

Audi 100 1991 ➤

Fuel supply system - petrol engines									
Engine ID	AAD	AAE	AAH	AAN	AAR	ABB	ABC	ABH	ABK
	ACE	ACK	ACZ	ADA	ADR	ADW	AEC	AEJ	AHK



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List of Workshop Manual Repair GroupsList of Workshop Manual
Repair GroupsList of Workshop Manual Repair Groups
Audi 100 1991 ➤

Fuel supply system - petrol engines

Repair Group

20 - Fuel supply system



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

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20 - Fuel supply system

1 - Notes on performing work on fuel supply system

1.1 - Notes on performing work on fuel supply system

1.2 - General repair instructions

Heed safety precautions => Page **1** .

Observe rules for cleanliness =>Page **2** .

Check fuel-pump relay and actuation.

=> Injection and Ignition System; Repair Group 24

=> Injection and Ignition System; Repair Group 25

1.3 - Safety precautions when working on fuel supply system

Attention:

- ◆ **Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.**
- ◆ **After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.**

Take the following measures before starting work on fuel supply system:

- ◆ Disconnect battery earth strap with ignition switched off.
- ◆ Briefly open fuel tank cap and close again.

Pay attention to the following when removing and installing components from inside full or partially filled fuel tank:

Attention:

Fuel tank may only be partially filled. The amount of fuel which can be left in the tank is indicated at the appropriate location in the text. Drain fuel tank if necessary. Procedure for front-wheel drive vehicles => Page **67** .

- ◆ Before starting work, switch on exhaust extraction system and place extraction hose in the vicinity of the fuel tank assembly opening to draw off the fuel vapours escaping.
If no exhaust extraction system is available, use can be made of a radial fan with a displacement of more than 15 m³/h provided that motor is not in air flow.
- ◆ Do not allow fuel to come into contact with skin. Wear fuel-resistant gloves.

Pay attention to the following when removing and installing fuel tank:



Attention:

Fuel tank must be empty to reduce weight. Drain fuel tank if necessary. Procedure for front-wheel drive vehicles
=> Page **67**.

1.4 - Rules for cleanliness

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

- ♦ Carefully clean all joints and adjacent areas before disconnecting.
- ♦ Place parts removed on a clean surface and cover them over. Do not use fluffy cloths.
- ♦ Carefully cover or seal opened components if repairs are not to be performed immediately.
- ♦ Only install clean components:
Do not remove replacement parts from wrapping until immediately prior to installation.
Do not use parts that have been stored loose (e.g. in tool boxes).
- ♦ When system is open:
Do not work with compressed air.
Do not move vehicle unless absolutely necessary.

2 - Fuel supply system - Front-wheel drive

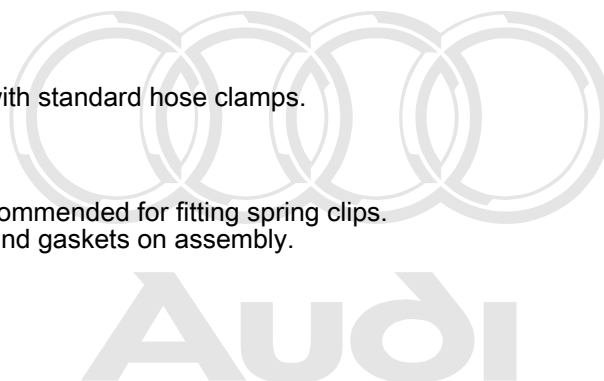
2.1 - Fuel supply system - Front-wheel drive

Notes:

- ♦ Secure all hose connections with standard hose clamps.

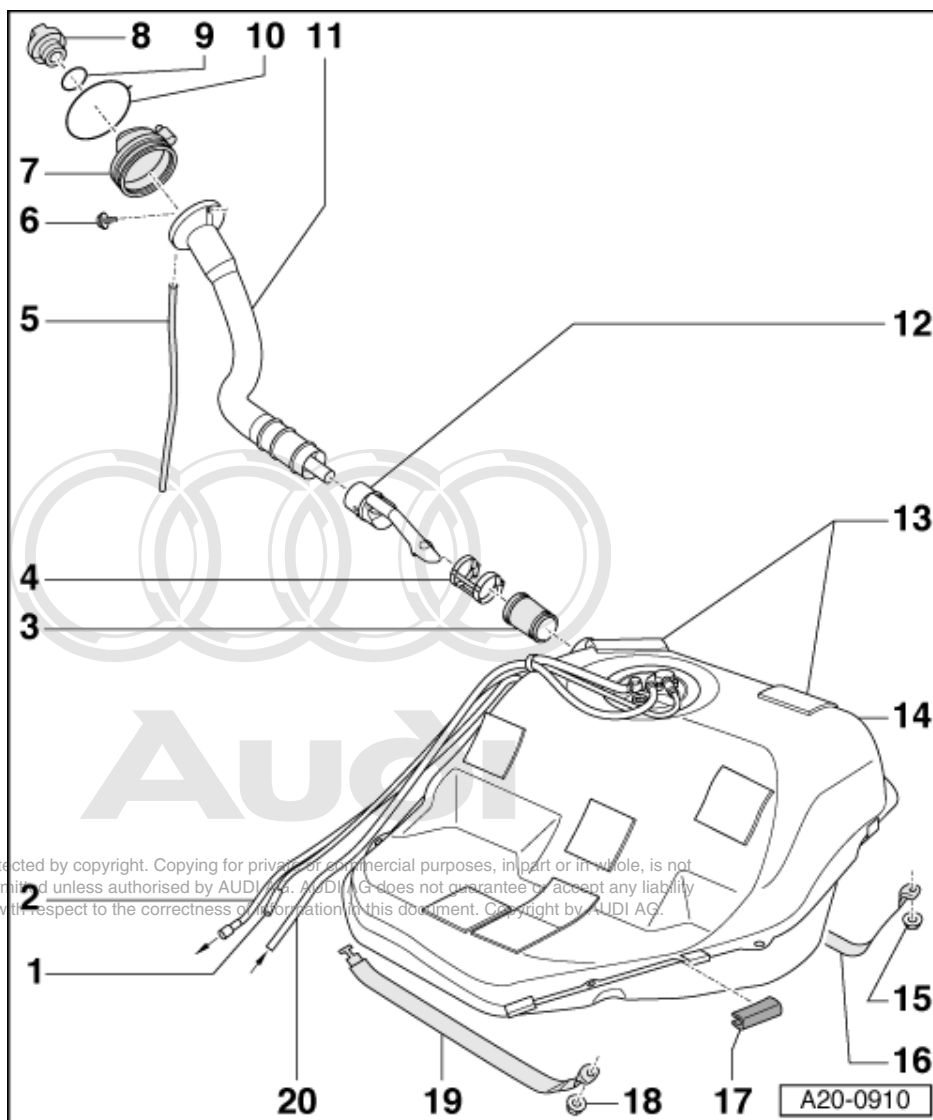
=> Parts List

- ♦ Special tool V.A.G 1921 is recommended for fitting spring clips.
- ♦ Always replace sealing rings and gaskets on assembly.

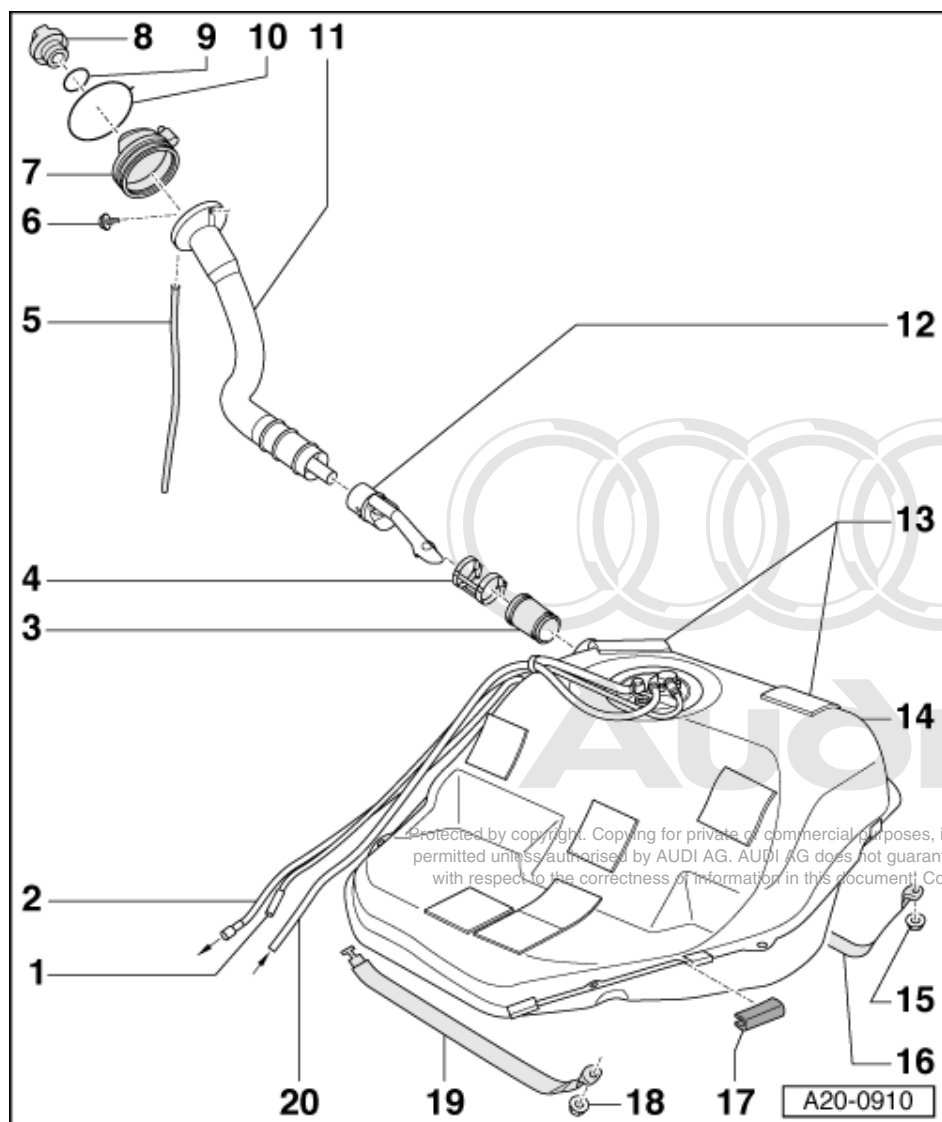


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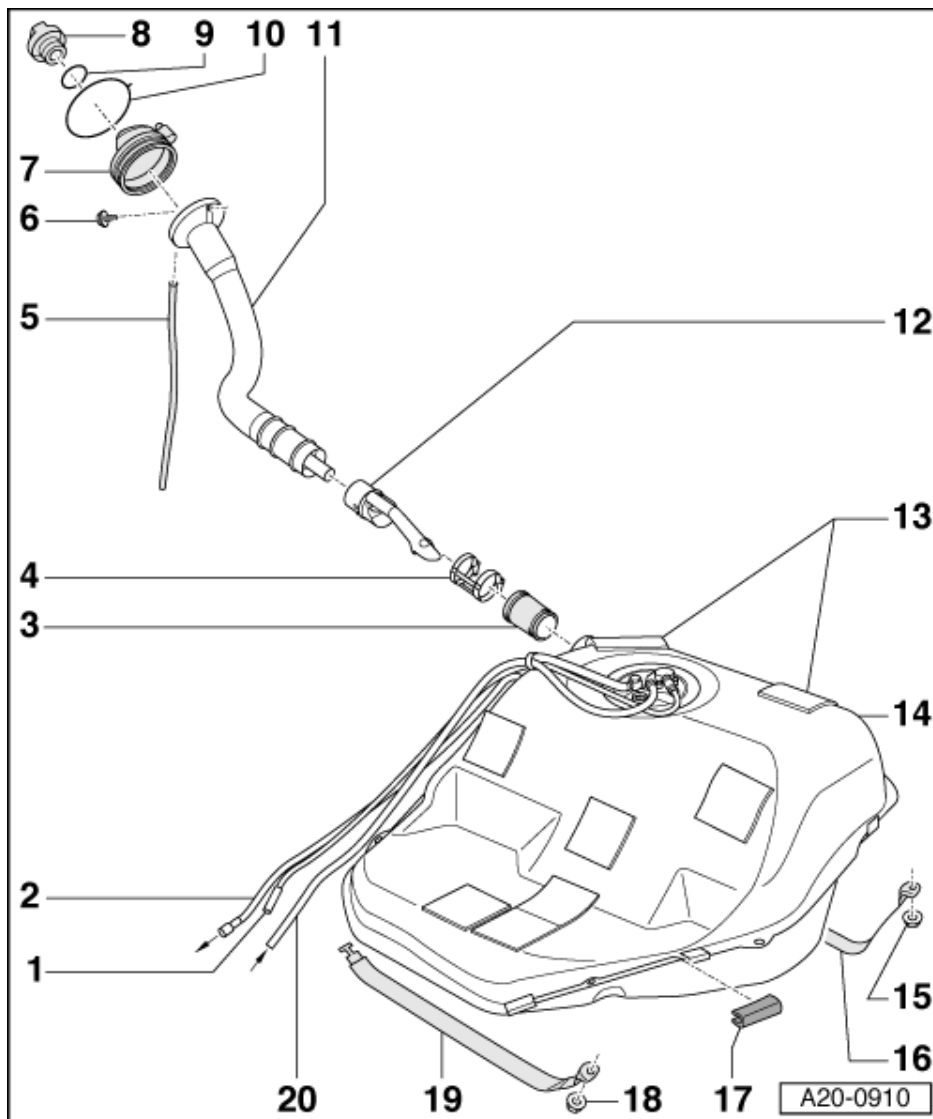
2.2 - Exploded view of components: Fuel tank with attachments



- 1 Breather pipe**
- ♦ To activated charcoal filter in front right wheel housing
 - ♦ Do not kink
 - ♦ Attached with cable tie to fuel tank
- 2 Fuel supply pipe**
- ♦ To fuel filter
 - ♦ Do not kink
 - ♦ Attached with cable tie to fuel tank
- 3 Adapter hose**
- 4 Double hose clamp**
- ♦ Installation position => Fig. 6
- 5 Overflow hose**
- ♦ Engage in wheel housing



- 6 **Oval-head bolt, 1 Nm**
- 7 **Rubber adapter**
- 8 **Cap**
- 9 **Sealing ring**
 - ◆ Replace if damaged
- 10 **Tensioning ring**
- 11 **Fuel filler neck**
 - ◆ Removing and installing=>Page 8
- 12 **Insert**
 - ◆ With non-return flap
- 13 **Pad**
 - ◆ Installation position => Fig. 6
- 14 **Fuel tank**
 - ◆ Removing and installing=>Page 8



15 23 Nm

16 Rear securing strap

- ♦ Engage on underside of vehicle on right

17 Edge strip

- ♦ Installation position => Fig. 6

18 23 Nm

19 Front securing strap

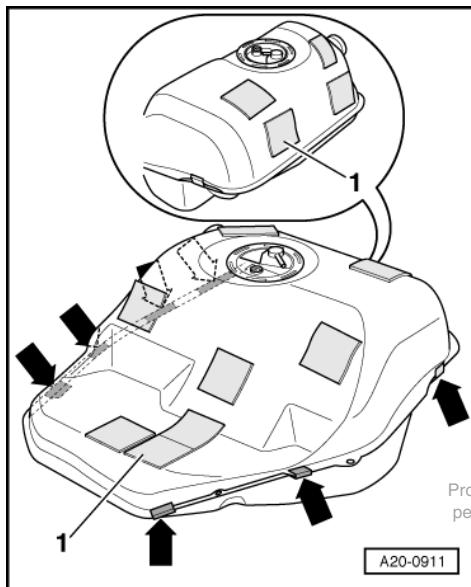
- ♦ Engage on underside of vehicle on right

20 Fuel return pipe

- ♦ From engine
- ♦ Do not kink
- ♦ Attached with cable tie to fuel tank



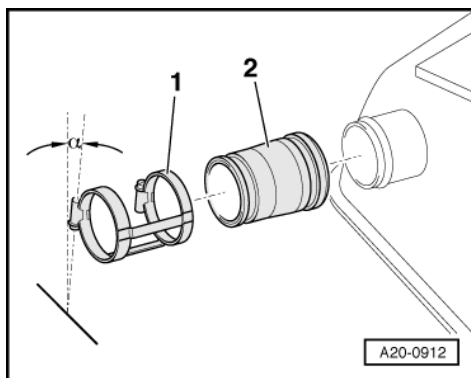
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-> Fig.1 Installation position of pads and edge strip

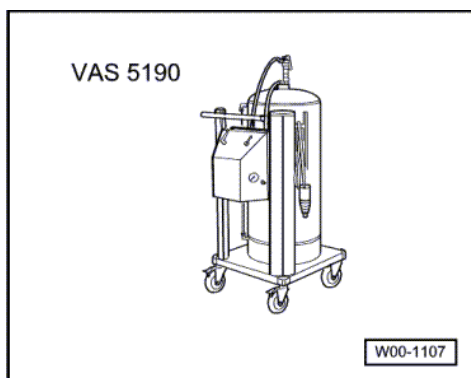
- ♦ Bond pads -1- to fuel tank as shown.
- ♦ Attach edge strip to fuel tank -arrows- as shown.



-> Fig.2 Installation position of double hose clamp

- ♦ Screw connections of double hose clamp -1- for adapter hose -2- must be at an angle of $\alpha = 15^\circ$ to perpendicular.

2.3 - Draining fuel tank



Special tools and workshop equipment required

- ♦ VAS 5190

Or

- ♦ V.A.G 1433 A

Sequence of operations

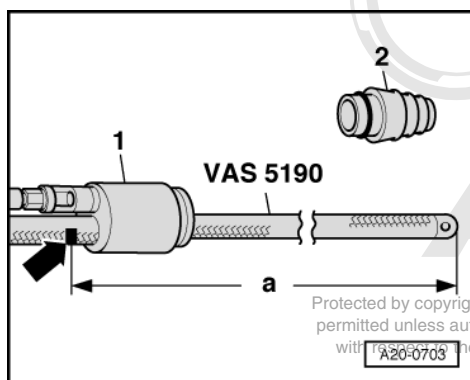
Heed safety precautions => Page 1 .

Observe rules for cleanliness =>Page 2 .

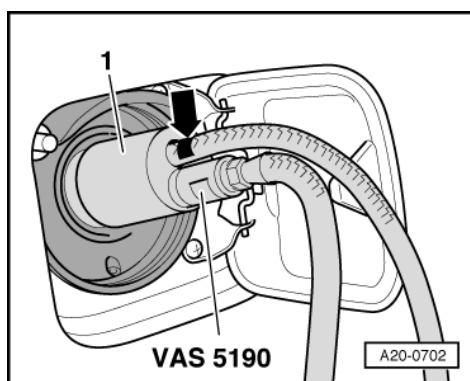
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.

Attention:
 Attach earth wire of V.A.G 1433

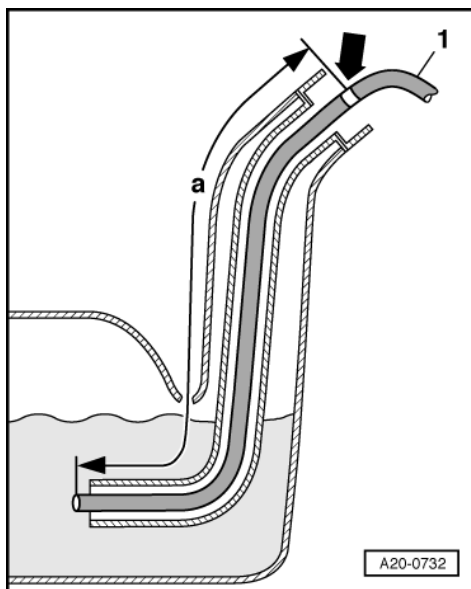
- Detach cap from fuel filler neck.



- -> Pull tapered section -2- off shank section -1- of VAS 5190.
- Use insulating tape to make a mark -arrow- on drain hose at a distance a = 1315 mm from end of hose.



- -> Screw shank section -1- of extraction unit VAS 5190 onto filler neck of fuel tank.
- Then insert drain hose into fuel tank until previously affixed mark -arrow- makes contact with shank section.



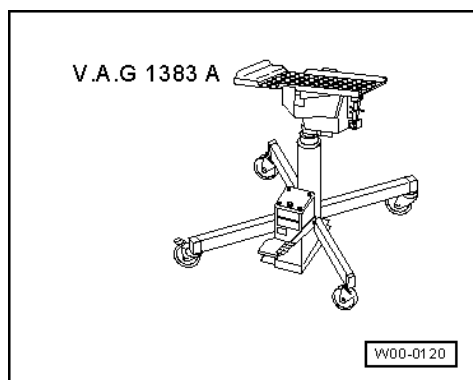
Notes:

- ♦ The procedure is essentially the same if use is made of an extractor with no shank section.
 - ♦ -> In this case, use insulating tape to make a mark -arrow- on drain hose at a distance $a = 1250$ mm from end of hose. Drain hose has been properly inserted if previously affixed mark is opposite edge of filler neck.
 - ♦ If hose is difficult to insert, apply a thin coat of engine oil. Never use silicone lubricants.
- Drain fuel tank by way of filler neck.
 - Carefully pull out drain hose.

Note:

On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

2.4 - Removing and installing fuel tank with attachments



Special tools and workshop equipment required

- ♦ V.A.G 1383 with V.A.G 1359/2

Removing

Heed safety precautions => Page **1**.



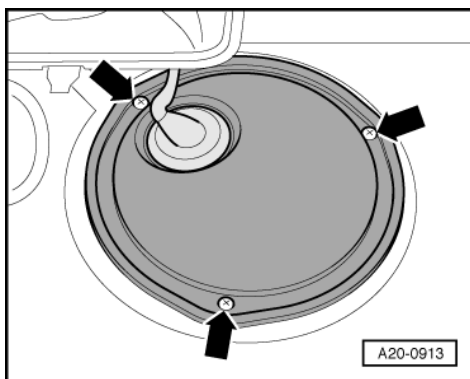
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Observe rules for cleanliness =>Page **2** .

- Fuel tank must be empty when removing it from vehicle so as to reduce weight. Drain fuel tank if necessary. Procedure => Page **6** .
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.
- Remove luggage compartment lining.

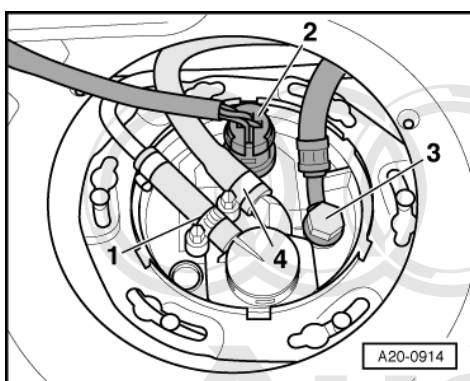
Avant:

- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.

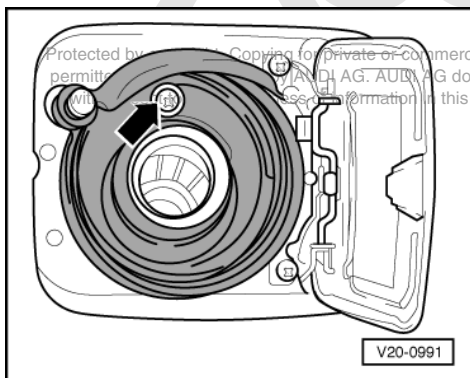


All models:

- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.



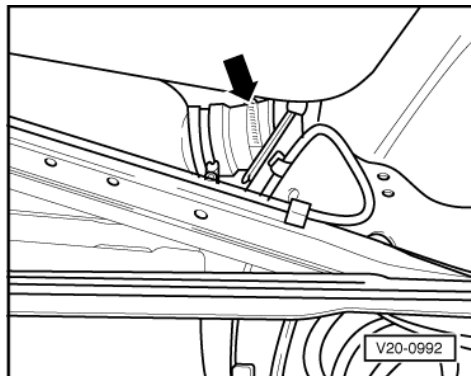
- Clean area around fuel filler neck.
- Open filler neck compartment lid and detach cap from fuel filler neck.
- -> Screw out bolt -arrow- at fuel filler neck.



- Remove rear right wheel housing liner.

=> General Body Repairs; Repair Group 66; Wheel housing liners Wheel housing liners

- Detach overflow hose from holder.



Attention:

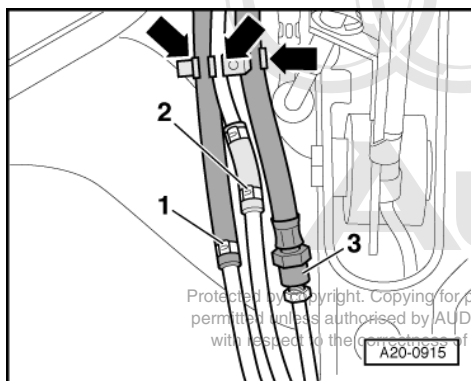
Even if fuel tank is empty, a small quantity of fuel may escape on unfastening hose clamp at adapter hose.

- -> Unfasten outer hose clamp -arrow- at adapter hose between fuel tank and fuel filler neck.

Note:

Leave adapter hose in position on fuel tank connection.

- Detach and take out fuel filler neck.



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Attention:

- ♦ **Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.**
- ♦ **After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.**

- -> Disconnect fuel supply pipe -3- on underside of vehicle and catch fuel which escapes.
- Detach fuel return pipe -1- and breather pipe -2- at connection point.
- Disengage and lay bare pipes -arrows-.

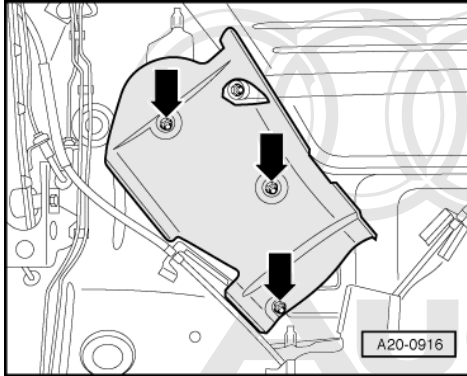
Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.

All models:

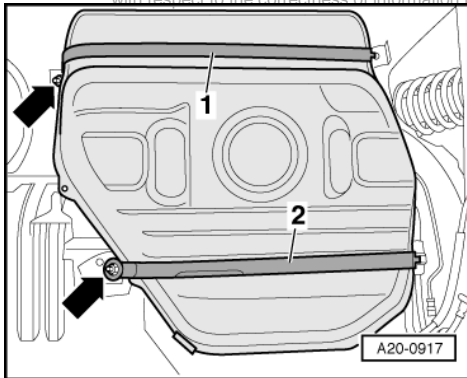
- Remove rear section of exhaust system.

=> Engine, Mechanics; Repair Group 26



- -> Detach heat shield -arrows-.

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- Position engine/gearbox lifter V.A.G 1383 A beneath vehicle to support fuel tank.

Attention:
 To reduce weight, fuel tank must be empty on removal.

- -> Unscrew nuts -arrows- and allow securing straps -1- and - 2- to hang down on right side of vehicle.
- Lower fuel tank at front and take out.

Installing

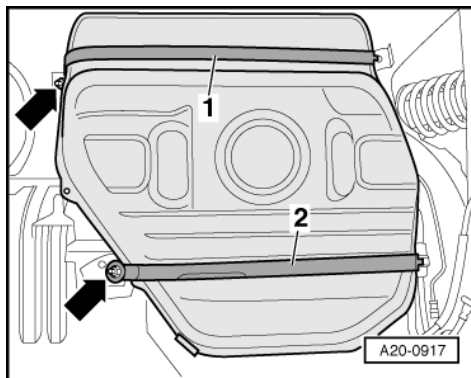
Install in reverse order, paying attention to the following:

Notes:

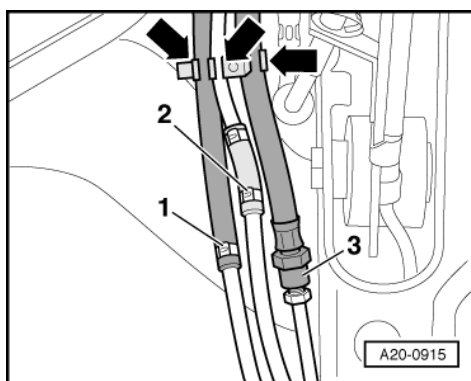
- ◆ Secure all hose connections with standard hose clamps.

=> Parts List

- ◆ Always replace sealing rings and gaskets on assembly.
- Check whether fuel supply, return and breather pipes are attached to fuel tank with cable ties.
- Position fuel tank on underside of vehicle using engine/gearbox lifter V.A.G 1383 A.



- -> Pre-assemble front securing strap -2-, then fit rear securing strap -1- and screw on before screwing on front securing strap.
- Fit fuel filler neck.
- Engage overflow hose at holder.



- -> Screw on fuel supply pipe -3-.
- Attach fuel return pipe -1- and breather pipe -2- and secure with new tab-type hose clamps. To do so, use V.A.G 1275.
- Engage pipes at holder -arrows-.
- Install rear section of exhaust system.

=> Engine, Mechanics; Repair Group 26

- Install rear right wheel housing liner.

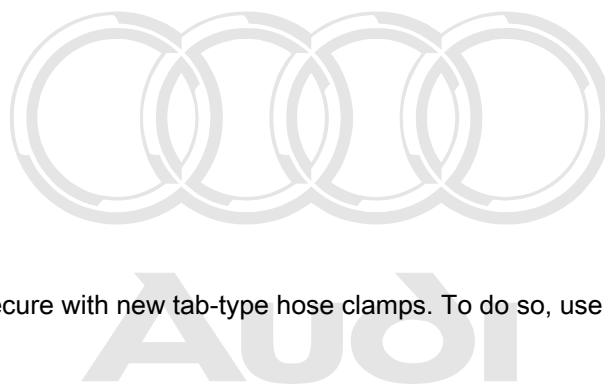
=> General Body Repairs; Repair Group 66; Wheel housing liners Wheel housing liners

Note:

On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

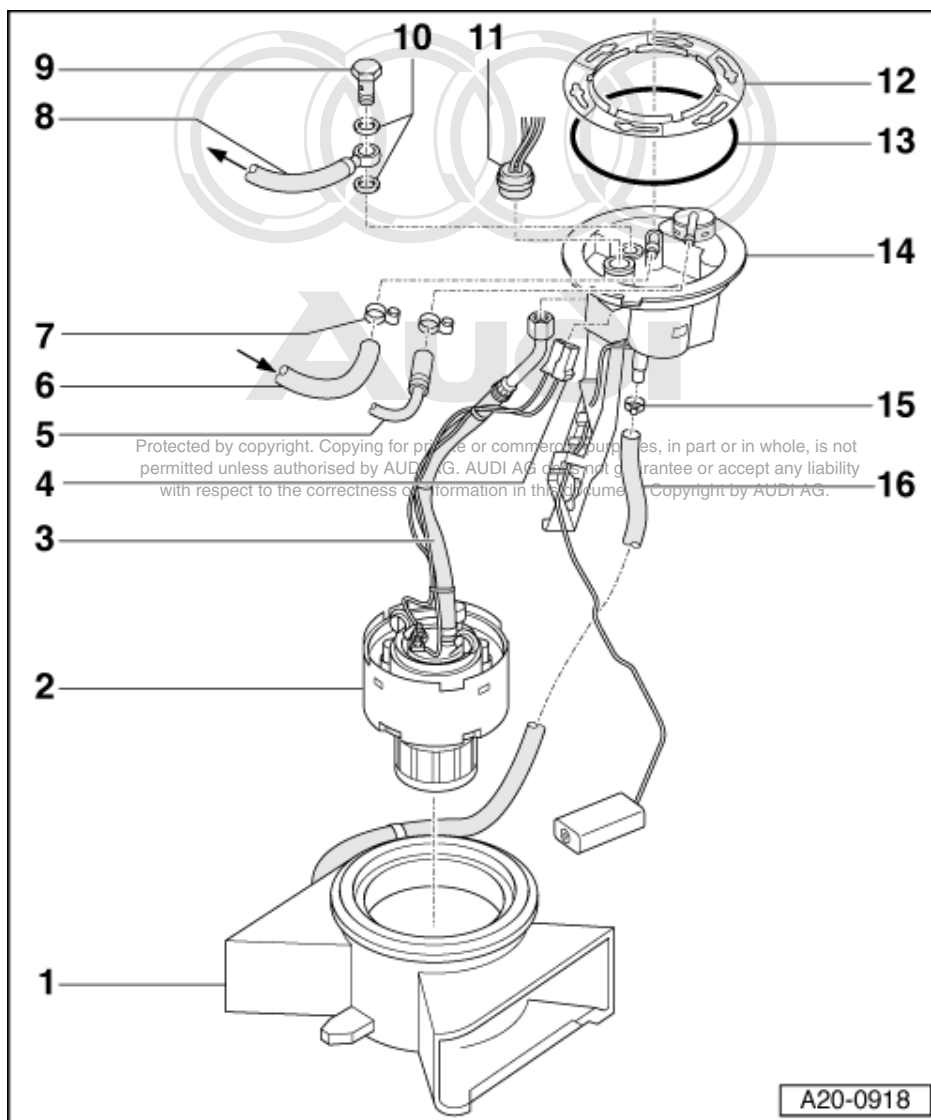
Tightening torques

Component	Nm
Securing straps to body	23
Bolted joint of fuel supply pipe	23
Hose clamp for fuel filler neck to fuel tank	2.6
Heat shield to body	1.3
Fuel filler neck to body	1
Battery terminal to battery post	6



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2.5 - Exploded view of components: Fuel delivery unit and fuel gauge sender



Notes:

- ♦ On vehicles with auxiliary heater, pay attention to routing of suction pipe for auxiliary heater.

=> Heating, Air Conditioner; Repair Group 82

- ♦ Fig. shows layout for vehicle with 6-cyl. engine.

1 Bottom part of baffle housing

- ♦ Cannot be removed

2 Fuel delivery unit

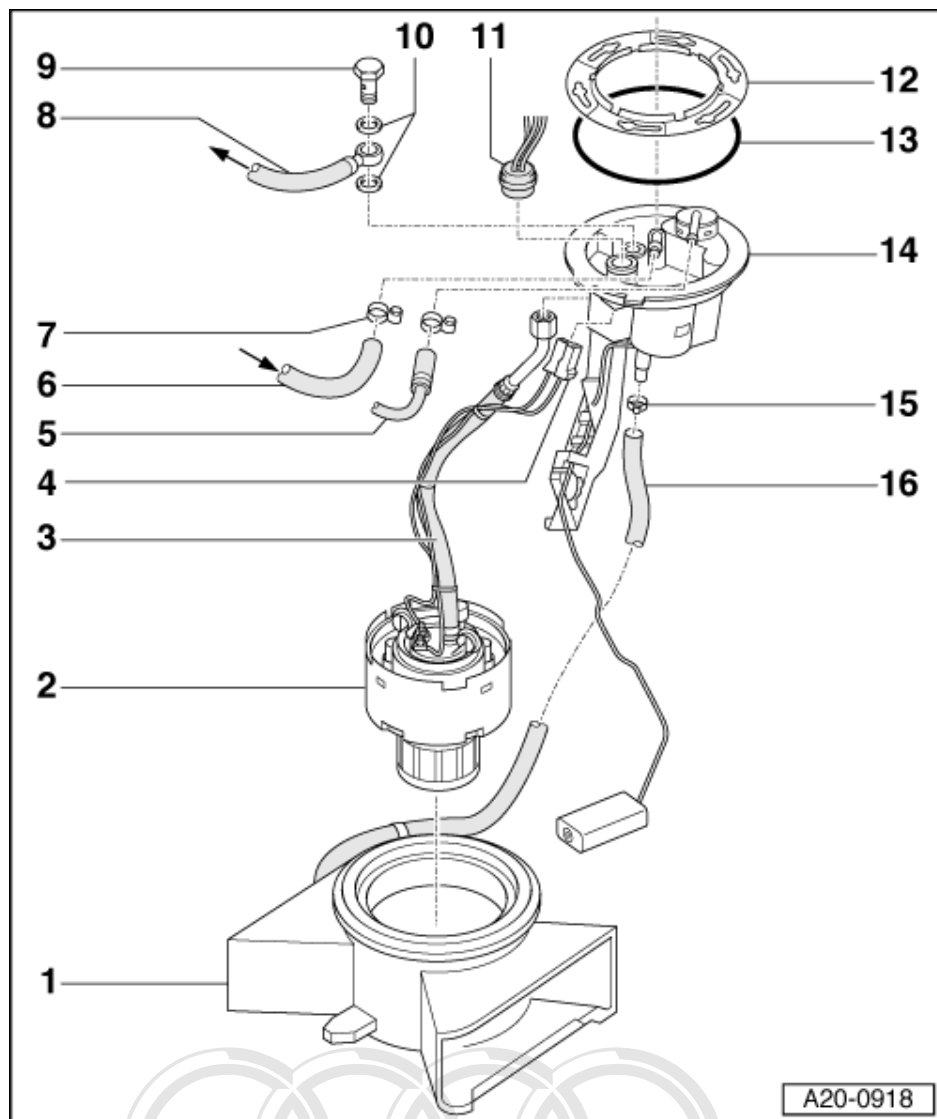
- ♦ Electrical checking of fuel pump
=> Page 16
- ♦ Checking delivery rate => Page 21 onwards
- ♦ Checking holding pressure

=> Injection and Ignition System; Repair Group 24

=> Injection and Ignition System; Repair Group 25

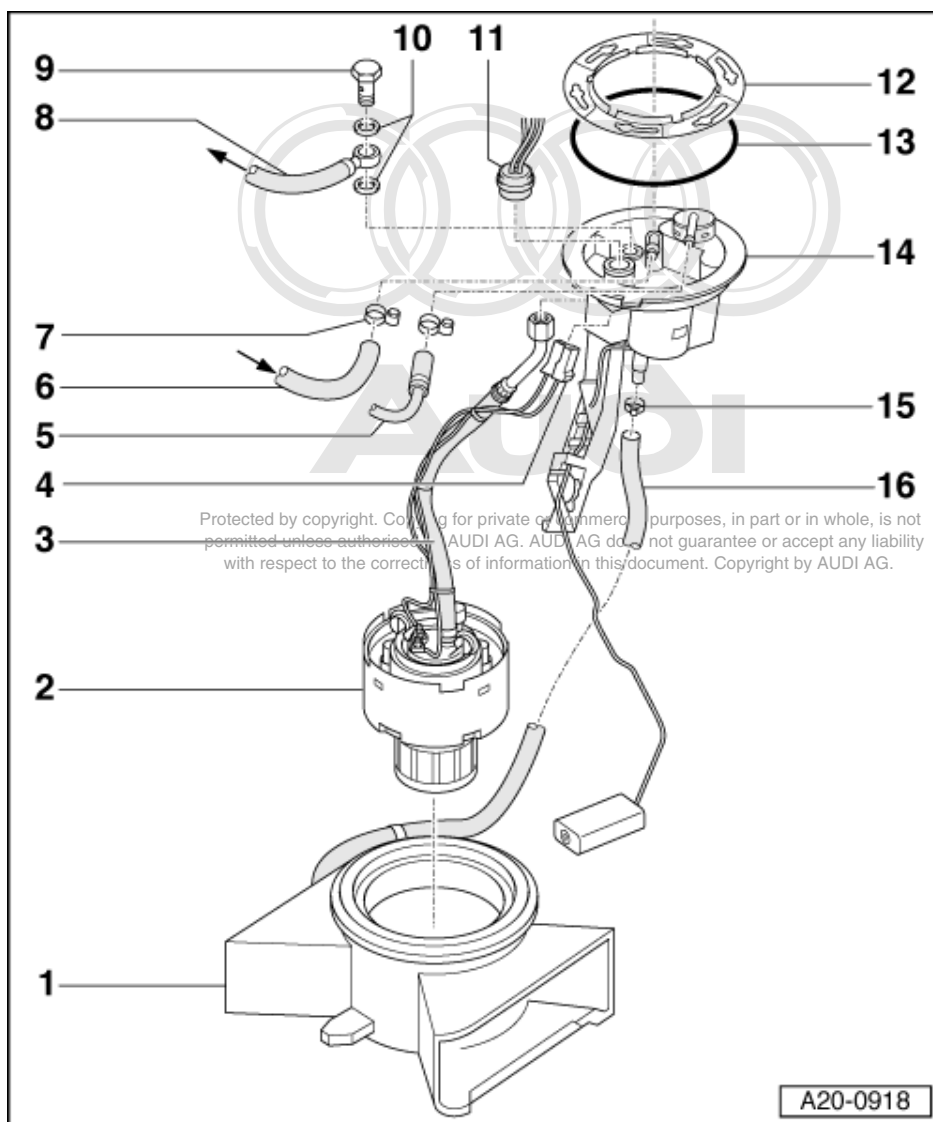


- ♦ Removing and installing=>Page 33



- 3 Fuel supply pipe**
♦ Fuel pump/baffle housing
- 4 Connector**
♦ For fuel pump
- 5 Breather pipe**
♦ To activated charcoal filter in front right wheel housing
- 6 Fuel return pipe**
♦ From engine
- 7 Screw-type clamp**
- 8 Fuel supply pipe**
♦ To fuel filter
- 9 Banjo bolt, 23 Nm**
- 10 Sealing rings**
♦ Replace
- 11 Connector**
♦ For fuel pump and fuel gauge sender -G

A20-0918



12 Locking ring

- ♦ Use spanner 3087 to remove and install

13 O-ring

- ♦ Replace

14 Fuel gauge sender -G

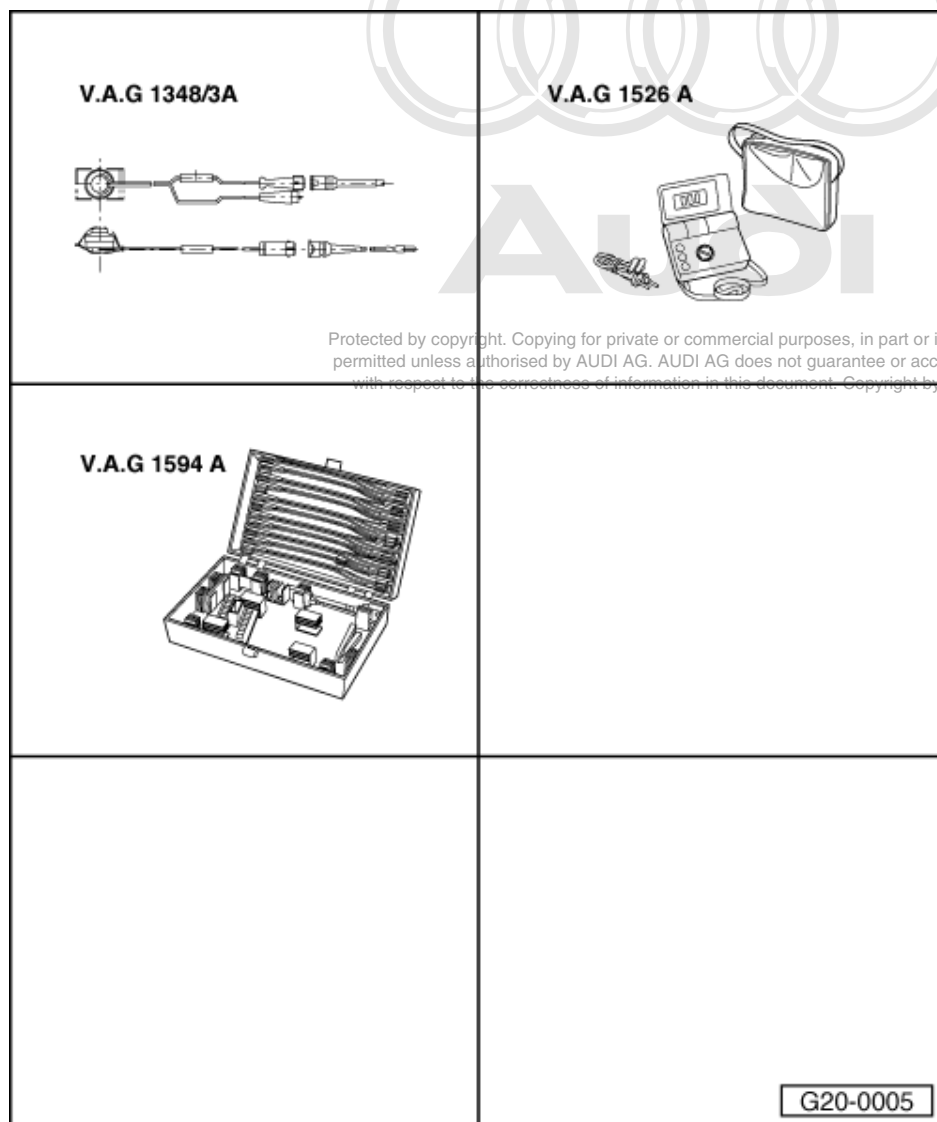
- ♦ Checking resistance values
=> Page 57
- ♦ Removing and installing=>Page 60

15 Screw-type clamp

16 Fuel return hose

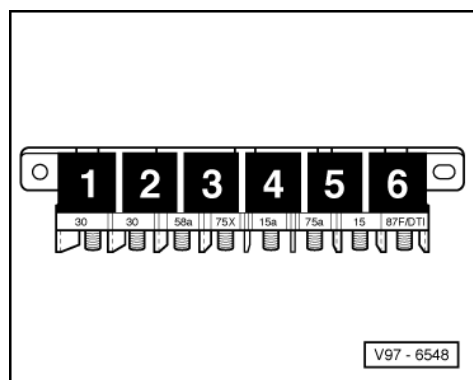
- ♦ Sender housing/bottom part of baffle housing

2.6 - Electrical checking of fuel pump



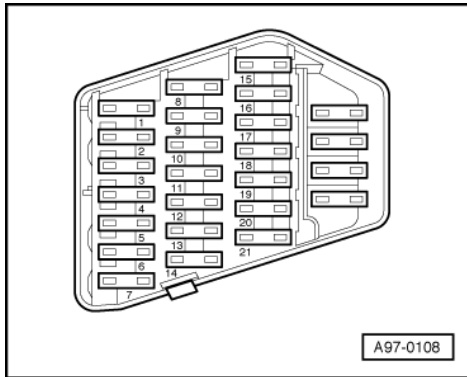
Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ V.A.G 1526 A
- ♦ V.A.G 1594 A



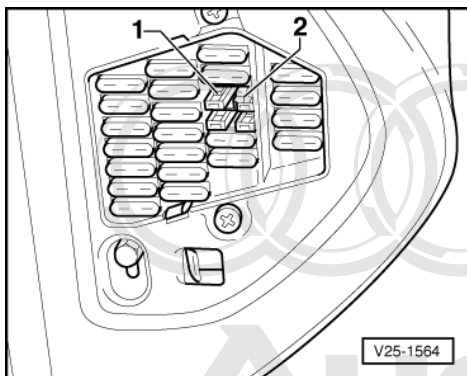
Test requirements:

- Battery voltage at least 12.7 V
- Fuse S17 OK (position 17)
- -> Fuel-pump relay at position 6 in 6-position relay carrier behind driver's storage compartment OK
- Fuel filter OK
- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.



- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

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Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

- Press switch on remote control.
 - Pump running noise must be audible in vicinity of fuel tank

Note:

Fuel pump is very quiet-running. Avoid ambient noise when checking fuel pump.

If running noise is not audible:

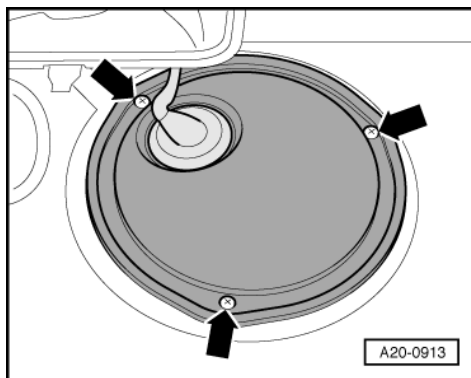
- Remove luggage compartment lining.

Avant:

- Remove load compartment floor.

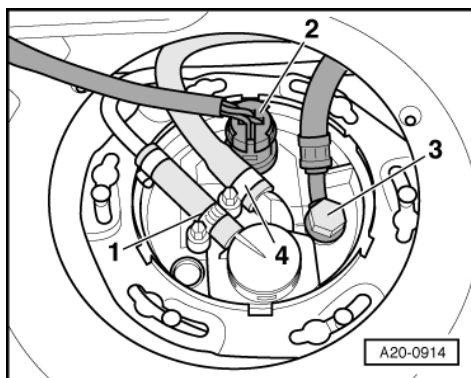


- If necessary, fold forward right backrest of rear seat bench.

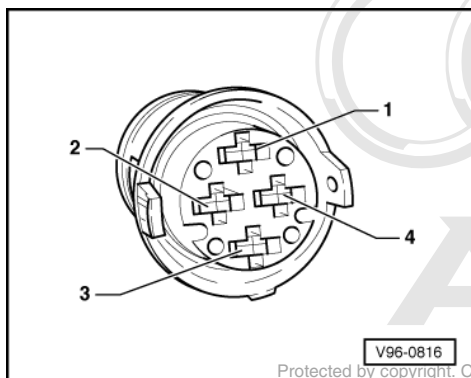


All models:

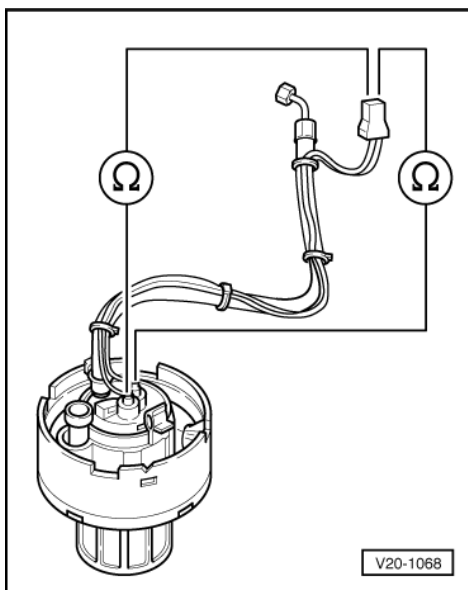
- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.



- -> Connect up multimeter for voltage measurement between contacts 1 and 4 of connector.
- Press switch on remote control.
 - Specification: approx. battery voltage



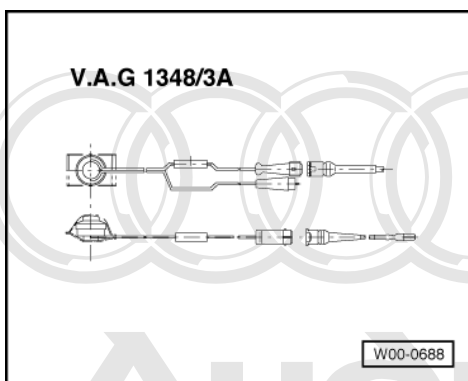
If reading matches specification although no pump running noise can be heard:

- Remove fuel delivery unit => Page 33 .
- -> Check connection of wiring between sender housing and fuel pump/check for continuity.

If no fault is found in wiring:

- Replace fuel pump => Dismantling fuel delivery unit, Page 39 onwards.
- Install fuel delivery unit => Page 36 .

2.7 - Checking fuel pump delivery rate - 4-cyl. engine (code letters AAE)



Special tools and workshop equipment required

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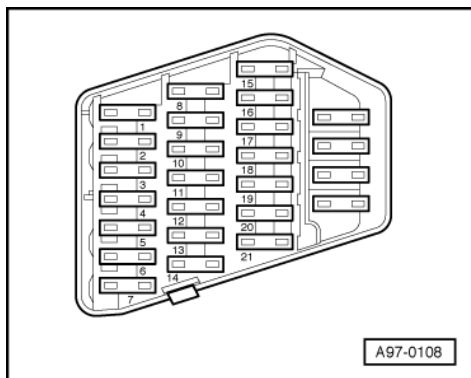
- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

Test requirements:

- Battery voltage at least 12.7 V
- Fuel filter OK

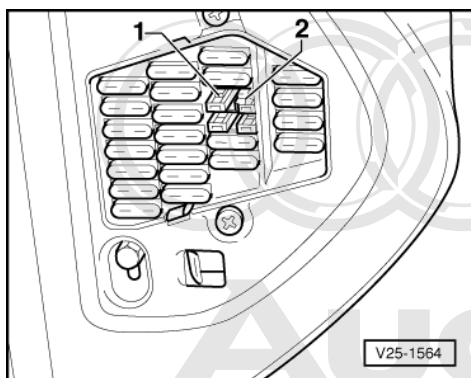


- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.

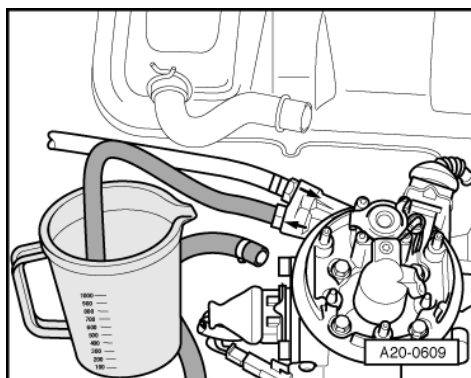


- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

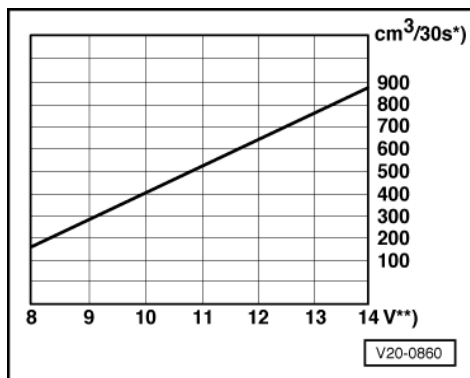
- Detach cap from fuel filler neck.



Attention:

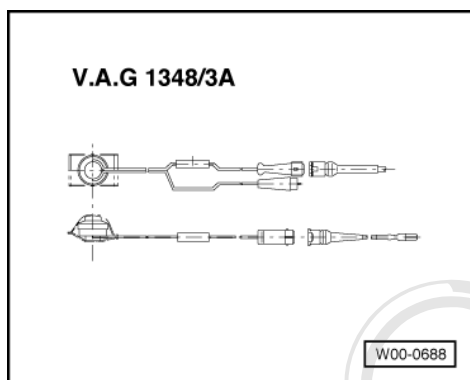
Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach fuel return pipe from connection of injection unit.
- Attach test hose to connection and hold over fuel-resistant graduated beaker.



- Operate remote control for 30 seconds, keeping button constantly pressed.
 - -> Compare fuel delivery rate to specification.
- *) Minimum delivery rate cm³/30 s
- **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)
- Attach fuel return pipe and tighten hose clamp to 2 Nm.

2.8 - Checking fuel pump delivery rate - 4-cyl. engine (code letters AAD, ABB, ACE)



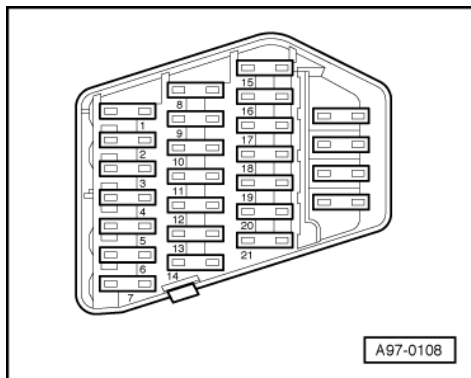
Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

Test requirements:

- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off

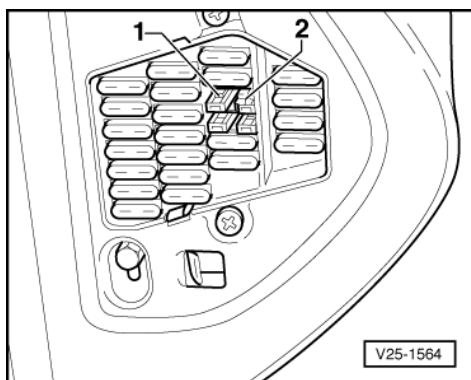
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Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.

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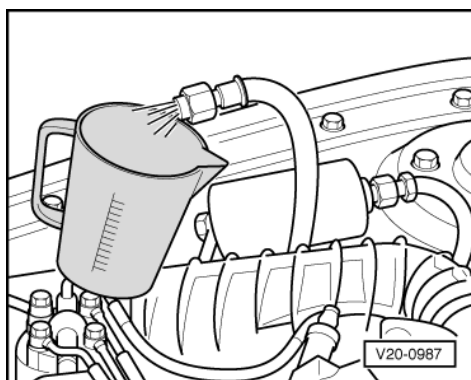


- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

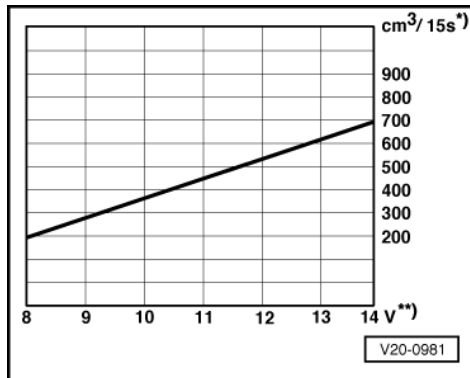
- Detach cap from fuel filler neck.



Attention:

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach fuel return pipe at connection point.
- Hold fuel return pipe over fuel-resistant graduated beaker.



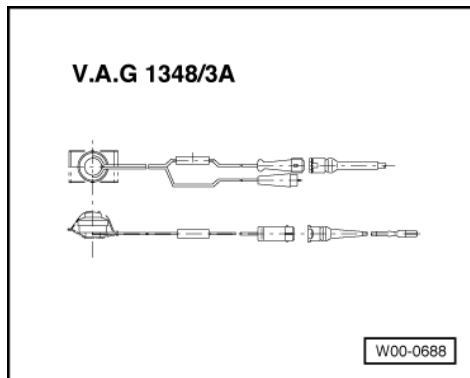
- Operate remote control for 15 seconds, keeping button constantly pressed.
- -> Compare fuel delivery rate to specification.

*) Minimum delivery rate cm³/15 s

***) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)

- Tighten fuel return pipe to 23 Nm.

2.9 - Checking fuel pump delivery rate - 4-cyl. engine (code letters ABK, ADA, ADW)



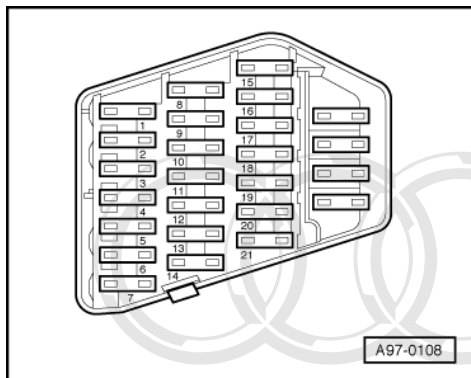
Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

Test requirements:

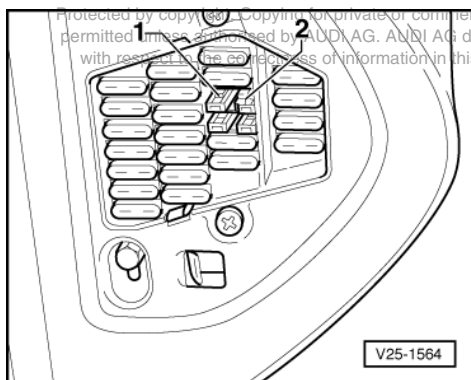
- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off

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Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.

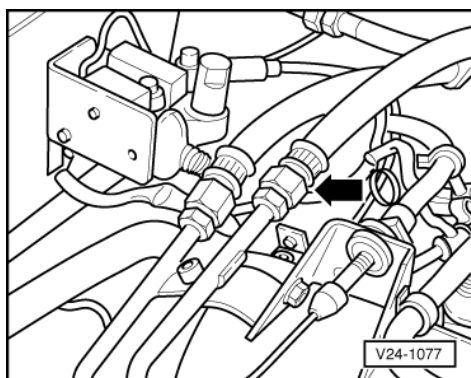


- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

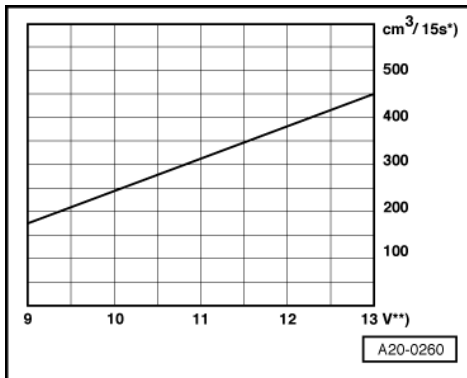
- Detach cap from fuel filler neck.



Attention:

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

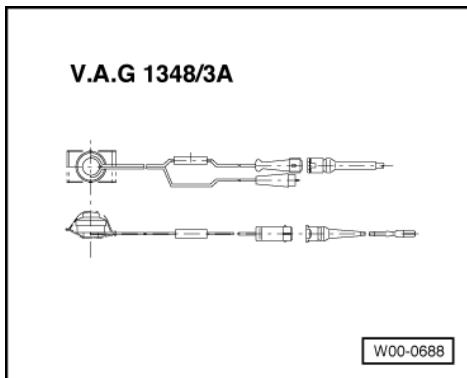
- -> Unscrew fuel supply pipe -arrow-.
- Hold fuel supply pipe over fuel-resistant graduated beaker.



- Operate remote control for 15 seconds, keeping button constantly pressed.
 - -> Compare fuel delivery rate to specification.
- *) Minimum delivery rate cm³/15 s
- **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)
- Tighten fuel supply pipe to 23 Nm.

2.10 - Checking fuel pump delivery rate - 4-cyl. engine (code letters ADR)

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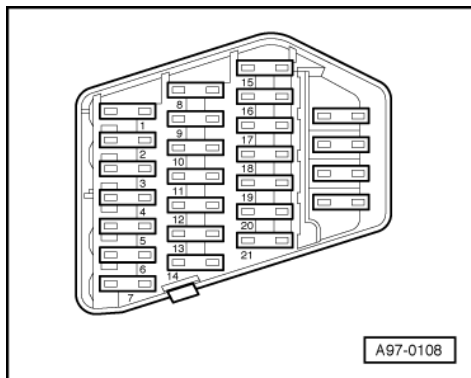


Special tools and workshop equipment required

- ◆ V.A.G 1348/3A with V.A.G 1348/3-2
- ◆ Fuel-resistant graduated beaker

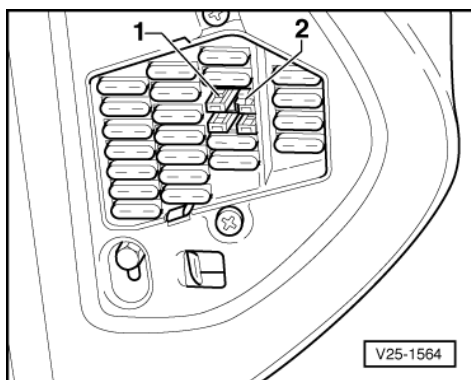
Test requirements:

- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.

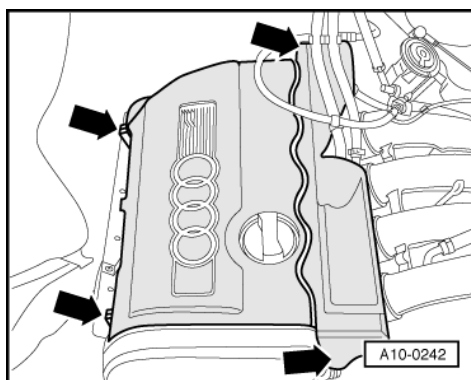


- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

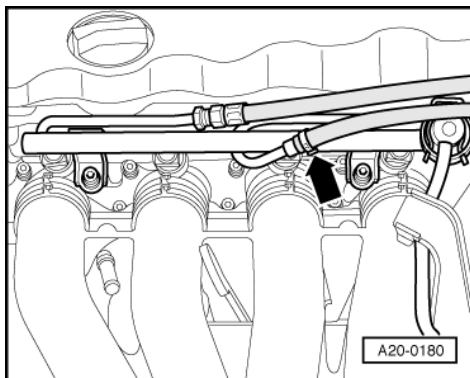
- Detach cap from fuel filler neck.



- -> Remove cover over injectors -right arrows-.

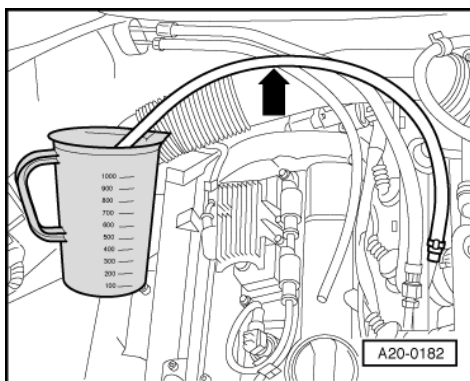


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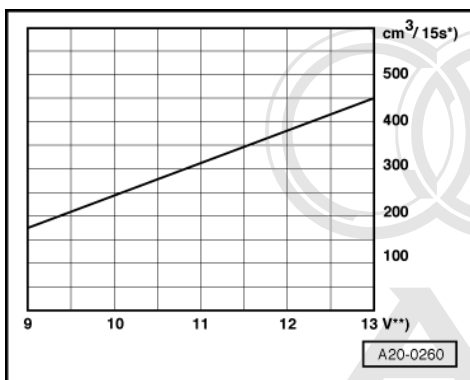


Attention:
 Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach hose of fuel return pipe -arrow- at fuel rail.



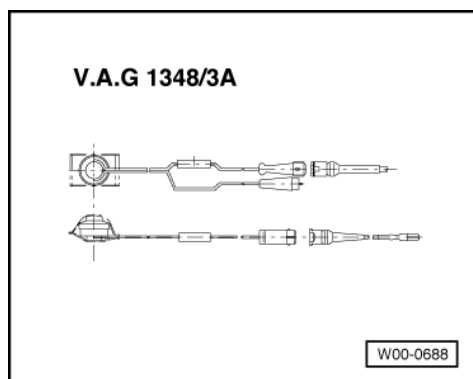
- -> Attach test hose -arrow- to free connection at fuel rail and hold over a fuel-resistant graduated beaker.



- Operate remote control for 15 seconds, keeping button constantly pressed.
 - -> Compare fuel delivery rate to specification.
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- *) Minimum delivery rate cm³/15 s
- **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)
- Attach fuel return pipe and secure with new tab-type hose clamp. To do so, use V.A.G 1275.



2.11 - Checking fuel pump delivery rate - 5-cyl. engine (code letters AAR)

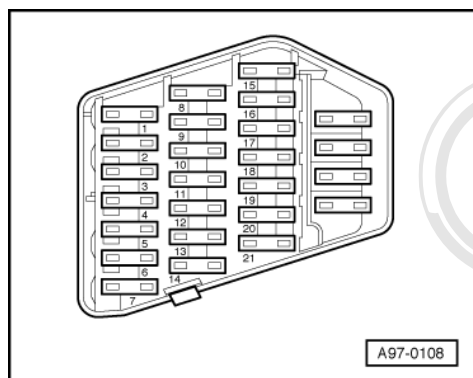


Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

Test requirements:

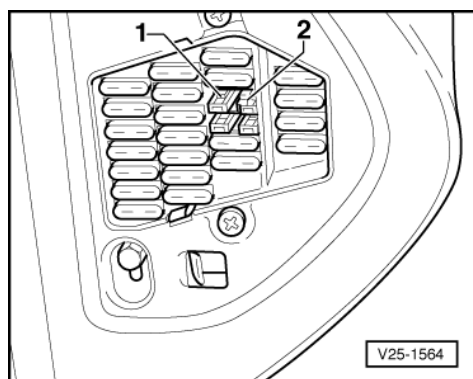
- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.

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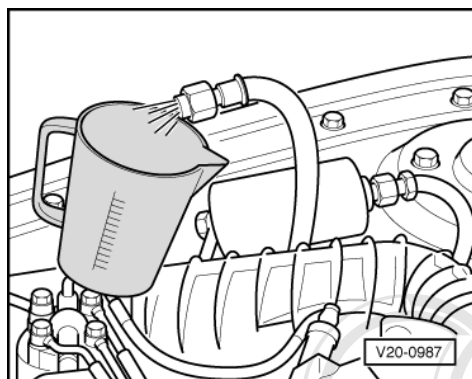
- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.

- Connect pick-off to vehicle battery (+).

Note:

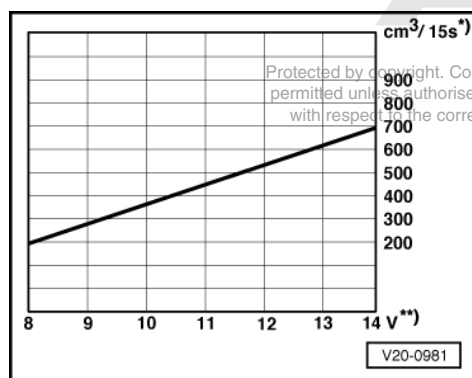
On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

- Detach cap from fuel filler neck.



Attention:
 Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach fuel return pipe at connection point.
- Hold fuel return pipe over fuel-resistant graduated beaker.



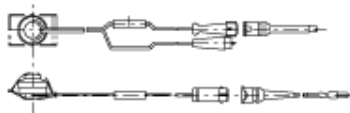
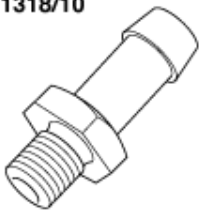
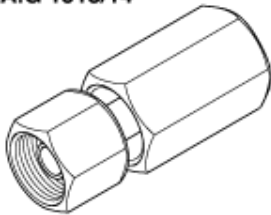
- Operate remote control for 15 seconds, keeping button constantly pressed.
- -> Compare fuel delivery rate to specification.

*) Minimum delivery rate cm³/15 s

**) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)

- Tighten fuel return pipe to 23 Nm.

2.12 - Checking fuel pump delivery rate - 6-cyl. engine

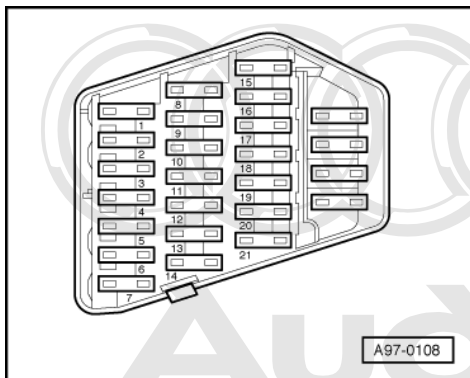
V.A.G 1348/3A 	V.A.G 1318/10 
V.A.G 1318/14 	
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Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ V.A.G 1318/10
- ♦ V.A.G 1318/14
- ♦ Fuel-resistant graduated beaker

Test requirements:

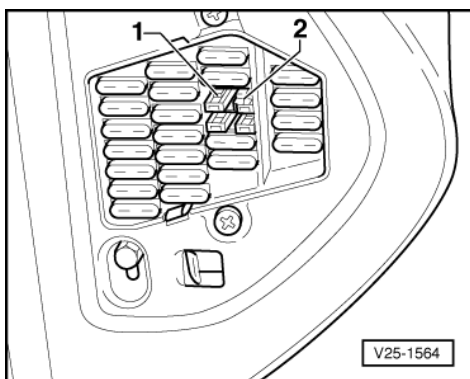
- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off



Test sequence

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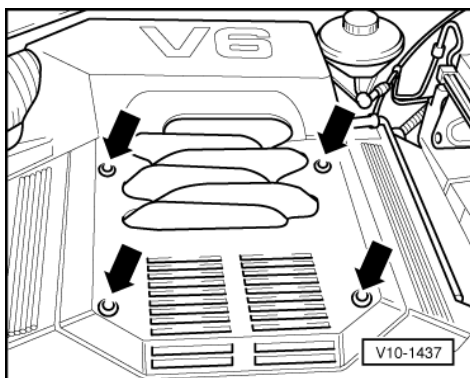
- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.



- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

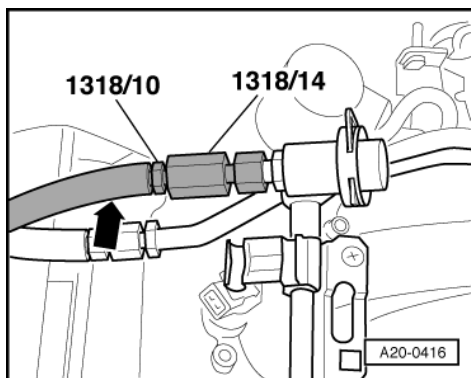
On vehicles with air conditioner, connect pick-off to boost-starting socket (+).



- Detach cap from fuel filler neck.

Vehicles with engine code letters AAH, ABC, ACZ, AEJ:

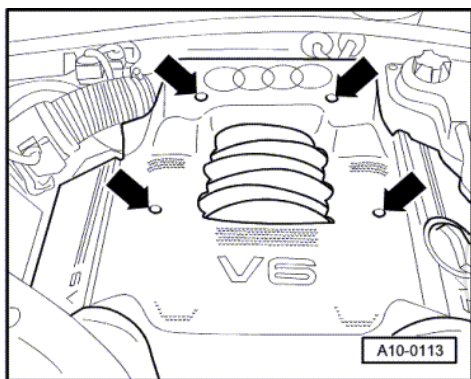
- -> Remove engine cover -arrows-.



Attention:

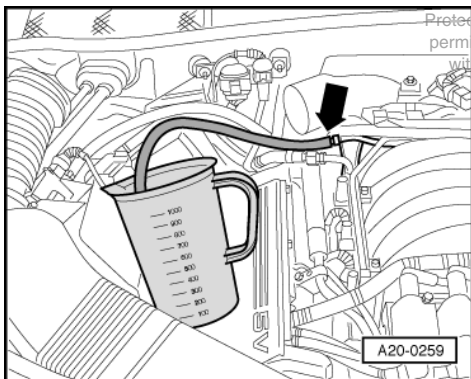
Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Unscrew fuel return pipe at fuel pressure regulator.
- Fit adapters V.A.G 1318/14 and V.A.G 1318/10 at fuel pressure regulator.
- Attach test hose -arrow- and hold over fuel-resistant graduated beaker.



Vehicles with engine code letters ACK:

- -> Remove engine cover -arrows-.

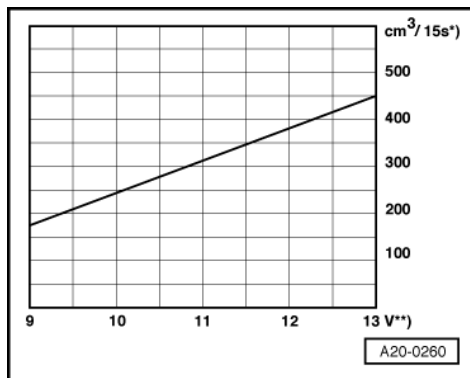


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Attention:

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach fuel return hose from pipe connection at fuel rail.
- Attach test hose -arrow- to fuel rail and hold over graduated beaker.



All models:

- Operate remote control for 15 seconds, keeping button constantly pressed.
- -> Compare fuel delivery rate to specification.

*) Minimum delivery rate cm³/15 s

**) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)

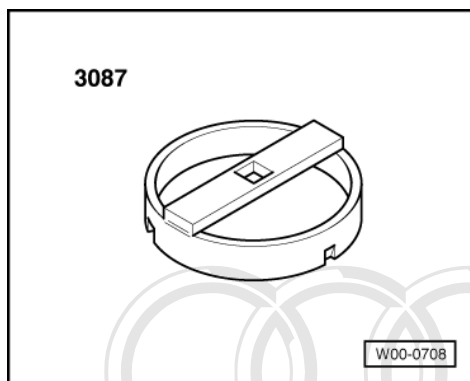
Vehicles with screw-type connection at fuel return pipe:

- Tighten fuel return pipe to 23 Nm.

Vehicles with plug-in fuel return pipe:

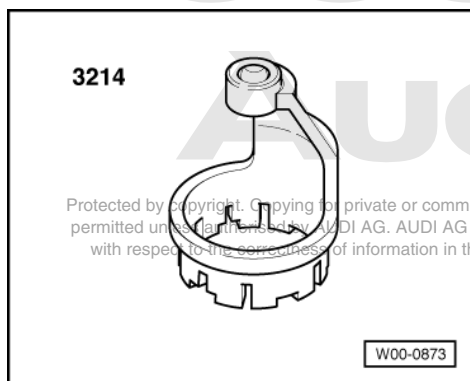
- Fit fuel return hose with new tab-type hose clamp. To do so, use V.A.G 1275.

2.13 - Removing and installing fuel delivery unit



Special tools and workshop equipment required

- ♦ Fuel gauge sender wrench 3087



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- ♦ Fuel pump wrench 3214

Removing

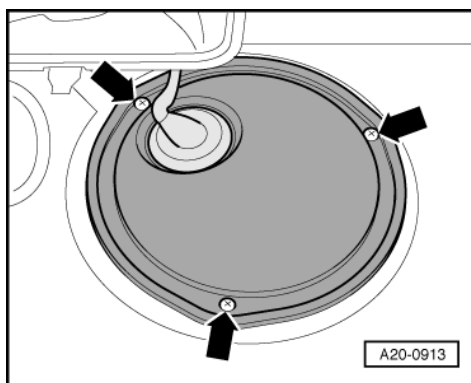
Heed safety precautions => Page 1 .

Observe rules for cleanliness =>Page 2 .

- When removing fuel delivery unit, fuel tank must not be more than 2/3 full. Drain fuel tank if necessary. Procedure => Page 6 .
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.
- Briefly open fuel tank cap and close again.
- Remove luggage compartment lining.

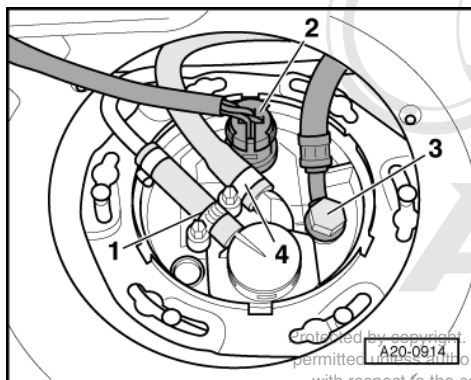
Avant:

- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.



All models:

- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.

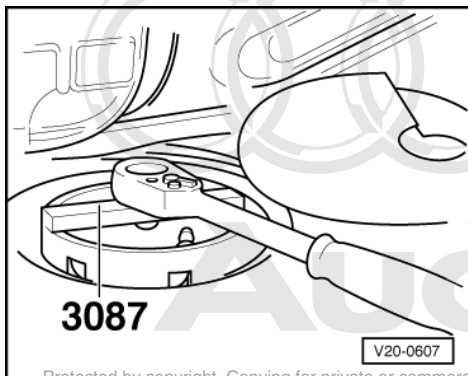
Attention:

- ♦ **Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.**
- ♦ **After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.**

- Detach fuel return pipe -4- and breather pipe -1-.
- Unscrew fuel supply pipe -3-.

Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.

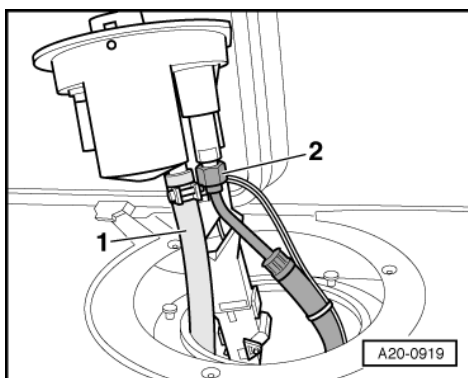


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Attention:

When removing fuel delivery unit, fuel tank must not be more than 2/3 full.

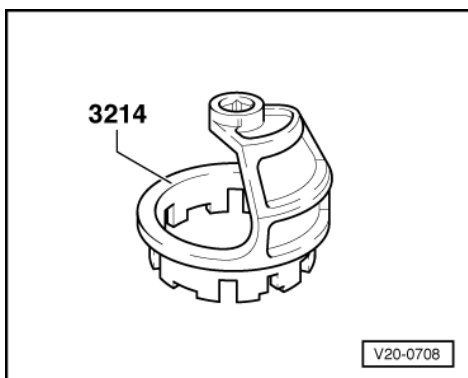
- -> Use fuel gauge sender wrench 3087 to unscrew locking ring.
- Lift fuel gauge sender carefully out of opening in fuel tank.



- -> Detach fuel return pipe -1- on inside of fuel gauge sender.
- Unscrew fuel supply pipe -2-.
- Unplug connector to fuel pump.

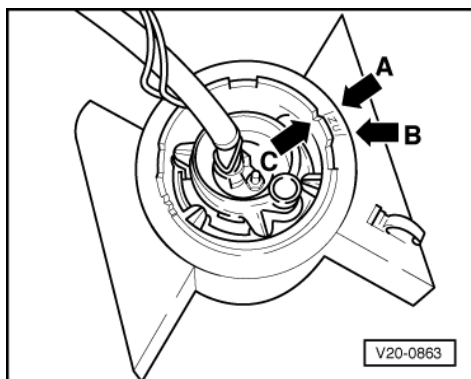
Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.



All models:

- -> Insert fuel pump wrench 3214 through fuel tank opening and apply at fuel delivery unit.



- Turn fuel delivery unit anti-clockwise by approx. 15° as far as stop.
 - -> Notch -C- must be in front of mark -A- (bayonet lock)

Note:

For ease of illustration, baffle housing is shown without fuel tank.

- Take out fuel delivery unit.

Installing

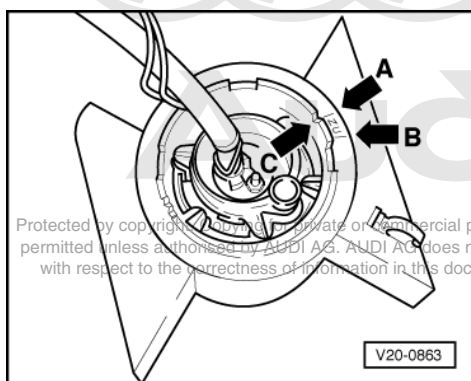
Install in reverse order, paying attention to the following:

- If fuel delivery unit has been dismantled or fuel pump removed, pre-assemble components as described under "Dismantling fuel delivery unit" for the various engine versions.

Note:

Secure all hose connections with standard hose clamps.

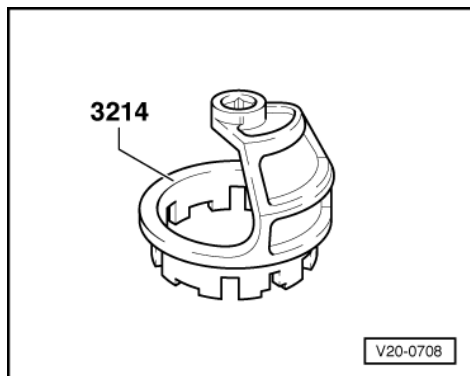
=> Parts List



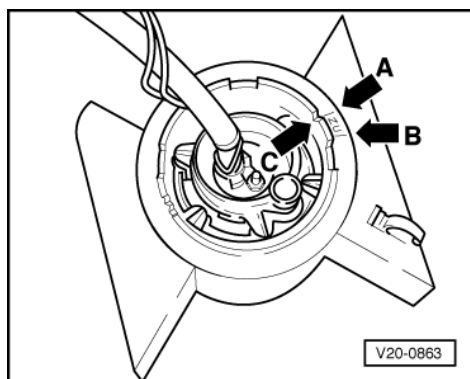
- Insert fuel delivery unit in fuel tank.
- -> Insert fuel delivery unit in baffle housing in fuel tank such that notch -C- at fuel delivery unit coincides with mark -A- at baffle housing.
 - Fuel delivery unit can be pressed down to a noticeable extent

Note:

For ease of illustration, baffle housing is shown without fuel tank.



