Workshop Manual

Audi A4 2015 ➤ , Audi A4 Avant 2015 ➤ , Audi A4 China 2016 ➤ , Audi A5 2016 ➤ , Audi A5 Cabriolet 2017 ➤

Fuel supply system									
Engine ID	DETA	DEUA	DEUB	CZHA	DESA	DEUC	CRTC	CSWB	CVKB
	CVNA	CYMC	CYRB	CYRC	DETB	DBPA	CWNA	CWPB	DCPC
	CWGD	DEMA	DHDA	DDWA	DECA	DEZB	DEZE	DCPE	DKNA
	DLVA	DLVB	DKUA	DKUB	DKWA	DKYA	DLHB	DFBA	DEWB
	CVKC	DDWB	DEMB	DMSA	DMSB	DMTA	DPAA	DTAA	DTAB

Edition 01.2020

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List of Workshop Manual Repair Groups

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Repair Group

00 - Technical data

20 - Fuel supply system

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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00 – Technical data

1 Safety precautions

(ARL006757; Edition 01.2020)

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

⇒ "1.2 Safety precautions when working on vehicles with start/stop system", page 2

⇒ "1.3 Safety precautions when using testers and measuring instruments during a road test", page 2

⇒ "1.4 Safety precautions when working on the SCR system", page 2

1.1 Safety precautions when working on the fuel system

Risk of injury - fuel system operates under high pressure

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

Before opening the fuel system:

– Put on safety goggles.

– Put on protective gloves.

– Release pressure (wrap a clean cloth around connection and open connection carefully).

Risk of fire due to escaping fuel

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

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

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

- Fuel tank must be completely drained or only partially full. The amount of fuel which can be left in the fuel tank is indicated in the corresponding procedure description. Drain fuel tank if necessary ⇒ page 15 .
- 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 m^3/h can be used (the fan motor must be clear of the air stream).

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

Risk of injury - engine may start unexpectedly

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

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

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

Risk of injury if test equipment is not secured

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

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

Or:

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

1.4 Safety precautions when working on the SCR system

Risk of injury caused by reducing agent

Reducing agent can cause eye and skin irritation, damage to the respiratory tract and poisoning.

– Put on safety goggles.

– Put on protective gloves.

– Wear protective clothing.

– Ensure that there is sufficient fresh air. In enclosed spaces, switch on the exhaust extraction system.

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Caution

Reducing agent must never be reused. For information regarding storage and disposal see ⇒ ServiceNet → Environmental protection → Workshop waste management . Contact importer for country-specific information regarding storage and disposal.

When removing and installing components on the SCR system, please note the following:

♦ The reducing agent tank must be empty when you are working on the SCR system. Refer to the corresponding work description to find out when the reducing agent tank must be drained.

2 Repair instructions

⇒ “2.1 Rules for cleanliness”, page 3

⇒ “2.2 General notes”, page 3

⇒ “2.3 Test conditions”, page 4

⇒ “2.4 Contact corrosion”, page 4

⇒ “2.5 Routing and attachment of pipes, hoses and wiring”, page 4

⇒ “2.6 Identification plates”, page 4

⇒ “2.7 Use of impact wrenches”, page 5

2.1 Rules for cleanliness

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

- Carefully clean connection points and the surrounding area with engine cleaner or brake cleaner and dry thoroughly before opening.
- Immediately seal open lines and connections with clean plugs, for example from engine bung set - VAS 6122- .
- Place removed parts on a clean surface and cover them. Use only lint-free cloths.
- Carefully cover or seal open components if repairs cannot be carried out immediately.
- Only install clean components; replacement parts should only be unpacked immediately prior to installation. Do not use parts that have not been stored in their packing (e.g. in tool boxes etc.).
- When the system is open, do not work with compressed air and do not move the vehicle.
- Protect unplugged electrical connectors against dirt and moisture and make sure connections are dry when attaching.
- Make sure that no diesel fuel comes into contact with other components in the engine compartment. If necessary, clean immediately.

2.2 General notes

SCR (selective catalytic reduction) system

Risk of damage caused by reducing agent

Reducing agent which has come into contact with trim or body components can crystallise after some time and damage the affected surfaces.

– Ensure that no reducing agent makes contact with parts of trim or body.

– Clean any surfaces which have come into contact with reducing agent immediately with water and a cloth.

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2.3 Test conditions

- Battery in standby mode ⇒ Electrical system; Rep. gr. 27 ; Battery; Charging battery .
- Fuses for fuel pump/ fuel pump relay - J17- / fuel pump control unit - J538- OK ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Fuel pump relay - J17- OK; checking ⇒ Vehicle diagnostic tester
- Fuel pump control unit - J538- OK; checking ⇒ Vehicle diagnostic tester.
- Fuel tank at least $^1/_4$ full.
- Fuel filter OK.
- Fuel lines OK (not obstructed or crushed).
- Ignition switched off.

2.4 Contact corrosion

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

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

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

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

Please note:

- ♦ We recommend using only genuine replacement parts; these have been tested and are compatible with aluminium.
- ♦ We recommend using Audi Genuine Accessories.
- ♦ Damage caused by contact corrosion is not covered by warranty.

2.5 Routing and attachment of pipes, hoses and wiring

Risk of damage to pipes/hoses/wiring

Moving or hot components may cause damage to pipes/hoses/ wiring.

– Restore original routing when installing pipes/hoses/wiring.
– Ensure sufficient clearance from all moving or hot components.

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- ♦ Mark fuel lines, hydraulic lines, vacuum lines, lines for activated charcoal filter and electrical wiring etc. before removal so they can be re-installed in the original positions and correctly connected. Make sketches or take photographs if necessary.

2.6 Identification plates

When renewing vehicle components, the identification plates on the old parts that have a replacement part number (see ⇒ Electronic parts catalogue) must be attached to the new parts due to approval regulations.

2.7 Use of impact wrenches

In general, it is permitted to use an impact wrench to unscrew bolts and nuts. An exception to this is when work is performed inside an open high-voltage battery. For this work, it is not permitted to use an impact wrench.

An impact wrench may be used to screw in bolts and nuts when performing repair work if the following requirements are observed. In general, electric and compressed-air impact wrenches should be used.

Requirements:

- Only screw in bolts with locking fluid or self-locking nuts at low speed.
- Use a suitable impact wrench with variable speed and adjustable torque range.
- Use suitable bits when working in the vicinity of sensitive surfaces, e.g. plastic-coated bits for aluminium rims.
- When working in the vicinity of natural gas systems, observe the information in the Workshop Manual “Natural gas engines - General information”.

Use:

- Fit bolts/nuts by hand.
- Only use an impact wrench to screw in bolts/nuts until the head of the bolt/nut makes contact and then continue tightening with a torque wrench.
- Clean threaded pins before unscrewing the bolt/nut.

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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 15

⇒ “1.3 Removing and installing fuel tank”, page 19

⇒ “1.4 Removing and installing misfuelling prevention device”, page 32

⇒ “1.5 Deactivating misfuelling prevention device”, page 35

1.1 Exploded view - fuel tank

⇒ “1.1.1 Exploded view - fuel tank, TFSI vehicles with front-wheel drive, rest-of-world vehicles”, page 6

⇒ “1.1.2 Exploded view - fuel tank, TFSI vehicles with four-wheel drive, rest-of-world vehicles”, page 8

⇒ “1.1.3 Exploded view - fuel tank, TFSI vehicles with front/four-wheel drive, NAR vehicles”, page 9

⇒ “1.1.4 Exploded view - fuel tank, TDI vehicles with front-wheel drive, rest-of-world vehicles”, page 11

⇒ “1.1.5 Exploded view - fuel tank, TDI vehicles with four-wheel drive, rest-of-world vehicles”, page 12

⇒ “1.1.6 Exploded view - fuel tank, TDI vehicles with four-wheel drive, NAR vehicles”, page 14

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

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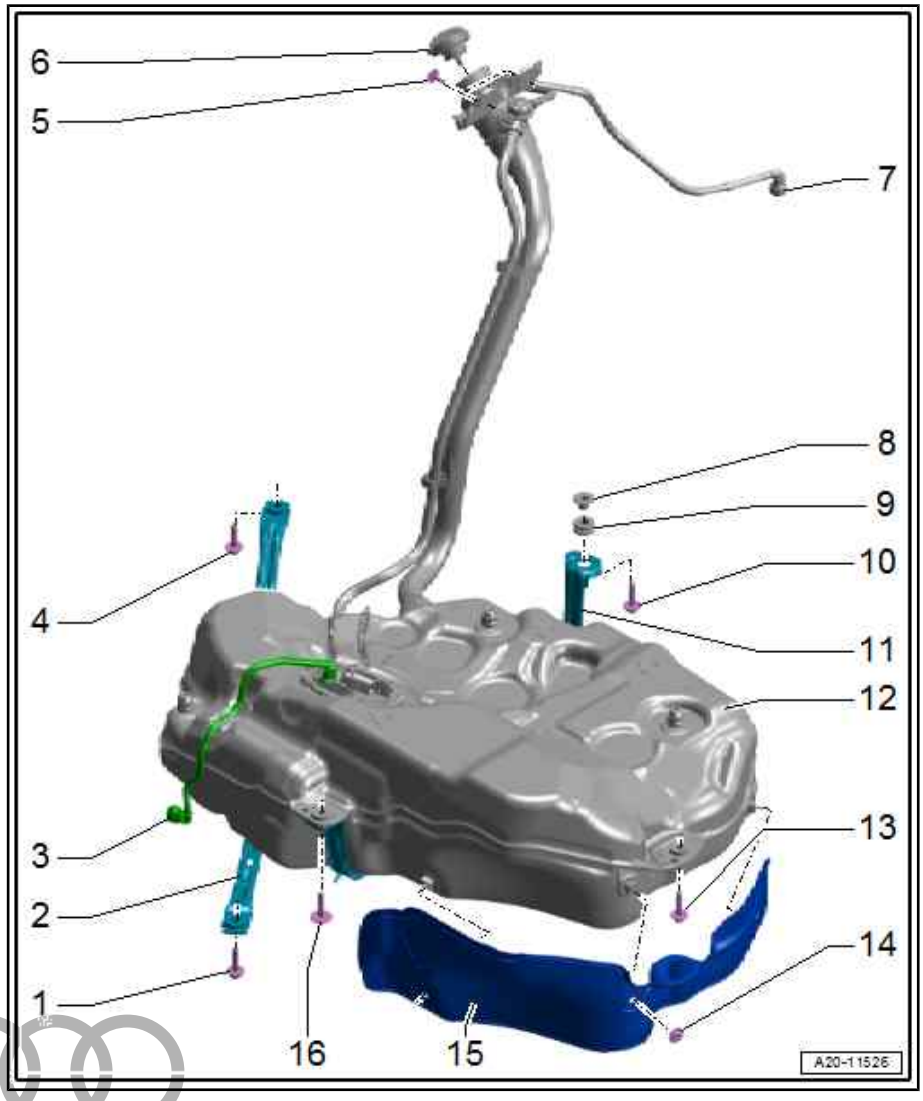

1 - Bolt
- ❑ 20 Nm

2 - Securing strap
- ❑ Attached to fuel tank with fasteners

3 - Fuel line
- ❑ To engine
- ❑ Do not kink
- ❑ Clipped onto fuel tank
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

4 - Bolt
- ❑ 20 Nm

5 - Bolt
- ❑ Secures fuel filler neck and also serves as earth connection

♦ A4: 2x

♦ A5: 3x
- ❑ 8 Nm

6 - Filler cap
- ❑ Secured to tank flap unit
- ❑ Screw down until it engages audibly

7 - Breather line
- ❑ To activated charcoal filter
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

8 - Bush

9 - Rubber bush

10 - Bolt
- ❑ 20 Nm

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11 - Securing strap
- ❑ Attached to fuel tank with fasteners

12 - Fuel tank
- ❑ Different versions available; for allocation refer to ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 19

13 - Bolt
- ❑ 20 Nm

14 - Speed nut
- ❑ For heat shield
- ❑ 3x
- ❑ 2 Nm

15 - Heat shield
- ❑ For fuel tank

16 - Bolt

- ❑ 20 Nm

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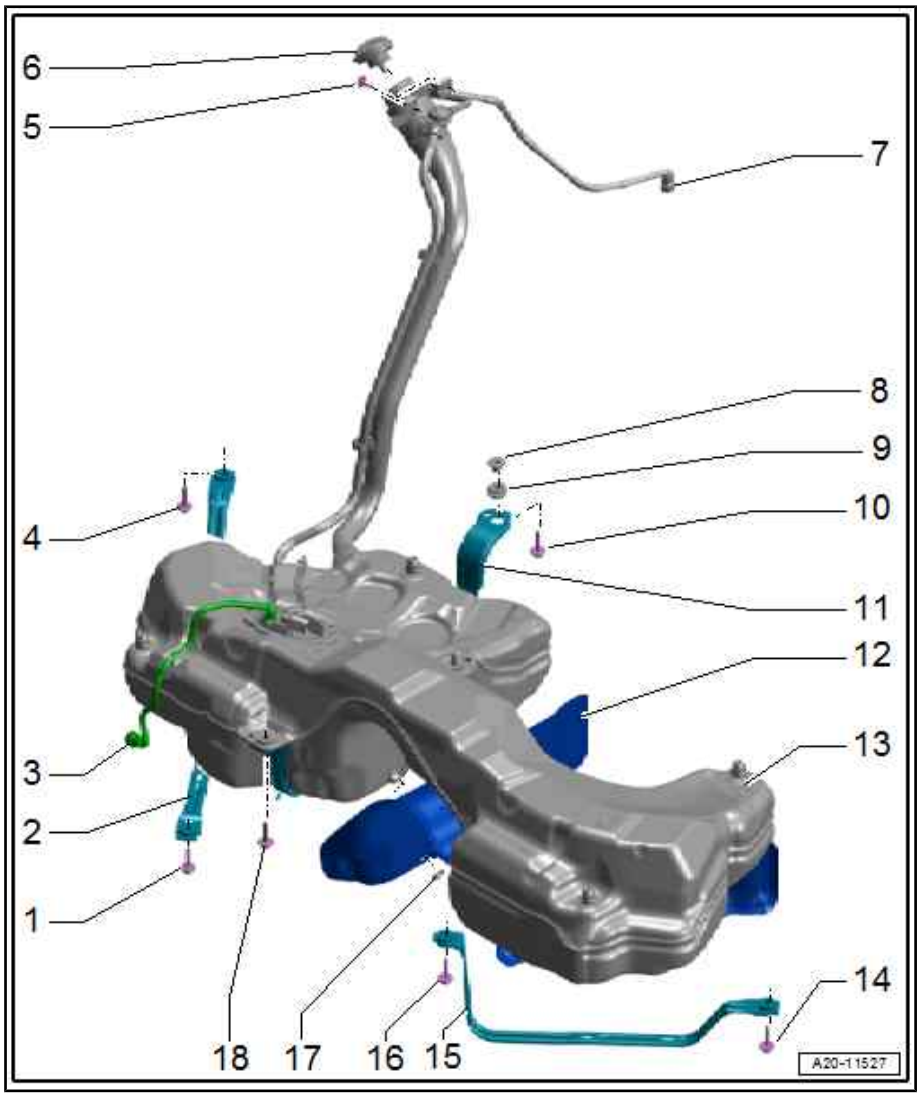
1.1.2 Exploded view - fuel tank, TFSI vehicles with four-wheel drive, rest-of-world vehicles



1 - Bolt

- ❑ 20 Nm

2 - Securing strap

- ❑ Attached to fuel tank with fasteners

3 - Fuel line

- ❑ To engine
- ❑ Do not kink
- ❑ Clipped onto fuel tank
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

4 - Bolt

- ❑ 20 Nm

5 - Bolt

- ❑ Secures fuel filler neck and also serves as earth connection

◆ A4: 2x

◆ A5: 3x

- ❑ 8 Nm

6 - Filler cap

- ❑ Secured to tank flap unit
- ❑ Screw down until it engages audibly

7 - Breather line

- ❑ To activated charcoal filter
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

8 - Bush

9 - Rubber bush

10 - Bolt

- ❑ 20 Nm

11 - Securing strap

- ❑ Attached to fuel tank with fasteners

12 - Heat shield

- ❑ For fuel tank

13 - Fuel tank

- ❑ Different versions available; for allocation refer to ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 19

14 - Bolt
- ❑ 20 Nm

15 - Securing strap
- ❑ Attached to fuel tank with fasteners

16 - Bolt
- ❑ 20 Nm

17 - Speed nut
- ❑ For heat shield
- ❑ 5x
- ❑ 2 Nm

18 - Bolt
- ❑ 20 Nm

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

1 - Bolt
- ❑ 20 Nm

2 - Securing strap
- ❑ Attached to fuel tank with fasteners

3 - Bolt
- ❑ 20 Nm

4 - Fuel line
- ❑ To engine
- ❑ Do not kink
- ❑ Clipped onto fuel tank
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

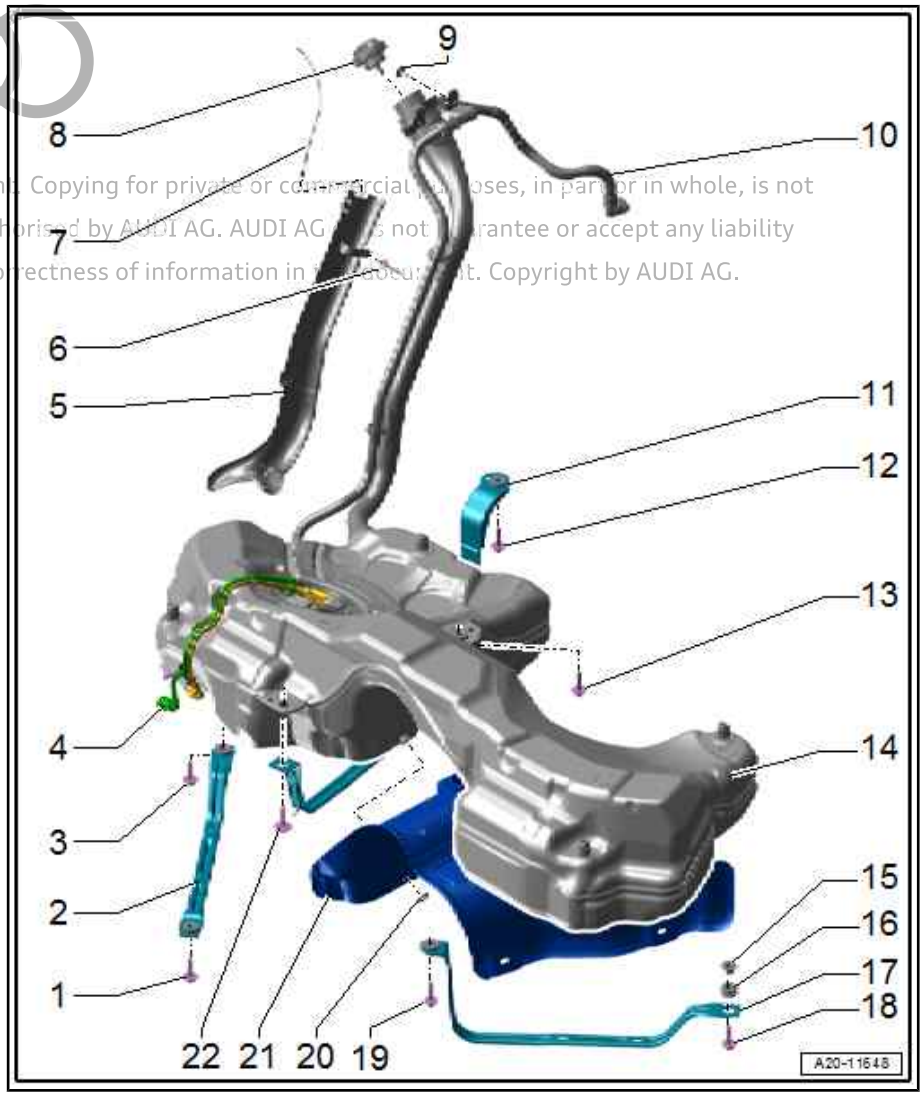
5 - Guard plate
- ❑ For fuel filler neck

6 - Rivet
- ❑ 2x

7 - Earth connection
- ❑ For protective plate
- ❑ To eliminate electrostatic charge ⇒ page 10

8 - Filler cap
- ❑ Secured to tank flap unit
- ❑ Screw down until it engages audibly

9 - Bolt
- ❑ Secures fuel filler neck, serves as earth connection
- ❑ 2x
- ❑ 8 Nm



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10 - Breather line

- ❑ To activated charcoal filter
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

11 - Securing strap

- ❑ Attached to fuel tank with fasteners

12 - Bolt

- ❑ 20 Nm

13 - Bolt

- ❑ 20 Nm

14 - Fuel tank

- ❑ Different versions available; for allocation refer to ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 19

15 - Bush

16 - Rubber bush

17 - Securing strap

- ❑ Attached to fuel tank with fasteners

18 - Bolt

- ❑ 20 Nm

19 - Bolt

- ❑ 20 Nm

20 - Speed nut

- ❑ For heat shield
- ❑ 5x
- ❑ 2 Nm

21 - Heat shield

- ❑ For fuel tank

22 - Bolt

- ❑ 20 Nm

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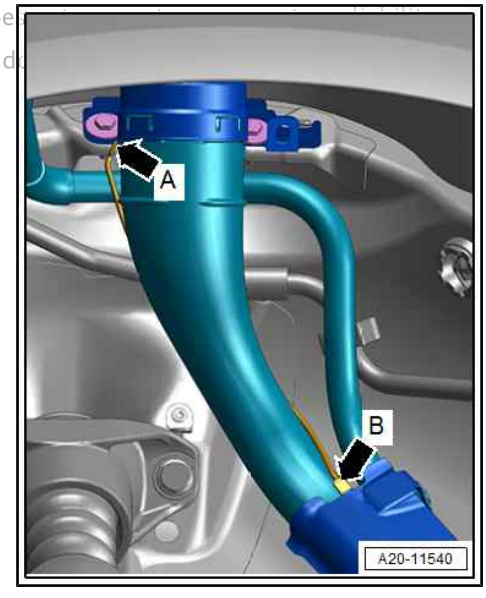
Routing of earth connection

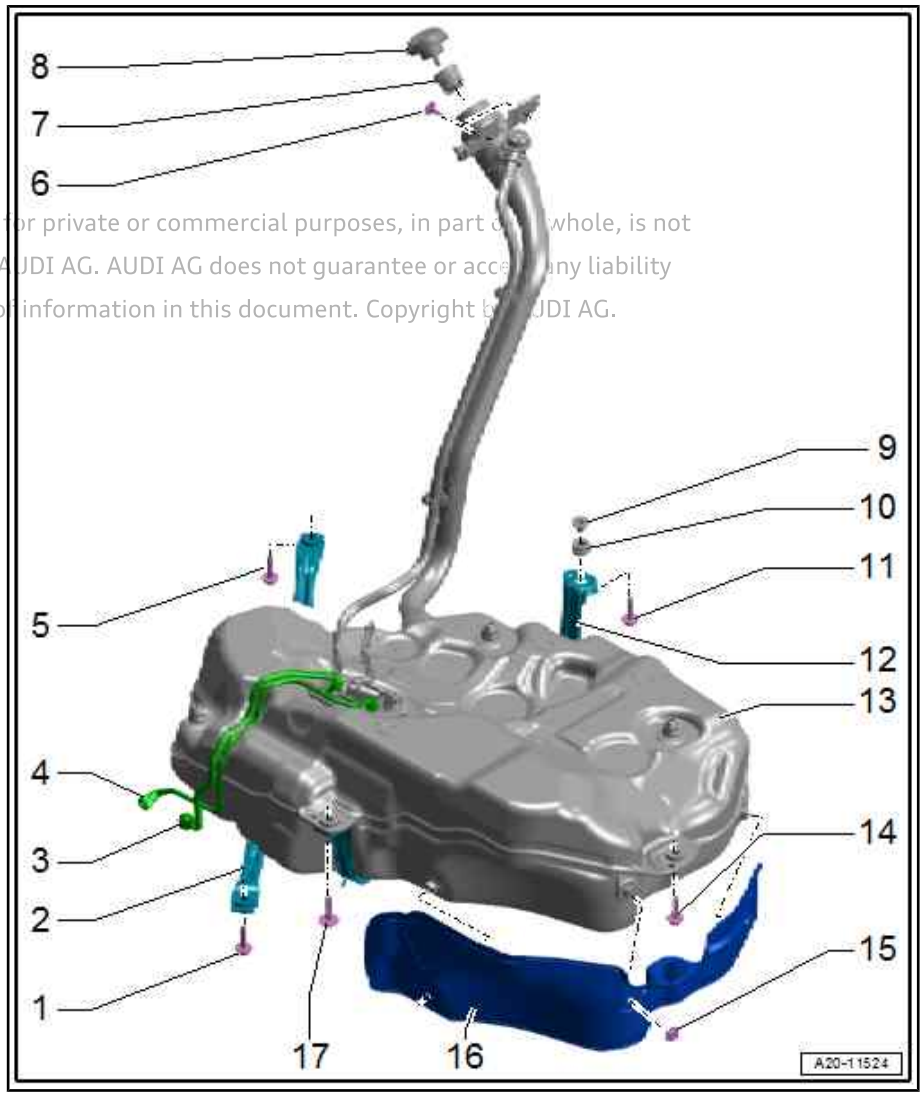
– Route earth connection as shown in illustration.

– Make sure that the following connectors are securely seated:

• Connector -arrow A- must be seated securely on metal ring and connector -arrow B- on protective plate of fuel filler neck.



