8.3.1 Removing and installing fuel pump control unit J538 - rest-of-world vehicles with front-wheel drive", page 140](#)

➔ ["8.3.2 Removing and installing fuel pump control unit J538 - rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 145](#)

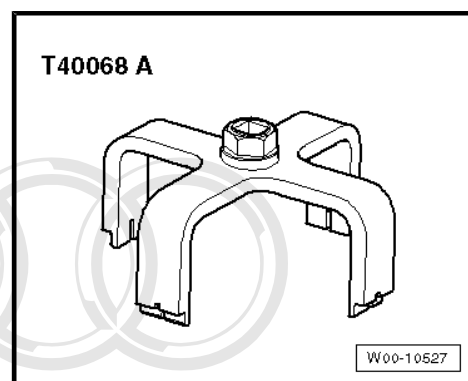
8.3.1 Removing and installing fuel pump control unit - J538- - rest-of-world vehicles with front-wheel drive

Special tools and workshop equipment required

- ◆ Assembly tool - T10118-



- ◆ Union nut tool - T40068A-



Removing

- Observe safety precautions ⇒ [page 1](#) .
- Observe rules for cleanliness ⇒ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel pump control unit -J538- , otherwise a large amount of fuel will escape.***

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- Drain fuel tank if necessary ⇒ [page 11](#) .
- Move passenger's seat as far to front as possible (if necessary).



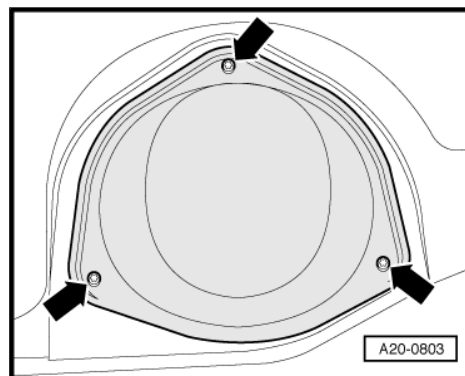
Caution

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

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

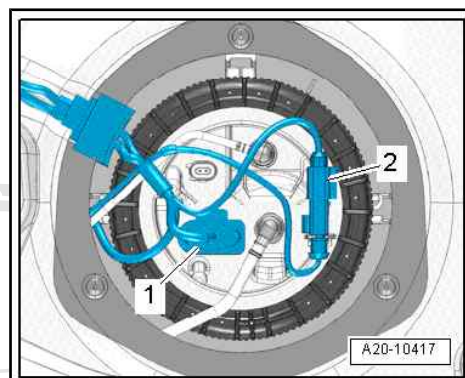
- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

- Remove rear seat bench ⇒ General body repairs, interior;
Rep. gr. 72 ; Rear seats; Removing and installing seat bench/
individual seats .
- Unscrew cover for flange -arrows-.

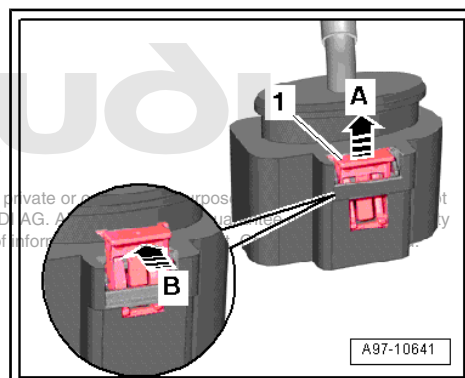


A5 models up to model year 2011, A4 models up to model year 2012:

- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Unplug electrical connector -1- on flange.



- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.

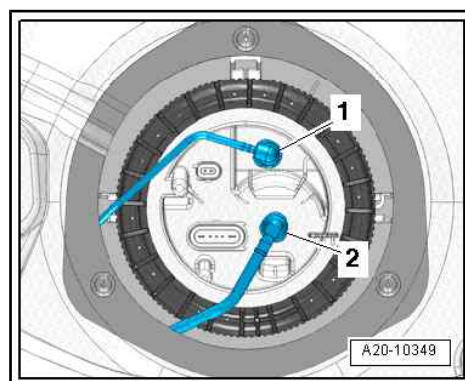


WARNING

Risk of injury - fuel system operates under high pressure.

