



## Workshop Manual

Arteon 2018 ➤ , Passat 2015 ➤ ,  
Passat Variant 2015 ➤ , Tiguan 2016 ➤ ,  
Tiguan RUS 2017 ➤

| Fuel supply system, petrol engines |          |          |          |      |          |      |          |          |          |
|------------------------------------|----------|----------|----------|------|----------|------|----------|----------|----------|
| Engine ID                          | CZC<br>A | CZE<br>A | CJSA     | CJSC | CHH<br>B | CJXA | CWL<br>A | CZD<br>A | CZP<br>A |
|                                    | CXD<br>A | DJH<br>C | CZP<br>B |      |          |      |          |          |          |

Edition 04.2017





## List of Workshop Manual Repair Groups

### 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 information

(VRL010128; Edition 04.2017)

⇒ [“1.1 Safety regulations for working on fuel supply”, page 1](#)

⇒ [“1.2 Safety precautions when using testers and measuring instruments during a road test”, page 1](#)

⇒ [“1.3 Safety measures when working on vehicles with a start/stop system”, page 2](#)

#### 1.1 Safety regulations for working on fuel supply

**Risk of injury from highly-pressurised fuel.**

The fuel system is pressurised. Injury from fuel spray possible.

Before opening the fuel system:

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

#### **Danger of fire from escaping fuel**

When the battery is connected and the driver door opens, the door contact switch activates the fuel pump. Escaping fuel can ignite and cause a fire.

- Disconnect voltage supply to fuel pump before opening the fuel system.



#### **NOTICE**

**Risk of irreparable damage to fuel pump if allowed to run dry.**

- Never allow fuel pump to run »dry«.

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

**Risk of injury through insecure testing and measuring instruments**

When the front passenger airbag is triggered in an accident, insufficiently secured testing and measuring instruments become dangerous projectiles.

- Secure testing and measuring instruments on the rear seat.

or

- Have a second person operate the test and measuring equipment on the rear seat.



### 1.3 Safety measures when working on vehicles with a start/stop system

#### Risk of injury due to unexpected motor start

If the vehicle's start/stop system is activated, the engine can start unexpectedly. A message in the dash panel insert indicates whether the Start/Stop system is activated.

- Deactivate Start/Stop system by switching off the ignition.





## 2 Identification

⇒ "2.1 Engine number/engine data", page 3

### 2.1 Engine number/engine data

| Identification code       | CZCA                      | CZDA                      | CZEA                      | CWLA                                                      | CZPA                      | CJSA                      | CJSC                      |
|---------------------------|---------------------------|---------------------------|---------------------------|-----------------------------------------------------------|---------------------------|---------------------------|---------------------------|
| Exhaust emission standard | EU 6                      | EU 6                      | EU 6                      | EU 6                                                      | EU 6                      | EU 6                      | EU 6                      |
| Displacement l            | 1.4                       | 1.4                       | 1.4                       | 1.4                                                       | 2.0                       | 1.8                       | 1.8                       |
| Power kW                  | 92                        | 110                       | 110                       | 110                                                       | 132                       | 132                       | 132                       |
| RON                       | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | Bioethanol E85 <sup>2)</sup> or 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> |

<sup>1)</sup> In exceptional circumstances min. 91 RON, however with reduced performance.

<sup>2)</sup> E85 means that up to 85% bioethanol may be contained in the fuel. Each mixture ratio below 85% is permissible.

| Identification code       | CHHB                      | CJXA                      | CXDA                      | DJVA                      | DJHC                      | CZPB                      |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| Exhaust emission standard | EU 6                      | EU 6                      | EU 6                      | EU 6W                     | EU 6 plus                 | EU 6                      |
| Displacement l            | 2.0                       | 2.0                       | 2.0                       | 1.4                       | 2.0                       | 2.0                       |
| Power kW                  | 162                       | 206                       | 196                       | 110                       | 206                       | 140                       |
| RON                       | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> | 95 unleaded <sup>1)</sup> |

<sup>1)</sup> In exceptional circumstances min. 91 RON, however with reduced performance.

<sup>2)</sup> E85 means that up to 85% bioethanol may be contained in the fuel. Each mixture ratio below 85% is permissible.



### 3 General information

⇒ **"3.1 Rules for cleanliness when working on auxiliary heater and fuel system", page 4**

#### 3.1 Rules for cleanliness when working on auxiliary heater and fuel system

When working on the fuel supply and injection system, pay careful attention to the following "rules":

- ◆ Thoroughly clean all joints and surrounding areas before dismantling.
- ◆ Place removed parts on a clean surface and cover them over. Use lint-free cloths only.
- ◆ If repair work cannot be performed immediately, cover new parts which have been removed from their packing.
- ◆ Install only clean parts; do not remove new parts from packaging until immediately before installing. Do not use parts that have been kept unpackaged (for example in toolboxes).
- ◆ When the system is open: Do not work with compressed air.
- ◆ Do not move the vehicle.
- ◆ Immediately seal open lines and unions with clean plugs, for example from engine bung set - VAS 6122- .
- ◆ Protect disconnected electrical connections from dirt and water and only reconnect in dry condition.





## 4 Repair notes

⇒ ["4.1 Pipe/wire routing and attachment", page 5](#)

⇒ ["4.2 General repair instructions", page 5](#)

### 4.1 Pipe/wire routing and attachment

#### Risk of damage to lines

Lines may become damaged by moving or hot components.

- Route lines in their original positions.
- Make sure there is sufficient clearance between the lines and moving as well as hot components.

- ◆ Avoid interchanging and ensure that the original installation position is restored. To do this, mark the lines for fuel, vacuum and activated charcoal filter system or electrical wiring before they are removed. Where necessary, make sketches or take photographs.

### 4.2 General repair instructions

**Before starting work on the fuel supply system, the following steps must be performed:**

- ◆ Before starting work, the extraction hose of a switched-on exhaust gas extraction system must be laid near to the assembly opening of the fuel tank.
- ◆ The extraction system serves to extract fumes.
- ◆ If no exhaust gas extraction system is available, a radial fan with a displacement greater than 15 m<sup>3</sup>/h can be used providing that motor is not in air flow.
- ◆ Prevent skin contact with fuel! Wear fuel-resistant gloves!
- ◆ Interrupt power supply to fuel system pressurisation pump - G6- ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- ◆ Drain fuel tank ⇒ [page 31](#) .



## 20 – Fuel supply system

### 1 Fuel tank

⇒ [“1.1 Assembly overview - fuel tank”, page 6](#)

⇒ [“1.2 Removing and installing fuel tank”, page 10](#)

⇒ [“1.3 Emptying fuel tank”, page 31](#)

#### 1.1 Assembly overview - fuel tank

⇒ [“1.1.1 Assembly overview - fuel tank, Passat and Arteon with front-wheel drive”, page 6](#)

⇒ [“1.1.2 Assembly overview - fuel tank, Tiguan with front-wheel drive”, page 8](#)

⇒ [“1.1.3 Assembly overview - fuel tank, vehicles with four-wheel drive”, page 9](#)

##### 1.1.1 Assembly overview - fuel tank, Passat and Arteon with front-wheel drive

###### 1 - Sealing cover

- ☐ Screw in until engages audibly
- ☐ Secured to tank flap unit

###### 2 - Filler neck

###### 3 - Bolt

- ☐ Qty. 2
- ☐ Renew after removal
- ☐ 8 Nm +90°

###### 4 - Bump stop

- ☐ Qty. 4
- ☐ Between fuel tank and vehicle body
- ☐ Ensure proper seating.

###### 5 - Guide

###### 6 - Bolt

- ☐ Renew after removal
- ☐ 20 Nm +90°

###### 7 - Fuel tank

- ☐ Removing and installing  
⇒ [page 10](#)

###### 8 - Heat shield

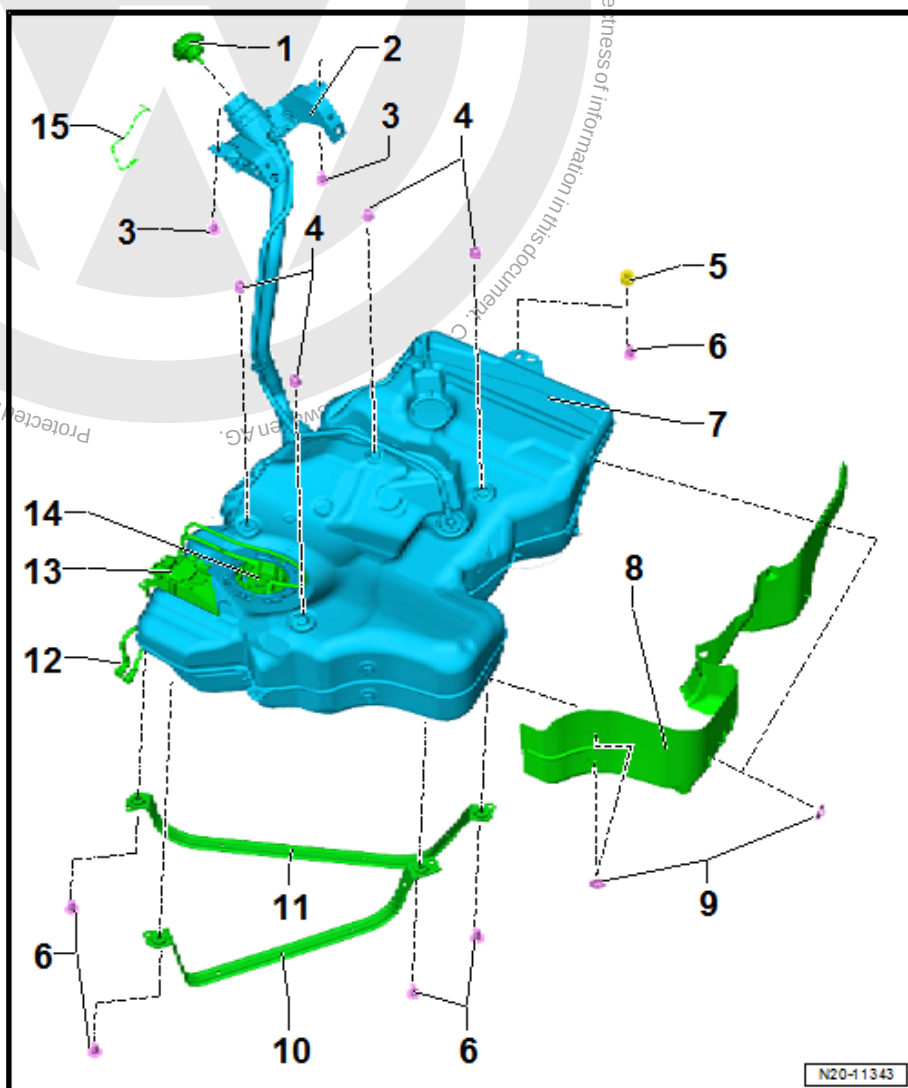
- ☐ For fuel tank

###### 9 - Nuts

- ☐ For heat shield.

###### 10 - Tensioning strap

- ☐ Check that the installation position is correct.
- ☐ Mark direction of travel when removing.
- ☐ Fitting position ⇒ [page 7](#)





### 11 - Tensioning strap

- ☐ Check that the installation position is correct.
- ☐ Mark direction of travel when removing.
- ☐ Fitting position ⇒ [page 7](#)

### 12 - Fuel lines

### 13 - Fuel pump control unit - J538-

- ☐ Removing and installing ⇒ [page 109](#)

### 14 - Fuel delivery unit, fuel gauge sender

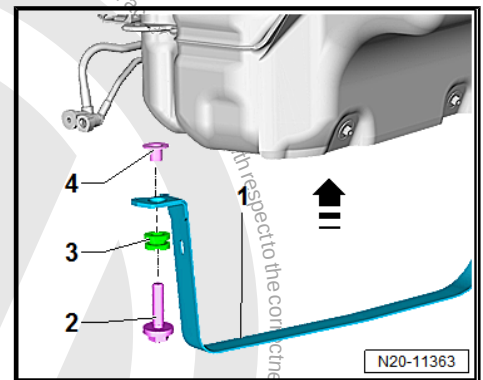
- ☐ Removing and installing ⇒ [page 47](#)

### 15 - Earth connection

- ☐ For fuel filler neck
- ☐ To eliminate electrostatic charge

### Components of fuel tank holder

- 1 - Securing strap/fuel tank
- 2 - Bolt with washer
- 3 - Rubber bracket
- 4 - Guide bush





## 1.1.2 Assembly overview - fuel tank, Tiguan with front-wheel drive

### 1 - Sealing cover

- ☐ Screw in until engages audibly
- ☐ Secured to tank flap unit

### 2 - Filler neck

### 3 - Earth connection

- ☐ For fuel filler neck
- ☐ To eliminate electrostatic charge

### 4 - Bolt

- ☐ Renew after removal
- ☐ 8 Nm +90°

### 5 - Breather line

- ☐ To activated charcoal filter solenoid valve 1 - N80- and to activated charcoal filter
- ☐ Do not kink
- ☐ Ensure plug-in connector is secured properly by pulling it.
- ☐ Disconnect plug-in connectors ⇒ [page 72](#)

### 6 - Bump stop

- ☐ Qty. 4
- ☐ Between fuel tank and vehicle body
- ☐ Ensure proper seating.

### 7 - Fuel delivery unit, fuel gauge sender

- ☐ Assembly overview ⇒ [page 47](#)
- ☐ Removing and installing ⇒ [page 54](#)

### 8 - Fuel tank

- ☐ Removing and installing ⇒ [page 10](#)

### 9 - Clamping washer

- ☐ For heat shield

### 10 - Heat shield

- ☐ For fuel tank

### 11 - Tensioning strap

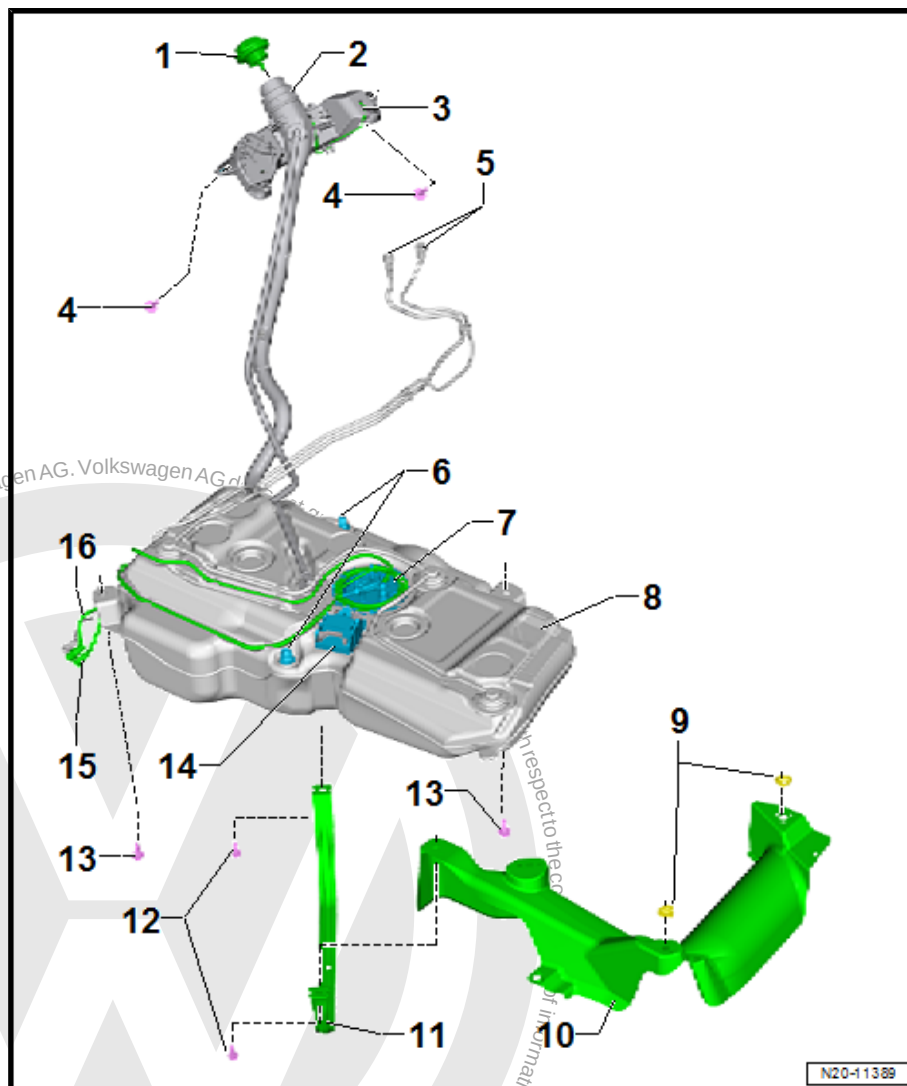
- ☐ Observe installation position

### 12 - Bolt

- ☐ Renew after removal
- ☐ 20 Nm +90°

### 13 - Bolt

- ☐ Renew after removal
- ☐ 20 Nm +90°







## 10 - Tensioning strap

- ☐ Note installation position ⇒ [page 10](#)

## 11 - Guide bush

- ☐ Passat and Arteon only

## 12 - Heat shield

- ☐ Ensure secure seating

## 13 - Breather line

## 14 - Bracket

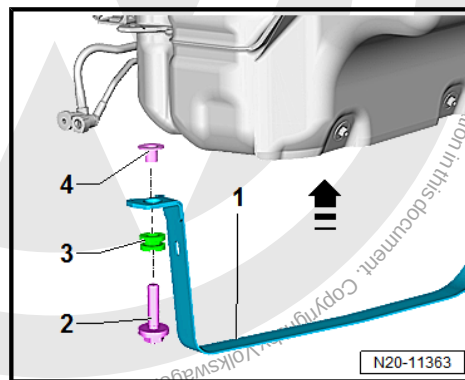
- ☐ For fuel pump control unit - J538-
- ☐ Removing and installing fuel pump control unit - J538- ⇒ [page 109](#) .

## 15 - Metering pump - V54-

- ☐ For auxiliary heater

### Components of fuel tank holder, Passat and Arteon

- 1 - Securing strap/fuel tank
- 2 - Bolt with washer
- 3 - Rubber bracket
- 4 - Guide bush



## 1.2 Removing and installing fuel tank

⇒ [“1.2.1 Removing and installing fuel tank - Passat and Arteon with front-wheel drive”, page 10](#)

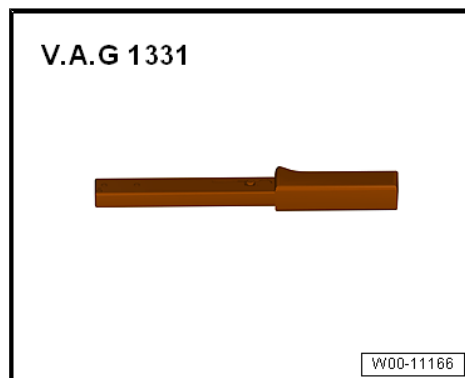
⇒ [“1.2.2 Removing and installing fuel tank - Tiguan with front-wheel drive”, page 17](#)

⇒ [“1.2.3 Removing and installing fuel tank - vehicles with four-wheel drive”, page 24](#)

### 1.2.1 Removing and installing fuel tank - Passat and Arteon with front-wheel drive

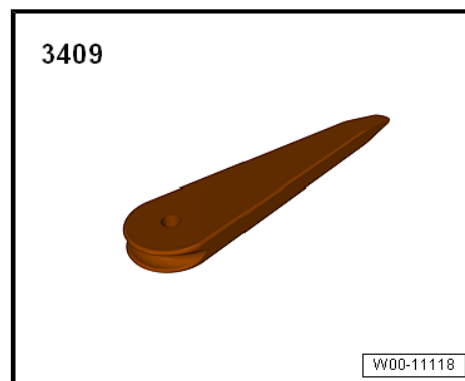
#### Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

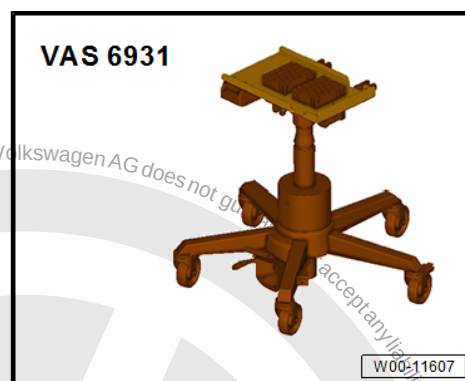




◆ Removal wedge - 3409-



◆ Engine and gearbox jack - VAS 6931-

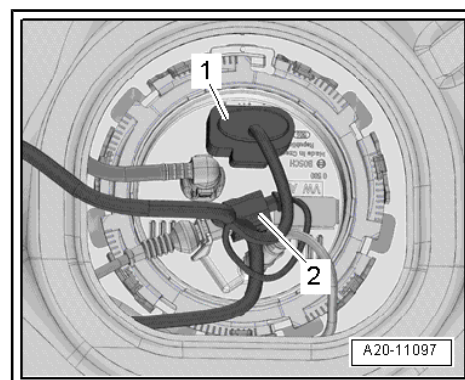


◆ Torque wrench - V.A.G 1332-



## Removing

- Move front seats to foremost position.
- Switch off ignition.
- Drain fuel tank ➔ [page 31](#) .
- Remove cover of assembly opening on right ➔ [page 69](#) .
- Release and pull off connector -1- on sealing flange.
- If fitted, detach electrical connector -2- for metering pump - V54- of auxiliary heater on sealing flange.
- Release and pull off connector -2-.
- Remove fuel pump control unit - J538- with wiring harness still attached ➔ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.





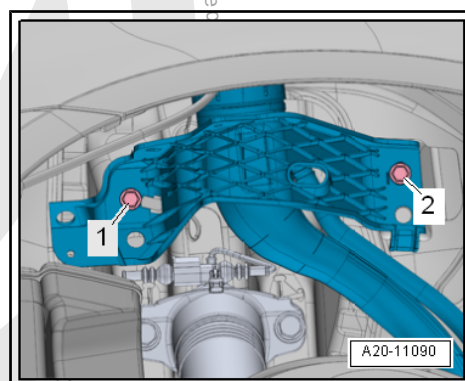
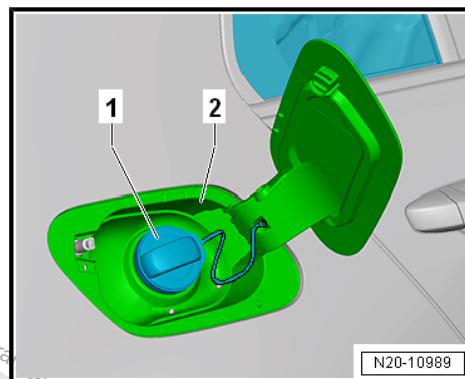
- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.



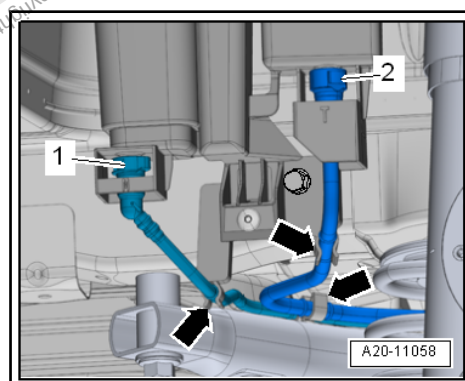
#### Note

*In order to prevent the ingress of dirt, seal the opening of the fuel filler neck with a clean plug.*

- Remove tank flap unit -2- ➤ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit .
- Remove rear right wheel ➤ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres and alignment .
- Remove rear right wheel housing liner ➤ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - rear wheel housing liner .
- Remove rear right underbody cladding ➤ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding .
- Unscrew bolts -1- and -2- for fuel filler neck.

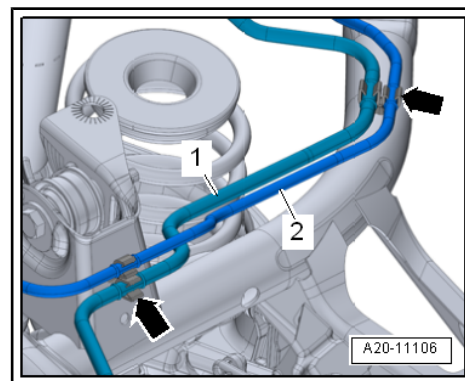


- Disconnect breather lines -1- and -2- from activated charcoal filter. Separate plug-in connectors ➤ [page 72](#) .
- Unclip breather lines from retainer -arrows-.





- Disconnect breather lines -1- and -2- from retainer -arrows-.
- If necessary, loosen rear section of exhaust system and push to one side ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Removing and installing silencer .



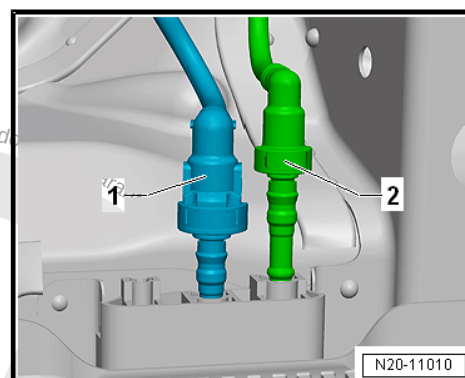
- Disconnect fuel line -1- on underbody. Separate plug-in connectors ⇒ [page 72](#) .

### ⚠ CAUTION

The fuel system is pressurised.

Danger of injury through fuel spray.

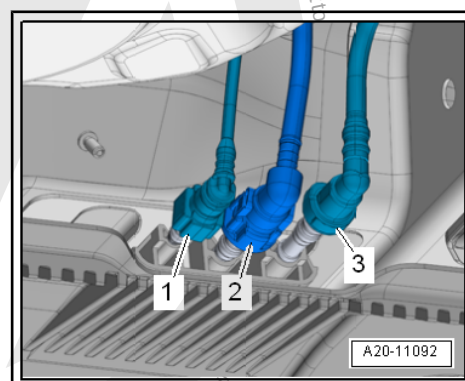
- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



- Disconnect breather line -2-. Separate plug-in connectors ⇒ [page 72](#) .

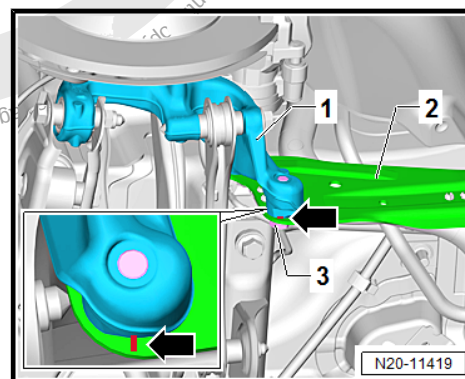
### Vehicles with auxiliary heater

- Disconnect fuel line -1- to auxiliary heating. Separate plug-in connectors ⇒ [page 72](#) .



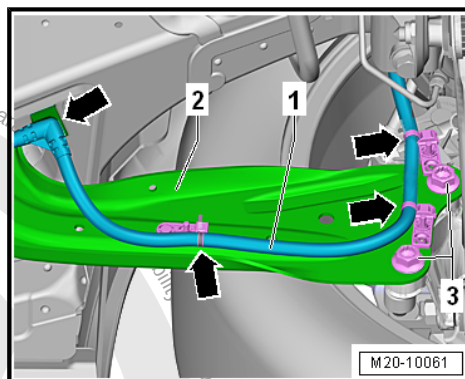
### Continued for all vehicles:

- Mark installation position between wheel bearing housing -1- and trailing arm -2-.
- To do this, use a suitable marker pen.
- Make a mark on the trailing arm in the area shown -arrow-.

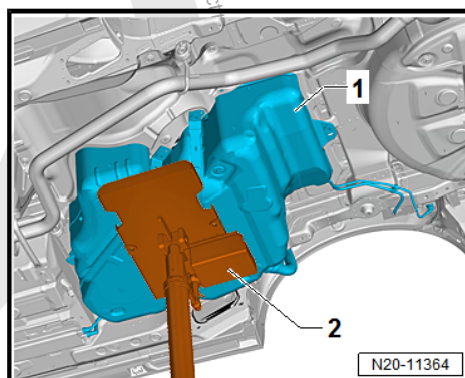




- Unclip wiring harness -1- from trailing arm -2- -arrows-.
- Unscrew bolts -3-, and swing trailing arm -2- downwards.



- Place engine and gearbox jack - VAS 6931- -2- underneath, and support fuel tank -1- as shown in illustration.





- Unscrew bolts -arrows-.

**i Note**

- ◆ *For reasons of clarity, the fuel tank is shown without the engine and gearbox jack - VAS 6931- .*
- ◆ *The aid of a 2nd mechanic is required to remove the fuel tank.*

- Lower fuel tank -1- using engine and gearbox jack - VAS 6931- .
- Lower fuel tank by turning it sideways.
- Observe lines to activated charcoal filter (unclip if necessary).
- Guide filler neck out between rear axle and body.

**Installing**

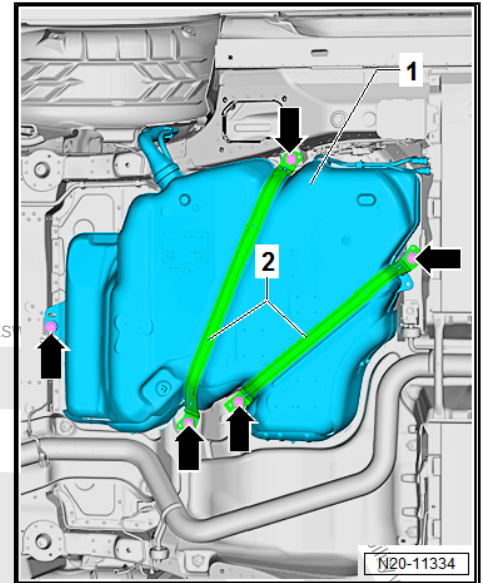
Install in reverse order of removal. The following should be observed:

- Guide filler neck in between rear axle and body.

**i Note**

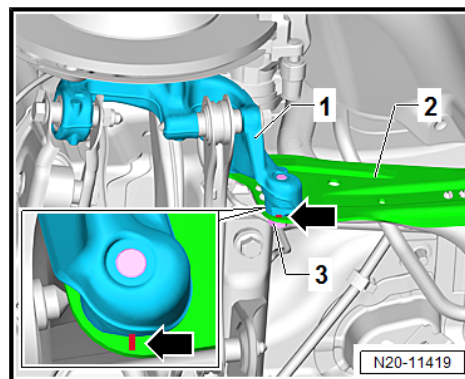
*Separate plug-in connectors ⇒ [page 72](#) .*

- If metering pump - V54- is fitted, ensure that it is securely fastened to bracket.
- Make sure that the filler neck of the fuel tank is correctly inserted into the opening in the body.
- Ensure rubber buffers are seated correctly ⇒ [Item 4 \(page 6\)](#) .
- Guide in breather lines on rear axle.
- When clipping in the lines, take note of the different diameters.
- Install breather lines and fuel lines free of kinks.
- After installing fuel tank, check that the supply, return and breather lines are still clipped onto the fuel tank.
- Position the fuel tank together with securing strap on underbody, using the engine and gearbox jack - VAS 6931- .
- Make sure bracket for exhaust system is seated correctly ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencers .
- Note position of securing strap.
- Ensure that line connections are tight.
- Ensure connections are secured properly by pulling.

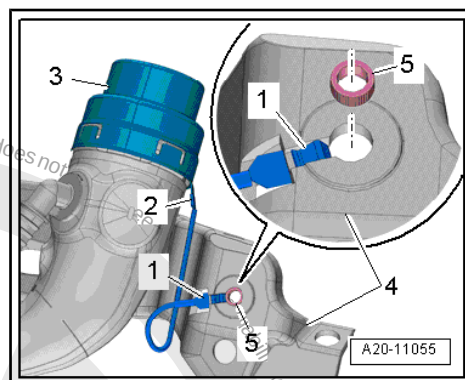




- Align wheel bearing housing -1- and trailing arm -2- in relation to each other.
- To do this, use the mark previously made -arrow-.
- Tighten bolt -3-.



- Check whether there are signs of oxidation on the earth wire of the connectors, remove if necessary.
- Check installation position of earth connection.
- Ensure that connector -2- is seated securely on metal ring -3-.
- Contact -1- must be attached to fuel tank -4- and secured with spacer bush -5-.
- Check the connection of the metal ring on the fuel filler neck by measuring between the ring and a bare metal part of the body using an ohmmeter.
- Specification: approx. 0 ohm.
- If the specification is not attained, there is a risk of explosion due to electrostatic discharge.



### **⚠ WARNING**

**Risk of explosion of fuel tank caused by fuel pump activation.**  
**Risk of severe injuries and burns.**

- If a new or completely empty fuel tank has been installed, fill it immediately with at least 5 litres of fuel.

- Fill fuel tank with at least 5 litres of fuel.

### **Specified torques**

- ◆ ⇒ ["1.1.1 Assembly overview - fuel tank, Passat and Arteon with front-wheel drive", page 6](#)
- ◆ ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seat; Removing and installing bench seat / individual seats
- ◆ ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencer
- ◆ ⇒ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cover
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cover
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing; Assembly overview - trailing arm
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Assembly overview - wheel bearing



## 1.2.2 Removing and installing fuel tank - Tiguan with front-wheel drive

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

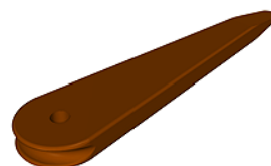
V.A.G 1331



W00-11186

- ◆ Removal wedge - 3409-

3409



W00-11118

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

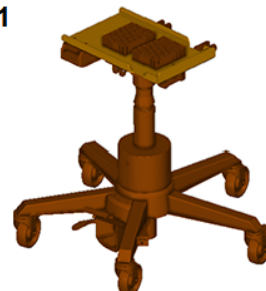
V.A.G 1383 A



W00-11135

- ◆ Engine and gearbox jack - VAS 6931-

VAS 6931



W00-11607

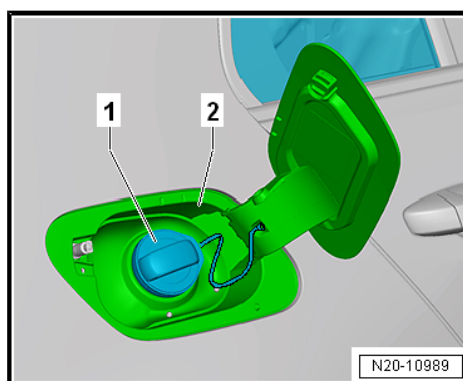
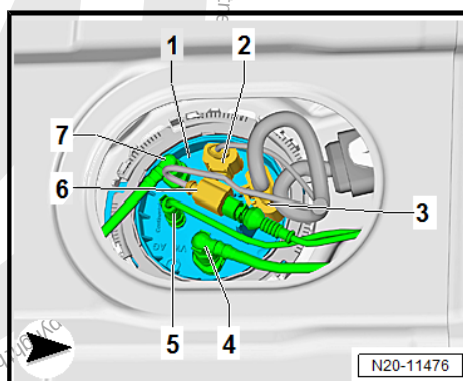


- ◆ Torque wrench - V.A.G 1332-



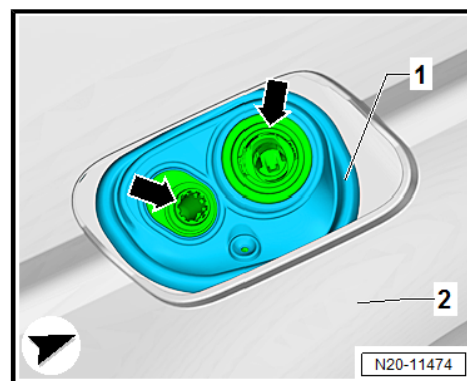
## Removing

- Move front seats to foremost position.
- Switch off ignition.
- Remove cover of assembly opening ➔ [page 69](#) .
- Release and pull off connectors -2- and -3- on flange.
- If fitted, detach, release and pull off electrical connector -6-.
- Remove fuel pump control unit - J538- with wiring harness still attached ➔ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.
- Remove rear right wheel ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres and alignment .
- Remove rear right wheel housing liner ➔ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - rear wheel housing liner .
- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- In order to prevent the ingress of dirt, seal the opening of the fuel filler neck with a clean plug.
- Remove tank flap unit -2- ➔ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit .

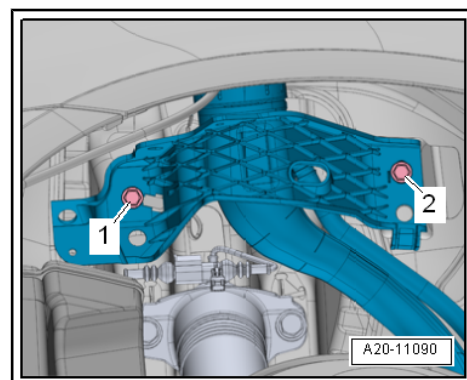




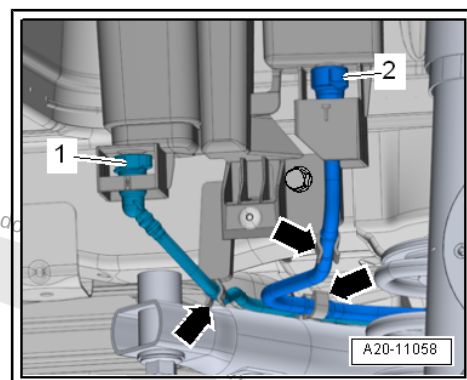
- Guide sealing grommet -1- out of filler pipes -arrows-.
- Pull sealing grommet -1- off body -2-, and remove it.