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



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1 - Bolt

- ❑ 20 Nm

2 - Securing strap

- ❑ Attached to fuel tank with fasteners

3 - Fuel supply line

- ❑ To fuel filter
- ❑ Clipped onto fuel tank
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

4 - Fuel return line

- ❑ From engine
- ❑ Do not kink
- ❑ Clipped onto fuel tank
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

5 - Bolt

- ❑ 20 Nm

6 - Bolt

- ❑ Secures fuel filler neck and also serves as earth connection

◆ A4: 2x

◆ A5: 3x

- ❑ 8 Nm

7 - Misfuelling prevention device

- ❑ Removing and installing ⇒ page 32

8 - Filler cap

- ❑ Screw down until it engages audibly
- ❑ Secured to tank flap unit

9 - Bush

10 - Rubber bush

11 - Bolt

- ❑ 20 Nm

12 - Securing strap

- ❑ Attached to fuel tank with fasteners

13 - Fuel tank

- ❑ Different versions available; for allocation refer to ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 25

14 - Bolt

- ❑ 20 Nm

15 - Speed nut

- ❑ For heat shield
- ❑ 3x
- ❑ 2 Nm

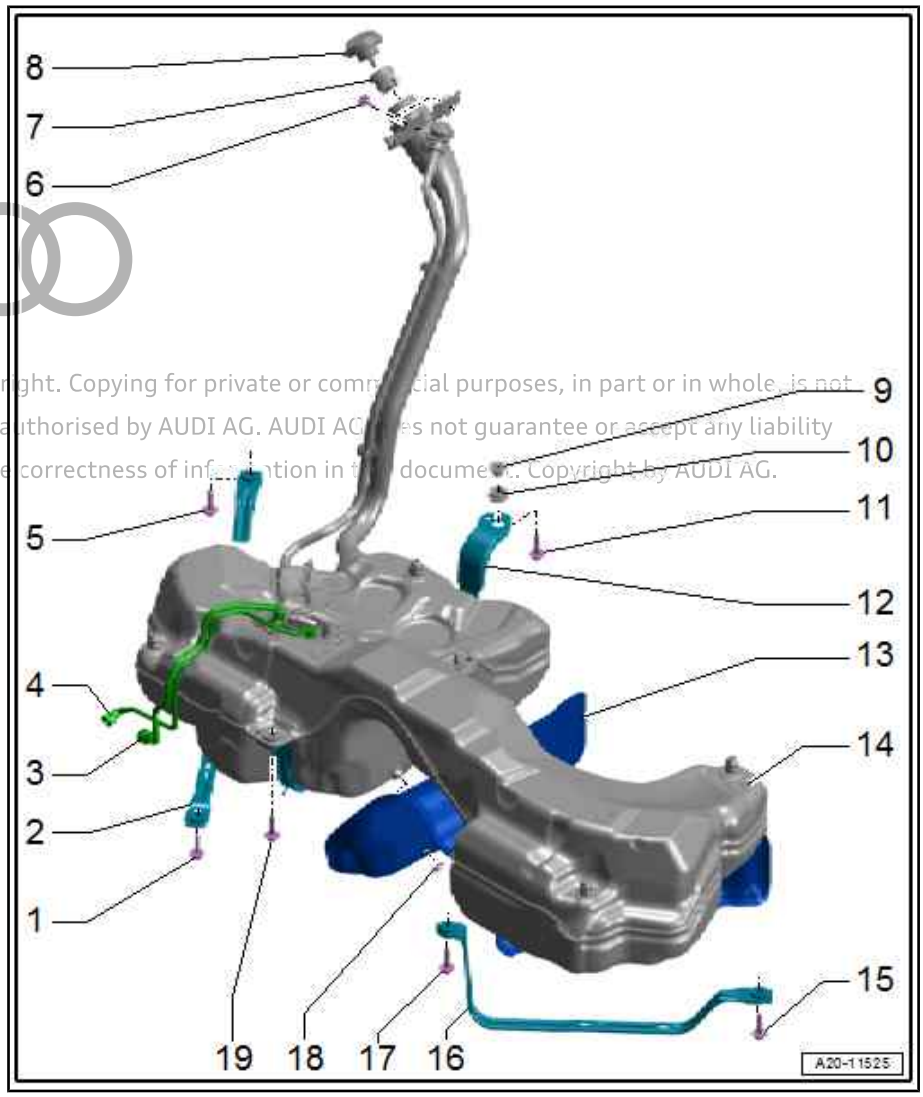
16 - Heat shield

- ❑ For fuel tank

17 - Bolt

- ❑ 20 Nm

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



1 - Bolt

- ❑ 20 Nm

2 - Securing strap

- ❑ Attached to fuel tank with fasteners

3 - Fuel supply line

- ❑ To fuel filter
- ❑ Clipped onto fuel tank
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

4 - Fuel return line

- ❑ From engine
- ❑ Do not kink
- ❑ Clipped onto fuel tank
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

5 - Bolt

- ❑ 20 Nm

6 - Bolt

- ❑ Secures fuel filler neck and also serves as earth connection

◆ A4: 2x

◆ A5: 3x

- ❑ 8 Nm

7 - Misfuelling prevention device

- ❑ Removing and installing ⇒ page 32

8 - Filler cap

- ❑ Screw down until it engages audibly
- ❑ Secured to tank flap unit

9 - Bush

- ❑ 1x

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10 - Rubber bush

- ❑ 1x

11 - Bolt

- ❑ 20 Nm

12 - Securing strap

- ❑ Attached to fuel tank with fasteners

13 - Heat shield

- ❑ For fuel tank

14 - Fuel tank

- ❑ Different versions available; for allocation refer to ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 25

15 - Bolt

- ❑ 20 Nm

16 - Securing strap

- ❑ Attached to fuel tank with fasteners

17 - Bolt

- ❑ 20 Nm

18 - Speed nut

- ❑ For heat shield
- ❑ 5x
- ❑ 2 Nm

19 - Bolt

- ❑ 20 Nm

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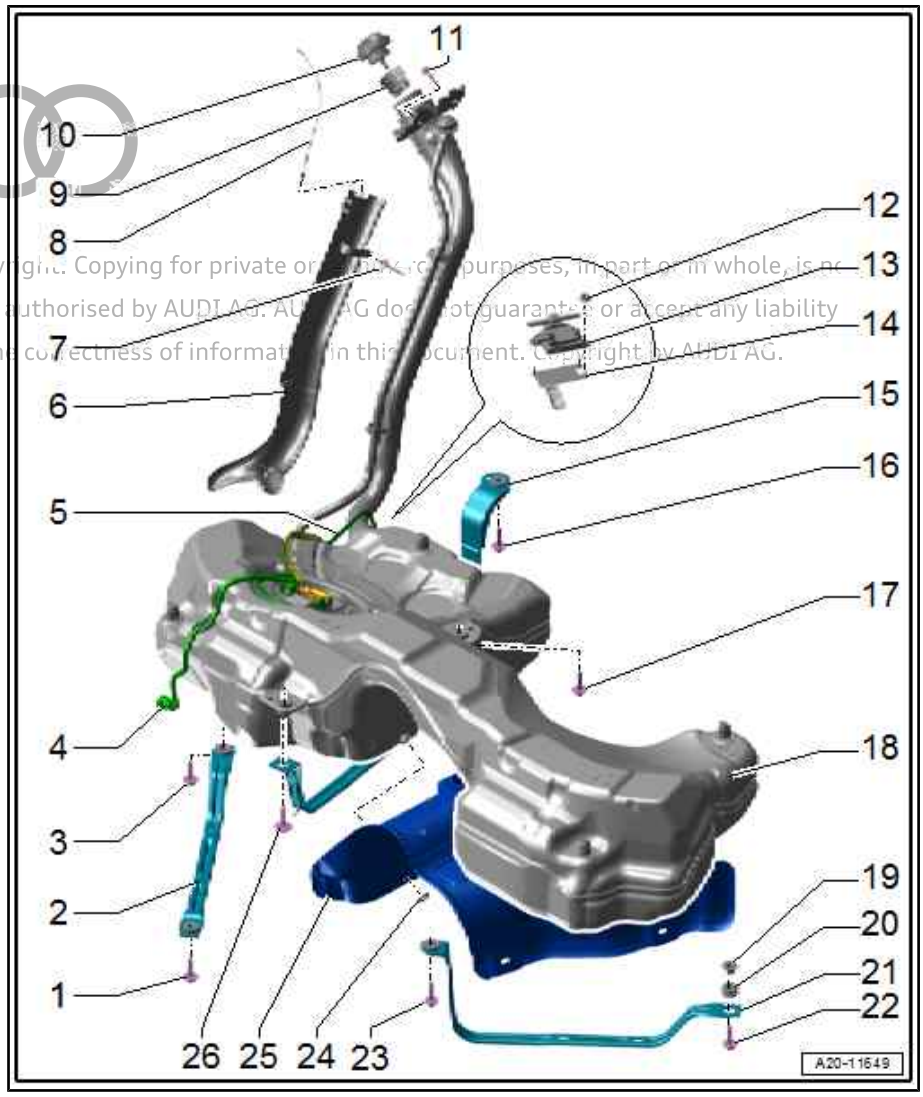
1.1.6 Exploded view - fuel tank, TDI vehicles with four-wheel drive, NAR vehicles



1 - Bolt
- ❑ 20 Nm

2 - Securing strap
- ❑ Attached to fuel tank with fasteners

3 - Bolt
- ❑ 20 Nm

4 - Fuel supply line
- ❑ To fuel filter
- ❑ Clipped onto fuel tank
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

5 - Not fitted

6 - Guard plate
- ❑ For fuel filler neck

7 - Rivet
- ❑ 2x

8 - Earth connection
- ❑ For protective plate
- ❑ To eliminate electrostatic charge ⇒ page 15

9 - Misfuelling prevention device
- ❑ Removing and installing ⇒ page 32

10 - Filler cap
- ❑ Screw down until it engages audibly
- ❑ Secured to tank flap unit

11 - Bolt
- ❑ Secure fuel filler neck, serve as earth connection
- ❑ 2x
- ❑ 8 Nm

12 - Not fitted

13 - Not fitted

14 - Not fitted

15 - Securing strap
- ❑ Attached to fuel tank with fasteners

16 - Bolt
- ❑ 20 Nm

17 - Bolt
- ❑ 20 Nm

18 - Fuel tank
- ❑ Different versions available; for allocation refer to ⇒ Electronic parts catalogue

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- ❑ Removing and installing ⇒ page 25

19 - Bush

20 - Rubber bush

21 - Securing strap

- ❑ Attached to fuel tank with fasteners

22 - Bolt

- ❑ 20 Nm

23 - Bolt

- ❑ 20 Nm

24 - Speed nut

- ❑ For heat shield
- ❑ 5x
- ❑ 2 Nm

25 - Heat shield

- ❑ For fuel tank

26 - Bolt

- ❑ 20 Nm

Routing of earth connection

– Route earth connection as shown in illustration.

– Make sure that the following connectors are securely seated:

• Connector -arrow A- must be seated securely on metal ring and connector -arrow B- on protective plate of fuel filler neck.

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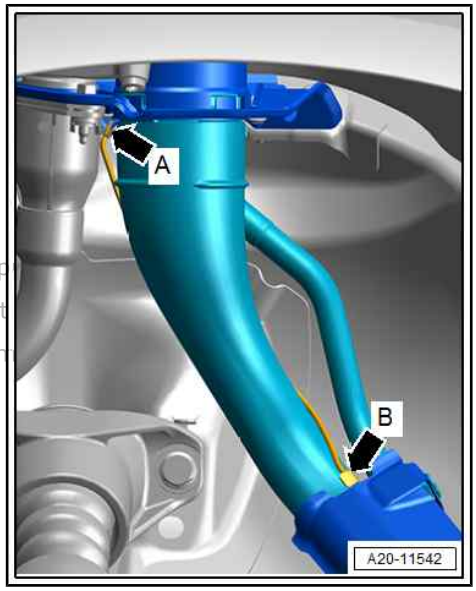


1.2 Draining fuel tank

⇒ “1.2.1 Draining fuel tank - vehicles with TFSI engine”, page 15

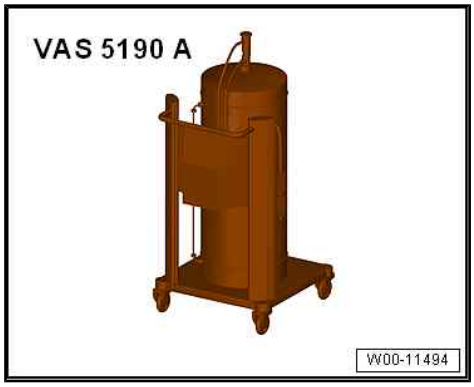
⇒ “1.2.2 Draining fuel tank if more than 3/4 full - vehicles with TDI engine”, page 17

⇒ “1.2.3 Draining fuel tank if less than 3/4 full - all vehicles”, page 19

1.2.1 Draining fuel tank - vehicles with TFSI engine

Special tools and workshop equipment required

♦ Fuel extractor - VAS 5190A-



♦ Adapter for fuel extraction - VAS 5190/4- (not illustrated)

Procedure

– Observe safety precautions ⇒ page 1 .

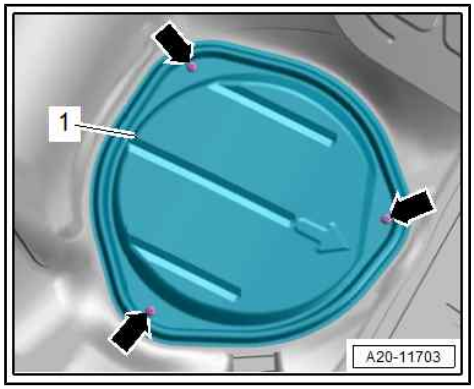
– Observe rules for cleanliness ⇒ page 3 .

– Remove filler cap for fuel filler neck.

– Move front seats all the way up and forwards.

– Remove seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

– Remove bolts -arrows- and detach cover -1- for flange.

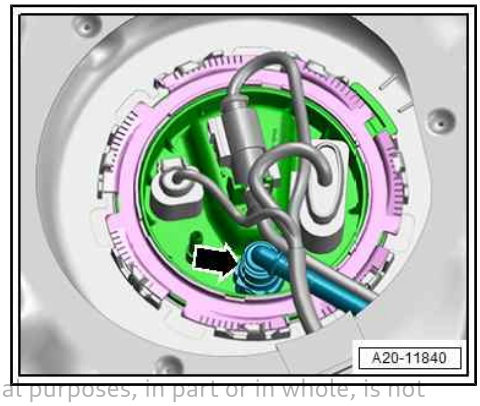


WARNING

The fuel system is pressurised.

Risk of injury as fuel may spray out.

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



– Disconnect fuel line -arrow- from flange. Disconnecting plug-in connectors ⇒ page 53

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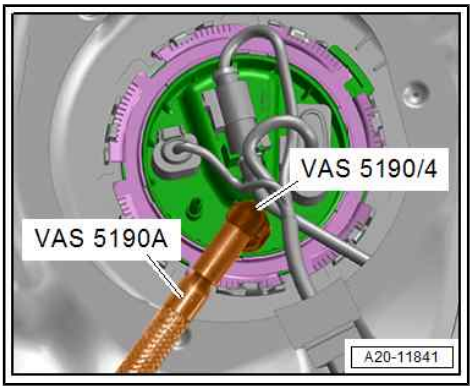
– Connect extraction hose to supply connection on flange with adapter for fuel extraction - VAS 5190/4- .
– Extract fuel from fuel tank with fuel extractor - VAS 5190A- (via supply connection on flange).



Further procedure depends on complaint

– Remove fuel delivery unit ⇒ page 40 .
– Remove fuel gauge sender - G- ⇒ page 52 .
– Remove fuel tank ⇒ page 19 .

1.2.2 Draining fuel tank if more than 3/4 full - vehicles with TDI engine

Special tools and workshop equipment required

♦ Fuel extractor - VAS 5190A-

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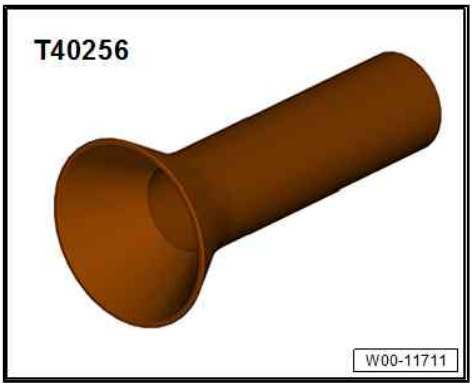
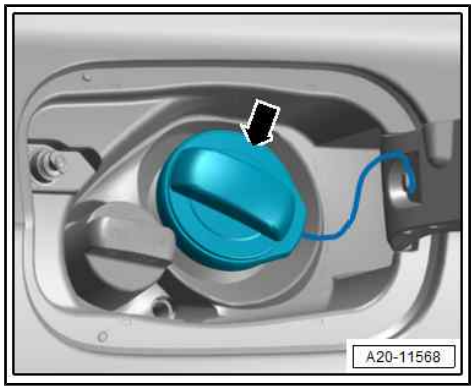
♦ Funnel - T40256- or emergency refuelling funnel



Procedure

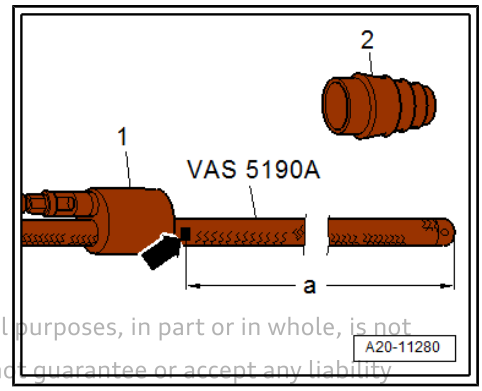
– Observe safety precautions ⇒ page 1 .
– Observe rules for cleanliness ⇒ page 3 .
– Open tank flap.
– Clean area around fuel filler neck.

– Remove filler cap -arrow- for fuel filler neck.



Note

- *Shaft end -1- and tapered adapter -2- of fuel extractor -VAS 5190A- are not used.*
- *Slide shaft end -1- slightly towards rear on hoses.*



– Use insulating tape to mark the extraction hose -arrow- at a distance of -a- from the end of the hose.

- All vehicles except for A5 Cabriolet: distance -a- = 990 mm.
- A5 Cabriolet: distance -a- = 970 mm.

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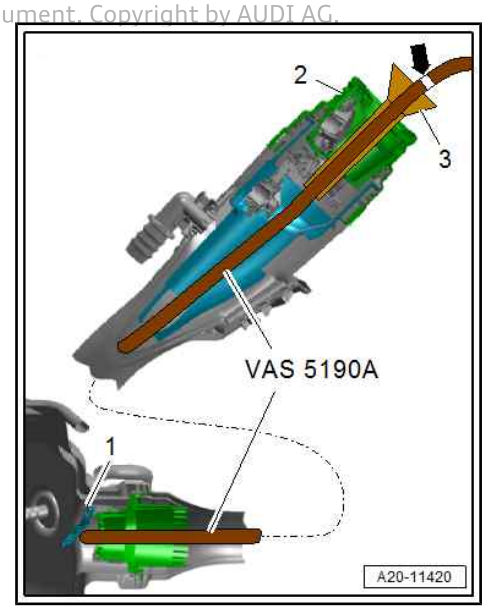
– Insert funnel - T40256- -item 3- in fuel filler neck as far as stop.

– Push extraction hose from -VAS 5190A- into fuel tank until marking on hose -arrow- is level with edge of filler neck.



Note

A flap -1- is located at the bottom of the filler neck -2- in the fuel tank; it must not be damaged by the extraction hose from -VAS 5190A- . Therefore, only push the hose in as far as the tape marking -arrow-.

– Push extraction hose from -VAS 5190A- into fuel tank until marking on hose -arrow- is level with edge of filler neck with funnel -3-.

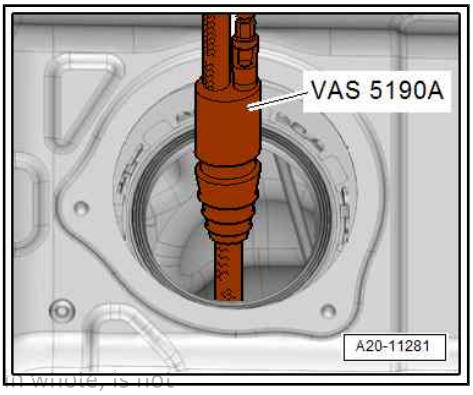
– Extract fuel from tank via fuel filler neck.

– Pull out extraction hose carefully.

Note

When no more fuel is extracted, the fuel tank has been drained enough for the flange to be opened safely.

– Open flange
⇒ “2.2.2 Removing and installing fuel delivery unit/fuel gauge sender - vehicles with TDI engine”, page 45 .



– Pull flange slightly out of opening in fuel tank.
– Insert extraction hose of -VAS 5190A- into fuel tank.
– Using fuel extractor - VAS 5190A- , extract fuel through opening.
– Four-wheel drive vehicles: Extract fuel from both fuel tank chambers through opening using fuel extractor - VAS 5190A- .

Further procedure depends on complaint

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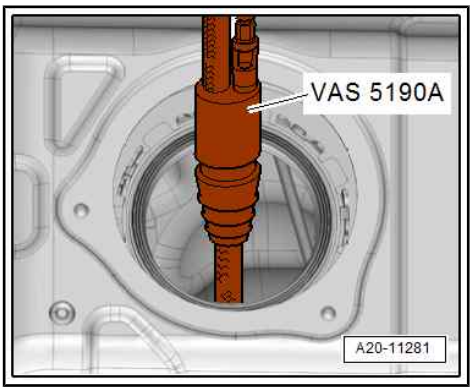
– Remove fuel delivery unit ⇒ page 40 .
– Remove fuel gauge sender - G- ⇒ page 52 .
– Remove fuel tank ⇒ page 19 .

1.2.3 Draining fuel tank if less than 3/4 full - all vehicles

– Open flange
⇒ “2.2 Removing and installing fuel delivery unit/fuel gauge sender”, page 40 .



– Pull flange slightly out of opening in fuel tank.
– Insert extraction hose of -VAS 5190A- into fuel tank.
– Using fuel extractor - VAS 5190A- , extract fuel through opening.
– Four-wheel drive vehicles: Extract fuel from both fuel tank chambers through opening using fuel extractor - VAS 5190A- .

Further procedure depends on complaint

– Remove fuel delivery unit ⇒ page 40 .
– Remove fuel gauge sender - G- ⇒ page 52 .
– Remove fuel tank ⇒ page 19 .

1.3 Removing and installing fuel tank

⇒ “1.3.1 Removing fuel tank - vehicles with TFSI engine”, page 19

⇒ “1.3.2 Removing fuel tank - vehicles with TDI engine”, page 25

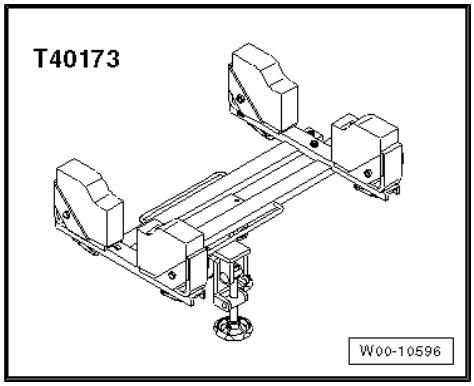
⇒ “1.3.3 Installing fuel tank - all vehicles”, page 29

1.3.1 Removing fuel tank - vehicles with TFSI engine

Special tools and workshop equipment required

- Engine and gearbox jack - VAS 6931-

- Gearbox support - T40173-



Removing

– Observe safety precautions ⇒ page 1 .

– Observe rules for cleanliness ⇒ page 3 .

Caution

When disconnecting the battery there is a risk of irreparable damage to electronic components.

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

– Disconnect earth wire from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

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WARNING

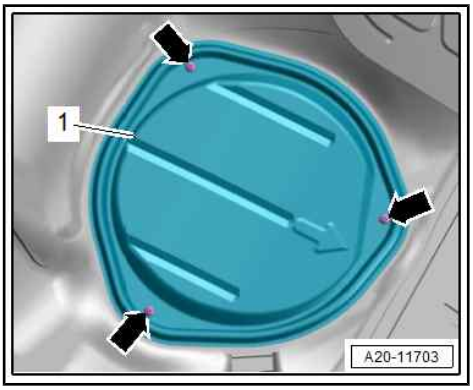
Risk of accident caused by weight of fuel tank

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

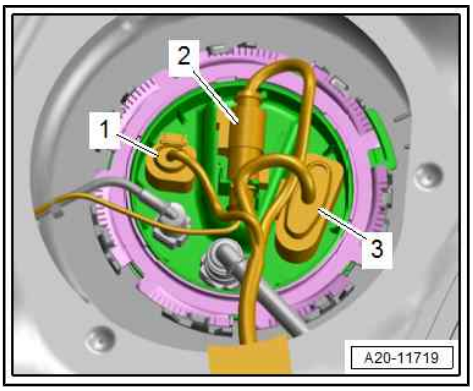
– Drain fuel tank ⇒ page 15 .

– Remove seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

– Remove bolts -arrows- and detach cover -1- for flange.



– Release retainer catches and unplug electrical connectors -1 and 3- on flange.
– Depending on country/equipment version: Release retainer catch and unplug electrical connector -2-.
– Remove rear wheel housing liner (right-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (rear) .
– Remove tank flap unit ⇒ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit .



A4:

– Remove bolts -arrows- for fuel filler neck.

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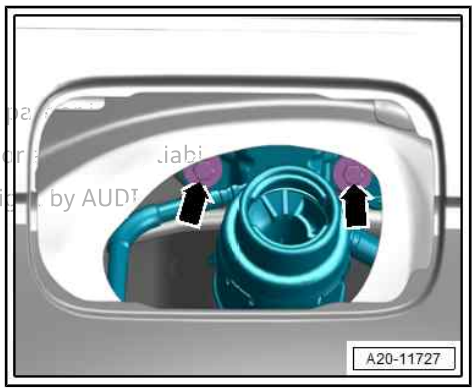
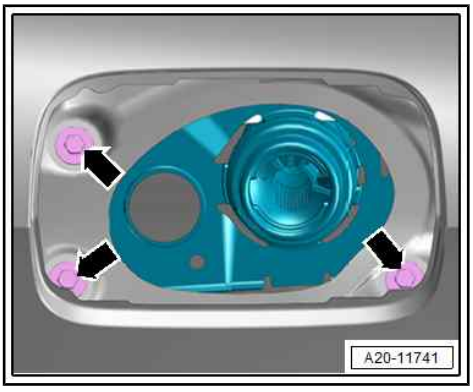


A5:

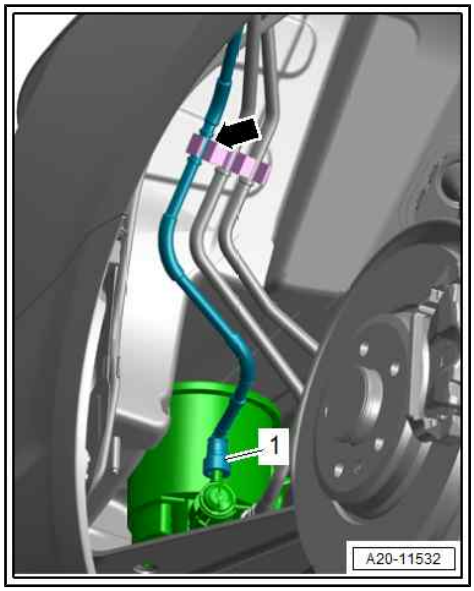
– Remove bolts -arrows- for fuel filler neck.



All rest-of-world vehicles:

– Disconnect breather line -1- at activated charcoal filter. Disconnecting plug-in connectors ⇒ page 53

– Disengage breather line from bracket -arrow- and move it clear.



NAR vehicles:

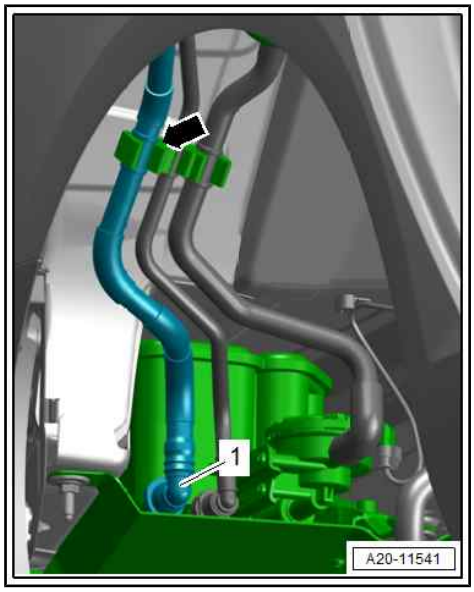
– Disconnect breather line -1- at activated charcoal filter. Disconnecting plug-in connectors ⇒ page 53

– Disengage breather line from bracket -arrow- and move it clear.

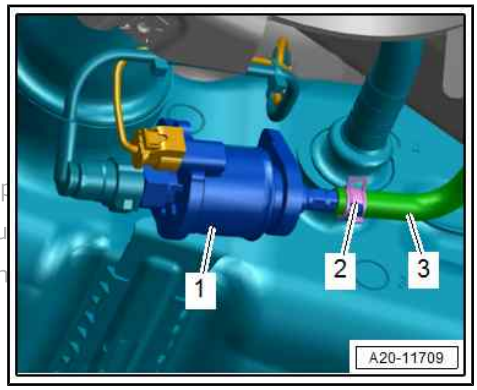
All vehicles (continued):

– Remove underbody trim panels (rear) ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .

– Remove rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Removing and installing silencers .



– Rest-of-world vehicles/equipment version: Release clamp -2- and detach fuel hose -3- from metering pump -1-.



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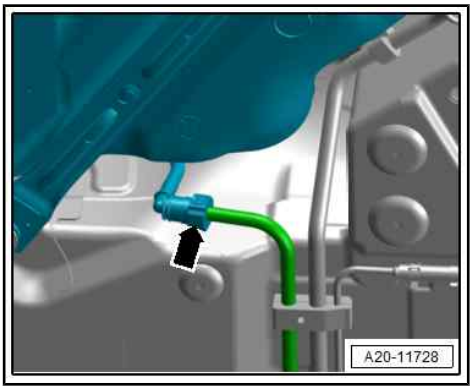
Note

Lay a cloth under the connection to catch escaping fuel.