- -> Insert fuel pump wrench 3214 through fuel tank opening and apply at fuel delivery unit.

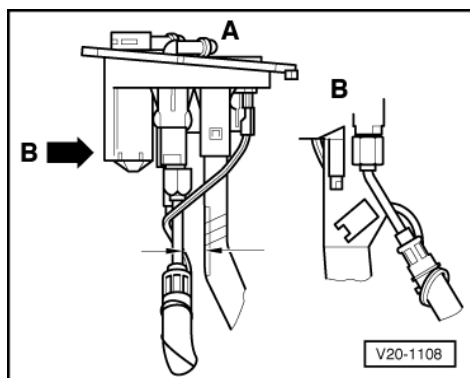


- Turn fuel delivery unit clockwise by approx. 15° as far as stop.
- -> Notch -C- must be in front of mark -B- (bayonet lock)

Note:

Fig. shows fuel delivery unit in released position.

- Replace O-ring for fuel gauge sender.
- Insert fuel gauge sender in fuel tank.



- Attach fuel return pipe to inside of fuel gauge sender.
- Attach fuel supply pipe as shown.

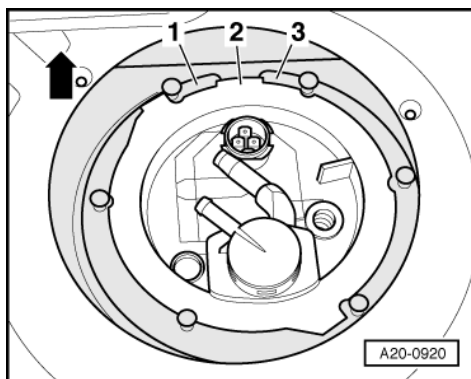
-> A - Parallel to sender housing

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B - Inclined to right (viewed in direction of arrow B)

- Route wire around fuel supply pipe as shown.

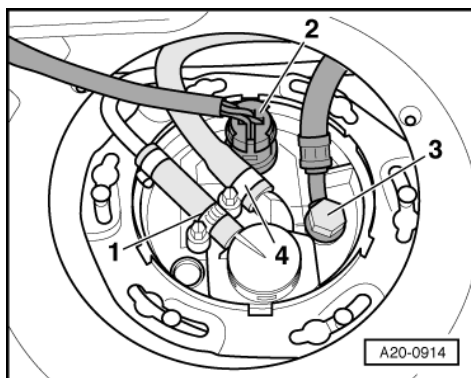


- -> Pay attention to installation position of fuel gauge sender.
- Tab -2- at fuel gauge sender must be located between raised areas -1- and -3- at fuel tank

Note:

Arrow faces in direction of travel.

- Use fuel gauge sender wrench 3087 to secure locking ring.



- -> Screw on fuel supply pipe -3-.
- Attach fuel return pipe -4- and breather pipe -1- and tighten hose clamps.
- Attach connector -2-.

Note:

On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

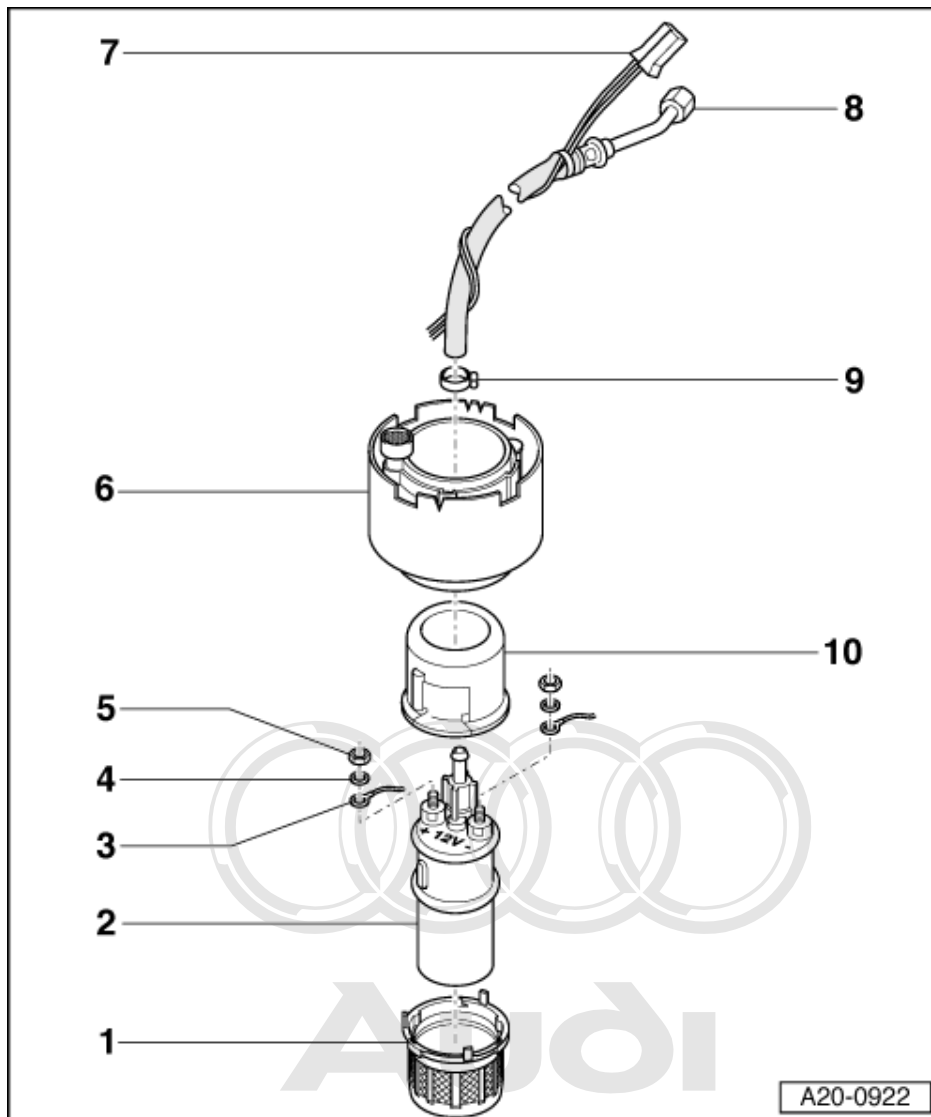
Tightening torques

Component	Nm
Supply pipe to sender housing (union nut)	23
Supply pipe to sender housing (banjo bolt)	23
Hose clamps	2
Battery terminal to battery post	6



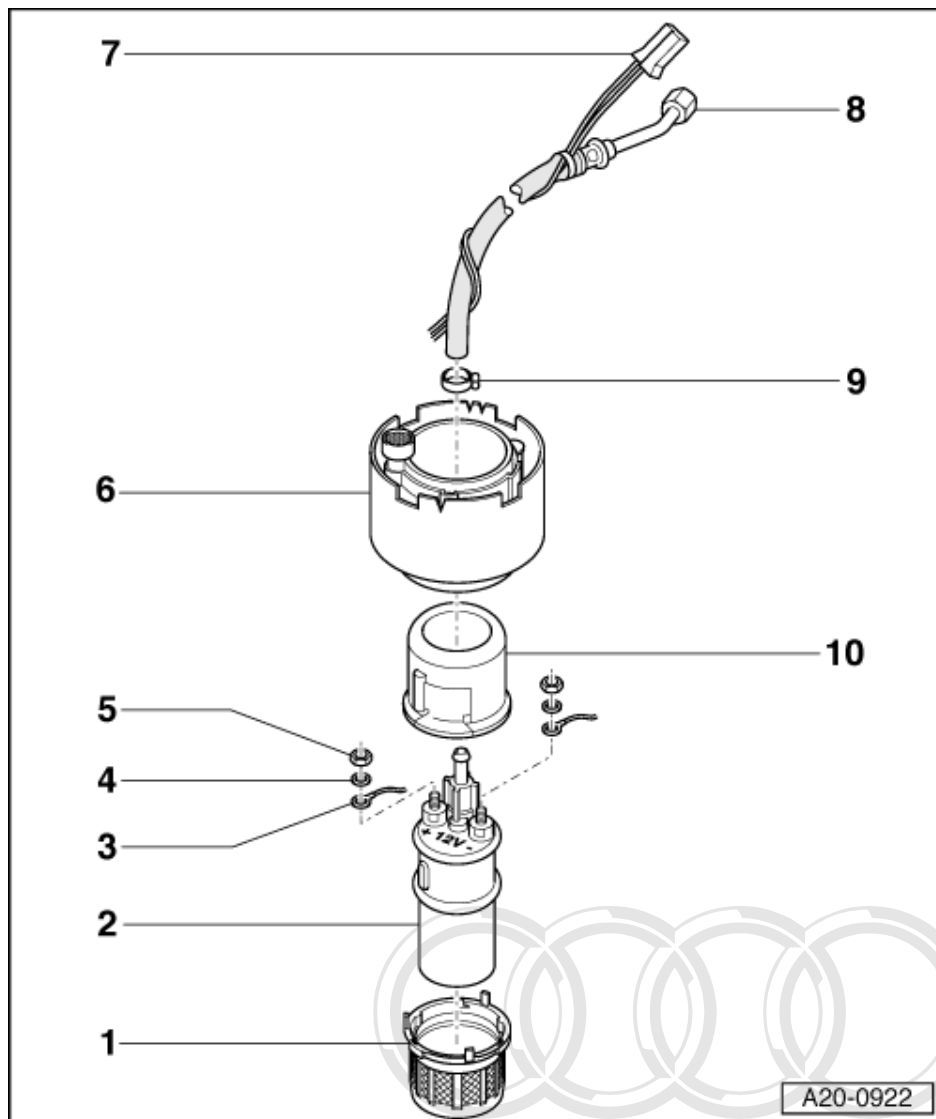
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2.14 - Dismantling fuel delivery unit - 4-cyl. engine (code letters AAE)



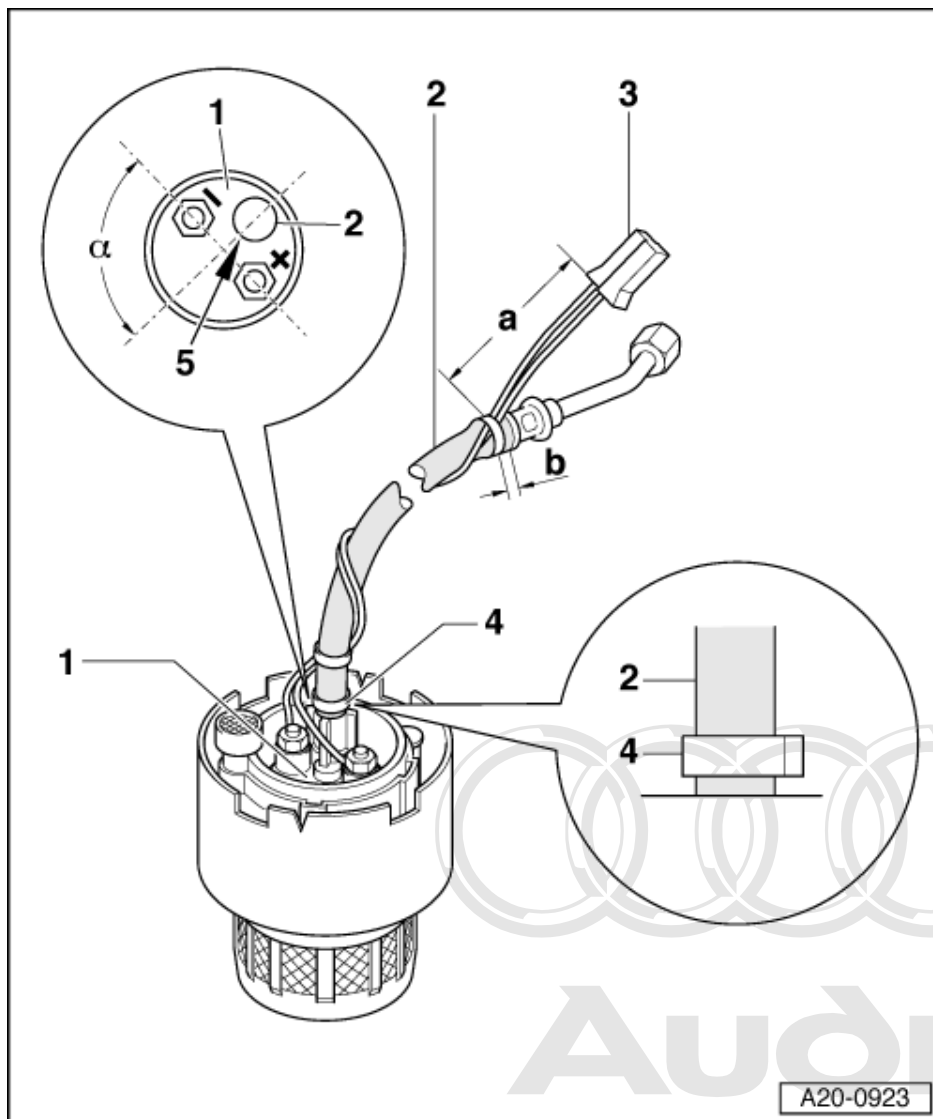
- 1 Fuel filter screen**
- ◆ Turn anti-clockwise to detach (bayonet lock)
 - ◆ Not available as separate replacement part
 - ◆ Clean if contaminated
- 2 Fuel pump**
- ◆ Removing and installing => Fig. 43
 - ◆ Pre-assembly => Page 41
 - ◆ Electrical checking => Page 16
 - ◆ Checking holding pressure

=> Injection and Ignition System; Repair Group 24



- 3 Wire**
 - ♦ For fuel pump
- 4 Washer**
- 5 M5 = 1.6 Nm
M6 = 2 Nm**
- 6 Inner part of baffle housing**
- 7 Wire**
 - ♦ For fuel pump
 - ♦ Installation position => Page 42
- 8 Fuel supply pipe**
 - ♦ Fuel pump/sender housing
- 9 Hose clamp**
 - ♦ Use V.A.G 1275 to secure
- 10 Mount**
 - ♦ For fuel pump

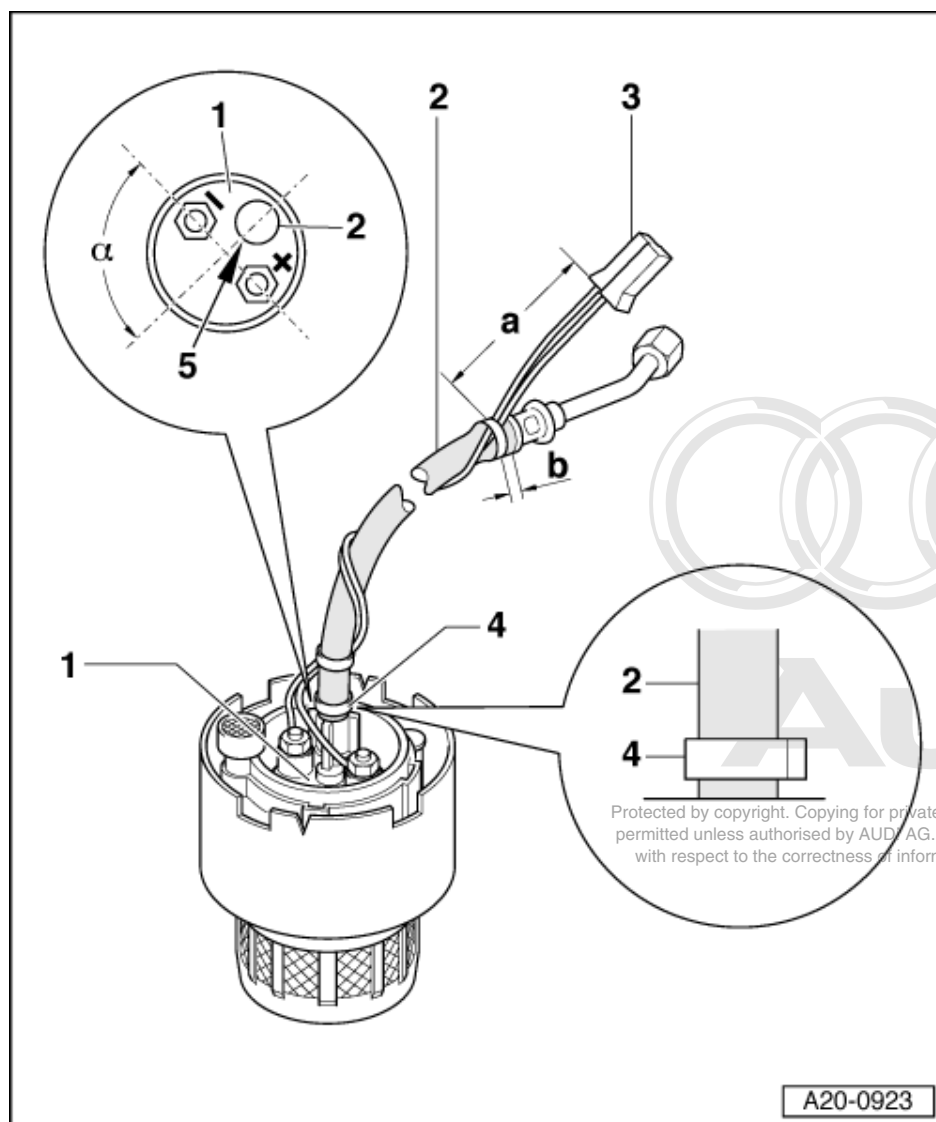
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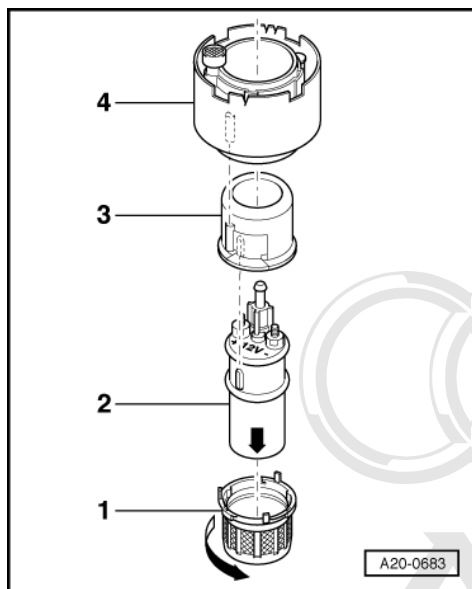
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Pre-assembling fuel pump and fuel supply pipe

- Fit fuel supply pipe -2- with new tab-type hose clamp -4- at fuel pump -1- as shown.
- To do so, align fuel supply pipe such that white stripe -arrow 5- at fuel supply pipe is at an angle of $\alpha = 90^\circ$ to electrical connections.
- Use V.A.G 1275 to secure tab-type hose clamp.



- Wind wiring -3- to fuel pump around fuel supply pipe-2-.
- Secure wiring with fuel-resistant cable tie at marked location.
 - a = Effective wire length 180 mm
 - b = 5 mm



-> Fig.1 Removing and installing fuel pump

- Fuel delivery unit dismantled

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Removing

- Turn fuel filter screen -1- anti-clockwise and detach it (bayonet lock).
- Pull fuel pump -2- with mount -3- downwards out of inner part of baffle housing -4-.

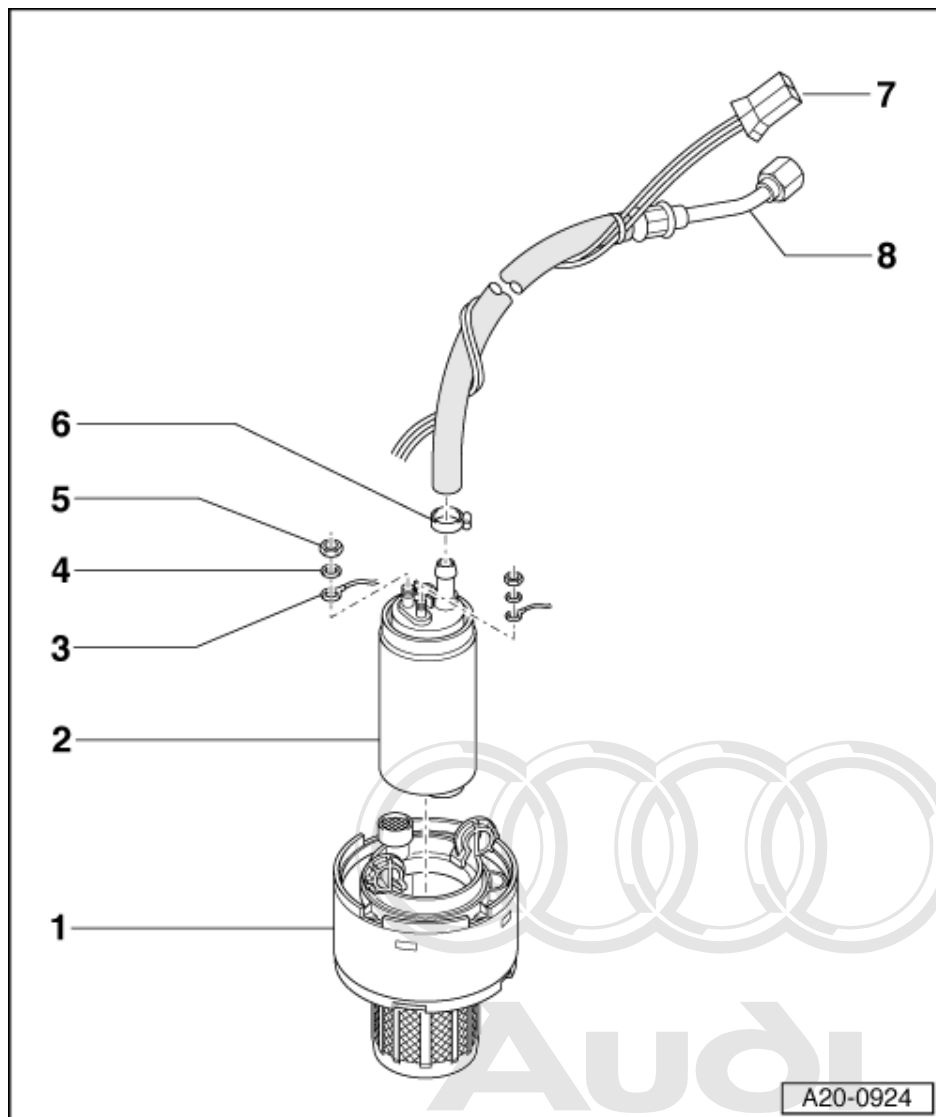
Installing

Install in reverse order, paying attention to the following:

- Make sure tab at fuel pump engages in recess at inner part of baffle housing.



2.15 - Dismantling fuel delivery unit - 4 and 6-cyl. engine (code letters AAH, ABC, ABK, ACK, ACZ, ADA, ADR, ADW, AEJ)

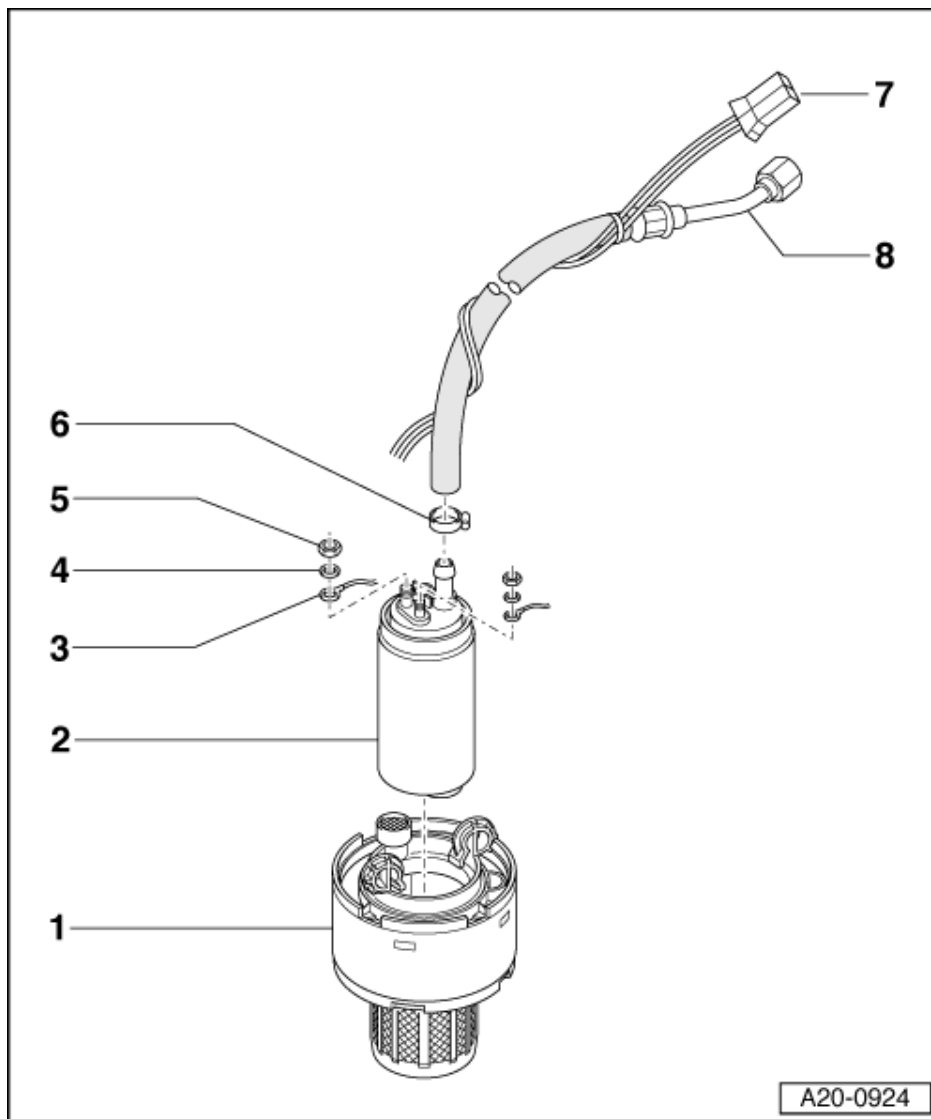


1 Inner part of baffle housing

2 Fuel pump

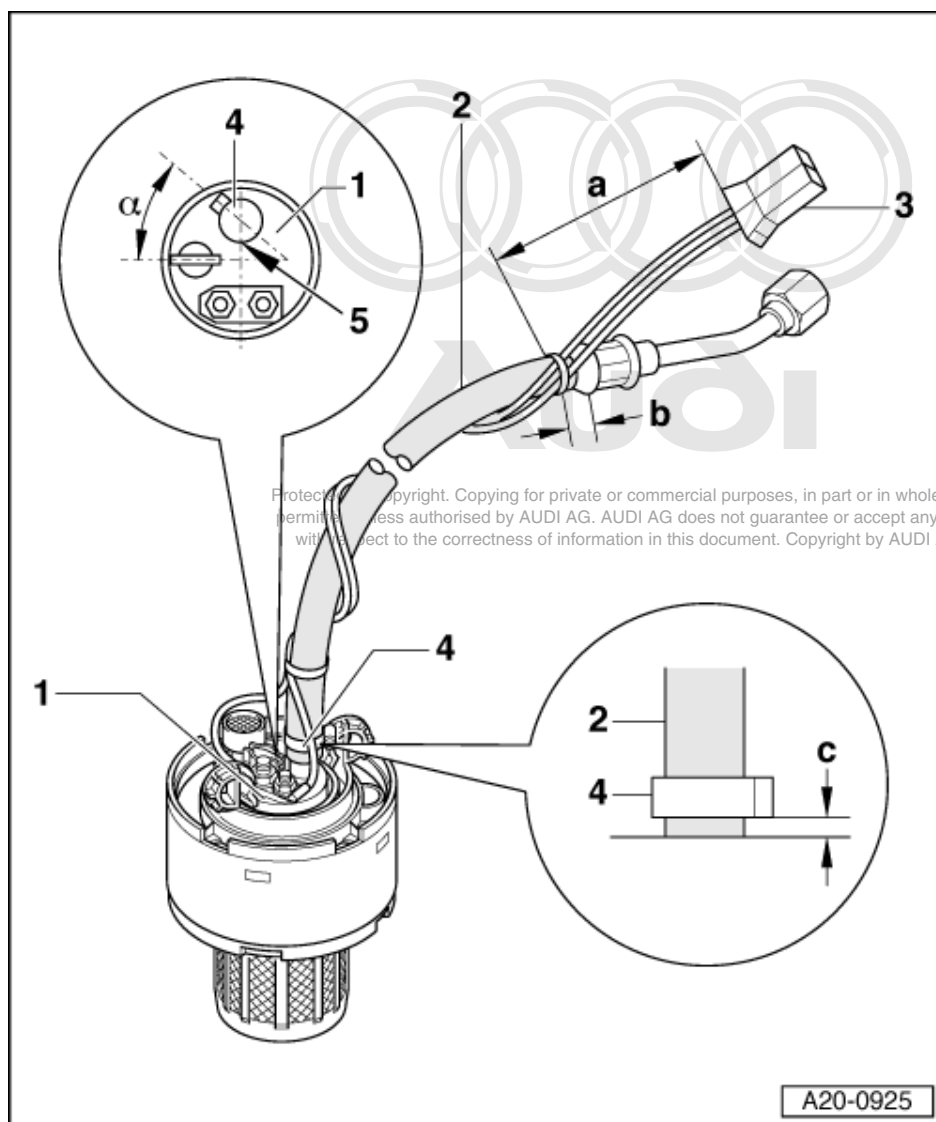
- ◆ Different versions (Bosch or VDO)
- ◆ Removing and installing => Fig. 49
- ◆ Pre-assembly => Page 48
- ◆ Electrical checking => Page 16
- ◆ Checking holding pressure

=> Injection and Ignition System; Repair Group 24



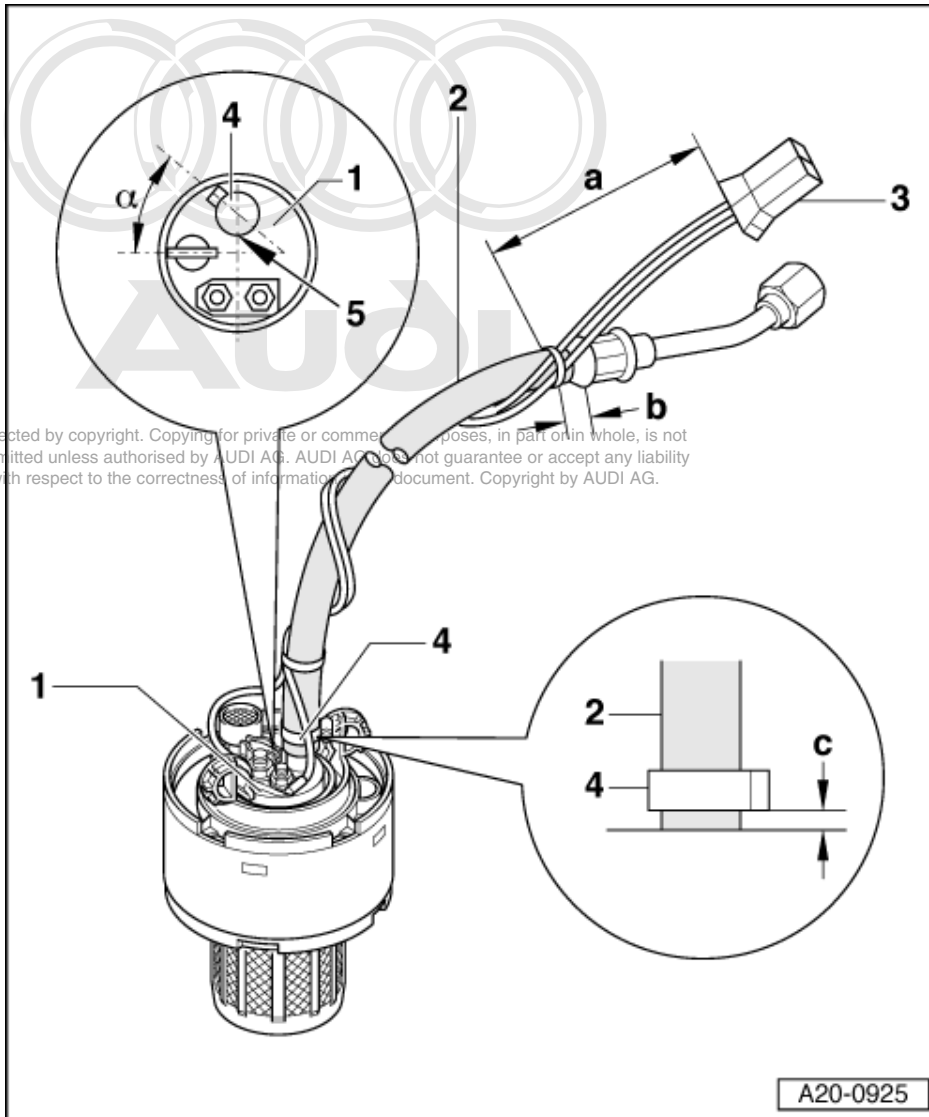
- 3 Wire**
 - ♦ For fuel pump
- 4 Washer**
- 5 M4 = 1.1 Nm**
M5 = 1.6 Nm
- 6 Hose clamp**
 - ♦ Use V.A.G 1275 to secure
- 7 Wire**
 - ♦ For fuel pump
 - ♦ Installation position => Page 49
- 8 Fuel supply pipe**
 - ♦ Fuel pump/sender housing
 - ♦ Pre-assembly => Page 48

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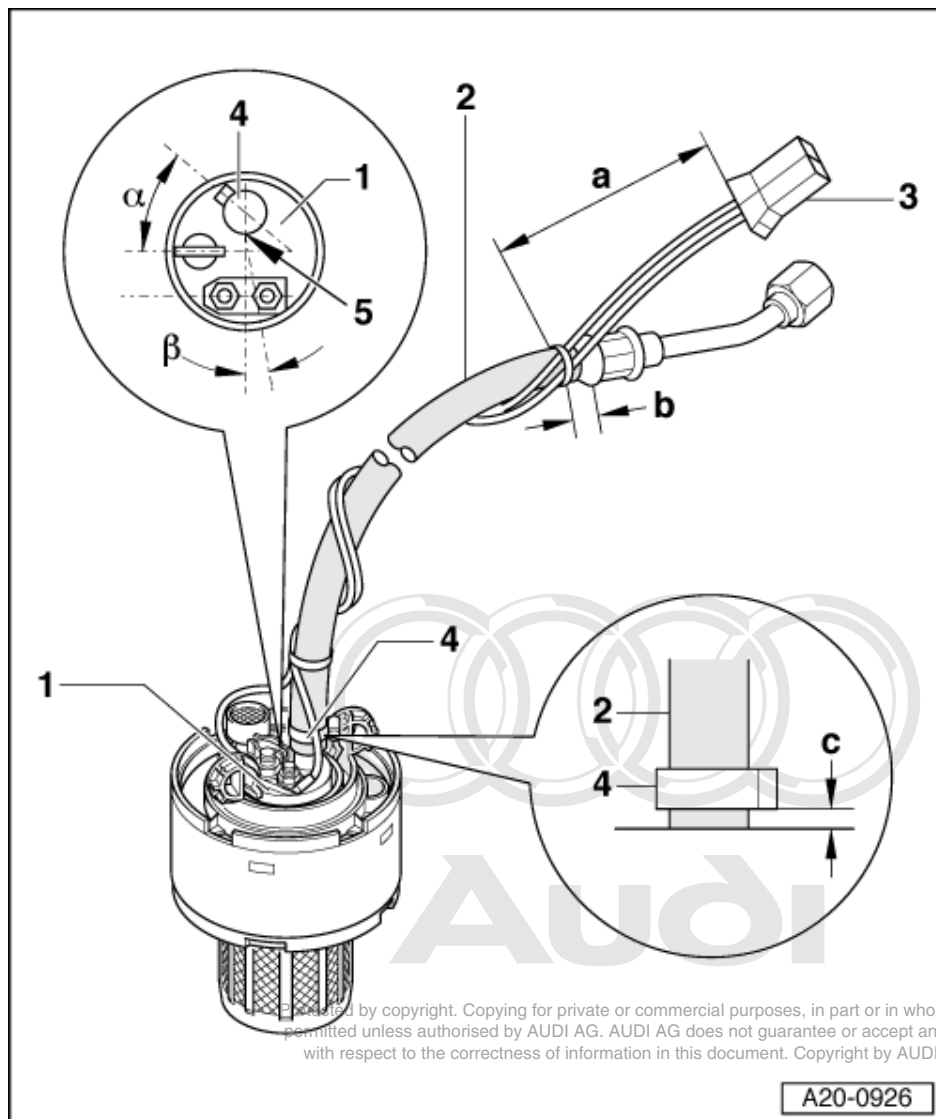


Pre-assembling fuel pump (Bosch) and fuel supply pipe

- Fit fuel supply pipe -2- with new tab-type hose clamp -4- at fuel pump -1- as shown.
- To do so, align fuel supply pipe such that white stripe -arrow 5- at fuel supply pipe coincides with electrical connections.
- Align tab-type hose clamp at an angle of $\alpha = 45^\circ$ to connection.
- Use V.A.G 1275 to secure tab-type hose clamp.
 - $c = 3 \text{ mm}$

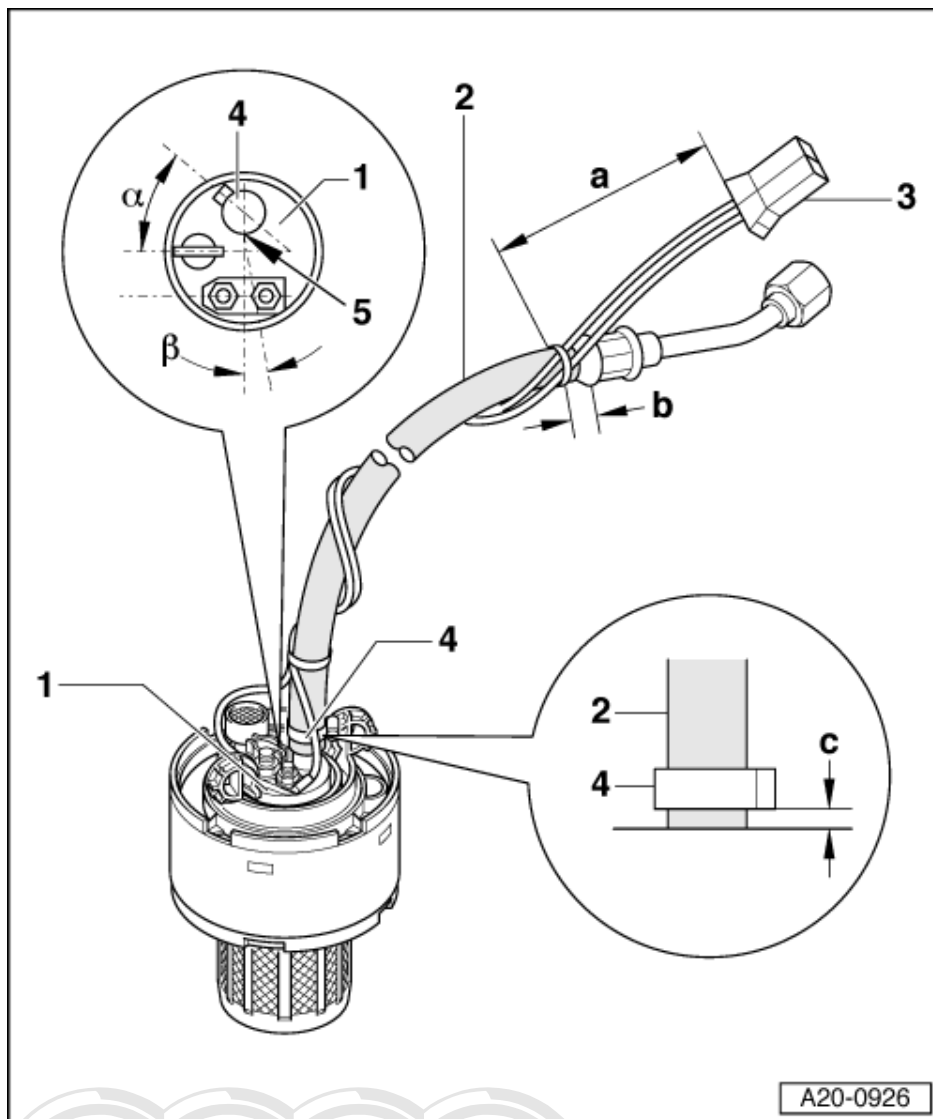


- Wind wiring -3- to fuel pump around fuel supply pipe.
- Secure wiring with fuel-resistant cable tie at marked location.
 - a = Effective wire length 180 mm
 - b = 5 mm

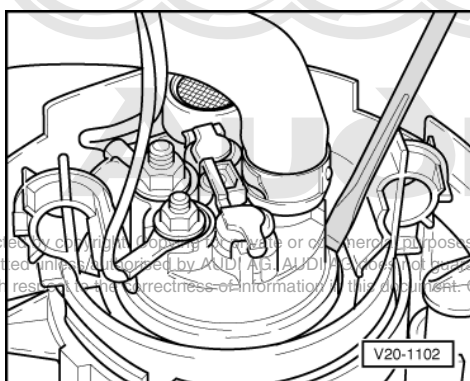


Pre-assembling fuel pump (VDO) and fuel supply pipe

- Fit fuel supply pipe -2- with new tab-type hose clamp -4- at fuel pump -1- as shown.
- To do so, align fuel supply pipe such that white mark -arrow 5- at fuel supply pipe is at an angle of $\beta = 10^\circ$ to electrical connections.
- Align tab-type hose clamp at an angle of $\alpha = 45^\circ$ to connection.
- Use V.A.G 1275 to secure tab-type hose clamp.
 - $c = 5 \text{ mm}$



- Wind wiring -3- to fuel pump around fuel supply pipe.
- Secure wiring with fuel-resistant cable tie at marked location.
 - a = Effective wire length 170 mm
 - b = 5 mm



-> Fig.1 Removing and installing fuel pump (Bosch and VDO)

- Fuel delivery unit dismantled



Removing

- Use screwdriver to press both locking lugs at baffle housing outwards and at the same time pull fuel pump slightly upwards to prevent re-engagement of locking lugs.
- Repeat procedure at second shoulder of fuel pump.
- Twist fuel pump and pull it upwards out of baffle housing.