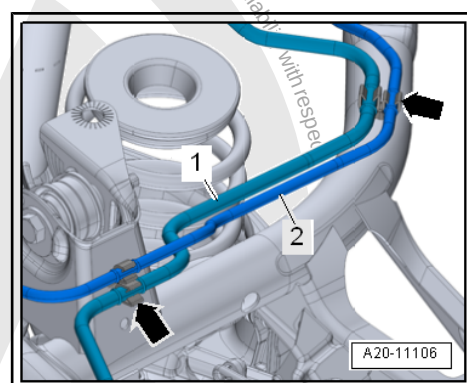
- Unscrew bolts -1- and -2- for fuel filler neck.



- Pull off breather lines -1- and -2- from activated charcoal filter. Separate plug-in connectors ⇒ [page 72](#) .
- Unclip breather lines from retainer -arrows-.



- Disconnect breather lines -1- and -2- from retainer -arrows-.
- Remove underbody cladding at rear left and rear right ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding .
- Detach underbody cladding on left and right in centre and lower ⇒ General body repair, exterior; Rep. gr. 66 ; Underbody cladding .
- If fitted, remove trim on rear axle ⇒ Running gear, axles, steering; Rep. gr. 42 ; Rear axle .
- Remove rear section of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Removing and installing silencer .
- Remove rear tunnel cross-piece ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding; Removing and installing tunnel cross-piece .





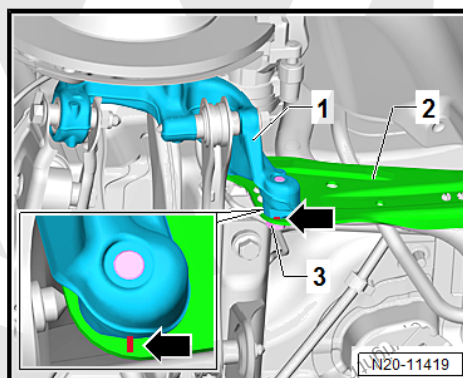
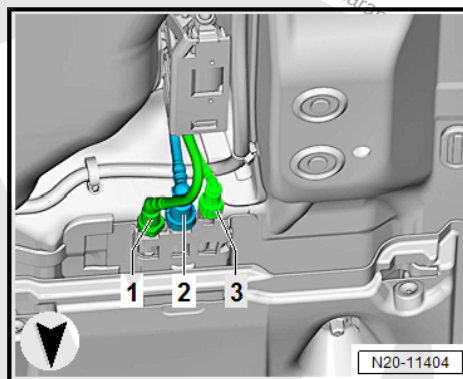
- Disconnect fuel supply lines -1- and -2- at underbody. Separate plug-in connectors ⇒ [page 72](#) .

#### Vehicles with auxiliary heater

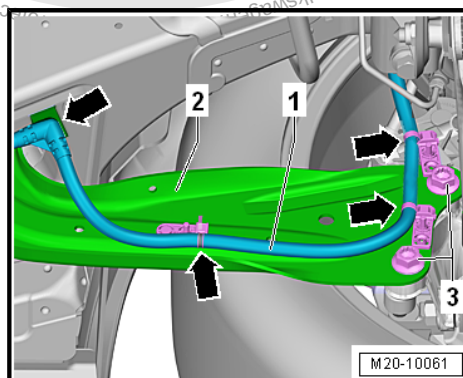
- Disconnect fuel line -3- to auxiliary heating. Separate plug-in connectors ⇒ [page 72](#) .

#### Continuation for all vehicles

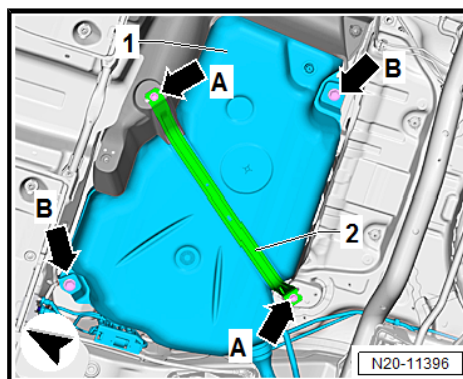
- Mark installation position between wheel bearing housing -1- and rear right trailing arm -2-.
- To do this, use a suitable marker pen.
- Make a mark on the trailing arm in the area shown -arrow-.



- Unclip wiring harness -1- from trailing arm -2- -arrows-. Press out inner retaining pins to do this.
- Support wheel bearing unit on engine and gearbox jack ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Assembly overview - wheel bearing .
- Unscrew bolts -3-, and swing trailing arm -2- downwards.

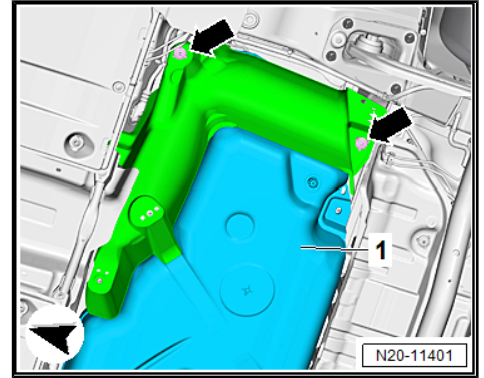


- Unscrew bolts -arrows A-.
- Remove securing strap -2-.

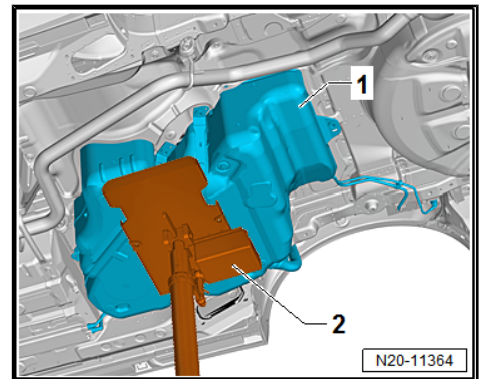




- Remove heat shield on fuel tank -1-.
- To do this, remove clamping washers -arrows-.
- Unhook heat shield from studs.
- Guide out heat shield and remove.



- Place engine and gearbox jack -2- under fuel tank -1- to support it.





- Unscrew bolts -arrows B-.



#### Note

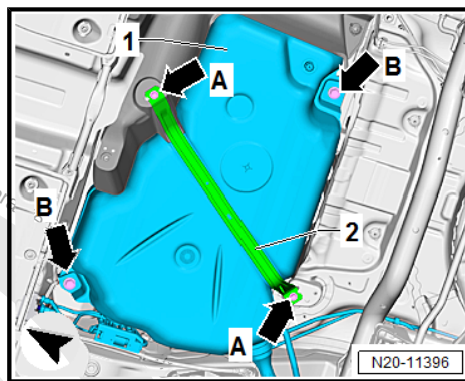
For reasons of clarity, the fuel tank is shown without the engine and gearbox jack .

- Support fuel tank with engine and gearbox jack to prevent it from falling down.
- Lower fuel tank using engine and gearbox jack .
- Lower fuel tank by turning it sideways.
- Guide out lines to activated charcoal filter on rear axle.
- Guide filler neck out between rear axle and body.

#### Installing

Install in reverse order of removal. The following should be observed:

- Ensure rubber buffers are seated correctly  
⇒ [Item 6 \(page 8\)](#) .
- Guide filler neck in between rear axle and body.
- If metering pump - V54- is fitted, ensure that it is securely fastened to bracket.
- Make sure that the filler neck of the fuel tank is correctly inserted into the opening in the body.
- After installing fuel tank, check that the supply, return and breather lines are still clipped onto the fuel tank.
- Install breather lines and fuel lines free of kinks.
- Guide in breather lines on rear axle.
- When clipping in the lines, take note of the different diameters.
- Clip in lines for auxiliary heater on fuel tank.





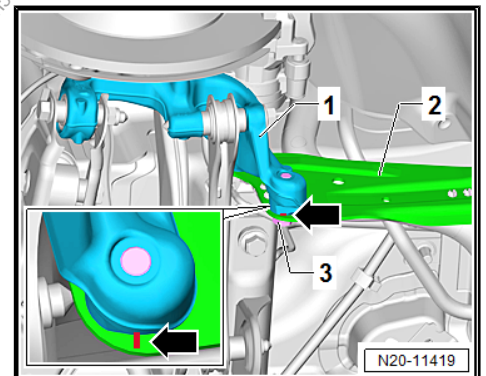
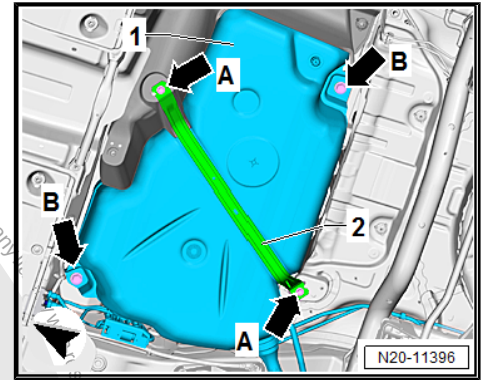
- Use engine and gearbox jack - V.A.G 1383 A- to position fuel tank on underbody.



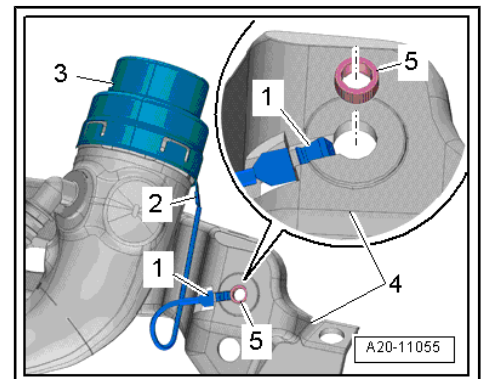
#### Note

For reasons of clarity, the fuel tank is shown without the engine and gearbox jack .

- Tighten bolts -arrows B- by hand.
- Lower engine and gearbox jack - V.A.G 1383 A- .
- Guide in breather lines on rear axle.
- When clipping in the lines, take note of the different diameters.
- Install heat shield.
- Attach securing strap and tighten bolts -arrows A- by hand.
- Note installation position of securing strap.
- Make sure bracket for exhaust system is seated correctly ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencers .
- Ensure that line connections are tight.
- Ensure connections are secured properly by pulling.
- Align wheel bearing housing -1- and trailing arm -2- in relation to each other.
- To do this, use the mark previously made -arrow-.
- Tighten bolt -3-.



- Check whether there are signs of oxidation on the earth wire of the connectors, remove if necessary.
- Check installation position of earth connection.
- Ensure that connector -2- is seated securely on metal ring -3-.
- Contact tab -1- must be hooked into fuel tank -4- and secured by means of spacer bush -5-.
- Check the connection of the metal ring on the fuel filler neck by measuring between the ring and a bare metal part of the body using an ohmmeter.
- Specification: approx. 0 ohm.
- If the specification is not attained, there is a risk of explosion due to electrostatic discharge.

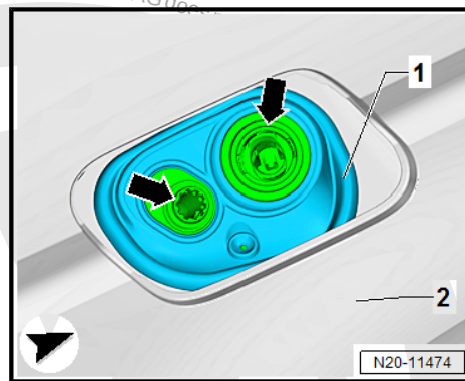




- Make sure that sealing grommet -1- is properly seated.
- To install trailing arm, lift wheel bearing unit on engine and gearbox jack until upper bolt can be inserted.
- Fill fuel tank with at least 5 litres of fuel.

#### Specified torques

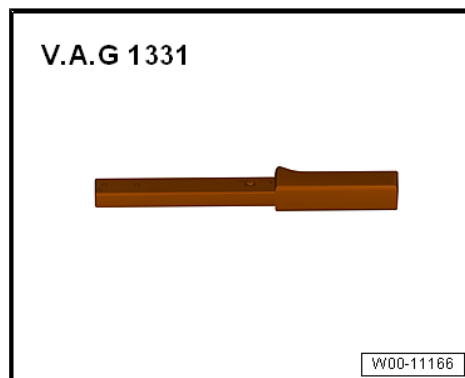
- ◆ ⇒ ["1.1.2 Assembly overview - fuel tank, Tiguan with front-wheel drive", page 8](#)
- ◆ ⇒ Rep. gr. 26 ; SCR system (selective catalytic reduction); Assembly overview - reducing agent tank
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Assembly overview - wheel bearing
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing; Assembly overview - trailing arm
- ◆ ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seat; Removing and installing bench seat / individual seats
- ◆ ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencer
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 42 ; Subframe; Assembly overview - subframe
- ◆ ⇒ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cover



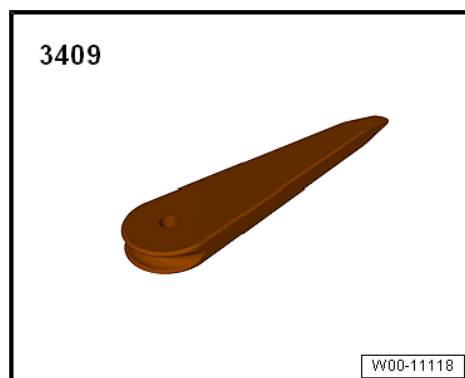
### 1.2.3 Removing and installing fuel tank - vehicles with four-wheel drive

#### Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-



- ◆ Removal wedge - 3409-

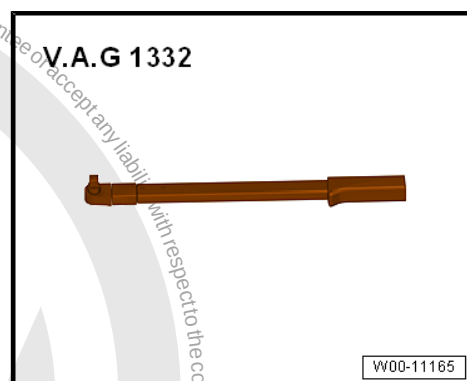




◆ Engine and gearbox jack - VAS 6931-



◆ Torque wrench - V.A.G 1332-

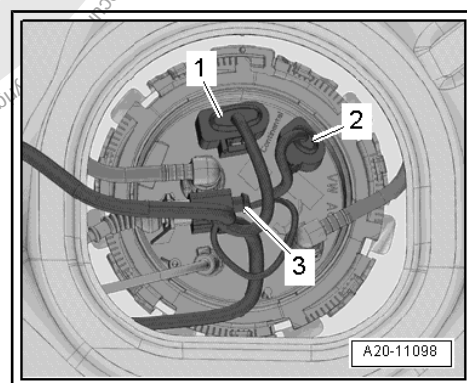


**Removing**

- Drain fuel tank ➔ [page 31](#) .
- Move front seats to foremost position.
- Switch off ignition.
- Remove cover of assembly opening on left and right  
➔ [page 69](#) .
- Release and pull off connectors -1- and -2- on sealing flange.

**Vehicles with auxiliary heater**

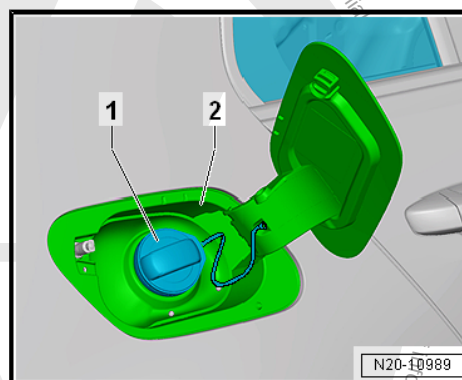
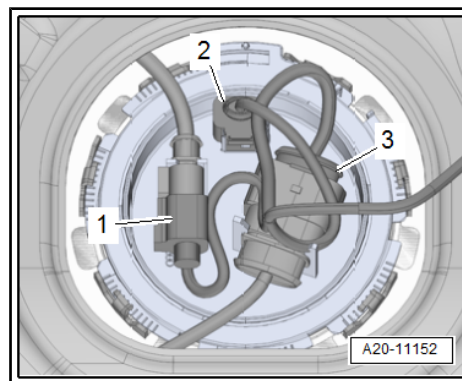
- Release and pull off connector -3- for metering pump - V54-





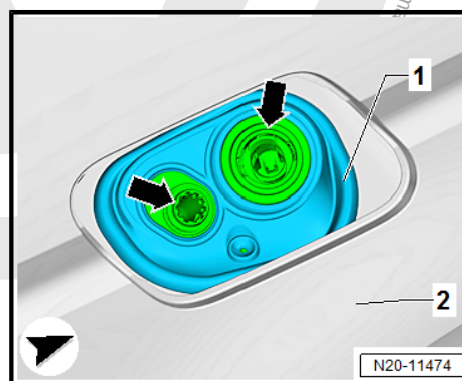
### Continuation for all vehicles

- Release and pull off connector -2- on sealing flange.
- Release and pull off connectors -1- on sealing flange.
- If fitted, release and pull off electrical connector -3- on flange.
- Unclip electrical connectors from mountings on flange.
- Remove fuel pump control unit - J538- with wiring harness still attached ⇒ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.
- Remove rear right wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Wheel change
- Remove rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - rear wheel housing liner
- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- In order to prevent the ingress of dirt, seal the opening of the fuel filler neck with a clean plug.
- Remove tank flap unit -2- ⇒ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit .



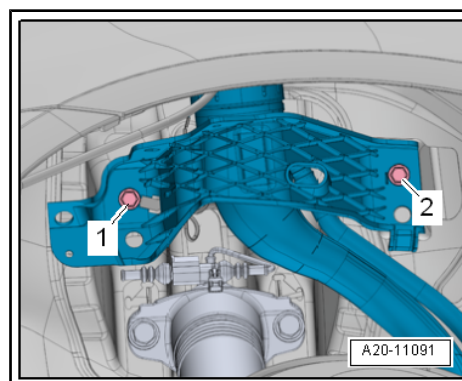
### Tiguan:

- Guide sealing grommet -1- out of filler pipes -arrows-.
- Pull sealing grommet -1- off body -2-, and remove it.



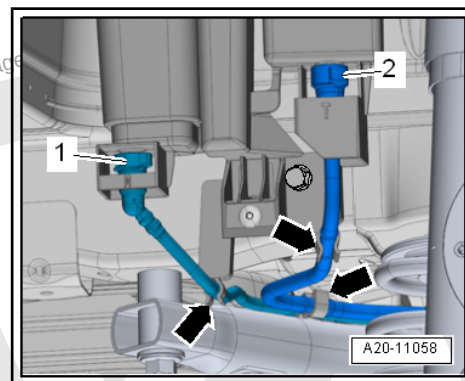
### Continued for all vehicles:

- Unscrew bolts -1- and -2- for fuel filler neck.
- Remove rear part of exhaust system ⇒ Rep. gr. 26 ; Exhaust system/silencer; Assembly overview - silencers .
- If fitted, remove left and right rear underbody cladding in front of rear axle ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding; Removing and installing underbody cladding .
- If necessary, detach underbody cladding on left and right in centre and lower ⇒ General body repair, exterior; Rep. gr. 66 ; Underbody cladding .

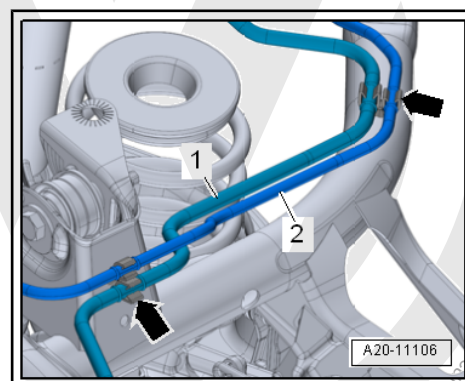




- Disconnect breather lines -1- and -2- from activated charcoal filter. Separate plug-in connectors ⇒ [page 72](#) .
- Unclip breather lines from retainer -arrows-.



- Disconnect breather lines -1- and -2- from retainer -arrows-.
- If necessary, loosen rear section of exhaust system and push to one side ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Removing and installing silencer .

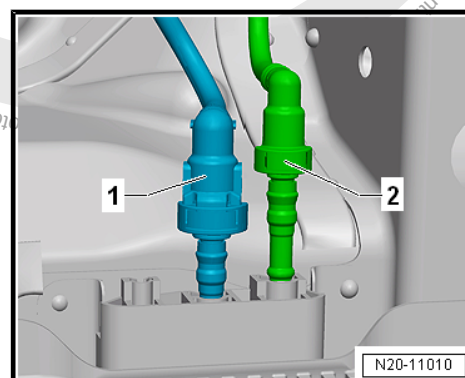


- Disconnect fuel line -1- on underbody. Separate plug-in connectors ⇒ [page 72](#) .

### ⚠ CAUTION

The fuel system is pressurised.  
Danger of injury through fuel spray.

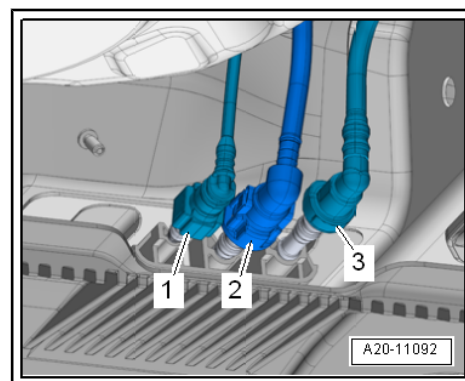
- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



- Disconnect fuel return line -2-. Separate plug-in connectors ⇒ [page 72](#) .

### Vehicles with auxiliary heater

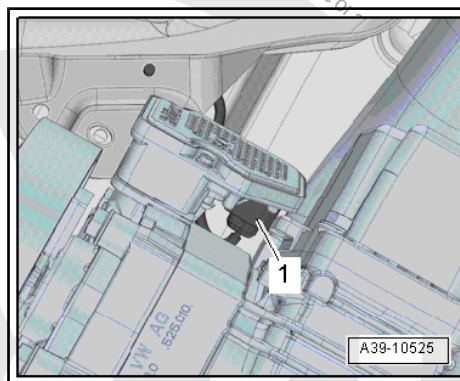
- Disconnect fuel line -1- to auxiliary heating. Separate plug-in connectors ⇒ [page 72](#) .



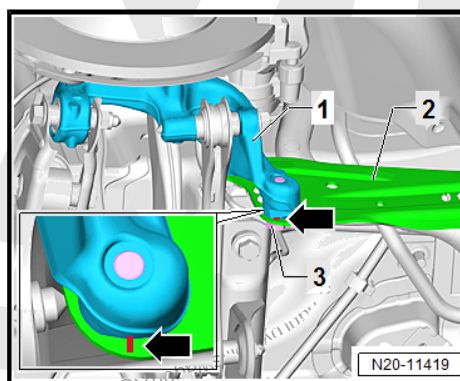


**Continued for all vehicles:**

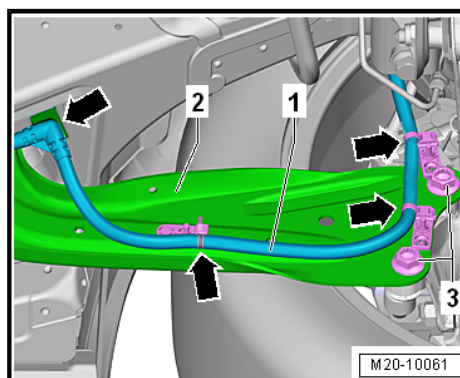
- Remove propshaft ⇒ Propshaft and rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Release and pull off connector -1- for Haldex coupling.
- Unclip wiring harness from fuel tank and heat shield.



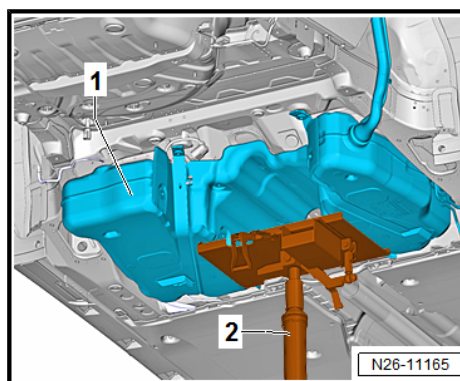
- Mark installation position between wheel bearing housing -1- and trailing arm -2-.
- To do this, use a suitable marker pen.
- Make a mark on the trailing arm in the area shown -arrow-.



- Unclip wiring harness -1- from trailing arm -2- -arrows-.
- Unscrew bolts -3-, and swing trailing arm -2- downwards.
- Remove rear right brake caliper ⇒ Brake system; Rep. gr. 46 ; Rear brake; Removing and installing brake caliper .
- Do not disconnect brake line when doing this.
- Secure brake caliper on body.



- Place engine and gearbox jack - VAS 6931- -2- underneath, and support fuel tank -1- as shown in illustration.

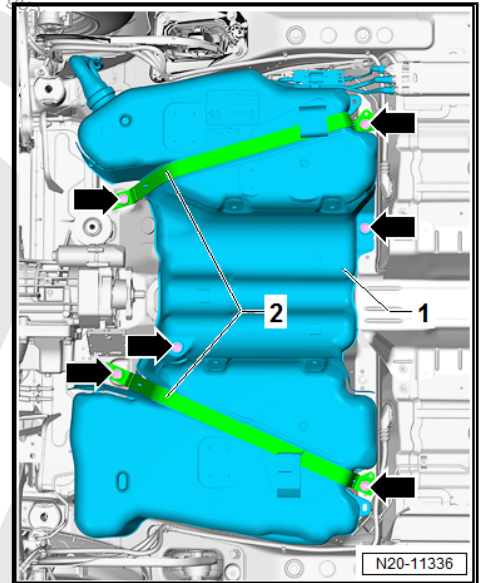




- Unscrew bolts -arrows-.

### Note

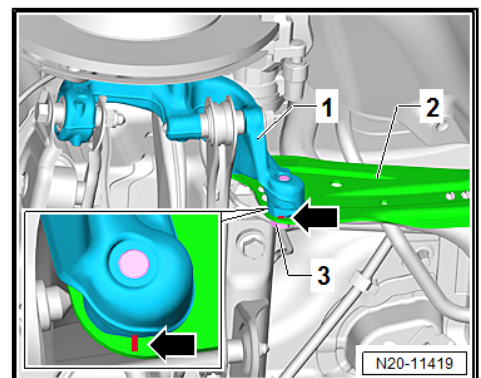
- ◆ *The number of bolts differs depending on the vehicle model.*
- ◆ *For reasons of clarity, the fuel tank is shown without the engine and gearbox jack - VAS 6931- .*
- ◆ *The aid of a second mechanic is required to remove the fuel tank.*
- Have a 2nd mechanic support fuel tank at back edge by hand.
- Lower fuel tank using engine and gearbox jack - VAS 6931- .
- Lower fuel tank by turning it sideways.
- Guide filler neck out between rear axle and body.
- A 2nd mechanic will be required to guide out fuel filler neck past trailing arm by hand.



### Installing

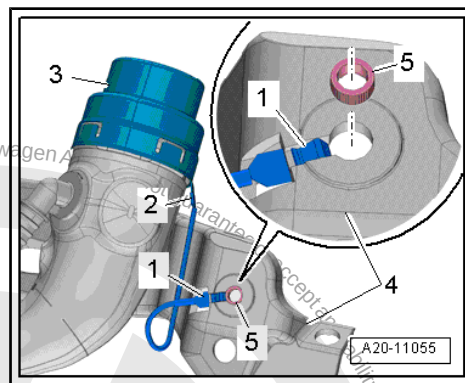
Install in reverse order of removal. The following should be observed:

- Install breather lines and fuel lines free of kinks.
- Ensure rubber buffers are seated correctly  
 ⇒ [Item 4 \(page 9\)](#) .
- Guide filler neck in between rear axle and body.
- If fitted, check that metering pump - V54- is firmly seated.
- Make sure that the filler neck of the fuel tank is correctly inserted into the opening in the body.
- Position the fuel tank together with securing strap on underbody, using the engine and gearbox jack - V.A.G 1383 A- .
- Make sure bracket for exhaust system is seated correctly ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencers .
- Note position of securing strap.
- Ensure that line connections are tight.
- After installing fuel tank, check that the supply, return and breather lines are still clipped onto the fuel tank.
- Align wheel bearing housing -1- and trailing arm -2- in relation to each other.
- To do this, use the mark previously made -arrow-.
- Tighten bolt -3-.





- Check whether there are signs of oxidation on the earth wire of the connectors, remove if necessary.
- Check installation position of earth connection.
- Ensure that connector -2- is seated securely on metal ring -3-.
- Contact -1- must be attached to fuel tank -4- and secured with spacer bush -5-.
- Check the connection of the metal ring on the fuel filler neck by measuring between the ring and a bare metal part of the body using an ohmmeter.
- Specification: approx. 0 ohm.
- If the specification is not attained, there is a risk of explosion due to electrostatic discharge.



#### Tiguan:

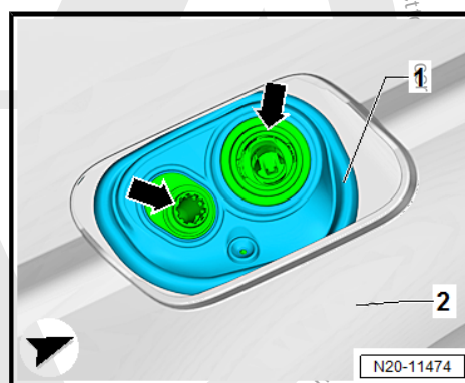
- Make sure that sealing grommet -1- is properly seated.

#### Continued for all vehicles:

#### **! WARNING**

**Risk of explosion of fuel tank caused by fuel pump activation.  
Risk of severe injuries and burns.**

- If a new or completely empty fuel tank has been installed, fill it immediately with at least 5 litres of fuel.



#### Specified torques

- ◆ ⇒ ["1.1.3 Assembly overview - fuel tank; vehicles with four-wheel drive", page 9](#)
- ◆ ⇒ Propshaft and rear final drive; Rep. gr. 39 ; Propshaft; Assembly overview - propshaft
- ◆ ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seat; Removing and installing bench seat / individual seats
- ◆ ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Assembly overview - silencer
- ◆ ⇒ General body repairs, exterior; Rep. gr. 55 ; Tank flap unit; Removing and installing tank flap unit
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing, trailing arm; Assembly overview - wheel bearing
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 42 ; Wheel bearing; Assembly overview - trailing arm
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cover
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cover



## 1.3 Emptying fuel tank

⇒ "1.3.1 Emptying fuel tank with fuel pump intact, vehicles with front-wheel drive", page 31 .

⇒ "1.3.2 Emptying fuel tank with fuel pump intact, vehicles with four-wheel drive", page 34

⇒ "1.3.3 Emptying fuel tank if more than 3/4 full, Passat and Arteon", page 37

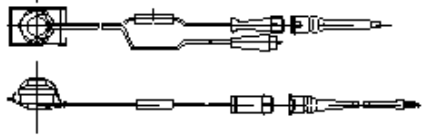
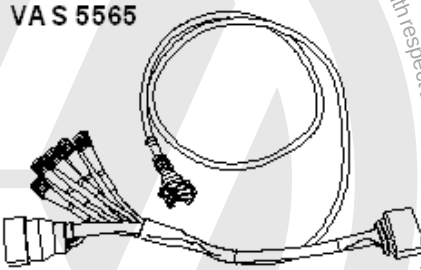
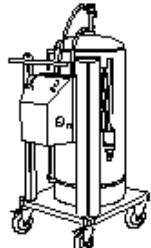
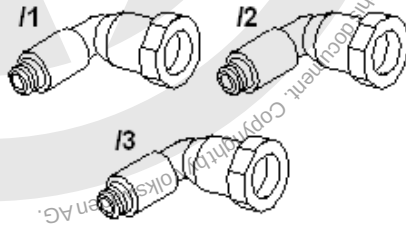
⇒ "1.3.5 Emptying fuel tank less than 3/4 full, vehicles with front-wheel drive", page 40

⇒ "1.3.4 Emptying fuel tank if more than 3/4 full, Tiguan", page 38

⇒ "1.3.6 Emptying fuel tank less than 3/4 full, vehicles with four-wheel drive", page 43

### 1.3.1 Emptying fuel tank with fuel pump intact, vehicles with front-wheel drive

Special tools and workshop equipment required

|                                                                                                                                   |                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <p>3409</p>                                     | <p>V.A.G 1348/3A</p>  |
| <p>VAS 5565</p>                               | <p>VAS 5190</p>      |
| <p>VAS 5190</p> <p>I1</p> <p>I2</p> <p>I3</p>  |  <p>W20-10055</p>    |

- ◆ Removal wedge - 3409-
- ◆ Remote control - V.A.G 1348/3A-
- ◆ Test instrument adapter/DSO (5-pin) - VAS 5565-



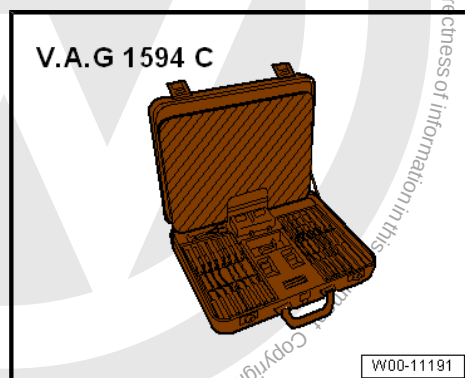
- ◆ Fuel extraction unit - VAS 5190-
- ◆ Fuel extractor - VAS 5190 A- for E 85 fuel (not shown).
- ◆ Adapter for fuel extraction - VAS 5190-



#### Note

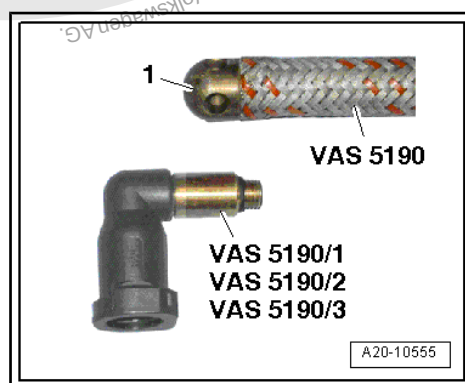
To extract E 85 fuel, use only fuel extractor - VAS 5190 A- .

- ◆ Adapter set - V.A.G 1594C-



#### Note

If the fuel extraction unit - VAS 5190- is still fitted with the extraction hose with a fixed tip, the hose is to be replaced with the screw-in version.



- Pull off fuel supply line -1-. Separate plug-in connectors  
⇒ [page 72](#) .



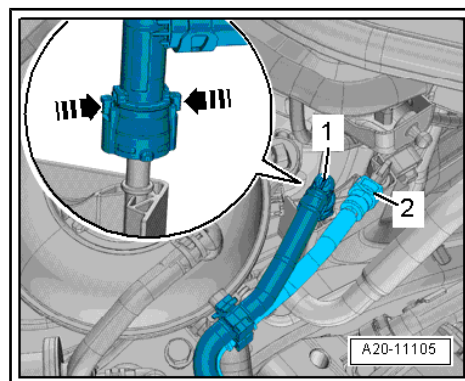
#### CAUTION

The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

- Collect escaping fuel with a cleaning cloth.





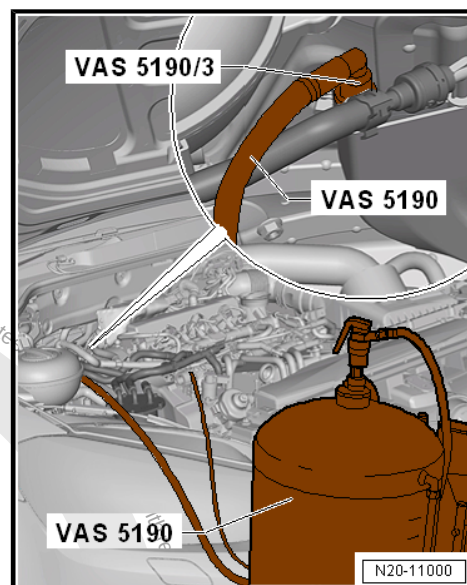
- Connect fuel extractor - VAS 5190- with adapter for fuel extractor - VAS 5190 /3- to fuel supply line.
- Secure earth wire of fuel extractor to a bare metal part of the body.

#### Passat and Arteon:

- Remove cover of assembly opening on right ➔ [page 69](#) .

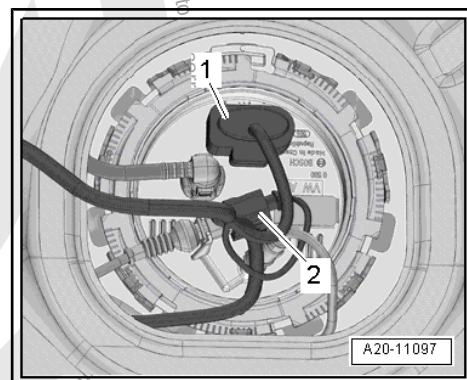
#### Tiguan:

- Remove cover of assembly opening ➔ [page 69](#) .



#### Continued for all vehicles:

- Release and pull off connector -1- on sealing flange.