WARNING

The fuel system is pressurised.

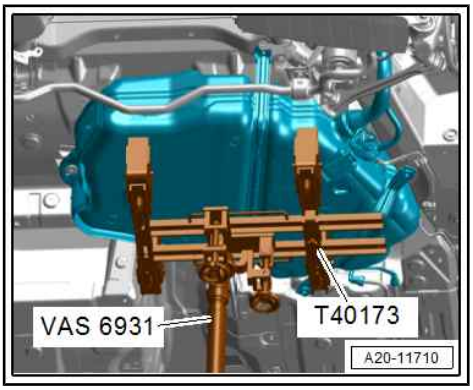
Risk of injury as fuel may spray out.

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

– Disconnect fuel line -arrow-. Disconnecting plug-in connectors ⇒ page 53

Front-wheel drive rest-of-world vehicles:

– Fit gearbox support - T40173- on engine and gearbox jack - VAS 6931- and position it so it supports fuel tank, as shown.

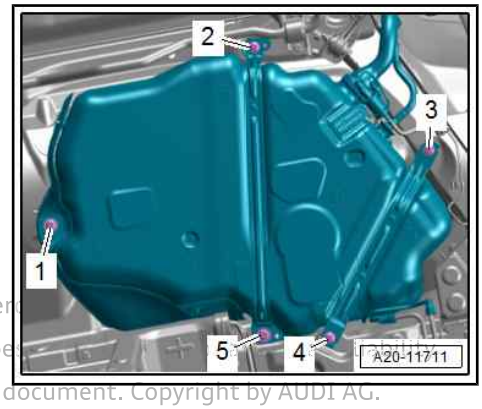


WARNING

Risk of accident caused by weight of fuel tank

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

– Remove bolts -1 ... 5-.



Note

For illustration purposes the fuel tank is shown without engine and gearbox jack.

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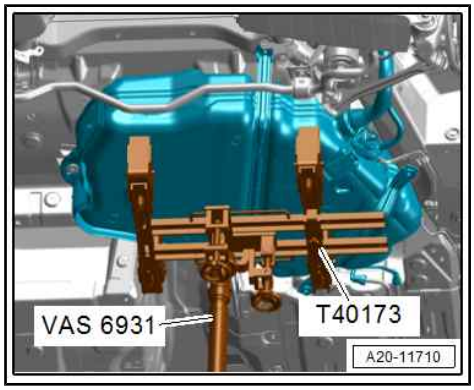
– Lower fuel tank with engine and gearbox jack - VAS 6931- .



Note

When guiding out the fuel tank, make sure there is sufficient clearance for the fuel filler neck.

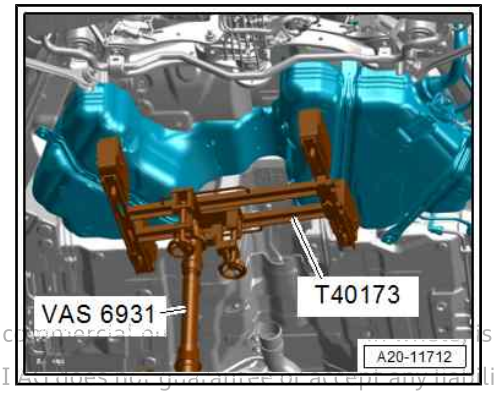
Four-wheel drive vehicles:

– Depending on equipment version: Remove diagonal struts ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing diagonal struts .

– Remove propshaft ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .

Front/four-wheel drive NAR vehicles and rest-of-world four-wheel drive vehicles:

– Fit gearbox support - T40173- on engine and gearbox jack - VAS 6931- and position it so it supports fuel tank, as shown.



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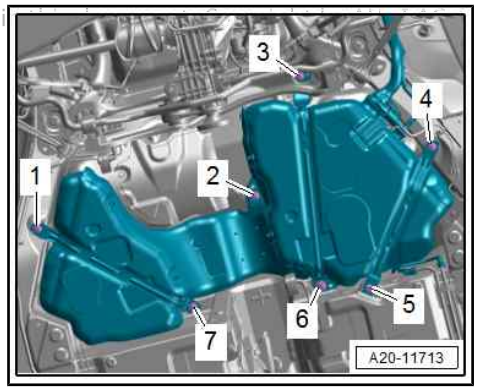
WARNING

Risk of accident caused by weight of fuel tank

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

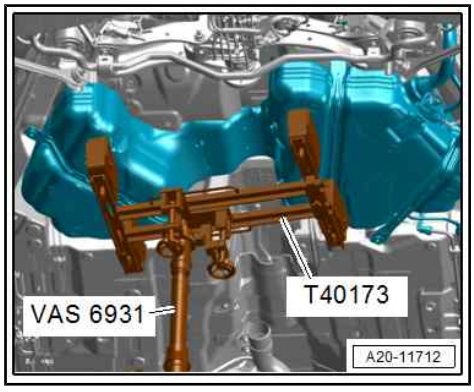
– Remove bolts -1 ... 7-.



Note

For illustration purposes the fuel tank is shown without engine and gearbox jack.

– Lower fuel tank with engine and gearbox jack - VAS 6931- .



Note

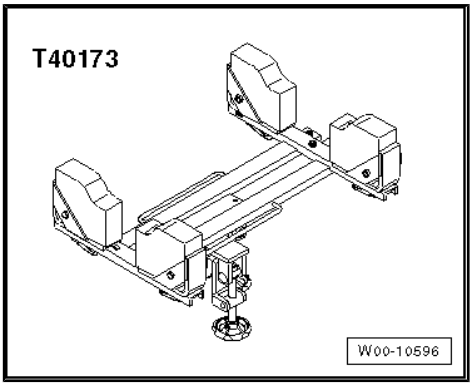
When guiding out the fuel tank, make sure there is sufficient clearance for the fuel filler neck.

1.3.2 Removing fuel tank - vehicles with TDI engine

Special tools and workshop equipment required

- Engine and gearbox jack - VAS 6931-

- Gearbox support - T40173-



Removing

– Observe safety precautions ⇒ page 1 .

– Observe rules for cleanliness ⇒ page 3 .

– Switch off ignition.

WARNING

Risk of accident caused by weight of fuel tank

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

– Drain fuel tank ⇒ page 15 .

– Remove seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

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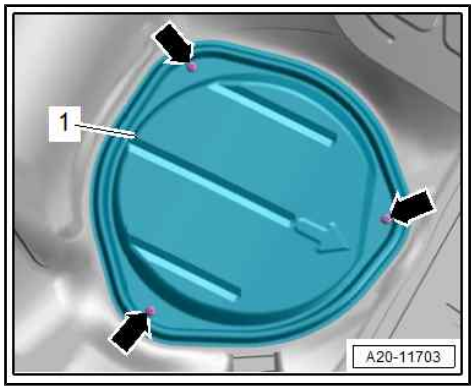
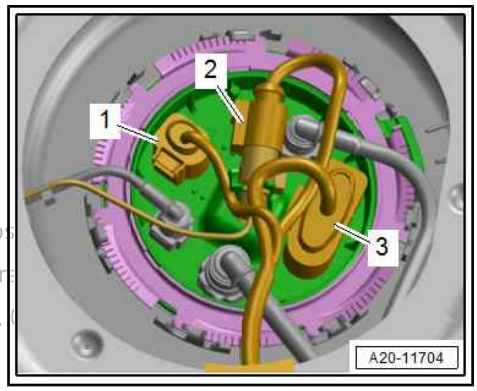
– Remove bolts -arrows- and detach cover -1- for flange.



– Release retainer catches and unplug electrical connectors -1 and 3- on flange.
– Rest-of-world vehicles/equipment version: Release retainer catch and unplug electrical connector -2-.
– Remove rear wheel housing liner (right-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (rear) .
– Remove tank flap unit ⇒ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit .



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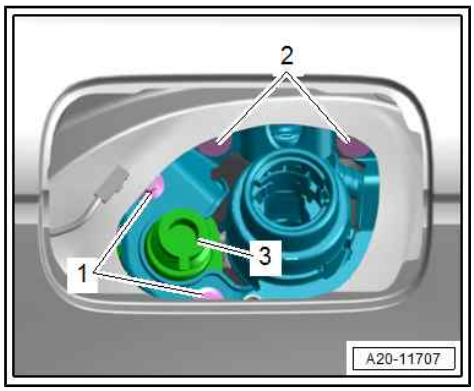
A4:

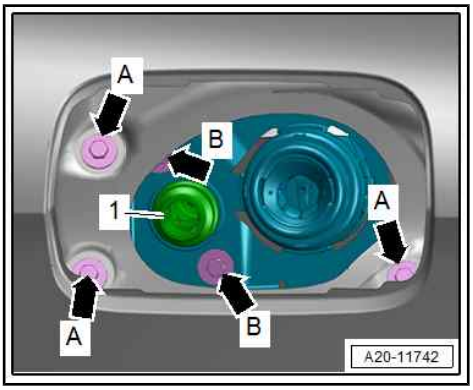
– Remove bolts -1- and filler neck for reducing agent -3- on fuel filler neck ⇒ Rep. gr. 26 ; SCR (selective catalytic reduction) system; Exploded view - reducing agent tank .
– Remove bolts -2- for fuel filler neck.



A5:

– Remove bolts -arrows A- for fuel filler neck.

– Unscrew bolts -arrows B- and remove filler neck for reducing agent -1- on fuel filler neck ⇒ Rep. gr. 26 ; SCR (selective catalytic reduction) system; Exploded view - reducing agent tank .



All vehicles (continued):

Note

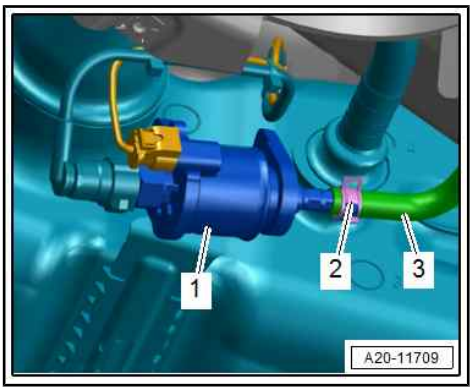
Seal off opening of fuel filler neck with a clean plug to prevent dirt from entering.

– Disengage fuel filler neck on mounting.

– Remove underbody trim panels (rear) ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .

– Remove rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Removing and installing silencers .

– Rest-of-world vehicles/equipment version: Release clamp -2- and detach fuel hose -3- from metering pump -1-.



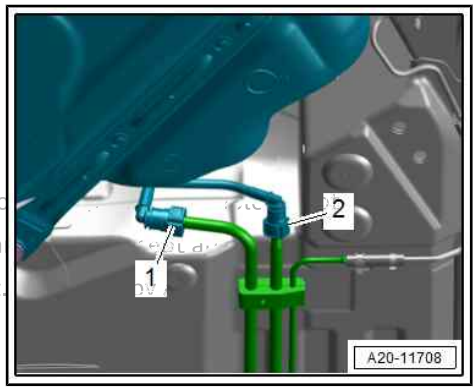
WARNING

The fuel system is pressurised.

Risk of injury as fuel may spray out.

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

– Disconnect fuel lines -1 and 2-. Disconnecting plug-in connectors ⇒ page 53



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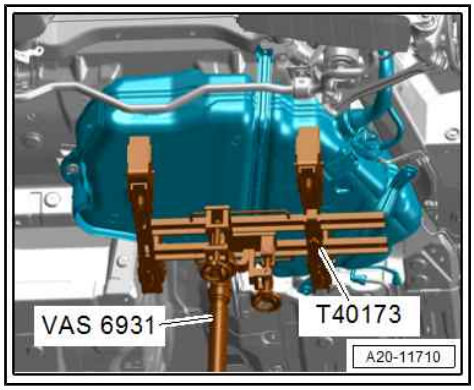
Front-wheel drive vehicles:

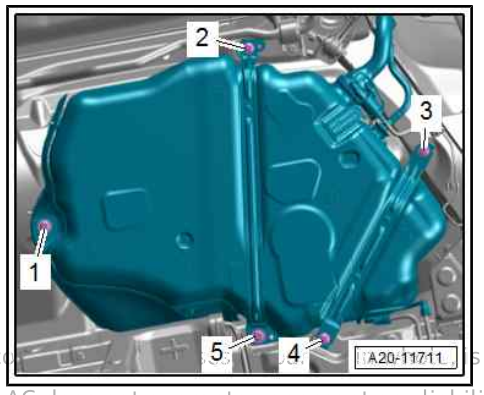
– Fit gearbox support - T40173- on engine and gearbox jack - VAS 6931- and position it so it supports fuel tank, as shown in illustration.



WARNING

Risk of accident caused by weight of fuel tank

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



– Remove bolts -1 ... 5-.

Note

For illustration purposes the fuel tank is shown without engine and gearbox jack.

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– Lower fuel tank with engine and gearbox jack - VAS 6931- .

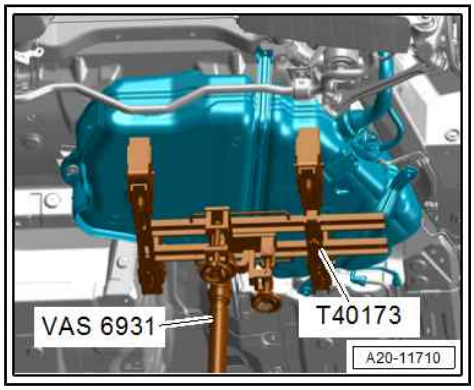
Note

When guiding out the fuel tank, make sure there is sufficient clearance for the fuel filler neck.

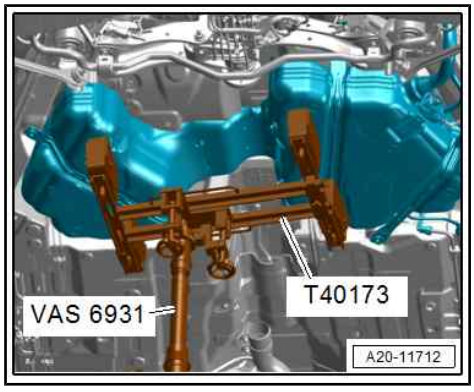
Four-wheel drive vehicles:

– Depending on equipment version: Remove diagonal struts ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing diagonal struts .

– Remove propshaft ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



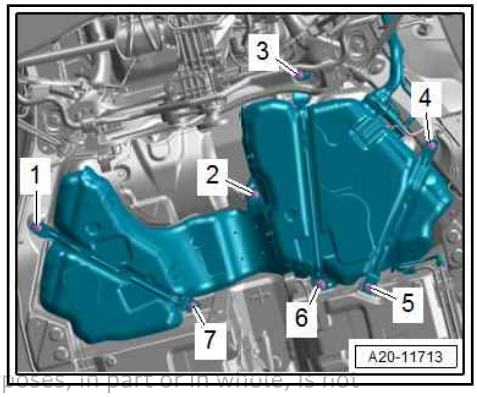
– Fit gearbox support - T40173- on engine and gearbox jack - VAS 6931- and position it so it supports fuel tank, as shown in illustration.



WARNING

Risk of accident caused by weight of fuel tank

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



– Remove bolts -1 ... 7-.

Note

For illustration purposes the fuel tank is shown without engine and gearbox jack.

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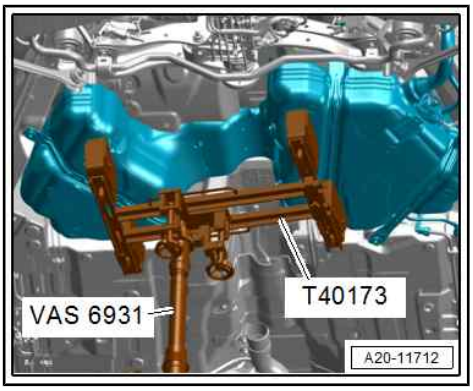
– Lower fuel tank with engine and gearbox jack - VAS 6931- .



Note

When guiding out the fuel tank, make sure there is sufficient clearance for the fuel filler neck.

1.3.3 Installing fuel tank - all vehicles

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

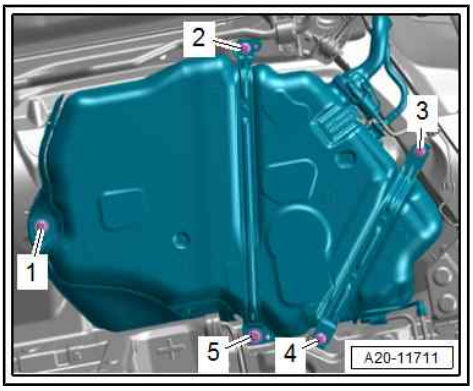
- Fuel lines and wiring harness for fuel delivery unit must be clipped in at fuel tank.

– Position fuel tank and securing straps on underside of vehicle using engine and gearbox jack - VAS 6931- .

– When installing fuel tank, make sure that fuel filler neck is correctly inserted into opening on body.

Front-wheel drive vehicles:

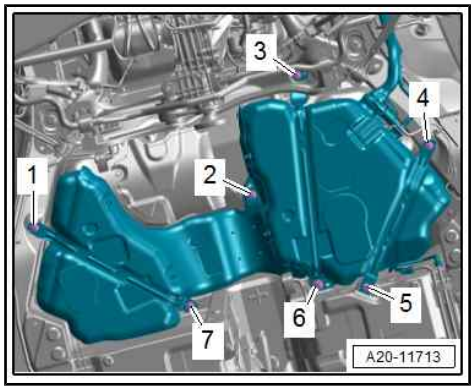
– Tighten bolts -1 ... 5- for securing straps and fuel tank.



Four-wheel drive vehicles:

– Tighten bolts -1 ... 7- for securing straps and fuel tank.

– Install propshaft ⇒ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



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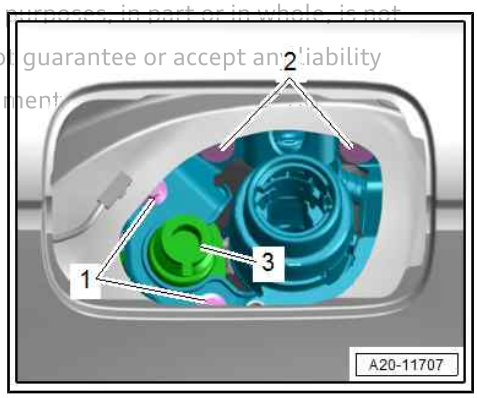
All A4 models:

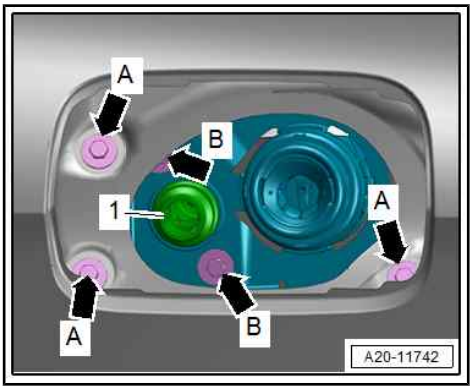
– Engage fuel filler neck on mounting.

– TDI vehicles: Install filler neck for reducing agent -3- ⇒ Rep. gr. 26 ; SCR (selective catalytic reduction) system; Exploded view - reducing agent tank .

– Tighten bolts -1, 2-.



All A5 models:



– TDI vehicles: Install filler neck for reducing agent -1- ⇒ Rep. gr. 26 ; SCR (selective catalytic reduction) system; Exploded view - reducing agent tank .

– Tighten bolts -arrows A and B-.

All vehicles (continued):

WARNING

Safety risk due to electrostatic discharge.

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

– Install tank flap unit ⇒ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit .

– Install seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

– TFSI vehicles: Connect battery and perform steps required after re-connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

– After installing a new or completely drained fuel tank, the tank must be filled with at least 5 litres of fuel before starting the engine.

Note

The fuel pump must not be allowed to run in an empty fuel tank.

– Rest-of-world vehicles/equipment version: Bleed fuel line leading to metering pump for auxiliary heater ⇒ page 51 .

Tightening torques

- ⇒ “1.1 Exploded view - fuel tank”, page 6
- ⇒ “2.1 Exploded view - fuel delivery unit/fuel gauge senders”, page 36
- ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers
- ⇒ Rep. gr. 26 ; SCR (selective catalytic reduction) system; Exploded view - reducing agent tank
- ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear)
- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view - underbody trim

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1.4 Removing and installing misfuelling prevention device

Note

This procedure applies to TDI vehicles only.

Special tools and workshop equipment required

- Funnel - T40256- or emergency refuelling funnel

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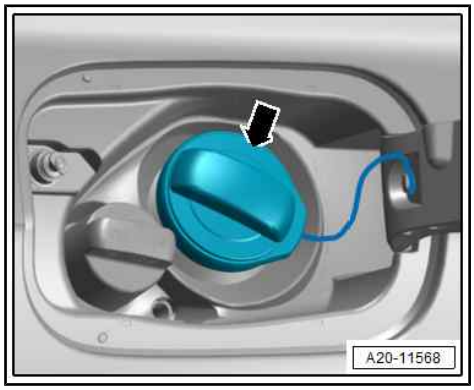
- Circlip pliers

Removing

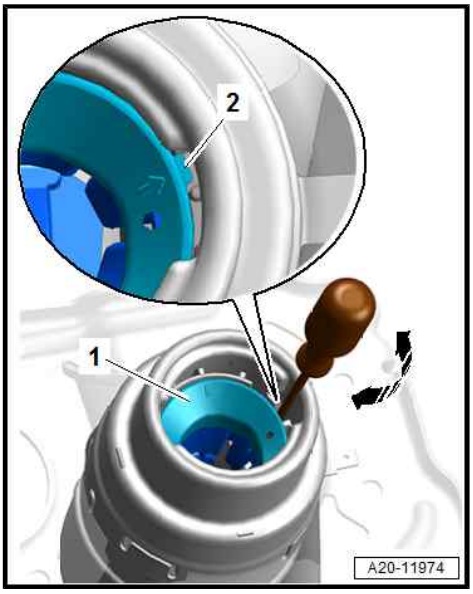
Observe safety precautions ⇒ page 1 .

Observe rules for cleanliness ⇒ page 3 .

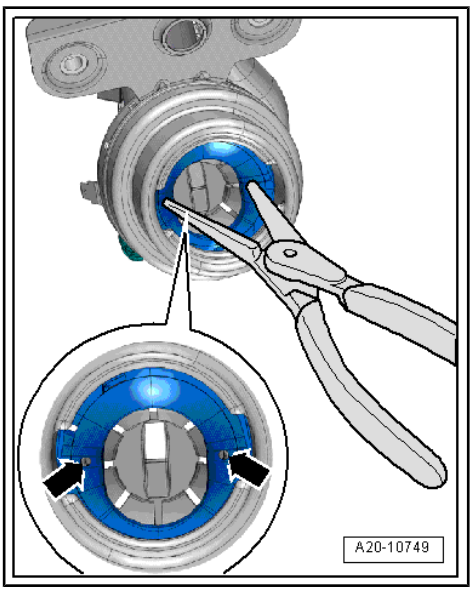
– Open tank flap.
– Clean area around fuel filler neck.
– Remove filler cap -arrow- for fuel filler neck.



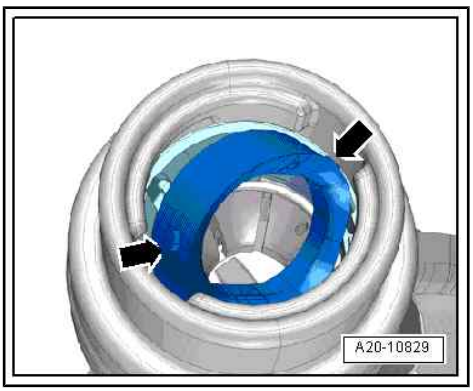
– Insert flat-bladed screwdriver between locking ring and metal ring of fuel filler neck and position it against retaining tab -2-.
– Have a second mechanic turn the screwdriver around its own axis -arrow- to release retaining tab for locking ring -1-.



– At the same time, insert circlip pliers in both holes -arrows- in locking ring.
– Turn locking ring approx. 25° anti-clockwise.



– Tilt locking ring inside fuel filler neck and take it out through slots -arrows- for filler cap.



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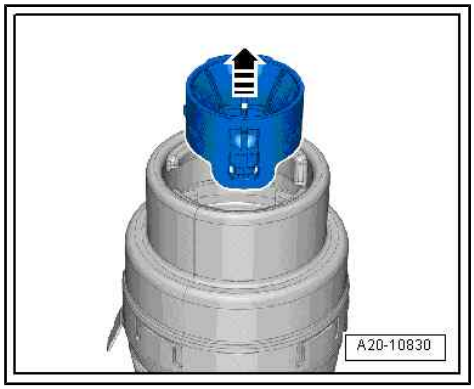
– Pull misfuelling prevention device out of fuel filler neck -arrow- (use circlip pliers if necessary).

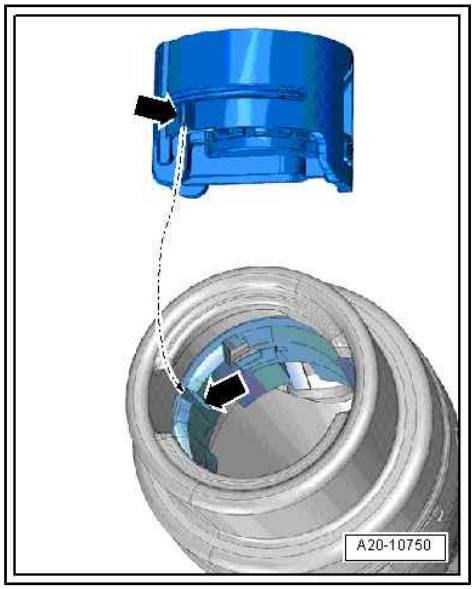


Installing

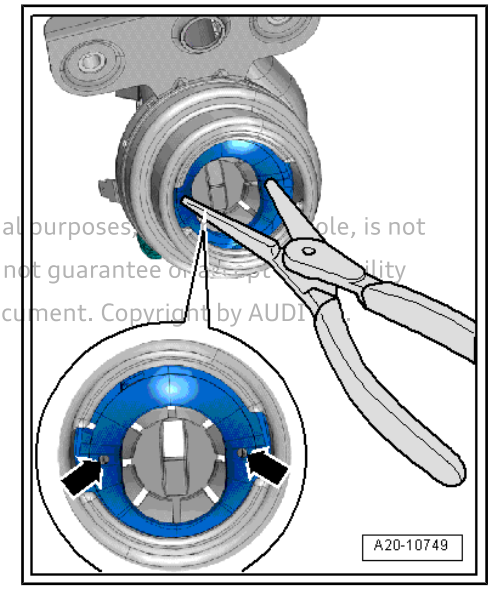
Installation is carried out in reverse order; note the following:

– Insert misfuelling prevention device in fuel filler neck.

• The lug on the misfuelling prevention device must engage in the groove on the filler neck -arrows-.



– Fit locking ring using circlip pliers (turn 25° clockwise).



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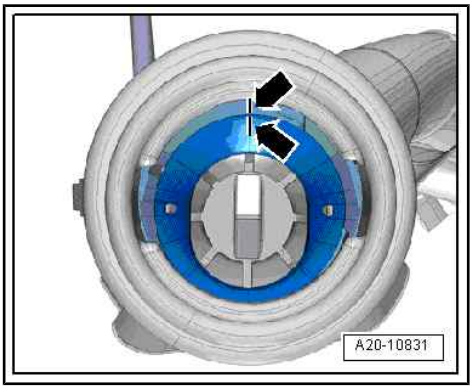
– If parts have been assembled correctly, markings on locking ring and fuel filler neck should now be aligned -arrows-.

Functional check:

- It must not be possible to open locking flap of misfuelling prevention device without release tool -T40256- .
- It must be possible to insert release tool -T40256- into fuel filler neck as far as stop.