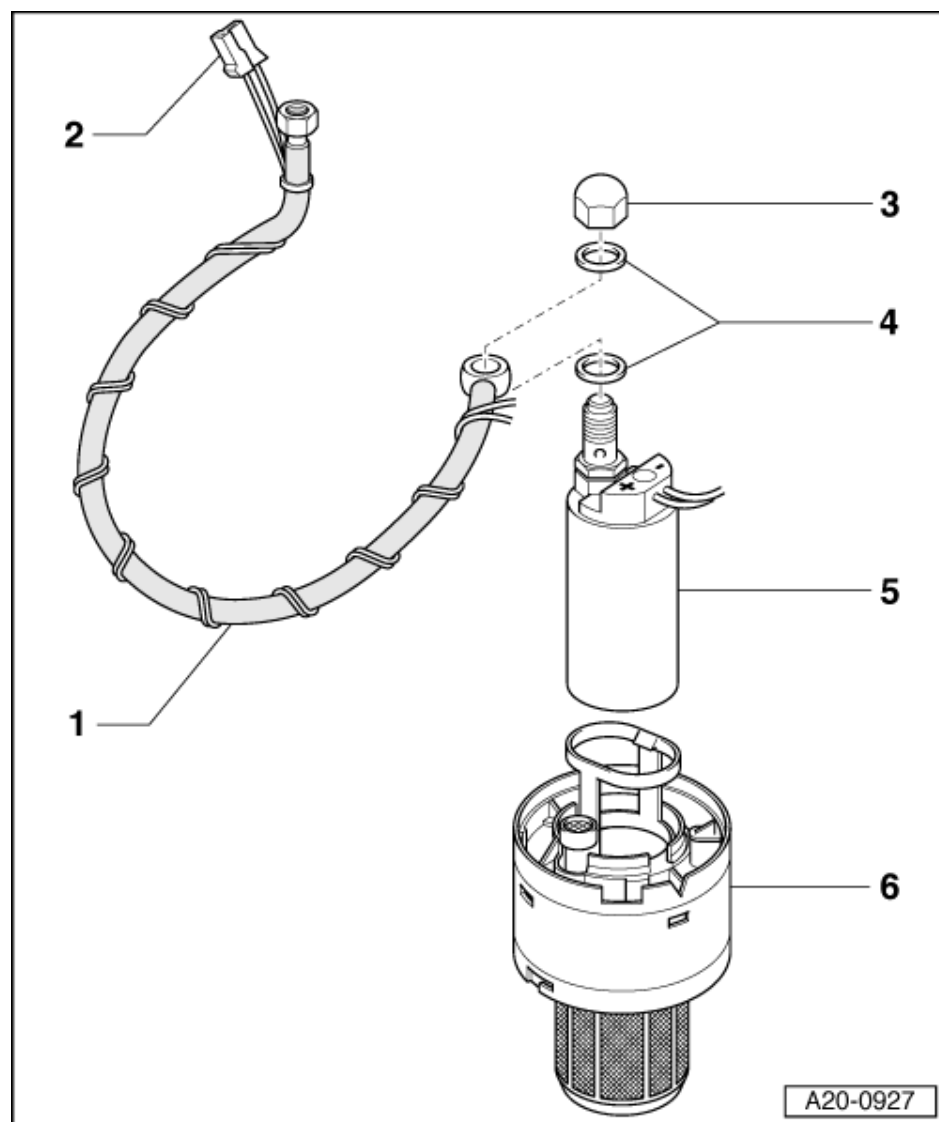
Installing

Install in reverse order, paying attention to the following:

- ♦ Installation position: Offset connection at bottom of fuel pump must be inserted in hole in inner part of baffle housing

2.16 - Dismantling fuel delivery unit (pump ø 40 mm) - 4 and 5-cyl. engine (code letters AAD, AAR, ABB, ACE)

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1 Fuel supply pipe

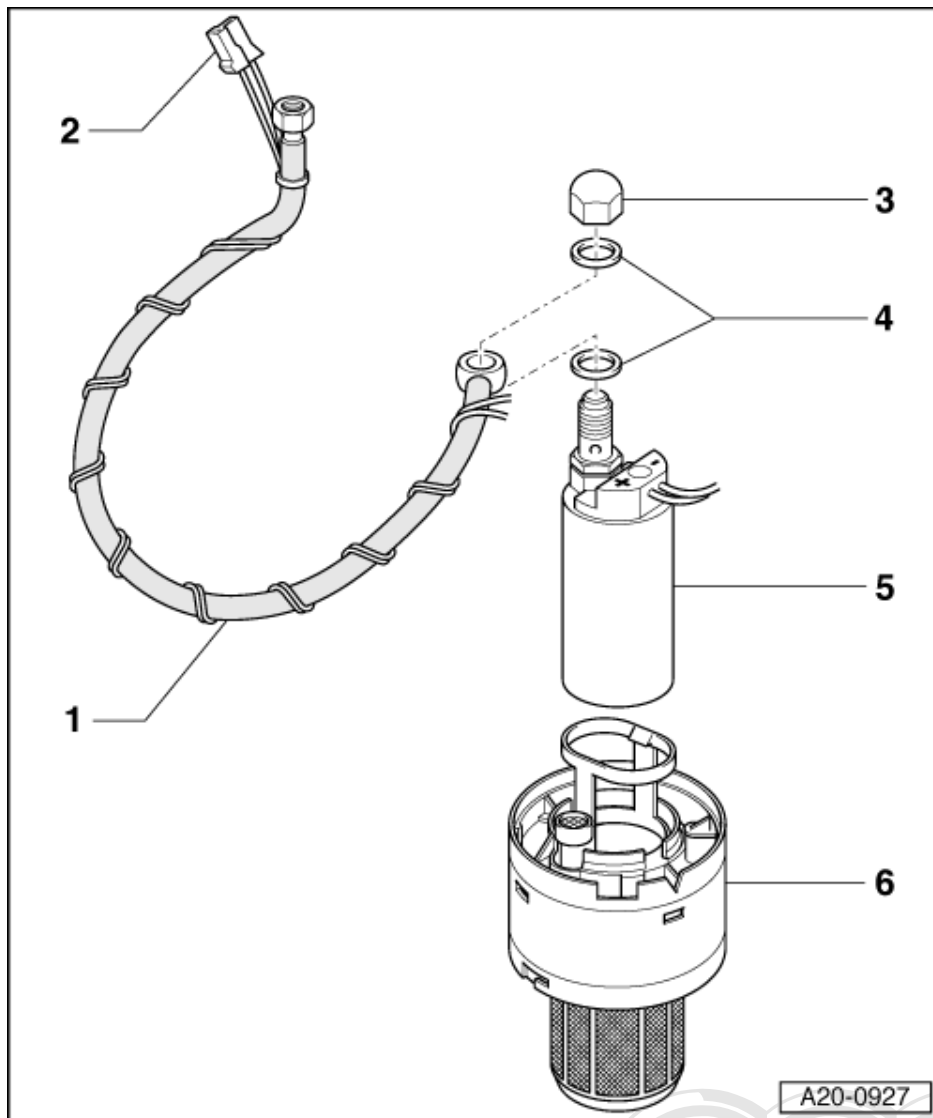
- ♦ Fuel pump/fuel pressure container
- ♦ Pre-assembly => Page 52

2 Wire

- ♦ For fuel pump
- ♦ Installation position => Page 52

3 Cap nut, 13 Nm

- ♦ Provide support at hexagon of fuel pump when unfastening and tightening



4 Sealing rings

- ♦ Replace

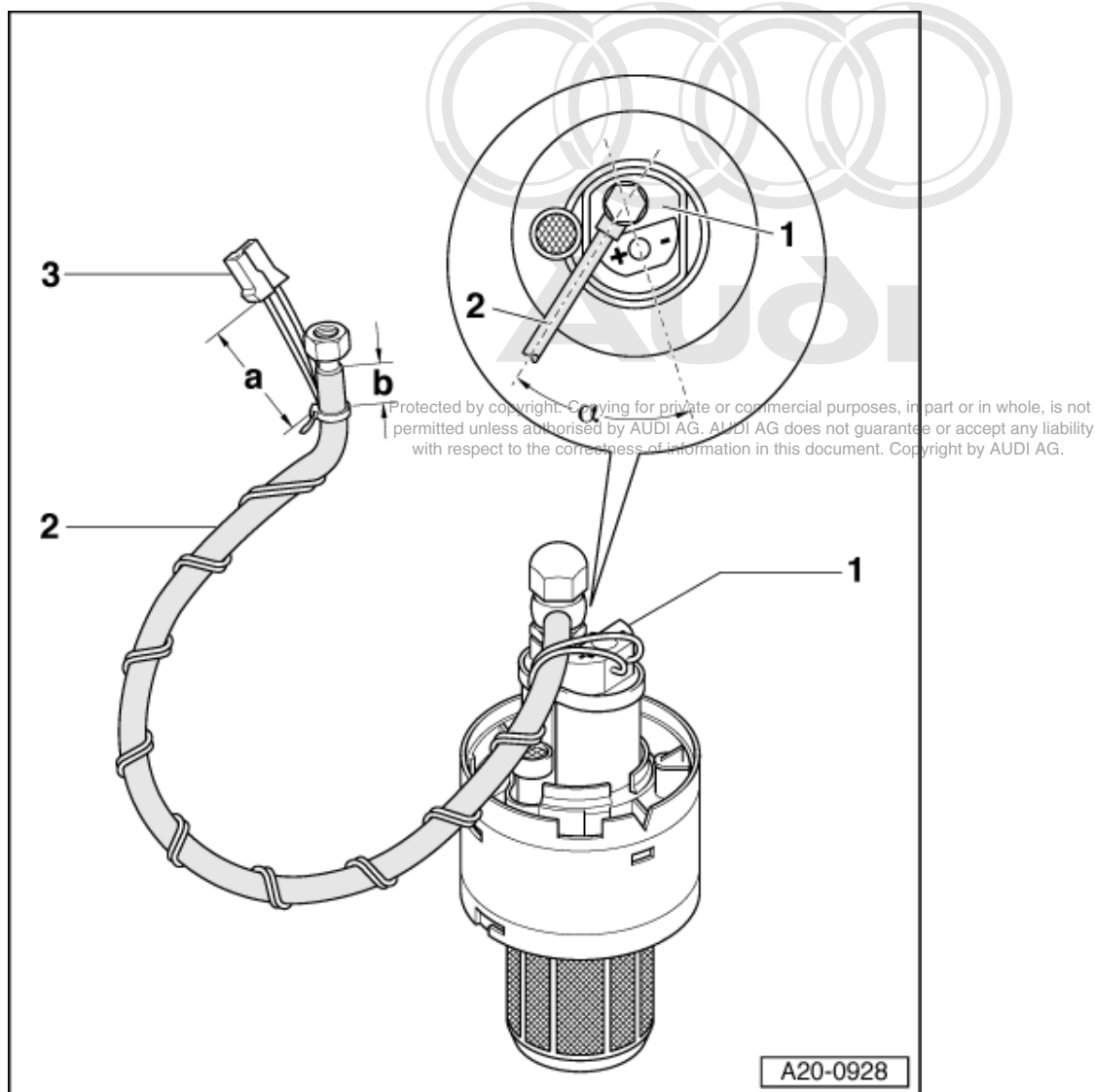
5 Fuel pump

- ♦ Removing and installing => Fig. 53
- ♦ Pre-assembly => Page 52
- ♦ Electrical checking => Page 16
- ♦ Checking holding pressure

=> Injection and Ignition System; Repair Group 25

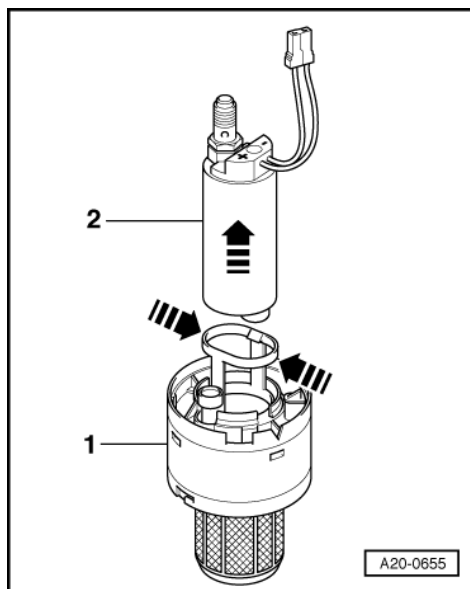
6 Inner part of baffle housing

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Pre-assembling fuel pump (ø 40 mm) and fuel supply pipe

- Fit fuel supply pipe -2- with new sealing rings at fuel pump -1- as shown.
- To do so, align fuel supply pipe at an angle of $\alpha = 45^\circ$ to electrical connections.
- Screw fuel supply pipe (13 Nm) to fuel pump.
- Wind wiring -2- to fuel pump in 9 coils around fuel supply pipe -3-.
- Secure wiring with fuel-resistant cable tie at marked location.
 - a = Effective wire length 170 mm
 - b = 20 mm



-> Fig.1 Removing and installing fuel pump

- Fuel delivery unit dismantled

Removing

- Squeeze both release areas -arrows- at inner part of baffle housing -1-.
- Pull fuel pump -2- upwards -arrow- out of inner part of baffle housing.

Installing

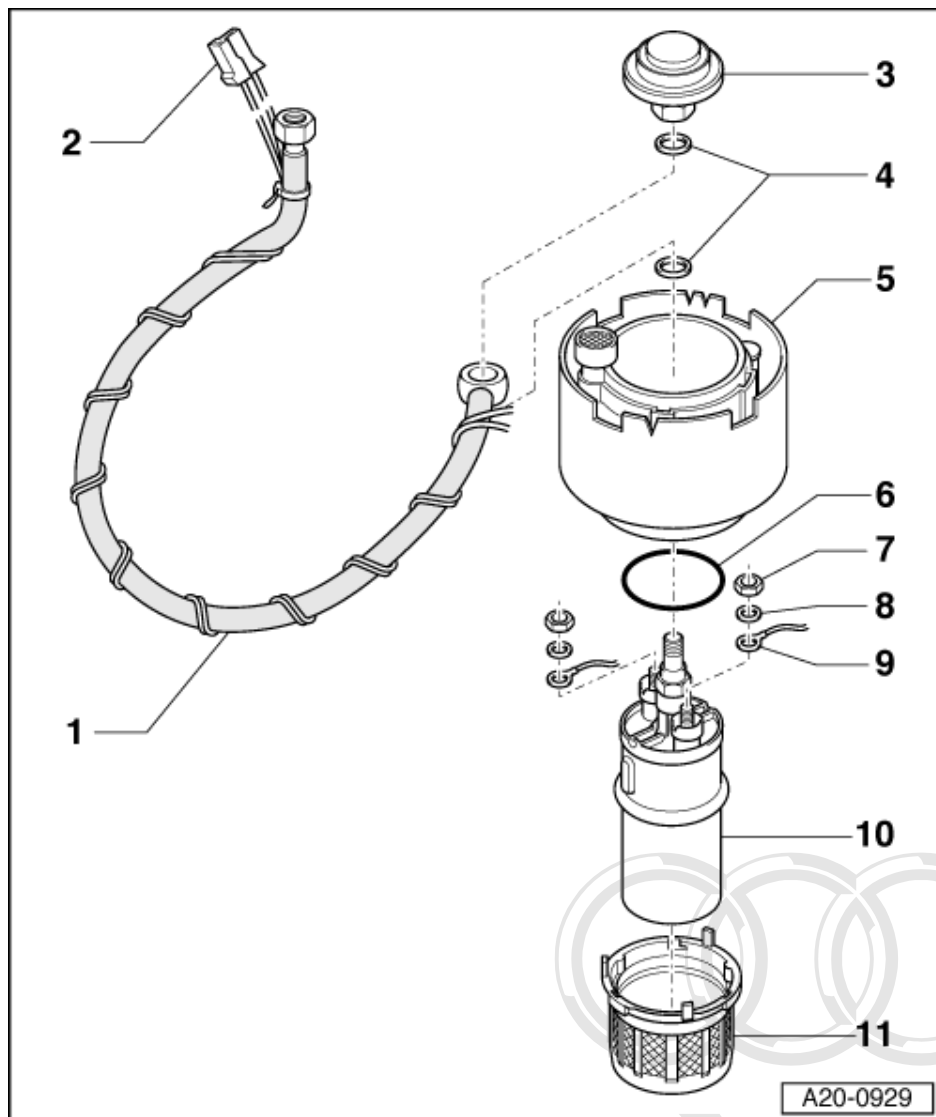
Install in reverse order, paying attention to the following:

- ♦ Installation position: Offset connection at bottom of fuel pump must be inserted in hole in inner part of baffle housing

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2.17 - Dismantling fuel delivery unit (pump $\varnothing$ 60 mm) - 4 and 5-cyl. engine (code letters AAD, AAR, ABB, ACE)



1 Fuel supply pipe

- ♦ Fuel pump/fuel pressure container
- ♦ Pre-assembly => Page 56

2 Wire

- ♦ For fuel pump
- ♦ Installation position => Page 20-78

3 Pressure damper, 13 Nm

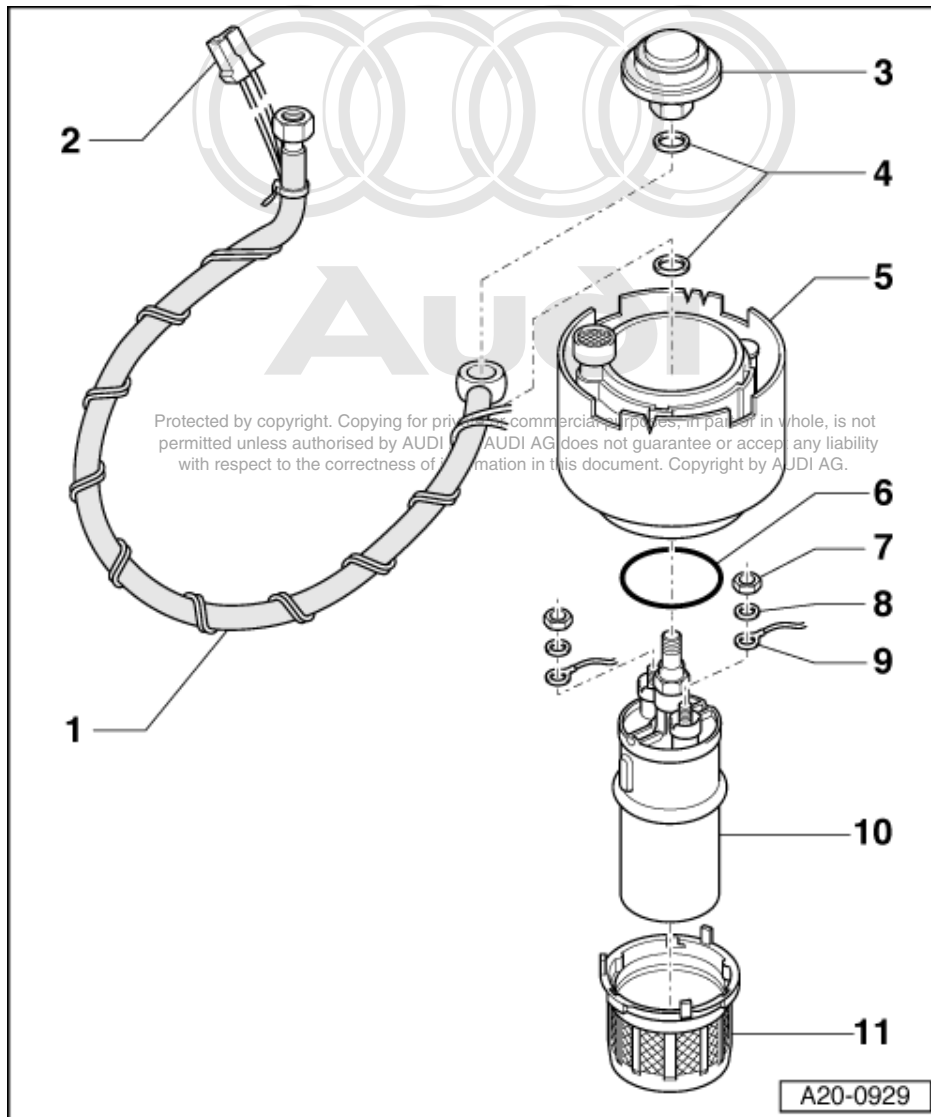
- ♦ Provide support at hexagon of fuel pump when unfastening and tightening

4 Sealing rings

- ♦ Replace

5 Inner part of baffle housing

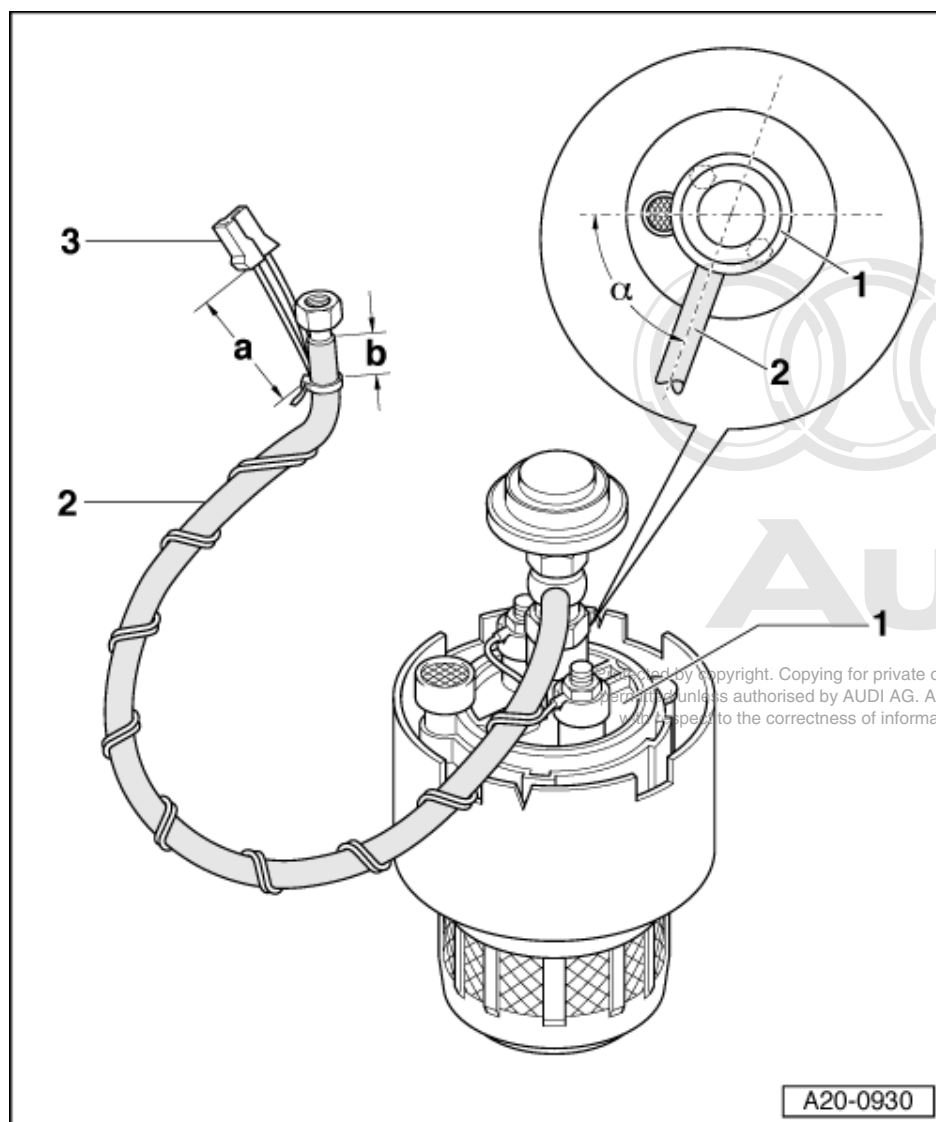
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- 6 O-ring**
 - ♦ Replace
- 7 M5 = 1.6 Nm**
M6 = 2 Nm
- 8 Washer**
- 9 Wire**
 - ♦ For fuel pump
- 10 Fuel pump**
 - ♦ Removing and installing => Fig. 57
 - ♦ Pre-assembly => Page 56
 - ♦ Electrical checking => Page 16
 - ♦ Checking holding pressure

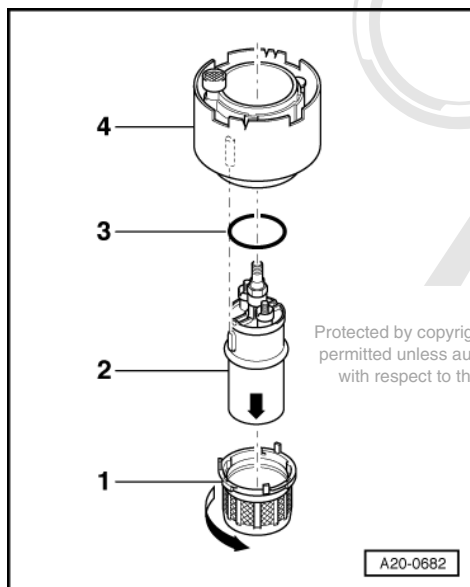
=> Injection and Ignition System; Repair Group 25

- 11 Fuel filter screen**
 - ♦ Turn anti-clockwise to detach (bayonet lock)
 - ♦ Cannot be replaced separately
 - ♦ Clean if contaminated



Pre-assembling fuel pump (ø 60 mm) and fuel supply pipe

- Fit fuel supply pipe -2- with new sealing rings at fuel pump -1- as shown.
- To do so, align fuel supply pipe at fuel pump at an angle of $\alpha = 65^\circ$ to connection.
- Screw fuel supply pipe (13 Nm) to fuel pump.
- Wind wiring -3- to fuel pump in 9 coils around fuel supply pipe -2-.
- Secure wiring with fuel-resistant cable tie at marked location.
 - a = Effective wire length 170 mm
 - b = 20 mm



-> Fig.1 Removing and installing fuel pump

- Fuel delivery unit dismantled

Removing

- Turn fuel filter screen -1- anti-clockwise and detach it (bayonet lock).
- Pull fuel pump -2- with O-ring -3- downwards out of inner part of baffle housing -4-.

Installing

Install in reverse order, paying attention to the following:

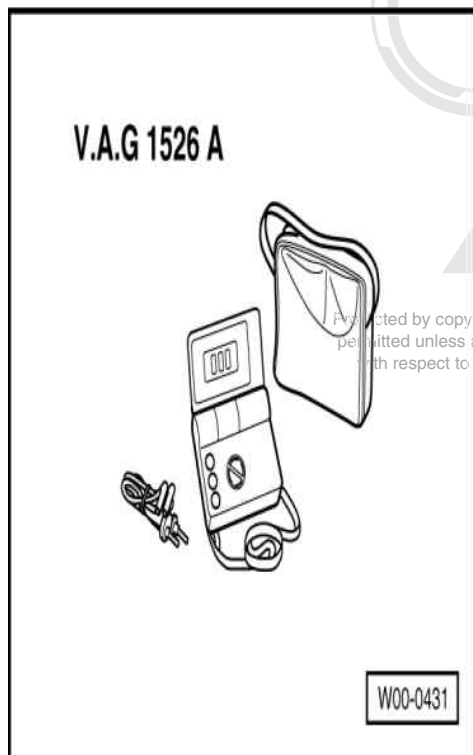
- Make sure tab at fuel pump engages in recess at inner part of baffle housing.

2.18 - Checking fuel gauge sender -G

Note:

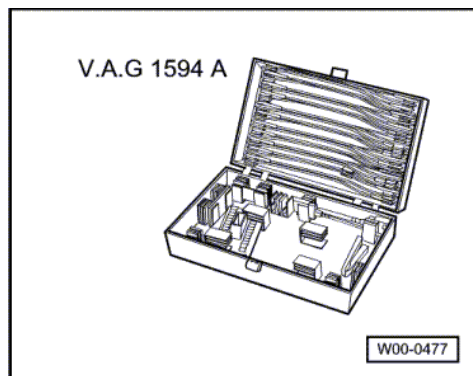
Checking signal from fuel gauge sender

=> Electrical System; Repair Group 90

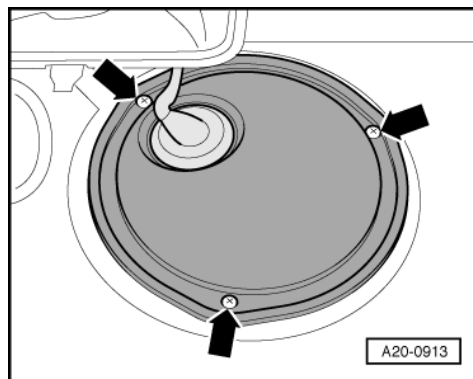


Special tools and workshop equipment required

- ♦ V.A.G 1526 A



- ♦ V.A.G 1594 A



Test sequence

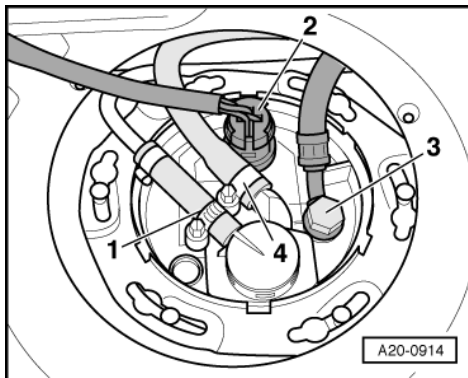
- Remove luggage compartment lining.

Avant:

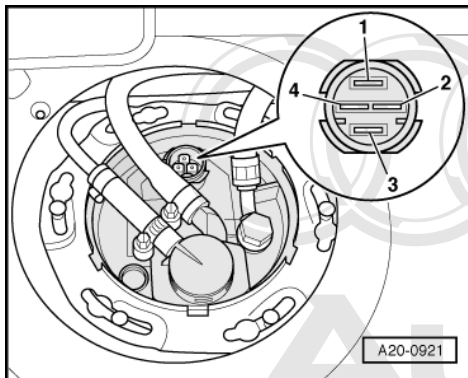
- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.

All models:

- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.



- -> Connect up multimeter for resistance measurement between contacts 2 and 3.

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Sender installed	Sender at lower stop	Sender at upper stop
Fuel gauge sender -G	approx. 275 ω	approx. 40 ω

- Measured value of 0 ω is an indication of a short circuit, whereas $\infty \omega$ signifies an open circuit in the wiring.

Note:

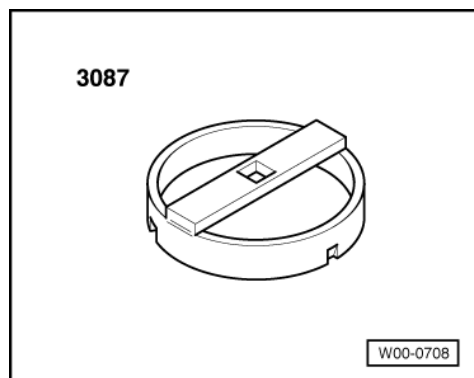
Checking resistance values "Tank full"/"Tank empty" involves removing fuel gauge sender -G => Page 60 and swivelling sender float to upper/lower stop.

The following values are obtained with the fuel gauge sender removed on account of the greater deflection of the float arm:



Sender removed	Sender at lower stop	Sender at upper stop
Fuel gauge sender -G	approx. 280 ω	approx. 40 ω

2.19 - Removing and installing fuel gauge sender



Special tools and workshop equipment required

- ♦ Fuel gauge sender wrench 3087

Removing

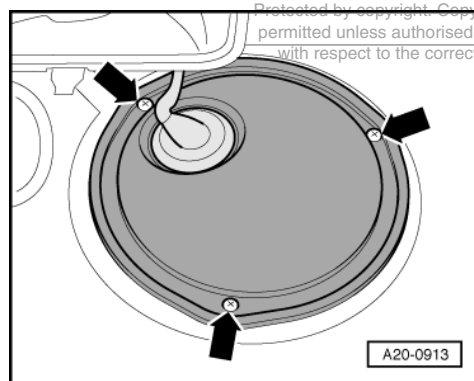
Heed safety precautions => Page 1 .

Observe rules for cleanliness =>Page 2 .

- When removing fuel gauge sender, fuel tank must not be more than 2/3 full. Drain fuel tank if necessary. Procedure => Page 6 .
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.
- Briefly open fuel tank cap and close again.
- Remove luggage compartment lining.

Avant:

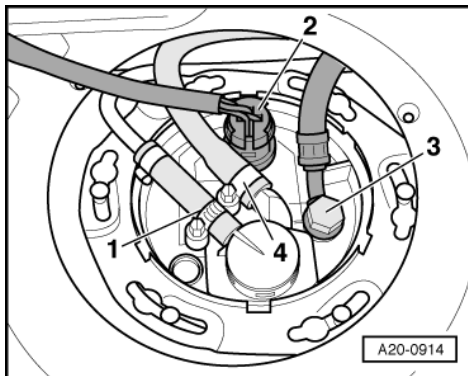
- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.



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All models:

- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.

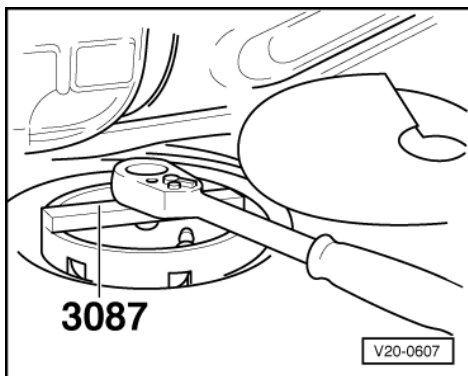
Attention:

- ◆ **Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.**
- ◆ **After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.**

- Detach fuel return pipe -4- and breather pipe -1-.
- Unscrew fuel supply pipe -3-.

Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.



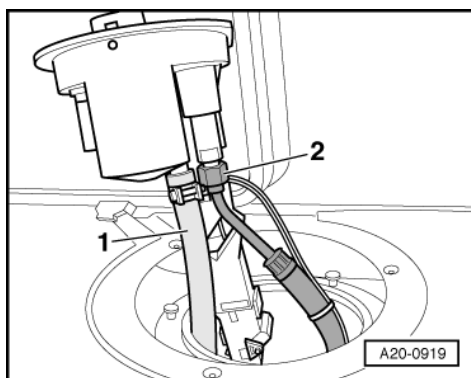
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All models:

Attention:

When removing fuel gauge sender, fuel tank must not be more than 2/3 full.

- -> Use fuel gauge sender wrench 3087 to unscrew locking ring.
- Lift fuel gauge sender carefully out of opening in fuel tank.



- -> Detach fuel return pipe -1- on inside of fuel gauge sender.
- Unscrew fuel supply pipe -2-.
- Unplug connector to fuel pump.

Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.

All models:

- Take fuel gauge sender carefully out of opening in fuel tank.

Installing

Install in reverse order, paying attention to the following:

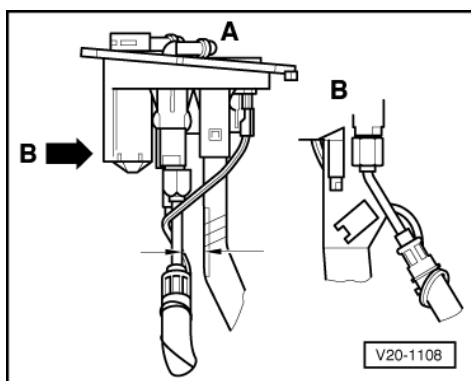
- If fuel delivery unit has been dismantled or fuel pump removed, pre-assemble components as described under "Dismantling fuel delivery unit" for the various engine versions.

Note:

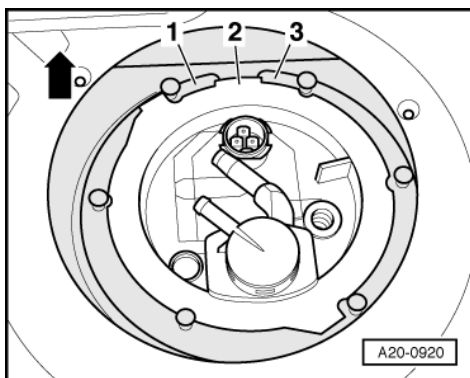
Secure all hose connections with standard hose clamps. purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

=> Parts List

- Replace O-ring for fuel gauge sender.
- Insert fuel gauge sender in fuel tank.



- Attach fuel return pipe to inside of fuel gauge sender.
- Attach fuel supply pipe as shown.
 - > A - Parallel to sender housing
 - B - Inclined to right (viewed in direction of arrow B)
- Route wire around fuel supply pipe as shown.

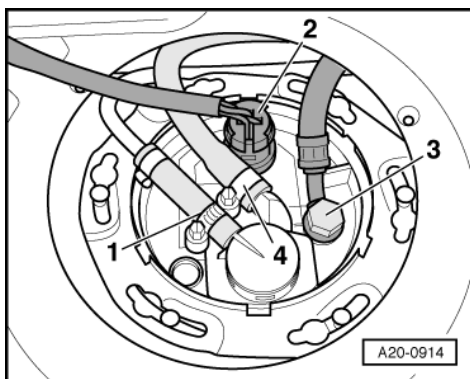


- -> Pay attention to installation position of fuel gauge sender.
- Tab -2- at fuel gauge sender must be located between raised areas -1- and -3- at fuel tank

Note:

Arrow faces in direction of travel.

- Use fuel gauge sender wrench 3087 to secure locking ring.



- -> Screw on fuel supply pipe -3-.
- Attach fuel return pipe -4- and breather pipe -1- and tighten hose clamps.
- Attach connector -2-.

Note:

On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

Tightening torques

Component	Nm
Supply pipe to sender housing (union nut)	23
Supply pipe to sender housing (banjo bolt)	23
Hose clamps	2
Battery terminal to battery post	6

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3 - Fuel supply system - Four-wheel drive

3.1 - Fuel supply system - Four-wheel drive

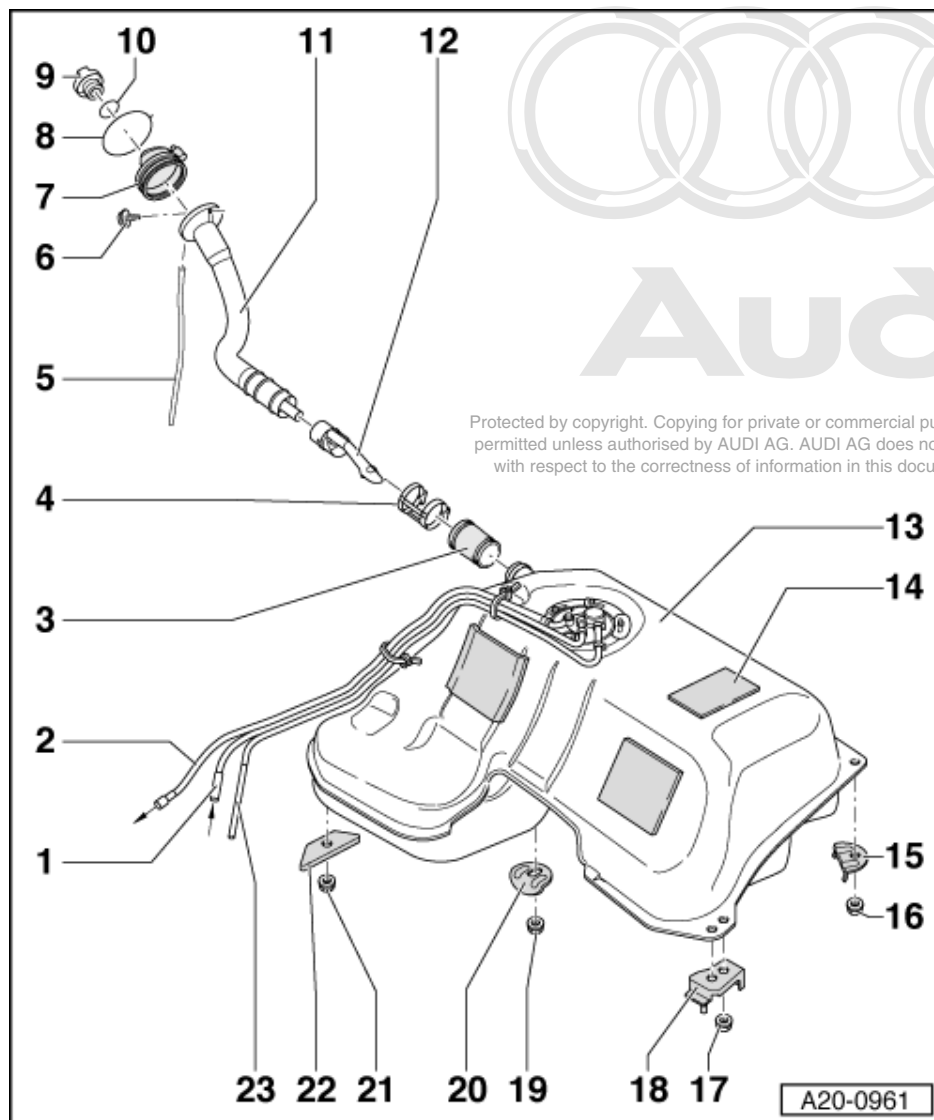
Notes:

- ♦ Secure all hose connections with standard hose clamps.

=> Parts List

- ♦ Special tool V.A.G 1921 is recommended for fitting spring clips.
- ♦ Always replace sealing rings and gaskets on assembly.