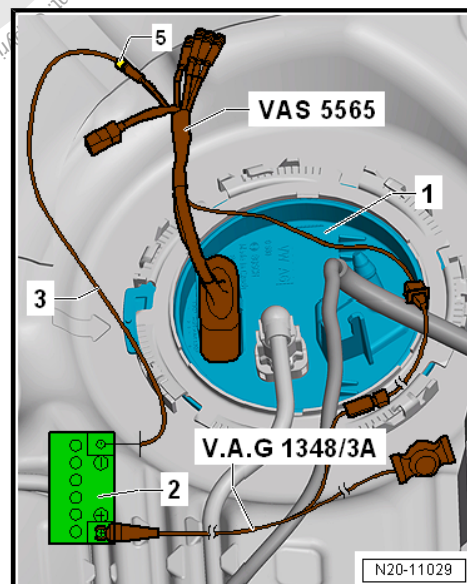


- Connect test instrument adapter/DSO (5-pin) - VAS 5565- to fuel delivery unit -1-.
- Connect remote control - V.A.G 1348/3A- to adapter - VAS 5565- and to battery positive terminal in engine compartment.
- Connect connection -5- (yellow) of test instrument adapter/DSO (5-pin) - VAS 5565- to battery negative terminal using suitable workshop equipment -3-.
- Also use auxiliary measuring set - V.A.G 1594C- for this purpose.



#### Note

*This step serves only to have the fuel pump running when the engine is stopped.*





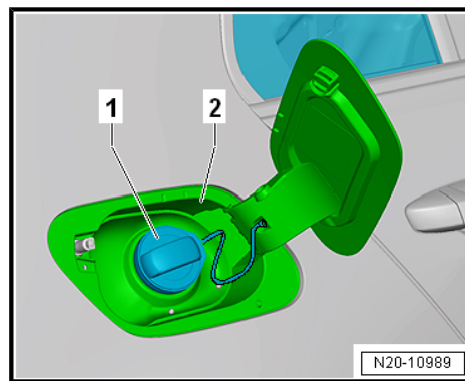
- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- Operate remote control - V.A.G 1348/3A- and shut-off tap on fuel extractor - VAS 5190- until fuel tank is empty.



#### NOTICE

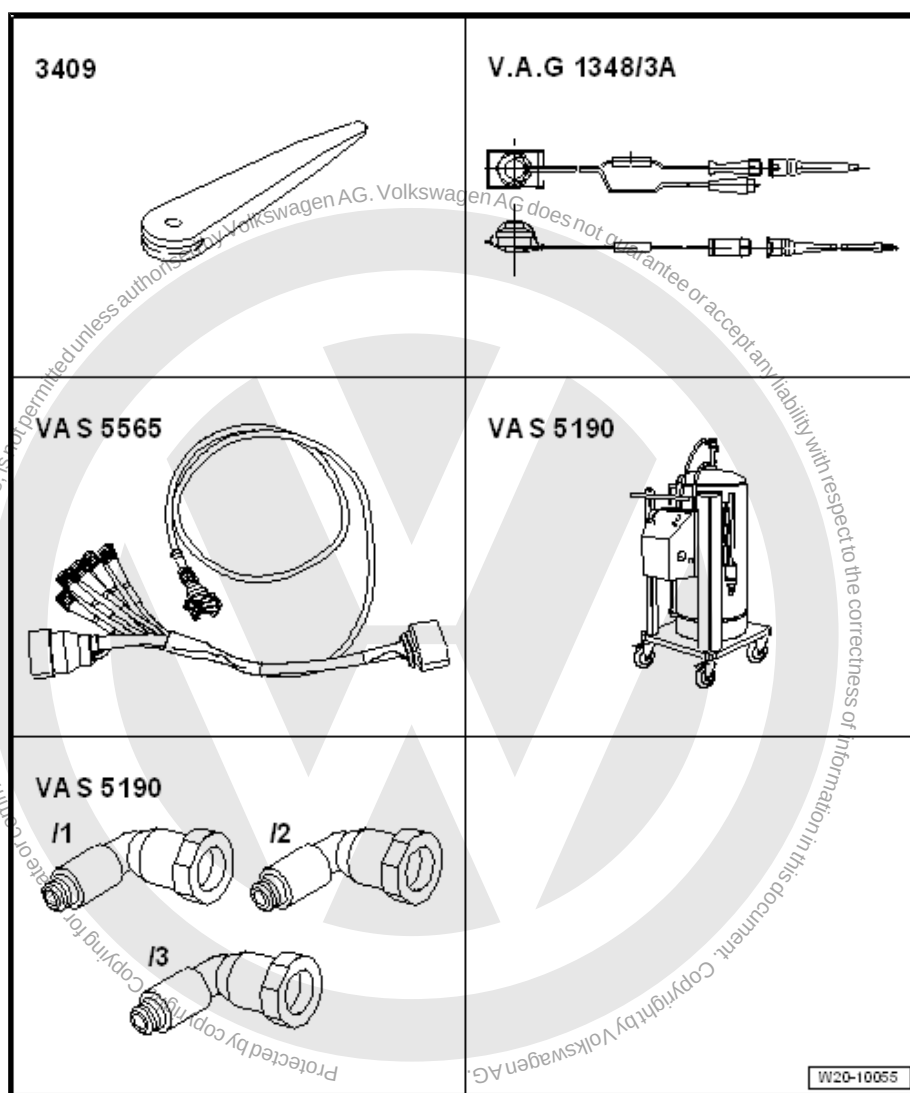
Risk of irreparable damage to fuel pump if allowed to run dry.

- Never allow fuel pump to run »dry«.



### 1.3.2 Emptying fuel tank with fuel pump intact, vehicles with four-wheel drive

Special tools and workshop equipment required



- ◆ Removal wedge - 3409-
- ◆ Remote control - V.A.G 1348/3A-
- ◆ Test instrument adapter/DSO (5-pin) - VAS 5565-
- ◆ Fuel extraction unit - VAS 5190-
- ◆ Fuel extractor - VAS 5190 A- for E 85 fuel (not shown).



- ◆ Adapter for fuel extraction - VAS 5190-



#### Note

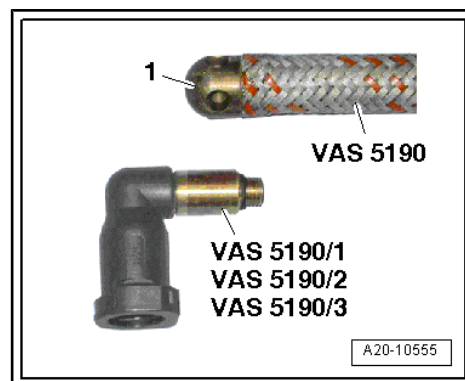
*To extract E 85 fuel, use only fuel extractor - VAS 5190 A- .*

- ◆ Adapter set - V.A.G 1594C-



#### Note

*If the fuel extraction unit - VAS 5190- is still fitted with the extraction hose with a fixed tip, the hose is to be replaced with the screw-in version.*



- Pull off fuel supply line -1- . Separate plug-in connectors ➔ [page 72](#) .



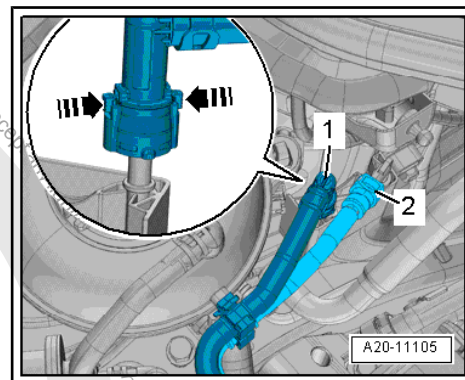
#### CAUTION

The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

- Collect escaping fuel with a cleaning cloth.



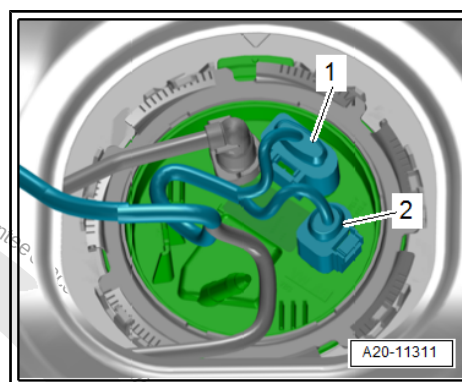


- ### Passat and Arteon:

- Tiguan:**

- 
- VAS 5190/3**
- VAS 5190**
- VAS 5190**
- N20-11000**

- Release and pull off connector -1- on sealing flange.

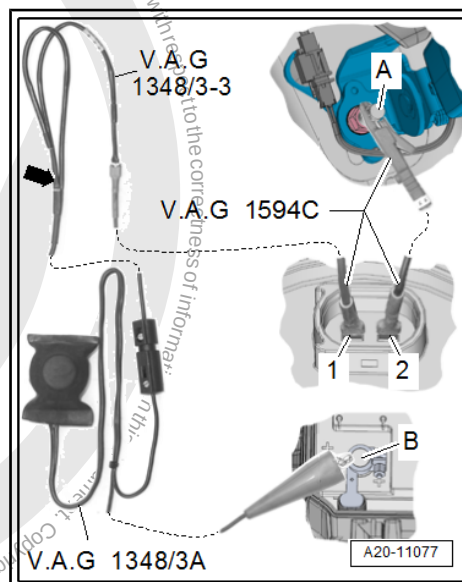


- Connect remote control for V.A.G 1348 - V.A.G 1348/3A- with adapter cable -V.A.G 1348/3-3- to contact -1- using auxiliary cable from auxiliary measuring set - V.A.G 1594C- .
- Tape off connector contact of the adapter cable -V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuit.
- Connect contact -2- to negative battery terminal -A- using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect remote control - V.A.G 1348/3A- to battery positive terminal clamp in engine compartment.



### Note

*This step serves only to have the fuel pump running when the engine is stopped.*





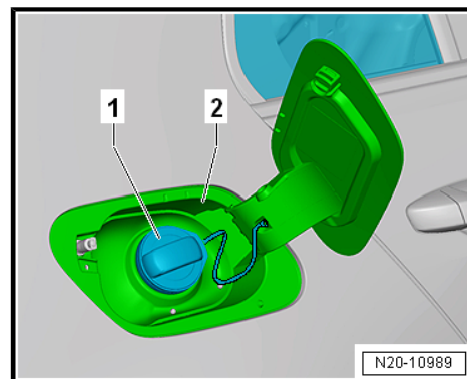
- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- Operate remote control - V.A.G 1348/3A- and shut-off tap on fuel extractor - VAS 5190- until fuel tank is empty.



#### NOTICE

Risk of irreparable damage to fuel pump if allowed to run dry.

- Never allow fuel pump to run »dry«.



### 1.3.3 Emptying fuel tank if more than $\frac{3}{4}$ full, Passat and Arteon

Special tools and workshop equipment required

- ◆ Fuel extraction unit - VAS 5190-



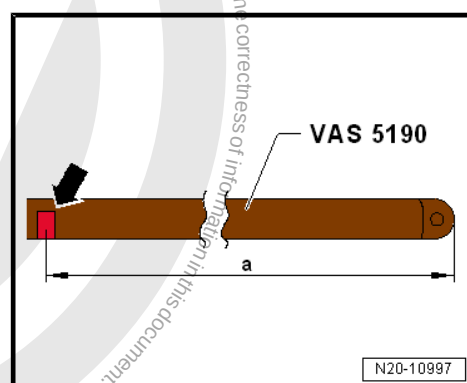
- ◆ Fuel extractor - VAS 5190 A- for E 85 fuel (not shown).



#### Note

To extract E 85 fuel, use only fuel extractor - VAS 5190 A- .

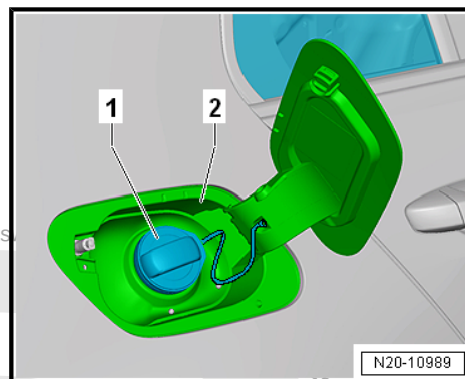
- Make a mark -arrow- at dimension -a- from end of extraction hose of fuel extractor - VAS 5190- .
- Use insulating tape for this.



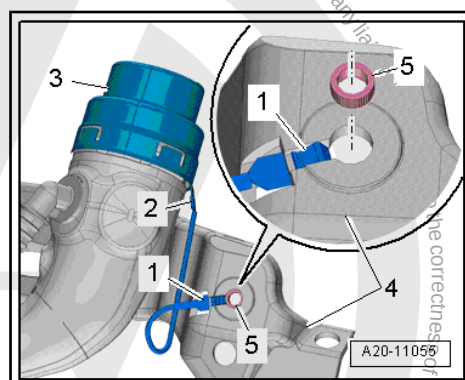
| Fuel tank                       | Distance a in mm |
|---------------------------------|------------------|
| Vehicles with front-wheel drive | 880 mm           |
| Vehicles with all-wheel drive   | 980 mm           |



- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- Secure earth wire of fuel extractor to a bare metal part of the body.



- Push extraction hose of extraction unit into fuel tank until marking on hose coincides with filler neck -3-.



#### Note

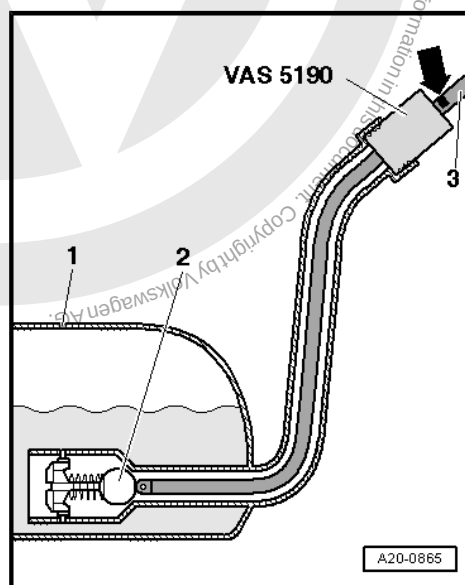
*There is a valve -2- in the fuel tank -1- at the lower end of the filler neck. The valve must not be damaged by the extraction hose -3-. Therefore push hose into filler neck only as far as marking -arrow-.*

- Pull extraction hose out carefully.
- Drain fuel tank via filler neck as far as possible.
- Pull extraction hose out carefully.



#### Note

- ♦ *When no more fuel is extracted, the tank is emptied just enough for the sender flange to be opened without danger.*
- ♦ *If work has to be done on fuel delivery unit or on fuel gauge sender , proceed as follows ⇒ [page 40](#) :*

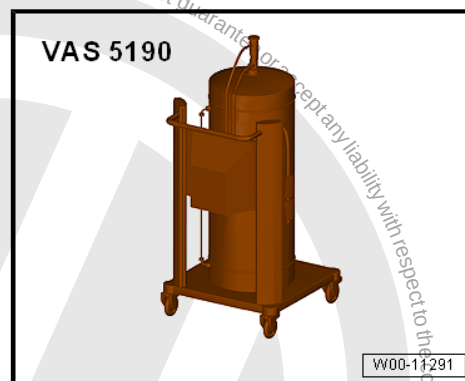


### 1.3.4 Emptying fuel tank if more than $\frac{3}{4}$ full, Tiguan

Special tools and workshop equipment required



◆ Fuel extraction unit - VAS 5190-



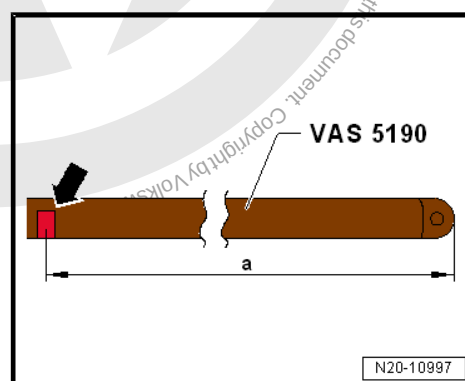
◆ Fuel extractor - VAS 5190 A- (not shown)



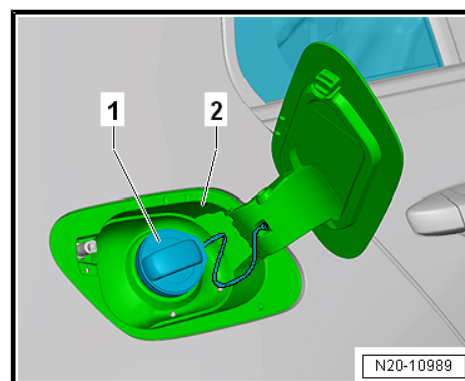
**Note**

*To extract E 85 fuel, use only fuel extractor - VAS 5190 A- .*

- Make a mark -arrow- at dimension -a- from end of extraction hose of fuel extractor - VAS 5190-
- Use insulating tape for this.
- Dimension -a- is 1100 mm.



- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- Secure earth wire of fuel extractor to a bare metal part of the body.



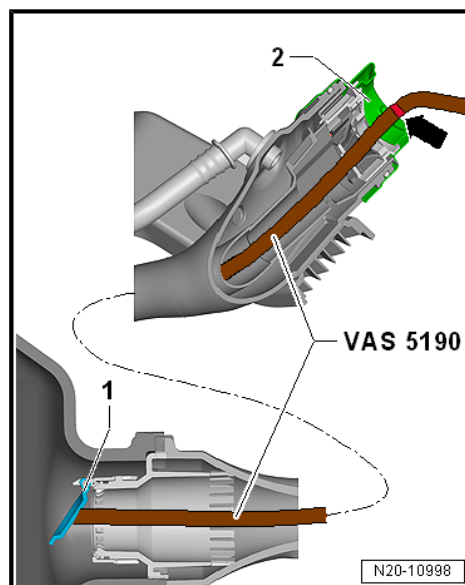


- Push extraction hose of extraction unit into fuel tank until previously attached marking -arrow- on hose coincides with filler neck -2-.
- Drain fuel tank via filler neck as far as possible.



#### Note

- ◆ *There is a flap -1- in the fuel tank at the lower end of the filler neck. The flap must not be damaged by the extraction hose. Therefore push hose into filler neck only as far as marking -arrow-.*
  - ◆ *If the extraction hose catches on the non-return valve when being extracted, do not apply force to pull the extraction hose out.*
  - ◆ *In this case, remove the fuel delivery unit and open the non-return valve manually. Ensure that your arm does not come into contact with fuel.*
- Pull extraction hose out carefully.



#### Note

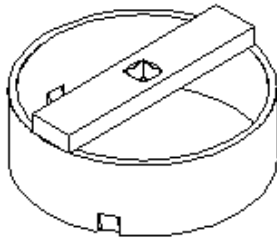
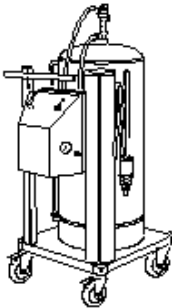
*When no more fuel is extracted, the tank is emptied just enough for the sender flange to be opened without danger.*

### 1.3.5 Emptying fuel tank less than $\frac{3}{4}$ full, vehicles with front-wheel drive





# Special tools and workshop equipment required

|                                                                                                            |                                                                                                            |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <p><b>3409</b></p>        | <p><b>T10202</b></p>    |
| <p><b>V.A.G 1332</b></p>  | <p><b>VAS 5190</b></p>  |
| <p>W20-10054</p>                                                                                           |                                                                                                            |

- ◆ Removal wedge - 3409-
- ◆ Special wrench - T10202-
- ◆ Torque wrench - V.A.G 1332-
- ◆ Fuel extraction unit - VAS 5190-
- ◆ Fuel extractor - VAS 5190 A- for E 85 fuel (not shown).



## Note

To extract E 85 fuel, use only fuel extractor - VAS 5190 A-.

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

## Passat and Arteon:

- Remove cover of assembly opening on right ➔ [page 69](#) .

## Tiguan:

- Remove cover of assembly opening ➔ [page 69](#) .



**Continued for all vehicles:**

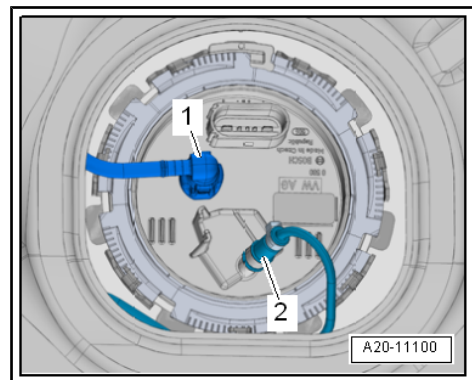
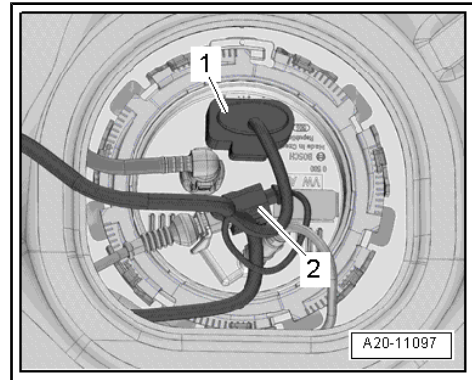
- Release and pull off electrical connectors -1- and -2- on flange.

**Vehicles with auxiliary heater**

- Detach connector -3- for metering pump - V54- from sealing flange.
- Release and pull off connector -3- for metering pump - V54- .

**Continued for all vehicles:**

- Remove fuel pump control unit - J538- ➔ [page 109](#) .
- Remove fuel pump control unit - J538- together with wiring harness and lay aside.
- Disconnect fuel line -1- on sealing flange. Separate plug-in connectors ➔ [page 72](#) .



**CAUTION**

The fuel system is pressurised.

Danger of injury through fuel spray.

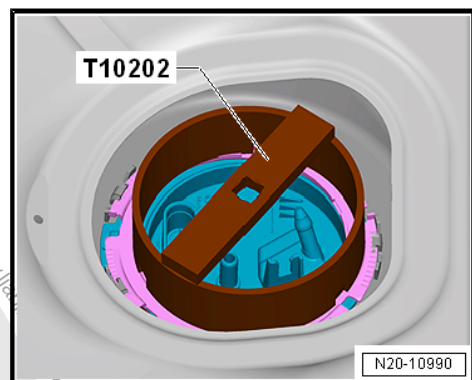
- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

**Vehicles with auxiliary heater**

- Remove fuel line -3- to metering pump - V54- for auxiliary heater from flange ➔ [page 63](#) .

**Continued for all vehicles:**

- Open locking ring using wrench - T10202- .



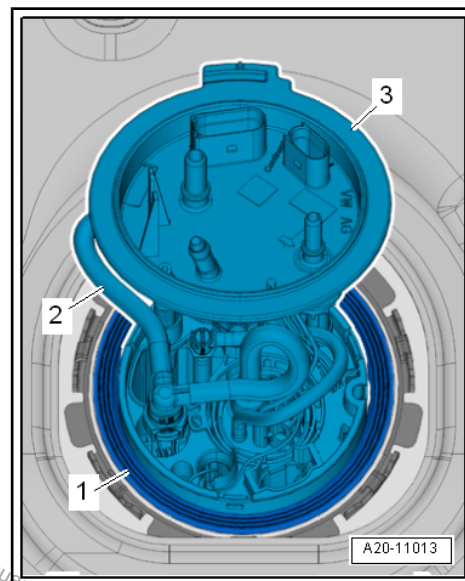


- Carefully lift flange of fuel delivery unit -3-.
- Remove gasket -1- and carefully lift up the flange of the fuel delivery unit slightly more.
- Secure earth wire of fuel extractor to a bare metal part of the body.
- Insert suction hose of fuel extractor - VAS 5190- as far as possible into fuel tank.
- Extract fuel using fuel extractor - VAS 5190- .

If the fuel tank was only emptied, Install fuel delivery unit  
⇒ [page 54](#) .

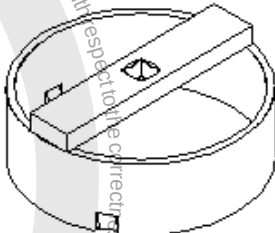
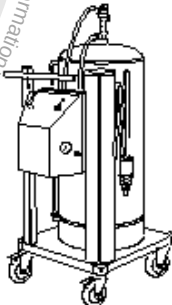
#### Specified torques

- ◆ ⇒ [“2.1 Assembly overview - fuel delivery unit and fuel gauge sender”, page 47](#)
- ◆ ⇒ Auxiliary heater; Rep. gr. 82 ; Fuel supply system; Overview of fitting locations – fuel supply system .



### 1.3.6 Emptying fuel tank less than $\frac{3}{4}$ full, vehicles with four-wheel drive

#### Special tools and workshop equipment required

|                                                                                                   |                                                                                                   |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 3409<br>       | T10202<br>    |
| V.A.G 1332<br> | VAS 5190<br> |
|                                                                                                   |                                                                                                   |

W20-10054



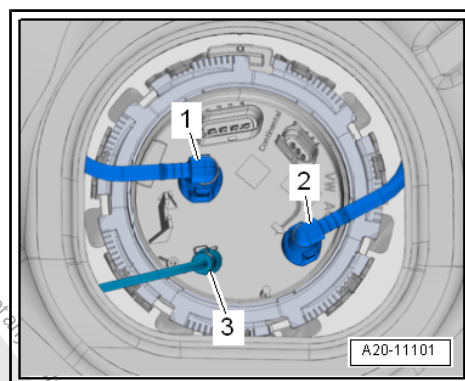
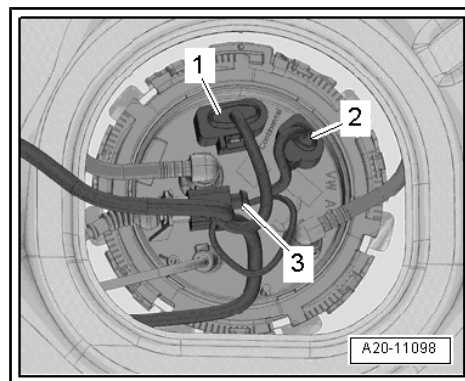
- ◆ Fuel extraction unit - VAS 5190-
- ◆ Fuel tank sender unit tool - T10202-
- ◆ Torque wrench (40 ... 200 Nm) - V.A.G 1332-
- ◆ Removal wedge - 3409-
- Drain fuel tank ⇒ [page 31](#) .
- Remove cover of assembly opening on left and right ⇒ [page 69](#) .
- Release and pull off electrical connectors -1- and -2- on flange.

#### Vehicles with auxiliary heater

- Detach connector -3- for metering pump - V54- from sealing flange.
- Release and pull off connector -3- for metering pump - V54- .

#### Continued for all vehicles:

- Remove fuel pump control unit - J538- ⇒ [page 109](#) .
- Remove fuel pump control unit - J538- together with wiring harness and lay aside.
- Disconnect fuel line -1- on sealing flange. Separate plug-in connectors ⇒ [page 72](#) .



#### CAUTION

The fuel system is pressurised.  
Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

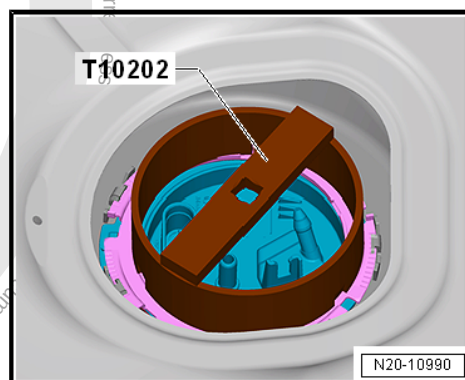
- Disconnect fuel return line -2- on flange. Separate plug-in connectors ⇒ [page 72](#) .

#### Vehicles with auxiliary heater

- Remove fuel line -3- to metering pump - V54- for auxiliary heater from flange ⇒ [page 63](#) .

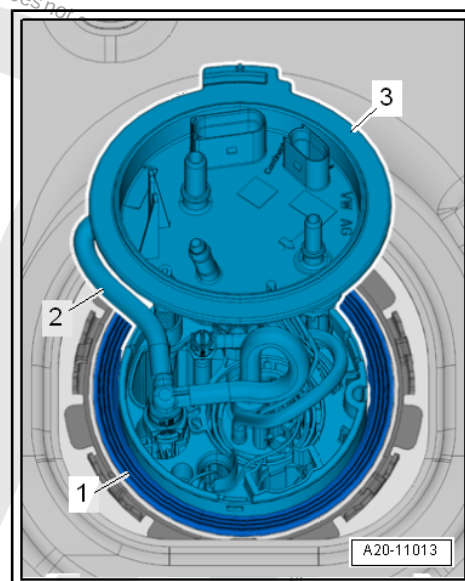
#### Continued for all vehicles:

- Open locking ring using fuel tank sender unit tool - T10202- .

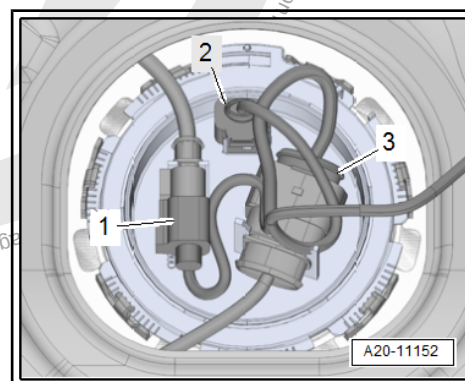




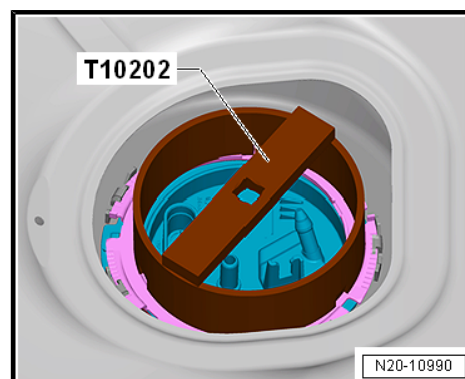
- Carefully lift flange of fuel delivery unit -3-.
- Remove gasket -1- and carefully lift up the flange of the fuel delivery unit slightly more.
- Secure earth wire of fuel extractor to a bare metal part of the body.
- Insert suction hose of fuel extractor - VAS 5190- as far as possible into fuel tank.
- Extract fuel using fuel extractor - VAS 5190- .



- Release and pull off connector -2- on sealing flange.
- Release and pull off connector -1- on sealing flange.
- If fitted, release and pull off electrical connector -3- on flange.
- Unclip electrical connectors from mountings on flange.



- Open locking ring using fuel tank sender unit tool - T10202- .





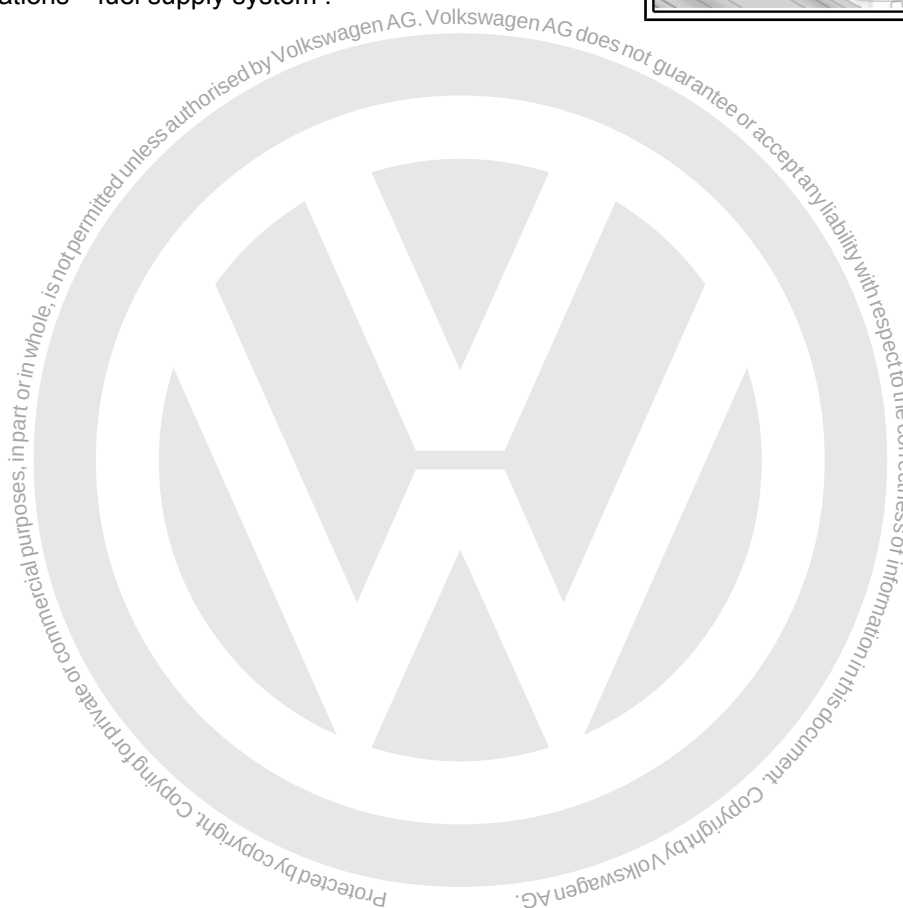
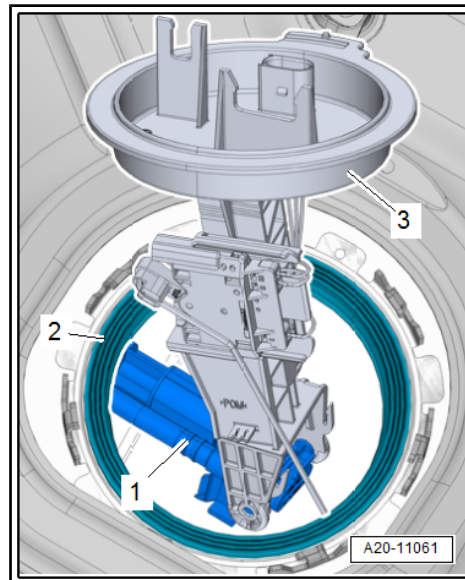
- Carefully pull sealing flange -3- on left together with suction-jet pump -1- a short distance out of opening in fuel tank.
- Insert suction hose of fuel extractor - VAS 5190- as far as possible into fuel tank.
- Extract fuel using fuel extractor - VAS 5190- .

If fuel tank needs only to be emptied:

- Install fuel delivery unit ⇒ [page 54](#) .
- Install fuel gauge sender 2 - G169- ⇒ [page 65](#) .

#### Specified torques

- ♦ ⇒ [“2.1 Assembly overview - fuel delivery unit and fuel gauge sender”, page 47](#)
- ♦ ⇒ [“2.4 Removing and installing fuel gauge sender 2 G169 ”, page 65](#)
- ♦ ⇒ Auxiliary heater; Rep. gr. 82 ; Fuel supply system; Overview of fitting locations – fuel supply system .





## 2 Fuel delivery unit, fuel gauge sender

⇒ [“2.1 Assembly overview - fuel delivery unit and fuel gauge sender”, page 47](#)

⇒ [“2.2 Removing and installing fuel delivery unit, fuel gauge sender”, page 54](#)

⇒ [“2.3 Removing and installing fuel gauge sender G ”, page 64](#)

⇒ [“2.4 Removing and installing fuel gauge sender 2 G169 ”, page 65](#)

⇒ [“2.5 Removing and installing assembly opening cover”, page 69](#)

### 2.1 Assembly overview - fuel delivery unit and fuel gauge sender

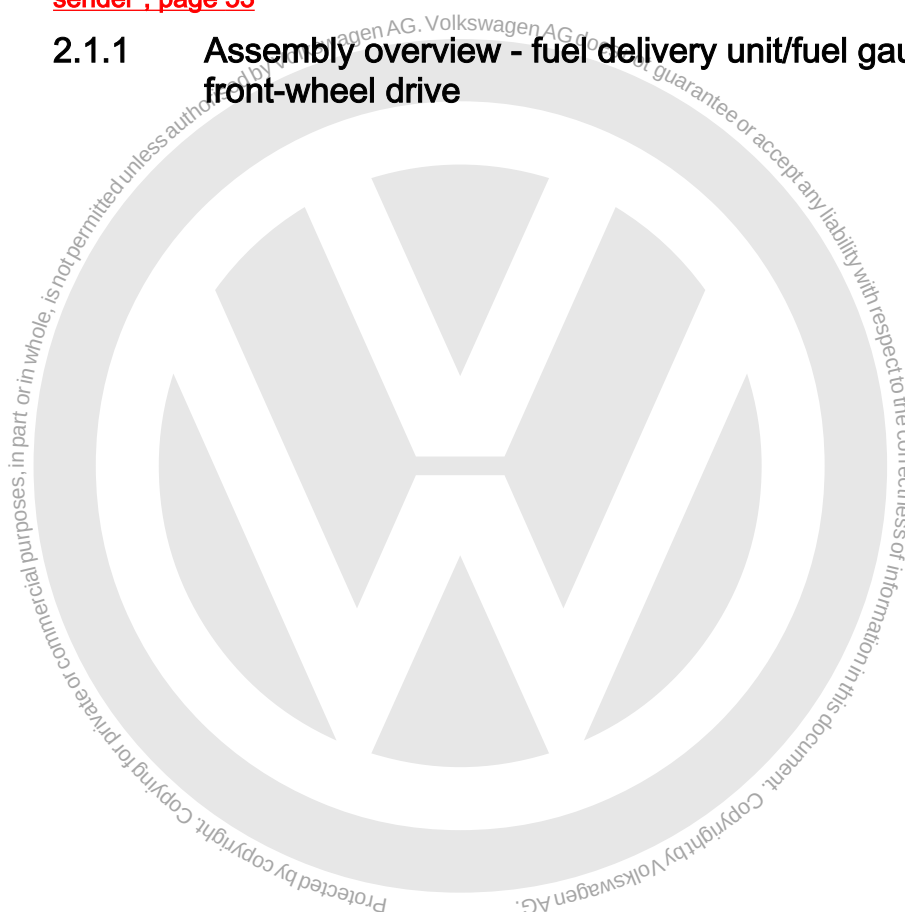
⇒ [“2.1.1 Assembly overview - fuel delivery unit/fuel gauge sender, vehicles with front-wheel drive”, page 47](#)

⇒ [“2.1.2 Assembly overview - fuel delivery unit/fuel gauge sender, vehicles with four-wheel drive”, page 49](#)

⇒ [“2.1.3 Assembly overview - fuel delivery unit/fuel gauge sender, vehicles with auxiliary heater”, page 51](#)

⇒ [“2.1.4 Assembly overview - fuel delivery unit/left fuel gauge sender”, page 53](#)

#### 2.1.1 Assembly overview - fuel delivery unit/fuel gauge sender, vehicles with front-wheel drive





### 1 - Fuel delivery unit

- ☐ With fuel system pressurisation pump - G6- .
- ☐ With integrated fuel filter; cannot be renewed individually.
- ☐ With integrated pressure limiting valve; cannot be renewed individually.
- ☐ Checking fuel pump (electrical test) ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 54](#)
- ☐ After installing, fill vehicle with at least 5 litres of fuel.
- ☐ Note installation position ⇒ [page 49](#)

### 2 - Sealing ring

- ☐ Renew
- ☐ Install dry

### 3 - Locking ring

- ☐ Remove and tighten with wrench - T10202- .
- ☐ 110 Nm

### 4 - Fuel pump control unit - J538-

- ☐ Check in Guided fault finding ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 109](#)

### 5 - Electrical connector

- ☐ For fuel pump control unit - J538- .
- ☐ Ensure proper engagement; check if connector is engaged correctly by pulling.