1.5 Deactivating misfuelling prevention device

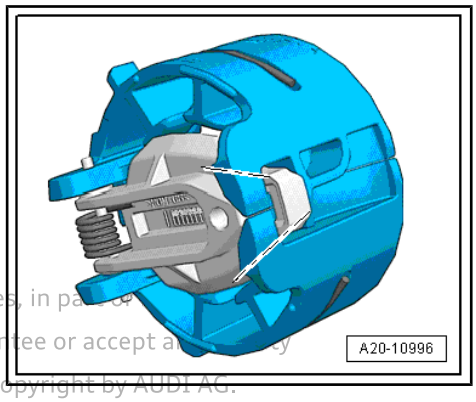
Note

This procedure applies to TDI vehicles only.

Procedure

– Remove misfuelling prevention device ⇒ page 32 .

– Cut off retaining tabs at markings, as shown in illustration.



Note

It must be possible to open locking flap of misfuelling prevention device smoothly.

– Install misfuelling prevention device ⇒ page 32 .

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2 Fuel delivery unit/fuel gauge senders

⇒ “2.1 Exploded view - fuel delivery unit/fuel gauge senders”, page 36

⇒ “2.2 Removing and installing fuel delivery unit/fuel gauge sender”, page 40

⇒ “2.3 Bleeding fuel line for metering pump”, page 51

⇒ “2.4 Removing and installing fuel gauge sender G ”, page 52

2.1 Exploded view - fuel delivery unit/fuel gauge senders

⇒ “2.1.1 Exploded view - fuel delivery unit/fuel gauge senders, TFSI vehicles, rest-of-world”, page 36

⇒ “2.1.2 Exploded view - fuel delivery unit/fuel gauge senders, TFSI vehicles, NAR”, page 38

⇒ “2.1.3 Exploded view - fuel delivery unit/fuel gauge senders, all TDI vehicles”, page 39

2.1.1 Exploded view - fuel delivery unit/fuel gauge senders, TFSI vehicles, rest-of-world

1 - Fuel gauge sender

- ❑ Removing and installing fuel gauge sender - G- ⇒ page 52

Note

Fuel gauge sender 2 - G169- is integrated in fuel tank and cannot be renewed separately

2 - Fuel line

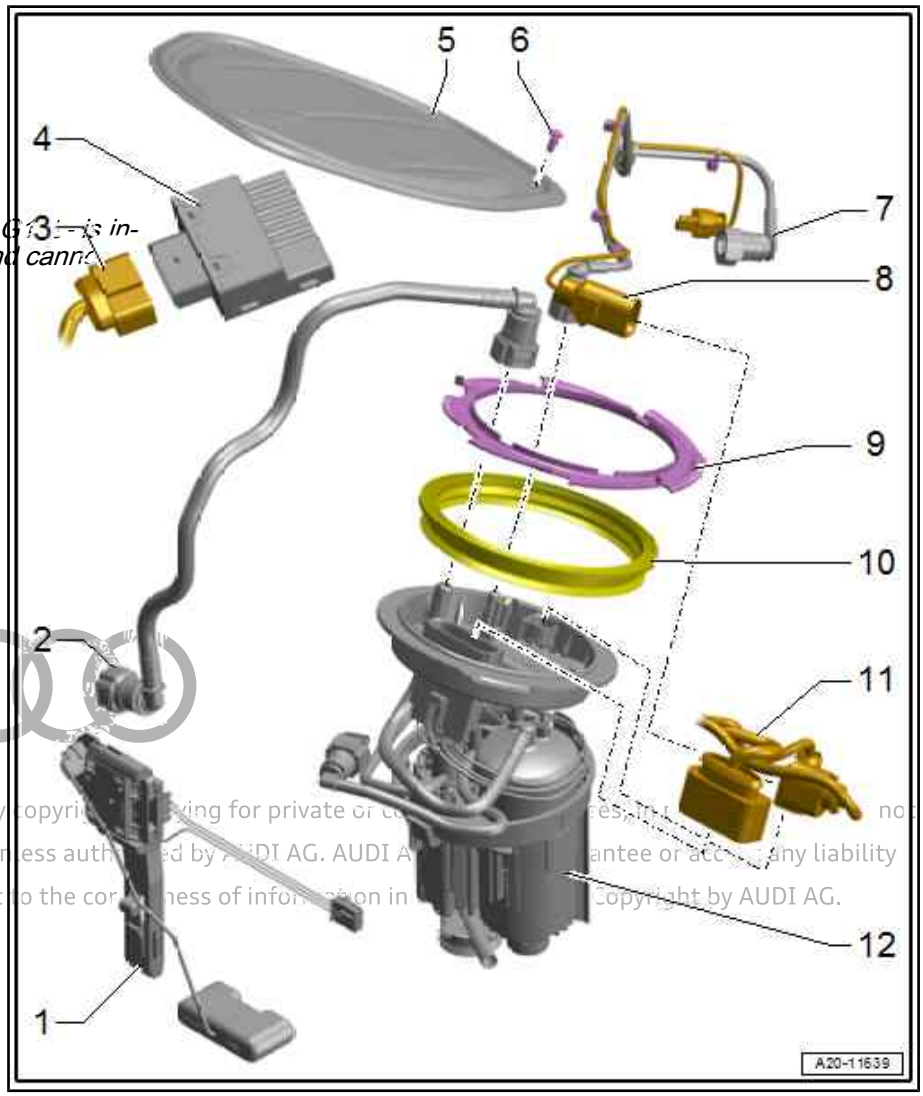
- ❑ To engine
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

3 - Electrical connector

- ❑ For fuel pump control unit - J538-
- ❑ Ensure item is connected securely

4 - Fuel pump control unit - J538-

- ❑ Checking ⇒ Vehicle diagnostic tester
- ❑ Fitting location: on right side under sill panel trim (rear)
- ❑ Removing and installing ⇒ page 90



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5 - Cover for flange

6 - Bolt

- ❑ 3x
- ❑ 1.5 Nm

7 - Fuel line to metering pump for auxiliary heater

- ❑ Depending on vehicle equipment
- ❑ Clipped onto fuel tank
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

8 - Electrical connector

- ❑ To metering pump for auxiliary heater
- ❑ Ensure item is connected securely

9 - Locking ring

- ❑ Loosen and tighten with key - T10202-
- ❑ 110 Nm

10 - Seal

- ❑ Renew after removing
- ❑ Install dry

11 - Wiring harness

- ❑ For fuel system pressurisation pump - G6- , fuel gauge sender - G- and fuel gauge sender 2 - G169-
- ❑ Ensure item is connected securely

12 - Fuel delivery unit

- ❑ With fuel system pressurisation pump - G6-
- ❑ With integrated fuel filter; fuel filter cannot be renewed separately
- ❑ Checking fuel pump (electrical test) ⇒ Vehicle diagnostic tester
- ❑ Removing and installing ⇒ page 40
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53
- ❑ After installing, make sure that fuel tank contains at least 5 litres of fuel

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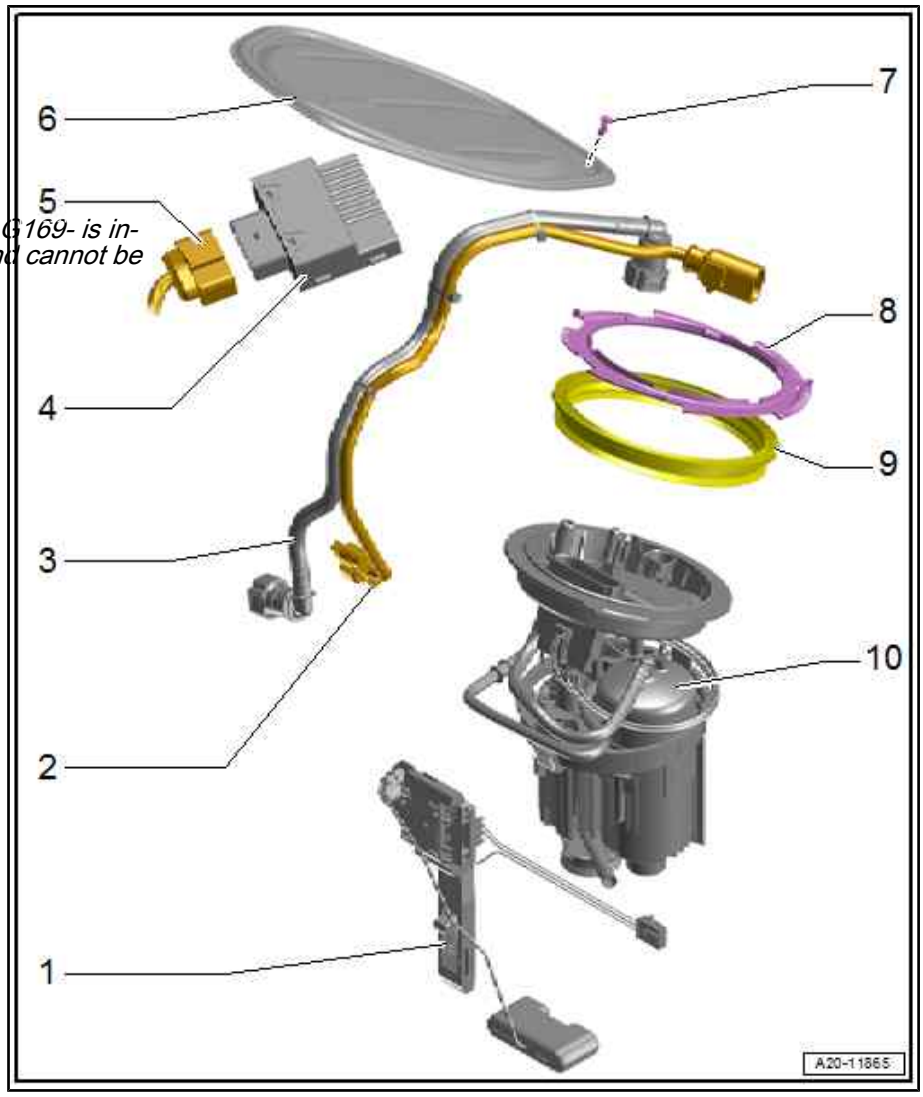
2.1.2 Exploded view - fuel delivery unit/fuel gauge senders, TFSI vehicles, NAR



1 - Fuel gauge sender

- ❑ Removing and installing fuel gauge sender - G- ⇒ page 52

Note

Fuel gauge sender 2 - G169- is integrated in fuel tank and cannot be renewed separately

2 - Electrical connector

- ❑ To control unit for fuel tank leak detection
- ❑ Ensure item is connected securely

3 - Fuel line

- ❑ To engine
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

4 - Fuel pump control unit - J538-

- ❑ Checking ⇒ Vehicle diagnostic tester
- ❑ Fitting location: on right side under sill panel trim (rear)
- ❑ Removing and installing ⇒ page 90

5 - Electrical connector

- ❑ For fuel pump control unit - J538-
- ❑ Ensure item is connected securely

6 - Cover for flange

7 - Bolt

- ❑ 3x
- ❑ 1.5 Nm

8 - Locking ring

- ❑ Loosen and tighten with key - T10202-
- ❑ 110 Nm

9 - Seal

- ❑ Renew after removing
- ❑ Install dry

10 - Fuel delivery unit

- ❑ With fuel system pressurisation pump - G6-
- ❑ With integrated fuel filter; fuel filter cannot be renewed separately
- ❑ Checking fuel pump (electrical test) ⇒ Vehicle diagnostic tester
- ❑ Removing and installing ⇒ page 40
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

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- ❑ After installing, make sure that fuel tank contains at least 5 litres of fuel

2.1.3 Exploded view - fuel delivery unit/fuel gauge senders, all TDI vehicles

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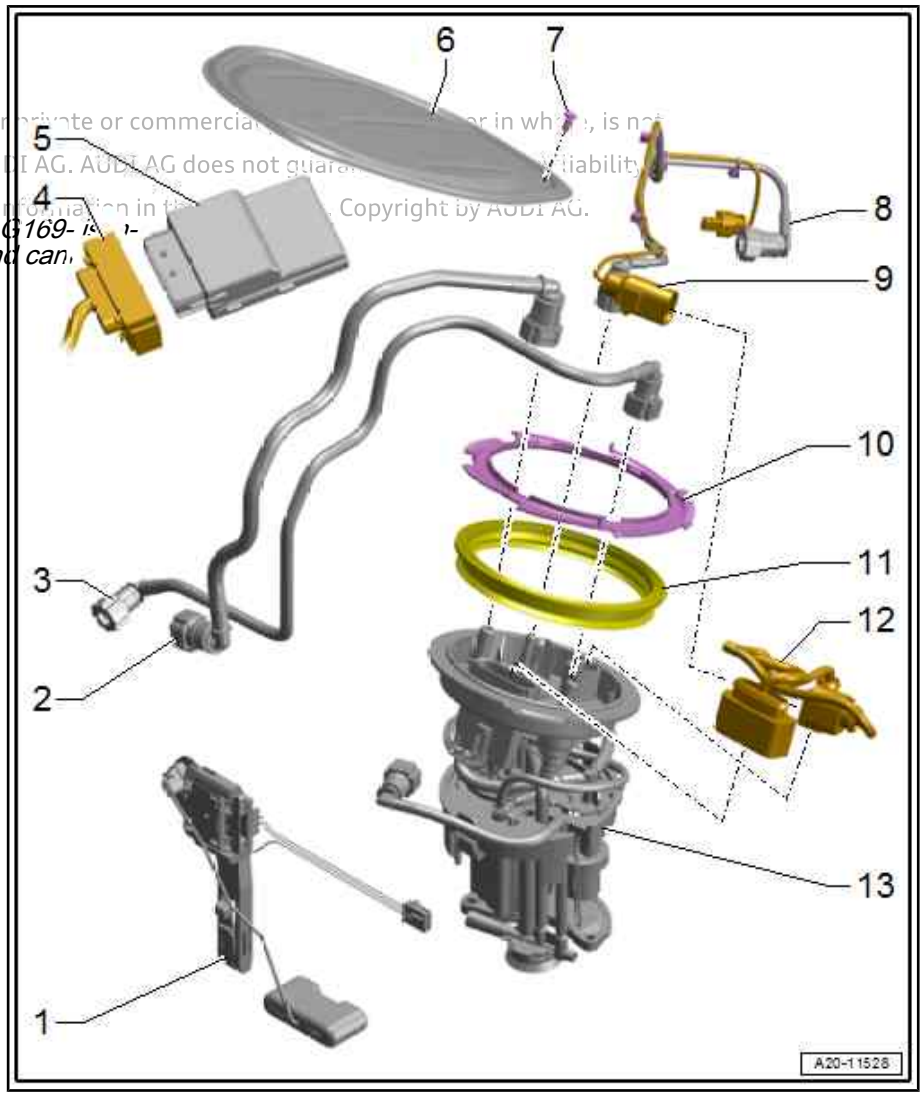

1 - Fuel gauge sender

- ❑ Removing and installing fuel gauge sender - G- ⇒ page 52

Note

Fuel gauge sender 2 - G169- is integrated in fuel tank and can be renewed separately

2 - Fuel supply line

- ❑ To fuel filter
- ❑ Clipped onto fuel tank
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

3 - Fuel return line

- ❑ From engine
- ❑ Clipped onto fuel tank
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

4 - Electrical connector

- ❑ For fuel pump control unit - J538-
- ❑ Ensure item is connected securely

5 - Fuel pump control unit - J538-

- ❑ Checking ⇒ Vehicle diagnostic tester
- ❑ Fitting location: on right side under sill panel trim (rear)
- ❑ Removing and installing ⇒ page 90

6 - Cover for flange

7 - Bolt

- ❑ 3x
- ❑ 1.5 Nm

8 - Fuel line to metering pump for auxiliary heater

- ❑ Depending on country/equipment version
- ❑ Clipped onto fuel tank
- ❑ Do not kink
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

9 - Electrical connector

- ❑ Depending on country/equipment version
- ❑ To metering pump for auxiliary heater

- ❑ Ensure item is connected securely

10 - Locking ring

- ❑ Loosen and tighten with key - T10202-
- ❑ 110 Nm

11 - Seal

- ❑ Renew after removing
- ❑ Install dry

12 - Wiring harness

- ❑ For fuel system pressurisation pump - G6- , fuel gauge sender - G- and fuel gauge sender 2 - G169-
- ❑ Ensure item is connected securely

13 - Fuel delivery unit

- ❑ With fuel system pressurisation pump - G6-
- ❑ Checking fuel pump (electrical test) ⇒ Vehicle diagnostic tester
- ❑ Removing and installing ⇒ page 45
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53
- ❑ After installing, make sure that fuel tank contains at least 5 litres of fuel

2.2 Removing and installing fuel delivery unit/fuel gauge sender

⇒ “2.2.1 Removing and installing fuel delivery unit/fuel gauge sender - vehicles with TFSI engine”, page 40

⇒ “2.2.2 Removing and installing fuel delivery unit/fuel gauge sender - vehicles with TDI engine”, page 45

2.2.1 Removing and installing fuel delivery unit/fuel gauge sender - vehicles with TFSI engine

Special tools and workshop equipment required

- ♦ Key - T10202-

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Removing

– Observe safety precautions ⇒ page 1 .

– Observe rules for cleanliness ⇒ page 3 .

WARNING

Danger! Fuel may escape.

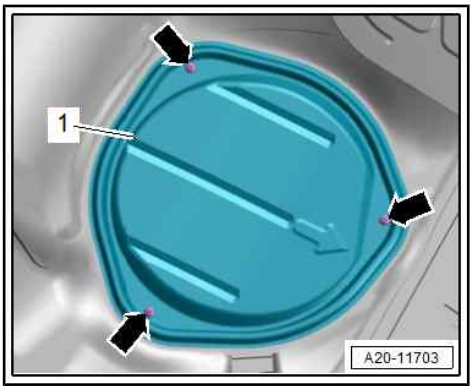
- *The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.*

– Drain fuel tank if necessary ⇒ page 15 .

– Move front seats all the way up and forwards.

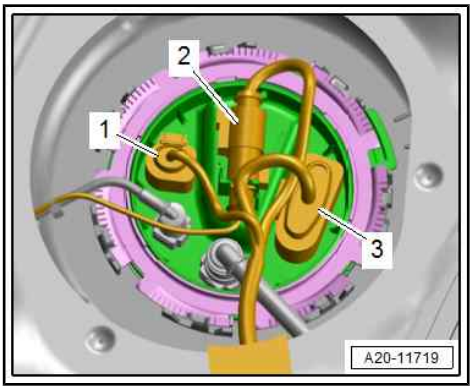
– Remove seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

– Remove bolts -arrows- and detach cover -1- for flange.

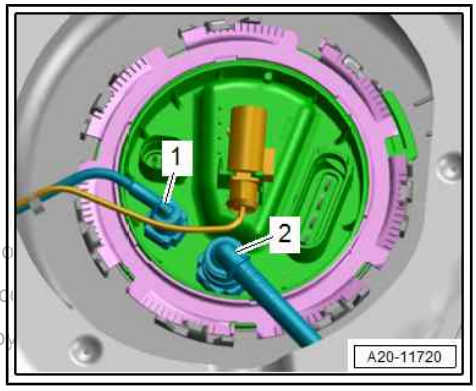


– Release retainer catches and unplug electrical connectors -1 and 3- on flange.

– Depending on country/equipment version: Release retainer catch and unplug electrical connector -2-.



– Rest-of-world vehicles/equipment version: Disconnect fuel line -1- leading to metering pump for auxiliary heater at flange. Disconnecting plug-in connectors ⇒ page 53



WARNING

The fuel system is pressurised.

Risk of injury as fuel may spray out.

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

– Disconnect fuel line -2- from flange. Disconnecting plug-in connectors ⇒ page 53

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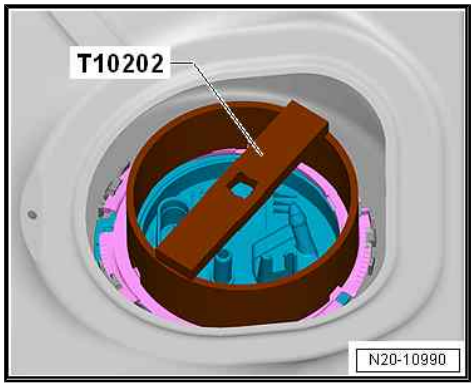
WARNING

Danger! Fuel may escape.

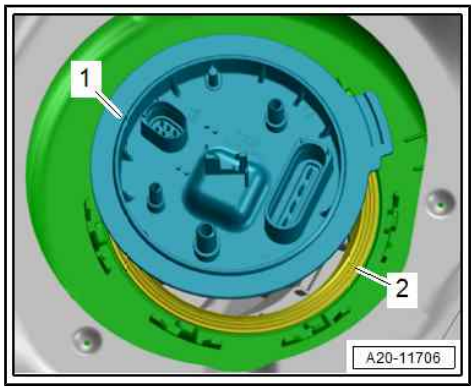
- *The fuel tank must not be more than 1/4 full when removing the fuel delivery unit, otherwise a large amount of fuel will escape.*



– Remove locking ring using key - T10202- .

– Pull flange -1- slightly out of opening in fuel tank and detach seal -2-.

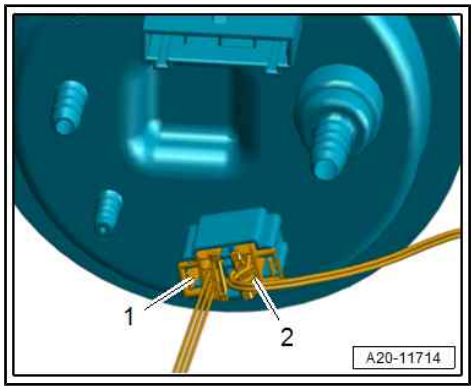
– Carefully pull flange with fuel lines out of opening in fuel tank.



– Release retainer catches and unplug electrical connectors on flange.

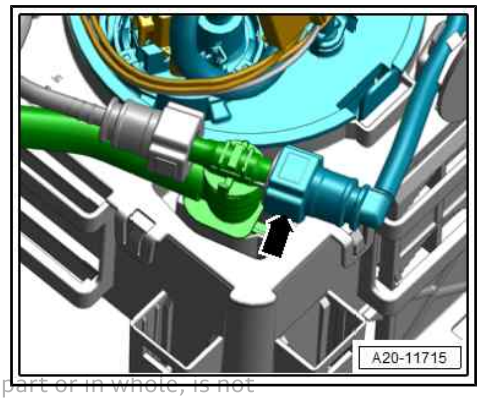
1 - For fuel gauge sender 2 - G169- (not fitted on all vehicle versions)

2 - For fuel gauge sender - G-



Front-wheel drive vehicles:

– Reach into opening in fuel tank and disconnect supply line -arrow- for suction-jet pump. Disconnecting plug-in connectors ⇒ page 53



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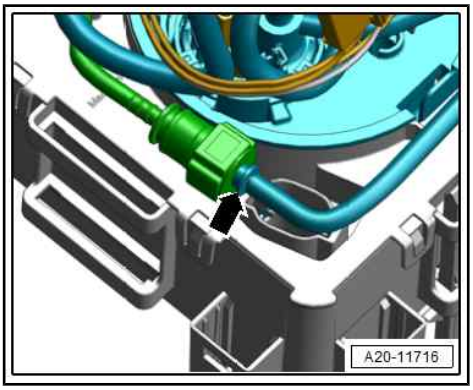
Four-wheel drive vehicles:

– Reach into opening in fuel tank and disconnect supply line -arrow- for suction-jet pump. Disconnecting plug-in connectors ⇒ page 53



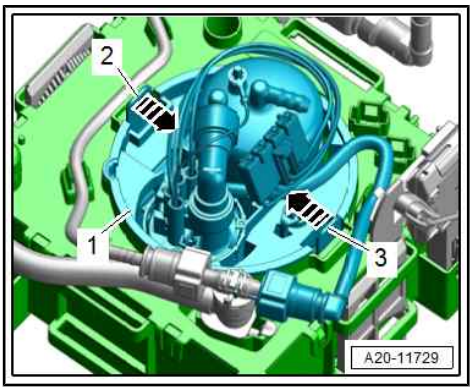
All vehicles (continued):

– Reach through opening in fuel tank, press catches -2, 3- in direction of -arrows- one after the other and at the same time release fuel delivery unit -1-.

WARNING

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

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



– Carefully pull fuel delivery unit out of opening in fuel tank.

Note

The fuel delivery unit is shown without fuel lines for greater clarity.

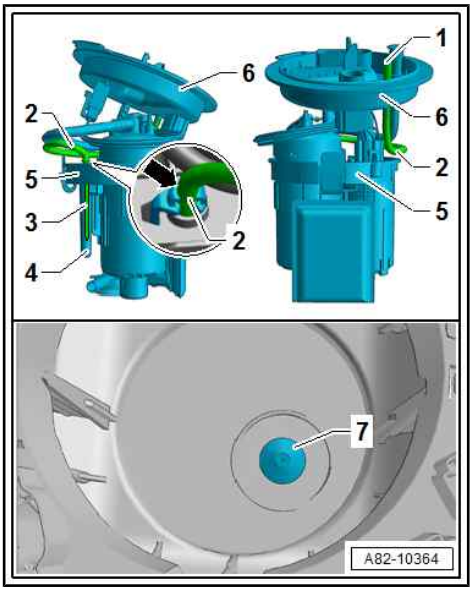
Installing

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

Note

- *Renew seal after removing.*
- *Make sure that fuel delivery unit is seated securely.*

– Country/equipment version with auxiliary heater: Make sure that suction pipe -2- (for extracting fuel) for auxiliary/supplementary heater is correctly inserted and engaged -arrow- in guide on fuel delivery unit -5-.



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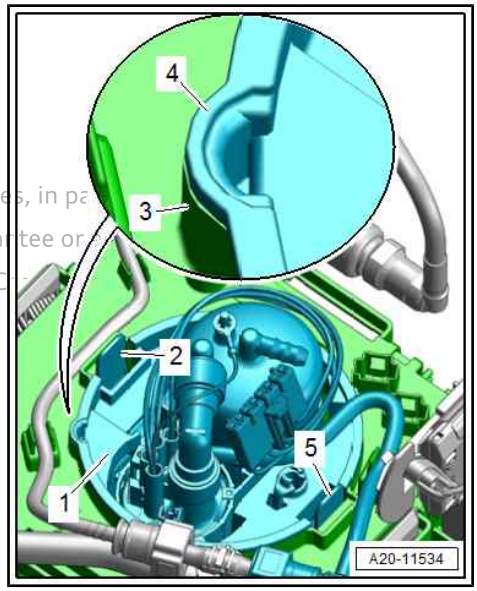
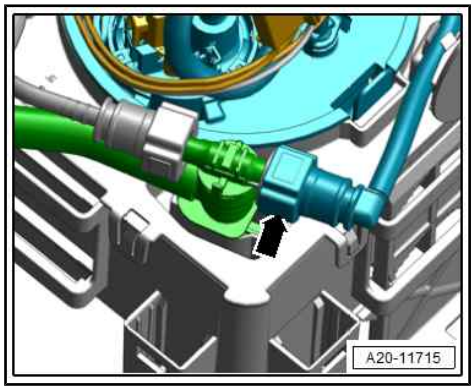
– Carefully insert fuel delivery unit in fuel tank.
– Reach through opening in fuel tank and bring fuel delivery unit into installation position.
• Lug -4- on fuel delivery unit must be seated in groove in baffle housing -3-.
– Press fuel delivery unit -1- downwards into catches on baffle housing so that it clicks into place.
– Press fuel delivery unit down again and then pull to check that catches -2 and 5- are correctly engaged.



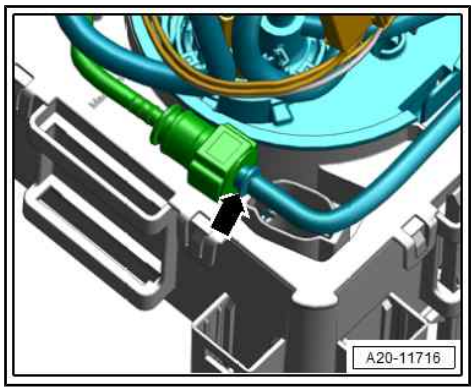
Front-wheel drive vehicles:

– Reach through opening in fuel tank and connect supply line -arrow- for suction-jet pump so it engages audibly. Connect plug-in connectors ⇒ page 53 .