3.2 - Exploded view of components: Fuel tank with attachments



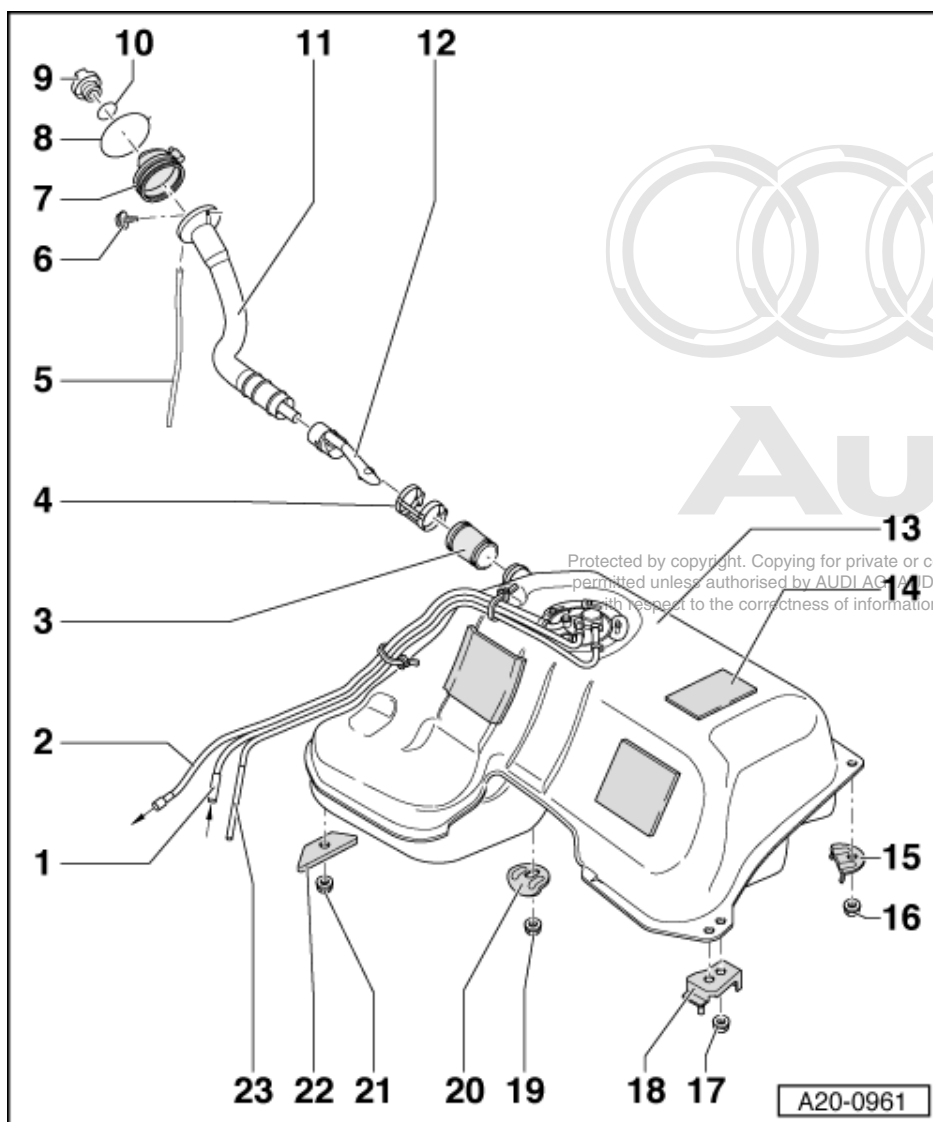
1 Fuel return pipe

- ♦ From engine
- ♦ Do not kink
- ♦ Attached with cable tie to fuel tank

2 Fuel supply pipe

- ♦ To fuel filter

- ♦ Do not kink
- ♦ Attached with cable tie to fuel tank
- 3 Adapter hose**
- 4 Double hose clamp**
 - ♦ Installation position
=> Fig. 67
- 5 Overflow hose**
 - ♦ Engage in wheel housing
- 6 Oval-head bolt, 1 Nm**

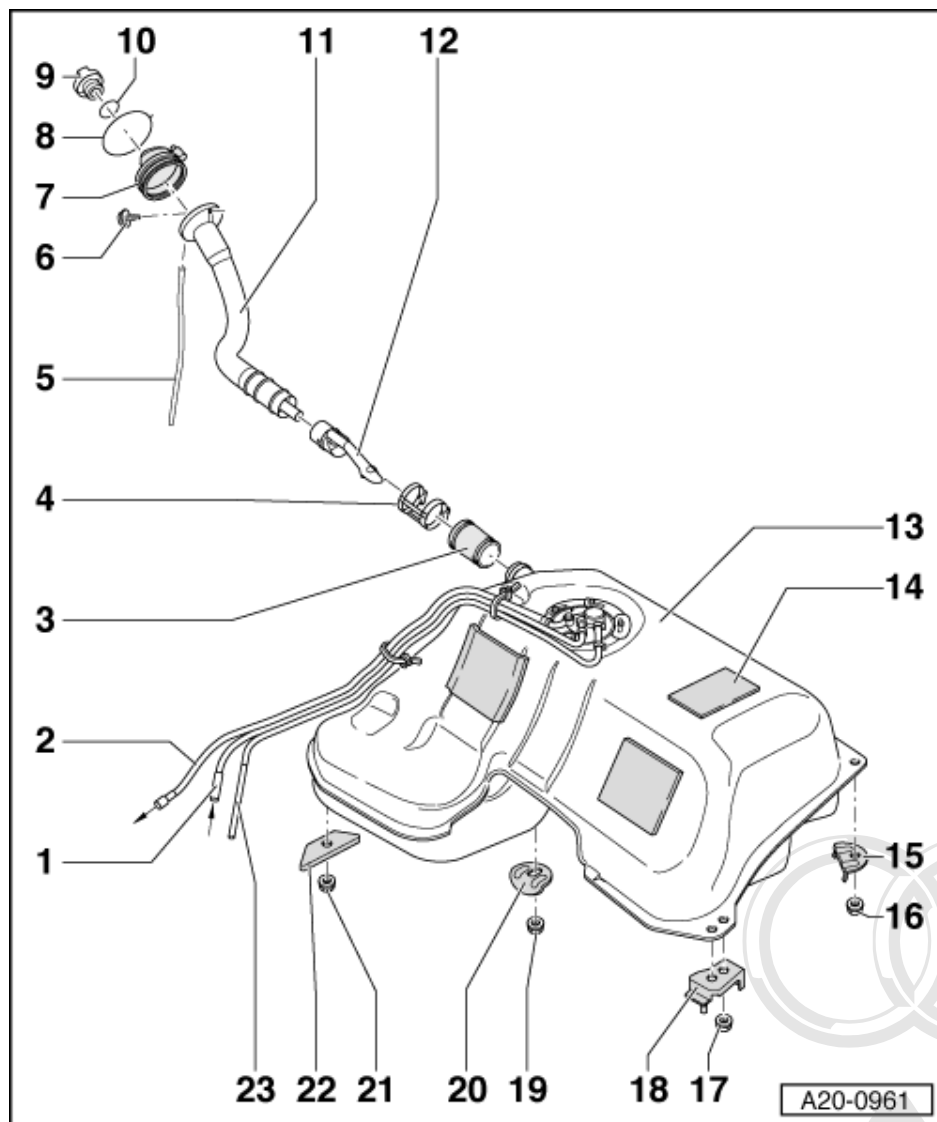


- 7 Rubber adapter**
- 8 Tensioning ring**
- 9 Cap**
- 10 Sealing ring**
 - ♦ Replace if damaged
- 11 Fuel filler neck**
 - ♦ Removing and installing=>Page 69
- 12 Insert**
 - ♦ With non-return flap
- 13 Fuel tank**
 - ♦ Removing and installing=>Page 69



14 Pad

- ♦ Installation position => Fig. 67



15 Intermediate plate

16 23 Nm

17 23 Nm

18 Bracket

19 23 Nm

20 Intermediate plate

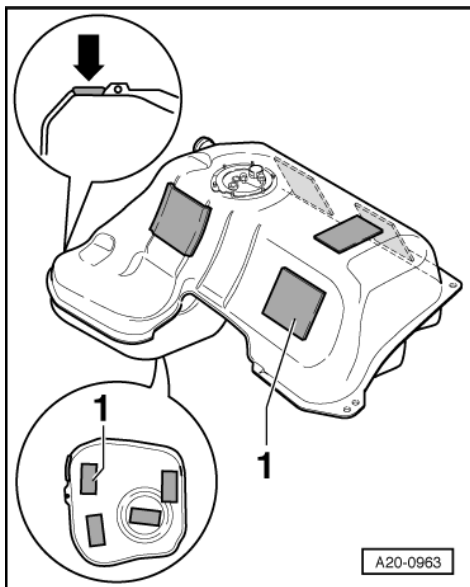
21 23 Nm

22 Intermediate plate

23 Breather pipe

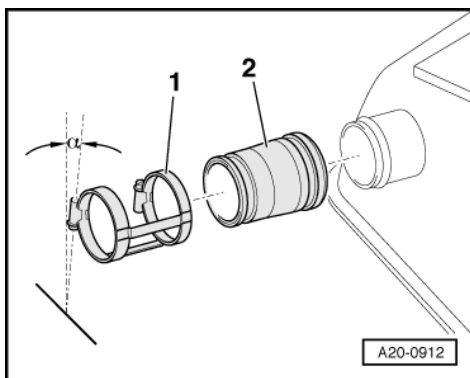
- ♦ To activated charcoal filter in front right wheel housing
- ♦ Do not kink
- ♦ Attached with cable tie to fuel tank

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-> Fig.1 Installation position of pads and edge strip

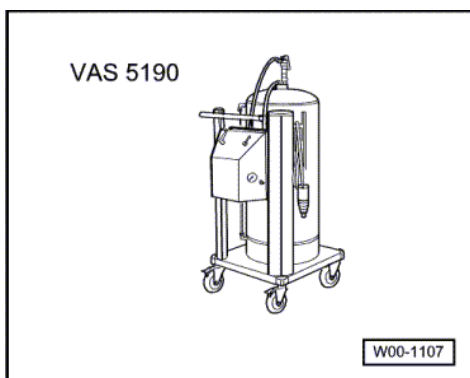
- ◆ Bond pads -1- to fuel tank as shown.
- ◆ Attach edge strip to fuel tank -arrows- as shown.



-> Fig.2 Installation position of double hose clamp

- ◆ Screw connections of double hose clamp -1- for adapter hose -2- must be at an angle of $\alpha = 10^\circ$ to perpendicular.

3.3 - Draining fuel tank



Special tools and workshop equipment required

- ♦ VAS 5190

Or

- ♦ V.A.G 1433 A

Sequence of operations

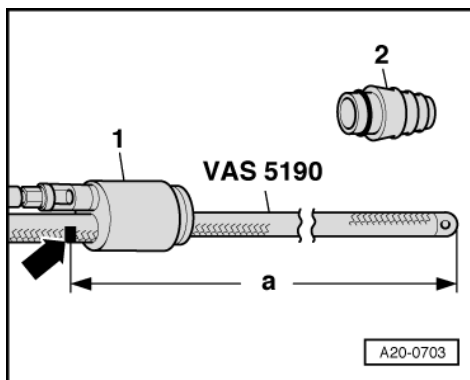
Heed safety precautions => Page **1** .

Observe rules for cleanliness =>Page **2** .

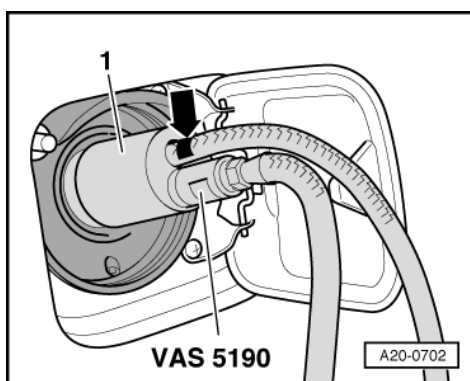
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.

Attention:
Attach earth wire of V.A.G 1433

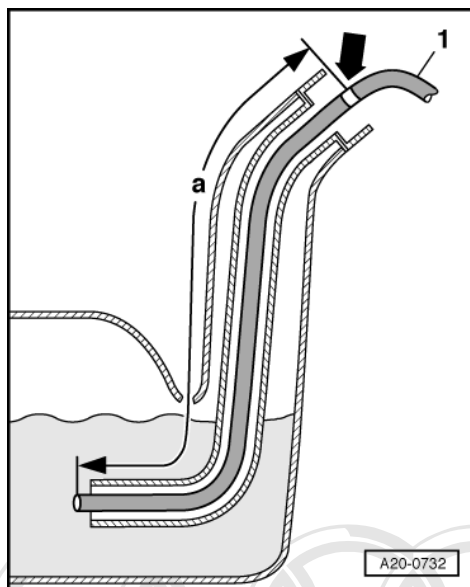
- Detach cap from fuel filler neck.



- -> Pull tapered section -2- off shank section -1- of VAS 5190.
- Use insulating tape to make a mark -arrow- on drain hose at a distance a = 1315 mm from end of hose.



- -> Screw shank section -1- of extraction unit VAS 5190 onto filler neck of fuel tank.
- Then insert drain hose into fuel tank until previously affixed mark -arrow- makes contact with shank section.



Notes:

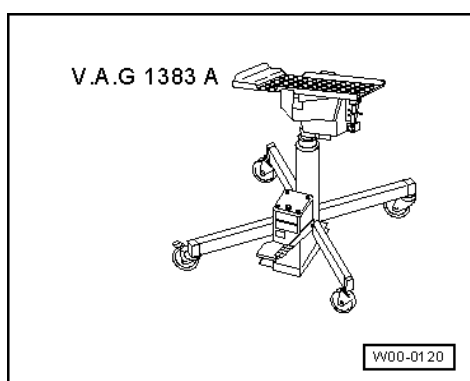
- ◆ The procedure is essentially the same if use is made of an extractor with no shank section.
 - ◆ -> In this case, use insulating tape to make a mark -arrow- on drain hose at a distance $a = 1250$ mm from end of hose. Drain hose has been properly inserted if previously affixed mark is opposite edge of filler neck.
 - ◆ If hose is difficult to insert, apply a thin coat of engine oil. Never use silicone lubricants.
- Drain fuel tank as far as possible via fuel filler neck.
 - Carefully pull out drain hose.

Note:

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On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

3.4 - Removing and installing fuel tank with attachments



Special tools and workshop equipment required

- ◆ V.A.G 1383 with V.A.G 1359/2

Removing

Heed safety precautions => Page 1 .

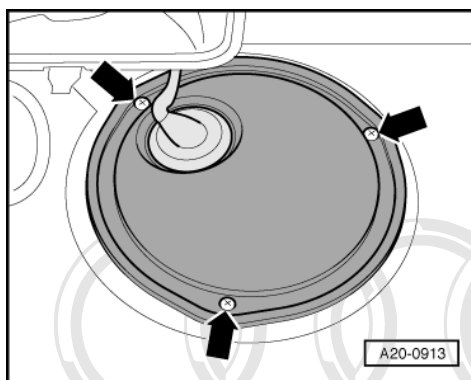


Observe rules for cleanliness =>Page **2** .

- Fuel tank must be empty when removing it from vehicle so as to reduce weight. Drain fuel tank if necessary. Procedure => Page **67** .
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.
- Remove luggage compartment lining.

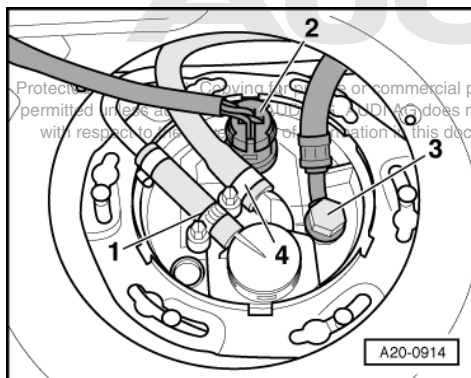
Avant:

- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.

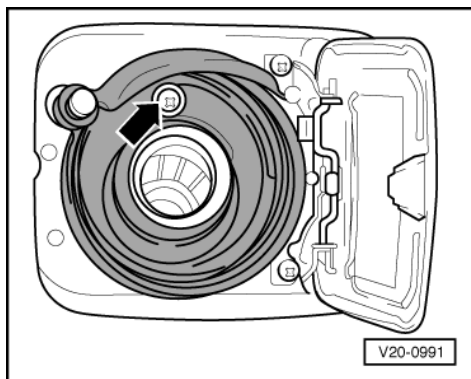


All models:

- -> Unscrew cover -arrows-.



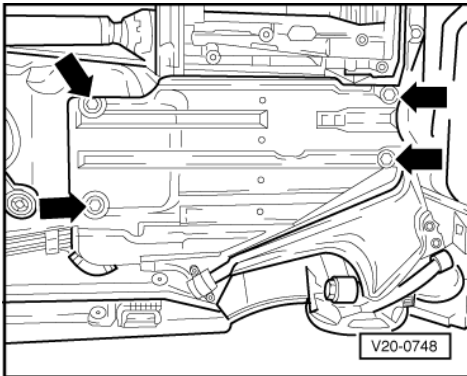
- -> Unplug connector -2- for fuel pump and fuel gauge sender.



- Clean area around fuel filler neck.
- Open filler neck compartment lid and detach cap from fuel filler neck.
- -> Screw out bolt -arrow- at fuel filler neck.
- Unscrew rear right wheel.
- Remove rear right wheel housing liner.

=> General Body Repairs; Repair Group 66; Wheel housing liners Wheel housing liners

- Detach overflow hose from holder.



- -> Remove guard underneath fuel tank -arrows-.
- Remove rear section of exhaust system.

=> Engine, Mechanics; Repair Group 26

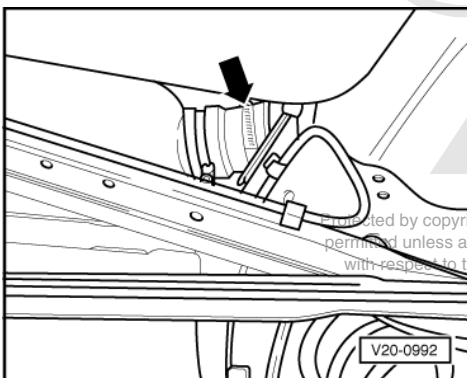
- Remove rear heat shield for exhaust system.
- Remove propshaft.

=> Manual Gearbox; Repair Group 39

=> Automatic Gearbox; Repair Group 39

- Remove rear axle.

=> Running Gear, Front-wheel Drive and Four-wheel Drive; Repair Group 42



Attention:

Even if fuel tank is empty, a small quantity of fuel may escape on unfastening hose clamp at adapter hose.

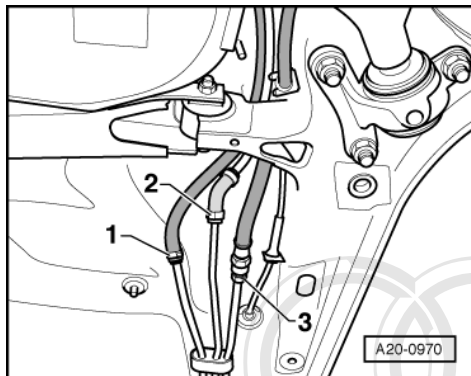
- -> Unfasten outer hose clamp -arrow- at adapter hose between fuel tank and fuel filler neck.



Note:

Leave adapter hose in position on fuel tank connection.

- Detach and take out fuel filler neck.



Attention:

- ♦ Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.
- ♦ After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.

- -> Disconnect fuel supply pipe 3 on underside of vehicle and catch fuel which escapes.
- Detach fuel return pipe -1- and breather pipe -2- at connection point.
- Disengage and lay bare pipes.

Vehicles with auxiliary heater:

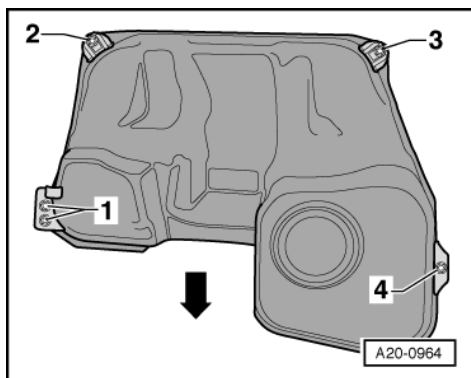
- Additionally disconnect fuel supply pipe to auxiliary heater.

All models:

- Position engine/gearbox lifter V.A.G 1383 A beneath vehicle to support fuel tank.

Attention:

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



- -> Unscrew nuts -1 ... 4- and detach intermediate plates.

Note:

Arrow faces in direction of travel.

- Use V.A.G 1383 A to lower fuel tank.

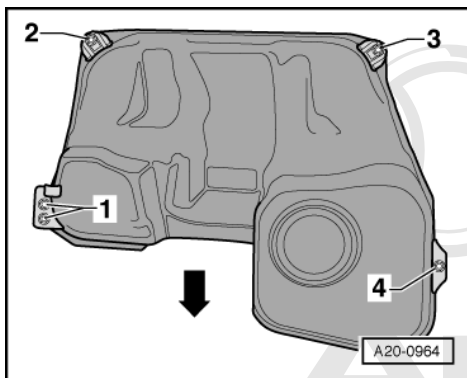
Installing

Install in reverse order, paying attention to the following:

- ♦ Secure all hose connections with standard hose clamps.

=> Parts List

- ♦ Always replace sealing rings and gaskets on assembly.
- Check whether fuel supply, return and breather pipes are attached to fuel tank with cable ties.
- Position fuel tank on underside of vehicle using engine/gearbox lifter V.A.G 1383 A.



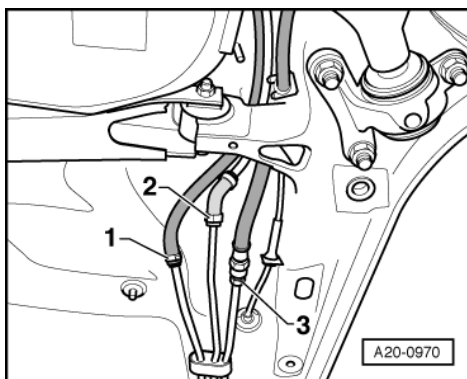
- -> Secure fuel tank using nuts -1...4-.

Note:

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Arrow faces in direction of travel.

- Fit fuel filler neck.
- Engage overflow hose at holder.



- -> Screw on fuel supply pipe -3-.
- Attach fuel return pipe -1- and breather pipe -2- and secure with new tab-type hose clamps. To do so, use V.A.G 1275.
- Engage pipes at holder -arrows-.
- Install rear axle.



=> Running Gear, Front-wheel Drive and Four-wheel Drive; Repair Group 42

- Fit propshaft.

=> Manual Gearbox; Repair Group 39

=> Automatic Gearbox; Repair Group 39

- Install rear right wheel housing liner.

=> General Body Repairs; Repair Group 66; Wheel housing liners Wheel housing liners

- Install rear section of exhaust system.

=> Engine, Mechanics; Repair Group 26

Note:

On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

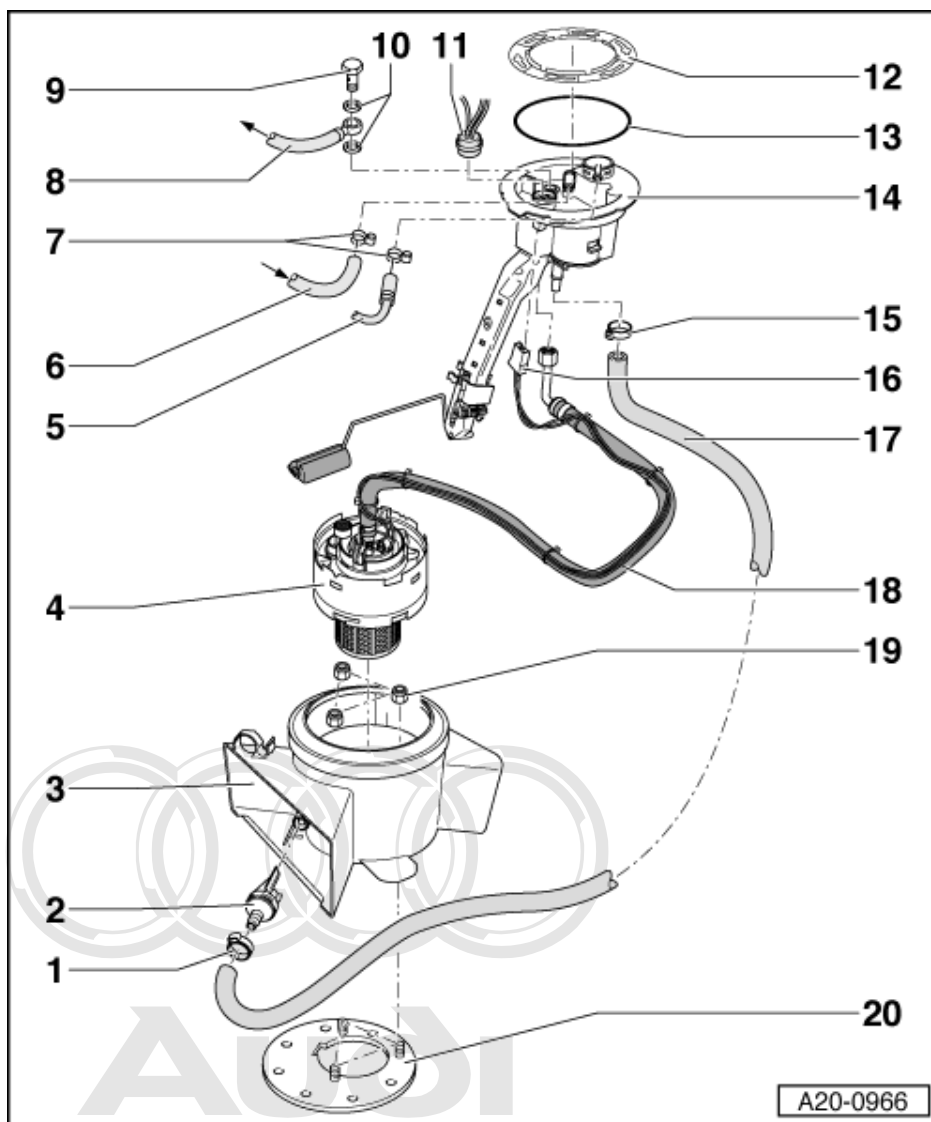
Tightening torques

Component	Nm
Fuel tank to body	23
Bolted joint of fuel supply pipe	23
Hose clamp for fuel filler neck to fuel tank	2.6
Fuel filler neck to body	1
Battery terminal to battery post	6



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3.5 - Exploded view of components: Fuel delivery unit and fuel gauge sender



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- ♦ On vehicles with auxiliary heater, pay attention to routing of suction pipe for auxiliary heater.

=> Heating, Air Conditioner; Repair Group 82

- ♦ Fig. shows layout for vehicle with 5-cyl. engine.

1 Hose clamp

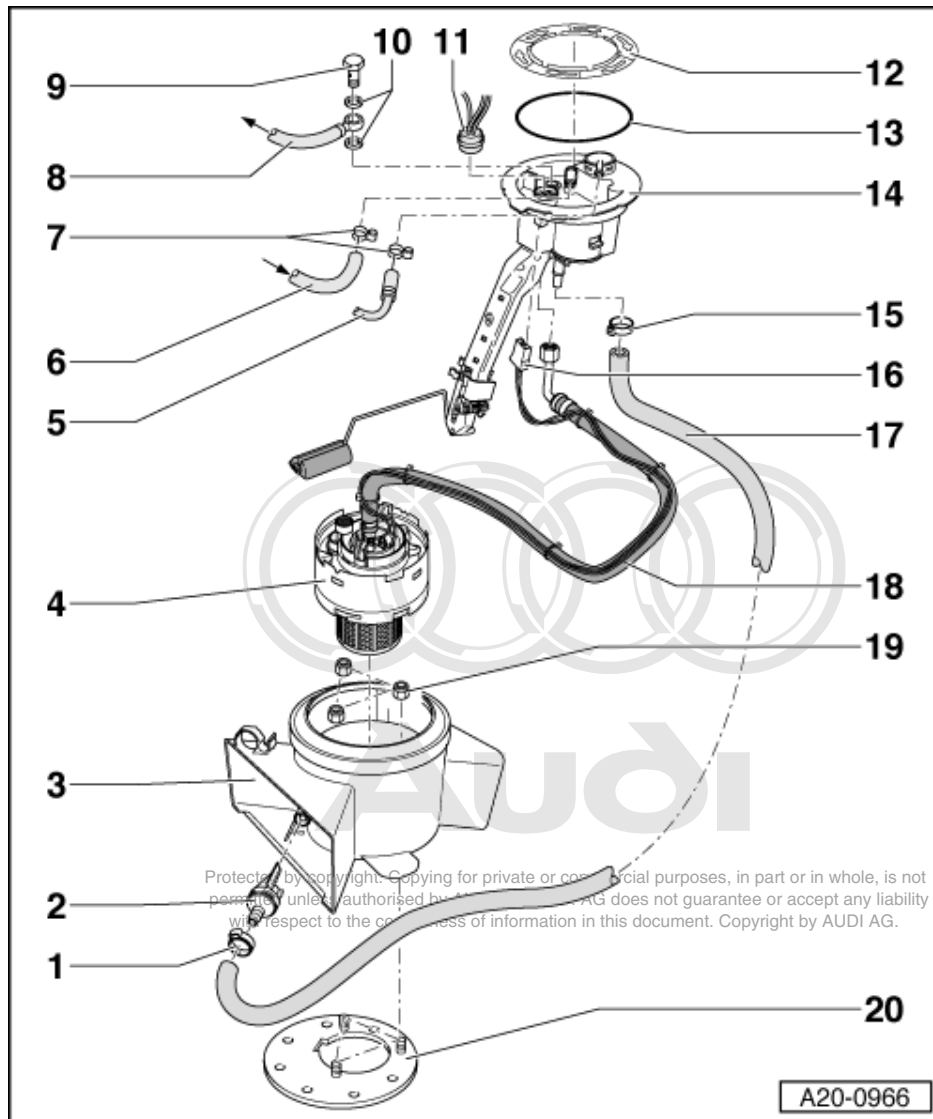
- ♦ Use V.A.G 1275 to secure

2 Suction jet pump

- ♦ Not available as separate replacement part

3 Bottom part of baffle housing

- ♦ Cannot be removed

**4 Fuel delivery unit**

- ◆ Electrical checking of fuel pump
=> Page 79
- ◆ Checking delivery rate
=> Page 84 onwards
- ◆ Checking holding pressure

=> Injection and Ignition System; Repair Group 24

=> Injection and Ignition System; Repair Group 25

- ◆ Removing and installing
=> Page 97

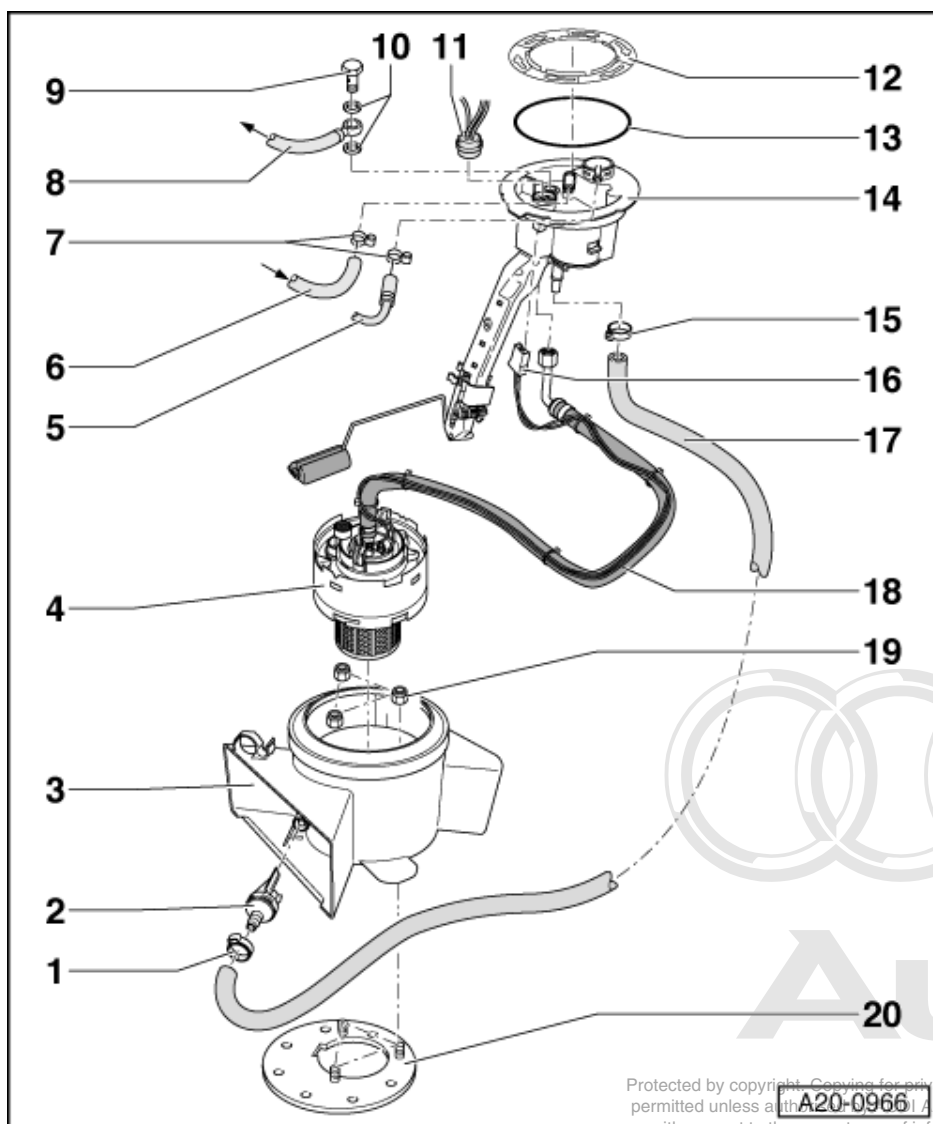
5 Breather pipe

- ◆ To activated charcoal filter in front right wheel housing

6 Fuel return pipe

- ◆ From engine

7 Clip



8 Fuel supply pipe

- ♦ To fuel filter

9 Banjo bolt, 23 Nm

10 Sealing rings

- ♦ Replace

11 Connector

- ♦ For fuel pump and fuel gauge sender -G

12 Locking ring

- ♦ Use spanner 3087 to remove and install

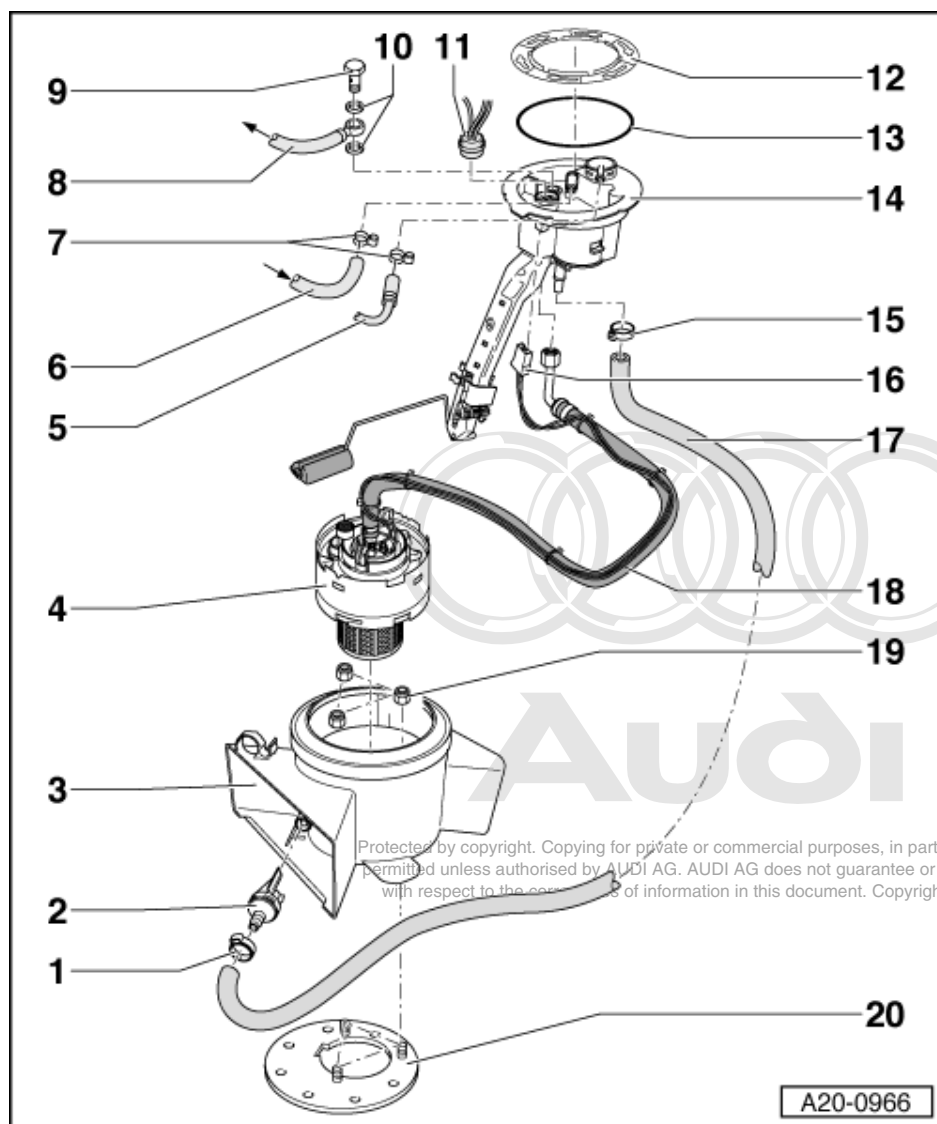
13 O-ring

- ♦ Replace

14 Fuel gauge sender -G

- ♦ Checking resistance values
=> Page 123
- ♦ Removing and installing
=> Page 126

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15 Screw-type clamp

16 Connector

- ♦ For fuel pump

17 Fuel return hose

- ♦ Sender housing/bottom part of baffle housing

18 Fuel supply pipe

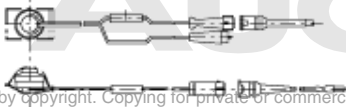
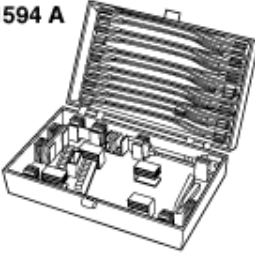
- ♦ Fuel pump/sender housing

19 5 Nm

20 Assembly flange for baffle housing

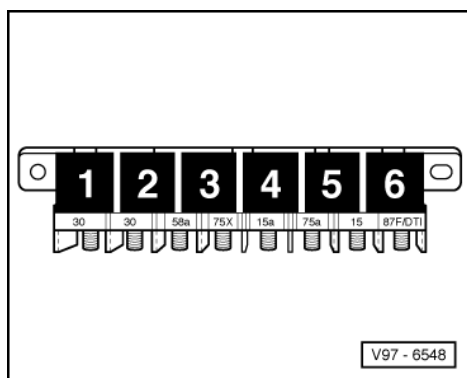
- ♦ Secured in position in fuel tank
- ♦ Cannot be removed

3.6 - Electrical checking of fuel pump

V.A.G 1348/3A 	V.A.G 1526 A 
V.A.G 1594 A 	
	G20-0005

Special tools and workshop equipment required

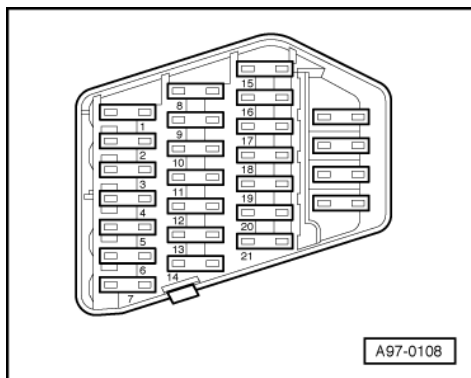
- ◆ V.A.G 1348/3A with V.A.G 1348/3-2
- ◆ V.A.G 1526 A
- ◆ V.A.G 1594 A





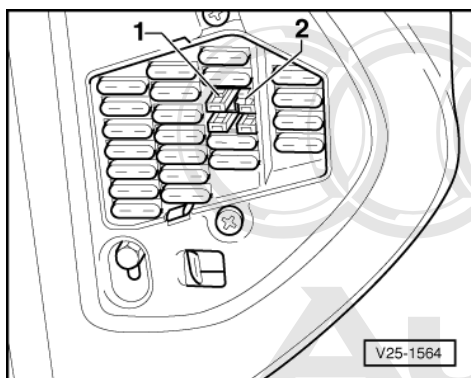
Test requirements:

- Battery voltage at least 12.7 V
- Fuse S17 OK (position 17)
- -> Fuel-pump relay at position 6 in 6-position relay carrier behind driver's storage compartment OK
- Fuel filter OK
- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.



- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

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Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

- Press switch on remote control.
 - Pump running noise must be audible in vicinity of fuel tank

Note:

Fuel pump is very quiet-running. Avoid ambient noise when checking fuel pump.

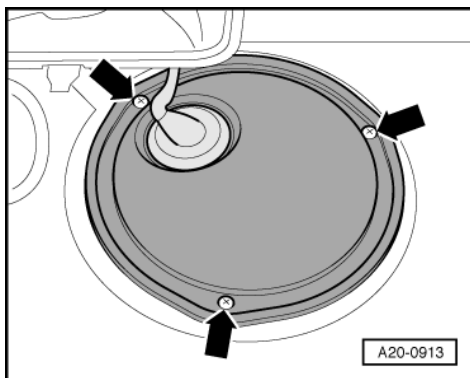
If running noise is not audible:

- Remove luggage compartment lining.

Avant:

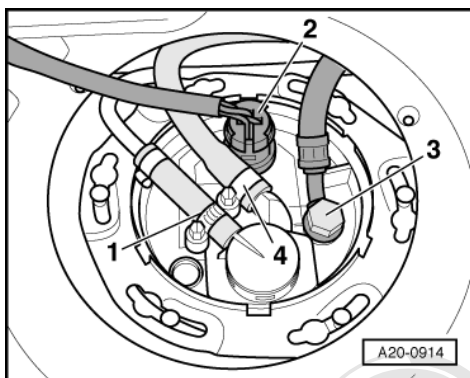
- Remove load compartment floor.