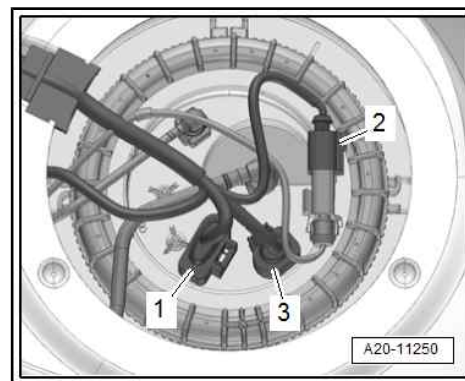
- ◆ ***To reduce the pressure in the fuel system, wrap a clean cloth around the connection and carefully loosen the connection.***

- Disconnect fuel line -2- from flange ⇒ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ⇒ [page 99](#) .



A5 models from model year 2012 onwards, A4 models from model year 2013 onwards:

- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Release retainer catches with assembly tool - T10118- and unplug electrical connectors -1 and 3- on flange.

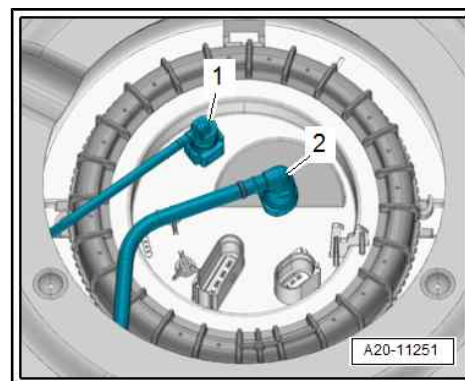


WARNING

Risk of injury - fuel system operates under high pressure.

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

- Disconnect fuel line -2- from flange ➔ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ➔ [page 99](#) .



All vehicles (continued):

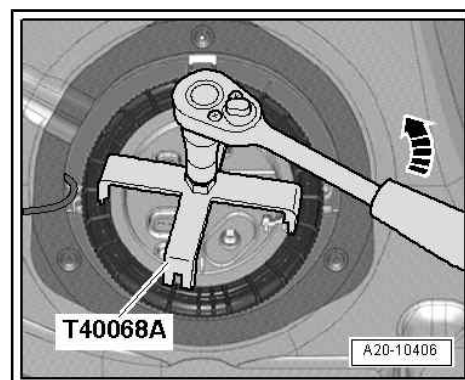


WARNING

Danger! Fuel may escape.

- ◆ *The fuel tank must not be more than 1/4 full when removing the flange, otherwise a large amount of fuel will escape.*

- Unscrew union nut using union nut tool - T40068A- -arrow-.

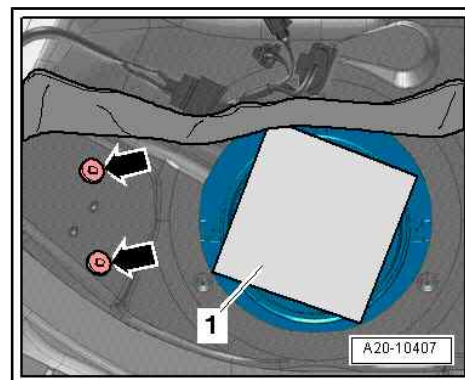


Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.

- Cover opening of fuel tank with clean cardboard -1- to prevent dirt particles from falling into the tank.
- Remove bolts -arrows-.

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- Guide out fuel pump control unit - J538- -item 1- towards interior between fuel tank and underbody.
- Unplug electrical connector and remove fuel pump control unit.