Four-wheel drive vehicles:

– Reach through opening in fuel tank and connect supply line -arrow- for suction-jet pump so it engages audibly. Connect plug-in connectors ⇒ page 53 .

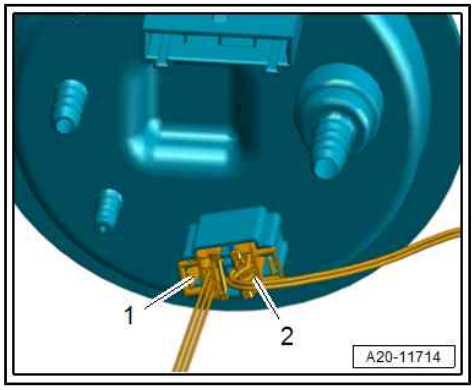


All vehicles (continued):

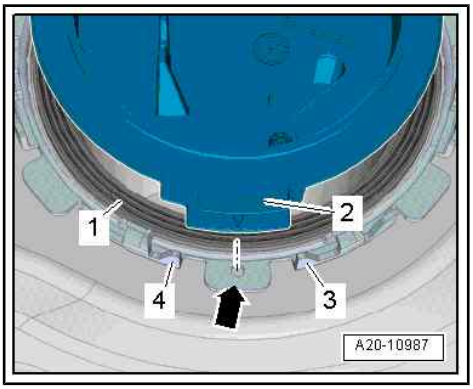
– Plug in electrical connectors on flange and make sure they are securely engaged.

1 - For fuel gauge sender 2 - G169- (not fitted on all vehicle versions)

2 - For fuel gauge sender - G-



– Install new seal -1- for flange (seal must be installed dry).



Caution

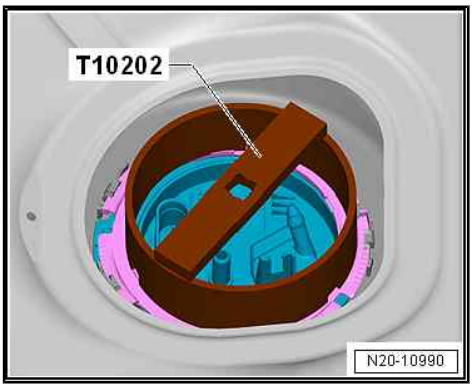
Risk of leaks

- *The seal must not be pinched or damaged when installing the flange.*

– Fit flange in correct installation position.

• Lug -2- on flange must point towards hole -arrow- on locking ring and must be between tabs -3 and 4- on fuel tank.

– Press flange on firmly, fit locking ring and secure using key -T10202- .



– Connect fuel lines, making sure they engage audibly.

– Plug in electrical connectors and make sure they are securely engaged.

– Install seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .

– After installing fuel delivery unit, make sure that fuel tank contains at least 5 litres of fuel.

Note

The fuel pump must not be allowed to run in an empty fuel tank.

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– Rest-of-world vehicles/equipment version: Bleed fuel line leading to metering pump for auxiliary heater ⇒ page 51 .

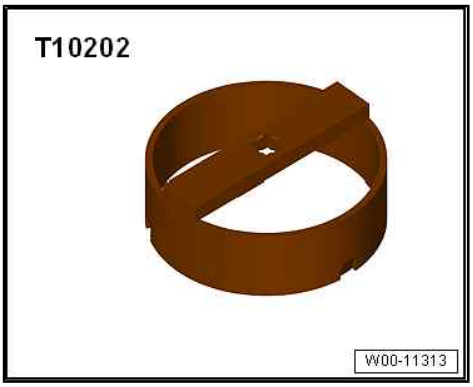
Tightening torques

- ⇒ “2.1 Exploded view - fuel delivery unit/fuel gauge senders”, page 36

2.2.2 Removing and installing fuel delivery unit/fuel gauge sender - vehicles with TDI engine

Special tools and workshop equipment required

- Key - T10202-



Removing

– Observe safety precautions ⇒ page 1 .

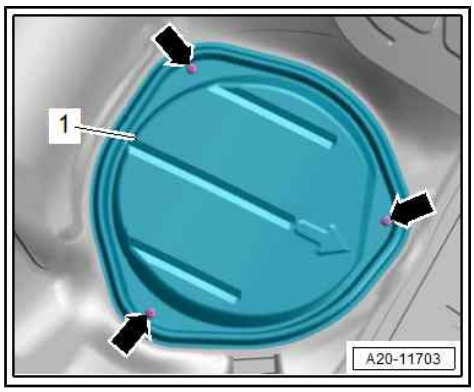
– Observe rules for cleanliness ⇒ page 3 .

WARNING

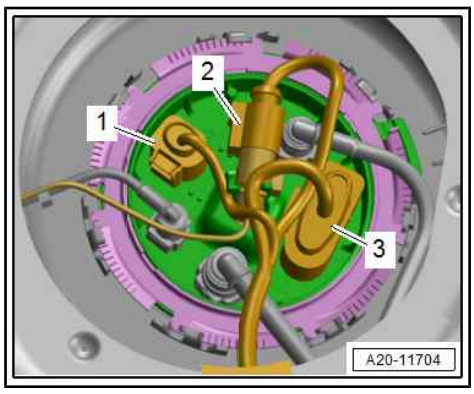
Danger! Fuel may escape.

- *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 15 .
– Move front seats all the way up and forwards.
– Remove seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
– Remove bolts -arrows- and detach cover -1- for flange.



– Release retainer catches and unplug electrical connectors -1 and 3- on flange.
– Rest-of-world vehicles/equipment version: Release retainer catch and unplug electrical connector -2-.



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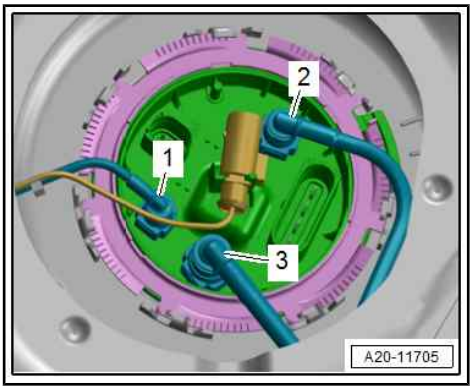
– Rest-of-world vehicles/equipment version: Disconnect fuel line -1- leading to metering pump. Disconnecting plug-in connectors ⇒ page 53



WARNING

The fuel system is pressurised.

Risk of injury as fuel may spray out.

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

– Disconnect fuel lines -2 and 3-. Disconnecting plug-in connectors ⇒ page 53

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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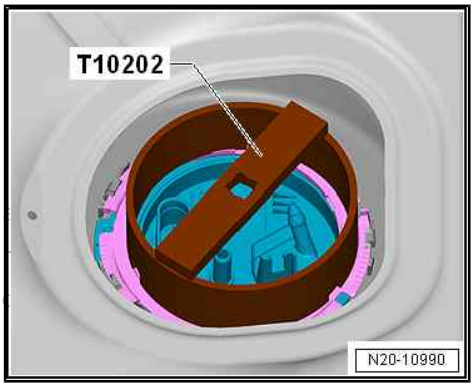
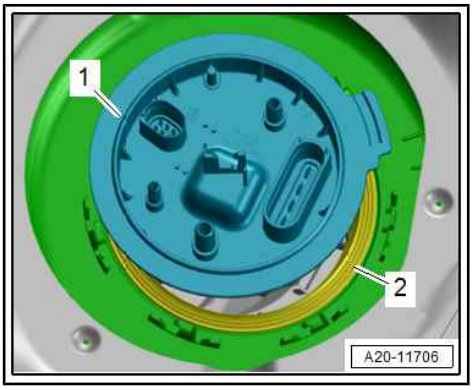


– Remove locking ring using key - T10202- .

– Pull flange -1- slightly out of opening in fuel tank and detach seal -2-.

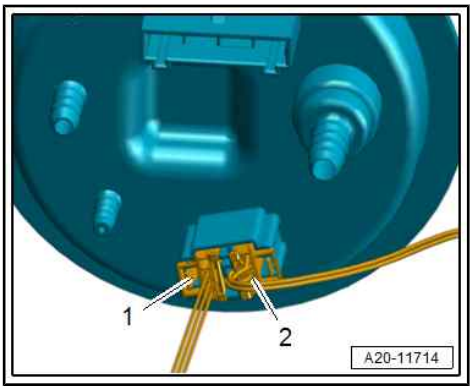
– Carefully pull flange with fuel lines out of opening in fuel tank.



– Release retainer catches and unplug electrical connectors on flange.

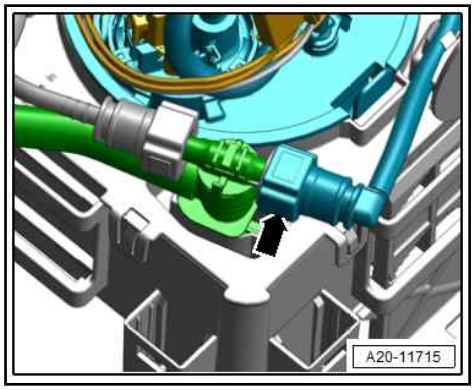
1 - For fuel gauge sender - G-

2 - For fuel gauge sender 2 - G169- (not fitted on all vehicle versions)



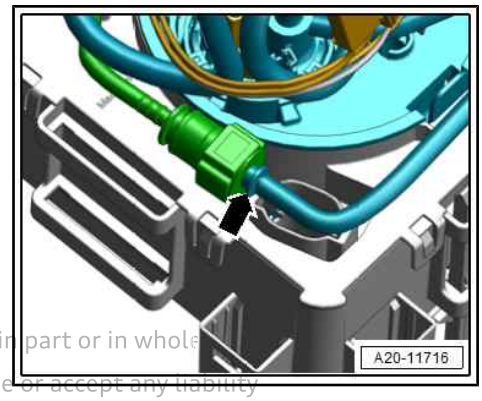
Front-wheel drive vehicles:

– Reach into opening in fuel tank and disconnect supply line -arrow- for suction-jet pump. Disconnecting plug-in connectors ⇒ page 53



Four-wheel drive vehicles:

– Reach into opening in fuel tank and disconnect supply line -arrow- for suction-jet pump. Disconnecting plug-in connectors ⇒ page 53



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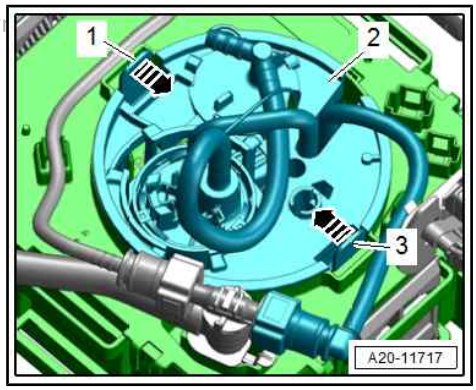
All vehicles (continued):

– Reach through opening in fuel tank, press catches -1, 3- in direction of -arrows- one after the other and at the same time release fuel delivery unit -2-.



WARNING

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

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

– Carefully pull fuel delivery unit out of opening in fuel tank.

Note

The fuel delivery unit is shown without fuel lines for greater clarity.

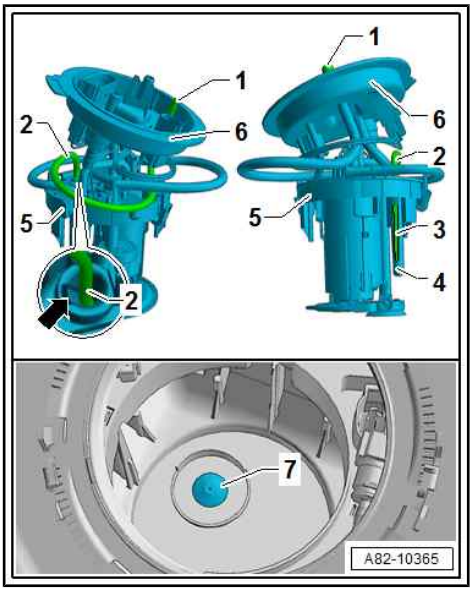
Installing

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

Note

- *Renew seal after removing.*
- *Make sure that fuel delivery unit is seated securely.*

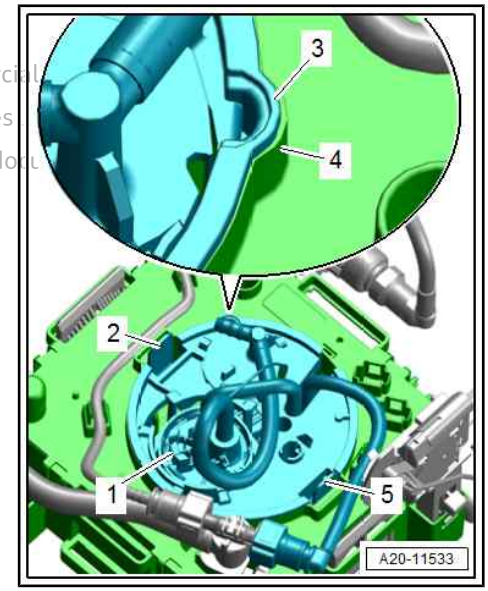
– Country/equipment version with auxiliary heater: Make sure that suction pipe -2- (for extracting fuel) for auxiliary/supplementary heater is correctly inserted and engaged -arrow- in guide on fuel delivery unit -5-.



– Carefully insert fuel delivery unit in fuel tank.

– Reach through opening in fuel tank and bring fuel delivery unit into installation position.

• Lug -3- on fuel delivery unit must be seated in groove in baffle housing -4-.



– Press fuel delivery unit -1- downwards into catches on baffle housing so that it clicks into place.

– Press fuel delivery unit down again and then pull to check that catches -2 and 5- are correctly engaged.

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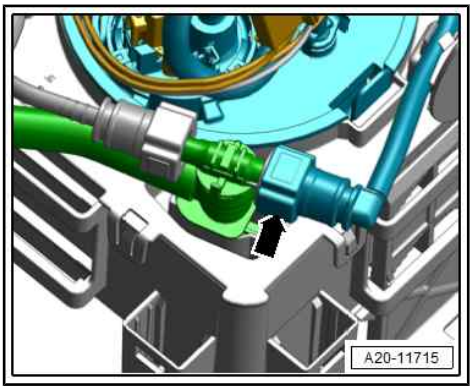
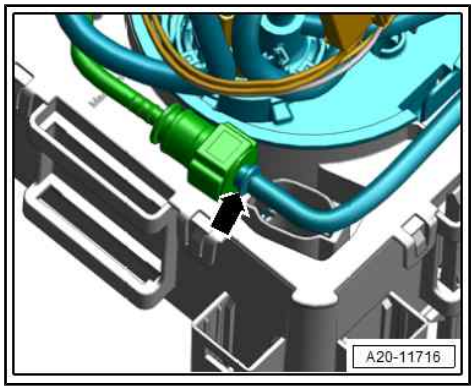
Front-wheel drive vehicles:

– Reach through opening in fuel tank and connect supply line -arrow- for suction-jet pump so it engages audibly. Connect plug-in connectors ⇒ page 53 .



Four-wheel drive vehicles:

– Reach through opening in fuel tank and connect supply line -arrow- for suction-jet pump so it engages audibly. Connect plug-in connectors ⇒ page 53 .

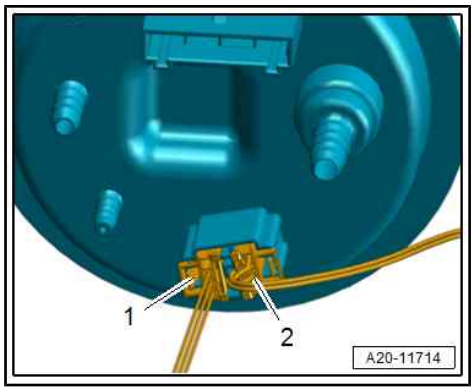


All vehicles (continued):

– Plug in electrical connectors on flange and make sure they are securely engaged.

1 - For fuel gauge sender - G-

2 - For fuel gauge sender 2 - G169- (not fitted on all vehicle versions)

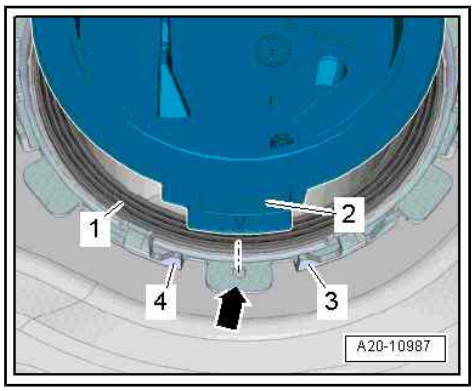


– Install new seal -1- for flange (seal must be installed dry).

Caution

Risk of leaks

- *The seal must not be pinched or damaged when installing the flange.*



– Fit flange in correct installation position.

- Lug -2- on flange must point towards hole -arrow- on locking ring and must be between tabs -3 and 4- on fuel tank.

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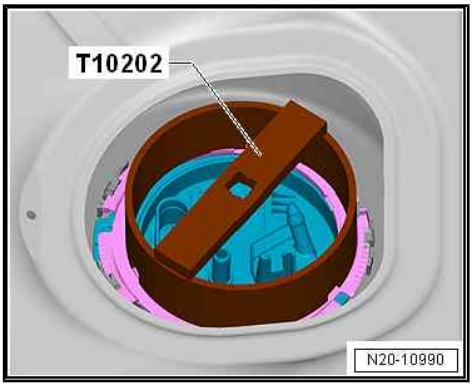
– Press flange on firmly, fit locking ring and secure using key - T10202- .



– Connect fuel lines, making sure they engage audibly.
– Plug in electrical connectors and make sure they are securely engaged.
– Install seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
– After installing fuel delivery unit, make sure that fuel tank contains at least 5 litres of fuel.

Note

The fuel pump must not be allowed to run in an empty fuel tank.

– Rest-of-world vehicles/equipment version: Bleed fuel line leading to metering pump for auxiliary heater ⇒ page 51 .

Tightening torques

♦ ⇒ “2.1 Exploded view - fuel delivery unit/fuel gauge senders”, page 36

2.3 Bleeding fuel line for metering pump

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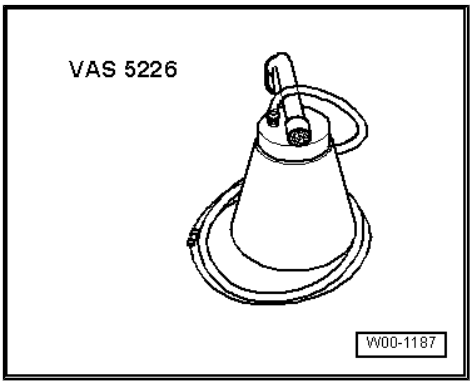
Note

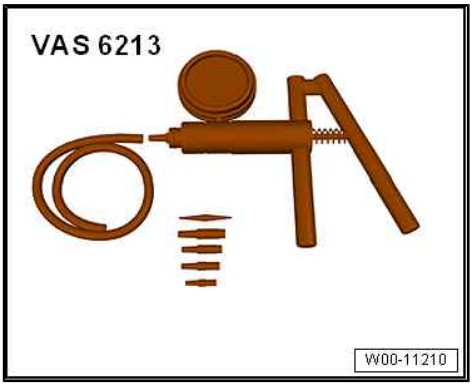
On equipment versions with auxiliary heater, it is important to bleed the fuel supply line leading to the metering pump after working on the fuel delivery unit.

Special tools and workshop equipment required

♦ Diesel extractor - VAS 5226-



♦ Hand vacuum pump - VAS 6213-



Procedure

- Auxiliary heater switched off.

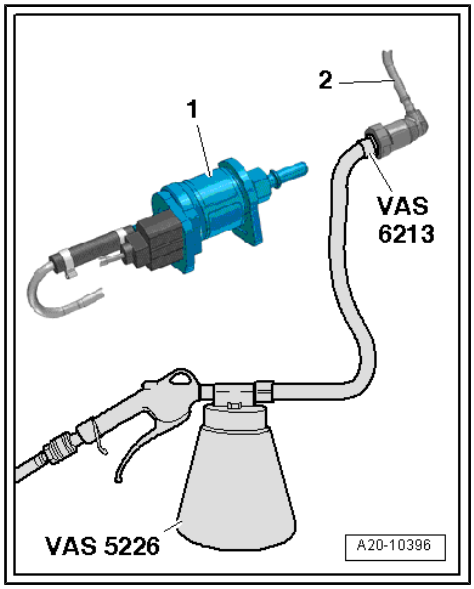
– Connect diesel extractor - VAS 5226- to compressed air supply.

– Detach 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.



2.4 Removing and installing fuel gauge sender - G-

Removing

– Observe safety precautions ⇒ page 1 .

– Observe rules for cleanliness ⇒ page 3 .

– Remove fuel delivery unit ⇒ page 40 .

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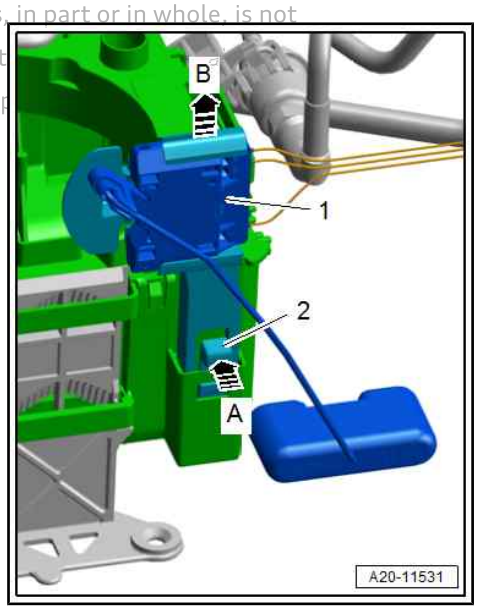
– Reach into opening in fuel tank, release catch -2- -arrow A- and at the same time pull fuel gauge sender - G- -item 1- off mounting on baffle housing -arrow B-.

– Carefully take out fuel gauge sender - G- through opening in fuel tank.



Note

When taking out the fuel gauge sender, make sure you do not bend the float arm.

Installing

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

Note

When inserting the fuel gauge sender, make sure you do not bend the float arm.

– Carefully guide fuel gauge sender - G- through opening and into fuel tank.

– Insert fuel gauge sender - G- into mounting on baffle housing and press downwards until it clicks into place.

– Install fuel delivery unit ⇒ page 40 .

3 Plug-in connectors

⇒ "3.1 Disconnecting plug-in connectors", page 53

3.1 Disconnecting plug-in connectors

– Observe rules for cleanliness ⇒ page 3 .

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 53 .

Colour coding

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

WARNING

The fuel system is pressurised.

Risk of injury as fuel may spray out.

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

Version 1

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

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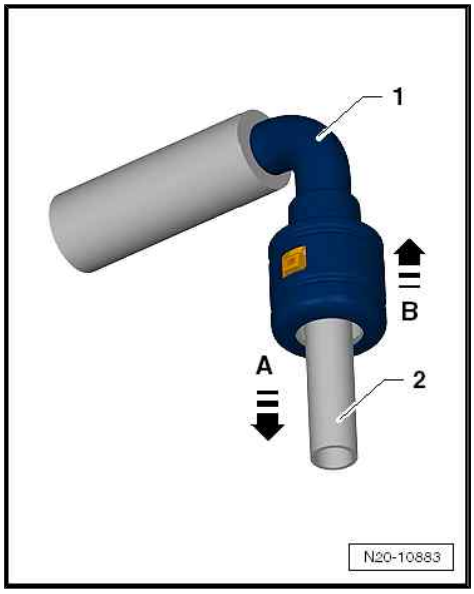
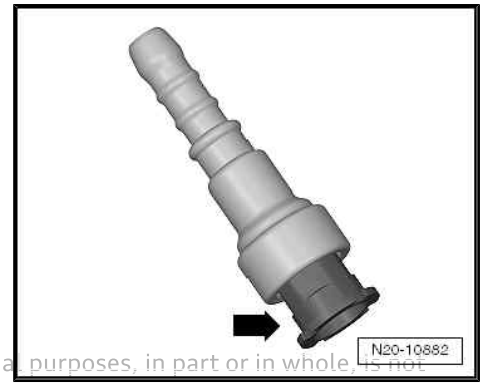
Disconnecting

– Press plug-in connector -1- in direction of -arrow A-.
– Press in and hold release tabs.
– Unplug plug-in connector -1- from fuel line -2- in direction of -arrow B-.
• When installing observe colour coding ⇒ page 53 .
• 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-



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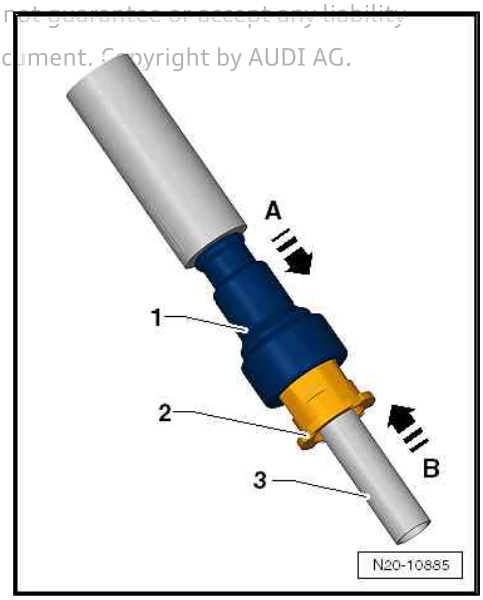
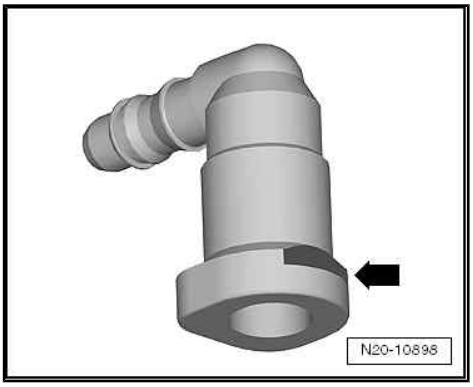
Disconnecting

– 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 53 .
• 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

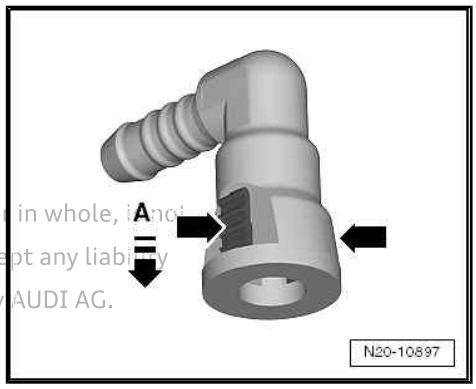
– Press release tab -arrow- and disconnect plug-in connectors.

• When installing observe colour coding ⇒ page 53 .

• 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 53 .

• Plug-in connectors should engage audibly when connecting.

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

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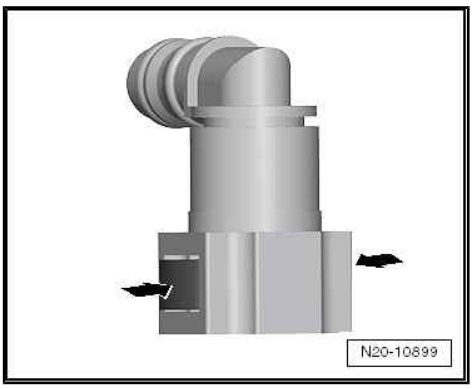
Version 5



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

Disconnecting

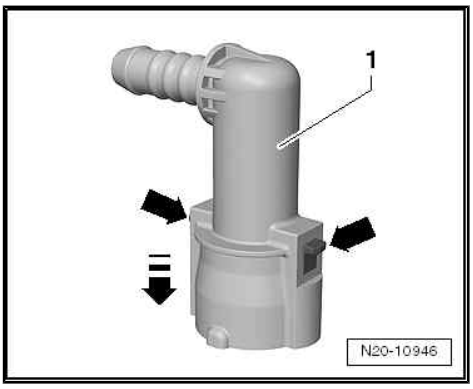
– Press release tabs -arrows- and disconnect plug-in connector.