- If necessary, fold forward right backrest of rear seat bench.

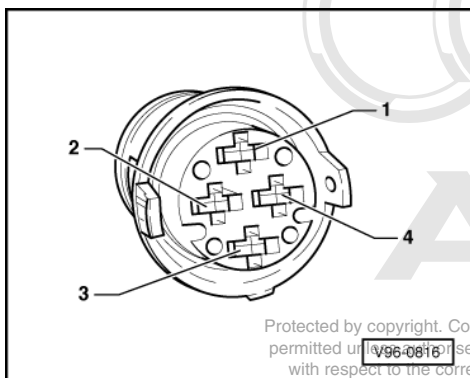


All models:

- -> Unscrew cover -arrows-.

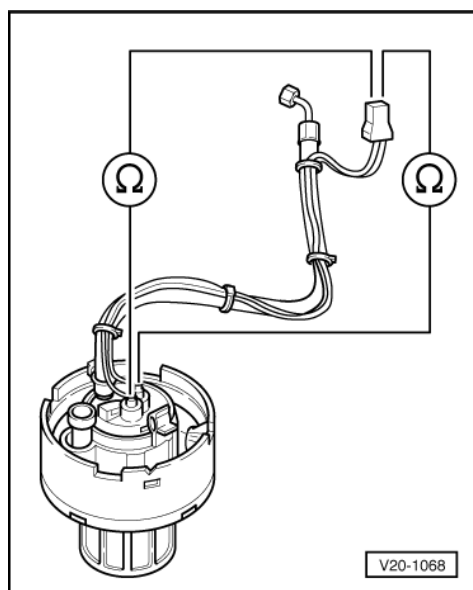


- -> Unplug connector -2- for fuel pump and fuel gauge sender.



- -> Connect up multimeter for voltage measurement between contacts 1 and 4 of connector.
- Press switch on remote control.
 - Specification: approx. battery voltage

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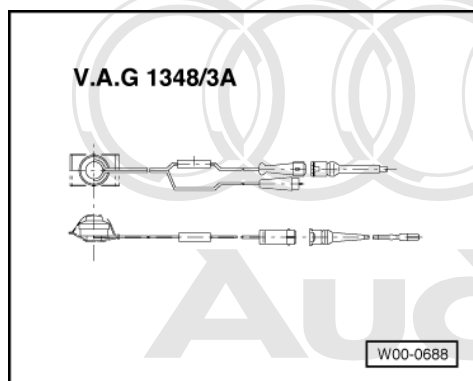
If reading matches specification although no pump running noise can be heard:

- Remove fuel delivery unit => Page **97** .
- -> Check connection of wiring between sender housing and fuel pump/check for continuity.

If no fault is found in wiring:

- Replace fuel pump => Dismantling fuel delivery unit, Page **103** onwards.
- Install fuel delivery unit => Page **100** .

3.7 - Checking fuel pump delivery rate - 4-cyl. engine (code letters AAD, ACE)



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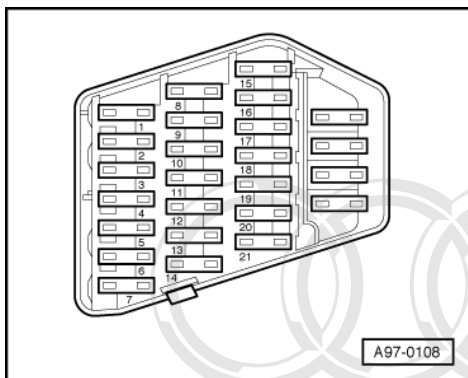
Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

Test requirements:

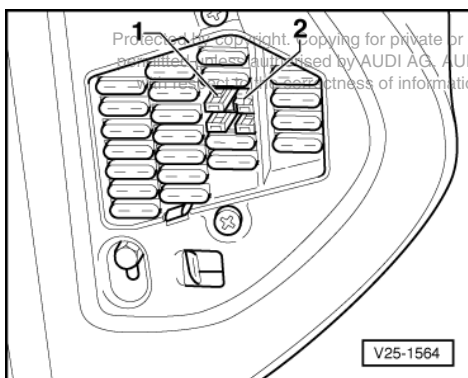
- Battery voltage at least 12.7 V
- Fuel filter OK

- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.

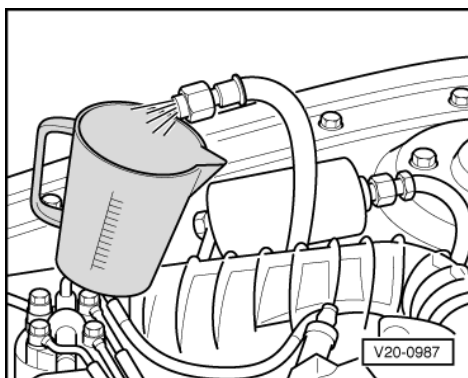


- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

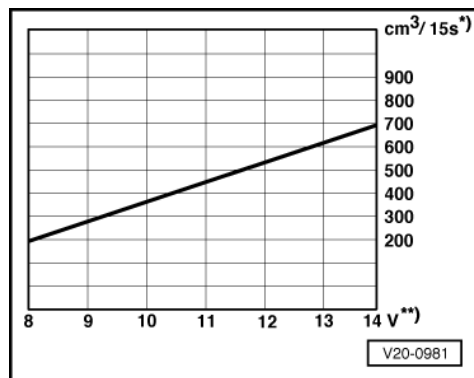
- Detach cap from fuel filler neck.



**Attention:**

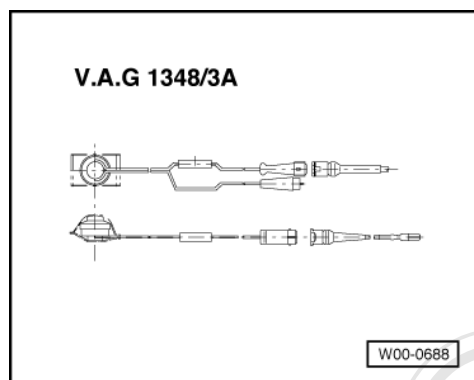
Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach fuel return pipe at connection point.
- Hold fuel return pipe over fuel-resistant graduated beaker.



- Operate remote control for 15 seconds, keeping button constantly pressed.
 - -> Compare fuel delivery rate to specification.
- *) Minimum delivery rate cm³/15 s
- **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)
- Tighten fuel return pipe to 23 Nm.

3.8 - Checking fuel pump delivery rate - 4-cyl. engine (code letters ADR)



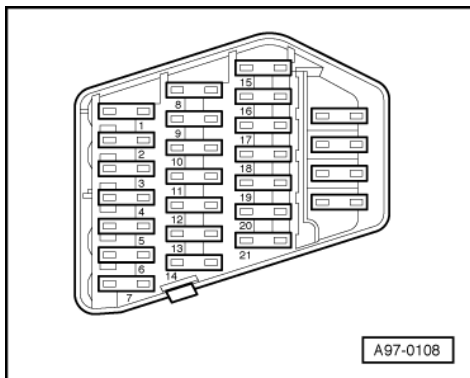
Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

Test requirements:

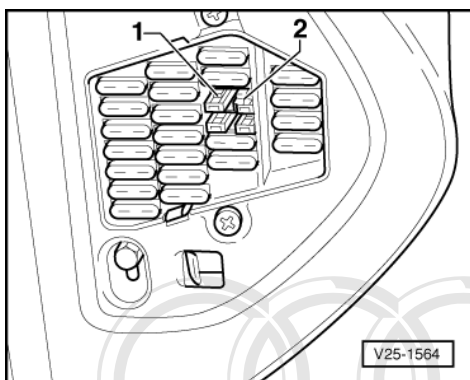
- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off

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Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.



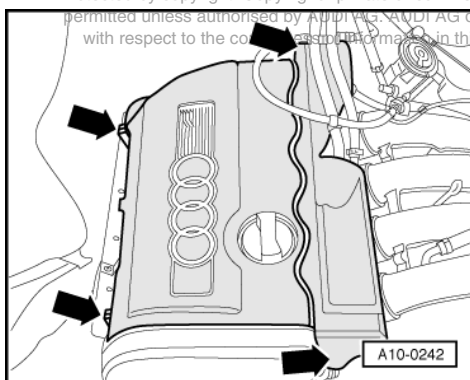
- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

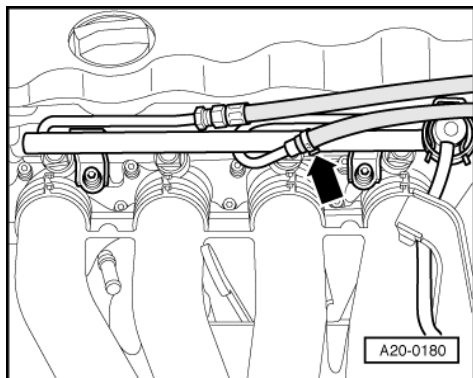
On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

- Detach cap from fuel filler neck.

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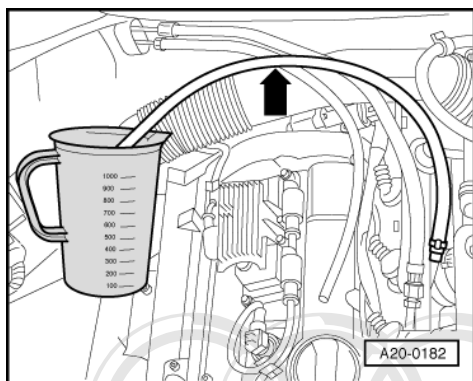
- -> Remove cover over injectors -right arrows-.



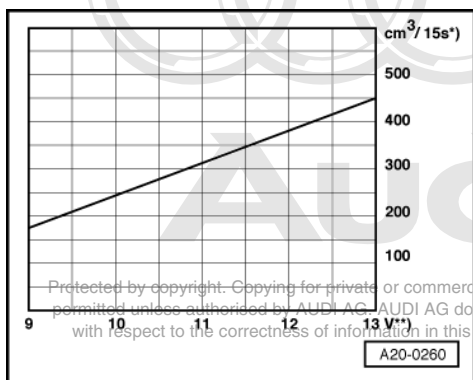
Attention:

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach hose of fuel return pipe -arrow- at fuel rail.

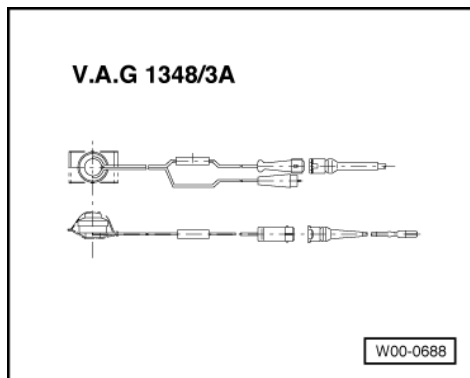


- -> Attach test hose -arrow- to free connection at fuel rail and hold over a fuel-resistant graduated beaker.



- Operate remote control for 15 seconds, keeping button constantly pressed.
- -> Compare fuel delivery rate to specification.
 - *) Minimum delivery rate $\text{cm}^3/15 \text{ s}$
 - **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)
- Attach fuel return pipe and secure with new tab-type hose clamp. To do so, use V.A.G 1275.

3.9 - Checking fuel pump delivery rate - 5-cyl. engine (code letters AAR)

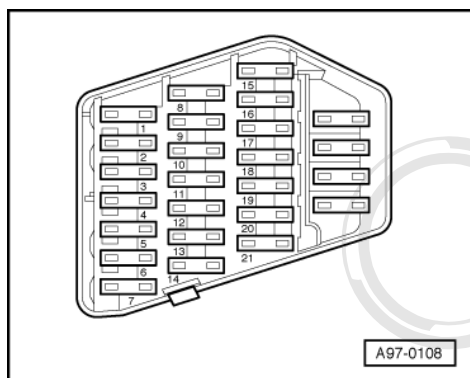


Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

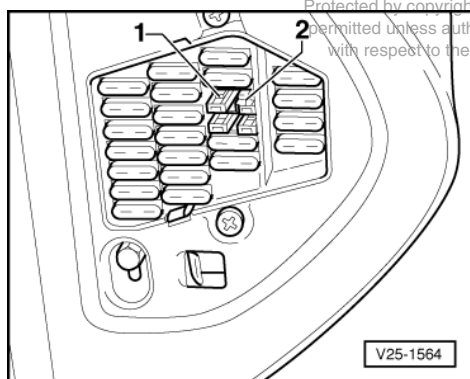
Test requirements:

- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.



- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.

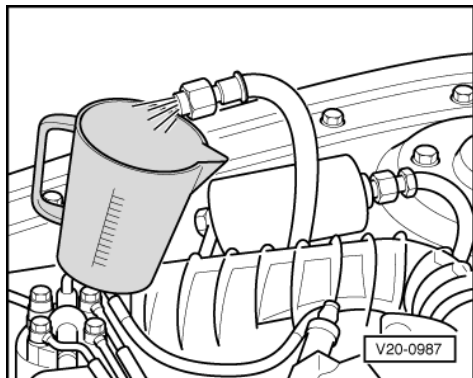


- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

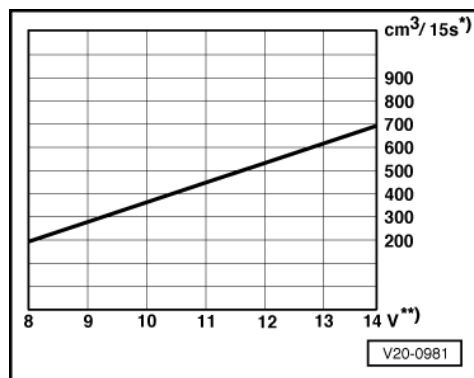
- Detach cap from fuel filler neck.



Attention:

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Detach fuel return pipe at connection point.
- Hold fuel return pipe over fuel-resistant graduated beaker.

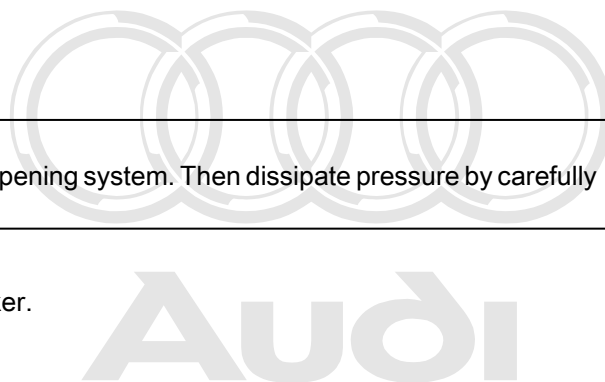


- Operate remote control for 15 seconds, keeping button constantly pressed.
- -> Compare fuel delivery rate to specification.

*) Minimum delivery rate cm³/15 s

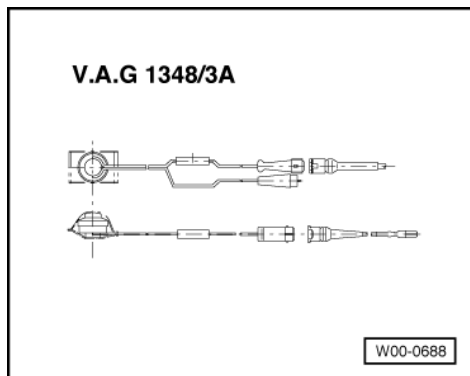
**) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)

- Tighten fuel return pipe to 23 Nm.



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3.10 - Checking fuel pump delivery rate - 5-cyl. engine (code letters AAN, ABY)

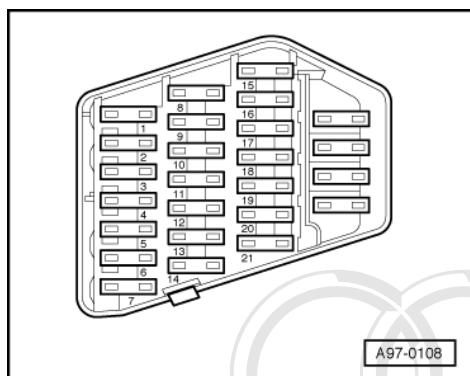


Special tools and workshop equipment required

- ◆ V.A.G 1348/3A with V.A.G 1348/3-2
- ◆ Fuel-resistant graduated beaker

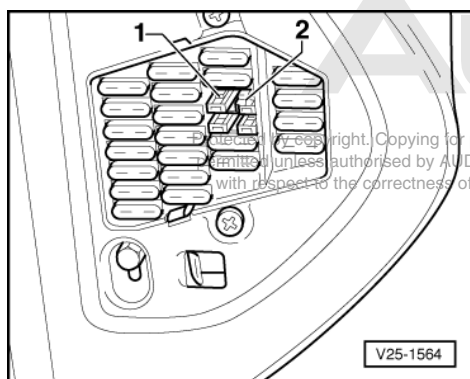
Test requirements:

- Battery voltage at least 12.7 V
- Fuel filter OK
- Ignition off



Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.



- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.

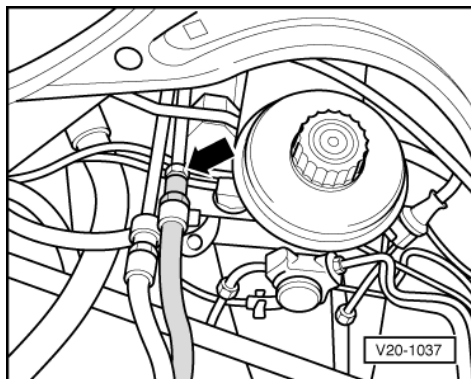


- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).

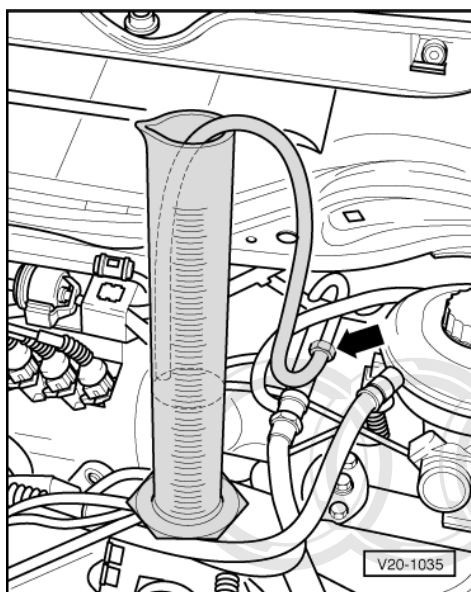
- Detach cap from fuel filler neck.



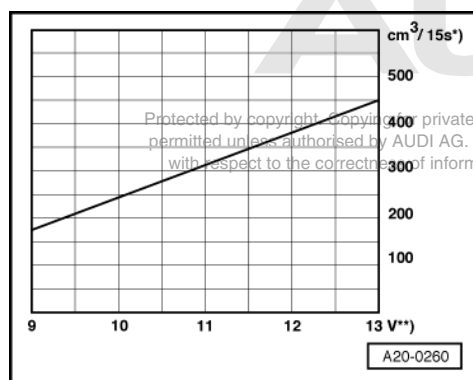
Attention:

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Unscrew fuel supply pipe -arrow-.

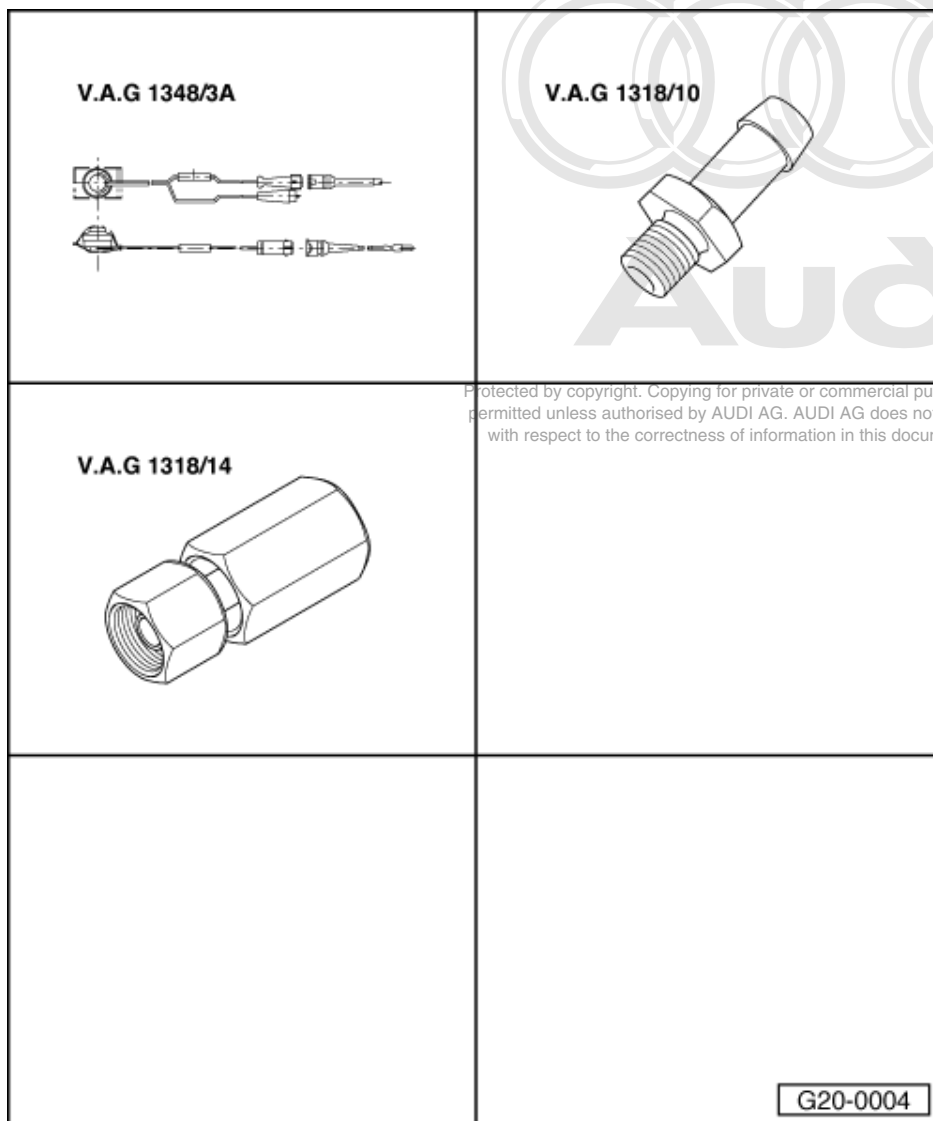


- -> Attach test hose to free connection -arrow- and hold over a fuel-resistant graduated beaker.



- Operate remote control for 15 seconds, keeping button constantly pressed.
- -> Compare fuel delivery rate to specification.
- *) Minimum delivery rate cm³/15 s
- **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)
- Tighten fuel supply pipe to 23 Nm.

3.11 - Checking fuel pump delivery rate - 6-cyl. engine



Special tools and workshop equipment required

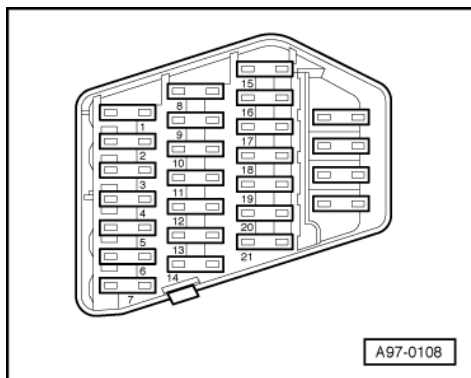
- ◆ V.A.G 1348/3A with V.A.G 1348/3-2
- ◆ V.A.G 1318/10
- ◆ V.A.G 1318/14
- ◆ Fuel-resistant graduated beaker

Test requirements:

- Battery voltage at least 12.7 V
- Fuel filter OK

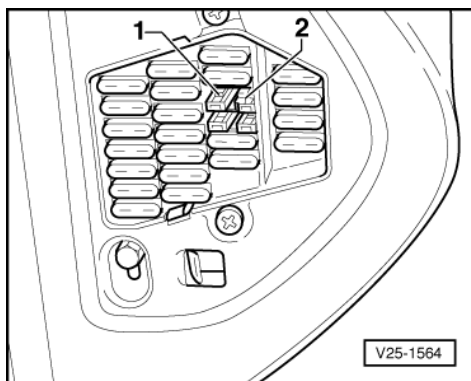


- Ignition off



Test sequence

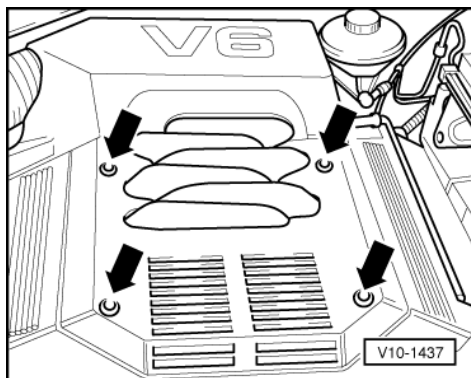
- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.



- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to vehicle battery (+).

Note:

On vehicles with air conditioner, connect pick-off to boost-starting socket (+).



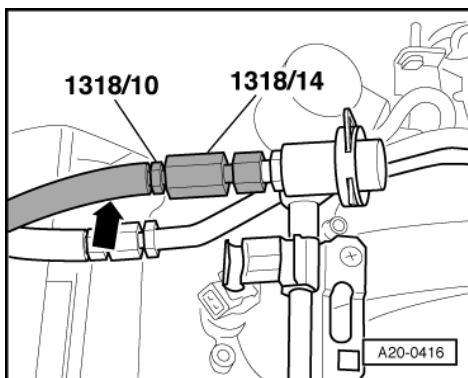
- Detach cap from fuel filler neck.

Vehicles with engine code letters AAH, ABC, ACZ, AEJ:

- -> Remove engine cover -arrows-.



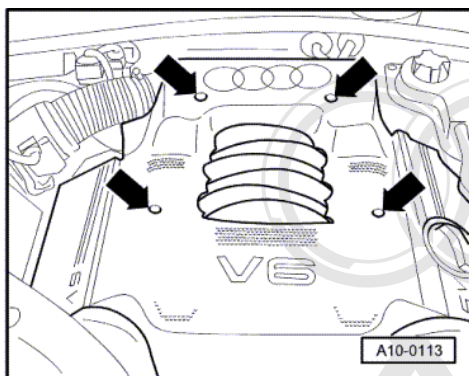
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Attention:

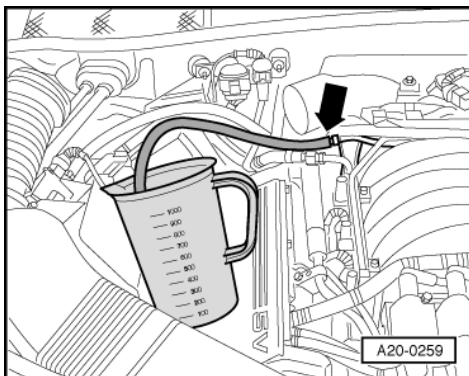
Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

- -> Unscrew fuel return pipe at fuel pressure regulator.
- Fit adapters V.A.G 1318/14 and V.A.G 1318/10 at fuel pressure regulator.
- Attach test hose -arrow- and hold over fuel-resistant graduated beaker.



Vehicles with engine code letters ACK:

- -> Remove engine cover -arrows-.

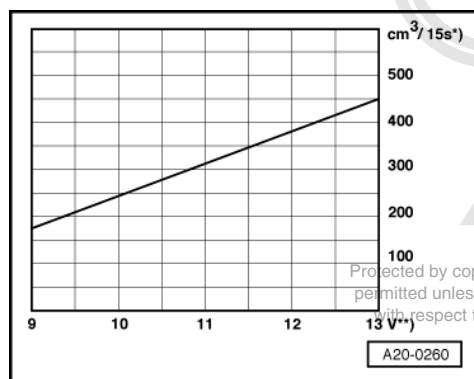


Attention:

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.



- -> Detach fuel return hose from pipe connection at fuel rail.
- Attach test hose -arrow- and hold over fuel-resistant graduated beaker.



All models:

- Operate remote control for 15 seconds, keeping button constantly pressed.
 - -> Compare fuel delivery rate to specification.
- *) Minimum delivery rate $\text{cm}^3/15 \text{ s}$
- **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)

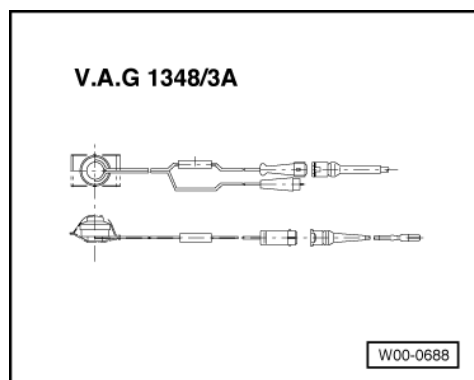
Vehicles with screw-type connection at fuel return pipe:

- Tighten fuel return pipe to 23 Nm.

Vehicles with plug-in fuel return pipe:

- Fit fuel return hose with new tab-type hose clamp. To do so, use V.A.G 1275.

3.12 - Checking fuel pump delivery rate - 8-cyl. engine



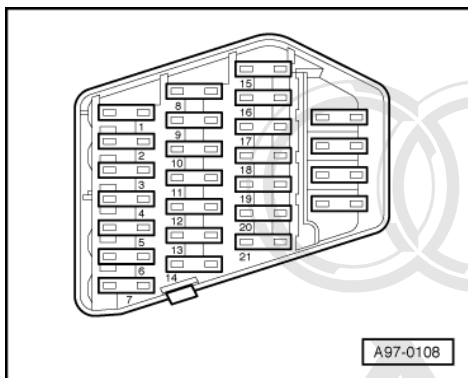
Special tools and workshop equipment required

- ♦ V.A.G 1348/3A with V.A.G 1348/3-2
- ♦ Fuel-resistant graduated beaker

Test requirements:

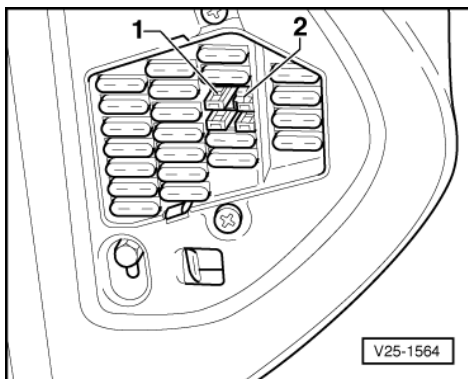
- Battery voltage at least 12.7 V
- Fuel filter OK

- Ignition off

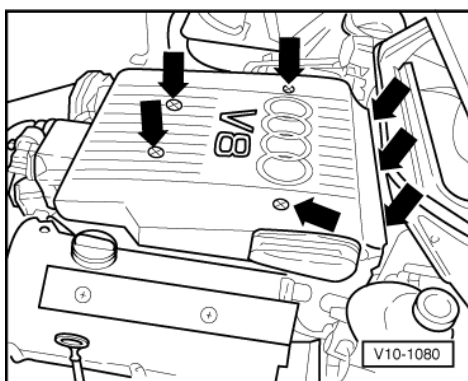


Test sequence

- Open lid of fuse box at left side of instrument panel.
- -> Pull out fuse S17.

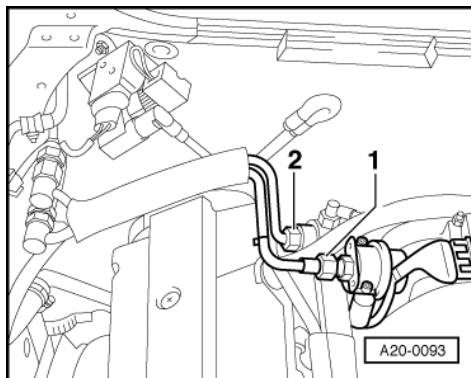


- -> Connect remote control V.A.G 1348/3A with adapter lead V.A.G 1348/3-2 to rear contact -2- of fuse socket.
- Connect pick-off to boost-starting socket (+).
- Detach cap from fuel filler neck.



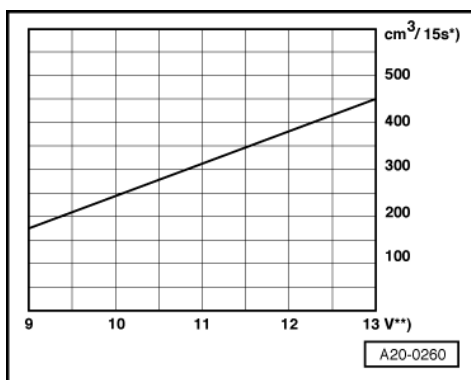
Vehicles with engine code letters ABH, AEC:

- -> Remove upper part of air cleaner -arrows-.

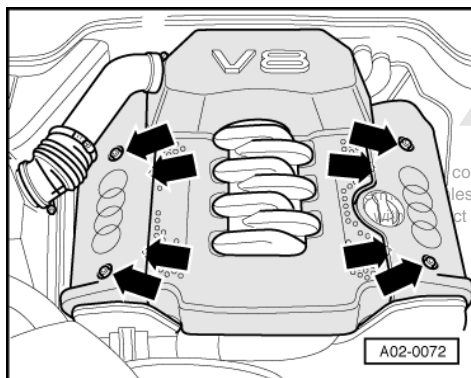
**Attention:**

Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.

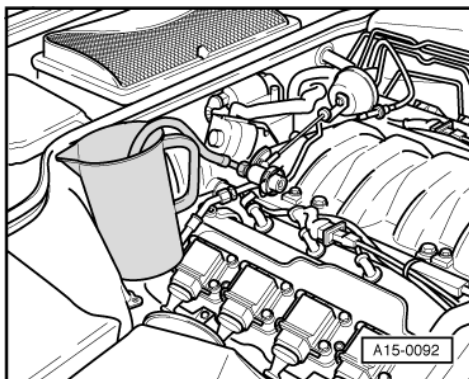
- -> Unscrew fuel return pipe -1- at fuel pressure regulator.
- Attach test hose to fuel return pipe (from engine) and hold over fuel-resistant graduated beaker.



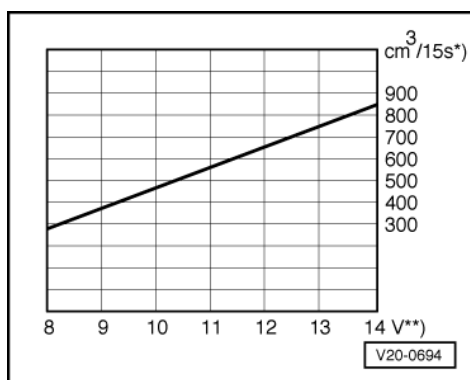
- Operate remote control for 15 seconds, keeping button constantly pressed.
 - -> Compare fuel delivery rate to specification.
- *) Minimum delivery rate cm³/15 s
- **) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)
- Tighten fuel return pipe to 35 Nm.

**Vehicles with engine code letters AHK:**

- -> Remove engine cover -arrows-.



- -> Unscrew fuel return pipe at fuel pressure regulator.
- Screw on test hose (part no. 8A0 201 351 A) and hold over graduated beaker.



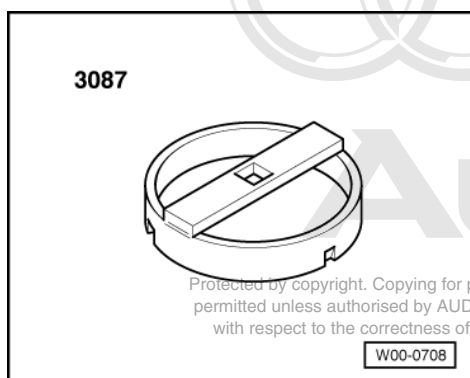
- Operate remote control for 15 seconds, keeping button constantly pressed.
- -> Compare fuel delivery rate to specification.

*) Minimum delivery rate cm³/15 s

**) Voltage at fuel pump with engine stopped and pump running (approx. 2 V less than battery voltage)

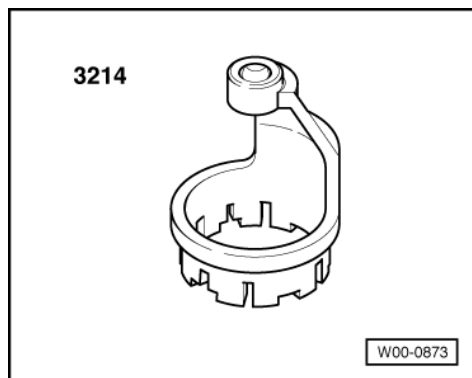
- Tighten fuel return pipe to 25 Nm.

3.13 - Removing and installing fuel delivery unit



Special tools and workshop equipment required

- ♦ Fuel gauge sender wrench 3087



- ♦ Fuel pump wrench 3214

Removing

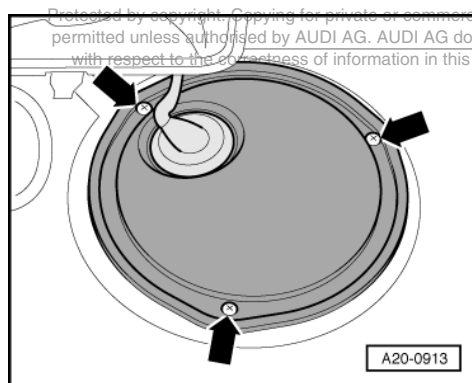
Heed safety precautions => Page 1.

Observe rules for cleanliness => Page 2.

- When removing fuel delivery unit, fuel tank must not be more than 1/4 full. Drain fuel tank if necessary. Procedure => Page 67.
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.
- Briefly open fuel tank cap and close again.
- Remove luggage compartment lining.

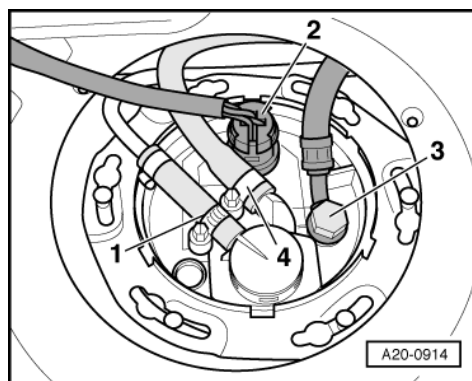
Avant:

- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.



All models:

- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.

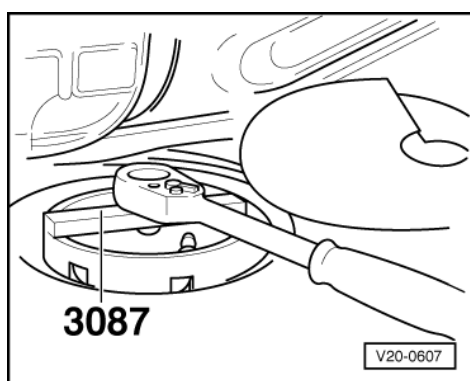
Attention:

- ♦ **Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.**
- ♦ **After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.**

- Detach fuel return pipe -4- and breather pipe -1-.
- Unscrew fuel supply pipe -3-.

Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.

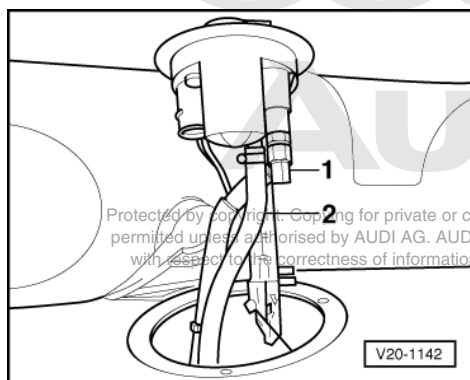


All models:

Attention:

When removing fuel delivery unit, fuel tank must not be more than 2/3 full.

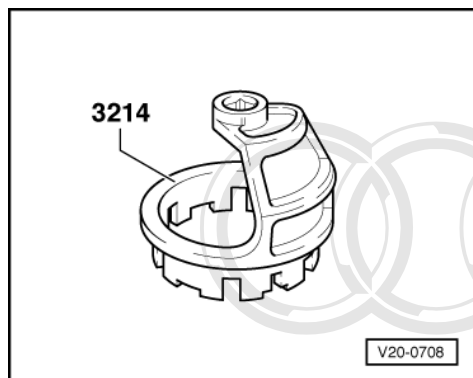
- -> Use fuel gauge sender wrench 3087 to unscrew locking ring.
- Lift fuel gauge sender carefully out of opening in fuel tank.



- -> Detach fuel return pipe -2- on inside of fuel gauge sender.
- Unscrew fuel supply pipe -1-.
- Unplug connector to fuel pump.

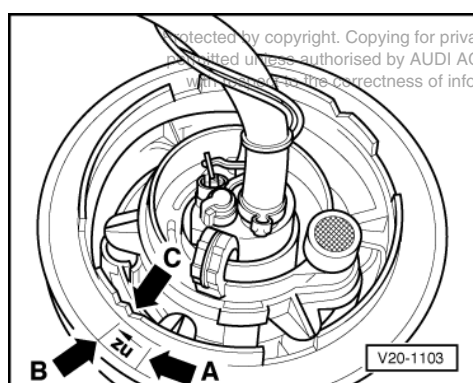
Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.



All models:

- -> Insert fuel pump wrench 3214 through fuel tank opening and apply at fuel delivery unit.



- Turn fuel delivery unit anti-clockwise by approx. 15° as far as stop.
 - -> Notch -C- must be in front of mark -A- (bayonet lock)

Note:

Fig. shows fuel delivery unit in locked position.

- Take out fuel delivery unit.

Installing

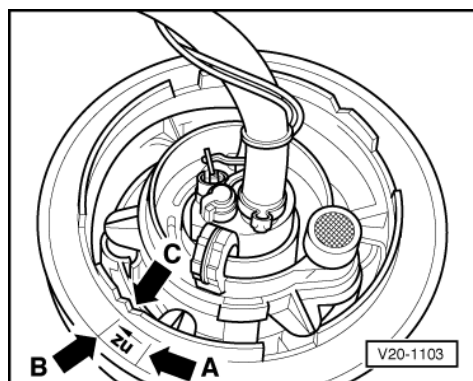
Install in reverse order, paying attention to the following:

- If fuel delivery unit has been dismantled or fuel pump removed, pre-assemble components as described under "Dismantling fuel delivery unit" for the various engine versions.