Installing

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

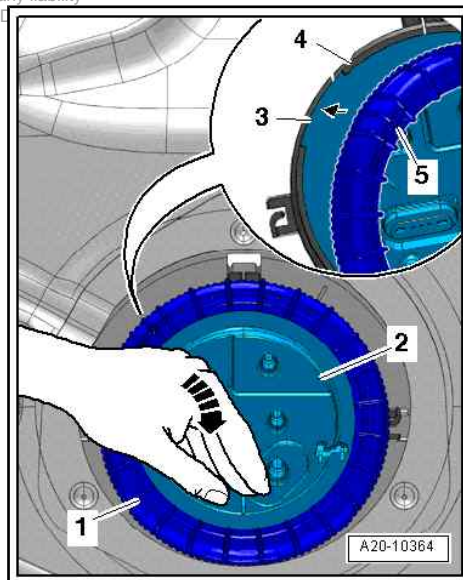
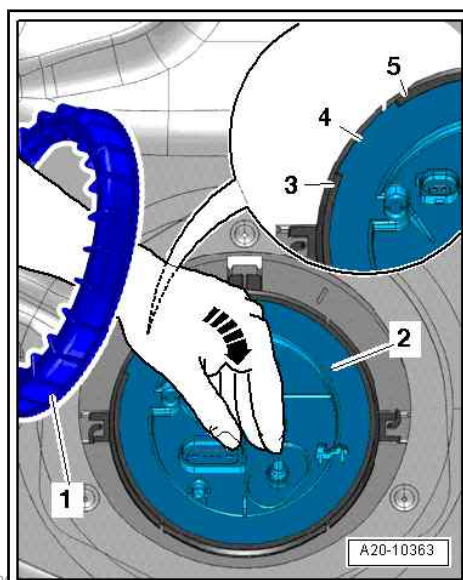
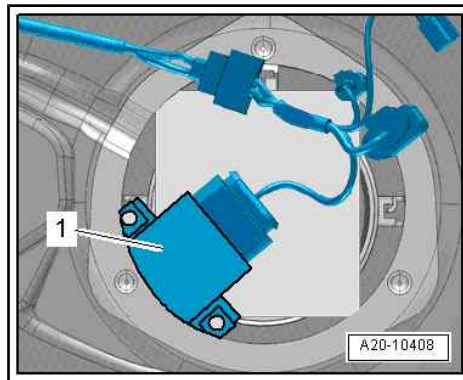
- Tightening torque
⇒ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders", page 32](#)



Note

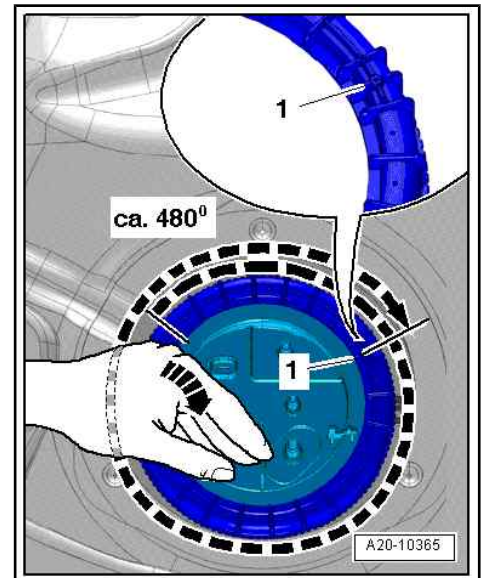
Renew seal and union nut.

- Bring fuel pump control unit - J538- into installation position and secure with bolts.
- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.



- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. "ten o'clock position"). This will make union nut engage immediately with beginning of thread -4- when tightening.

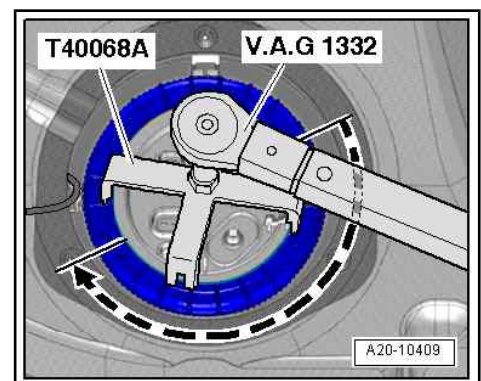
- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. “two o'clock position” and at the same time keep on pressing flange downwards firmly with your left hand.



 **Caution**

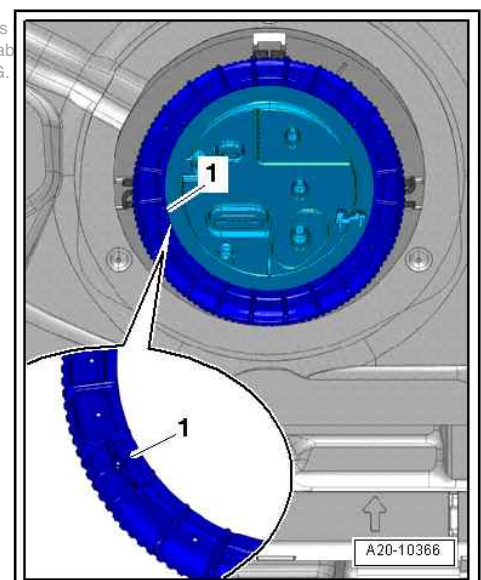
Take care to avoid leakage at flange.

◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*



- Tighten union nut for flange using union nut tool - T40068A- .

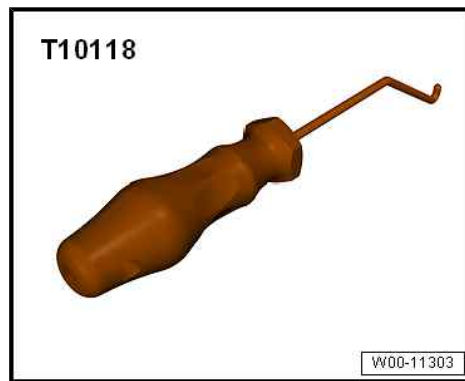
- Checking: Double ridge -1- must now be aligned between “seven o'clock and eight o'clock position”.
- Connect fuel line, making sure it engages audibly.
- Press fuel line in again and then pull to check that plug-in connector is correctly engaged.
- Connect electrical connectors.
- Install cover for flange ⇒ [page 7](#) .
- Install rear seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Vehicles with auxiliary heater: Bleed fuel supply line leading to metering pump ⇒ [page 122](#) .



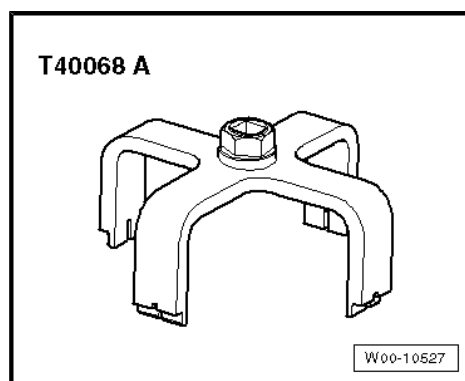
8.3.2 Removing and installing fuel pump control unit - J538- - rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

Special tools and workshop equipment required

◆ Assembly tool - T10118-



◆ Union nut tool - T40068A-



Removing

- Observe safety precautions ➔ [page 1](#) .
- Observe rules for cleanliness ➔ [page 4](#) .



WARNING

Danger! Fuel may escape.

- ◆ ***The fuel tank must not be more than 1/4 full when removing the fuel pump control unit -J538- , otherwise a large amount of fuel will escape.***

- Drain fuel tank if necessary: Rest-of-world vehicles ➔ [page 13](#) , USA vehicles ➔ [page 14](#) .
- Move passenger's seat as far to front as possible (if necessary).



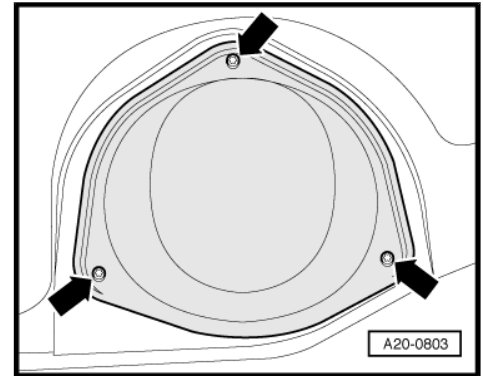
Caution

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

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

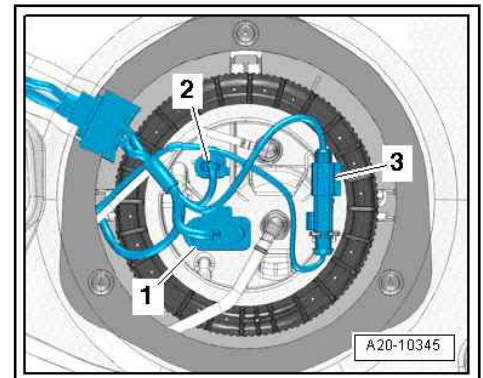
- Disconnect battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

- Remove rear seat bench ⇒ General body repairs, interior;
 Rep. gr. 72 ; Rear seats; Removing and installing seat bench/
 individual seats .
- Unscrew cover for flange -arrows-.