### 6 - Electrical connector

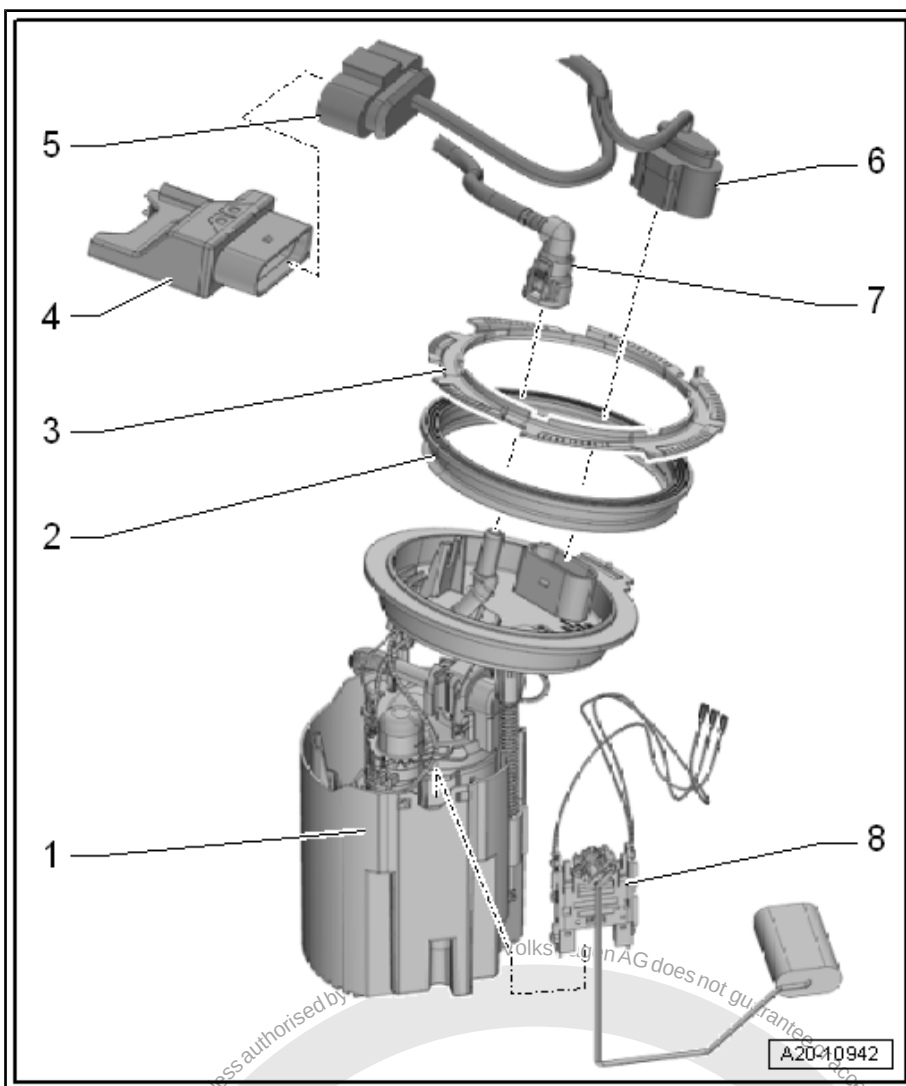
- ☐ For fuel system pressurisation pump - G6- and fuel gauge sender - G-
- ☐ Ensure proper engagement; check if connector is engaged correctly by pulling.

### 7 - Fuel supply line

- ☐ To engine
- ☐ Do not kink
- ☐ To pull off, press release button on connection
- ☐ Plug-in connectors must engage »audibly« when joined
- ☐ Ensure plug-in connector is secured properly by pulling it.
- ☐ Disconnect plug-in connectors ⇒ [page 72](#)

### 8 - Fuel gauge sender - G-

- ☐ Checking ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 64](#)

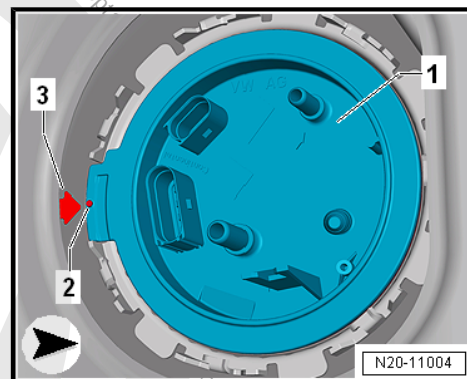




## Installation position of fuel delivery unit

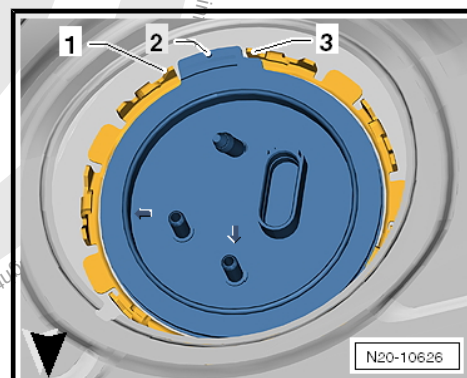
### Version 1:

- The arrow -3- on the fuel tank must line up with the mark -2- on the sealing flange -1-.



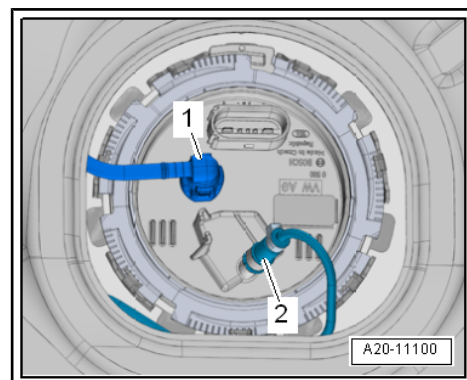
### Version 2:

- Tab -2- on flange must be between lugs -1- and -3- on fuel tank.
- Arrow- points in direction of travel.



## Fuel lines on fuel delivery unit

- 1 - Fuel supply line
- 2 - Fuel line to metering pump - V54-



## 2.1.2 Assembly overview - fuel delivery unit/fuel gauge sender, vehicles with four-wheel drive



**1 - Fuel delivery unit**

- ❑ With fuel system pressurisation pump - G6 -
- ❑ With integrated fuel filter; fuel filter cannot be renewed separately
- ❑ Carrying out electrical test of fuel pump in Guided fault finding mode ⇒ Vehicle diagnostic tester
- ❑ Removing and installing ⇒ page 58
- ❑ After installing, fill vehicle with at least 5 litres of fuel.
- ❑ Fitting position ⇒ page 51

## 2 - Sealing ring

- ☐ Renew after removal
- ☐ Install dry

### 3 - Locking ring

- ☐ Remove and tighten with wrench - T10202 -
- ☐ 110 Nm

#### 4 - Electrical connector

- ❑ Pin assignment  
⇒ page 51
- ❑ Make sure connectors are attached properly; pull to check that they are correctly engaged.

## 5 - Electrical connector

- ☐ Make sure connectors are attached properly; pull to check that they are correctly engaged.

## 6 - Fuel pump control unit - J538-

- ❑ Check in Guided fault finding → Vehicle diagnostic tester
- ❑ Removing and installing → page 109

## 7 - Fuel line

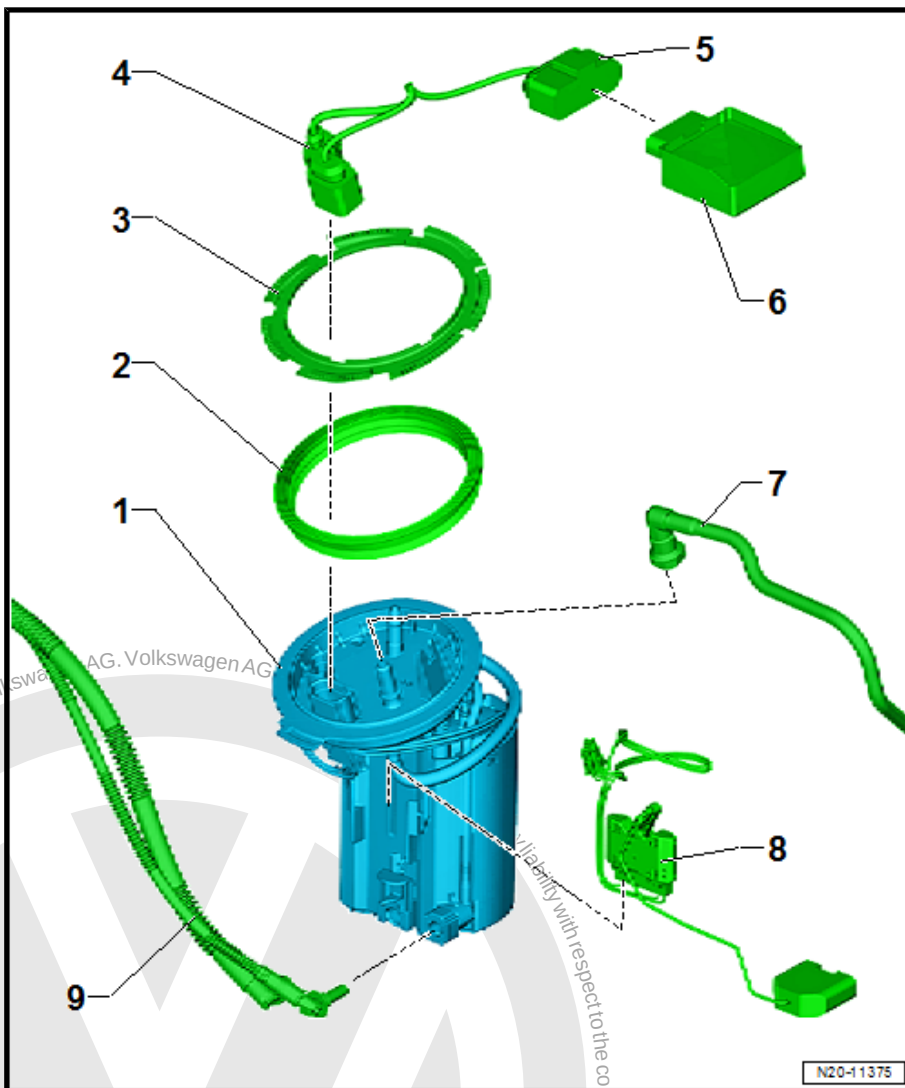
- ☐ To engine
- ☐ Do not kink
- ☐ Separating and connecting plug-in connectors ⇒ [page 72](#)

### 8 - Fuel gauge sender - G-

- ❑ Removing and installing → [page 64](#)

## 9 - Fuel line

- ☐ To left side of fuel tank
- ☐ Do not kink
- ☐ Separating and connecting plug-in connectors ⇒ page 72

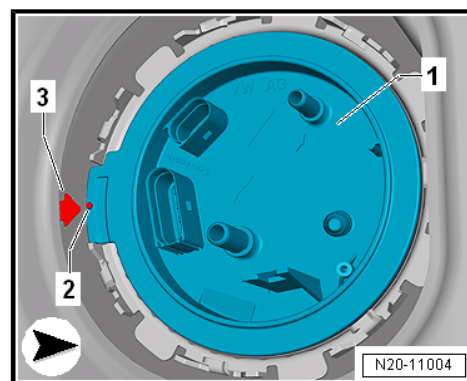




## Installation position of fuel delivery unit

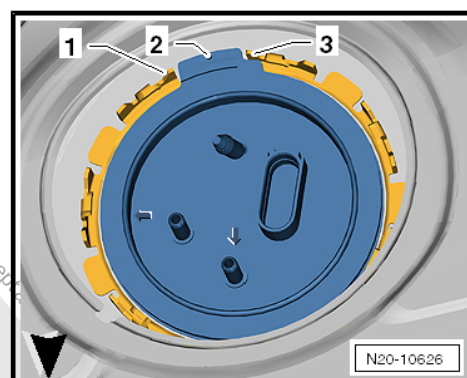
### Version 1:

- The arrow -3- on the fuel tank must line up with the mark -2- on the sealing flange -1-.



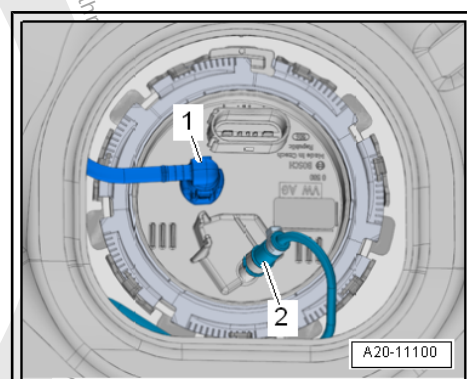
### Version 2:

- Tab -2- on flange must be between lugs -1- and -3- on fuel tank.
- Arrow- points in direction of travel.



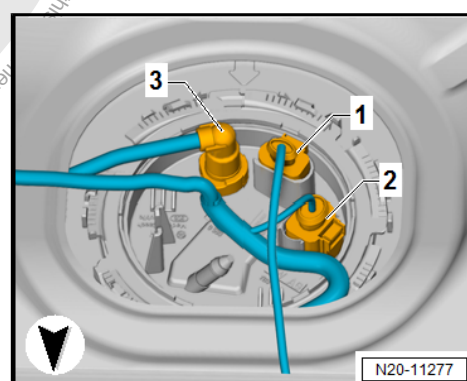
## Fuel lines on fuel delivery unit

- Fuel supply line
- Fuel line to metering pump - V54-



## Connector on fuel delivery unit

- Connector for fuel system pressurisation pump - G6-
- Connector for fuel gauge sender - G-
- Fuel supply line



## 2.1.3 Assembly overview - fuel delivery unit/fuel gauge sender, vehicles with auxiliary heater



### 1 - Fuel delivery unit

- ☐ With fuel system pressurisation pump - G6- .
- ☐ With integrated fuel filter; fuel filter cannot be renewed separately
- ☐ Carrying out electrical test of fuel pump in Guided fault finding mode ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 58](#)
- ☐ After installing, fill vehicle with at least 5 litres of fuel.
- ☐ Fitting position ⇒ [page 52](#)

### 2 - Clip

- ☐ Renew after removal
- ☐ Secure hose connection with the hose clips corresponding to original equipment.

### 3 - Clip

- ☐ Renew after removal
- ☐ Secure hose connection with the hose clips corresponding to original equipment.

### 4 - Fuel line

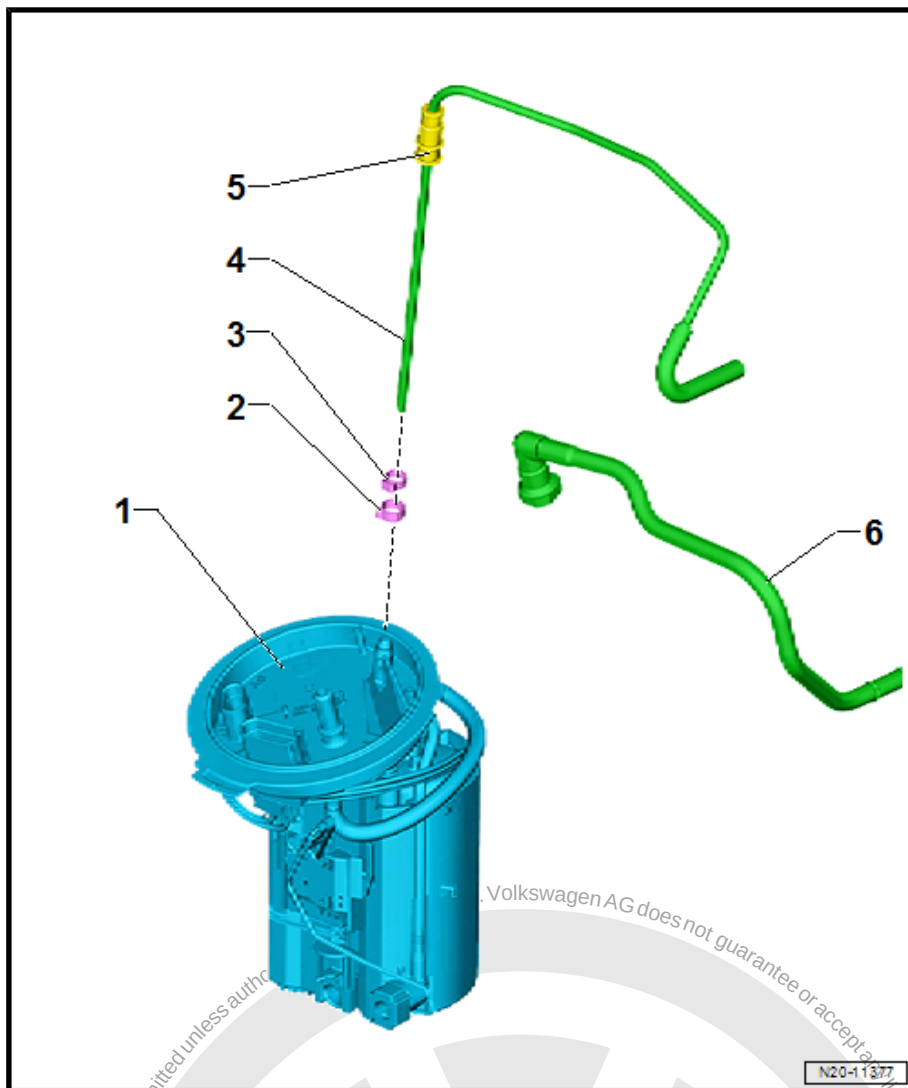
- ☐ To metering pump - V54-
- ☐ Removing and installing ⇒ [page 63](#)

### 5 - Sealing grommet

- ☐ Check for damage

### 6 - Fuel line

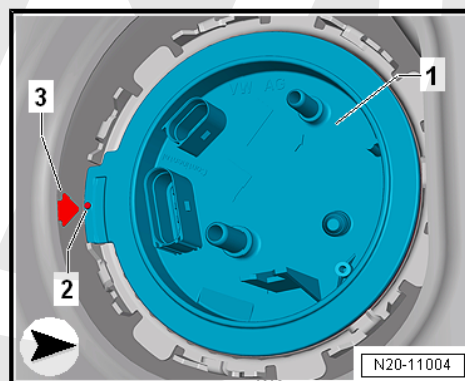
- ☐ To engine



### Installation position of fuel delivery unit

#### Version 1:

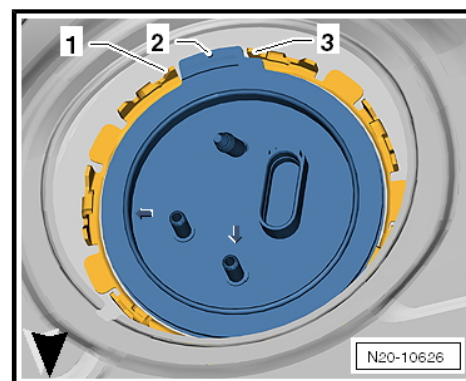
- The arrow -3- on the fuel tank must line up with the mark -2- on the sealing flange -1-.





### Version 2:

- Tab -2- on flange must be between lugs -1- and -3- on fuel tank.
- -Arrow- points in direction of travel.



## 2.1.4 Assembly overview - fuel delivery unit/left fuel gauge sender

### 1 - Connector

- ☐ Make sure connectors are attached properly; pull to check that they are correctly engaged.

### 2 - Locking ring

- ☐ Remove and tighten with wrench - T10202- .
- ☐ 110 Nm

### 3 - Sealing ring

- ☐ Renew if damaged
- ☐ Install dry

### 4 - Fuel gauge sender 2 - G169-

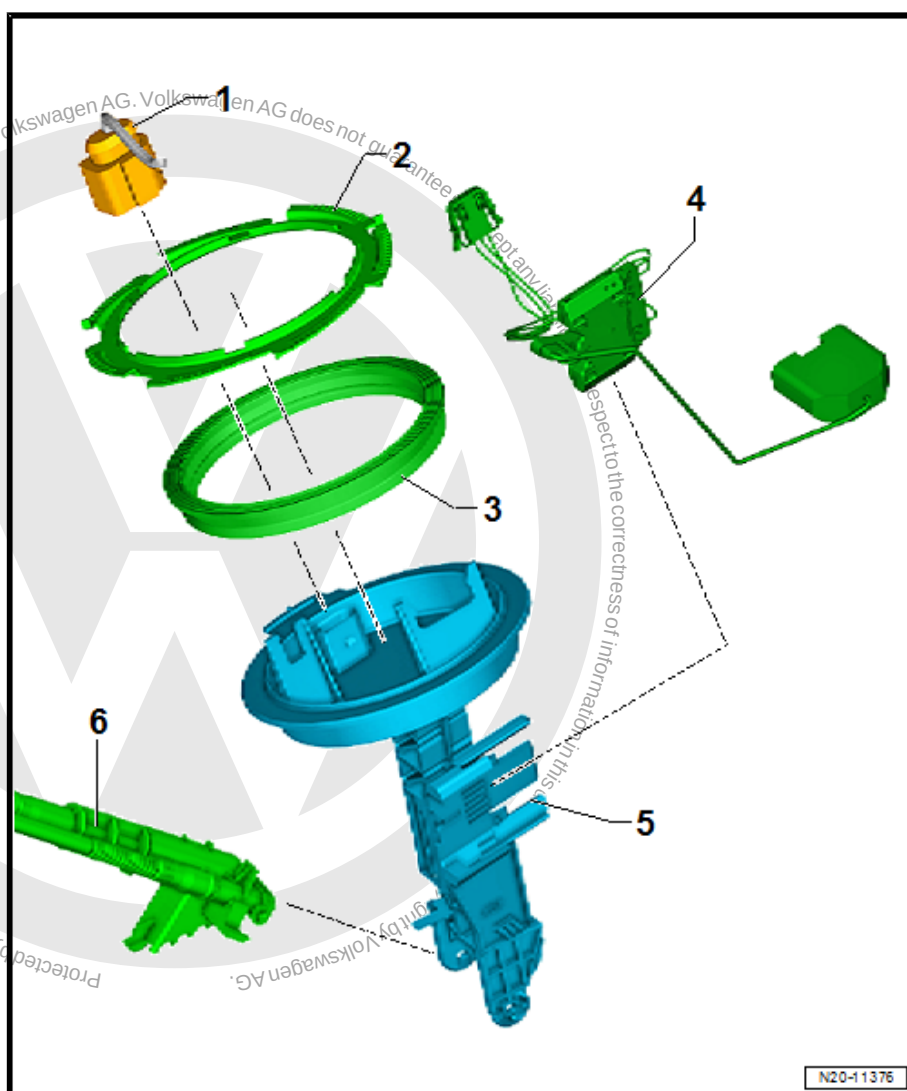
- ☐ Removing and installing  
[⇒ page 65](#)

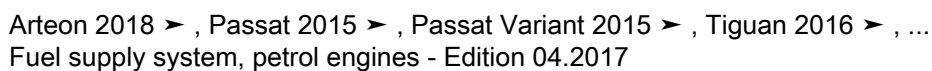
### 5 - Fuel delivery unit and left fuel gauge sender

- ☐ Removing and installing  
[⇒ page 65](#)
- ☐ Fitting position  
[⇒ page 54](#)

### 6 - Fuel line

- ☐ For suction-jet pump
- ☐ Removing and installing  
[⇒ page 108](#)

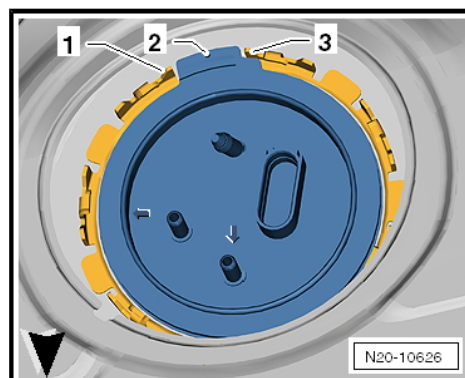




### Version 1:

- ### Version 2:

- 



⇒ **“2.2.3 Removing and installing fuel line for auxiliary/supplementary heater”, page 63**

### 2.2.1 Removing and installing fuel delivery unit/fuel gauge sender, vehicles with front-wheel drive

### Special tools and workshop equipment required

- ◆ Special wrench - T10202-

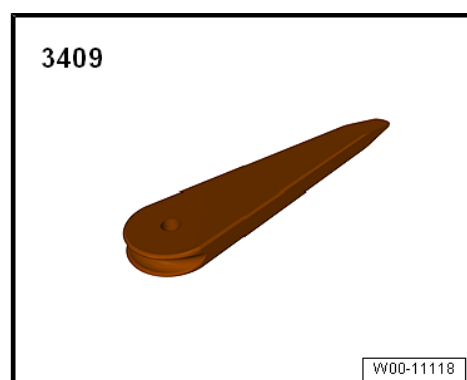




- ◆ Torque wrench - V.A.G 1332-

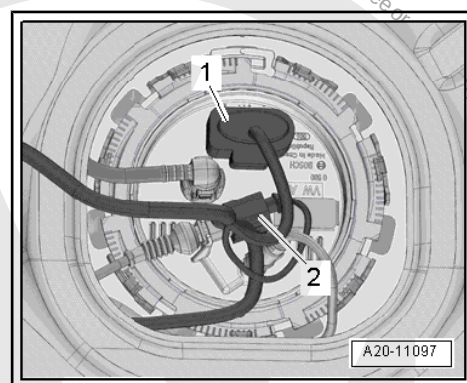


- ◆ Removal wedge - 3409-



## Removing

- Fuel tank must not be more than  $\frac{3}{4}$  full. This ensures that the fill level is below the flange of the fuel delivery unit.
- Drain fuel tank ➔ [page 6](#) .
- Remove cover of assembly opening ➔ [page 69](#) .
- Drain fuel tank ➔ [page 31](#) .
- Release and pull off connector -1- on sealing flange.
- If fitted, detach connector -2- for metering pump - V54- of auxiliary heater on sealing flange and lay connector aside.





- Disconnect fuel line -1- on sealing flange. Separate plug-in connectors ➔ [page 72](#) .

**CAUTION**

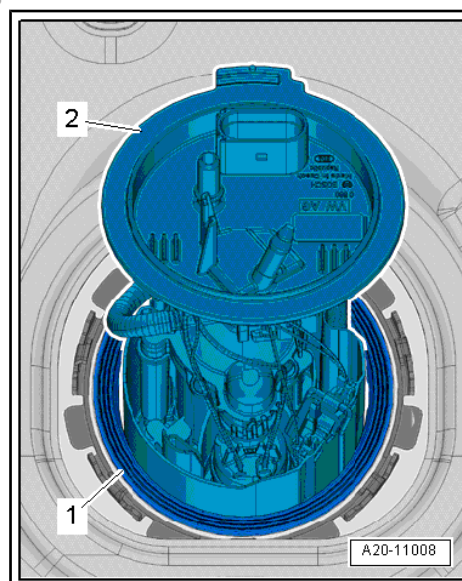
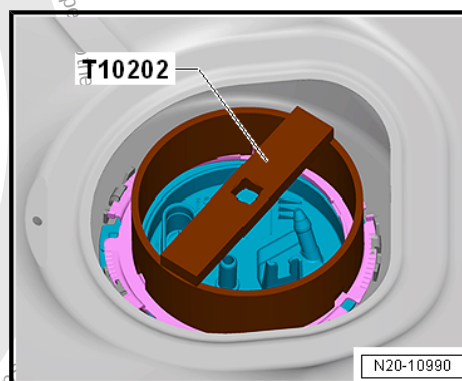
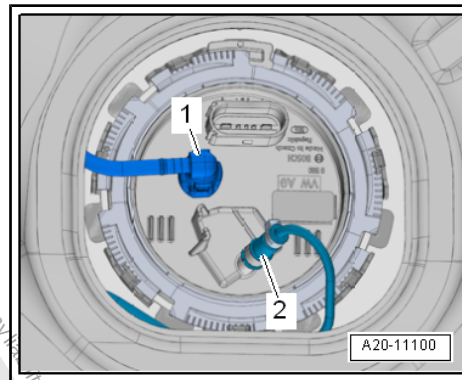
The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

- If fitted, remove fuel line -2- leading to metering pump - V54- for auxiliary heater from sealing flange ➔ [page 63](#) .
- Open locking ring using wrench - T10202- .  
Carefully lift flange of fuel delivery unit.

- Pull sealing flange -2- for a short distance out of the opening in the fuel tank.
- Remove seal -1- at the opening in the fuel tank.
- Carefully pull sealing flange with fuel line -2- as far as possible out of opening in fuel tank.





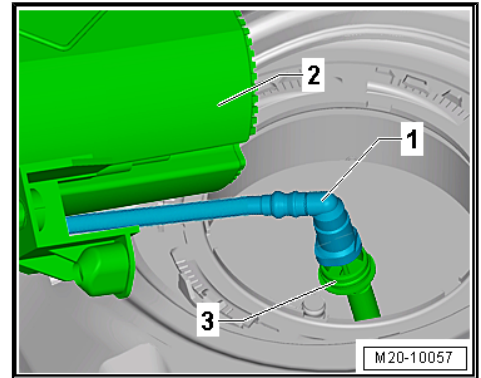
#### Vehicles with additional suction hose:

- Pull fuel delivery unit -2- as far as possible out of fuel tank.
- Grip through opening in fuel tank.
- Release fuel line -1- in fuel tank and pull it off from line -3-.

Separate plug-in connectors ➔ [page 72](#) .

#### Continued for all vehicles:

- Carefully pull out fuel delivery unit with fuel gauge sender - G- through opening in fuel tank.
- Turn and tilt it as necessary while doing so.
- When removing the fuel delivery unit, ensure that the float arm of the fuel gauge sender is not bent.
- Place a cloth underneath the fuel delivery unit to catch any escaping fuel.



#### Note

- ◆ When the delivery unit is replaced, the old delivery unit must be emptied before disposal.
- ◆ Observe environmental regulations for disposal.
- ◆ Check fuel tank for foreign bodies and dirt.

#### Installing:

Install in reverse order of removal. The following should be observed:



#### Note

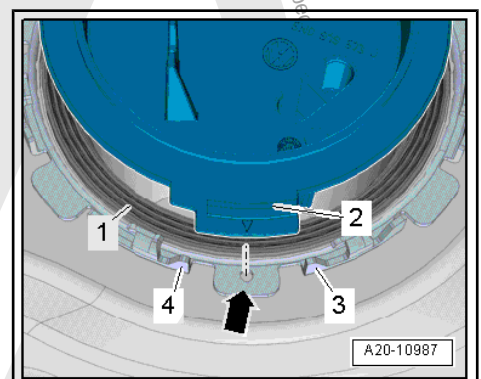
- ◆ Separate plug-in connectors ➔ [page 72](#) .
- ◆ Renew seal if damaged.

#### Vehicles with auxiliary heater

- If a new fuel delivery unit is installed, the auxiliary heater connection must be opened ➔ [page 63](#) .

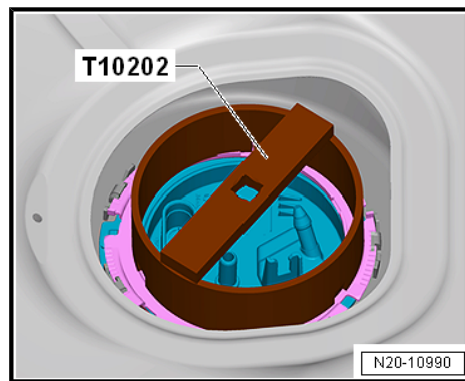
#### Continued for all vehicles:

- Insert dry seal -1- for fuel delivery unit into opening in fuel tank.
- When inserting fuel delivery unit, ensure that fuel gauge sender is not bent.
- Coat inner side of seal -1- with fuel.
- Press down sealing flange -2- against spring force.
- While observing installation position, position flange so that it can be installed ➔ [page 49](#) .





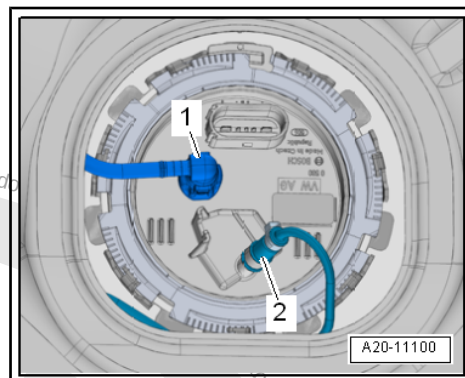
- Tighten locking ring using wrench - T10202- .



- Push fuel line -1- onto sealing flange until it engages audibly.

#### Vehicles with auxiliary heater

- Install fuel line -2- leading to metering pump - V54- for auxiliary heater to sealing flange ⇒ [page 63](#) .

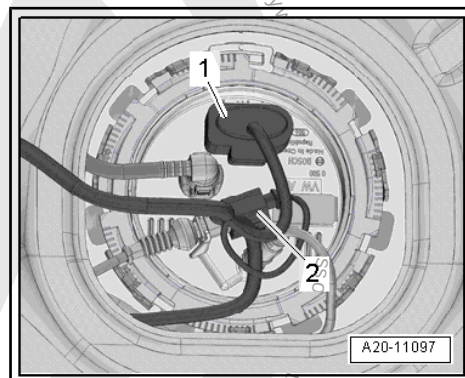


#### Continued for all vehicles:

- Connect connector -1-.
- If present, attach connector -2- for metering pump - V54- of auxiliary heater to sealing flange.
- Ensure connectors -1- are firmly seated by pulling.
- After installing fuel delivery unit, fill fuel tank with at least 5 litres of fuel.

#### Specified torques

- ◆ ⇒ ["2.1 Assembly overview - fuel delivery unit and fuel gauge sender", page 47](#)
- ◆ ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seat; Removing and installing bench seat / individual seats

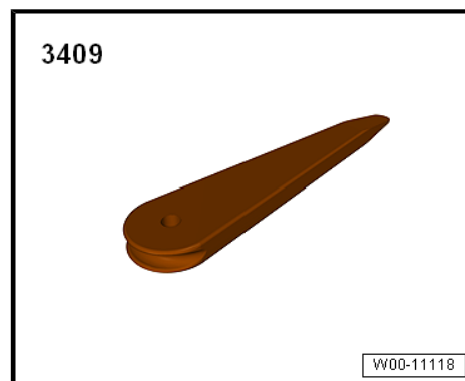


## 2.2.2 Removing and installing fuel delivery unit/fuel gauge sender, vehicles with four-wheel drive

### Special tools and workshop equipment required



◆ Removal wedge - 3409-



◆ Special wrench - T10202-



## Removing

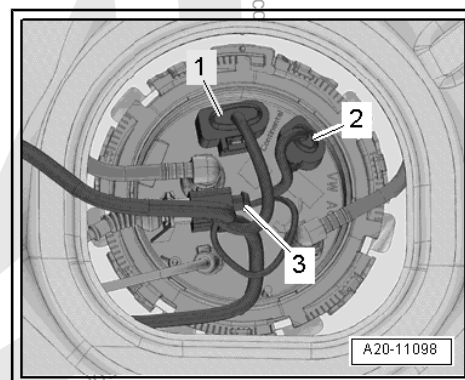
- Move front seats to foremost position.
- Switch off ignition.
- Remove rear bench seat ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing bench seat / individual seats
- Fuel tank must not be more than  $\frac{3}{4}$  full. This ensures that the fill level is below the flange of the fuel delivery unit.
- Drain fuel tank ⇒ [page 6](#) .
- Remove cover of assembly opening on right ⇒ [page 69](#) .
- Release and pull off connectors -1- and -2- on sealing flange.