• When installing observe colour coding ⇒ page 53 .

• 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.

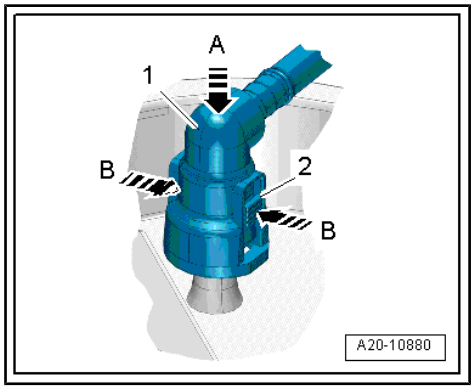
• When installing observe colour coding ⇒ page 53 .

• 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



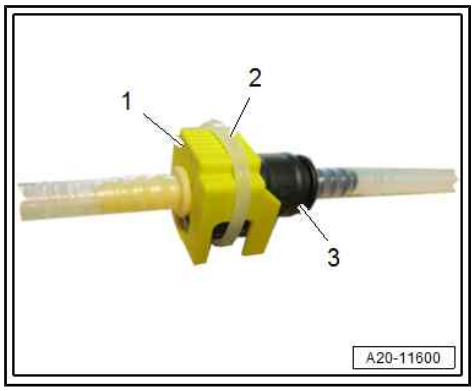
Disconnecting

- 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 53 .
- Plug-in connectors should engage audibly when connecting.

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

Version 8

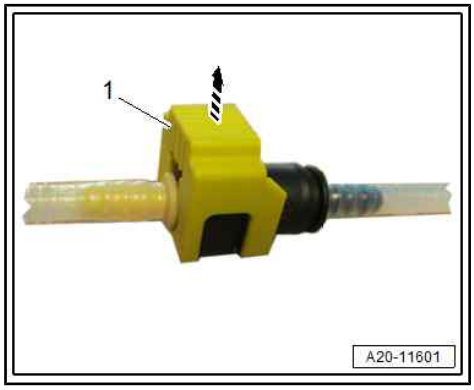
♦ Straight plug-in connector with release tabs on both sides and with retaining clip -1- and cable tie -2-



Disconnecting

– Cut through cable tie for retaining clip and plug-in connector -3-.

– Release retaining clip -1- at plug-in connector in direction of -arrow-.

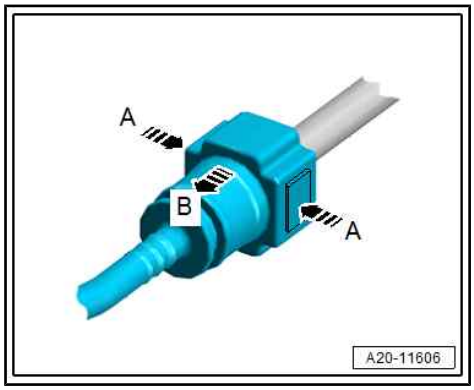


– Press in and hold release tabs -arrows A-.

– Detach plug-in connector in direction of -arrow B-.

- When installing observe colour coding ⇒ page 53 .
- Plug-in connectors should engage audibly when connecting.

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



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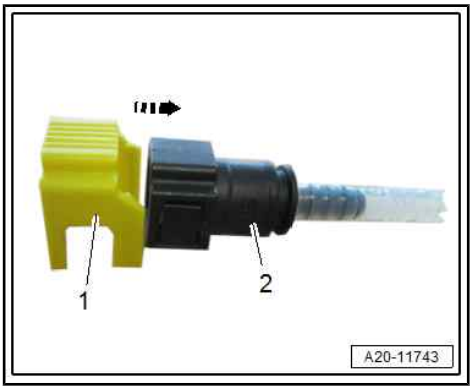
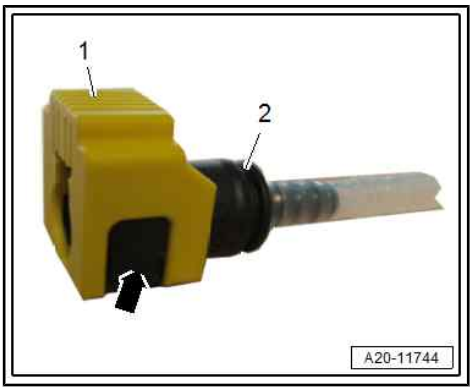
– Slide retaining clip -1- onto plug-in connector -2- -arrow-.



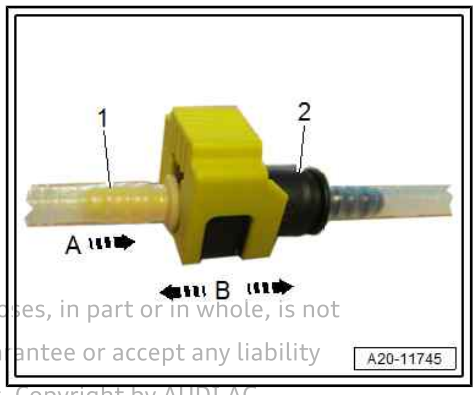
– Retaining clip -1- should be seated on plug-in connector as shown in illustration.

• Release tabs -arrow- on plug-in connector -2- should be accessible through openings in retaining clip.



– Fit fuel line -1- onto plug-in connector -2- -arrow A-.

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



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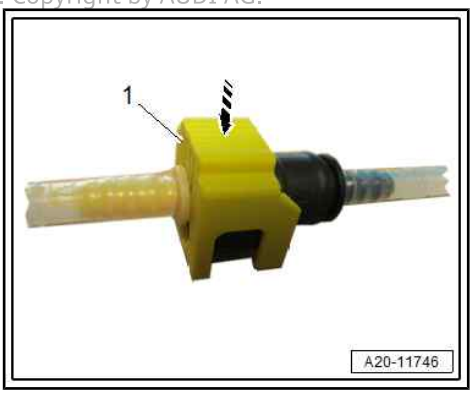
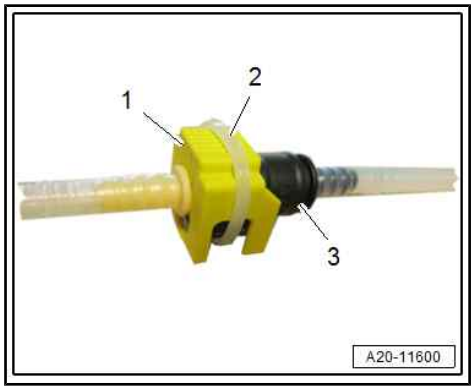
– Press retaining clip -1- down -arrow- to secure plug-in connector.



– Secure retaining clip -1- on plug-in connector -3- with cable tie -2-.



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4 Activated charcoal filter system

⇒ “4.1 Connection diagram - activated charcoal filter system”, page 59

⇒ “4.2 Exploded view - activated charcoal filter system”, page 62

⇒ “4.3 Removing and installing activated charcoal filter”, page 64

⇒ “4.4 Removing and installing pressure sensor”, page 66

⇒ “4.5 Removing and installing fuel tank leak detection module GX36 ”, page 67

⇒ “4.6 Checking fuel system for leaks”, page 67

4.1 Connection diagram - activated charcoal filter system

⇒ “4.1.1 Connection diagram - activated charcoal filter system, vehicles without tank leak detection”, page 59

⇒ “4.1.2 Connection diagram - activated charcoal filter system, vehicles with fuel tank leak detection module GX36 ”, page 61

4.1.1 Connection diagram - activated charcoal filter system, vehicles without tank leak detection

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Note

- *This connection plan applies to TFSI vehicles only.*
- *Lines in vehicle are not coloured.*

1 - Activated charcoal filter solenoid valve 1 - N80-

2 - Engine

3 - Breather line

- To activated charcoal filter solenoid valve 1 - N80-

4 - Breather line

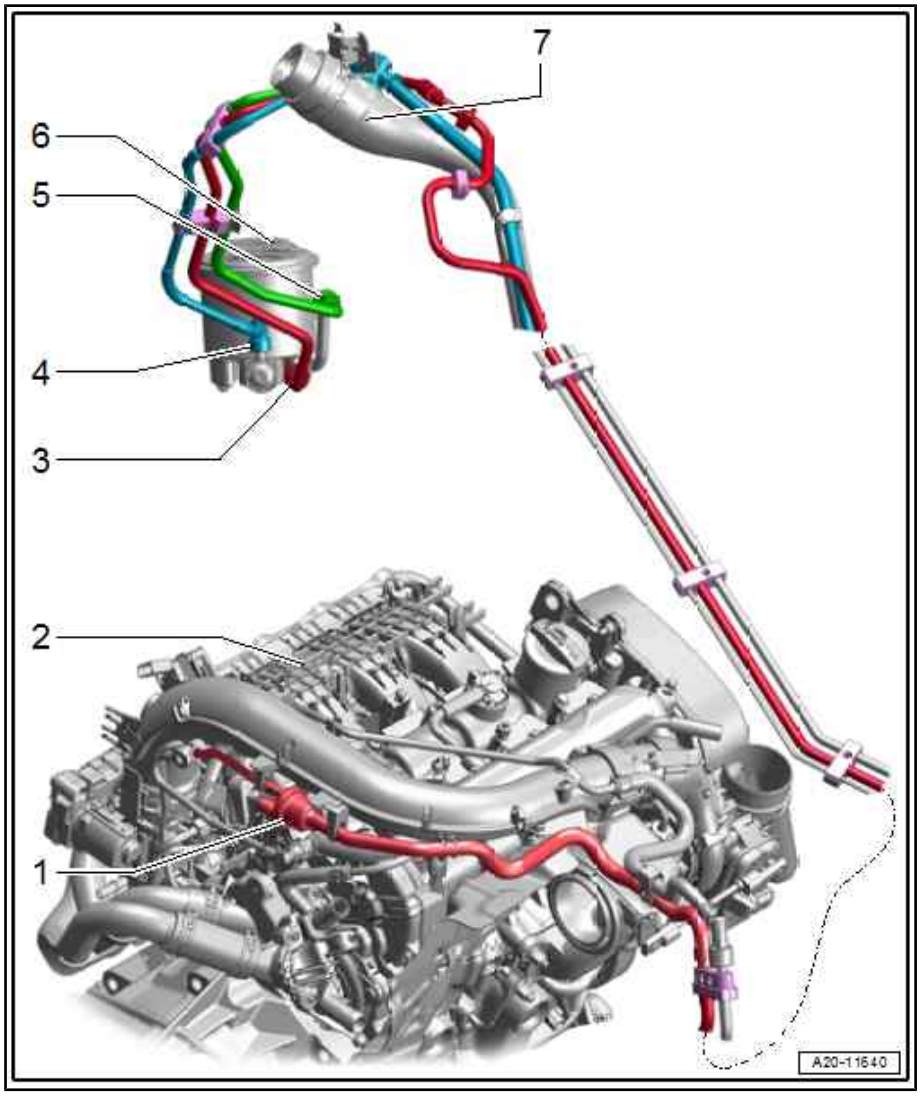
- From fuel tank

5 - Vent line

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

6 - Activated charcoal filter

7 - Fuel filler neck



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4.1.2 Connection diagram - activated charcoal filter system, vehicles with fuel tank leak detection module - GX36-

Note

- *This connection plan applies to TFSI vehicles only.*
- *Lines in vehicle are not coloured.*

1 - Vent line

- ❑ Open to atmosphere at rear right of vehicle below wheel housing liner

2 - Tank pressure sensor/tank breather pressure sensor

- ❑ Designation in current flow diagram:
- 4-cyl. engines: Tank pressure sensor - G400-
- 6-cyl. engines: Tank breather pressure sensor 1 - G950-

3 - Breather line

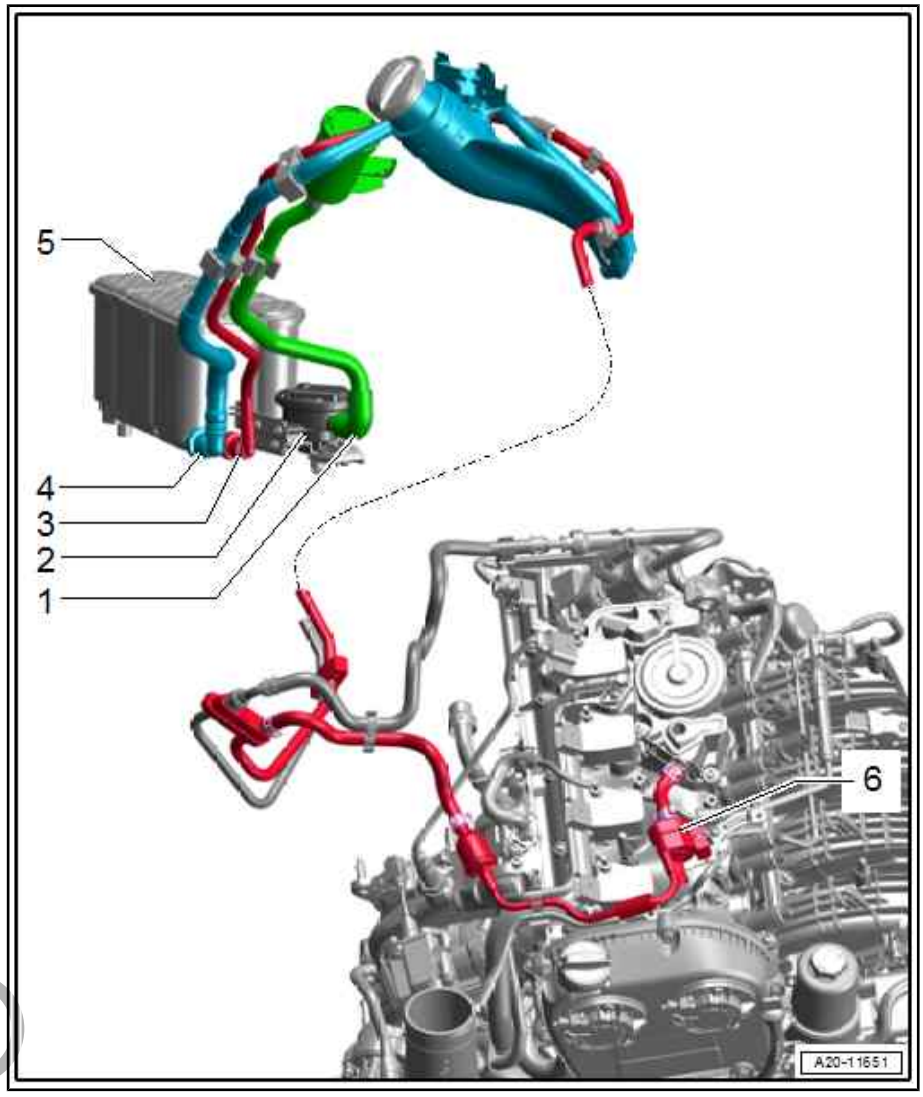
- ❑ To activated charcoal filter solenoid valve 1 - N80-

4 - Breather line

- ❑ From fuel tank

5 - Activated charcoal filter

6 - Activated charcoal filter solenoid valve 1 - N80-



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4.2 Exploded view - activated charcoal filter system

⇒ “4.2.1 Exploded view - activated charcoal filter system, vehicles without tank leak detection”, page 62

⇒ “4.2.2 Exploded view - activated charcoal filter system, vehicles with fuel tank leak detection module GX36 ”, page 63

4.2.1 Exploded view - activated charcoal filter system, vehicles without tank leak detection

Note

This exploded view applies to TFSI vehicles only.

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1 - Bolt
- ❑ 3x
- ❑ 8 Nm

2 - Nut
- ❑ 2x
- ❑ 20 Nm

3 - Activated charcoal filter
- ❑ Fitting location: rear right
- ❑ Removing and installing ⇒ page 64

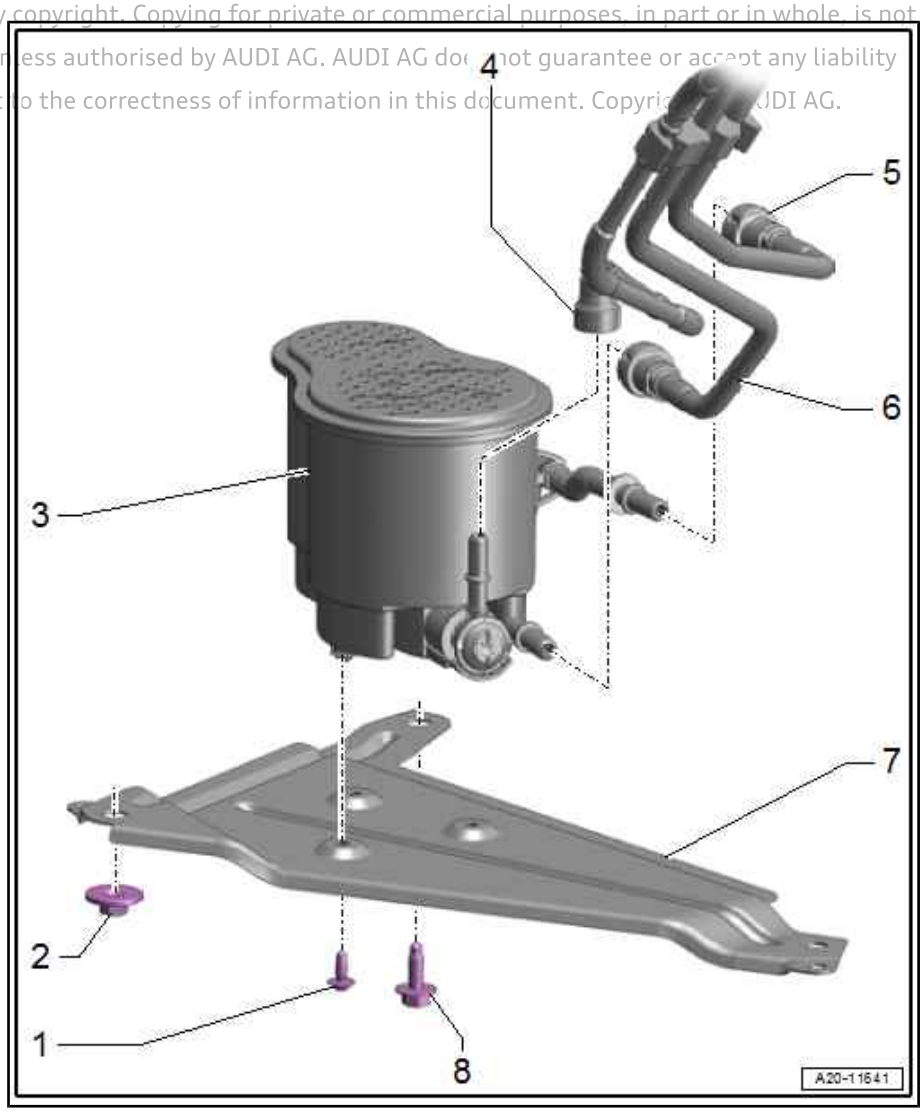
4 - Breather line
- ❑ From fuel tank
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

5 - Vent line
- ❑ Open to atmosphere at rear right of vehicle below wheel housing liner
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

6 - Breather line
- ❑ To activated charcoal filter solenoid valve 1 - N80-
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53
- ❑ Clipped onto underbody

7 - Bracket

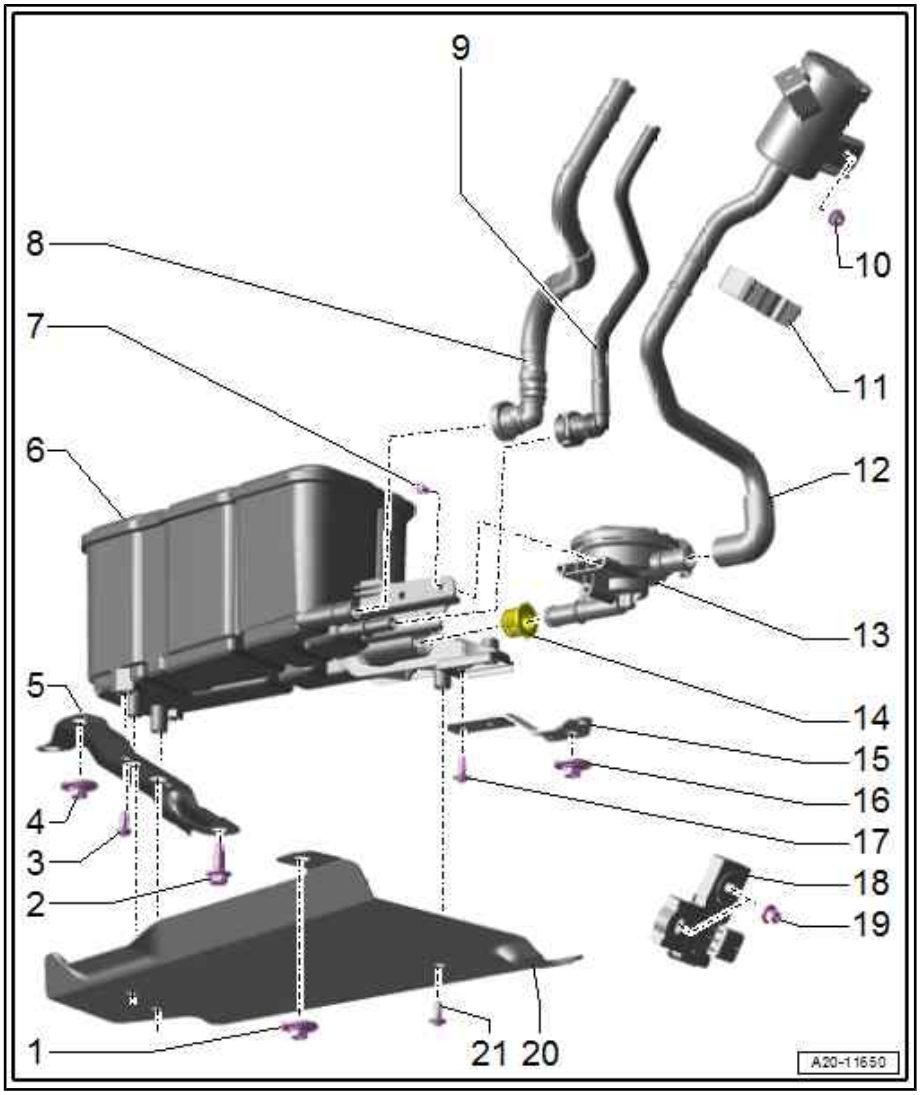
8 - Bolt
- ❑ 20 Nm



4.2.2 Exploded view - activated charcoal filter system, vehicles with fuel tank leak detection module - GX36-

Note

This exploded view applies to TFSI vehicles only.



1 - Nut
- ❑ 20 Nm

2 - Bolt
- ❑ Tightening torque ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers

3 - Bolt
- ❑ 2x
- ❑ 8 Nm

4 - Nut
- ❑ 20 Nm

5 - Bracket

6 - Activated charcoal filter
- ❑ Fitting location: rear right
- ❑ Removing and installing ⇒ page 65

7 - Bolt
- ❑ 3x
- ❑ 1.5 Nm

8 - Breather line
- ❑ From fuel tank
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

9 - Breather line
- ❑ To activated charcoal filter solenoid valve 1 - N80-
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53
- ❑ Clipped onto underbody

10 - Nut
- ❑ 5 Nm

11 - Bracket

12 - Vent line
- ❑ Open to atmosphere at rear right of vehicle below wheel housing liner
- ❑ Disconnecting and connecting plug-in connectors ⇒ page 53

13 - Tank pressure sensor/tank breather pressure sensor
- ❑ Designation in current flow diagram:
- ♦ 4-cyl. engines: Tank pressure sensor - G400-

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◆ 6-cyl. engines: Tank breather pressure sensor 1 - G950-
- ❑ Removing and installing ⇒ page 66

14 - Seal

15 - Bracket

16 - Nut
- ❑ 20 Nm

17 - Bolt
- ❑ 2x
- ❑ 8 Nm

18 - Fuel tank leak detection module - GX36-
- ❑ Fitting location: on fuel tank (front right)
- ❑ Removing and installing ⇒ page 67

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19 - Nut
- ❑ 2x
- ❑ 2 Nm

20 - Heat shield

21 - Bolt
- ❑ 3x
- ❑ 8 Nm

4.3 Removing and installing activated charcoal filter

⇒ "4.3.1 Removing and installing activated charcoal filter - vehicles without tank leak detection", page 64

⇒ "4.3.2 Removing and installing activated charcoal filter - vehicles with fuel tank leak detection module GX36 ", page 65

4.3.1 Removing and installing activated charcoal filter - vehicles without tank leak detection

Removing

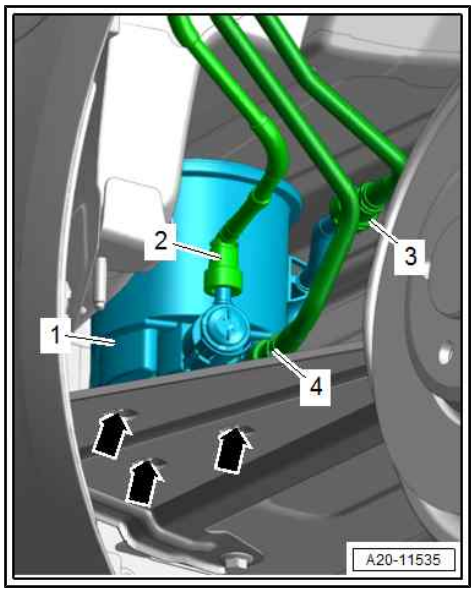
– Observe safety precautions ⇒ page 1 .

– Observe rules for cleanliness ⇒ page 3 .

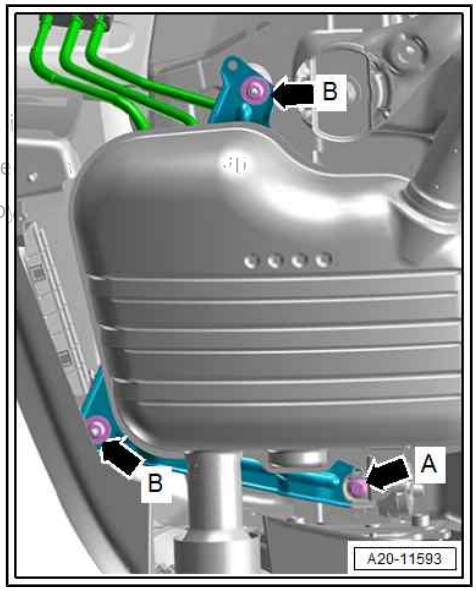
– Remove rear wheel housing liner (right-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (rear) .

– Disconnect vent and breather lines -2, 3, 4-. Disconnecting plug-in connectors ⇒ page 53

– If accessible, unscrew bolts -arrows- and detach activated charcoal filter -1-.



– Otherwise, unscrew bolt/nuts -arrows A, B- and take out bracket with activated charcoal filter towards front.



Installing

Installation is carried out in reverse sequence.