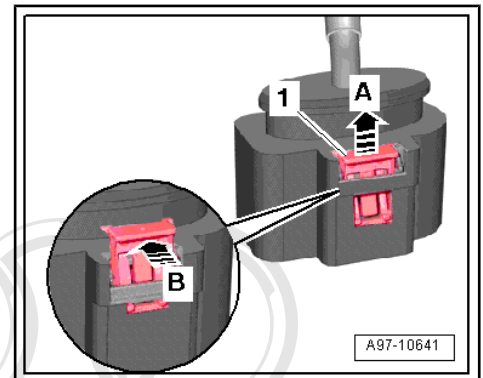


A5 models up to model year 2011, A4 models up to model year 2012:

- If fitted, disengage electrical connector -3- for metering pump for auxiliary heater on flange and move clear.
- Release retainer catch with assembly tool - T10118- and unplug electrical connector -2- on flange.
- Unplug electrical connector -1- on flange.



- To do so, slide catch -1- upwards -arrow A- and press release catch inwards -arrow B-.



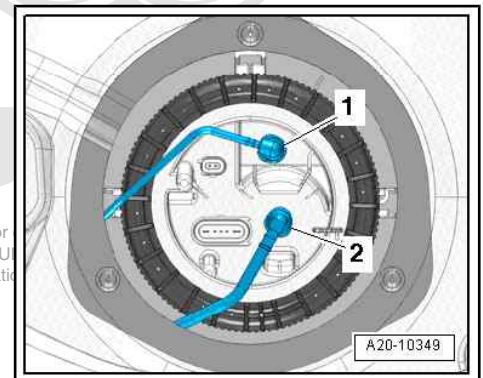
WARNING

Risk of injury - fuel system operates under high pressure.

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

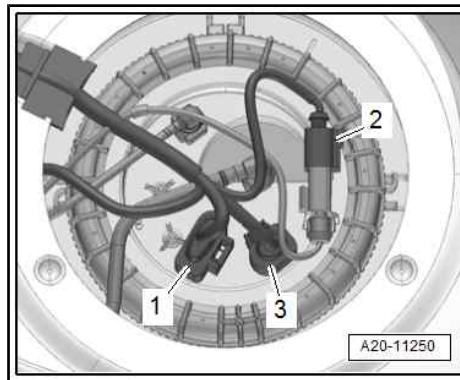
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- Disconnect fuel line -2- from flange ⇒ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ⇒ [page 99](#) .



A5 models from model year 2012 onwards, A4 models from model year 2013 onwards:

- If fitted, unplug electrical connector -2- for metering pump for auxiliary heater on flange.
- Release retainer catches with assembly tool - T10118- and unplug electrical connectors -1 and 3- on flange.

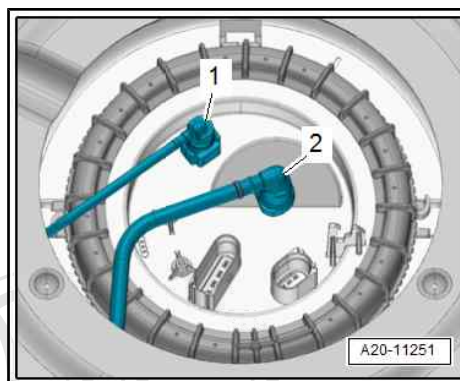


WARNING

Risk of injury - fuel system operates under high pressure.

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

- Disconnect fuel line -2- from flange ➤ [page 99](#) .
- If fitted, disconnect fuel line -1- for metering pump for auxiliary heater on flange ➤ [page 99](#) .



All vehicles (continued):



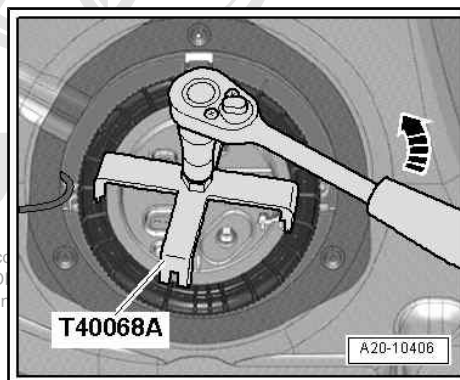
WARNING

Danger! Fuel may escape.