## Vehicles with auxiliary heater

- Detach connector -3- for metering pump - V54- from sealing flange.
- Release and pull off connector -3- for metering pump - V54- .

## Continued for all vehicles:

- Remove fuel pump control unit - J538- with wiring harness still attached ⇒ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.





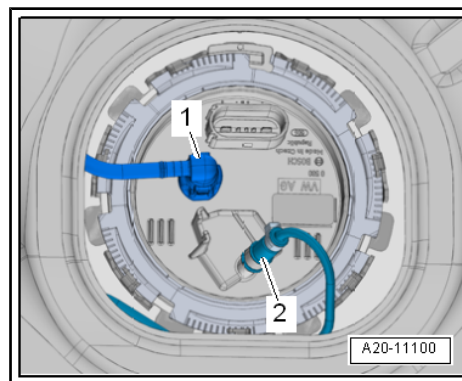
- Disconnect fuel line -1- on sealing flange. Separate plug-in connectors ➔ [page 72](#) .

### ⚠ CAUTION

The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

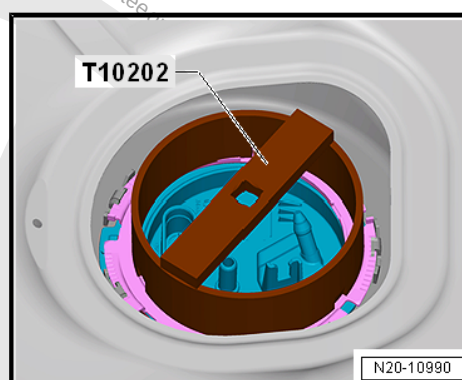


### Vehicles with auxiliary heater

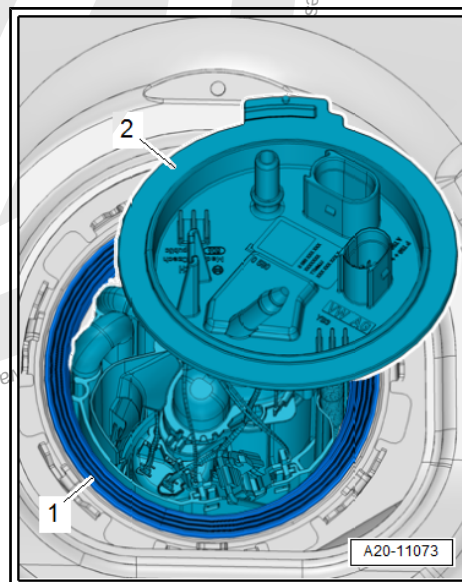
- Remove fuel line -3- to metering pump - V54- for auxiliary heater from flange ➔ [page 63](#) .

### Continued for all vehicles:

- Open locking ring using wrench - T10202- .
- Carefully lift flange of fuel delivery unit.

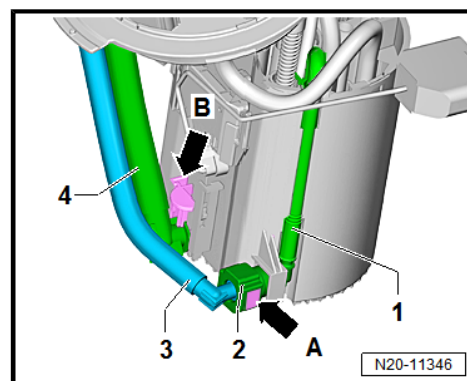


- Pull sealing flange -2- for a short distance out of the opening in the fuel tank.
- Remove seal -1- at the opening in the fuel tank.
- Carefully pull sealing flange with fuel line -2- as far as possible out of opening in fuel tank.





- Grip through opening in fuel tank.
- Press release buttons -arrow A- on connection piece -2-. Separate plug-in connectors ➔ [page 72](#).
- Pull line -3- off line -1-.
- Push fastener -arrow B- upwards, and pull slide upwards.
- Disconnect line -4-.
- Carefully pull out fuel delivery unit with fuel gauge sender - G- through opening in fuel tank.
- Turn and tilt fuel delivery unit as necessary while doing so.
- When removing the fuel delivery unit, ensure that the float arm of the fuel gauge sender is not bent.
- Place a cloth underneath the fuel delivery unit to catch any escaping fuel.



### Note

- ◆ *When the delivery unit is replaced, the old delivery unit must be emptied before disposal.*
- ◆ *Observe environmental regulations for disposal.*
- ◆ *Check fuel tank for foreign bodies and dirt.*

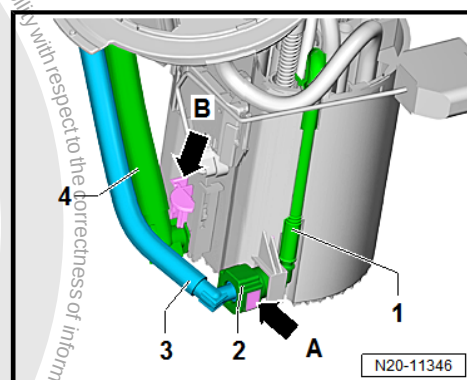
### Installing

### Note

- ◆ *Separate plug-in connectors ➔ [page 72](#).*
- ◆ *Renew seal if damaged.*

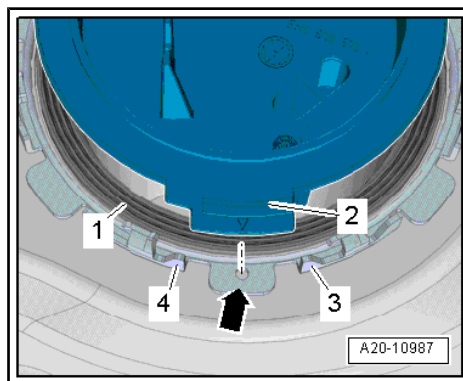
### Vehicles with auxiliary heater

- If a new fuel delivery unit is installed, the auxiliary heater connection must be opened ➔ [page 63](#).
- Push on fuel lines -3- and -4- until they engage audibly.

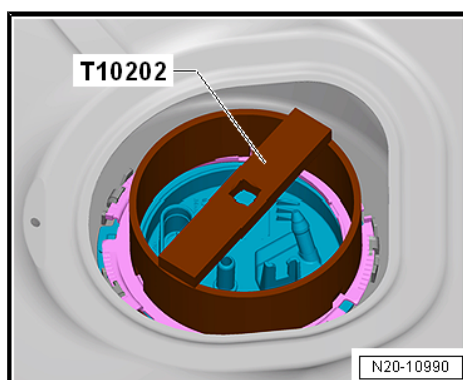




- Insert dry seal -1- for fuel delivery unit into opening in fuel tank.
- When inserting fuel delivery unit, ensure that fuel gauge sender is not bent.
- Coat inner side of seal -1- with fuel.
- Press down sealing flange -2- against spring force.
- While observing installation position, position flange so that it can be installed ⇒ [page 51](#) .



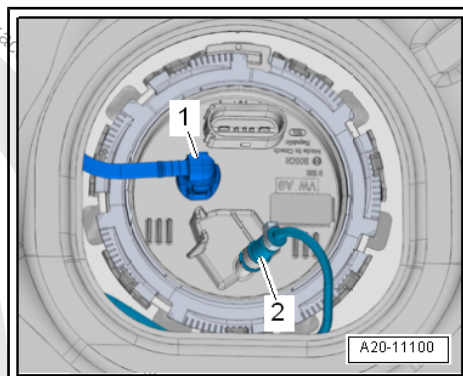
- Tighten locking ring using wrench - T10202- .



- Push fuel line -1- and -2- onto sealing flange until it engages audibly.

#### Vehicles with auxiliary heater

- If featured, install fuel line -2- leading to metering pump - V54- for auxiliary heater on sealing flange ⇒ [page 64](#) .

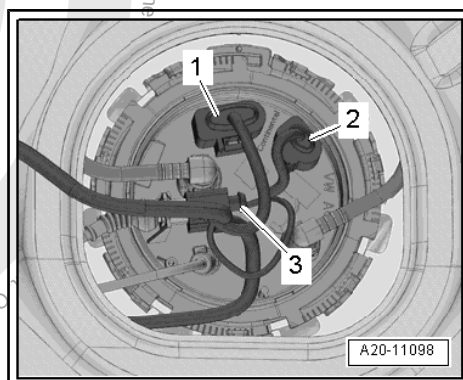


#### Continued for all vehicles:

- Connect connector -1-.
- If present, attach connector -3- for metering pump - V54- of auxiliary heater to sealing flange.
- Check connectors are secured properly by pulling.
- After installing fuel delivery unit, fill fuel tank with at least 5 litres of fuel.

#### Specified torques

- ♦ ⇒ ["2.1 Assembly overview - fuel delivery unit and fuel gauge sender", page 47](#)
- ♦ ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seat; Removing and installing bench seat / individual seats





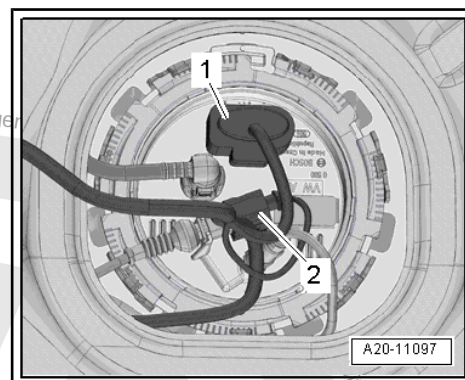
## 2.2.3 Removing and installing fuel line for auxiliary/supplementary heater

### Removing

- Fuel tank must not be more than  $\frac{3}{4}$  full. This ensures that the fill level is below the flange of the fuel delivery unit.
- Drain fuel tank ➔ [page 6](#) .
- Remove cover of assembly opening on right or centre ➔ [page 69](#) .

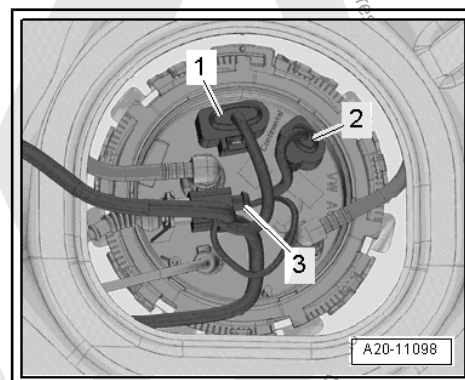
#### Vehicles with front-wheel drive:

- Release and pull off connector -1- on sealing flange.
- If fitted, detach connector -2- for metering pump - V54- of auxiliary heater on sealing flange and lay connector aside.



#### Vehicles with all-wheel drive:

- Release and pull off connectors -1- and -2- on sealing flange.
- If fitted, detach connector -3- for metering pump - V54- of auxiliary heater on sealing flange and lay connector aside.



If fuel line for metering pump - V54- is to be disconnected from fuel delivery unit:

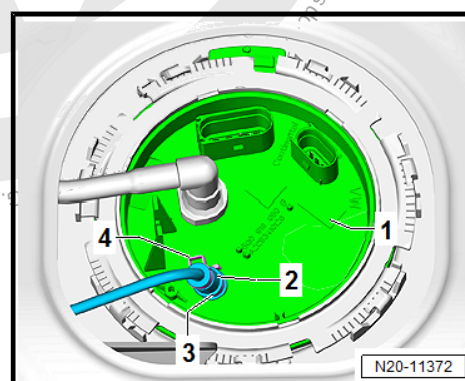
- Open lower clip -3- on flange -1-.

### CAUTION

The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



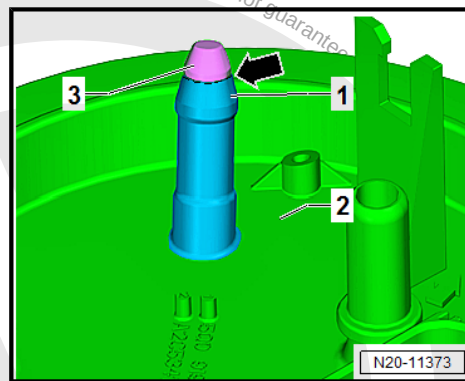
- Do not open upper clip -4-.
- Pull fuel line -2- together with grommet off flange.

If a new fuel delivery unit is installed:

- Remove fuel line ➔ [page 63](#) .

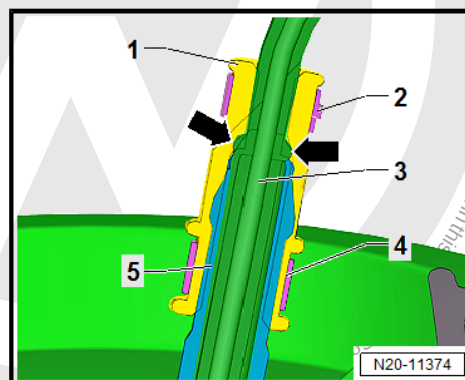


- Remove fuel delivery unit ⇒ [page 54](#) .
- The connection on the fuel delivery unit -2- must be opened.
- To do this, cut off sealing piece -3- on connection -1-.
- Cut it off on the respective marking line -arrow-.
- Deburr edges of cutting point.
- Prevent any dirt or swarf from entering the fuel delivery unit.
- Check fuel delivery unit for soiling, and clean it as necessary.
- Install fuel delivery unit ⇒ [page 54](#) .



#### Installing fuel line:

- Insert fuel line -3- in connection -5-.
- Insert fuel line to stop -arrow-.
- While doing this, fit grommet -1- over connection.
- Renew lower clip -4-.
- If the fuel line or grommet has been renewed, the upper clip must be renewed as well.
- Renew clips -2- and -4-, if they have been opened.
- Secure hose connections with the hose clips corresponding to original equipment.



#### Specified torques

- ◆ ⇒ [“2.1 Assembly overview - fuel delivery unit and fuel gauge sender”, page 47](#)

## 2.3 Removing and installing fuel gauge sender - G-

⇒ [“2.3.1 Removing and installing fuel gauge sender G , vehicles with front-wheel drive”, page 64](#)

⇒ [“2.3.2 Removing and installing fuel gauge sender , vehicles with four-wheel drive”, page 65](#)

### 2.3.1 Removing and installing fuel gauge sender - G- , vehicles with front-wheel drive

#### Removing

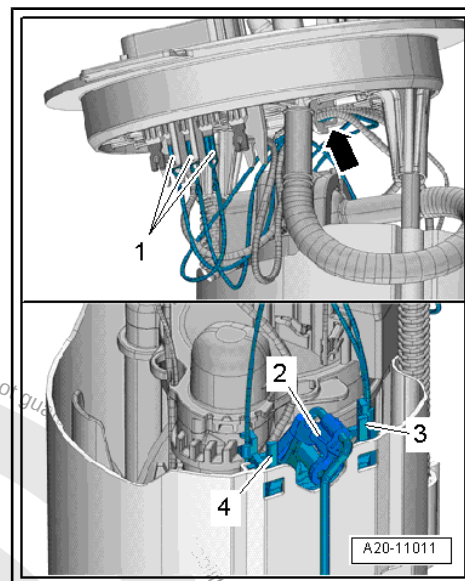
- Remove fuel delivery unit ⇒ [page 54](#) .
- Note colour assignment of cables -1- for re-installation.



- Release and pull off connectors -1- on sealing flange.
- Disengage and move clear electrical wiring at retainer -arrow-.
- Release locking lugs -3- and -4- from tabs.
- Pull out fuel gauge sender - G- -2- upwards.
- Bend back the locking hooks of the connectors.

#### Installing:

- Install in reverse order of removal. Observe the following:
- Note colour assignment of contacts.
- Check connectors are secured properly by pulling.
- Insert fuel gauge sender - G- into guide on fuel delivery unit and press down until it engages.
- Install fuel delivery unit ➔ [page 54](#) .



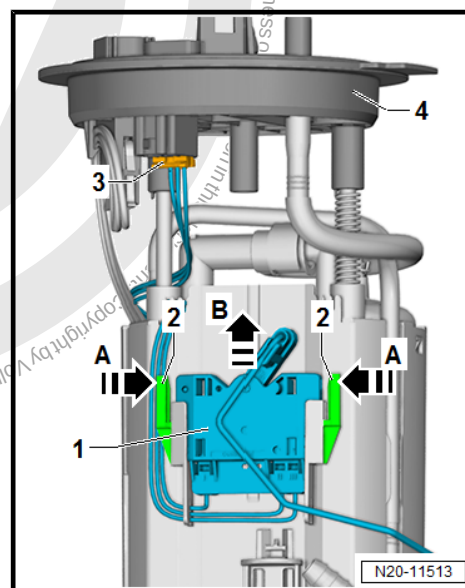
### 2.3.2 Removing and installing fuel gauge sender - - , vehicles with four-wheel drive

#### Removing

- Remove fuel delivery unit ➔ [page 54](#) .
- Release and pull off electrical connectors -3- on sealing flange -4-.
- Detach and move clear electrical wiring at retainer.
- Release locking lugs -2- in direction of -arrow A-.
- Pull out fuel gauge sender - G- -1- upwards in -direction of arrow B-.

#### Installing:

- Install in reverse order of removal. Observe the following:
- Check connectors are secured properly by pulling.
- Insert fuel gauge sender - G- into guide on fuel delivery unit and press down until it engages.
- Install fuel delivery unit ➔ [page 54](#) .



### 2.4 Removing and installing fuel gauge sender 2 - G169-

Special tools and workshop equipment required



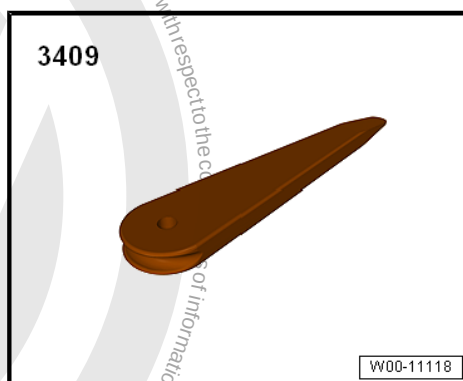
◆ Special wrench - T10202-



◆ Torque wrench - V.A.G 1332-

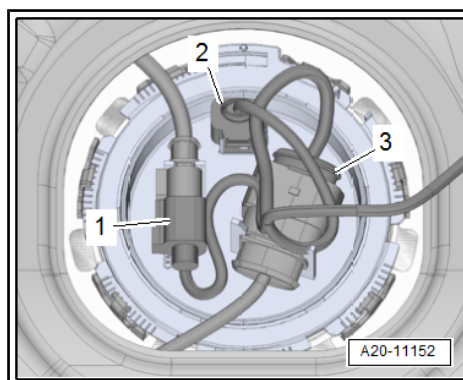


◆ Removal wedge - 3409-



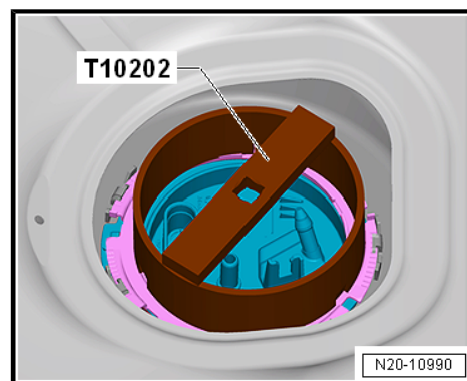
### Removing

- Move front seats to foremost position.
- Switch off ignition.
- Drain fuel tank ➔ [page 31](#).
- Remove cover of assembly opening ➔ [page 69](#).
- Release and pull off connector -2- on sealing flange.
- Release and pull off connectors -1- on sealing flange.
- If fitted, release and pull off electrical connector -3- on flange.
- Unclip electrical connectors from mountings on flange.





- Open locking ring using wrench - T10202- .



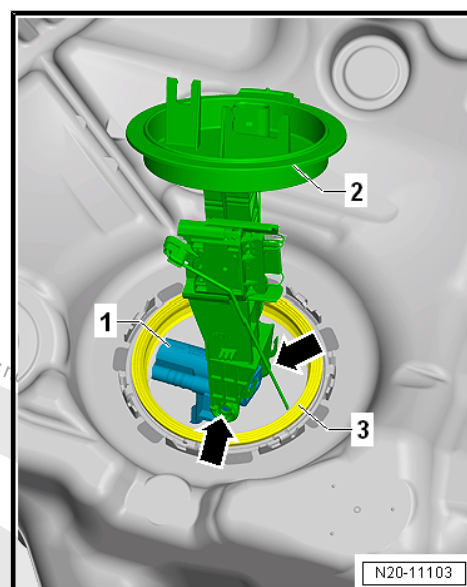
- Carefully lift sealing flange -2- and pull it out of opening in fuel tank.



**Note**

*The seal -3- can remain on the opening in the fuel tank.*

- Unclip suction-jet pump -1- from fuel gauge sender 2 - G169- .
- To do so, carefully bend retaining lugs -arrows- outwards.
- Place a cloth underneath to absorb fuel.
- Carefully pull out fuel gauge sender 2 - G169- through opening in fuel tank.
- Turn and tilt it as necessary while doing so.



**Note**

*When removing, ensure that the float arm of the fuel gauge sender 2 - G169- is not bent.*



- Release connector -3- from unit -2- and pull off connector.
- Thread out electrical wiring.
- Release fuel gauge sender 2 - G169- -1- from unit -2-.
- To do so, carefully bend open retaining lugs -arrows-.
- Pull off fuel gauge sender 2 - G169- in -direction of arrow-.



#### Note

- ◆ *Observe environmental regulations for disposal.*
- ◆ *Check fuel tank for foreign bodies and dirt.*

#### Installing

Install in reverse order of removal. The following should be observed:

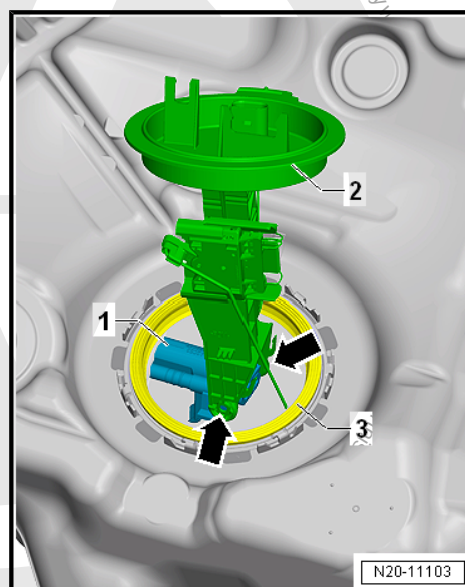
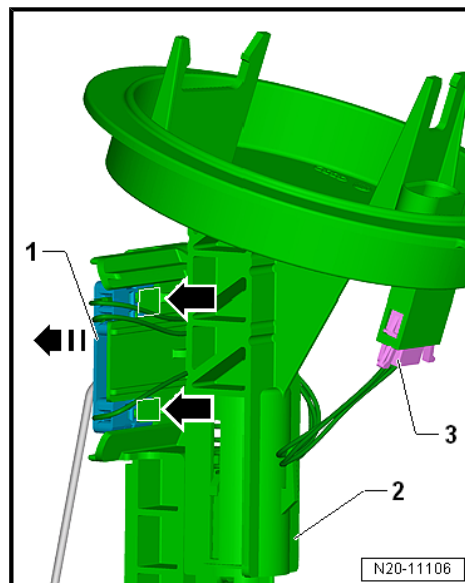


#### Note

- ◆ *Make sure all components are mounted in the correct position.*
  - ◆ *Renew seal if damaged.*
  - ◆ *Ensure that the electrical wiring is correctly routed in the mountings.*
- Ensure fuel gauge sender 2 - G169- is firmly seated by pulling.

#### Passat and Arteon:

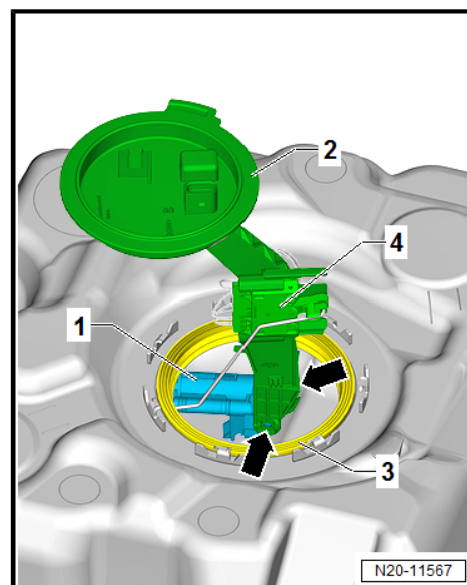
- Coat inner side of seal -3- with fuel.
- Install suction-jet pump -1-.
- When inserting fuel gauge sender 2 - G169- -2-, ensure that sender arm is not bent.
- Ensure that fuel gauge sender 2 - G169- is installed in position as shown.





#### Tiguan:

- Coat inner side of seal -3- with fuel.
- Install suction-jet pump -1-.
- When inserting fuel gauge sender 2 - G169- -4-, ensure that sender arm is not bent.
- Ensure that fuel gauge sender 2 - G169- is installed in position as shown.



#### Continued for all vehicles:

- Push flange downwards against spring force and move flange into installation position.
- Note installation position of flange when installing  
⇒ [page 51](#)
- When sealing flange is inserted, ensure that seal is not damaged or squashed.
- Tighten locking ring using wrench - T10202- .
- Check connectors are secured properly by pulling.

#### Specified torques

- ◆ ⇒ [“2.1 Assembly overview - fuel delivery unit and fuel gauge sender”, page 47](#)

## 2.5 Removing and installing assembly opening cover

⇒ [“2.5.1 Removing and installing assembly opening cover, Passat and Arteon”, page 69](#)

⇒ [“2.5.2 Removing and installing assembly opening cover, Tiguan”, page 70](#)

### 2.5.1 Removing and installing assembly opening cover, Passat and Arteon

Special tools and workshop equipment required

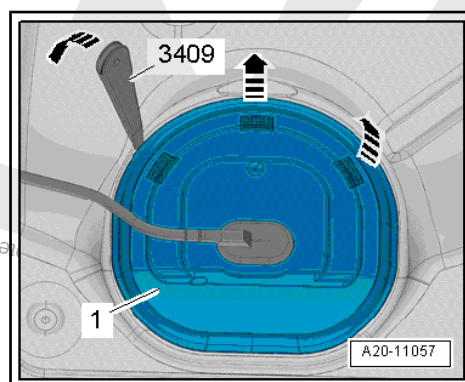




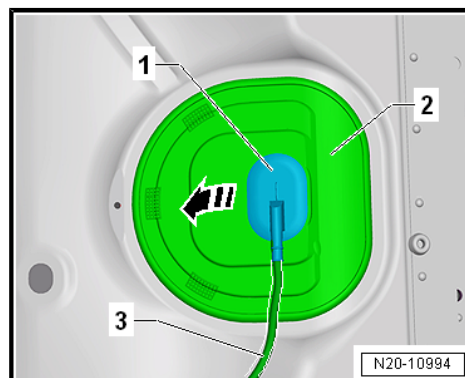
◆ Removal wedge - 3409-



- Remove rear bench seat ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing bench seat / individual seats .
- Unclip cover -1- for flange at retaining tabs -arrows-, using removal wedge - 3409- .



- Unclip sealing grommet -1- downwards from cover -2-.
- Push cover -2- back along wiring harness -3-.



## 2.5.2 Removing and installing assembly opening cover, Tiguan

### Special tools and workshop equipment required

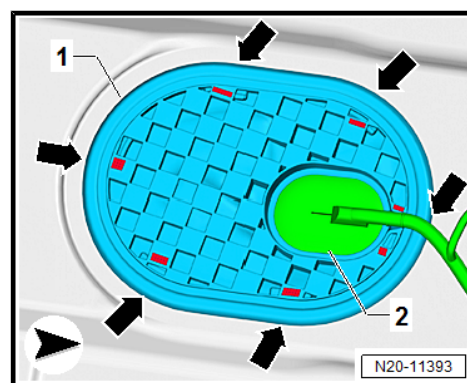
◆ Removal wedge - 3409-





#### Note

- ◆ *On vehicles with all-wheel drive, assembly openings are located on the left and right-hand side.*
- ◆ *On vehicles with front-wheel drive, the assembly opening is in the centre.*
- Remove rear seats ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing bench seat / individual seats .
- Fold up floor covering and support in this position ⇒ General body repairs, interior; Rep. gr. 70 ; Interior trim .
- Unclip cover -1- for sealing flange at retaining tabs -arrows-.
- Unclip sealing grommet -2- downwards from cover -1-.
- Move cover -1- towards rear along wiring harness.





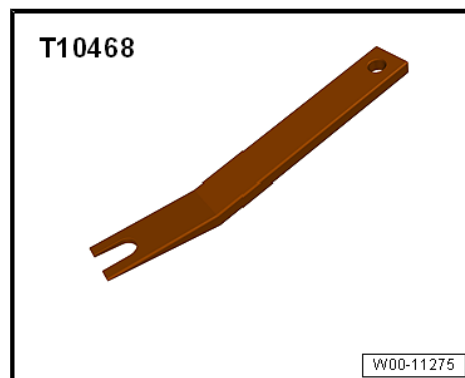
### 3 Plug-in connectors

⇒ ["3.1 Separating plug-in connectors", page 72](#)

#### 3.1 Separating plug-in connectors

Special tools and workshop equipment required

- ◆ Lever - T10468-



Assignment of plug-in connectors



#### Note

- ◆ *The plug-in connectors for fuel, vacuum and breather lines are colour coded. There is either a coloured dot on the plug-in connector or the release button is of the respective colour*  
⇒ [page 72](#).
- ◆ *Plug-in connectors for fuel lines must engage »audibly« when joined.*
- ◆ *Ensure plug-in connector is secured properly by pulling it.*

Colour assignment

| Plug-in connector | Colour code on plug-in connector |
|-------------------|----------------------------------|
| Fuel supply       | black                            |
| Fuel return line  | blue                             |
| Breather          | White, beige                     |
| Vacuum            | green                            |

#### CAUTION

The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



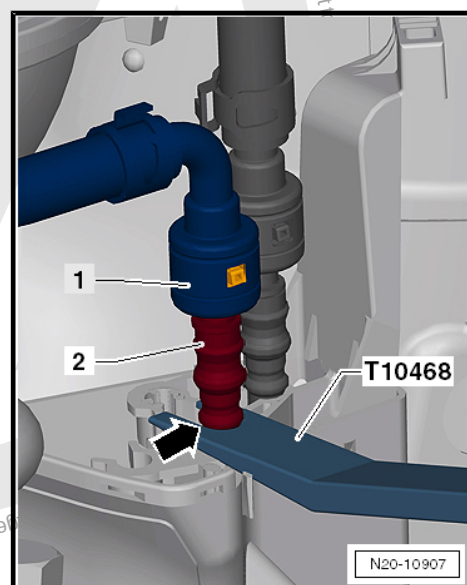
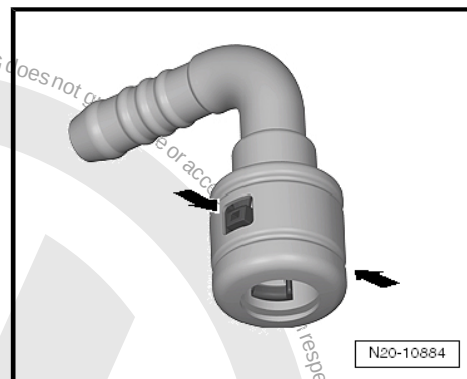
## Version 1

Plug-in connector with release buttons -arrows- on right and left

### Open

Counterhold at the coupling point for fuel -1- in the engine compartment.

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



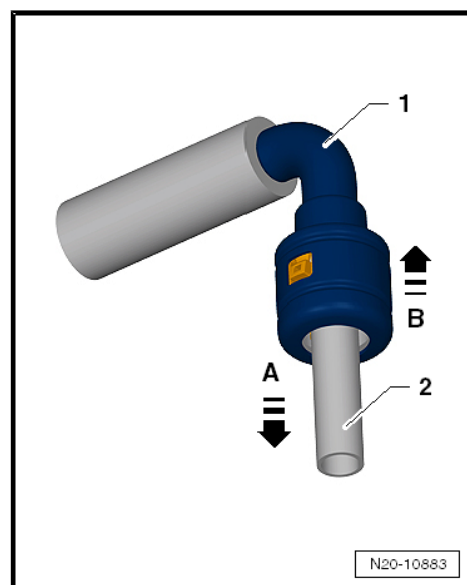
Continuation for all fuel system connections:

- Push plug-in connector -1- in -direction of arrow A-.
- Press and hold release buttons.
- Pull plug-in connector -1- off fuel line -2- in -direction of arrow B-.

Note colour assignment during installation ⇒ [page 72](#) .

Plug-in connectors for fuel lines must engage »audibly« when joined.

- Ensure plug-in connector is secured properly by pulling it.





## Version 2

Plug-in connector with pull-release mechanism -arrow-.

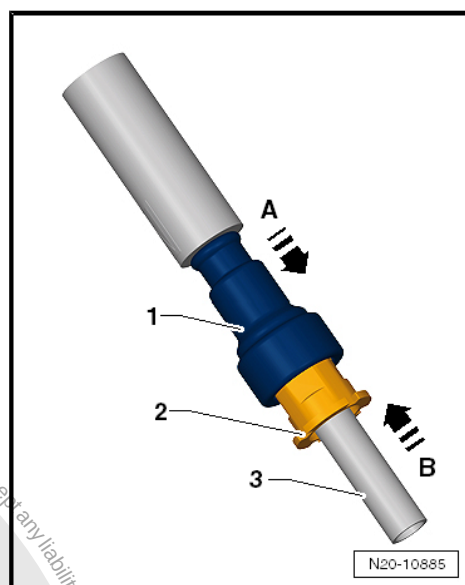
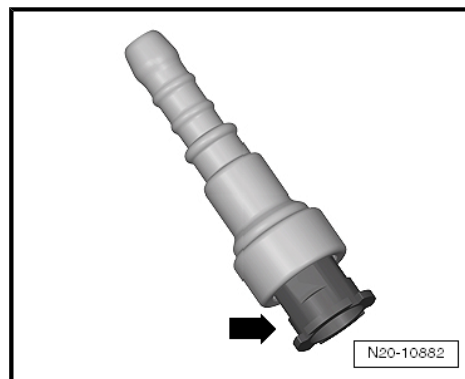
Open

- Push plug-in connector -1- in -direction of arrow A-.
- Pull pull-release mechanism -2- in -direction of arrow B-.
- Pull plug-in connector -1- off fuel line -3- in -direction of arrow B-.

Note colour assignment during installation ⇒ [page 72](#) .

Plug-in connectors for fuel lines must engage »audibly« when joined.

- Ensure plug-in connector is secured properly by pulling it.



## Version 3

Plug-in connector with button in front -arrow-.

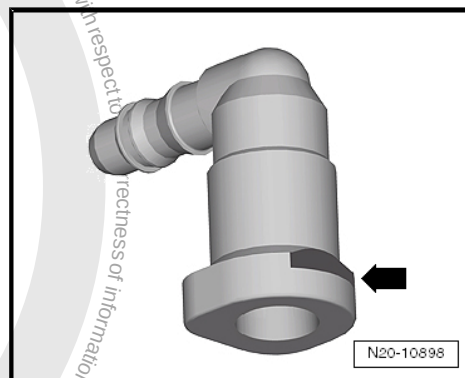
Open

- Press release button -arrow- and pull off plug-in connectors.

Note colour assignment during installation ⇒ [page 72](#) .

Plug-in connectors for fuel lines must engage »audibly« when joined.

- Ensure plug-in connector is secured properly by pulling it.



## Version 4

Plug-in connector with release button -arrows- on right and left:

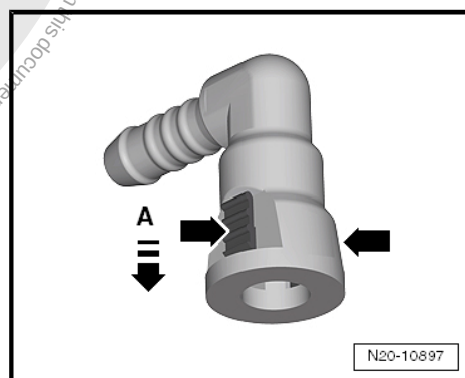
Open

- Push plug-in connector in -direction of arrow A-.
- Press release buttons -arrows- and pull off plug-in connector.

Note colour assignment during installation ⇒ [page 72](#) .

Plug-in connectors for fuel lines must engage »audibly« when joined.

- Ensure plug-in connector is secured properly by pulling it.





### Version 5

Plug-in connector with release buttons -arrows- on right and left:

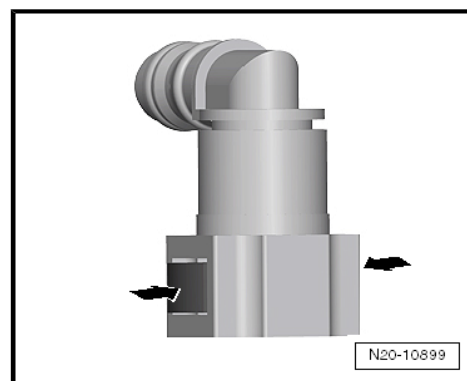
Open

- Press release buttons -arrows- and pull off plug-in connector.