Note:

Secure all hose connections with standard hose clamps.

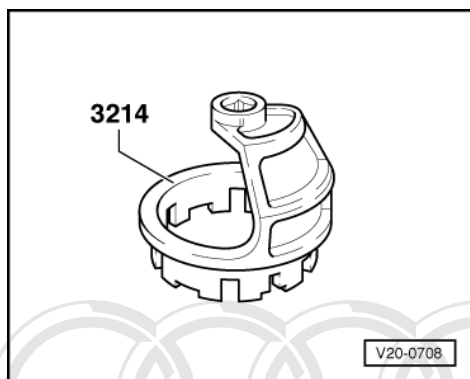
=> Parts List



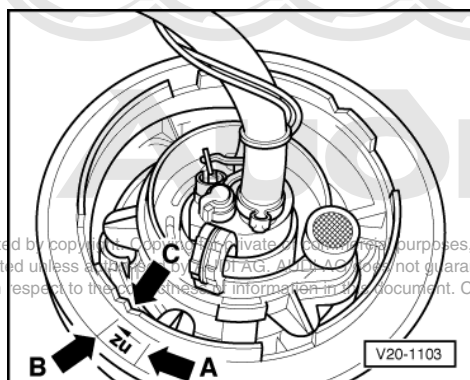
- Insert fuel delivery unit in fuel tank.
- -> Insert fuel delivery unit in baffle housing in fuel tank such that notch -C- at fuel delivery unit coincides with mark -A- at baffle housing.
- Fuel delivery unit can be pressed down to a noticeable extent

Note:

Fig. shows fuel delivery unit in locked position.

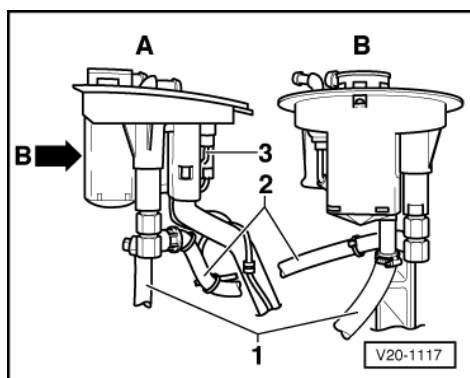


- -> Insert fuel pump wrench 3214 through fuel tank opening and apply at fuel delivery unit.



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- Turn fuel delivery unit clockwise by approx. 15° as far as stop.
- -> Notch -C- must be in front of mark -B- (bayonet lock)
- Replace O-ring for fuel gauge sender.
- Insert fuel gauge sender in fuel tank.



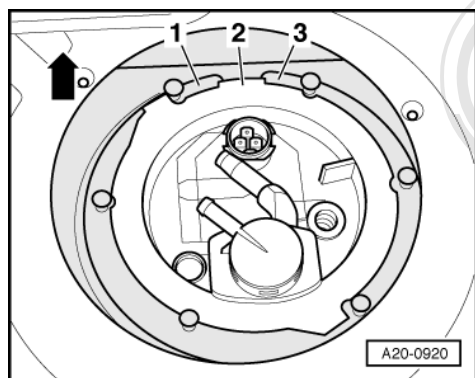
- -> Attach fuel supply pipe -2- and fuel return pipe -1- as illustrated in views -A- and -B-.

Note:

-Arrow B- indicates viewing direction for view -B-.



- Connect wires -3- to sender housing as shown.

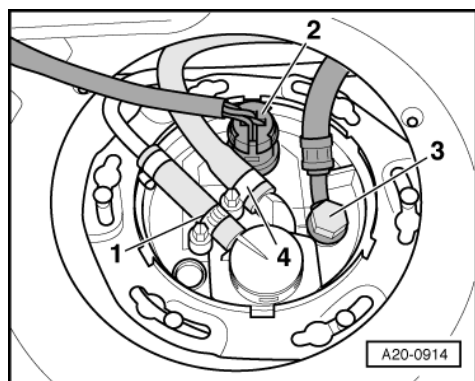


- -> Pay attention to installation position of fuel gauge sender.
- Tab -2- at fuel gauge sender must be located between raised areas -1- and -3- at fuel tank

Note:

Arrow faces in direction of travel.

- Use fuel gauge sender wrench 3087 to secure locking ring.



- -> Screw on fuel supply pipe -3-.
- Attach fuel return pipe -4- and breather pipe -1- and tighten hose clamps.
- Attach connector -2-.

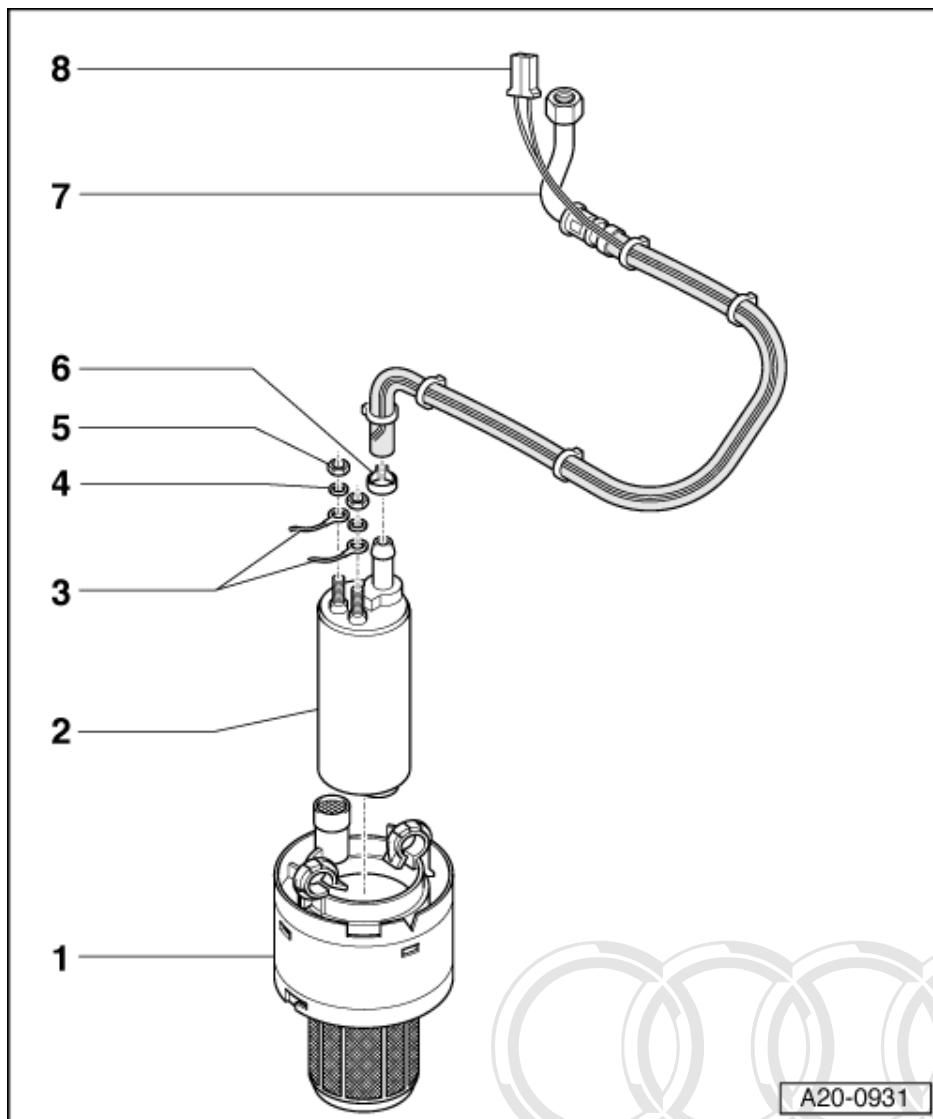
Note:

On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

Tightening torques

Component	Nm
Supply pipe to sender housing (union nut)	23
Supply pipe to sender housing (banjo bolt)	23
Hose clamps	2
Battery terminal to battery post	6

3.14 - Dismantling fuel delivery unit - 4, 5, 6 and 8-cyl. engine (code letters AAH, AAN, ABC, ABH, ABY, ACK, ACZ, ADR, AEC, AEJ)



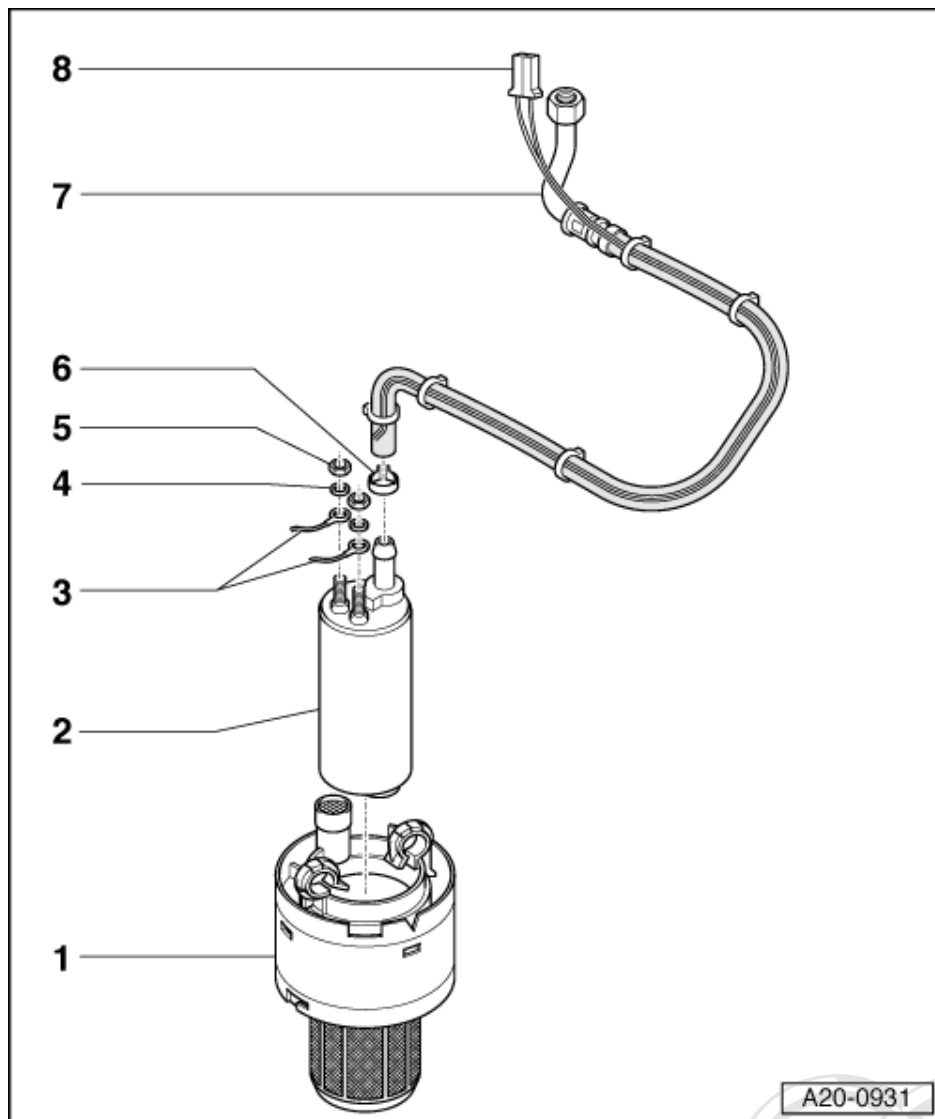
1 Inner part of baffle housing

2 Fuel pump

- ♦ Different versions (Bosch or VDO)
- ♦ Removing and installing
=> Fig. 108
- ♦ Pre-assembly => Page 107
- ♦ Electrical checking => Page 79
- ♦ Checking holding pressure

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=> Injection and Ignition System; Repair Group 24

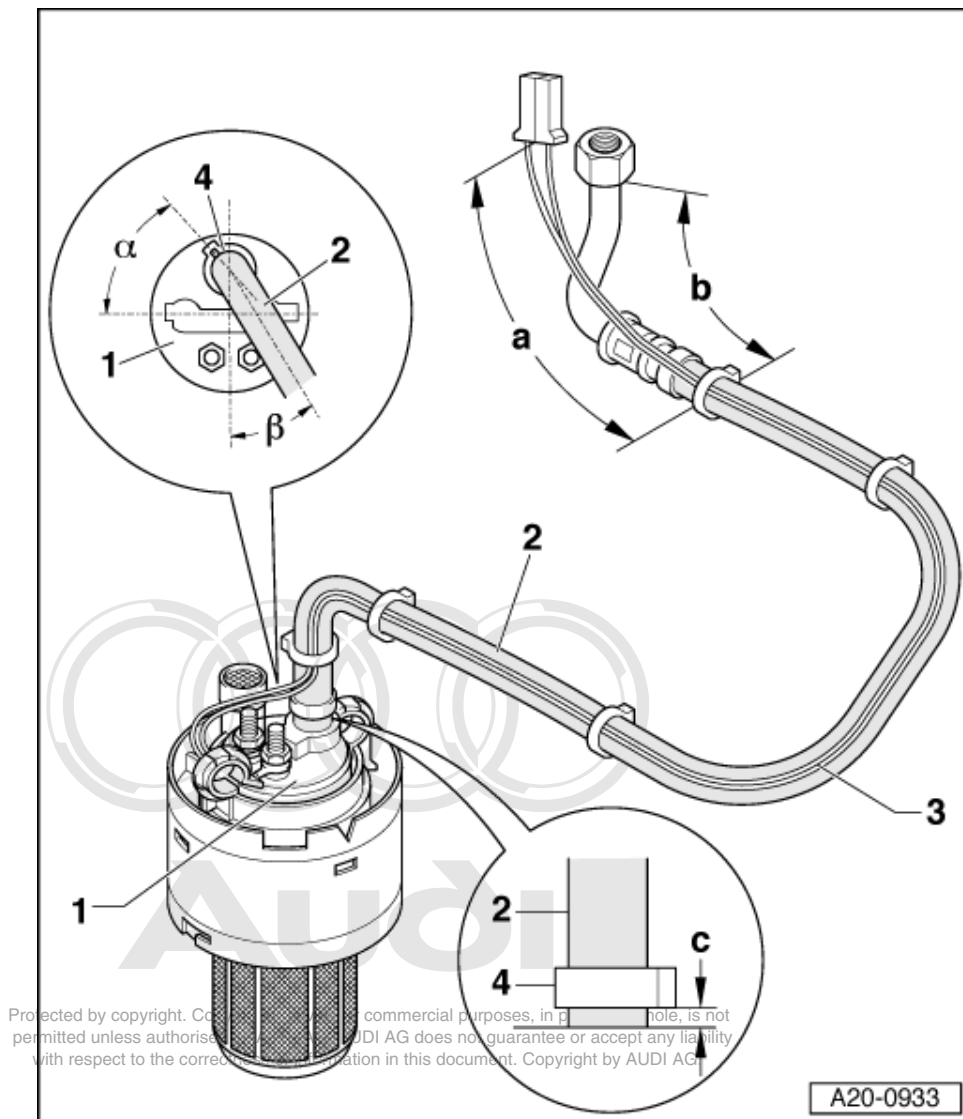


- 3 Wire
 - ♦ For fuel pump
- 4 Washer
- 5 M4 = 1.1 Nm
M5 = 1.6 Nm
- 6 Hose clamp
 - ♦ Use V.A.G 1275 to secure
- 7 Fuel supply pipe
 - ♦ Fuel pump/sender housing
 - ♦ Pre-assembly => Page 107
- 8 Wire
- 9 Connector
 - ♦ For fuel pump
 - ♦ Installation position => Page 108

A20-0931

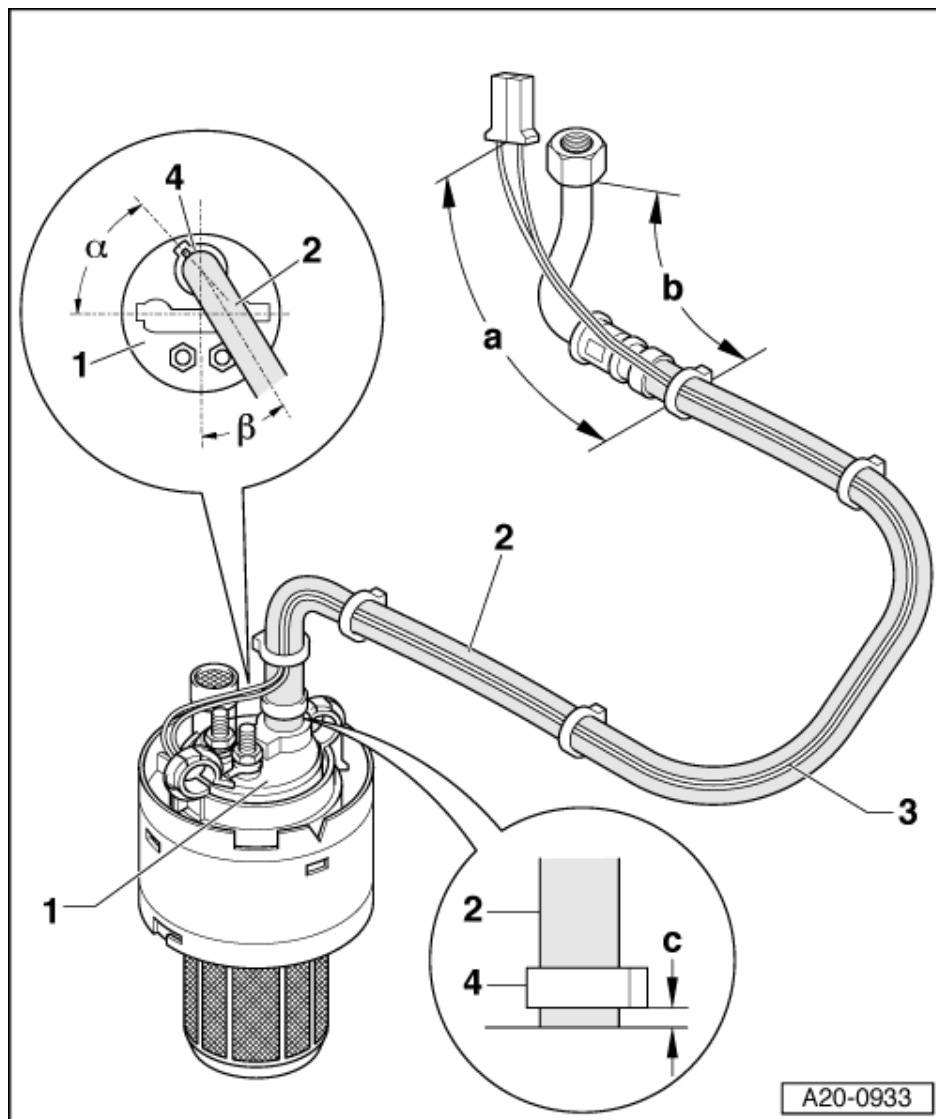
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Pre-assembling fuel pump (Bosch) and fuel supply pipe

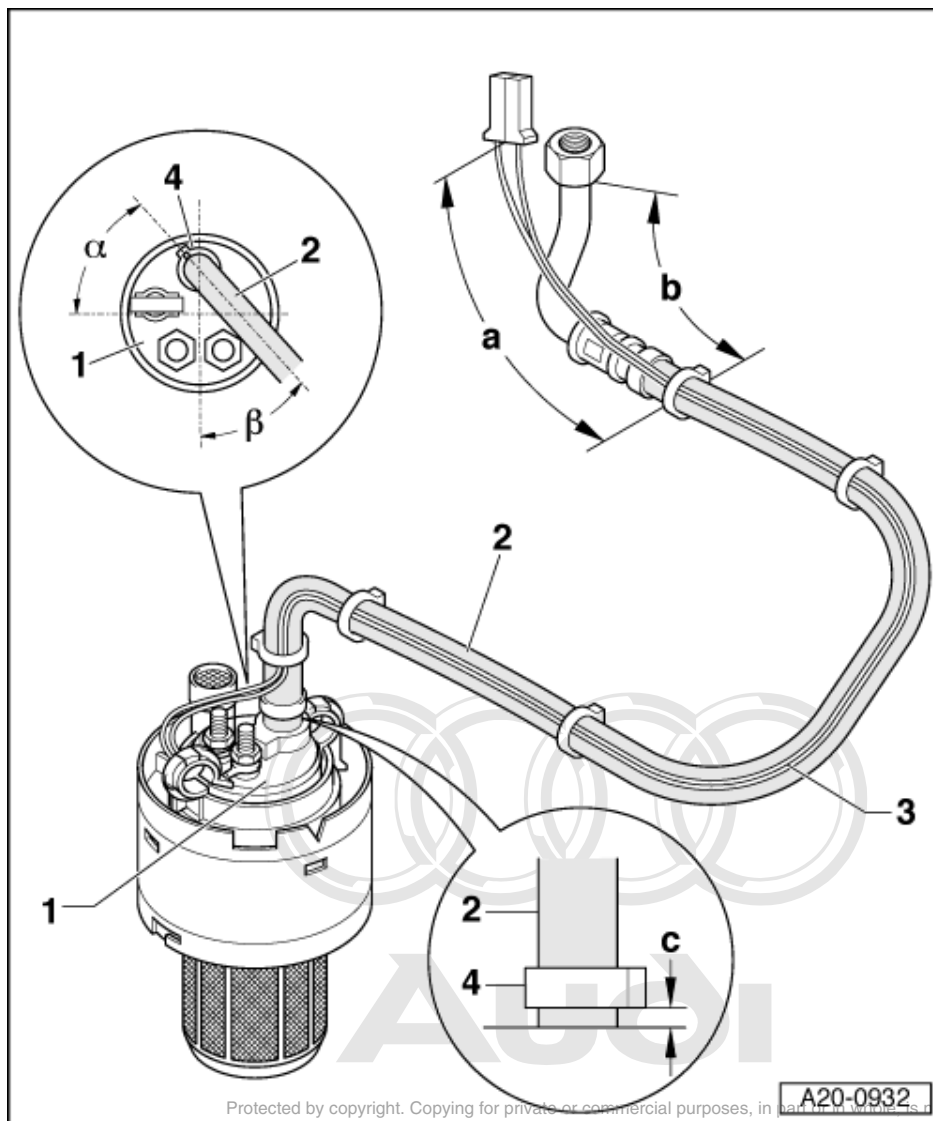
- Fit fuel supply pipe -2- with new tab-type hose clamp -4- at fuel pump -1- as shown.
- To do so, align fuel supply pipe at an angle of $\beta = 30^\circ$ to electrical connections.
- Align tab-type hose clamp at an angle of $\alpha = 45^\circ$ to edge of housing.
- Use V.A.G 1275 to secure tab-type hose clamp.
 - c = 3 mm



- Lay wiring -3- to fuel pump along fuel supply pipe.
- Secure wiring with a total of 5 fuel-resistant cable ties. Attach upper cable tie at marked location:
 - a = Effective wire length 120 mm
 - b = Effective length of fuel supply pipe 120 mm



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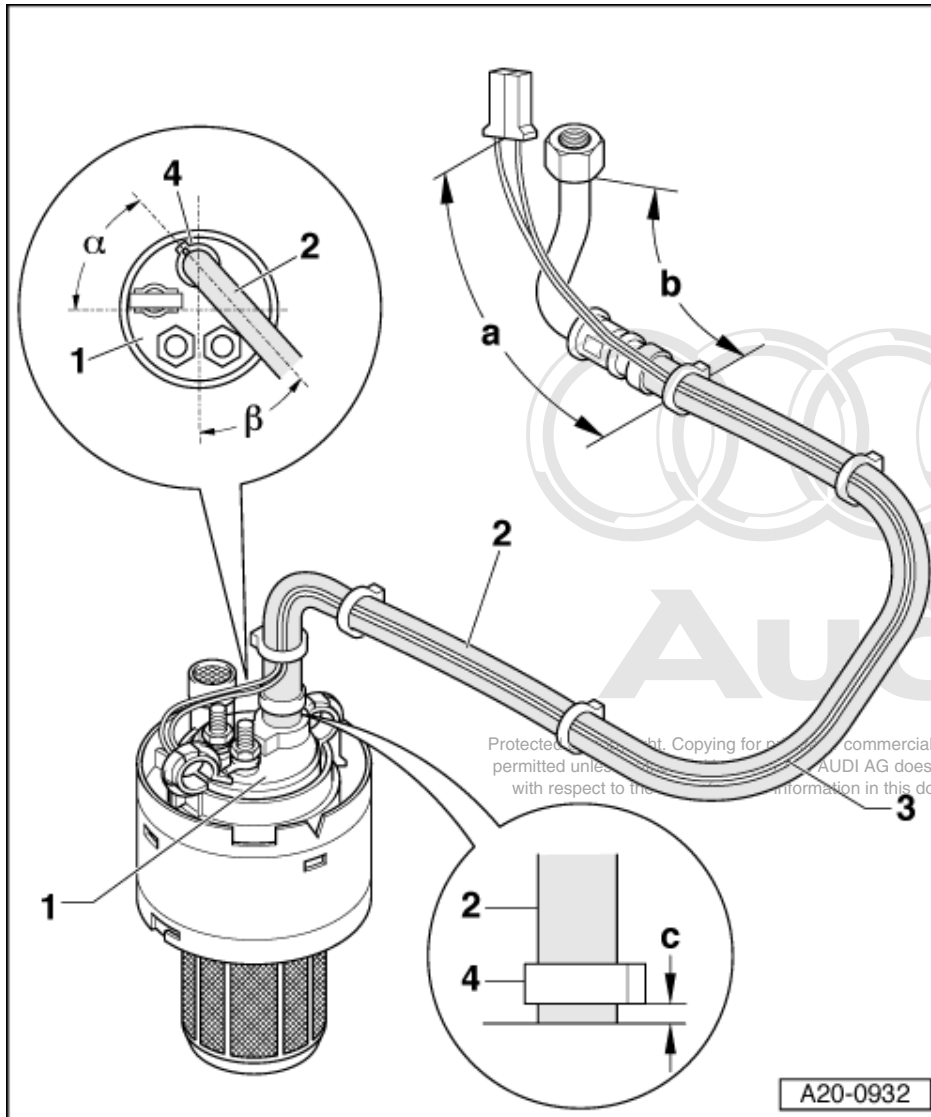


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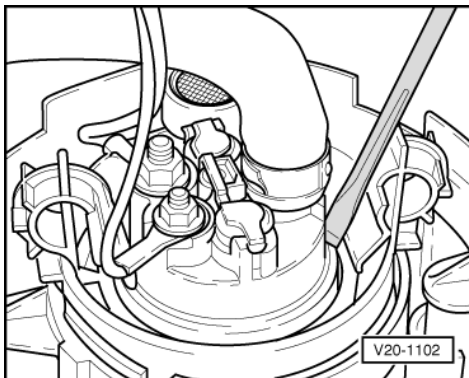
A20-0932

Pre-assembling fuel pump (VDO) and fuel supply pipe

- Fit fuel supply pipe -2- with new tab-type hose clamp -4- at fuel pump -1- as shown.
- Align fuel supply pipe at an angle of $\beta = 40^\circ$ to electrical connections.
- Align tab-type hose clamp at an angle of $\alpha = 45^\circ$ to edge of housing.
- Use V.A.G 1275 to secure tab-type hose clamp.
 - $c = 5 \text{ mm}$



- Secure wiring with a total of 5 fuel-resistant cable ties. Attach upper cable tie at marked location:
 - a = Effective wire length 120 mm
 - b = Effective length of fuel supply pipe 120 mm



-> Fig.1 Removing and installing fuel pump (Bosch and VDO)

- Fuel delivery unit dismantled

Removing

- Use screwdriver to press both locking lugs at baffle housing outwards and at the same time pull fuel pump slightly upwards to prevent re-engagement of locking lugs.
- Repeat procedure at second shoulder of fuel pump.
- Twist fuel pump and pull it upwards out of baffle housing.

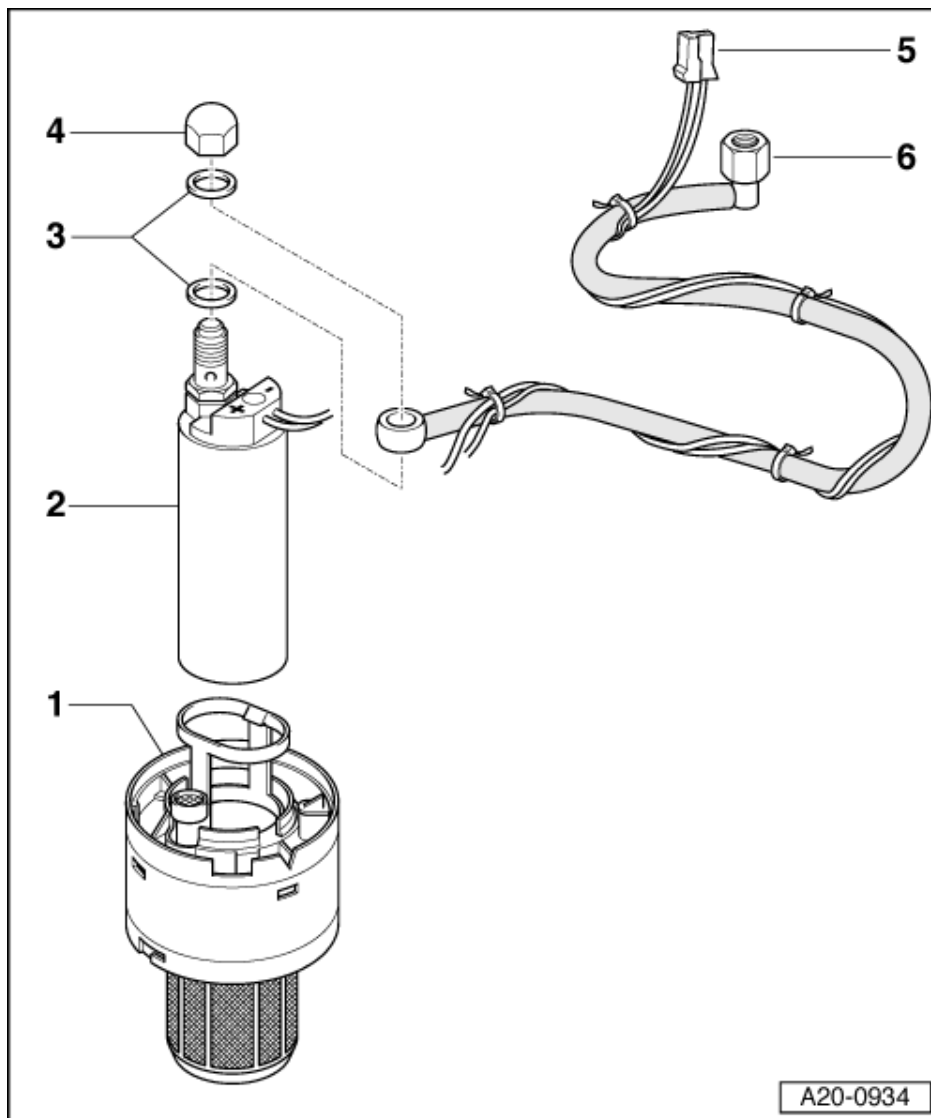
Installing

Install in reverse order, paying attention to the following:

- ♦ Installation position: Offset connection at bottom of fuel pump must be inserted in hole in inner part of baffle housing

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3.15 - Dismantling fuel delivery unit (pump ø 40 mm) - 4 and 5-cyl. engine (code letters AAD, AAR, ACE)



1 Inner part of baffle housing

2 Fuel pump

- ♦ Removing and installing
=> Fig. 113
- ♦ Pre-assembly => Page 111
- ♦ Electrical checking => Page 79

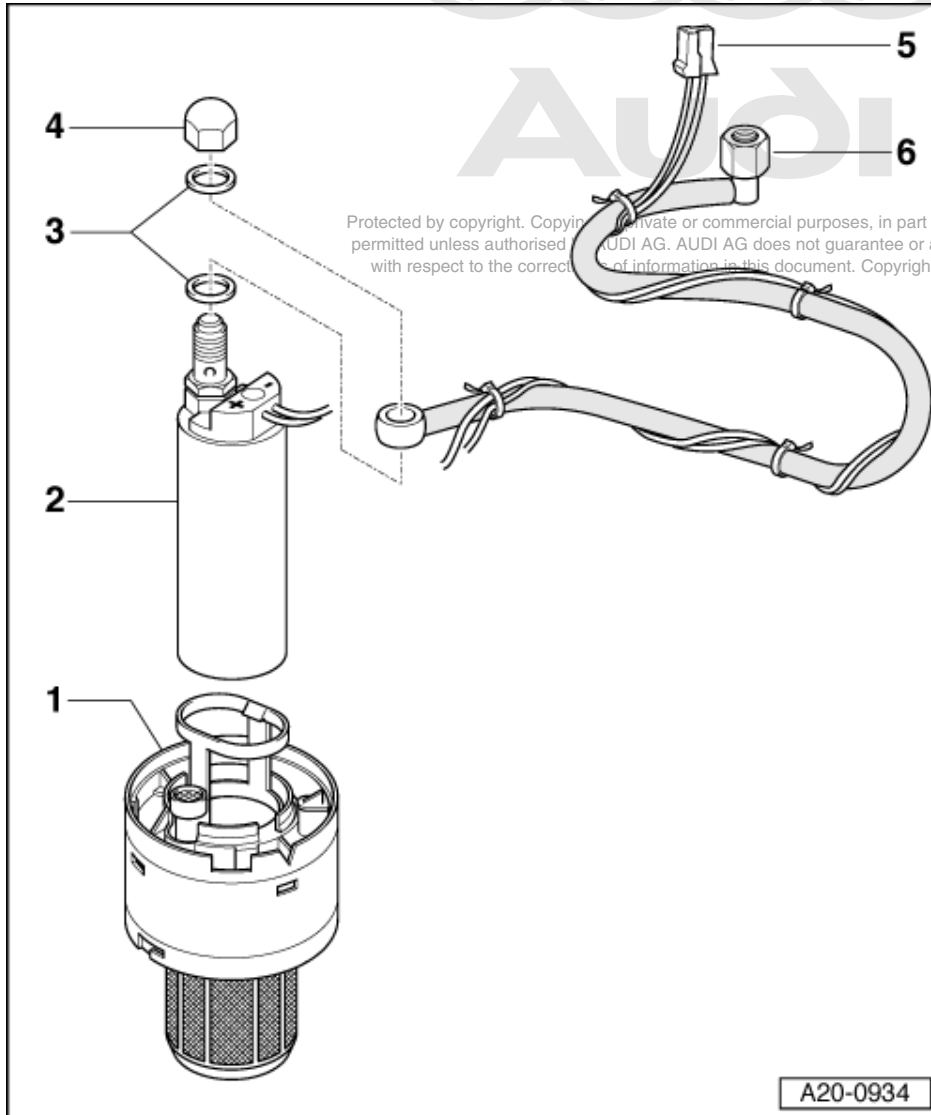


- ♦ Checking holding pressure

=> Injection and Ignition System; Repair Group 25

3 Sealing rings

- ♦ Replace



4 Cap nut, 13 Nm

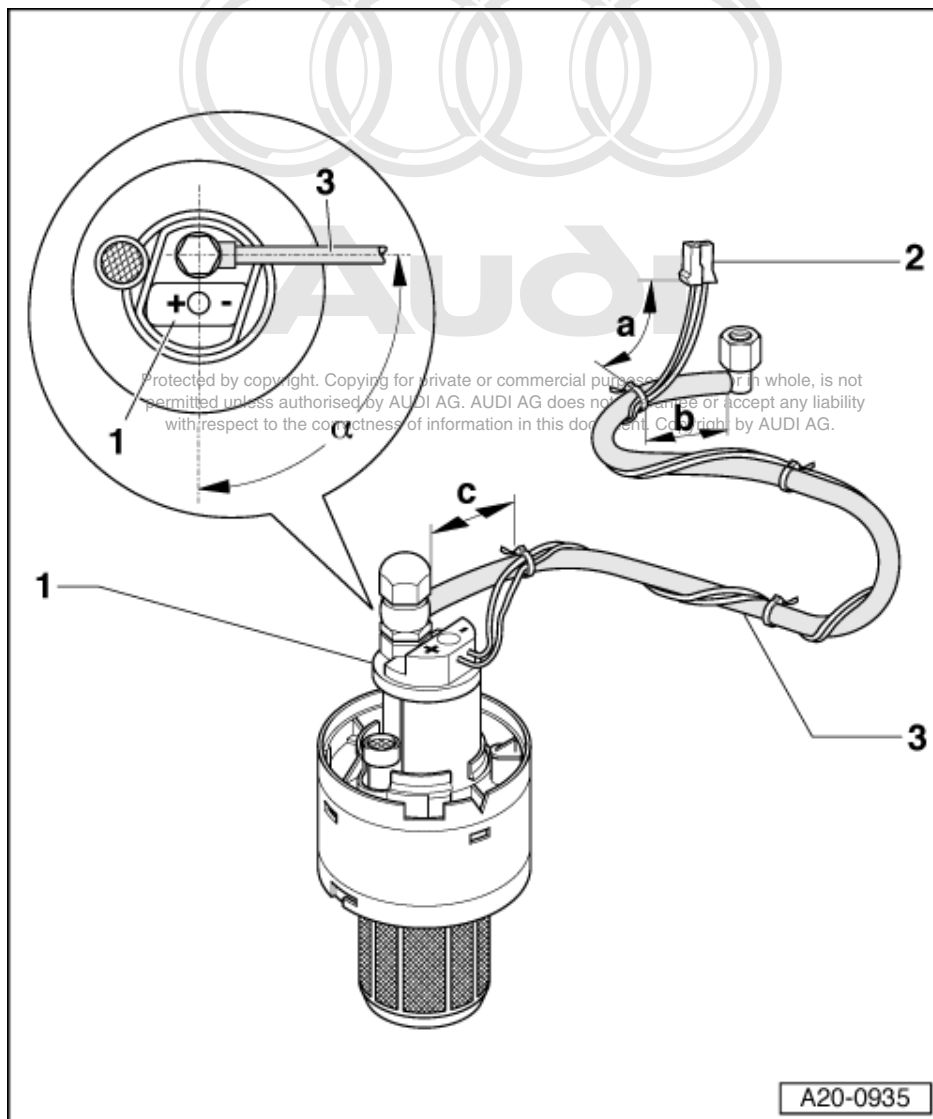
- ♦ Provide support at hexagon of fuel pump when unfastening and tightening

5 Wire

- ♦ For fuel pump
- ♦ Installation position => Page 112

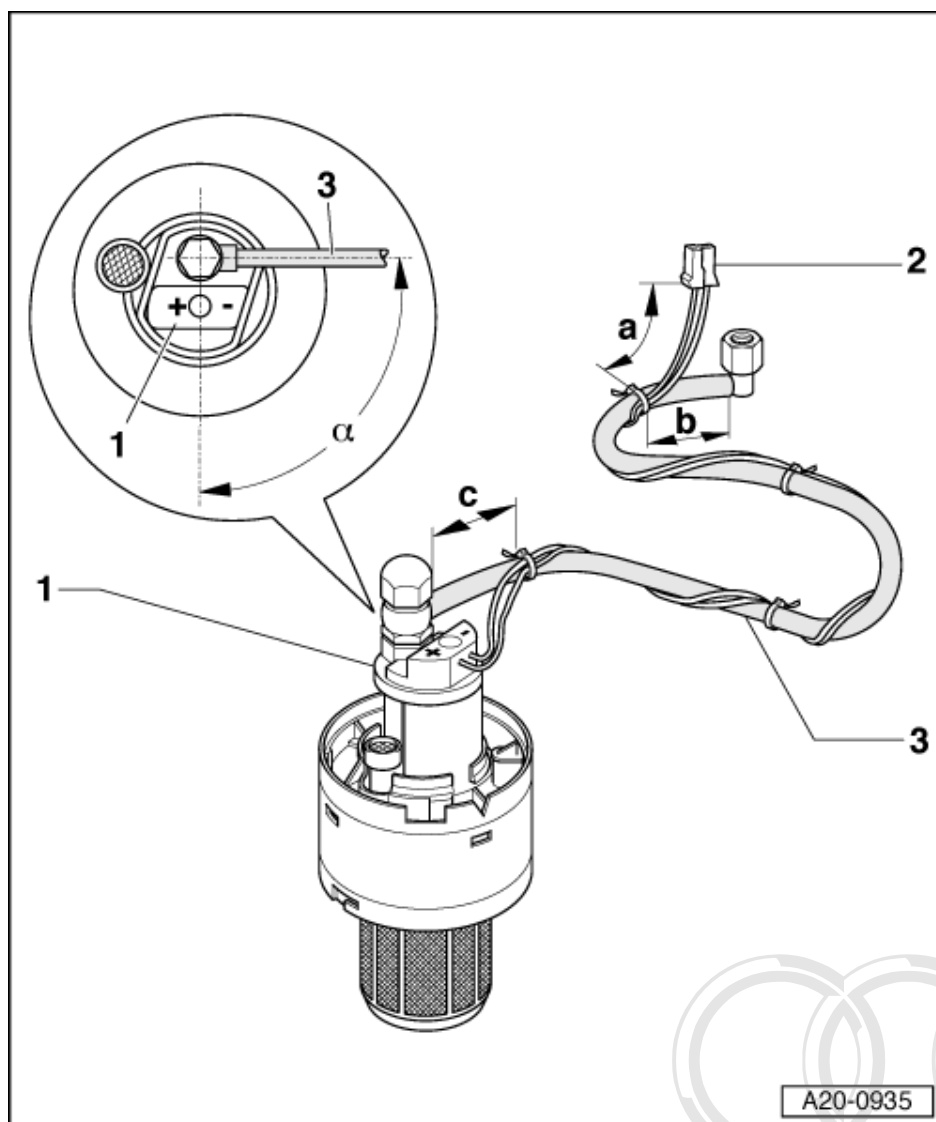
6 Fuel supply pipe

- ♦ Fuel pump/sender housing
- ♦ Pre-assembly => Page 111



Pre-assembling fuel pump (ø 40 mm) and fuel supply pipe

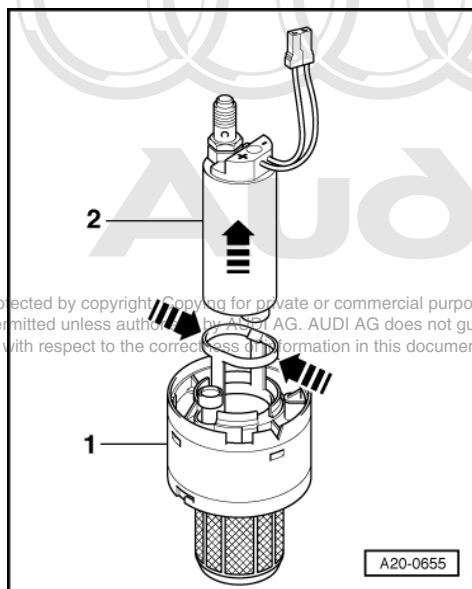
- Fit fuel supply pipe -3- with new sealing rings at fuel pump -1- as shown.
- Align fuel supply pipe at an angle of $\alpha = 90^\circ$ to connections.
- Screw fuel supply pipe (13 Nm) to fuel pump.
- Wind wiring -2- to fuel pump around fuel supply pipe.