- ♦ *The fuel tank must not be more than 1/4 full when removing the flange, otherwise a large amount of fuel will escape.*

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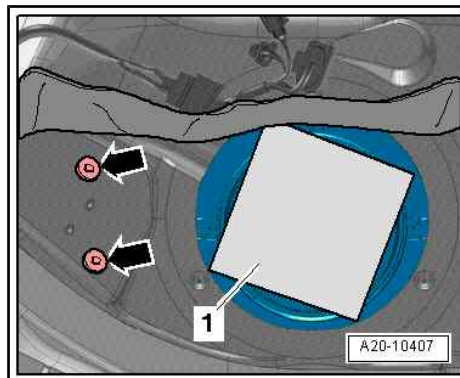
- Unscrew union nut using union nut tool - T40068A- -arrow-.



Note

The plastic detent on the threaded ring will break off when the union nut is unscrewed - this can be disregarded.

- Cover opening of fuel tank with clean cardboard -1- to prevent dirt particles from falling into the tank.
- Remove bolts -arrows-.



- Guide out fuel pump control unit - J538- -item 1- towards interior between fuel tank and underbody.
- Unplug electrical connector and remove fuel pump control unit.

Installing

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

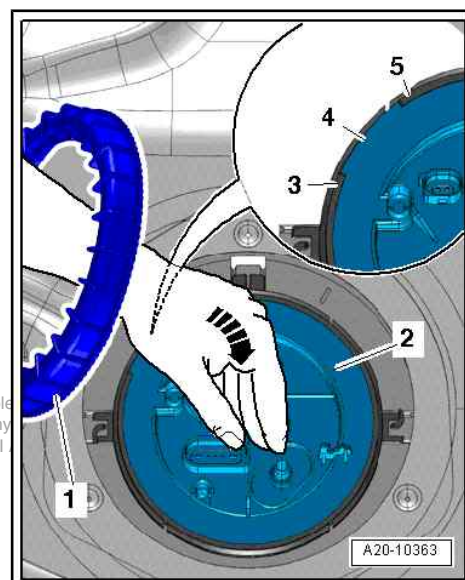
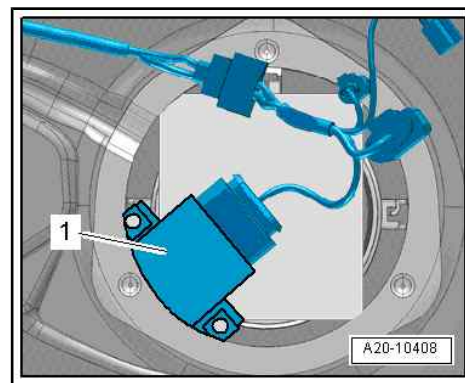
- Tightening torque
 ⇒ ["2.1 Exploded view - fuel delivery unit/fuel gauge senders", page 32](#)



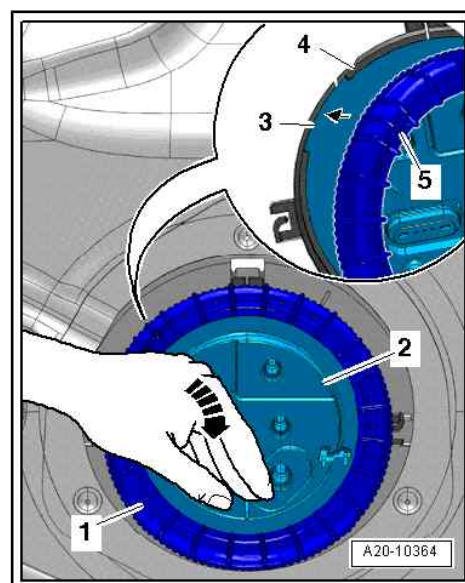
Note

Renew seal and union nut.

- Bring fuel pump control unit - J538- into installation position and secure with bolts.
- Slip union nut -1- over your left arm and press flange -2- firmly into installation position -arrow- with your left hand.
- Lug -4- on flange must be between tabs -3- and -5- on threaded ring.