Note colour assignment during installation ⇒ [page 72](#) .

Plug-in connectors for fuel lines must engage »audibly« when joined.

- Ensure plug-in connector is secured properly by pulling it.



### Version 6

Plug-in connector with release buttons -arrows- on right and left:

Open

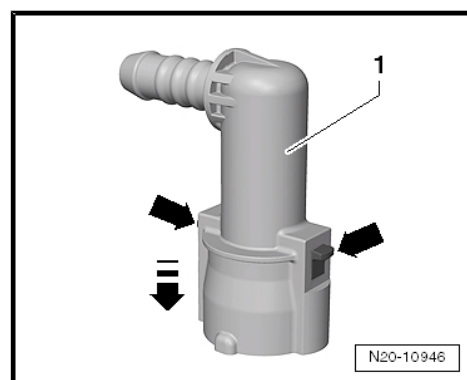
- Push plug-in connector -1- in -direction of arrow- and maintain pressure.

- Press release buttons -arrows- and pull off plug-in connector.

Note colour assignment during installation ⇒ [page 72](#) .

Plug-in connectors for fuel lines must engage »audibly« when joined.

- Ensure plug-in connector is secured properly by pulling it.



### Version 7

Plug-in connector -1- with release buttons -2- on right and left:

Open

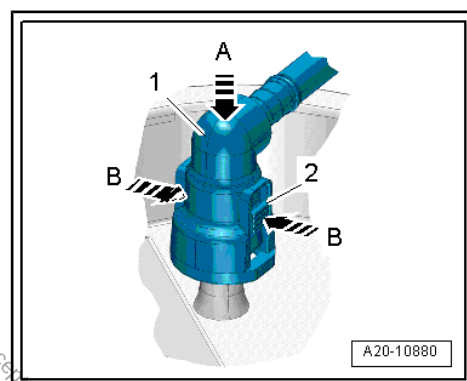
- Press plug-in connector -1- in -direction of arrow A- and maintain pressure.

- Press release button -2- in -direction of arrow B- and pull off plug-in connector -1-.

Note colour assignment during installation ⇒ [page 72](#) .

Plug-in connectors for fuel lines must engage »audibly« when joined.

- Ensure plug-in connector is secured properly by pulling it.





## 4 fuel filter.

Pressure limiting valve and fuel filter are integrated in fuel delivery unit and cannot be renewed individually ⇒ [page 47](#) .



## 5 Activated charcoal filter system

⇒ ["5.1 Assembly overview - activated charcoal filter system", page 77](#)

⇒ ["5.2 Removing and installing activated charcoal filter", page 78](#)

⇒ ["5.3 Checking fuel tank breather", page 79](#)

### 5.1 Assembly overview - activated charcoal filter system

#### 1 - Breather line

- ☐ To activated charcoal filter solenoid valve 1 - N80-
- ☐ Clipped onto fuel tank.
- ☐ Checking breather  
⇒ [page 79](#)
- ☐ Connection diagram  
⇒ [page 78](#)
- ☐ To pull off, press release button on connection
- ☐ Plug-in connectors must engage »audibly« when joined
- ☐ Ensure plug-in connector is secured properly by pulling it.
- ☐ Disconnect plug-in connectors ⇒ [page 72](#)

#### 2 - Bolt

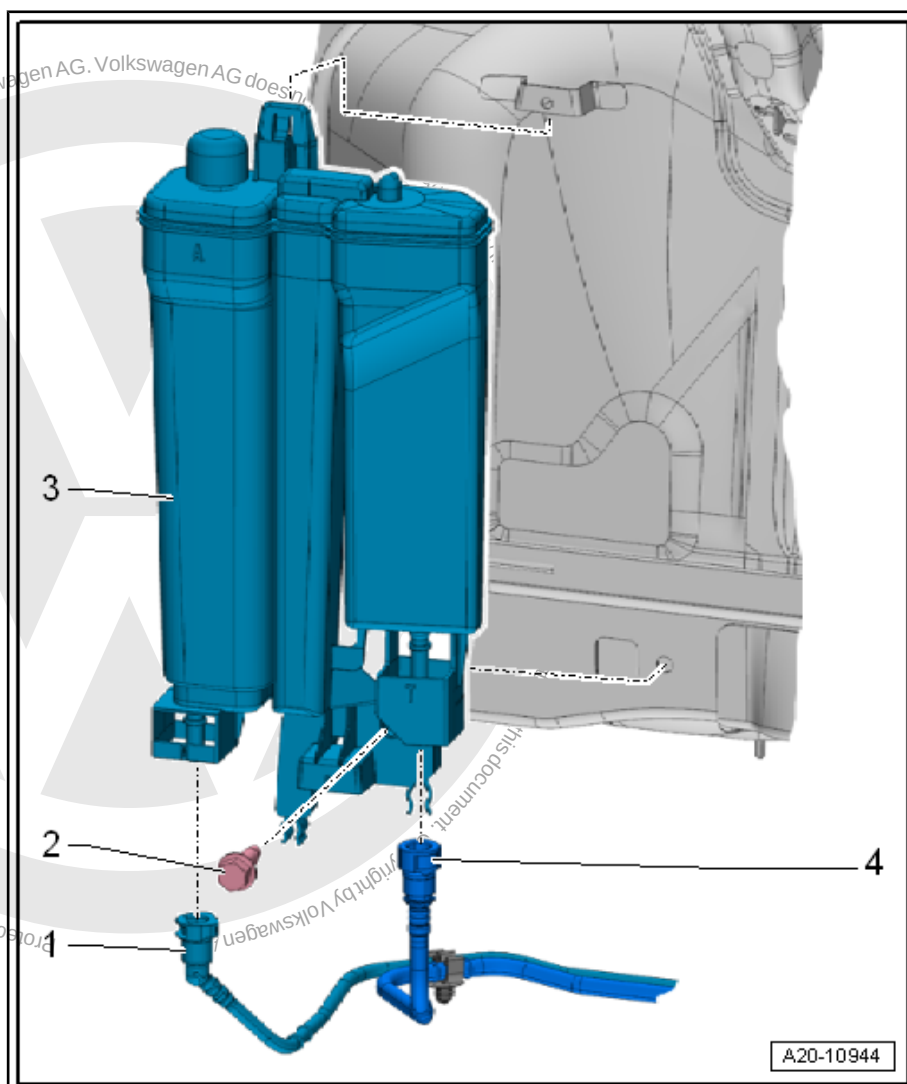
- ☐ 20 Nm

#### 3 - Activated charcoal filter

- ☐ Fitting location: On rear right in wheel housing, beneath wheel housing liner.
- ☐ Removing and installing  
⇒ [page 78](#)
- ☐ Checking breather  
⇒ [page 79](#)

#### 4 - Breather line

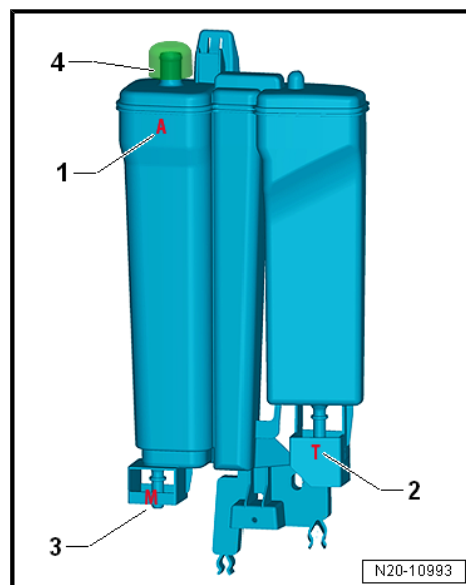
- ☐ To fuel tank
- ☐ To pull off, press release button on connection
- ☐ Plug-in connectors must engage »audibly« when joined
- ☐ Ensure plug-in connector is secured properly by pulling it.
- ☐ Disconnect plug-in connectors ⇒ [page 72](#)
- ☐ Checking breather ⇒ [page 79](#)
- ☐ Connection diagram ⇒ [page 78](#)





### Connections on activated charcoal filter

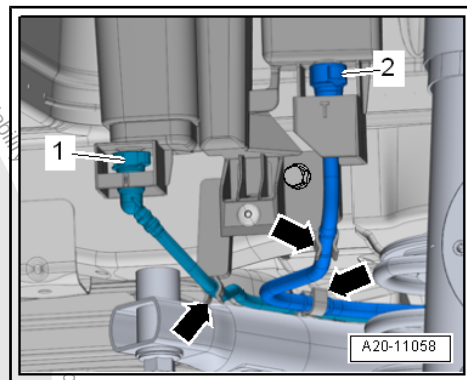
- 1 - -A- breather connection
- 2 - -T- connection to fuel tank
- 3 - -M- to activated charcoal filter solenoid valve 1 - N80-
- 4 - Protective cap



## 5.2 Removing and installing activated charcoal filter

### Removing

- Remove rear right wheel ➤ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres and alignment .
- Remove rear right wheel housing liner ➤ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - rear wheel housing liner .
- Pull off breather lines -1- and -2- from activated charcoal filter. Separate plug-in connectors ➤ [page 72](#) .
- Unclip breather lines from retainer -arrows-.





- Unscrew bolt -1-.
- Press in locking device -3- using screwdriver.
- Pull activated charcoal filter -2- downwards in -direction of arrow- out of mounting.

### Installing

Install in reverse order of removal. The following should be observed:



### Note

Separate plug-in connectors ⇒ [page 72](#) .

### Specified torques

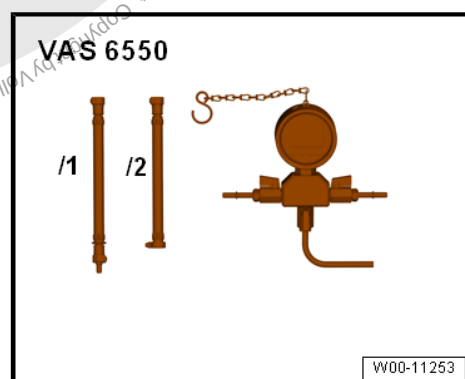
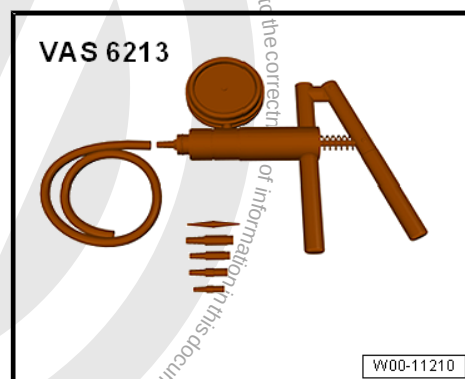
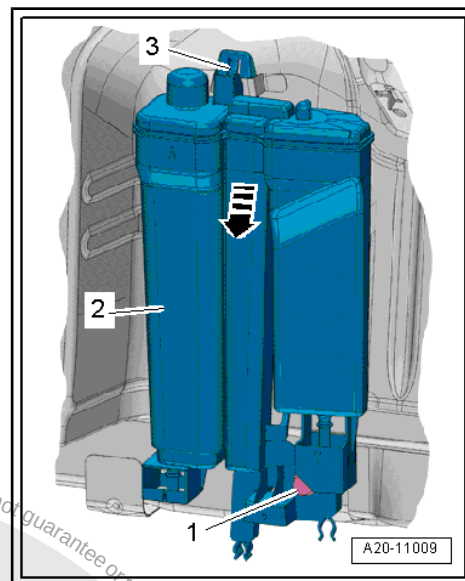
- ◆ ⇒ ["5.1 Assembly overview - activated charcoal filter system", page 77](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview- rear wheel housing liner .
- ◆ ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Wheel change .

## 5.3 Checking fuel tank breather

### Special tools and workshop equipment required

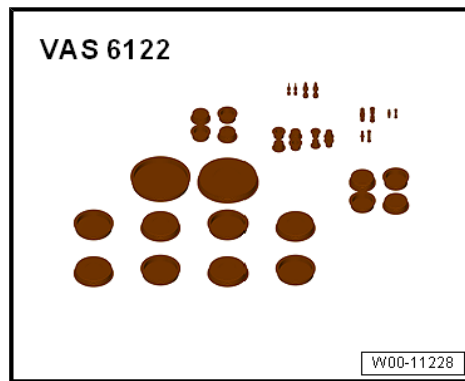
- ◆ Hand operated vacuum pump - VAS 6213-

- ◆ Adapter set - VAS 6550-





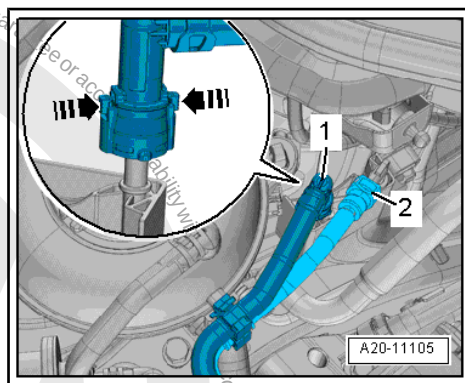
◆ Set of plugs for engine - VAS 6122-



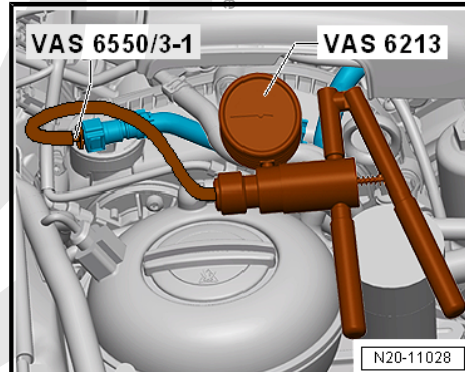
- Read event memory ⇒ Vehicle diagnostic tester.
- Switch off ignition.

**Checking activated charcoal filter system solenoid valve 1 - N80- for leaks**

- Release and pull off breather line -2-. Separate plug-in connectors ⇒ [page 72](#).

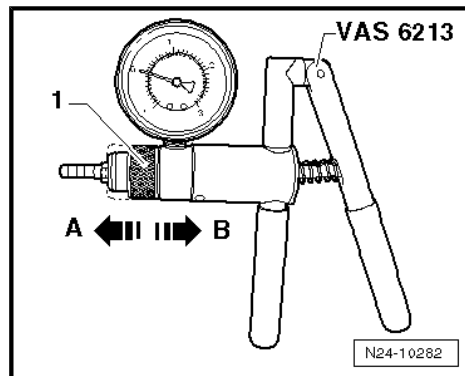


- Using a connecting nipple - VAS 6213- and a standard hose, connect hand vacuum pump - VAS 6550/3-1- to line leading to active charcoal filter system solenoid valve 1 - N80- .



- Move slide ring -1- on hand vacuum pump - VAS 6213- to position -B- for "pressure".
- Using hand-operated vacuum pump - VAS 6213- , build up pressure of approx. 0.1 bar.
- If pressure does »not« build up:
- Check line leading to activated charcoal filter solenoid valve 1 - N80- for leaks and damage. If no fault is detected, the solenoid valve - N80- is leaking. Renew solenoid valve - N80- .
- If pressure builds up:

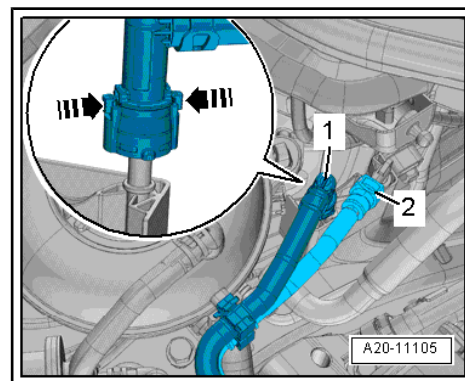
Activated charcoal filter solenoid valve 1 - N80- is not leaking.



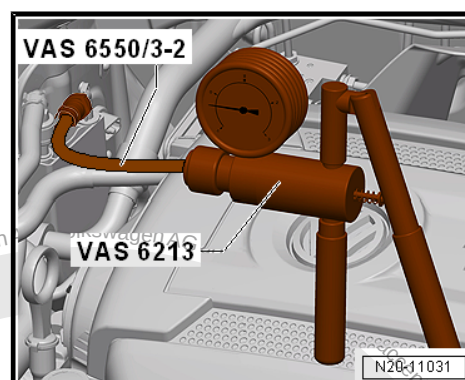


### Checking breather connection on activated charcoal filter

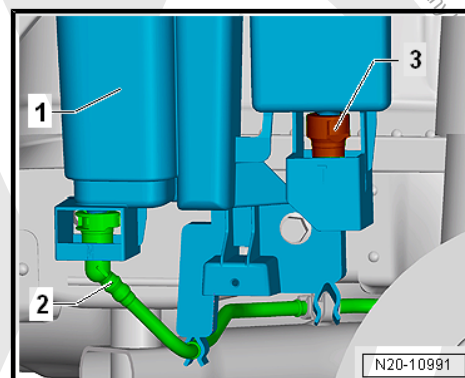
- Release and pull off breather line -2-. Separate plug-in connectors ⇒ [page 72](#) .



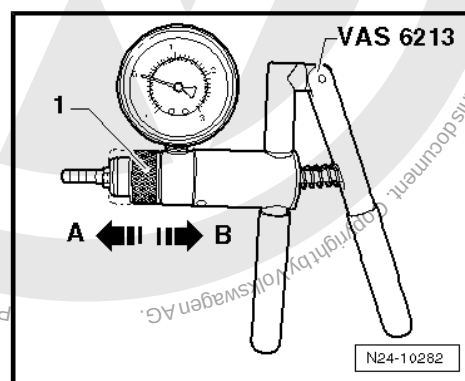
- Connect hand vacuum pump - VAS 6213- with adapter set - VAS 6550/3-2- to line leading to activated charcoal filter.
- Remove rear right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - rear wheel housing liner .



- Pull breather line -3- at connection -T- off activated charcoal filter, and seal connection using suitable workshop equipment.

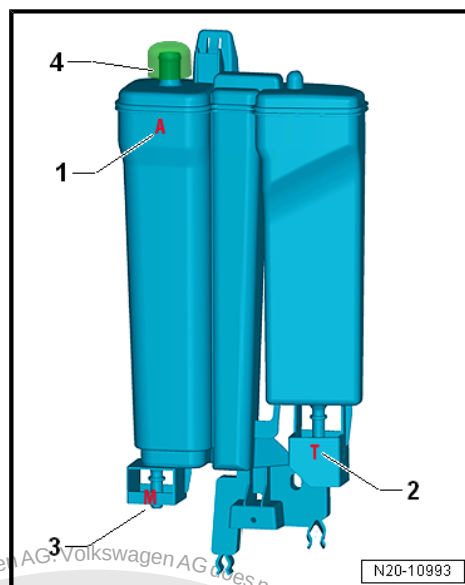


- Move slide ring -1- on hand vacuum pump - VAS 6213- to position -B- for “pressure”.
- Operate hand vacuum pump - VAS 6213- approx. 25 times.
- If »no« pressure builds up:
- Breather connection is OK.



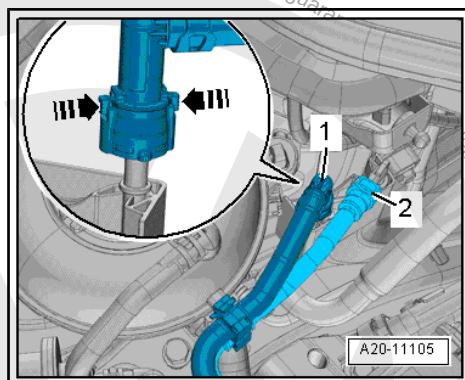


- If pressure builds up:
- Breather connection -A- on activated charcoal filter is blocked. Remove breather cap -4-, and check breather connection for soiling.

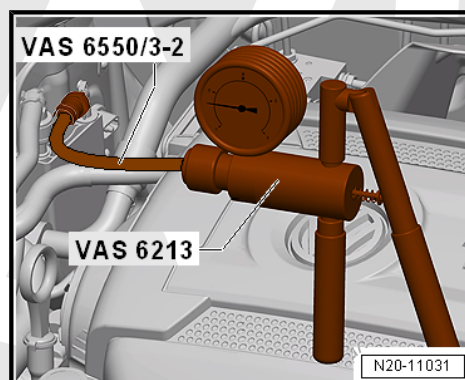


#### Checking activated charcoal filter and breather line for leaks

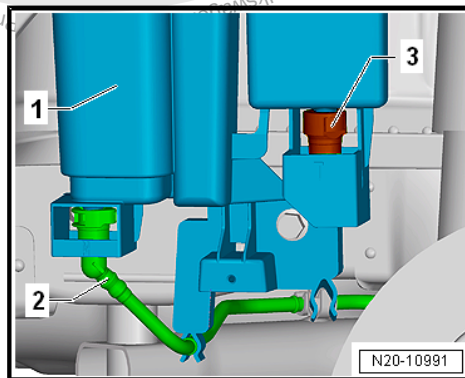
- Release and pull off breather line -2-. Separate plug-in connectors ➔ [page 72](#) .



- Connect hand vacuum pump - VAS 6213- with adapter set - VAS 6550/3-2- to line leading to activated charcoal filter.
- Remove rear right wheel housing liner ➔ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - rear wheel housing liner .

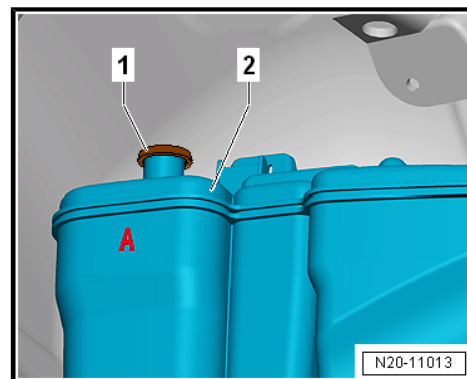


- Pull breather line -3- at connection -T- off activated charcoal filter, and seal connection using suitable workshop equipment.

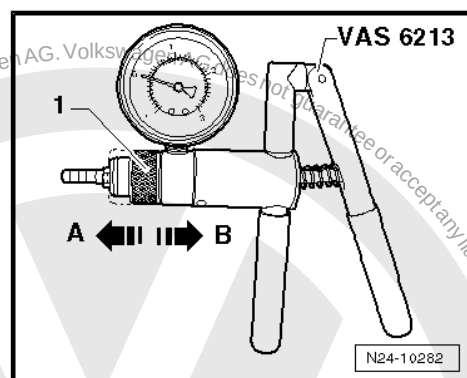




- Remove breather cap from connection -A-, and seal connection on activated charcoal filter -2- using a suitable plug -1- from engine bung set - VAS 6122- .



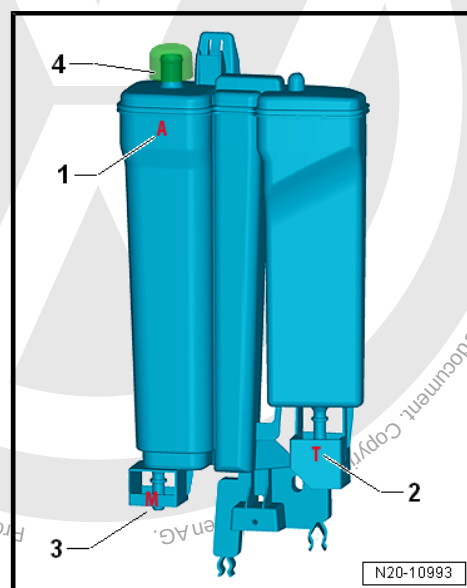
- Move slide ring -1- on hand vacuum pump - VAS 6213- to position -B- for “pressure”.
- Using hand-operated vacuum pump - VAS 6213- , build up pressure of approx. 0.1 bar.
- If pressure builds up:
- Activated charcoal filter and breather line are not leaking.



- If pressure does »not« build up:

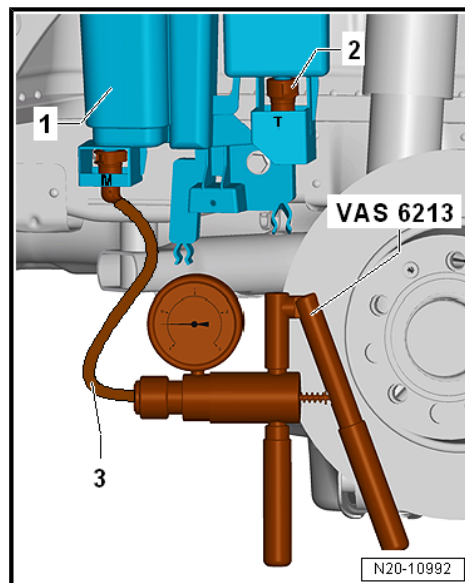
Activated charcoal filter and breather line are leaking. First, check activated charcoal filter for leaks as follows:

- 1 - Breather connection -A- is sealed.
- 2 - Connection -T- is sealed.





- Connect hand vacuum pump - VAS 6213- to connection -M- of activated charcoal filter -1- by means of commercially available hose -3-.
- Using hand-operated vacuum pump - VAS 6213- , build up pressure of approx. 0.1 bar.
- If pressure does »not« build up, the activated charcoal filter is leaking. Check for leaks by hearing, touching or with leak detector spray.
- If pressure builds up, the activated charcoal filter is not leaking. Check breather line.





## 6 Accelerator pedal

⇒ ["6.1 Assembly overview - accelerator module", page 85](#)

⇒ ["6.2 Removing and installing accelerator pedal module GX2 ", page 86](#)

### 6.1 Assembly overview - accelerator module

#### 1 - Bolt

- 6 Nm

#### 2 - Electrical connector

- Make sure connectors are attached properly; pull to check that they are correctly engaged.

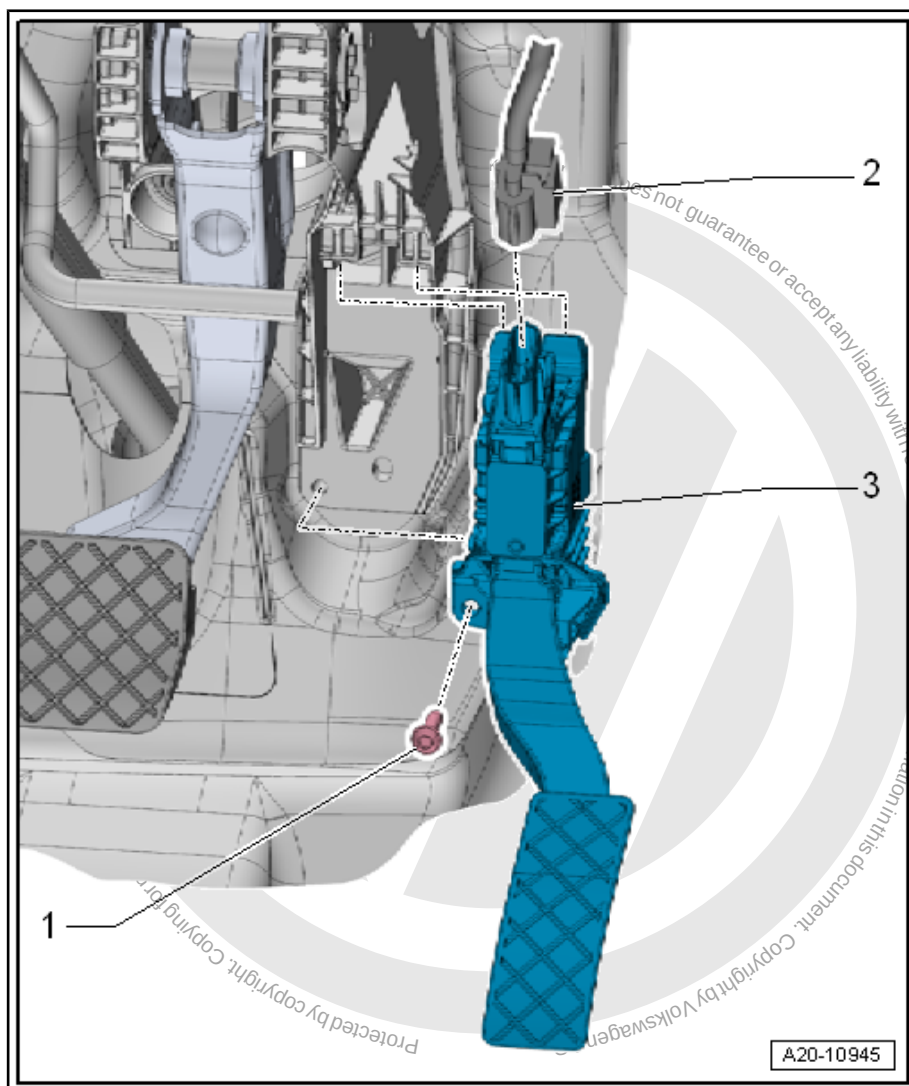
#### 3 - Gas pedal module - GX2-

- Includes

Acceleration pedal position sender - G79-

Accelerator position sender 2 - G185-

- Removing and installing  
⇒ [page 86](#)

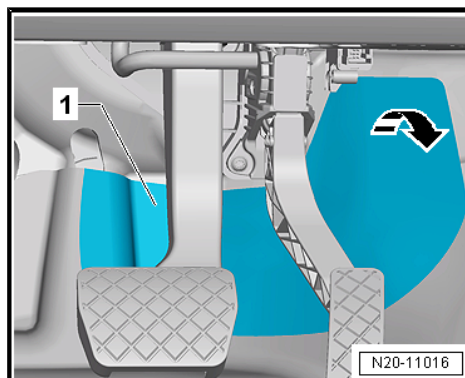




## 6.2 Removing and installing accelerator pedal module - GX2-

### Removing

- Fold floor covering -1- forwards in -direction of arrow-.



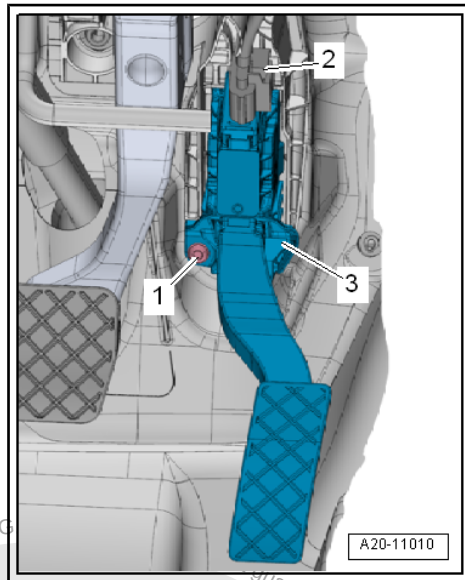
- Release and pull off electrical connector -2- on accelerator pedal module - GX2- .
- Unscrew bolt -1-.
- Detach accelerator pedal module -3- from mounting.

### Installing

Install in reverse order of removal. The following should be observed:

### Specified torques

- ♦ ⇒ [“6.1 Assembly overview - accelerator module”, page 85](#)





## 7 Fuel pump

⇒ [“7.1 Checking fuel system pressurisation pump G6 ”, page 87](#)

⇒ [“7.2 Removing and installing suction-jet pump”, page 108](#)

⇒ [“7.3 Removing and installing fuel pump control unit J538 ”, page 109](#)

⇒ [“7.4 Checking suction-jet pump”, page 112](#)

### 7.1 Checking fuel system pressurisation pump - G6-

⇒ [“7.1.1 Checking operation and power supply of fuel pump”, page 87](#)

⇒ [“7.1.2 Checking fuel pressure”, page 90](#)

⇒ [“7.1.3 Checking holding pressure”, page 93](#)

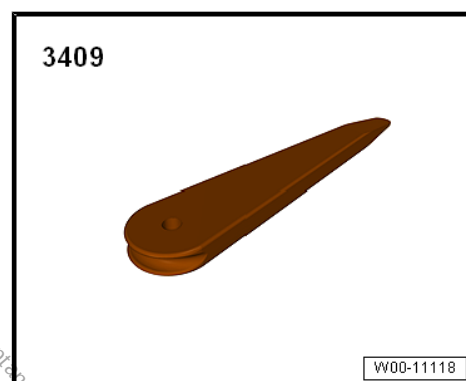
⇒ [“7.1.4 Checking fuel delivery rate, vehicles with front-wheel drive”, page 97](#)

⇒ [“7.1.5 Checking fuel delivery rate, vehicles with four-wheel drive”, page 102](#)

#### 7.1.1 Checking operation and power supply of fuel pump

Special tools and workshop equipment required

- ◆ Removal wedge - 3409-

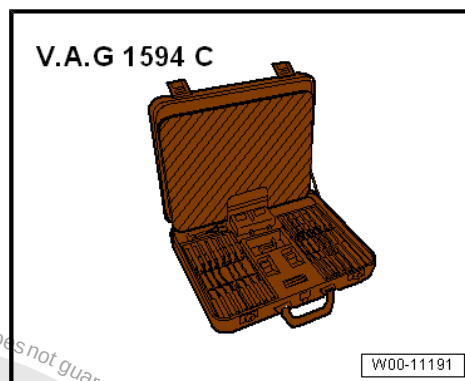


- ◆ Multimeter, e.g. hand-held multimeter - V.A.G 1526E-





◆ Adapter set - V.A.G 1594C-



◆ Vehicle diagnostic tester

**Test conditions:**

- Battery voltage must be at least 11.5 V. Charge battery → Electrical system; Rep. gr. 27 ; Battery; Charging battery .
- Fuse for fuel pump control unit - J538- OK ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Fuel pump control unit - J538- OK ⇒ Vehicle diagnostic tester.

**Test sequence**



**Note**

*Function of fuel pump is checked using final control diagnosis.*

- Connect vehicle diagnostic tester .
- Switch on ignition.
- Select final control diagnosis for fuel pump in vehicle self-diagnosis program.

The fuel pump must now run slowly up to maximum speed.



**Note**

- ◆ *The fuel pump runs very quietly.*
- ◆ *If the final control diagnosis is carried out several times in succession, it may be necessary to start the engine briefly before repeating the final control diagnosis.*

- Switch off ignition.

**If fuel pump does not run:**

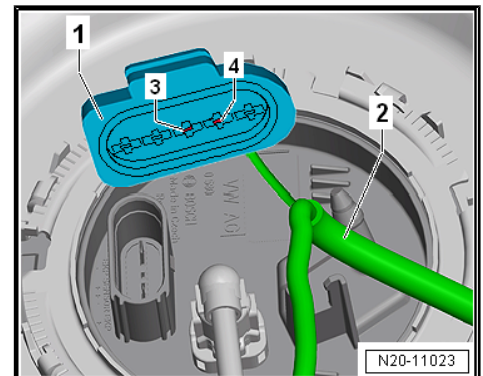
- Remove cover of assembly opening ⇒ [page 69](#) .
- Remove fuel pump control unit - J538- with wiring harness still attached ⇒ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.
- Ensure that connector on fuel pump control unit - J538- is fitted securely by pulling connector without pressing catch. If connector was not inserted correctly, repeat functional check of fuel pump.



- Release and pull off connector from fuel pump control unit - J538- .
- Check contacts on connector and on fuel pump control unit - J538- for damage.
- Check voltage supply between contacts -3- and -4- using multimeter ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Use auxiliary measuring set - V.A.G 1594C- to do this.
- Switch on ignition.
- Specification: approx. battery voltage

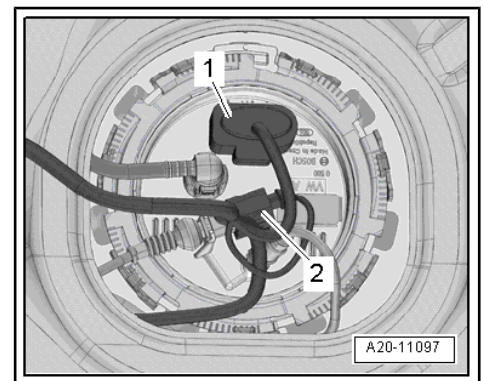
**If specification is not obtained**

- Locate and eliminate open circuit referring to current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



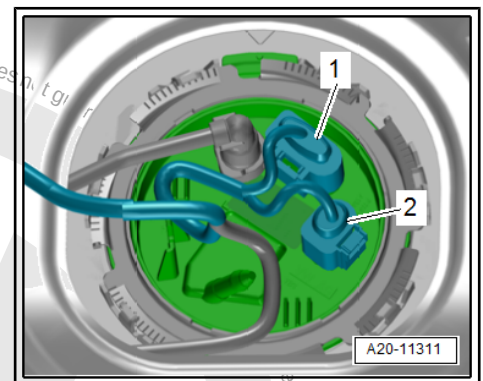
**If specification is attained on vehicles with front-wheel drive:**

- Check that connector -1- is fitted securely by pulling connector without pressing catch. If connector was not inserted correctly, repeat functional check of fuel pump.
- Release connector -1- and pull off.
- Check contacts on plug and on fuel delivery unit for damage.
- Check wiring harness between fuel pump control unit - J538- and fuel delivery unit ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



**If specification is attained on vehicles with four-wheel drive:**

- Check that connector -1- is fitted securely by pulling connector without pressing catch. If connector was not inserted correctly, repeat functional check of fuel pump.
- Release connector -1- and pull off.
- Check contacts on plug and on fuel delivery unit for damage.
- Check wiring harness between fuel pump control unit - J538- and fuel delivery unit ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



**If no fault is detected:**

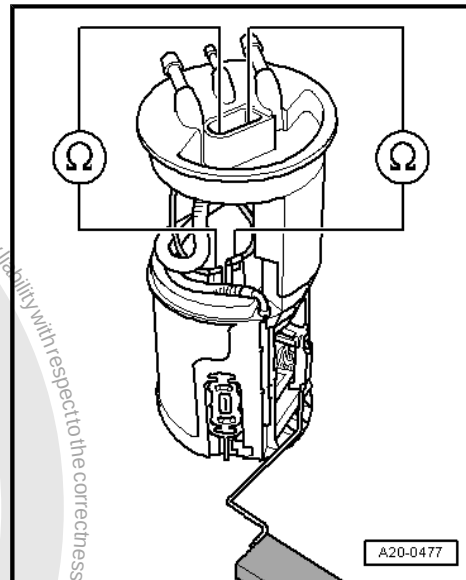
- Remove fuel delivery unit ⇒ [page 54](#) .