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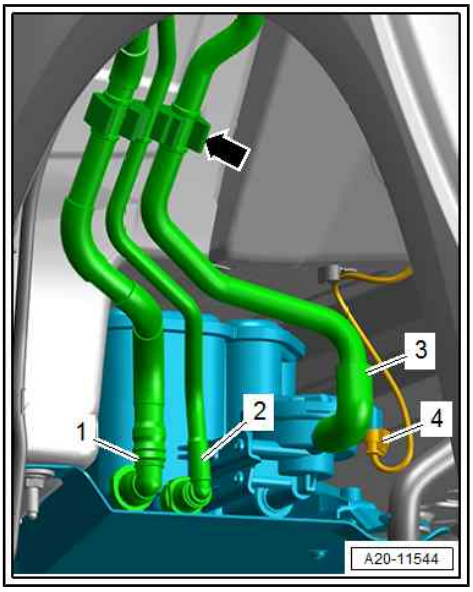
Tightening torques

- ⇒ "4.2.1 Exploded view - activated charcoal filter system, vehicles without tank leak detection", page 62
- ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear)

4.3.2 Removing and installing activated charcoal filter - vehicles with fuel tank leak detection module - GX36-

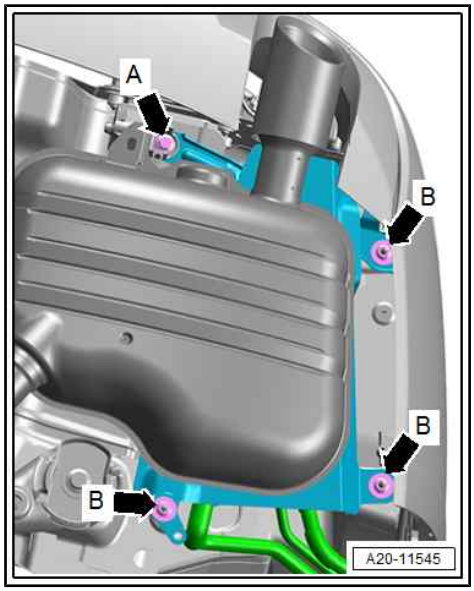
Removing



– Observe safety precautions ⇒ page 1 .
– Observe rules for cleanliness ⇒ page 3 .
– Remove rear wheel housing liner (right-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (rear) .
– Disconnect vent and breather lines -1, 2, 3-. Disconnecting plug-in connectors ⇒ page 53
– Disengage vent and breather lines on bracket -arrow- and move them clear.
– Release retainer catch and unplug electrical connector -4-.

– Remove bolt -arrow A- and nuts -arrows B-.

– Take out activated charcoal filter towards front.



Installing

Installation is carried out in reverse sequence.

Tightening torques

- ⇒ "4.2.2 Exploded view - activated charcoal filter system, vehicles with fuel tank leak detection module GX36 ", page 63
- ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear)
- ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers

4.4 Removing and installing pressure sensor

Removing

– Observe safety precautions ⇒ page 1 .

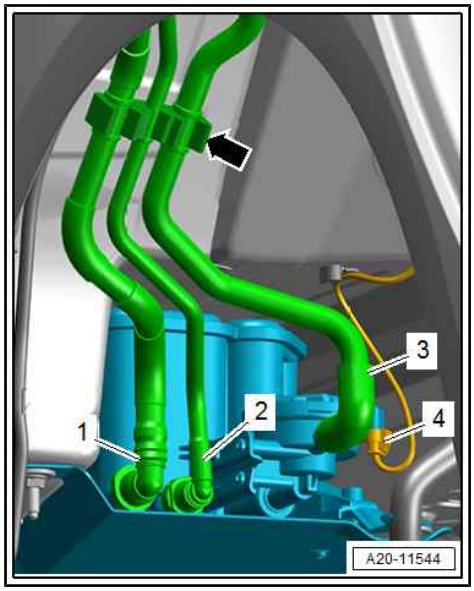
– Observe rules for cleanliness ⇒ page 3 .

– Remove rear wheel housing liner (right-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (rear) .

– Disconnect vent and breather lines -1, 2, 3-. Disconnecting plug-in connectors ⇒ page 53

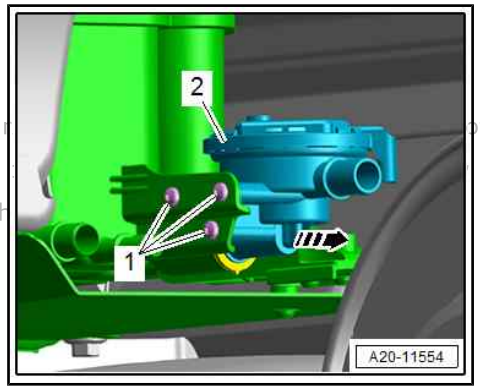
– Disengage vent and breather lines on bracket -arrow- and move them clear.

– Release retainer catch and unplug electrical connector -4-.



– Remove bolts -1-.

– Remove tank pressure sensor -2- from activated charcoal filter in direction of -arrow-.



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Installing

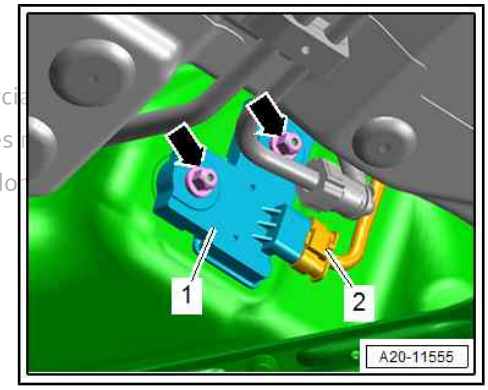
Installation is carried out in reverse sequence.

Tightening torques

- ⇒ "4.2.2 Exploded view - activated charcoal filter system, vehicles with fuel tank leak detection module GX36 ", page 63
- ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear)

4.5 Removing and installing fuel tank leak detection module - GX36-

Removing



– Remove underbody trim (rear right) ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .
– Release retainer catch and unplug electrical connector -2-.
– Remove nuts -arrows- and disengage fuel tank leak detection module - GX36- -item 1-.

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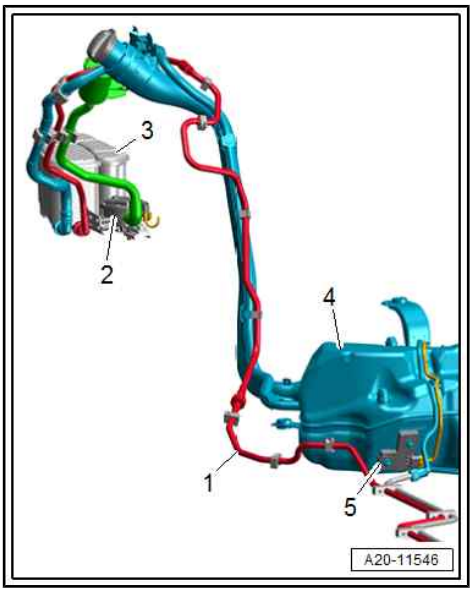
Installing

Installation is carried out in reverse sequence.

Tightening torques

- ⇒ “4.2.2 Exploded view - activated charcoal filter system, vehicles with fuel tank leak detection module GX36 ”, page 63
- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Exploded view - underbody trim

4.6 Checking fuel system for leaks



- 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 cools down.
- The tank pressure sensor - G400- -item 2- registers the degree of vacuum in the breather line of the activated charcoal filter -3-. The fuel tank leak detection module - GX36- -item 5- is located directly on the wall of the fuel tank and is thus able to register the temperature in the tank -4-. 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 to engine

5 Fuel filter

⇒ “5.1 Exploded view - fuel filter”, page 68

⇒ “5.2 Removing and installing water separator”, page 70

5.1 Exploded view - fuel filter

Note

This exploded view applies to TDI vehicles only.

⇒ “5.1.1 Exploded view - fuel filter”, page 68

⇒ “5.1.2 Exploded view - water separator”, page 69

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5.1.1 Exploded view - fuel filter

1 - Nut
- ❑ 8 Nm

2 - Fuel hose

3 - Spring-type clips

4 - Fuel supply line
- ❑ From fuel tank
- ❑ Clipped onto underbody

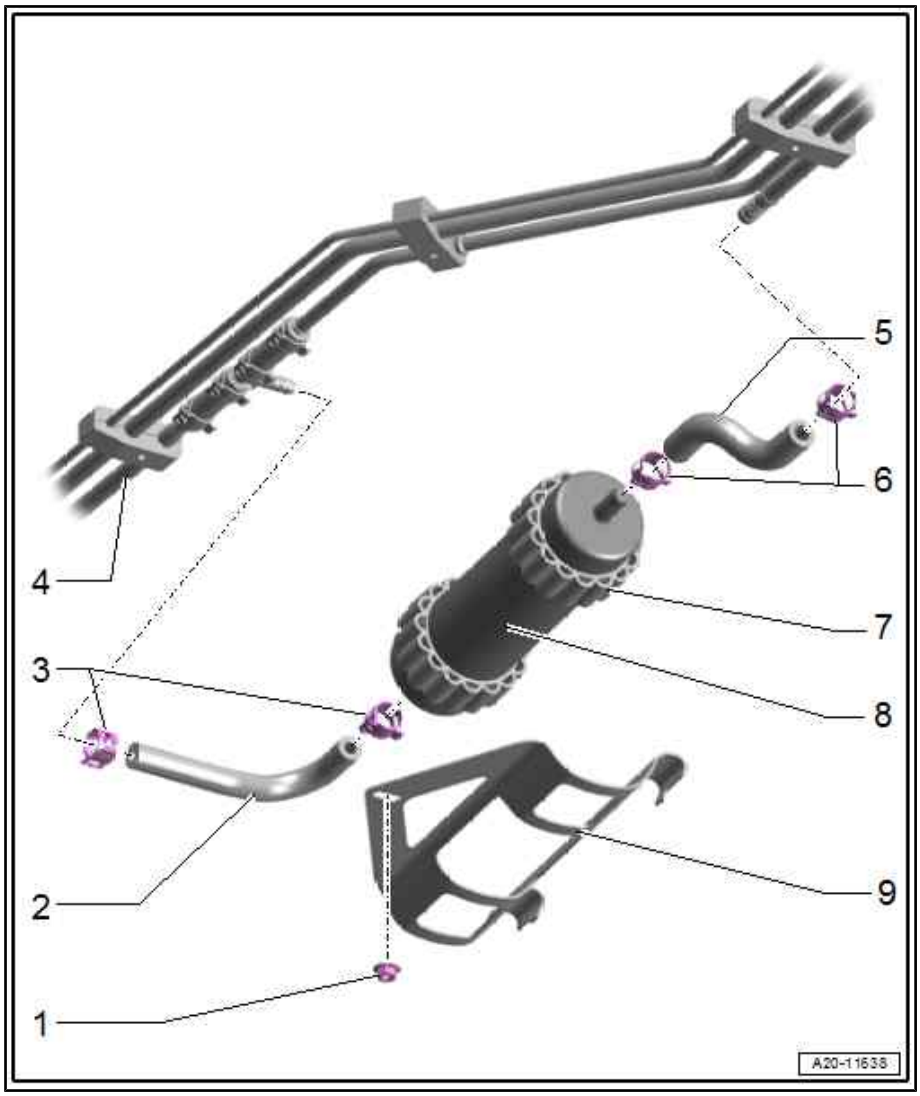
5 - Fuel hose

6 - Spring-type clips

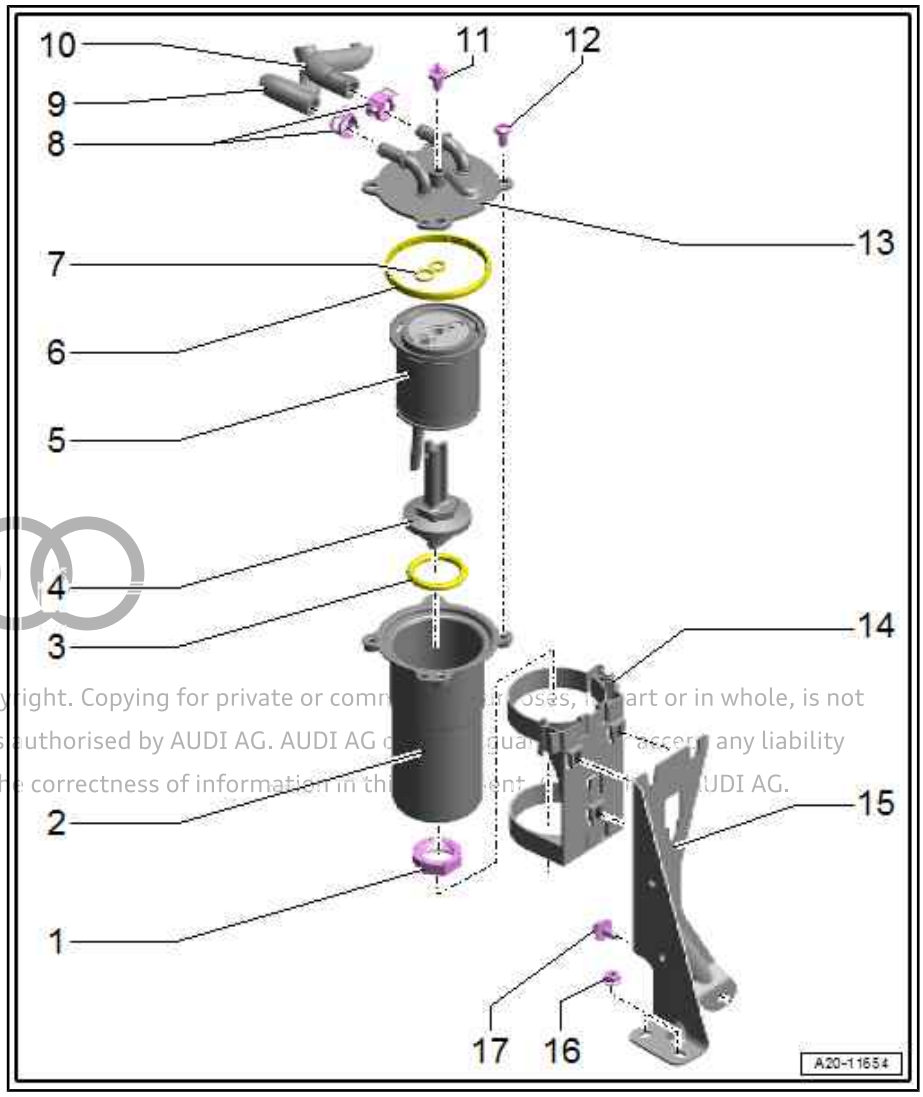
7 - Rubber bush
- ❑ For fuel filter

8 - Fuel filter
- ❑ Flow direction is marked by arrows
- ❑ Do not interchange connections
- ❑ Removing and installing ⇒ Maintenance ; Booklet 830 ; Maintenance; Fuel filter: renewing
- ❑ Fitting location: on underbody (right-side as seen in direction of travel)

9 - Bracket
- ❑ For fuel filter



5.1.2 Exploded view - water separator



1 - Nut
- ❑ Not available as separate part
- ❑ 5 Nm

2 - Water separator
- ❑ Removing and installing ⇒ page 70

3 - Seal
- ❑ Not available as separate part

4 - Water level sender - G120-
- ❑ Not available as separate part

5 - Filter element
- ❑ Removing and installing ⇒ Maintenance ; Booklet 830 ; Maintenance; Fuel filter: renewing

6 - Seal
- ❑ Renew after removing
- ❑ Not available as separate part

7 - Seal
- ❑ Renew after removing
- ❑ Not available as separate part

8 - Hose clips
- ❑ Release with hose clip pliers - V.A.G 1921-

9 - Fuel hose
- ❑ To high-pressure pump
- ❑ Secure fuel hose with hose clip and then pull to check that fuel hose is properly secured

10 - Fuel hose
- ❑ From fuel tank
- ❑ Secure fuel hose with hose clip and then pull to check that fuel hose is properly secured

11 - Draining valve
- ❑ 10 Nm

12 - Bolt
- ❑ 4x
- ❑ 9 Nm

13 - Cover with connections
- ❑ Not available as separate part

14 - Bracket for water separator
- ❑ Not available as separate part

15 - Bracket

16 - Nut
- ❑ 2x

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❑ 8 Nm

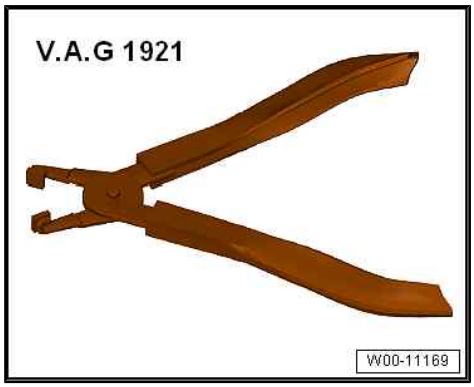
17 - Bolt

❑ 8 Nm

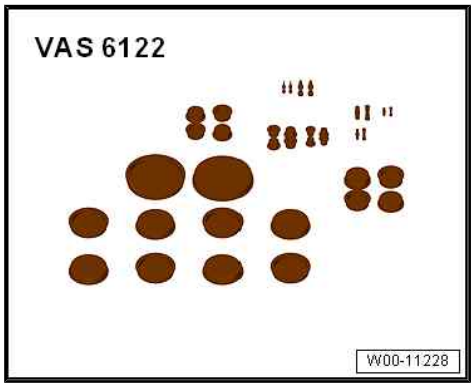
5.2 Removing and installing water separator

Special tools and workshop equipment required

♦ Hose clip pliers - V.A.G 1921-

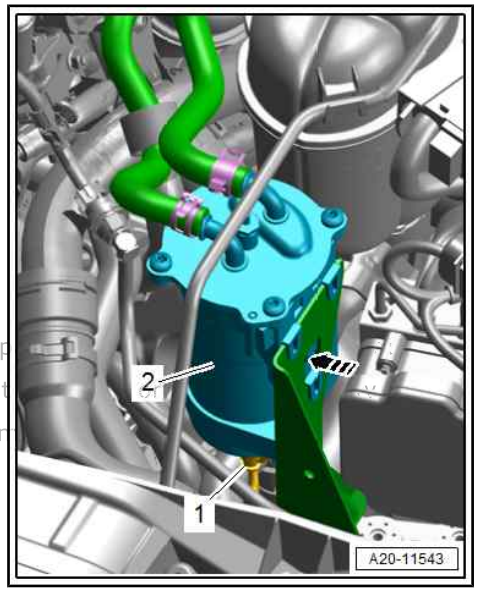


♦ Engine bung set - VAS 6122-



Removing

– Observe safety precautions ⇒ page 1 .
– Observe rules for cleanliness ⇒ page 3 .
– Release retainer catch and unplug electrical connector -1-.
– Release fastener -arrow- and detach water separator -2- upwards from bracket.



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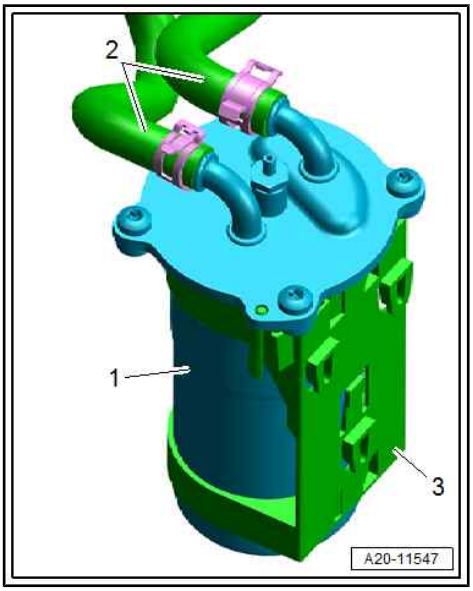
– Detach bracket -3- from water separator -1-.
– Release hose clips with hose clip pliers - V.A.G 1921- and detach fuel hoses -2-.
– Seal off open fuel hoses and connections with plugs (thoroughly cleaned) from engine bung set - VAS 6122- .



Installing

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

Note

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

– Bleed fuel system ⇒ Engine; Rep. gr. 23 ; Injection system; Filling/bleeding fuel system .

Tightening torques

♦ ⇒ “5.1.2 Exploded view - water separator”, page 69

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6 Accelerator mechanism

⇒ “6.1 Exploded view - accelerator pedal module”, page 72

⇒ “6.2 Removing and installing accelerator pedal module GX2 ”, page 73

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6.1 Exploded view - accelerator pedal module

1 - Accelerator pedal module - GX2-

- ❑ With:

- ◆ Accelerator position sender - G79-
- ◆ Accelerator position sender 2 - G185-
- ◆ Depending on equipment version: active accelerator pedal motor - V592-
  - ❑ Checking ⇒ Vehicle diagnostic tester
  - ❑ Removing and installing ⇒ page 73
  - ❑ Adaption may be required after renewing, depending on engine/gearbox combination
  - ❑ Perform adaption if this menu item is shown under “Functions” in the engine electronics tree ⇒ Vehicle diagnostic tester

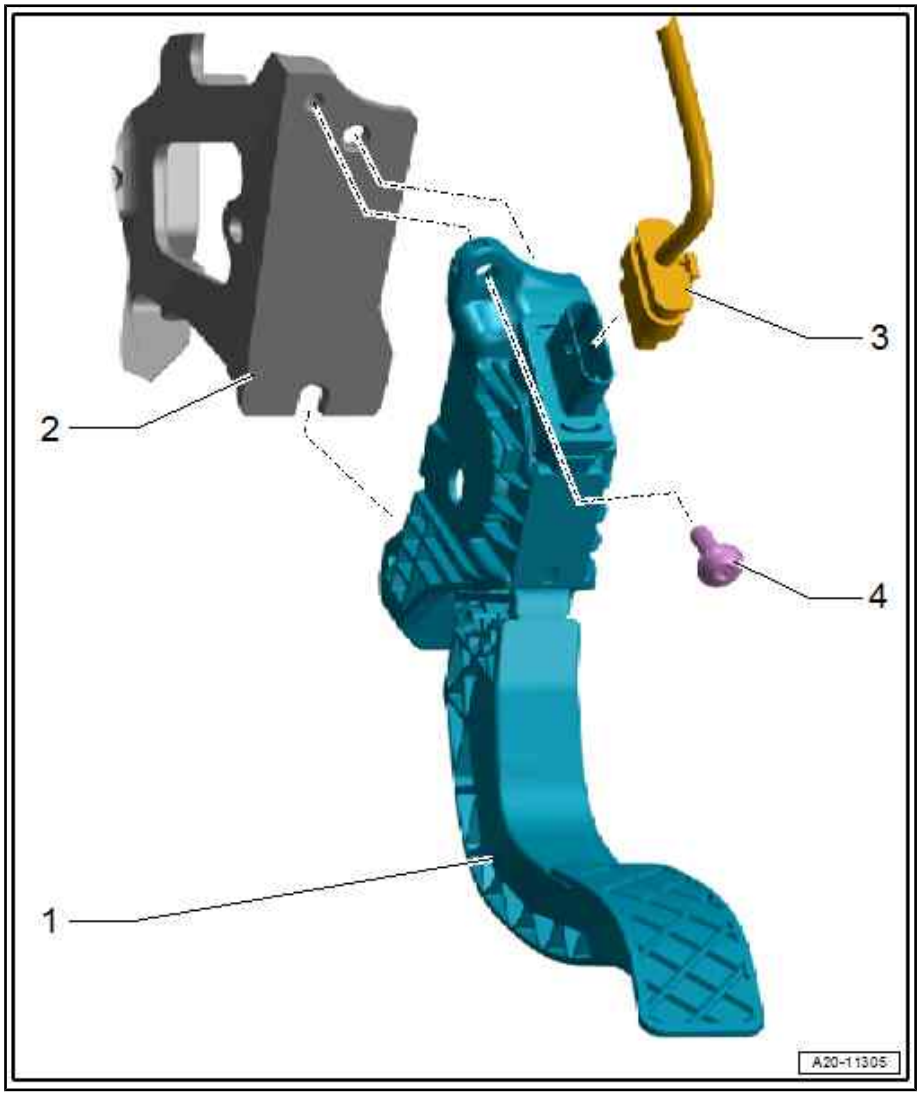
2 - Pedal bracket

3 - Electrical connector

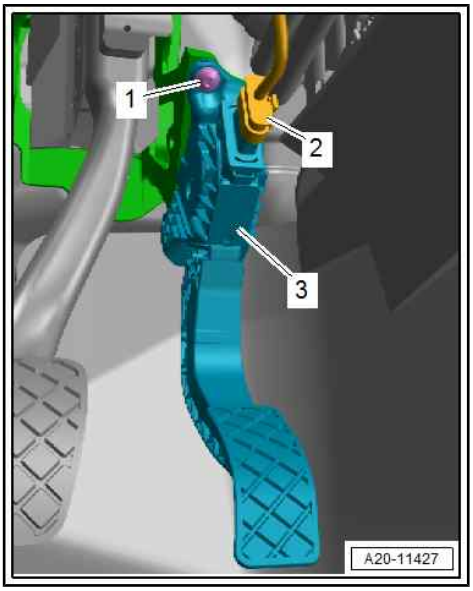
- ❑ Ensure item is connected securely

4 - Bolt

- ❑ 8 Nm



6.2 Removing and installing accelerator pedal module - GX2-



Removing

– Press release tab and unplug electrical connector -2-.
– Remove bolt -1-.
– Disengage accelerator pedal module -3- from bottom of pedal bracket and detach.

Installing

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

– Attach accelerator pedal module to bottom of pedal bracket, insert centring pin and tighten bolt.

Note

- *Adaption must be carried out after renewing, depending on engine/gearbox combination.*
- *Perform adaption if this menu item is shown under "Functions" in the engine electronics tree ⇒ Vehicle diagnostic tester.*

Tightening torques

- ⇒ "6.1 Exploded view - accelerator pedal module", page 72

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7 Fuel pump

⇒ “7.1 Checking fuel system pressurisation pump G6 ”, page 74

⇒ “7.2 Removing and installing suction-jet pump”, page 89

⇒ “7.3 Removing and installing fuel pump control unit J538 ”, page 90

7.1 Checking fuel system pressurisation pump - G6-

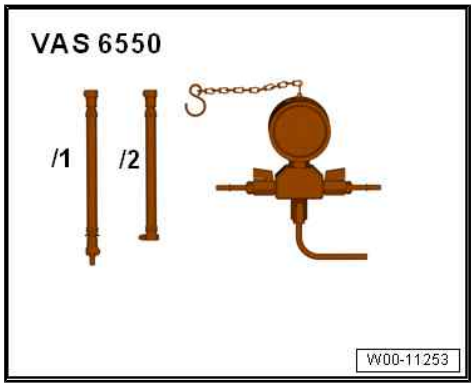
⇒ “7.1.1 Checking fuel system pressurisation pump G6 - vehicles with TFSI engine”, page 74

⇒ “7.1.2 Checking fuel system pressurisation pump G6 - vehicles with TDI engine”, page 80

7.1.1 Checking fuel system pressurisation pump - G6- - vehicles with TFSI engine

Special tools and workshop equipment required

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



- Adapter set - VAS 6550/3-

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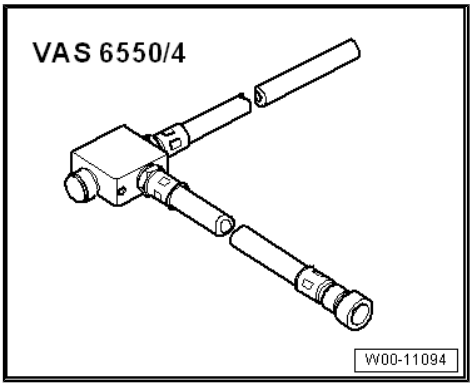
- Pressure control valve - VAS 6550/4-



- Vehicle diagnostic tester
- Fuel-resistant measuring container

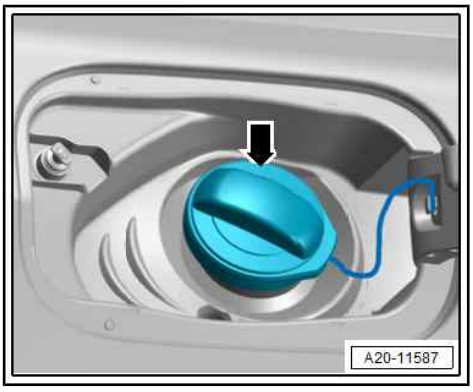
A - Checking fuel delivery rate

– Observe test conditions ⇒ page 4 .

– Open tank flap.

– Remove filler cap -arrow- for fuel filler neck.

– Remove engine cover panel ⇒ Engine; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .



1.4 ltr./3.0 ltr. TFSI vehicles:

– If necessary, remove air cleaner housing ⇒ Engine; Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .

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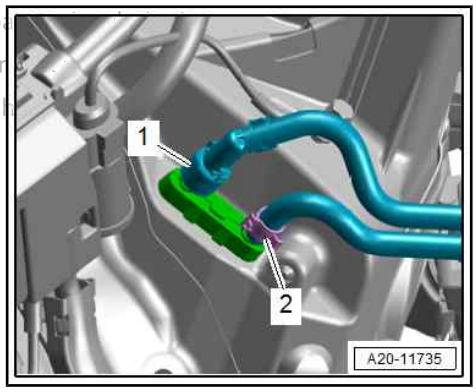
WARNING

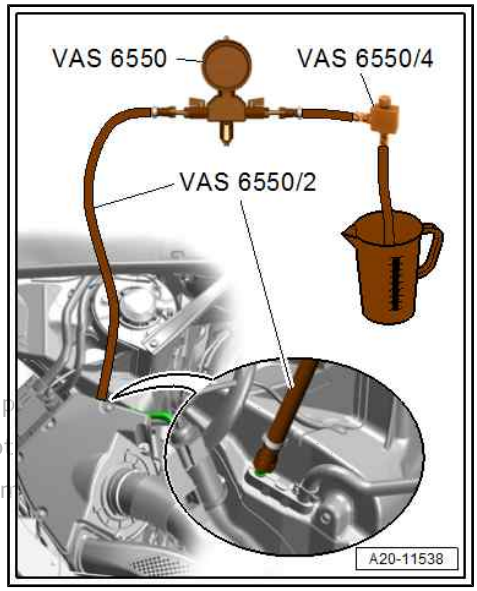
The fuel system operates at high pressure - risk of injuries!

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

– Disconnect fuel hose -1-. Disconnecting plug-in connectors ⇒ page 53



– 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.



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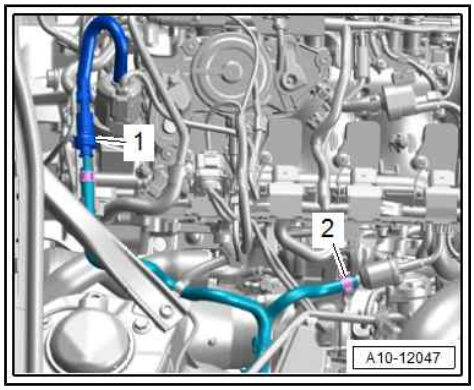
1.8 ltr./2.0 ltr. TFSI vehicles:

WARNING

The fuel system is pressurised.

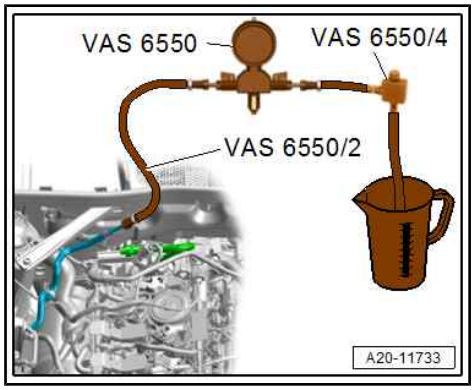
Risk of injury as fuel may spray out.

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

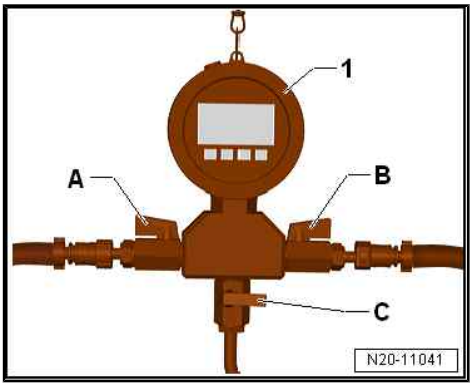


– Disconnect fuel hose -1-. Disconnecting plug-in connectors ⇒ page 53

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



All vehicles (continued):



– Switch on pressure tester - VAS 6550- -item 1- by pressing `On/Off` button.

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:

– 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.***

– Connect vehicle diagnostic tester .

– Switch on ignition.

– Select `Self-diagnosis` mode.

♦ Select `0001 - Engine electronics`.

♦ Select `Basic setting` in menu item Control unit self-diagnosis.

♦ Select `Empty fuel tank` from the list.

– Press `Start`.

• The fuel pump starts 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: 4.5 bar

– From this point on, do not turn adjuster screw -1-.

– Press Stop.

– Drain measuring container.

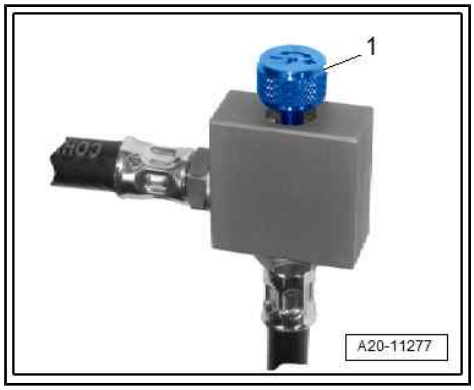
– For measurement, press Start again and let fuel pump run for 15 seconds.

– Press Stop after 15 seconds.

– Check amount of fuel delivered in measuring container.

• Specification for 4-cylinder engine: minimum delivery rate 400 cm^3/15 sec.

• Specification for 6-cylinder engine: minimum delivery rate 600 cm^3/15 sec.



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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 with integrated fuel filter defective.

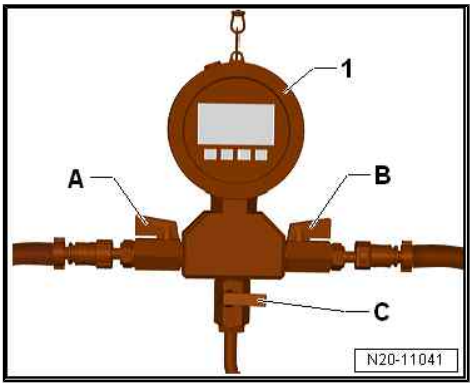
♦ Fuel pressure regulator in fuel delivery unit defective.

♦ 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.

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.*

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– 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: 6.0…8.0 bar.

– Press Stop.

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

- Fuel filter in fuel delivery unit blocked or fuel supply line crushed.

If specification is not attained:

- Fuel delivery unit or fuel pressure regulator in fuel tank 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 45 .

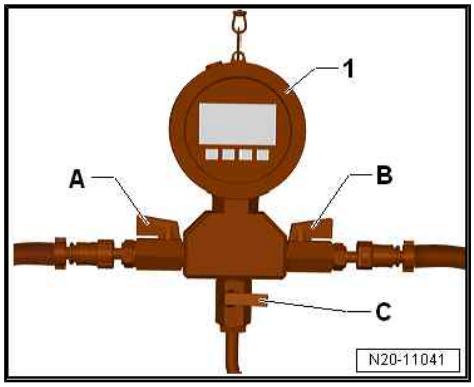
Assembling

Assembly is performed in reverse sequence; note the following:

- The ignition must be switched off.

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.

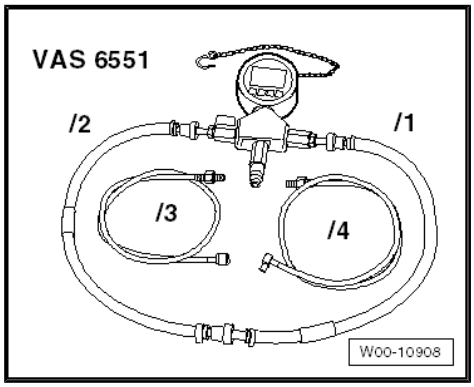


- Detach pressure tester - VAS 6550- together with connection cables.
- Connect fuel supply line, making sure it engages audibly.
- Press fuel supply line in again and then pull to check that plug-in connector is correctly engaged.

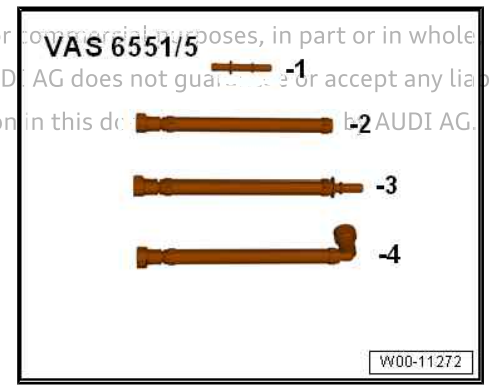
7.1.2 Checking fuel system pressurisation pump - G6- - vehicles with TDI engine

Special tools and workshop equipment required

- Pressure tester (diesel) - VAS 6551- with hose - VAS 6551/2-



- Adapter set - VAS 6551/5-



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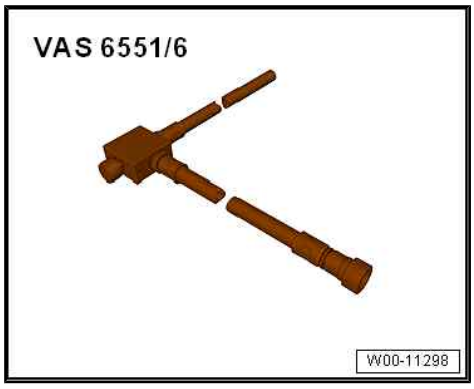
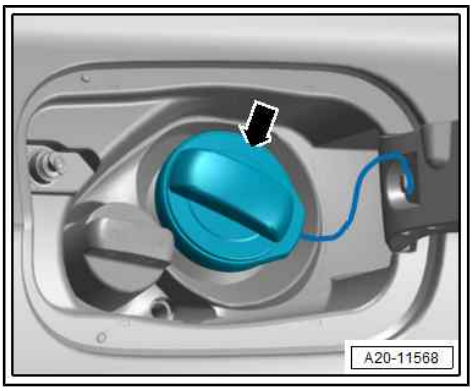
- Pressure control valve - VAS 6551/6-



- Adapter set - VAS 6551/7-

- Vehicle diagnostic tester
- Fuel-resistant measuring container

A - Checking fuel delivery rate



– Observe test conditions ⇒ page 4 .
– Open tank flap.
– Remove filler cap -arrow- for fuel filler neck.
– Remove engine cover panel ⇒ Engine; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

WARNING

The fuel system is pressurised.

Risk of injury as fuel may spray out.

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

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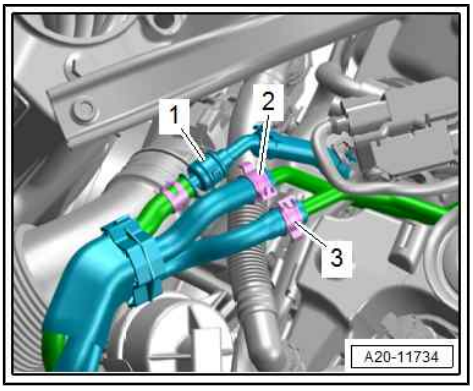
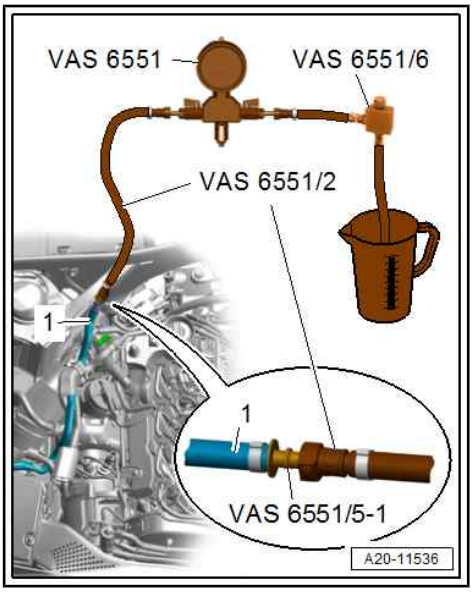
2.0 ltr. TDI vehicles:



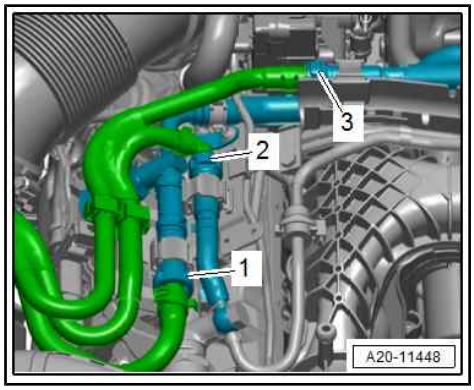
– Release hose clip -2- and detach fuel supply hose from fuel supply line to high-pressure pump.



– Attach connection fitting - VAS 6551/5-1- to fuel supply hose -1-, secure with hose clip and attach connection lead - VAS 6551/2- .
– Attach connecting line - VAS 6551- to pressure tester (diesel) - VAS 6551/2- .
– Attach pressure control valve - VAS 6551/6- and hold end of hose into fuel-resistant measuring container.

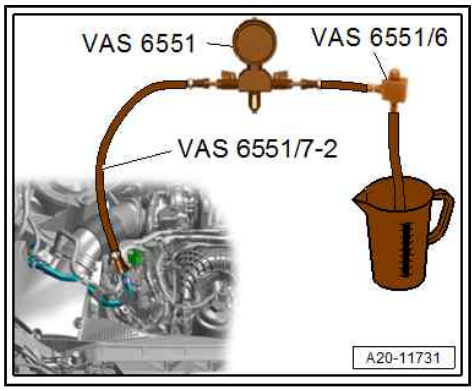
3.0 ltr. TDI vehicles:

– Disconnect fuel supply hose -1- leading to high-pressure pump. Disconnecting plug-in connectors ⇒ page 53



– Connect pressure tester (diesel) - VAS 6551- to fuel supply hose with connecting line - VAS 6551/7-2- .

– Attach pressure control valve - VAS 6551/6- and hold end of hose into fuel-resistant measuring container.



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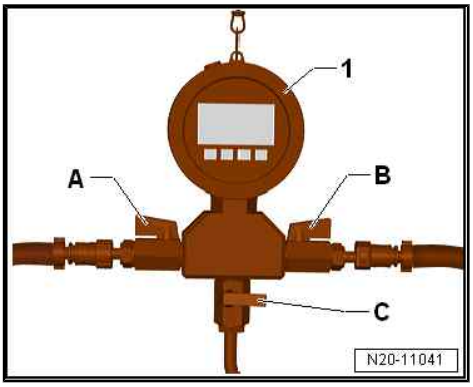
All vehicles (continued):



– Switch on pressure tester (diesel) - VAS 6551- -item 1- by pressing `On/Off` button.

Note

To measure the fuel delivery rate, pressure must first be built up in the fuel supply 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 6551/6- as follows:

– 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.***

– Connect vehicle diagnostic tester .

– Switch on ignition.

– Select and start `Diagnosis`.

– Choose `Select own test` and select following options one after the other:

- `Drive train`
- `Select engine code and engine`
- `0001 - Self-diagnosis compatible systems`
- `0001 - Engine electronics`
- `0001 - Engine electronics, functions`
- `0001 - Activate fuel pump`
- `Carry out test`

– Start fuel pump and let it run for 15 seconds.

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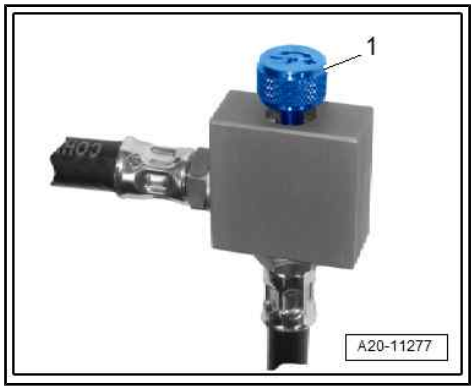
– Build up pressure in fuel system by turning adjuster screw -1- on pressure control valve - VAS 6551/6- until correct pressure is reached.

• Specification: 4.5 bar



Note

If 15 seconds are not long enough to reach the correct pressure, repeat the procedure.

– From this point on, do not turn adjuster screw -1-.

– Drain measuring container.

– Start fuel pump and let it run for 15 seconds.

– Check amount of fuel delivered in measuring container.

• Specification for 4-cylinder engine: minimum delivery rate 750 cm^3/15 sec.

• Specification for 6-cylinder engine: minimum delivery rate 1000 cm^3/15 sec.

If the minimum delivery rate is attained:

♦ Fuel supply line, fuel filter and fuel pump are OK

♦ However, there may be a fault in the return line. For Fault Finding, perform “Pressure test for entire system” ⇒ page 86 ; ⇒ page 86 .

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

♦ Fuel pump or fuel pressure regulator in fuel tank faulty.

♦ Fuel line crushed.

♦ Fuel filter is blocked.

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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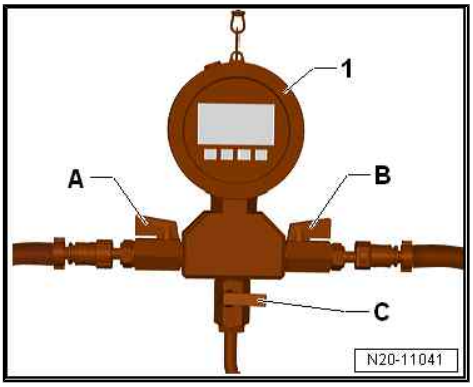
B - Pressure test on fuel supply line



- Leave measuring equipment connected in the same way as for measuring the fuel delivery rate.
- Vehicle diagnostic tester still connected.

– Switch on pressure tester (diesel) - VAS 6551- -item 1- by pressing On/Off button.

– Open cut-off valve -A-.

- Lever must point in direction of flow.

Caution

Risk of fuel escaping.

- *Cut-off valves -B and C- must be closed.*
- *The levers should point perpendicular to direction of flow.*

– Start fuel pump and let it run for 15 seconds.

– Read fuel pressure off pressure tester (diesel) - VAS 6551- .

- Specification: 6.0…8.0 bar.

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

- Fuel supply line crushed.
- Fuel filter is blocked.

If specification is not attained:

- Fuel pump or fuel pressure regulator in fuel tank faulty.

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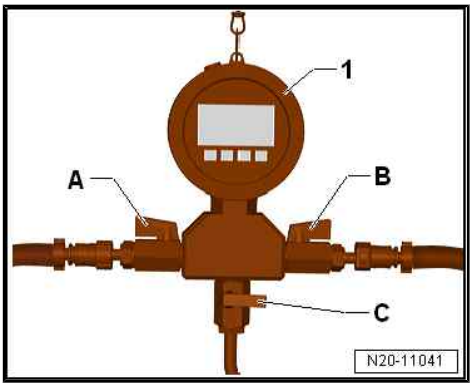
Note

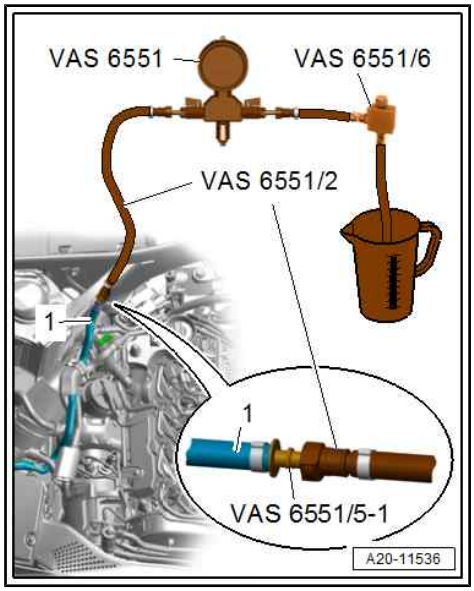
- *To detect any faults in the fuel return line or in the relief valve of the high-pressure pump, a pressure test must be performed on the entire system as described below.*
- *Before disconnecting the measuring equipment, release the fuel pressure by opening the cut-off valves -B and C- and allowing fuel to drain off into a measuring container.*



C - Pressure test for entire system, 2.0 ltr. TDI vehicles

– Detach pressure control valve - VAS 6551/6- and remove together with measuring container.

- Fuel delivery rate and pressure test on fuel supply line OK
- Connection fitting - VAS 6551/5-1- and connecting line - VAS 6551/2- connected to fuel supply hose and to pressure tester (diesel) - VAS 6551- .
- Vehicle diagnostic tester is connected.



– Connect connecting line - VAS 6551/5-2- to fuel supply line leading to high-pressure pump and to pressure tester (diesel) - VAS 6551- .

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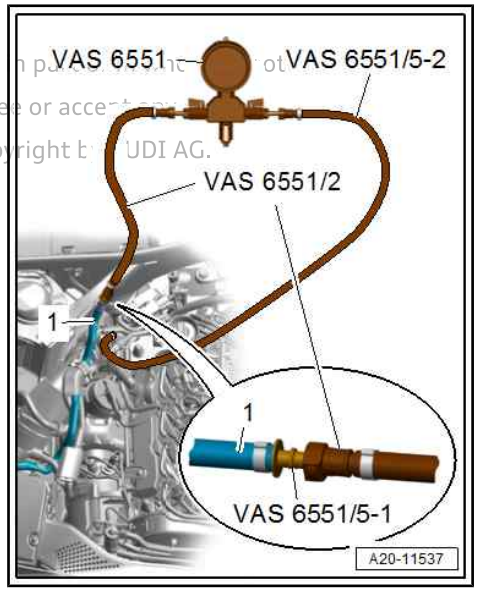


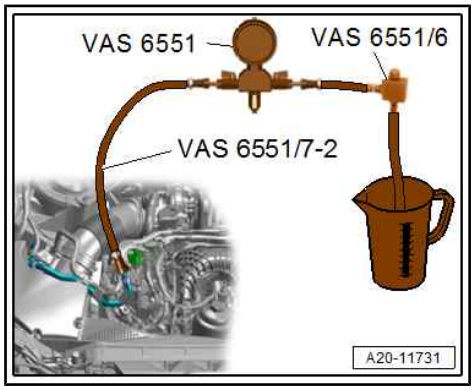
Note

In this way the pressure tester (diesel) - VAS 6551- is connected into the fuel supply line.

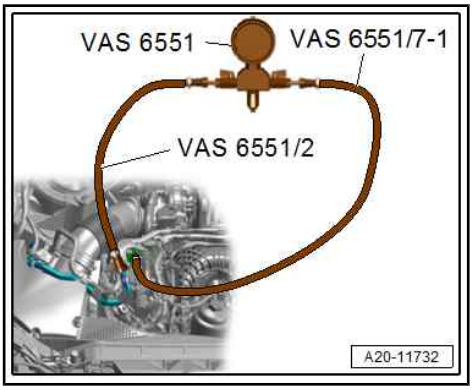
C - Pressure test for entire system, 3.0 ltr. TDI vehicles

– Detach pressure control valve - VAS 6551/6- and remove together with measuring container.

- Fuel delivery rate and pressure test on fuel supply line OK
- Connecting line - VAS 6551/7-2- connected to fuel supply hose and to pressure tester (diesel) - VAS 6551- .
- Vehicle diagnostic tester is connected.



– Connect connecting line - VAS 6551/7-1- to fuel supply hose leading to high-pressure pump and to pressure tester (diesel) - VAS 6551- .



Note

In this way the pressure tester (diesel) - VAS 6551- is connected into the fuel supply line.

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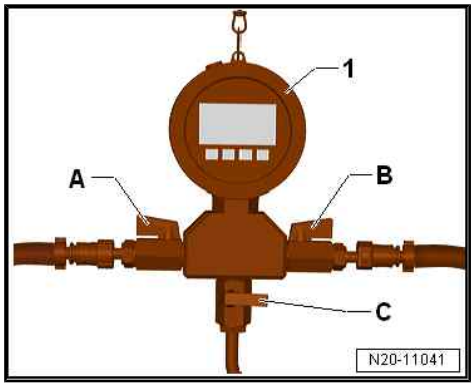

– Switch on pressure tester (diesel) - VAS 6551- -item 1- by pressing `On/Off` button.

– 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.*

– Connect vehicle diagnostic tester .

– Switch on ignition.

– Select and start `Diagnosis`.

– Choose `Select own test` and select following options one after the other:

- `Drive train`
- `Select engine code and engine`
- `0001 - Self-diagnosis compatible systems`
- `0001 - Engine electronics`
- `0001 - Engine electronics, functions`
- `0001 - Activate fuel pump`
- `Carry out test`

– Start fuel pump and let it run for 15 seconds.

– Read fuel pressure off pressure tester (diesel) - VAS 6551- .

• Specification: 3.8 … 5.8 bar.

If the indicated value is below the specification, although the fuel delivery rate was OK:

- Relief valve in high-pressure pump not OK

If the specification is exceeded:

- Fuel return line blocked or crushed.

Assembling

Assembly is performed in reverse sequence; note the following:

• The ignition must be switched off.

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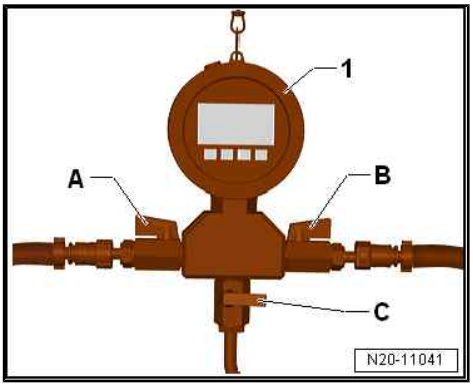
Note

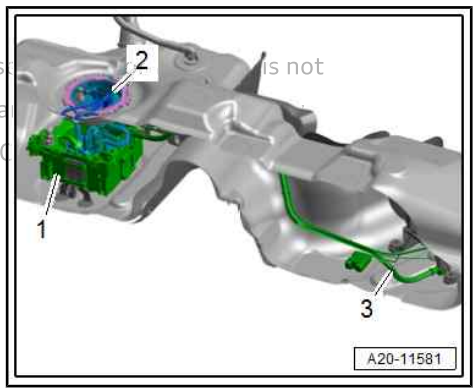
Before removing the pressure tester -1-, release the fuel pressure by opening the cut-off valves -B, C- and allowing fuel to drain off into a measuring container.



- Detach pressure tester (diesel) - VAS 6551- together with connecting lines.
- Secure fuel supply line with hose clip and then pull to check that fuel supply line is properly secured.
- Install engine cover panel ⇒ Engine; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

7.2 Removing and installing suction-jet pump

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



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Suction-jet pump: operation

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

Faults caused by defective suction-jet pump

Caution

The engine can stop due to fuel starvation if the suction-jet pump is defective.

- ***If the suction-jet pump is defective, the engine can stop due to fuel starvation when the tank is still 1/4 full.***

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

If the engine stops due to fuel starvation with the tank up to about 1/4 full, proceed as follows:

- Add approx. 5 litres of fuel.
- Start engine.

If engine now starts:

- Renew fuel tank ⇒ page 19 ; suction-jet pump cannot be renewed separately.

If engine does not start:

- Check fuel pump (electrical test) ⇒ Vehicle diagnostic tester.

7.3 Removing and installing fuel pump control unit - J538-

Removing

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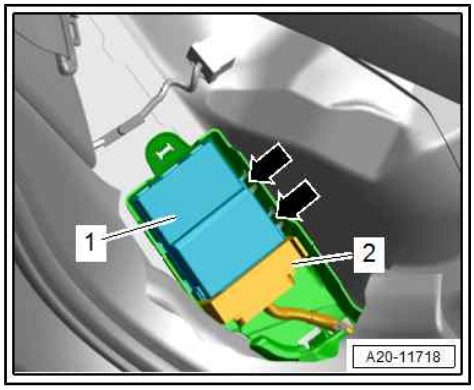
– Observe safety precautions ⇒ page 1 .
– Observe rules for cleanliness ⇒ page 3 .

Cabriolet:

– Remove side trim (rear right) ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Exploded view - side trim .
– If installed, remove rear right subwoofer - R240- ⇒ Communication; Rep. gr. 91 ; Sound system; Overview of fitting locations - sound system .

All vehicles:

– Remove seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .
– Release catches -arrows- with a screwdriver and detach fuel pump control unit - J538- -item 1- from bracket.
– Pull fuel pump control unit out under sill panel trim/side trim.
– Release retainer catch and unplug electrical connector -2- for fuel pump control unit - J538- .



Installing

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

– Install seat bench ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing seat bench/individual seats .