- Take union nut -1- off your left arm with your right hand and at the same time keep pressing down flange -2- firmly with your left hand -arrow-.
- Position union nut -1- with your right hand in such a way that double ridge -5- on ribs aligns with lug -3- of flange (approx. "ten o'clock position"). This will make union nut engage immediately with beginning of thread -4- when tightening.



- Keep pressing flange downwards firmly -arrow-.
- Turn union nut approx. 480° with your right hand until double ridge -1- is in approx. “two o'clock position” and at the same time keep on pressing flange downwards firmly with your left hand.

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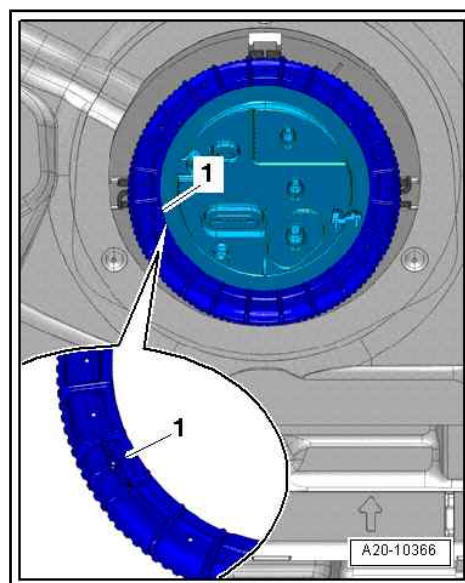
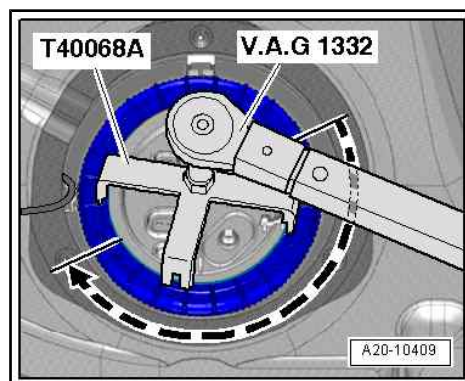
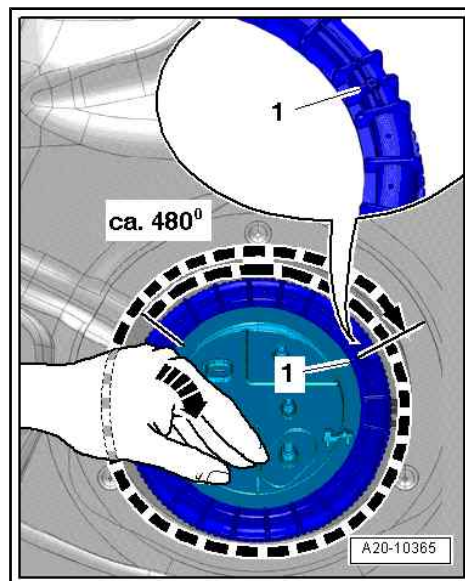


Caution

Take care to avoid leakage at flange.

- ◆ *Press flange downwards firmly when tightening union nut to make sure flange does not also turn.*

- Tighten union nut for flange using union nut tool - T40068A- .
- Checking: Double ridge -1- must now be aligned between “seven o'clock and eight o'clock position”.
- Connect fuel line, making sure it engages audibly.
- Press fuel line in again and then pull to check that plug-in connector is correctly engaged.
- Connect electrical connectors.
- Install cover for flange ➔ [page 9](#) .
- Install rear seat bench ➔ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
- Connect battery and perform steps required after re-connecting battery ➔ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Vehicles with auxiliary heater: Let auxiliary heater run with full load for 10 minutes to bleed fuel line leading to metering pump.



8.4 Checking fuel pump control unit - J538-

⇒ ["8.4.1 Checking fuel pump control unit J538 - rest-of-world vehicles with front-wheel drive", page 151](#)

⇒ ["8.4.2 Checking fuel pump control unit J538 - rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive", page 151](#)

8.4.1 Checking fuel pump control unit - J538- - rest-of-world vehicles with front-wheel drive

- ◆ On vehicles with FSI 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.

8.4.2 Checking fuel pump control unit - J538- - rest-of-world vehicles with four-wheel drive, USA vehicles with front-wheel drive/four-wheel drive

- ◆ On vehicles with FSI 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.