- Check electrical wiring between flange and fuel pump for continuity using an ohmmeter.
- Check contacts for damage.

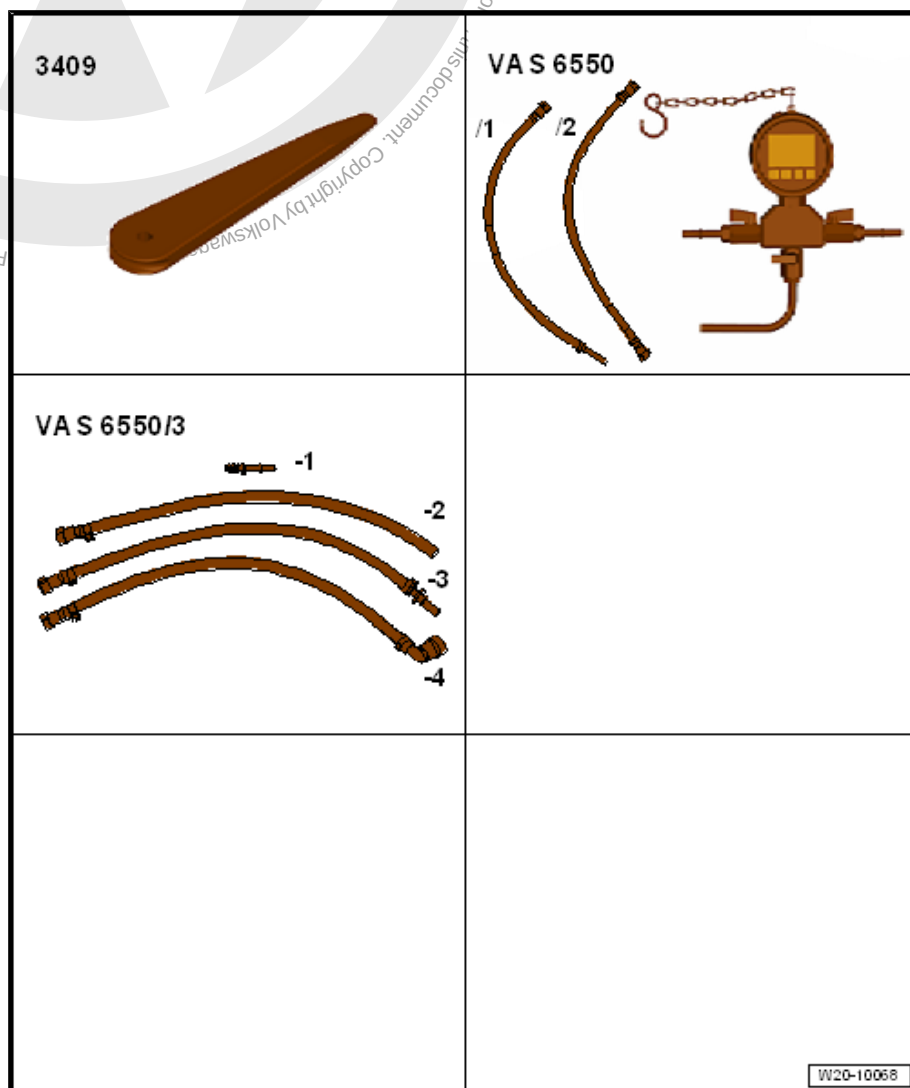
If no open circuit can be found:

- Fuel pump is defective; renew fuel delivery unit ⇒ [page 54](#)



## 7.1.2 Checking fuel pressure

Special tools and workshop equipment required



◆ Removal wedge - 3409-



- ◆ Pressure gauge - VAS 6550-
- ◆ Connector cable - VAS 6550/3-3-
- ◆ Connector cable - VAS 6550/3-4-
- ◆ Vehicle diagnostic tester

Condition:

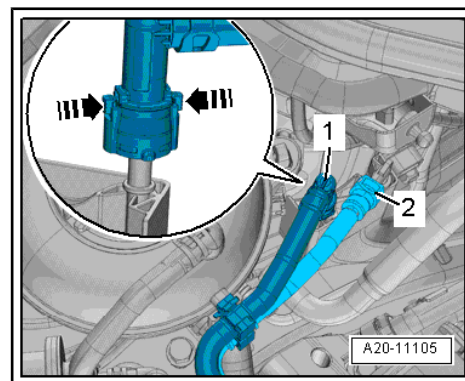
- Voltage supply OK ➔ [page 87](#) .
- Pull off supply line -1-. Separate plug-in connectors  
 ➔ [page 72](#) .

### ⚠ CAUTION

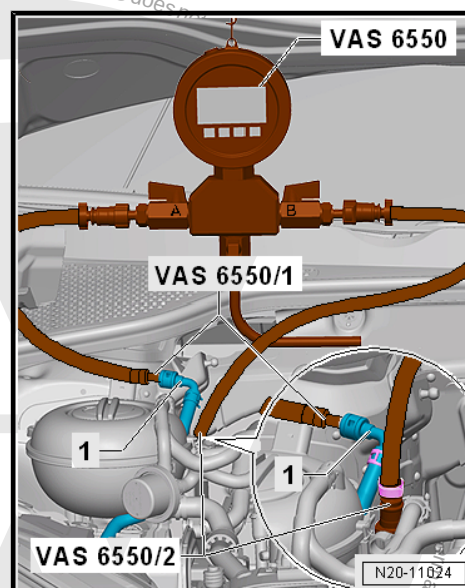
The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



- Collect escaping fuel with a cleaning cloth.
- Connect hose - VAS 6550- to connection -A- of pressure tester - VAS 6550/1- .
- Connect hose - VAS 6550/1- to fuel supply line -1- leading to engine.
- Connect hose - VAS 6550/2- to connection -B- of pressure tester - VAS 6550- .
- Use hose - VAS 6550- to connect fuel line leading to fuel tank with pressure tester - VAS 6550/2- .
- Ensure plug-in connectors are secure properly by pulling.





- Make sure that drain tap -C- on pressure tester -1- is closed.
- Shut-off valves -A- and -B- on pressure tester -1- are open.
- Connect vehicle diagnostic tester .
- Select final control diagnosis for fuel pump in vehicle self-diagnosis program.



#### Note

- ♦ *The fuel pump is now actuated to build up fuel pressure.*
- ♦ *If the final control diagnosis was carried out several times in succession, it may be necessary to start the engine briefly before repeating the final control diagnosis.*

- Read off fuel pressure on pressure gauge.

- Specification: 4.0 ... 7.0 bar

If fuel pressure is OK, check holding pressure ⇒ [page 93](#) .

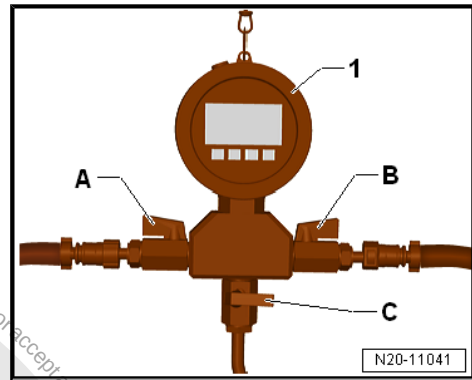
**If the specification is exceeded:**

- Pressure limiting valve in fuel delivery unit is defective.
- Renew fuel delivery unit ⇒ [page 54](#) .

**If specification is not obtained**

Proceed as follows to check fuel pressure at fuel delivery unit:

- Remove cover of assembly opening ⇒ [page 69](#) .
- Remove fuel pump control unit - J538- with wiring harness still attached ⇒ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.
- Pull fuel lines -1- off flange. Separate plug-in connectors ⇒ [page 72](#) .

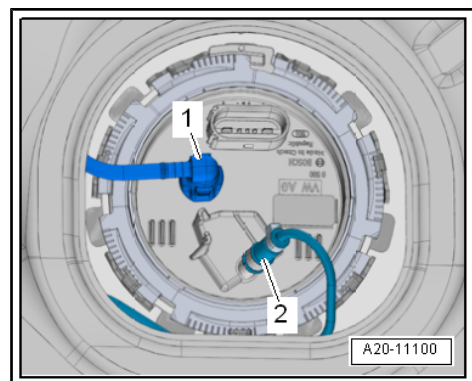


#### CAUTION

**The fuel system is pressurised.**

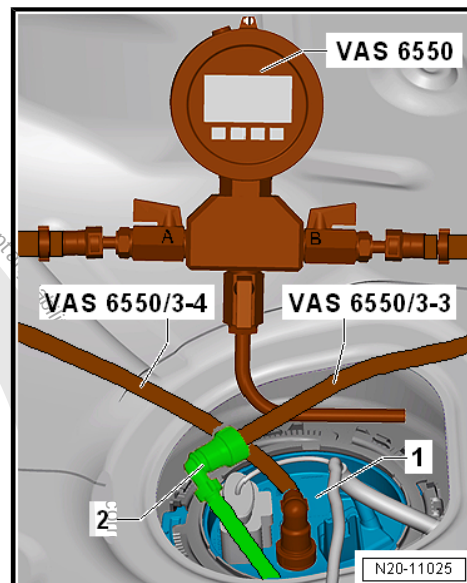
**Danger of injury through fuel spray.**

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.





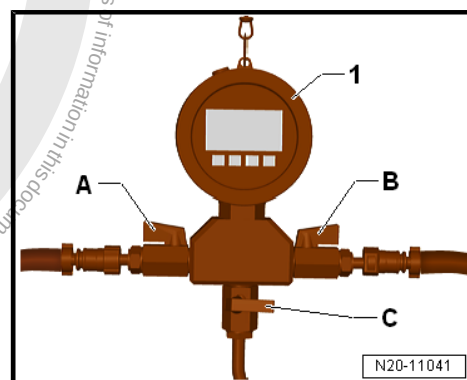
- Connect pressure tester - VAS 6550- with hose - VAS 6550/3-4- to fuel delivery unit -1-.
- Connect hose - VAS 6550/3-3- between pressure tester - VAS 6550- and fuel supply line -2-.
- Ensure plug-in connectors are secure properly by pulling.



- Make sure that drain tap -C- on pressure tester -1- is closed.
- Shut-off valves -A- and -B- on pressure tester -1- are open.
- Repeat final control diagnosis to build up fuel pressure.

**If reading matches specification:**

- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel line for leaks and damage.

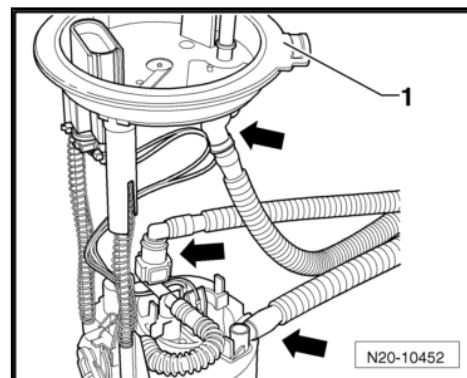


**If specification is not obtained**

- Remove fuel delivery unit ➔ [page 54](#) and check for contamination.
- Check that all hoses are connected -arrows-.
- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel lines for leaks and damage.

**If no fault is found:**

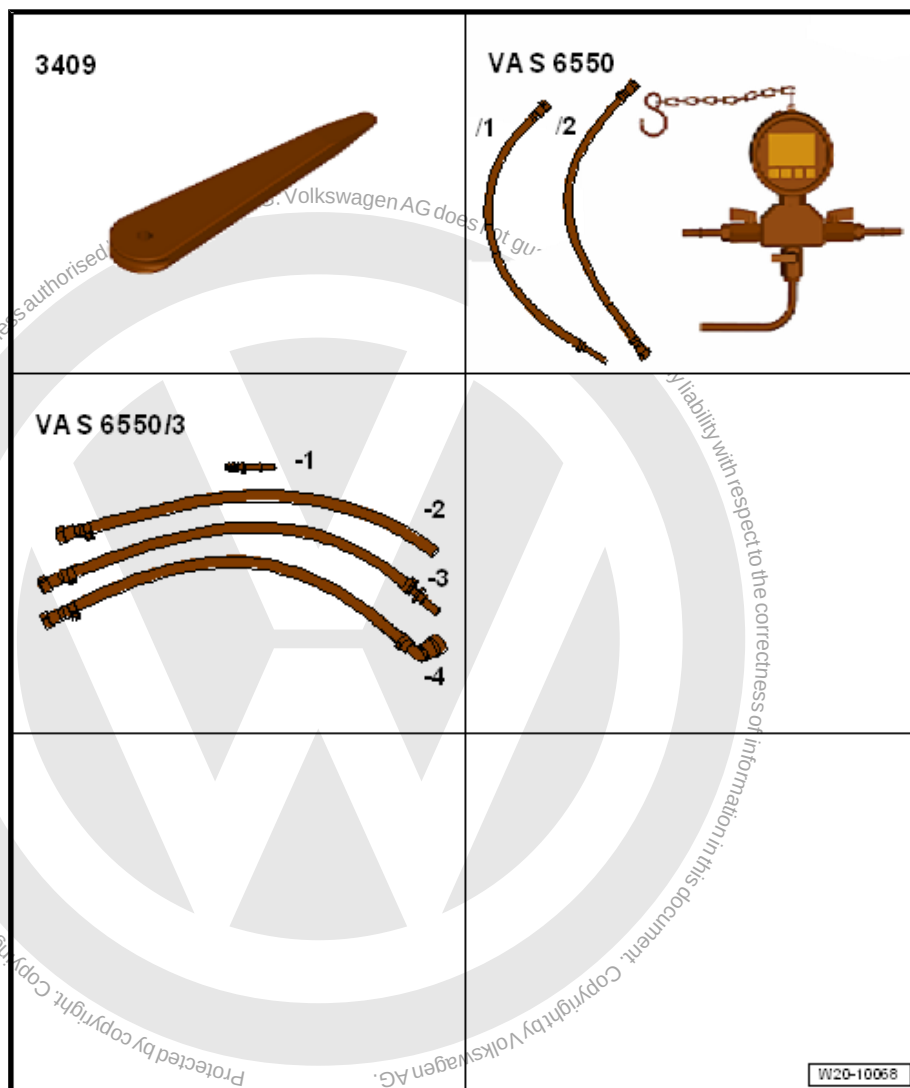
- Fuel pump is defective; renew fuel delivery unit ➔ [page 54](#) .



### 7.1.3 Checking holding pressure



### Special tools and workshop equipment required



- ◆ Pressure gauge - VAS 6550-
- ◆ Removal wedge - 3409-
- ◆ Connector cable - VAS 6550/3-
- ◆ Connector cable - VAS 6550/3-
- ◆ Vehicle diagnostic tester
- Fuel pressure OK and pressure tester - VAS 6550- connected.  
Check fuel pressure ⇒ [page 90](#) .



- Connect adapter - VAS 6550/2- between fuel line from fuel tank to shut-off tap -B- of pressure tester - VAS 6550- .
- Connect adapter - VAS 6550/1- between fuel line to engine -1- and shut-off tap -A- of pressure tester - VAS 6550- .

#### Test sequence

- Connect vehicle diagnostic tester .
- Select final control diagnosis for fuel pump in vehicle self-diagnosis program.

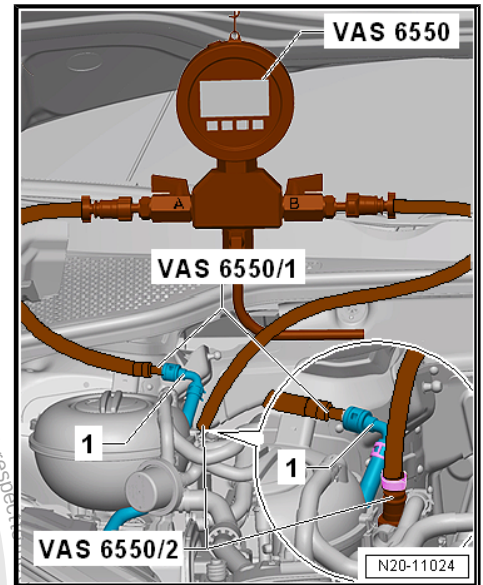


#### Note

- ◆ *The fuel pump is now actuated to build up fuel pressure.*
- ◆ *If the final control diagnosis was carried out several times in succession, it may be necessary to start the engine briefly before repeating the final control diagnosis.*
- Read off fuel pressure on pressure gauge.
  - Specification:  $\geq 4.0$  bar
- End self-diagnosis, and switch off ignition.
- Observe pressure drop on pressure gauge. After 10 minutes, pressure must not drop below 3.0 bar.

#### If the pressure drops:

Check all fuel lines for leaks and damage.





**If no fault is detected:**

- Make sure that drain tap -C- on pressure tester -1- is closed.
- Shut-off valves -A- and -B- on pressure tester -1- are open.
- Actuate fuel pump with final control diagnosis to build up fuel pressure.
- After pressure has built up, close shut-off valve -A- of pressure tester immediately. Lever is then at right angle to direction of flow.

**If the pressure now drops (leak on fuel tank side):**

Proceed as follows to check residual pressure on fuel delivery unit  
⇒ [page 96](#) .

**If the pressure does not drop now (leak on engine side):**



**Note**

*Search for leak on engine side. Repeat holding pressure check.  
This time, close shut-off valve -B- to check whether leak actually  
is on engine side.*

- If there is a leak on engine side, carry out external check of fuel pipes and high-pressure pump for leaks.

If no fault can be determined, check the injectors for leaks:

- Remove spark plugs.
- Open shut-off valves -A- and -B-. Actuate fuel pump with final control diagnosis.
- Check through spark plug holes whether fuel has collected on piston crown due to a leaking injector.

**Checking residual pressure on fuel delivery unit:**

- Remove cover of assembly opening ⇒ [page 69](#) .
- Remove fuel pump control unit - J538- with wiring harness still attached ⇒ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.
- Pull fuel line -1- off flange. Separate plug-in connectors ⇒ [page 72](#) .

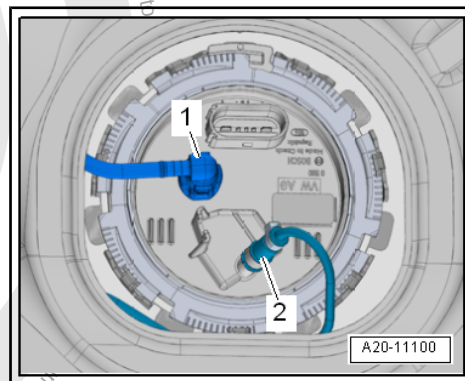
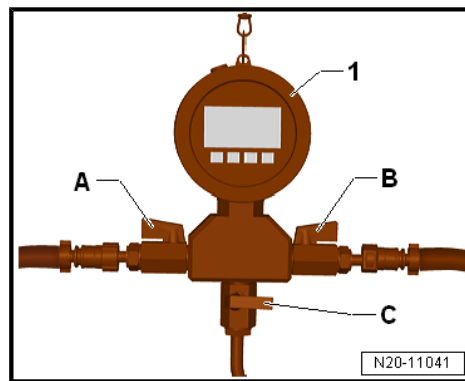


**CAUTION**

**The fuel system is pressurised.**

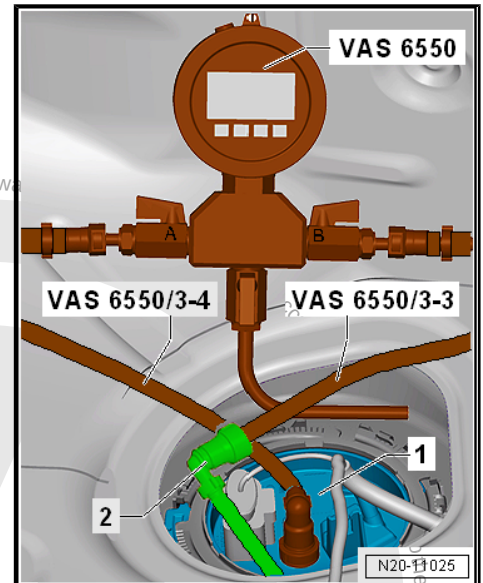
**Danger of injury through fuel spray.**

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.

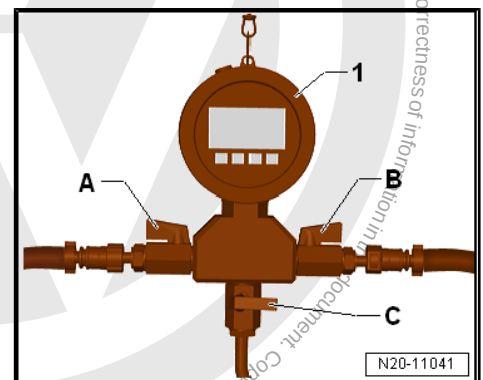




- Connect pressure tester - VAS 6550- to fuel delivery unit -1- by means of hose - VAS 6550/3-4- .
- Connect pressure tester - VAS 6550/3-3- to fuel line -2- by means of hose - VAS 6550- .
- Ensure plug-in connectors are secure properly by pulling.



- Make sure that drain tap -C- on pressure tester -1- is closed.
- Shut-off valves -A- and -B- on pressure tester -1- are open.
- Actuate fuel pump with final control diagnosis to build up fuel pressure.
- After pressure has built up, close shut-off tap -B- of pressure tester immediately. Lever is then at right angle to direction of flow.
- Repeat holding pressure check ➤ [page 95](#) .



**If pressure no longer drops:**

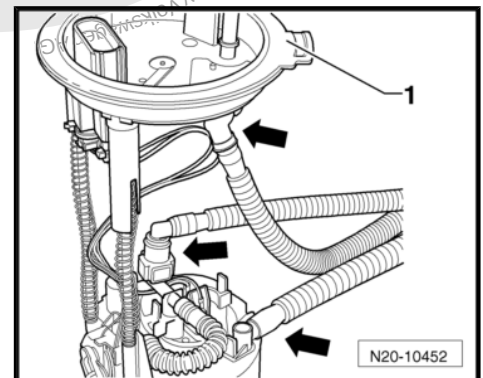
- Check fuel line for leaks.

**If the pressure drops again:**

- Open fuel delivery unit -1- ➤ [page 54](#) .
- Check that all hose connections -arrows- are connected.
- Check fuel lines for leaks and damage.

**If no fault is found:**

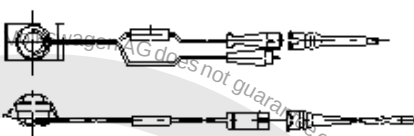
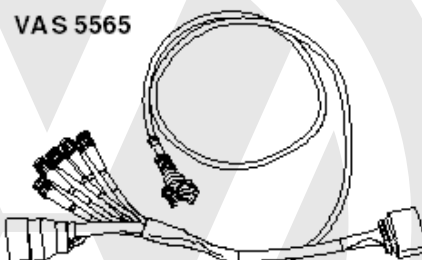
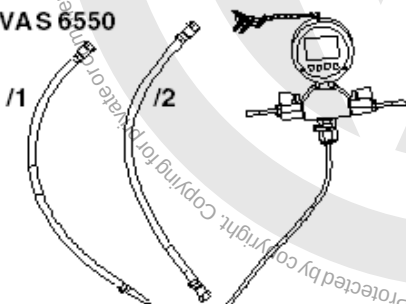
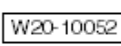
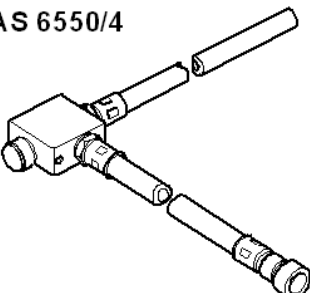
- Pressure retention valve in fuel delivery unit is defective; re-new fuel delivery unit ➤ [page 54](#) .



#### 7.1.4 Checking fuel delivery rate, vehicles with front-wheel drive

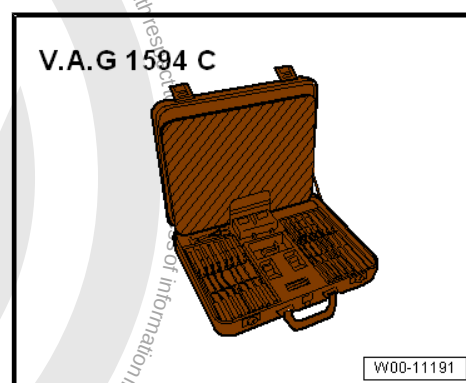


**Special tools and workshop  
equipment required**

|                                                                                                                                                                                                    |                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>3409</b><br>                                                                                                   | <b>V.A.G 1348/3A</b><br> |
| <b>V.A.G 1526E</b><br>                                                                                            | <b>VAS 5565</b><br>      |
| <b>VAS 6550</b><br>                                                                                              |                       |
| <b>VAS 6550/3</b><br><br> |                                                                                                            |
| <b>VAS 6550/4</b><br><br> |                                                                                                            |



- ◆ Removal wedge - 3409-
- ◆ Remote control for V.A.G. 1348 - V.A.G 1348/3A-
- ◆ Multimeter, e.g. hand-held multimeter - V.A.G 1526E-
- ◆ Test instrument adapter/DSO (5-pin) - VAS 5565-
- ◆ Pressure gauge - VAS 6550-
- ◆ Vehicle diagnostic tester
- ◆ Connector cable - VAS 6550/3-3-
- ◆ Connector cable - VAS 6550/3-4-
- ◆ Pressure regulating valve - VAS 6550/4-
- ◆ Measuring container, capacity  $\geq 3$  litre
- ◆ Adapter set - V.A.G 1594C-



Carry out the following work:

Checking fuel delivery rate in engine compartment, quick test:



**Note**

*The fuel delivery rate must first be checked in the engine compartment with the help of the function "Checking fuel delivery rate, quick test". If the minimum delivery rate is not achieved, a 2nd measurement must be carried out at the flange of the fuel delivery unit.*

- Connect vehicle diagnostic tester .
- Start Guided Functions.
- Select "Check fuel delivery rate, quick test".
- Follow instructions on vehicle diagnostic tester .



### If specification is not obtained

- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- Check fuel delivery rate, repeat quick test ⇒ [page 99](#) .

### If reading matches specification:

- Check fuel tank breather ⇒ [page 79](#) .

### If specification is not obtained

- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel lines for leaks and damage.

### If no fault is found:

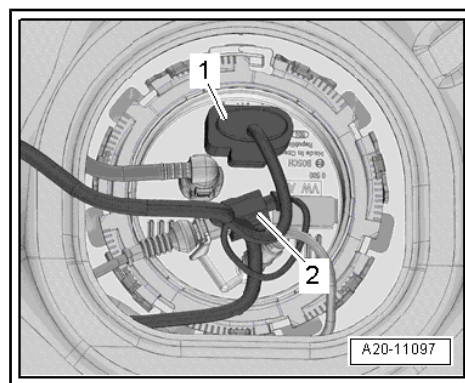
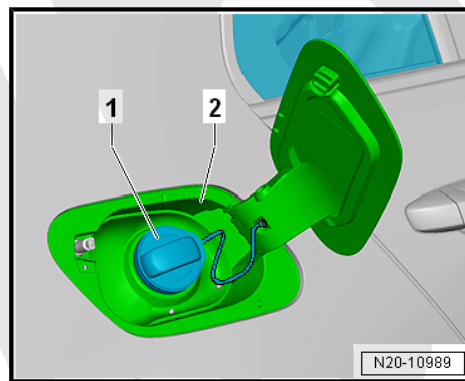
Proceed as follows to check fuel delivery rate at fuel delivery unit:

### Checking fuel delivery rate on fuel delivery unit:



#### Note

- ◆ *Separate plug-in connectors ⇒ [page 72](#) .*
- ◆ *When driving characteristic problems occur when the fuel tank is approx.  $\frac{1}{4}$  filled, then check fuel delivery rates with approx.  $\frac{1}{4}$  filled tank or less.*
- Voltage supply OK ⇒ [page 87](#) .
- Fuel pressure OK ⇒ [page 90](#) .
- Fuel pump control unit - J538- OK ⇒ Vehicle diagnostic tester.
- Connect battery charger ⇒ Electrical system; Rep. gr. 27 ; Battery; Charging battery .
- Remove cover of assembly opening ⇒ [page 69](#) .
- Remove fuel pump control unit - J538- with wiring harness still attached ⇒ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.
- Check that connector -1- is fitted securely by pulling connector without pressing catch. The connector may have caused a fault if it was not fitted correctly.
- Release connector -1- and pull off.
- Check contacts on plug and on fuel delivery unit for damage.
- If fitted, unclip connector -2- from retainer.



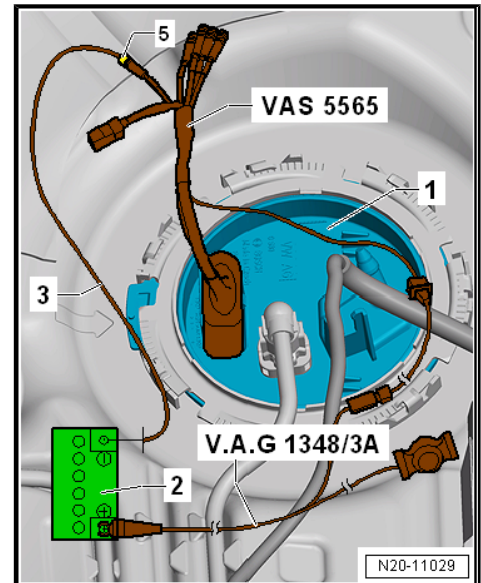


- Connect test instrument adapter/DSO (5-pin) - VAS 5565- to fuel delivery unit -1-.
- Connect remote control - V.A.G 1348/3A- to adapter - VAS 5565- and to battery positive terminal in engine compartment.
- Connect connection -5- (yellow) of test instrument adapter/DSO (5-pin) - VAS 5565- to battery negative terminal using suitable workshop equipment -3-.
- Also use auxiliary measuring set - V.A.G 1594C- for this purpose.



#### Note

*This step serves only to have the fuel pump running when the engine is stopped.*



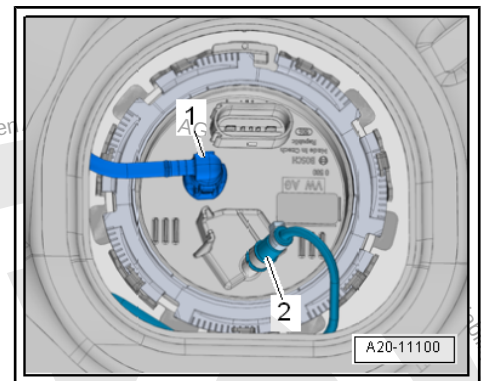
- Pull fuel lines -1- off flange. Separate plug-in connectors ➔ [page 72](#) .

#### CAUTION

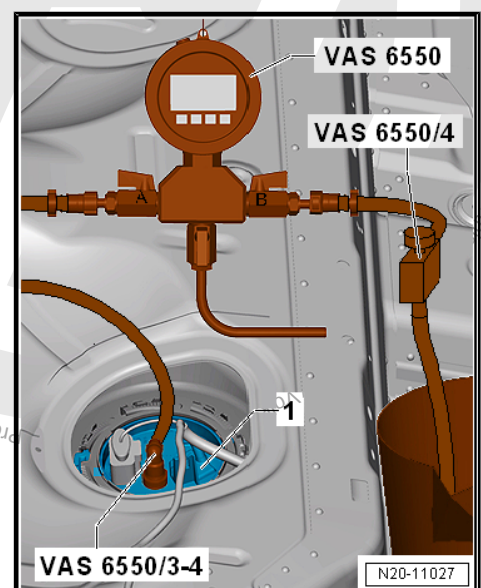
**The fuel system is pressurised.**

**Danger of injury through fuel spray.**

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



- The quantity delivered by the fuel pump depends on the battery voltage. Therefore, also connect multimeter to outputs -1- and -5- of test instrument/DSO adapter 5-pin - VAS 5565- .
- Connect multimeter with auxiliary measuring set - V.A.G 1594C- .
- Connect pressure tester - VAS 6550- with hose - VAS 6550/3-4- to fuel delivery unit -1-.
- Connect hose - VAS 6550/3-4- to shut-off tap -A-.
- Connect pressure regulator valve - VAS 6550/4- to connection -B- of pressure tester - VAS 6550- .
- Hold end of hose of pressure regulating valve - VAS 6550/4- in measuring container.



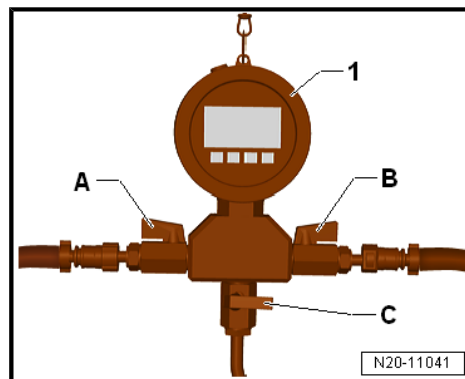


- Make sure that drain tap -C- on pressure tester -1- is closed.
- Shut-off valves -A- and -B- on pressure tester -1- are open.
- Press remote control - V.A.G 1348/3A- .



#### Note

*The fuel system pressurisation pump - G6- will be actuated.*



- Set pressure of 4.0 bar on pressure regulating valve -arrow- using adjuster wheel.
- From this point on do not change position of adjuster wheel any more.
- Drain measuring container.
- Press remote control for 30 seconds.
- While doing so, measure voltage at fuel pump (it must be at least 12 V).
- Check quantity delivered in measuring container.
- Specification: 1100 cm<sup>3</sup>/30 s.
- Onboard supply voltage: at least 12 V

#### If reading matches specification:

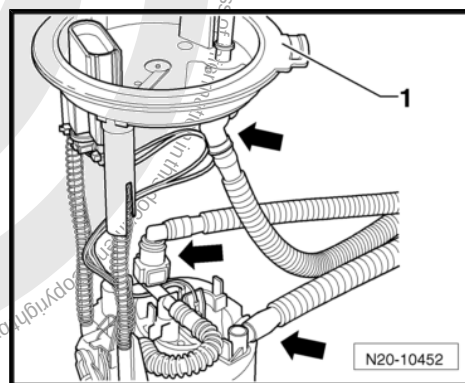
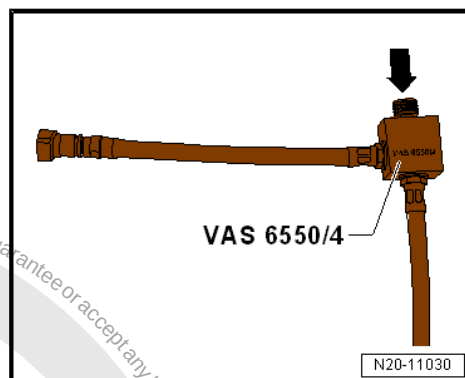
- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel lines for leaks and damage.

#### If specification is not obtained

- Remove fuel delivery unit ➔ [page 54](#) .
- Check filter strainer for soiling.
- Check that all fuel delivery unit -1- hose connections -arrows- are connected.
- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel lines for leaks and damage.

#### If no fault is detected:

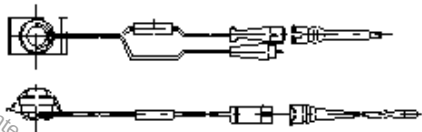
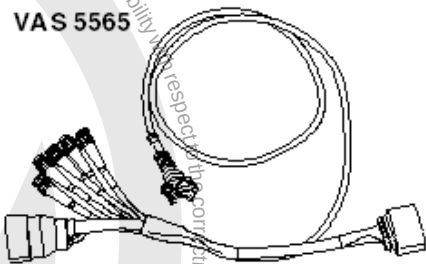
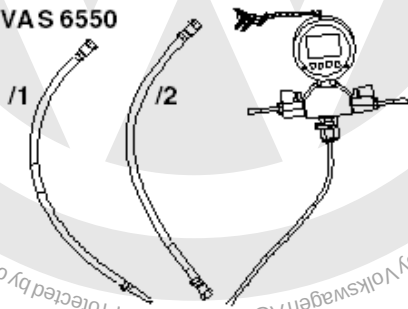
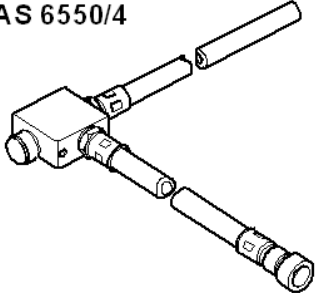
- Renew fuel delivery unit ➔ [page 54](#) .



### 7.1.5 Checking fuel delivery rate, vehicles with four-wheel drive

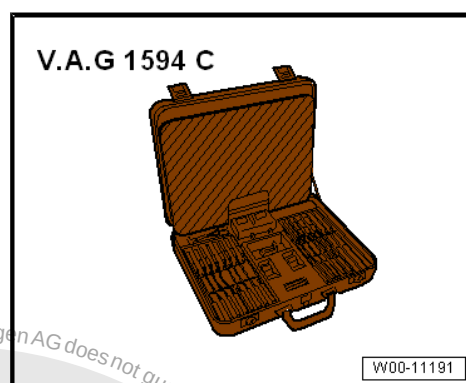


# Special tools and workshop equipment required

|                                                                                                                                        |                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>3409</b></p>                                    | <p><b>V.A.G 1348/3A</b></p>                         |
| <p><b>V.A.G 1526E</b></p>                             | <p><b>VAS 5565</b></p>                              |
| <p><b>VAS 6550</b></p> <p>/1</p> <p>/2</p>          | <p><b>W20-10052</b></p>                                                                                                                |
| <p><b>VAS 6550/3</b></p>  <p><b>W00-11468</b></p> | <p><b>VAS 6550/4</b></p>  <p><b>W00-11094</b></p> |



- ◆ Removal wedge - 3409-
- ◆ Remote control for V.A.G. 1348 - V.A.G 1348/3A-
- ◆ Multimeter, e.g. hand-held multimeter - V.A.G 1526E-
- ◆ Test instrument adapter/DSO (5-pin) - VAS 5565-
- ◆ Pressure gauge - VAS 6550-
- ◆ Vehicle diagnostic tester
- ◆ Connector cable - VAS 6550/3-3-
- ◆ Connector cable - VAS 6550/3-4-
- ◆ Pressure regulating valve - VAS 6550/4-
- ◆ Measuring container, capacity  $\geq 3$  litre
- ◆ Adapter set - V.A.G 1594C-



Carry out the following work:

Checking fuel delivery rate in engine compartment, quick test:



#### Note

*The fuel delivery rate must first be checked in the engine compartment with the help of the function "Checking fuel delivery rate, quick test". If the minimum delivery rate is not achieved, a 2nd measurement must be carried out at the flange of the fuel delivery unit.*

- Connect vehicle diagnostic tester .
- Start Guided Functions.
- Select "Check fuel delivery rate, quick test".
- Follow instructions on vehicle diagnostic tester .



**If specification is not obtained**

- Open tank flap unit -2-.
- Clean area around fuel filler neck.
- Unscrew cap -1- for fuel filler neck.
- Check fuel delivery rate, repeat quick test ➔ [page 104](#) .

**If reading matches specification:**

- Check fuel tank breather ➔ [page 79](#) .

**If specification is not obtained**

- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel lines for leaks and damage.

**If no fault is found:**

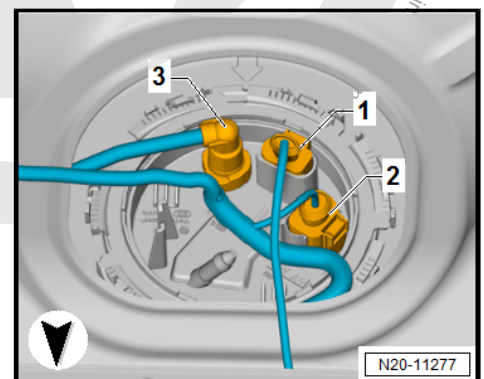
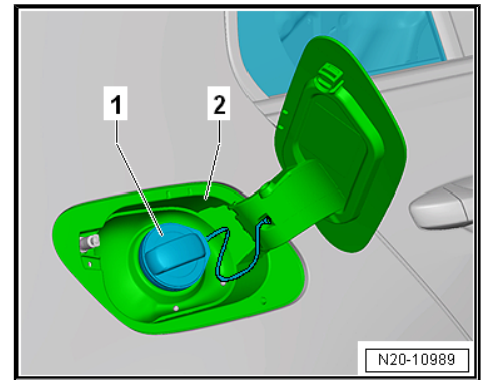
Proceed as follows to check fuel delivery rate at fuel delivery unit:

**Checking fuel delivery rate on fuel delivery unit:**



**Note**

- ◆ *Separate plug-in connectors ➔ [page 72](#) .*
- ◆ *When driving characteristic problems occur when the fuel tank is a approx.  $\frac{1}{4}$  filled, then check fuel delivery rates with approx.  $\frac{1}{4}$  filled tank or less.*
- Voltage supply OK ➔ [page 87](#) .
- Fuel pressure OK ➔ [page 90](#) .
- Fuel pump control unit - J538- OK ➔ Vehicle diagnostic tester.
- Connect battery charger ➔ Electrical system; Rep. gr. 27 ; Battery; Charging battery .
- Remove cover of assembly opening ➔ [page 69](#) .
- Remove fuel pump control unit - J538- with wiring harness still attached ➔ [page 109](#) .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Place fuel pump control unit - J538- together with wiring harness to one side.
- Check that connector -1- is fitted securely by pulling connector without pressing catch. The connector may have caused a fault if it was not fitted correctly.
- Release connector -1- and pull off.
- Check contacts on plug and on fuel delivery unit for damage.



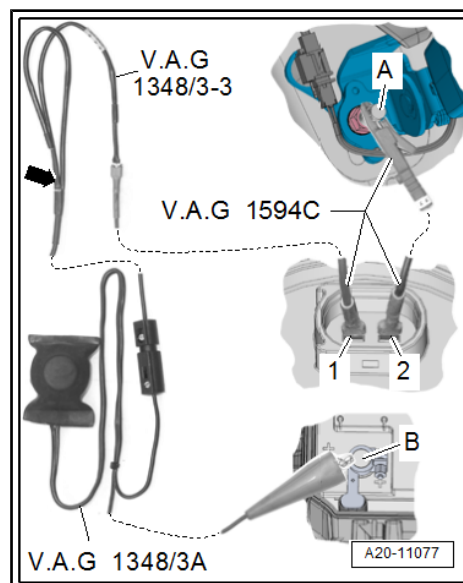


- Connect remote control for V.A.G 1348 - V.A.G 1348/3A- with adapter cable -V.A.G 1348/3-3- to contact -1- using auxiliary cable from auxiliary measuring set - V.A.G 1594C- .
- Tape off 2nd connector contact of the adapter cable -V.A.G 1348/3-3- with insulating tape -arrow- to prevent short circuits.
- Connect contact -2- to negative battery terminal -A- using a test lead from auxiliary measuring set - V.A.G 1594C- .
- Connect remote control - V.A.G 1348/3A- to battery positive terminal clamp -B-.



#### Note

*This step serves only to have the fuel pump running when the engine is stopped.*



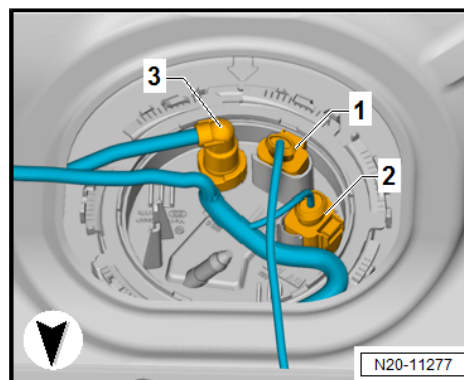
- Pull fuel lines -3- off flange. Separate plug-in connectors ➔ [page 72](#) .

#### CAUTION

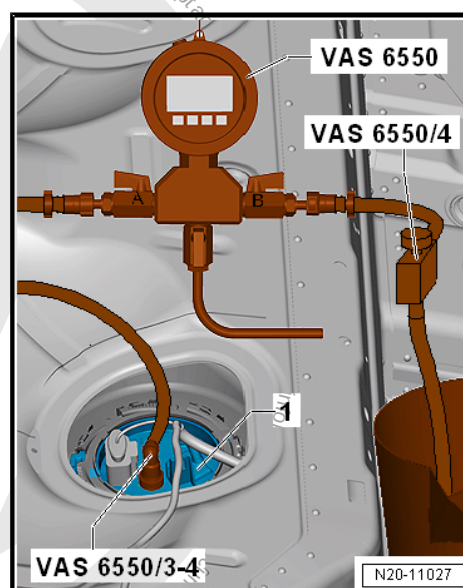
**The fuel system is pressurised.**

**Danger of injury through fuel spray.**

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



- The quantity delivered by the fuel pump depends on the battery voltage. Therefore, also connect multimeter to battery.
- Connect multimeter with auxiliary measuring set - V.A.G 1594C- .
- Connect pressure tester - VAS 6550- with hose - VAS 6550/3-4- to fuel delivery unit -1-.
- Connect hose - VAS 6550/3-4- to shut-off tap -A-.
- Connect pressure regulator valve - VAS 6550/4- to connection -B- of pressure tester - VAS 6550- .
- Hold end of hose of pressure regulating valve - VAS 6550/4- in measuring container.





- Make sure that drain tap -C- on pressure tester -1- is closed.
- Shut-off valves -A- and -B- on pressure tester -1- are open.
- Press remote control - V.A.G 1348/3A-



#### Note

The fuel system pressurisation pump - G6- will be actuated.

- Set pressure of 4.0 bar on pressure regulating valve -arrow- using adjuster wheel.
- From this point on do not change position of adjuster wheel any more.
- Drain measuring container.
- Press remote control for 60 seconds whilst measuring voltage at fuel pump.

- Compare delivered quantity of fuel with specification indicated in chart.

| Name of axis                                                   | Unit            |
|----------------------------------------------------------------|-----------------|
| Minimum delivery rate                                          | cm <sup>3</sup> |
| Voltage at fuel pump with engine not running and pump running. | Volt            |

Reading example:

During the test a voltage of 10.5 volts is measured. This equates to a minimum delivery rate of approx. 1200 cm<sup>3</sup> in 60 seconds.

**If reading matches specification:**

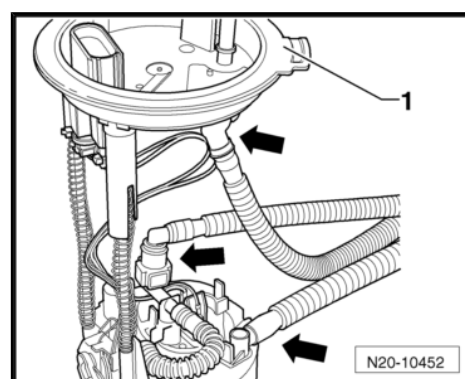
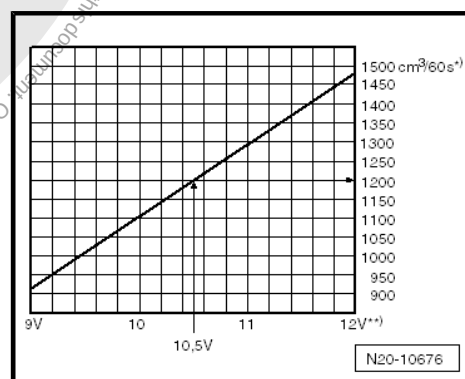
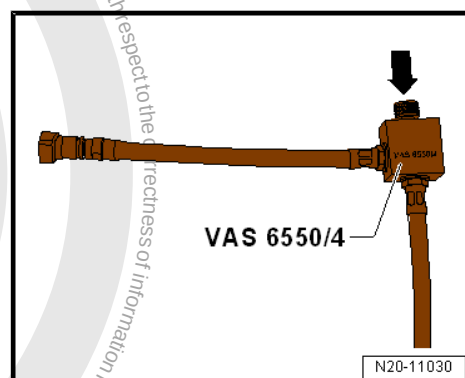
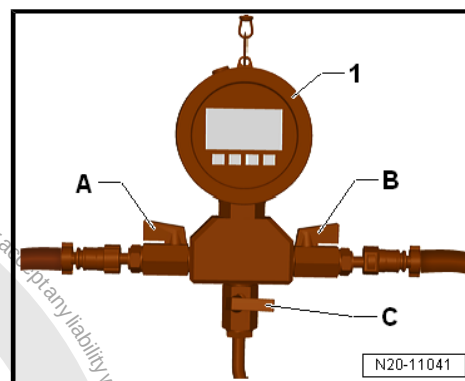
- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel lines for leaks and damage.

**If specification is not obtained**

- Remove fuel delivery unit ➔ [page 54](#) .
- Check filter strainer for soiling.
- Check that all fuel delivery unit -1- hose connections -arrows- are connected.
- Check fuel lines for possible restrictions (kinks) or blockages.
- Check fuel lines for leaks and damage.

**If no fault is detected:**

- Renew fuel delivery unit ➔ [page 54](#) .





## 7.2 Removing and installing suction-jet pump

### Special tools and workshop equipment required

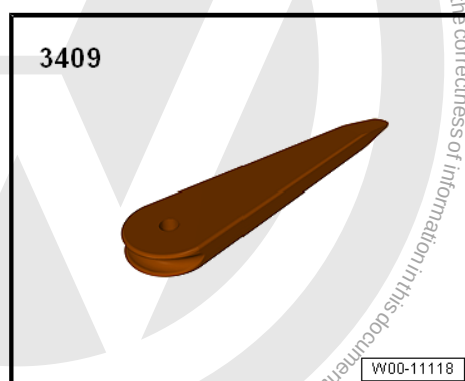
- ◆ Special wrench - T10202-



- ◆ Torque wrench - V.A.G 1332-



- ◆ Removal wedge - 3409-



### Removing

- Remove rear bench seat ⇒ General body repairs, interior;  
Rep. gr. 72 ; Rear seats; Removing and installing bench seat/  
individual seats .
- Drain fuel tank ⇒ [page 31](#) .

### CAUTION

The fuel system is pressurised.

Danger of injury through fuel spray.

- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



- Remove fuel delivery unit ➔ [page 54](#) .
- Removing fuel gauge sender 2 - G169- ➔ [page 113](#) .
- Pull suction-jet pump out through opening for fuel gauge sender 2 - G169- in fuel tank.



#### Note

- ◆ *Observe environmental regulations for disposal.*
- ◆ *Check fuel tank for foreign bodies and dirt.*

#### Installing

Install in reverse order of removal. During this step, observe the following:



#### Note

- ◆ *Make sure all components are mounted in the correct position.*
- ◆ *Separate plug-in connectors ➔ [page 72](#) .*
- ◆ *Renew seal if damaged.*
- Insert suction-jet pump through left opening into fuel tank.
- Guide suction-jet pump towards fuel delivery unit.
- Install fuel delivery unit ➔ [page 54](#) .
- Install fuel gauge sender 2 - G169- ➔ [page 113](#) .

#### Specified torques

- ◆ ➔ [“2.1 Assembly overview - fuel delivery unit and fuel gauge sender”, page 47](#)

### 7.3 Removing and installing fuel pump control unit - J538-

➔ [“7.3.1 Removing and installing control unit for fuel pump J538 , Passat and Arteon”, page 109](#)

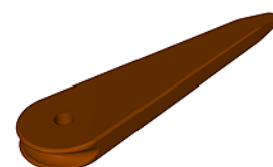
➔ [“7.3.2 Removing and installing fuel pump control unit J538 , Tiguan”, page 110](#)

#### 7.3.1 Removing and installing control unit for fuel pump - J538- , Passat and Arteon

Special tools and workshop equipment required

- ◆ Removal wedge - 3409-

3409

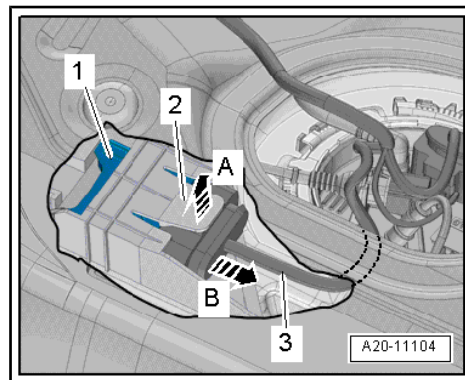


W00-11118



## Removing

- Move front seats to foremost position.
- Switch off ignition.
- Remove cover of assembly opening ➔ [page 69](#) .
- Press up tab -2- in -direction of arrow A-; to do so, reach between floor panel and fuel tank with your finger.
- At the same time, carefully pull fuel pump control unit - J538- -1- out of mounting -in direction of arrow B- by grasping hold of wiring harness -3-.
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Unplug electrical connector and remove fuel pump control unit - J538- .



## Installing

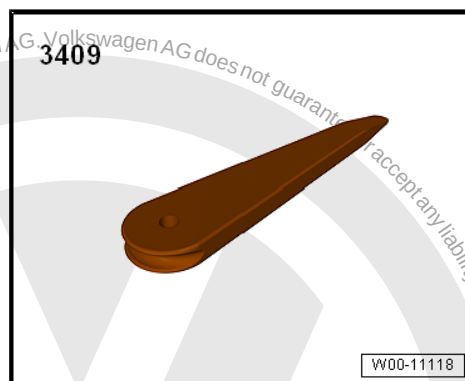
Install in reverse order of removal. The following should be observed:

- Connect wiring harness to fuel pump control unit - J538- .
- Check if connector is secured properly by pulling it.
- Insert fuel pump control unit - J538- into mounting bracket on fuel tank and push it in until it audibly engages.
- Pull on fuel pump control unit - J538- to make sure that it is properly secured.

## 7.3.2 Removing and installing fuel pump control unit - J538- , Tiguan

### Special tools and workshop equipment required

- ♦ Removal wedge - 3409-



## Removing

- Move front seats to foremost position.
- Switch off ignition.

### All-wheel drive:

- Remove cover of assembly opening on right ➔ [page 69](#) .

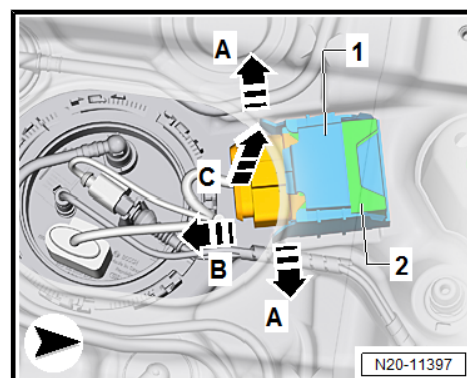
### Front-wheel drive:

- Remove cover of assembly opening in centre ➔ [page 69](#) .



### Continued for all vehicles:

- Press up tab -1- in direction of -arrow C-, reaching between floor panel and fuel tank with a finger to do so.
- At same time, remove fuel pump control unit - J538- -2- from mounting in direction of -arrow B- by carefully pulling on wiring harness.
- Remove fuel pump control unit - J538- upwards by carefully pulling on wiring harness.
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Detach electrical connector and remove fuel pump control unit - J538- .
- Guide fuel pump control unit - J538- out towards interior between fuel tank and floor panel.
- Unplug electrical connector and remove fuel pump control unit - J538- .



### Installing

Install in reverse order of removal. The following should be observed:

- Connect wiring harness to fuel pump control unit - J538- .
- Check if connector is secured properly by pulling it.
- Insert fuel pump control unit - J538- into mounting bracket on fuel tank and push it in until it audibly engages.
- Pull on fuel pump control unit - J538- to make sure that it is properly secured.





## 7.4 Checking suction-jet pump

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

### Function of suction-jet pump

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

### Faults caused by defective suction-jet pump



#### Note

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

If the suction-jet pump is not functioning, approx. 15 litres of fuel ( $\frac{1}{4}$  of tank capacity) remain in the left chamber of the fuel tank.

This fuel cannot be extracted by the fuel delivery unit.

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

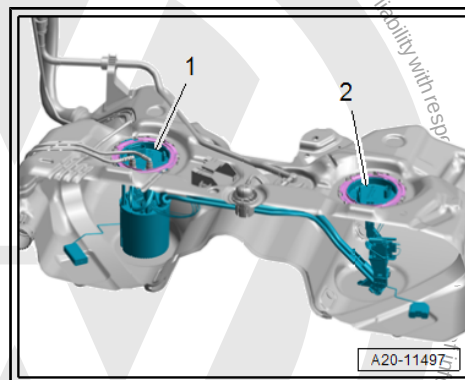
- Check fuel system pressurisation pump - G6- ⇒ [page 87](#) .

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

- Refill fuel tank with approx. 5 litres of fuel.
- Start engine.

If engine starts OK now:

- Renew suction-jet pump ⇒ [page 108](#) .





## 8 Senders and sensors

⇒ ["8.1 Assembly overview - fuel quality sender", page 113](#)

⇒ ["8.2 Removing and installing fuel quality sender G446", page 113](#)

### 8.1 Assembly overview - fuel quality sender

#### 1 - Bracket

#### 2 - Bolt

- ☐ Qty. 2
- ☐ 8 Nm

#### 3 - Fuel line

- ☐ From fuel tank

#### 4 - Nut

- ☐ Qty. 2
- ☐ 8 Nm

#### 5 - Fuel quality sender - G446-

- ☐ Removing and installing  
 ⇒ [page 113](#)

#### 6 - Connector

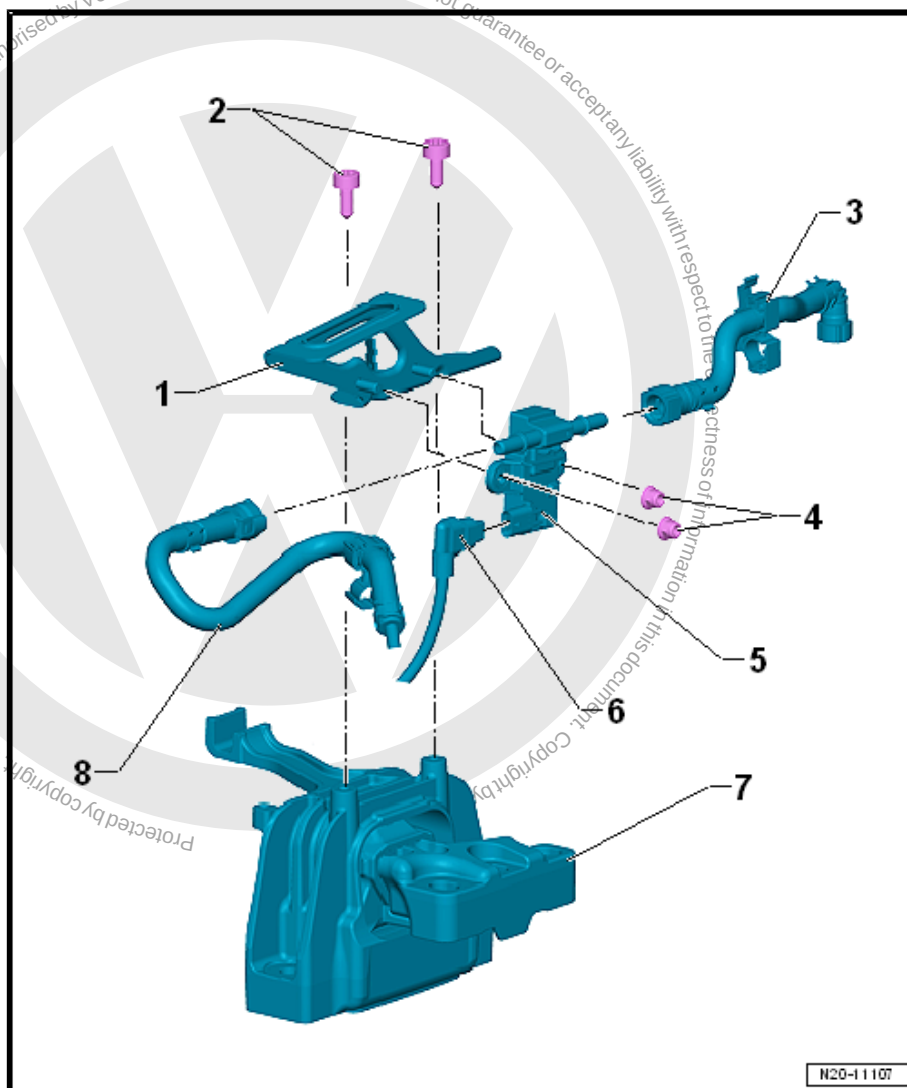
- ☐ For fuel quality sender - G446-

#### 7 - Engine mounting

- ☐ ⇒ Rep. gr. 10: Assembly mountings; Assembly overview - assembly mountings

#### 8 - Fuel line

- ☐ To engine

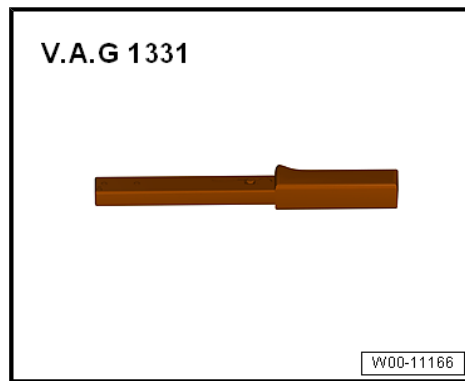


### 8.2 Removing and installing fuel quality sender - G446-

Special tools and workshop equipment required



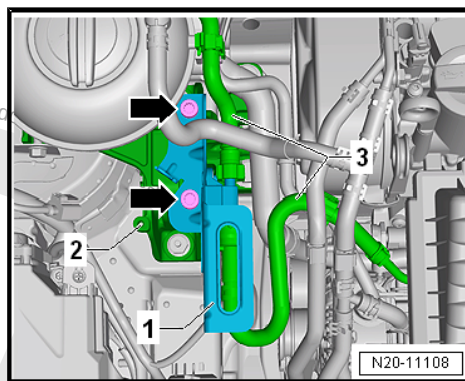
- ◆ Torque wrench - V.A.G 1331-



### Removing

If fuel quality sender - G446- is only to be unbolted from engine mounting:

- Unscrew bolts -arrows-.
- Lay bracket -1- with fuel quality sender - G446- aside with lines -3- still connected.

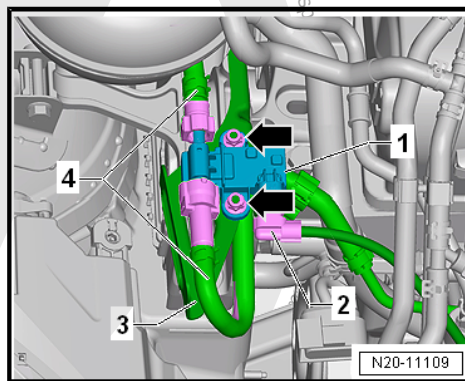


If fuel quality sender - G446- with bracket is to be removed:

- Unbolt bracket -3- ➔ [page 114](#) and turn it over.
- Release and detach connector -2- from fuel quality sender - G446- -1-.
- Pull fuel lines -4- off fuel quality sender - G446- -1-. Separate plug-in connectors ➔ [page 72](#) .

If fuel quality sender - G446- is to be removed from bracket:

- Remove nuts -arrows- from bracket -3-.
- Remove fuel quality sender - G446- -1- from bracket -3-.



### Installing

Install in reverse order of removal. The following should be observed:

### Specified torques

- ◆ ➔ ["8.1 Assembly overview - fuel quality sender", page 113](#)



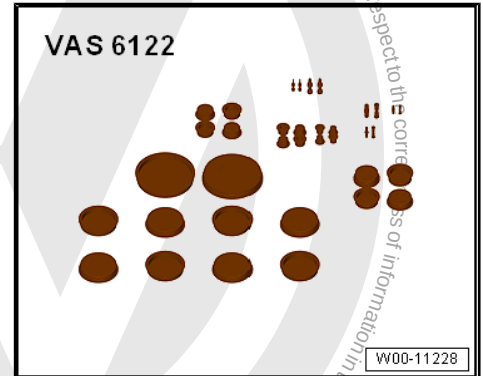
## 9 Lines

⇒ **"9.1 Removing and installing fuel lines", page 115**

### 9.1 Removing and installing fuel lines

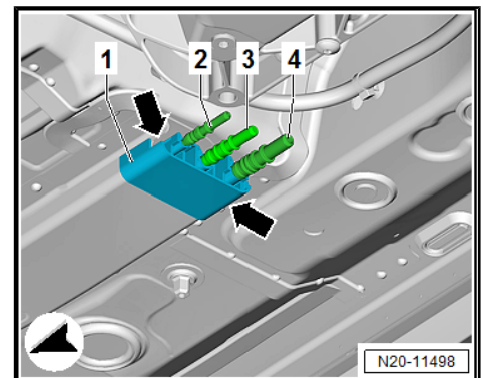
#### Special tools and workshop equipment required

- ◆ Set of plugs for engine - VAS 6122-



#### Removing

- Seal off all open lines and connections with clean plugs from engine bung set - VAS 6122- .
- Remove underbody cladding on right side in front of rear axle  
 ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding; Assembly overview - underbody cladding .
- Detach underbody cladding on right side and lower ⇒ General body repair, exterior; Rep. gr. 66 ; Underbody cladding; Assembly overview - underbody cladding .
- Disconnect fuel lines on underbody ⇒ **page 72** .
- Unclip retainers -1- on underbody -arrows-.
- Unclip retainers -1- on fuel lines.
- Secure a pulling aid (e.g. cable or cord) to fuel lines.
- The pulling aid eases reinstallation; choose an appropriate length.
- Use adhesive tape to secure pulling aid.
- Lower vehicle using lifting platform.
- Pull off fuel supply lines -1- and -2-. Separate plug-in connectors ⇒ **page 72** .

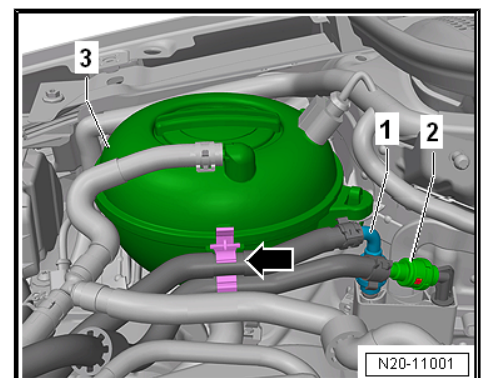


#### **CAUTION**

The fuel system is pressurised.

Danger of injury through fuel spray.

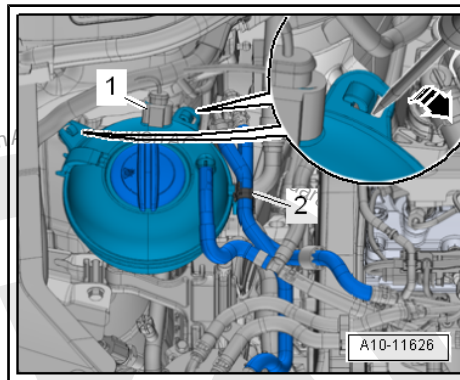
- Wear protective goggles.
- Wear protective gloves.
- To release pressure, wrap a clean cloth around the connection and carefully loosen the connection.



- Unclip fuel lines -1- and -2- from retainer -arrow- on coolant expansion tank -3-.

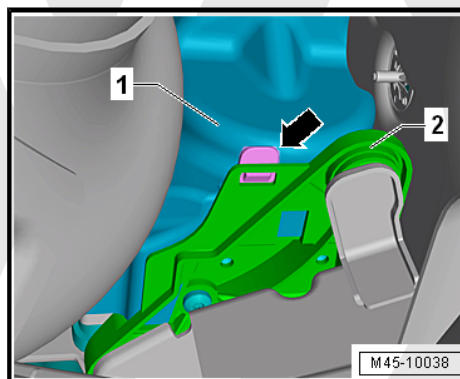


- Disconnect connector -1-.
- Remove coolant hoses from engine. To do this, open retainers.
- Using a screwdriver, release fasteners -arrow- and move coolant expansion tank to one side.
- Open refrigerant line retainers on right wheel housing.
- Unclip refrigerant lines ⇒ Heating, air conditioning; Rep. gr. 87 ; Refrigerant circuit; Removing and installing refrigerant lines with internal heat exchanger .



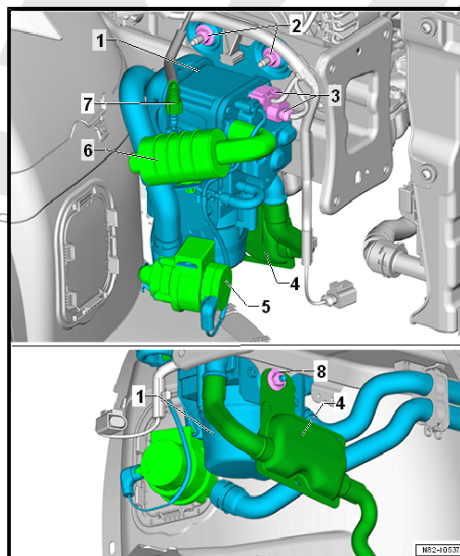
#### Left-hand drive:

- If fitted, remove heat shield -1- on ABS hydraulic unit - N55- .
- To do this, unclip heat shield -1- from bracket -2- -arrow-.



#### Vehicles with auxiliary heater

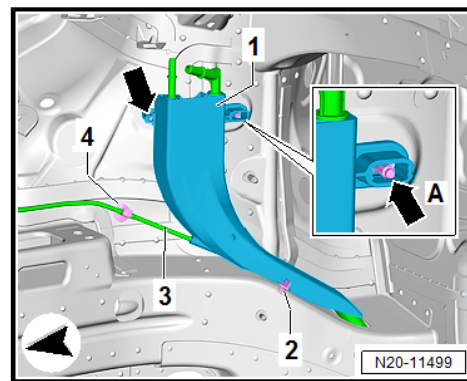
- Remove front part of wheel housing liner or front right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview - front wheel housing liner .
- Release and pull off fuel line -7-.
- Unclip fuel line from retainers, and guide it out.
- Unclip retainers for refrigerant lines from body ⇒ Heating, air conditioning; Rep. gr. 87 ; Refrigerant circuit; Removing and installing refrigerant lines with internal heat exchanger .
- Guide out fuel line from underneath refrigerant lines and engine mounting.





### Continued for all vehicles:

- Unclip shield -1- from stud on body -arrows-.
- Unclip guard -1- from longitudinal member -2-.
- If fitted, detach clip -4- for fuel line of auxiliary heater -3- from body.
- Unclip retainer -2- for guard from longitudinal member.
- Pull out lines upwards.
- While doing this, just turn the lines carefully, do not jerk them.
- Unclip lines and remove screen upwards.



### Installing:

- Detach pulling aid from old lines.
- Make sure that the sealing caps are properly seated on the new lines.
- If necessary, seal open lines with suitable plugs from engine bung set - VAS 6122- .



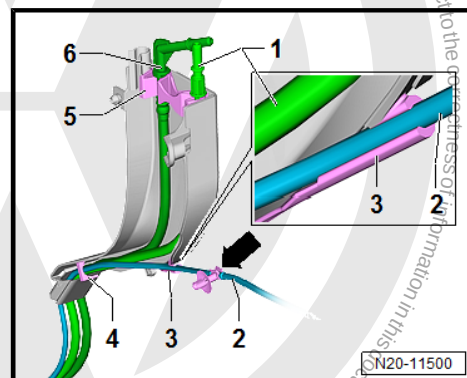
### Note

- ◆ *The fuel line, breather line and fuel line for auxiliary heater are installed together.*
- ◆ *If necessary, use adhesive tape to fix the lines in position.*

- Insert lines into guides on guard as shown in illustration, and clip them in ➔ [page 117](#) .
- Do not clip in fuel lines in upper area of guard until after they have been guided in ➔ [page 117](#) .
- Secure pulling aid to fuel lines.
- Use adhesive tape to secure pulling aid.
- Make sure that the pulling aid is only attached in the front area of the lines.
- Close slotted guide at bottom area of guard with adhesive tape to prevent lines from slipping out.
- Fit fuel lines together with guard to opening in longitudinal member.

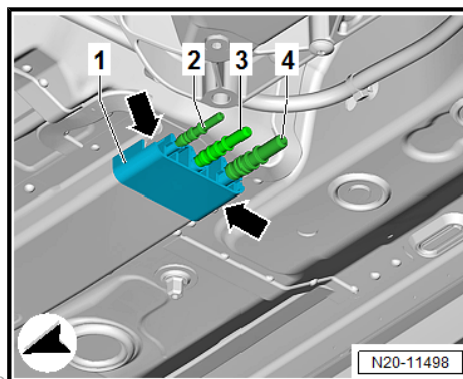
### Installation position of lines on guard:

- 1 - Fuel supply line
  - 2 - Fuel line for auxiliary heater
  - 3 - Guide for fuel line for auxiliary heater
  - 4 - Bottom line guide
  - 5 - Retainers for lines in area of coupling point
  - 6 - Breather line
- Push in fuel lines collectively from front to rear.



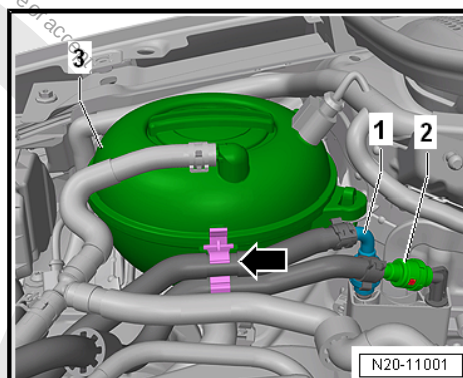


- Clip lines into retainer on underbody -1-.
- Then clip retainer onto underbody



#### Installation position of fuel lines at coupling point in engine compartment:

- 1 - Fuel supply line
- 2 - Breather line



#### Installation position of fuel lines on underbody:

- 2 - Breather line
- 3 - Fuel supply line
- 4 - Fuel line for auxiliary heater

#### Specified torques:

- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Assembly overview- front wheel housing liner .
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cover