- Secure wiring with a total of 4 fuel-resistant cable ties. Attach upper and lower cable tie at marked locations.
 - a = Effective wire length 90 mm
 - b = 60 mm
 - c = 80 mm



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-> Fig.1 Removing and installing fuel pump

- Fuel delivery unit dismantled

Removing

- Squeeze both release areas -arrows- at inner part of baffle housing -1-.
- Pull fuel pump -2- upwards -arrow- out of inner part of baffle housing.

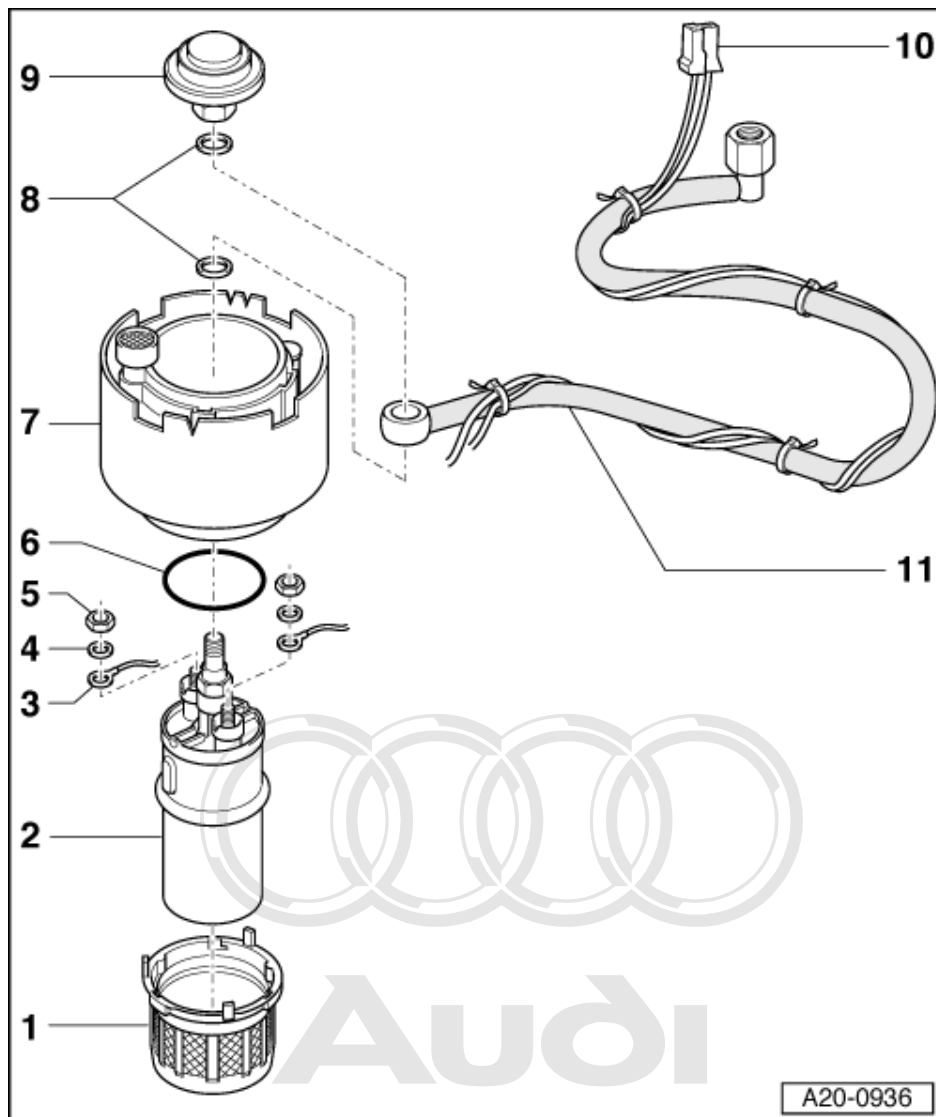
Installing

Install in reverse order, paying attention to the following:

- ♦ Installation position: Offset connection at bottom of fuel pump must be inserted in hole in inner part of baffle housing



3.16 - Dismantling fuel delivery unit (pump ø 60 mm) - 4 and 5-cyl. engine (code letters AAD, AAR, ACE)



1 Fuel filter screen

- ♦ Turn anti-clockwise to detach (bayonet lock)
- ♦ Cannot be replaced separately
- ♦ Clean if contaminated

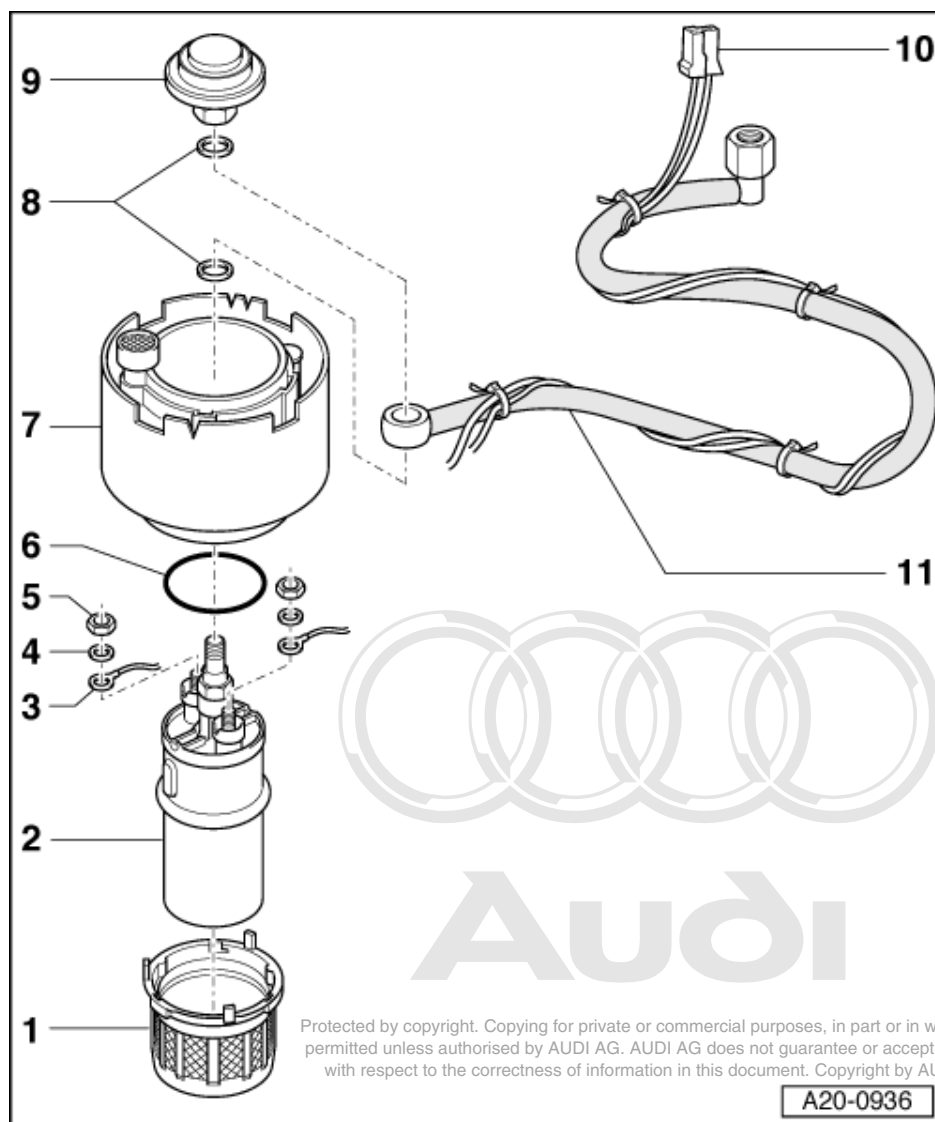
2 Fuel pump

- ♦ Removing and installing => Fig. 118
- ♦ Pre-assembly => Page 116
- ♦ Electrical checking => Page 79
- ♦ Checking holding pressure

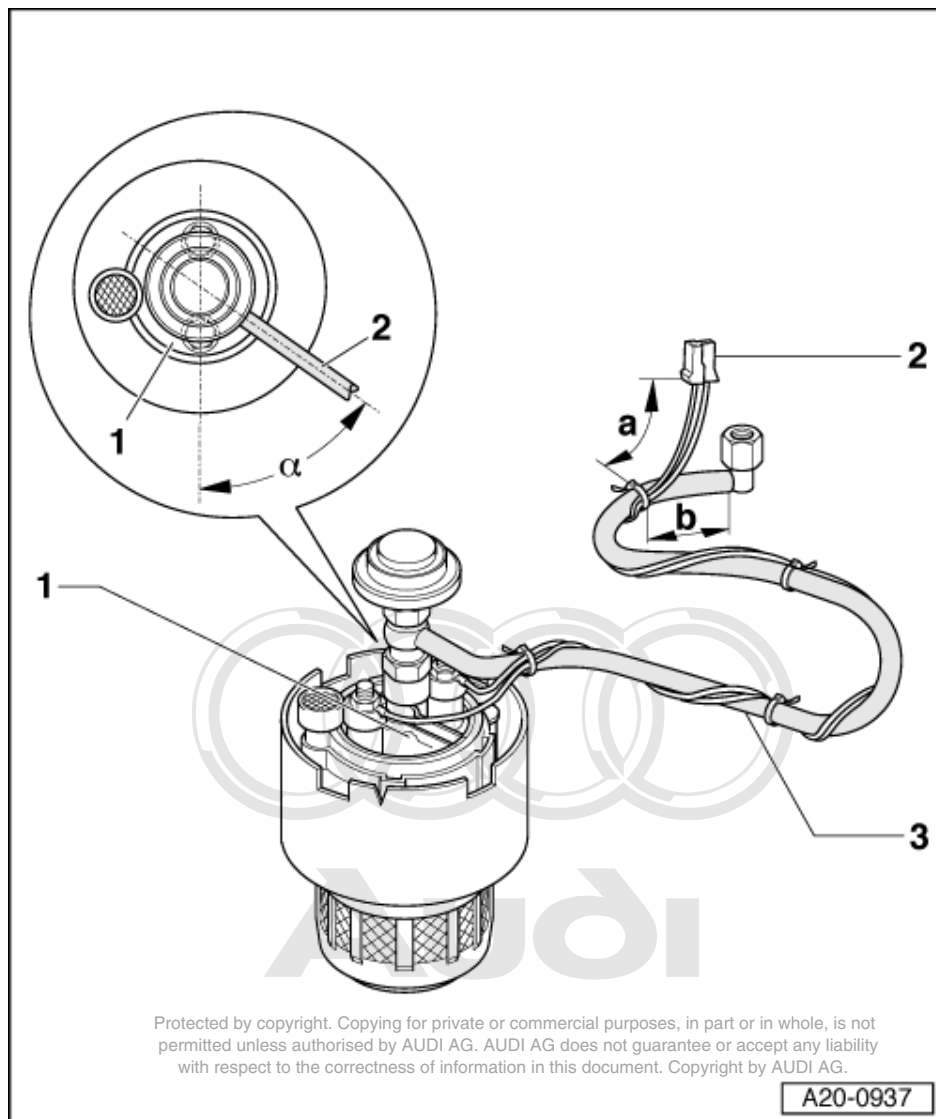
=> Injection and Ignition System; Repair Group 25

3 Wire

- ♦ For fuel pump

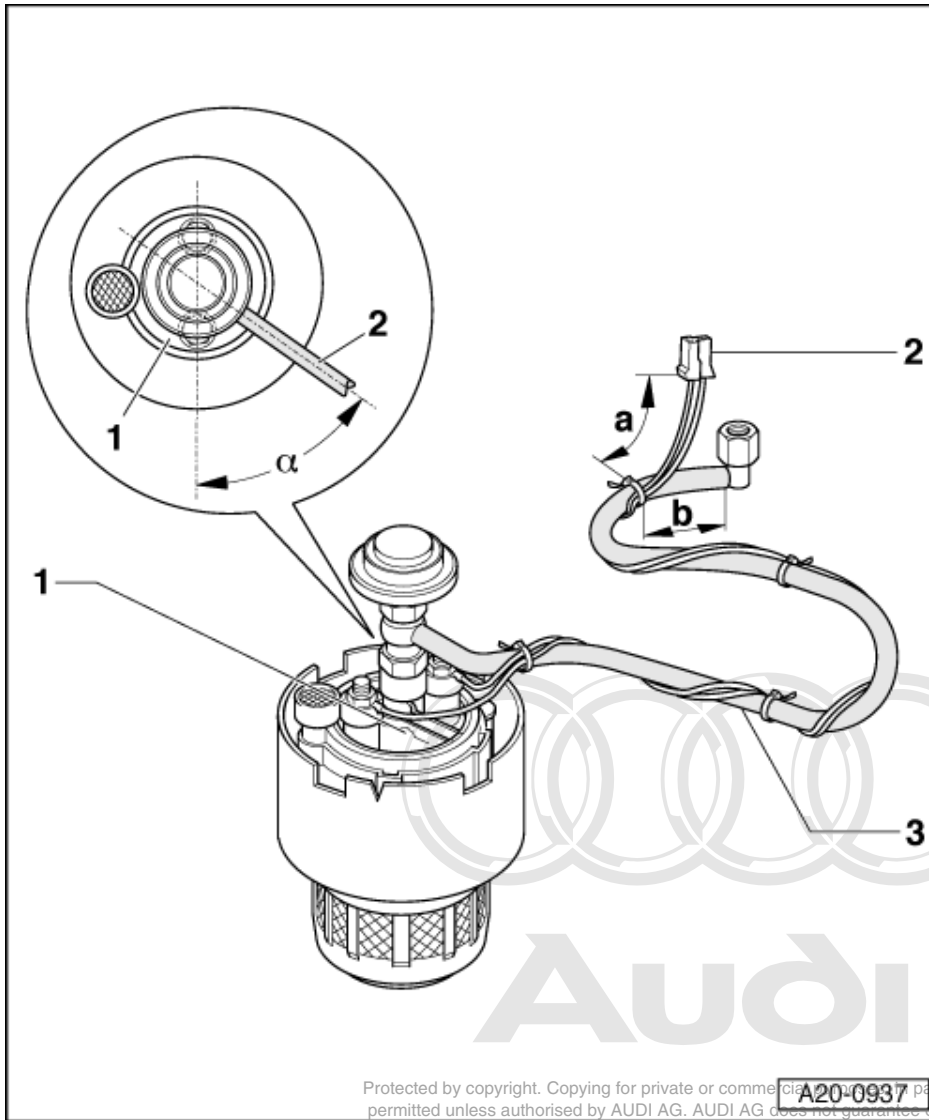


- 4 Washer**
- 5 M5 = 1.6 Nm**
M6 = 2 Nm
- 6 O-ring**
 - ♦ Replace
- 7 Inner part of baffle housing**
- 8 Sealing rings**
 - ♦ Replace
- 9 Pressure damper, 13 Nm**
 - ♦ Provide support at hexagon of fuel pump when unfastening and tightening
- 10 Wire**
 - ♦ For fuel pump
 - ♦ Installation position => Page **116**
- 11 Fuel supply pipe**
 - ♦ Fuel pump/sender housing
 - ♦ Pre-assembly => Page **116**

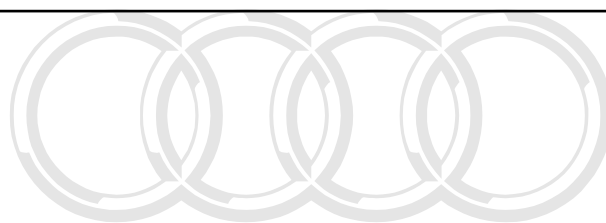
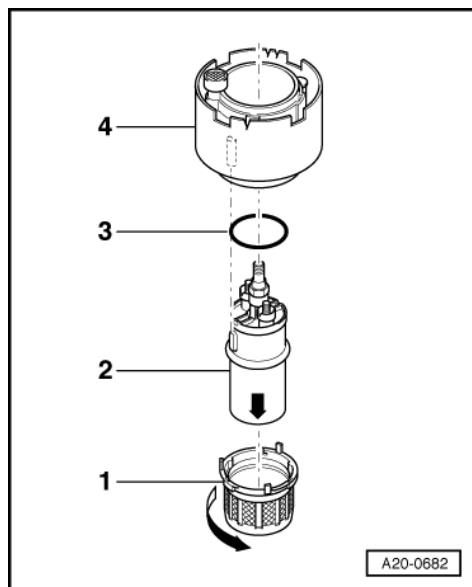


Pre-assembling fuel pump (ø 60 mm) and fuel supply pipe

- Fit fuel supply pipe -3- with new sealing rings at fuel pump -1- as shown.
- To do so, align fuel supply pipe at fuel pump at an angle of $\alpha = 55^\circ$ to electrical connections.
- Screw fuel supply pipe (13 Nm) to fuel pump.
- Wind wiring -2- to fuel pump around fuel supply pipe.



- Secure wiring with a total of 4 fuel-resistant cable ties. Attach upper and lower cable tie at marked locations.
 - a = Effective wire length 90 mm
 - b = 60 mm



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-> Fig.1 **Removing and installing fuel pump**

- Fuel delivery unit dismantled

Removing

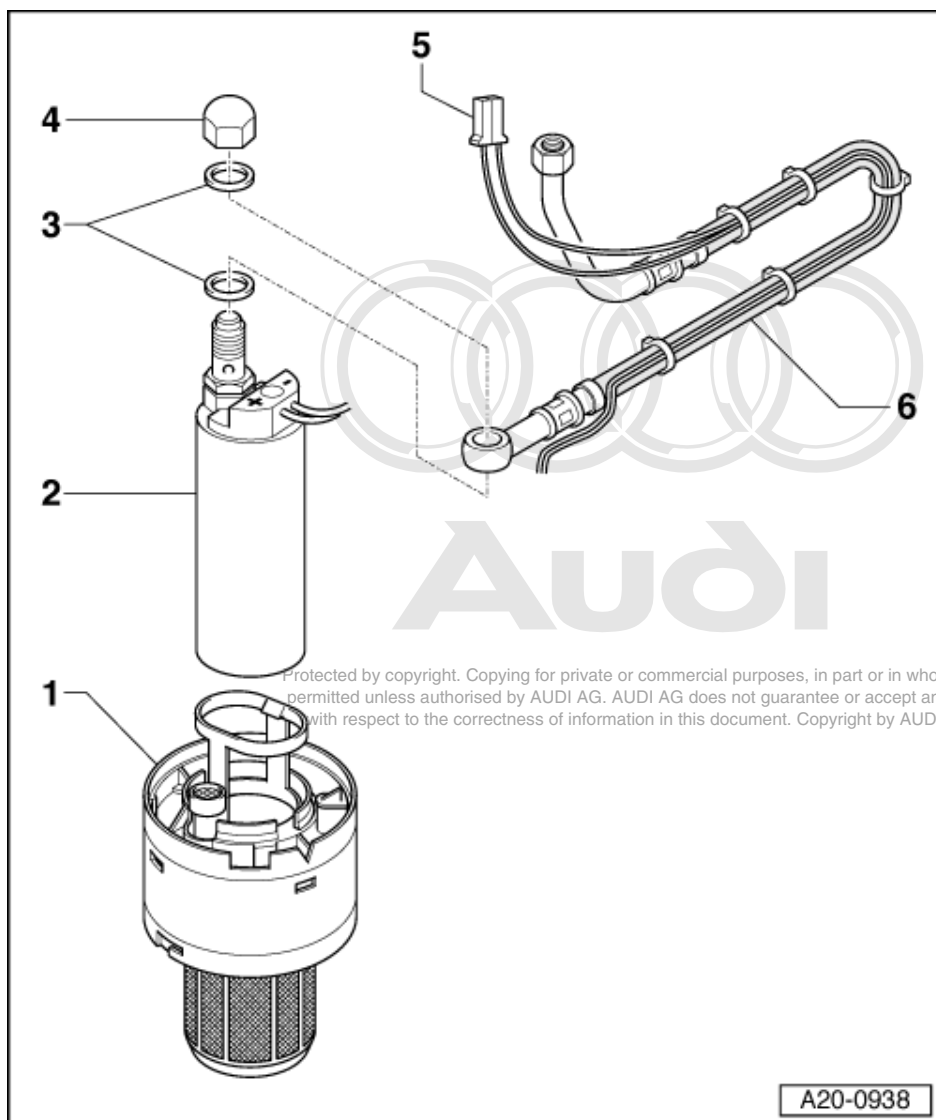
- Turn fuel filter screen -1- anti-clockwise and detach it (bayonet lock).
- Pull fuel pump -2- with O-ring -3- downwards out of inner part of baffle housing -4-.

Installing

Install in reverse order, paying attention to the following:

- Make sure tab at fuel pump engages in recess at inner part of baffle housing.

3.17 - Dismantling fuel delivery unit - 8-cyl. engine (code letters AHK)



1 Inner part of baffle housing

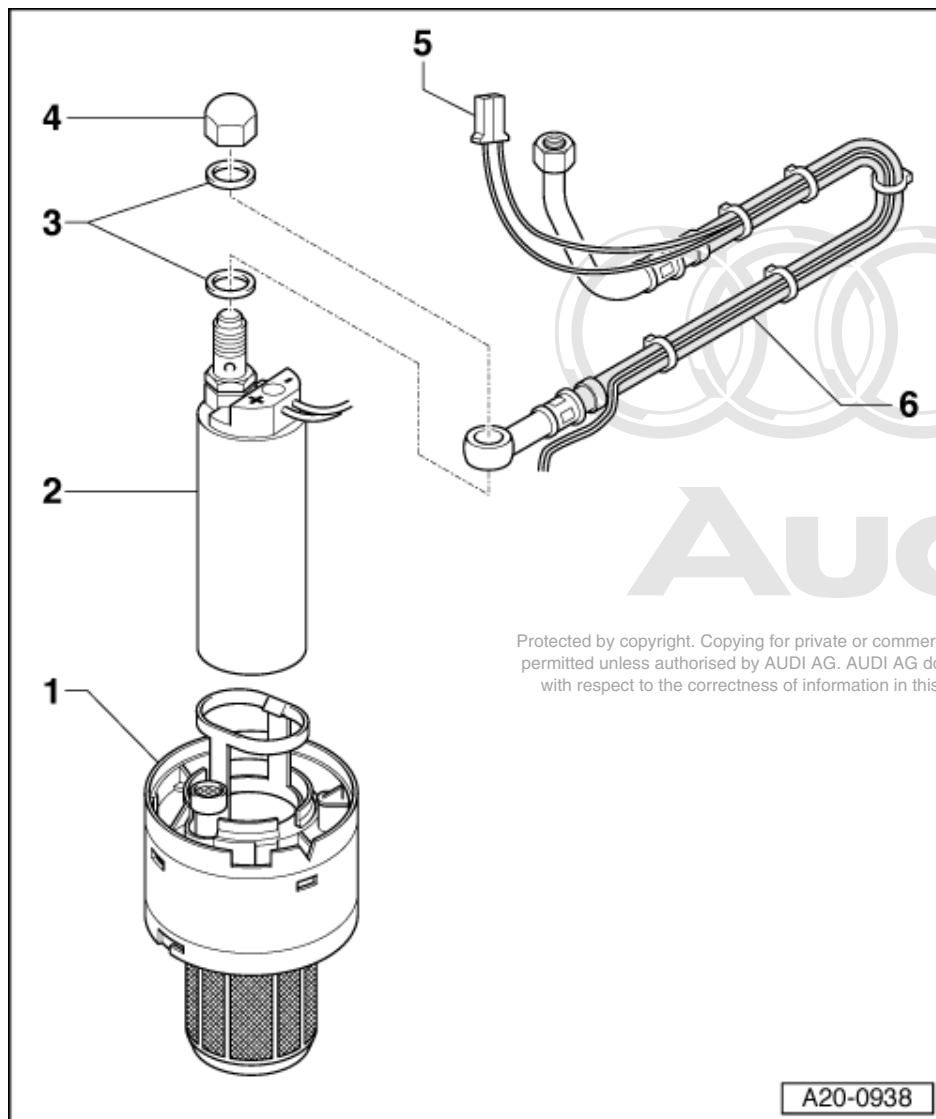
2 Fuel pump

- ♦ Removing and installing => Fig. 123
- ♦ Pre-assembly => Page 121
- ♦ Electrical checking => Page 79
- ♦ Checking holding pressure

=> Injection and Ignition System; Repair Group 24

3 Sealing rings

- ♦ Replace



4 Cap nut, 13 Nm

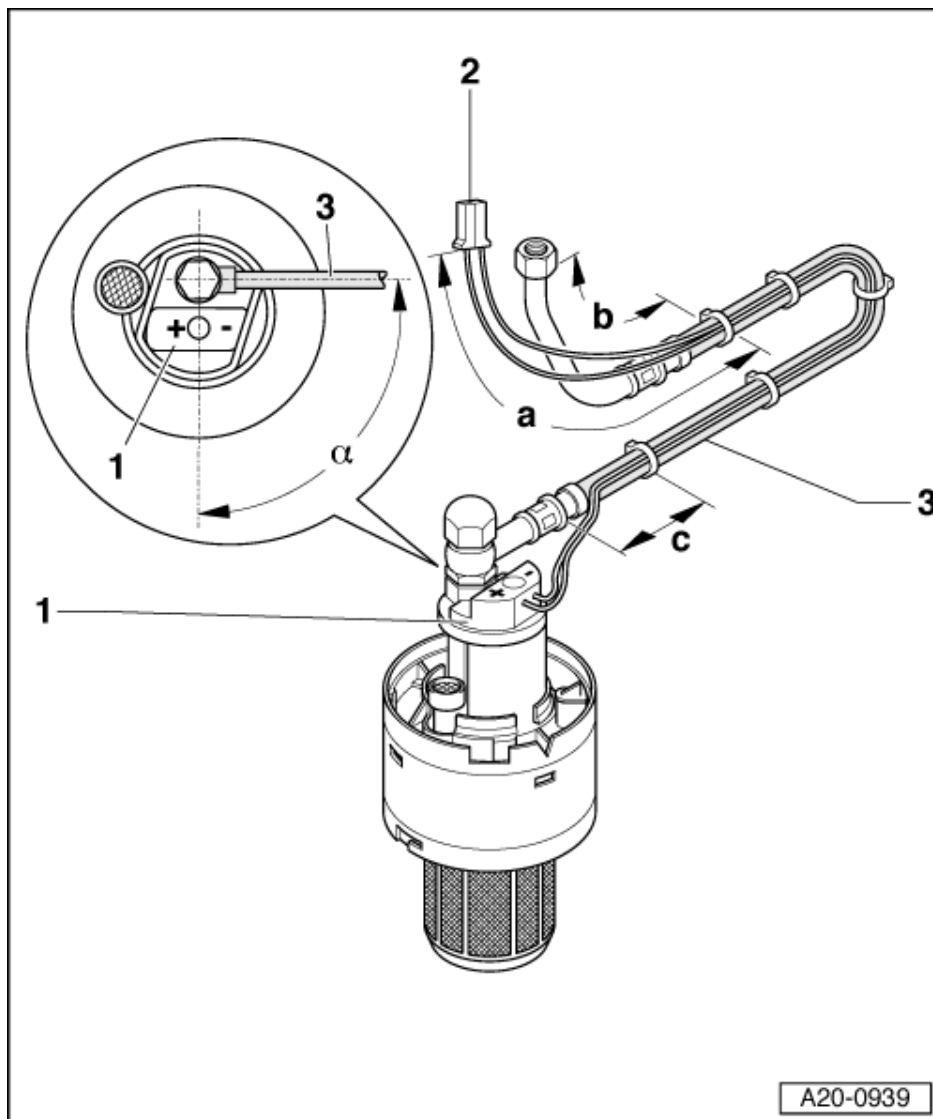
- ♦ Provide support at hexagon of fuel pump when unfastening and tightening

5 Wire

- ♦ For fuel pump
- ♦ Installation position => Page 121

6 Fuel supply pipe

- ♦ Fuel pump/sender housing
- ♦ Pre-assembly => Page 121

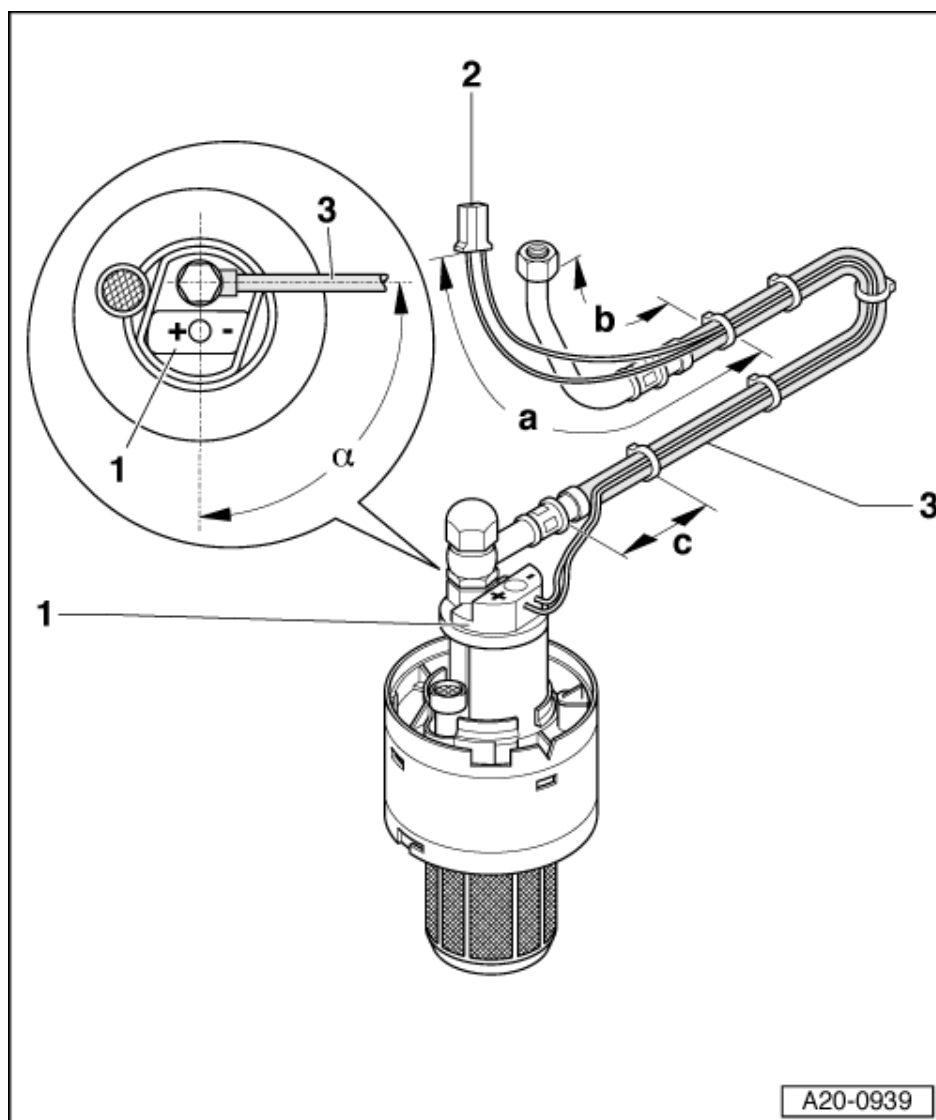


Pre-assembling fuel pump and fuel supply pipe

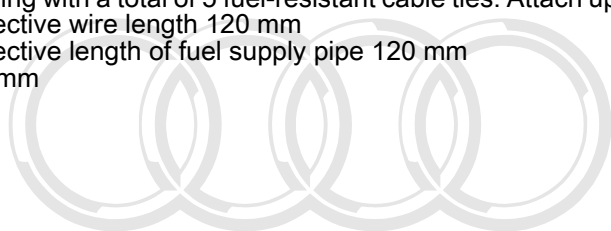
- Fit fuel supply pipe -3- with new sealing rings at fuel pump -1- as shown.
- Align fuel supply pipe at fuel pump at an angle of $\alpha = 90^\circ$ to connections.
- Screw fuel supply pipe (13 Nm) to fuel pump.
- Lay wiring -2- to fuel pump along fuel supply pipe.



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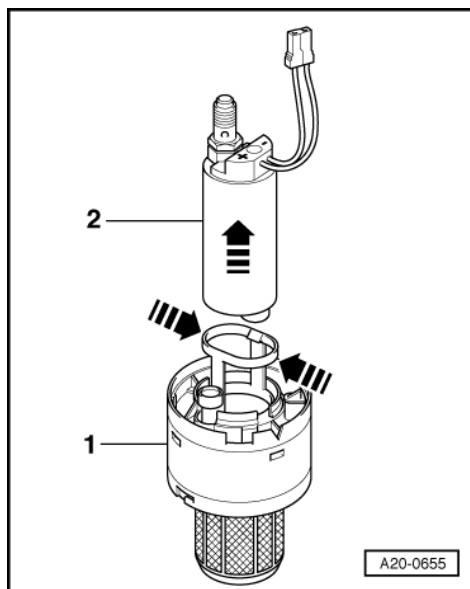


- Secure wiring with a total of 5 fuel-resistant cable ties. Attach upper and lower cable tie at marked locations.
- a = Effective wire length 120 mm
- b = Effective length of fuel supply pipe 120 mm
- c = 25 mm



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-> Fig.1 Removing and installing fuel pump

- Fuel delivery unit dismantled

Removing

- Squeeze both release areas -arrows- at inner part of baffle housing -1-.
- Pull fuel pump -2- upwards -arrow- out of inner part of baffle housing.

Installing

Install in reverse order, paying attention to the following:

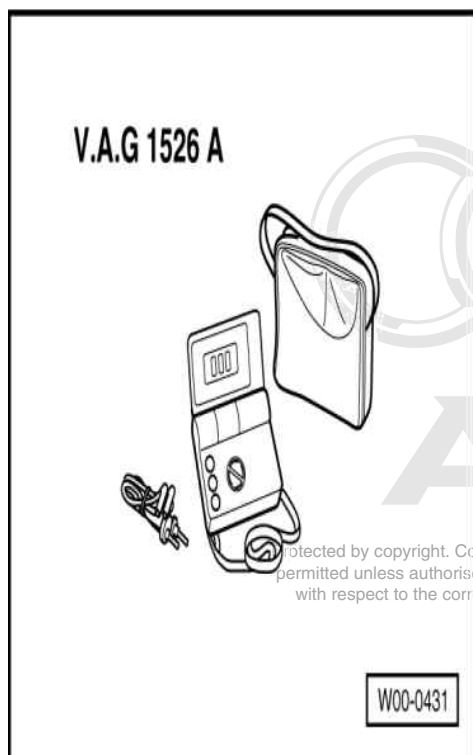
- ♦ Installation position: Offset connection at bottom of fuel pump must be inserted in hole in inner part of baffle housing

3.18 - Checking fuel gauge sender -G

Note:

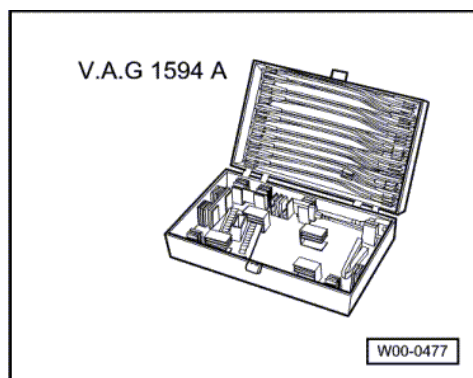
Checking signal from fuel gauge sender

=> **Electrical System; Repair Group 90**
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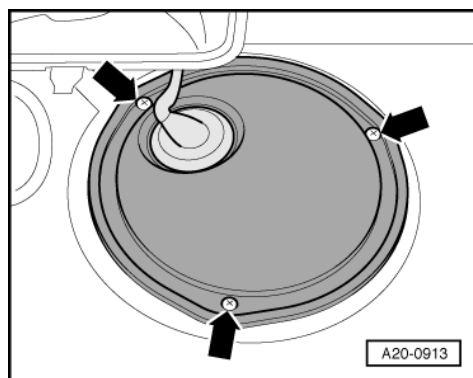


Special tools and workshop equipment required

- ♦ V.A.G 1526 A



- ♦ V.A.G 1594 A



Test sequence

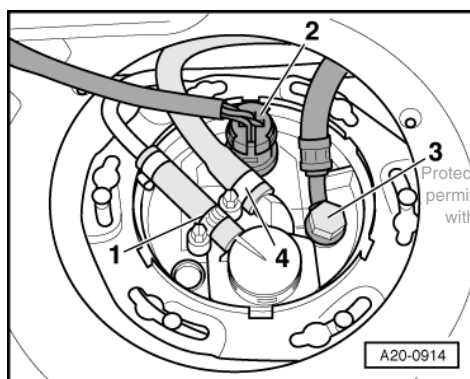
- Remove luggage compartment lining.

Avant:

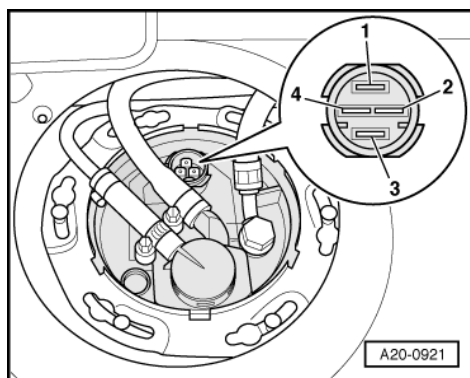
- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.

All models:

- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.



- -> Connect up multimeter for resistance measurement between contacts 2 and 3.

Sender installed	Sender at lower stop	Sender at upper stop
Fuel gauge sender -G	approx. 275 ω	approx. 40 ω

- Measured value of 0 ω is an indication of a short circuit, whereas ∞ ω signifies an open circuit in the wiring.

Note:

Checking resistance values "Tank full"/"Tank empty" involves removing fuel gauge sender => Page 126 and swivelling sender float to upper/lower stop.

The following values are obtained with the fuel gauge sender removed on account of the greater deflection of the float arm:



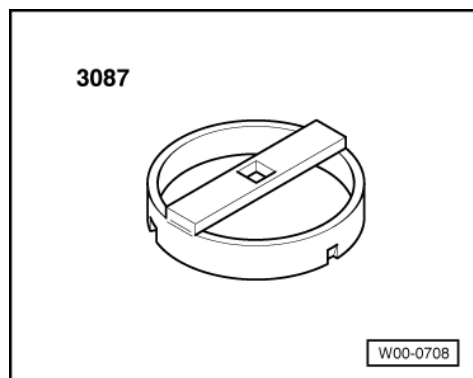
Sender removed	Sender at lower stop	Sender at upper stop
Fuel gauge sender -G	approx. 280 ω	approx. 40 ω



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3.19 - Removing and installing fuel gauge sender -G



Special tools and workshop equipment required

- ♦ Fuel gauge sender wrench 3087

Removing

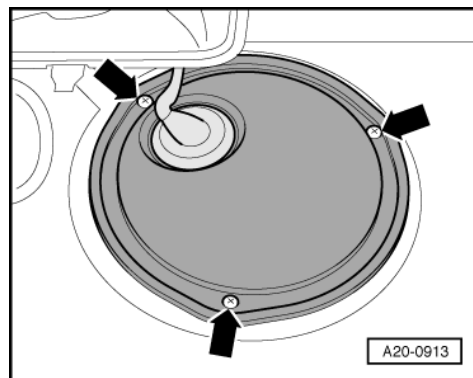
Heed safety precautions => Page 1 .

Observe rules for cleanliness =>Page 2 .

- When removing fuel gauge sender, fuel tank must not be more than 2/3 full. Drain fuel tank if necessary. Procedure => Page 67 .
- Heed (if necessary obtain) radio code for vehicles with encoded radio.
- Disconnect battery earth strap with ignition switched off.
- Briefly open fuel tank cap and close again.
- Remove luggage compartment lining.

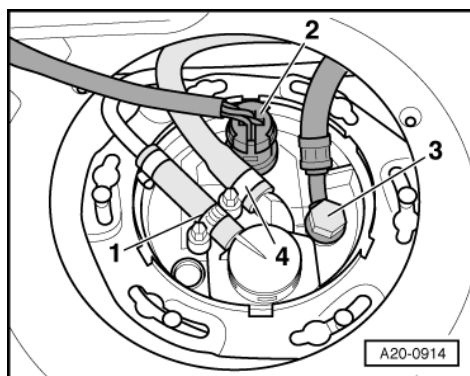
Avant:

- Remove load compartment floor.
- If necessary, fold forward right backrest of rear seat bench.



All models:

- -> Unscrew cover -arrows-.



- -> Unplug connector -2- for fuel pump and fuel gauge sender.

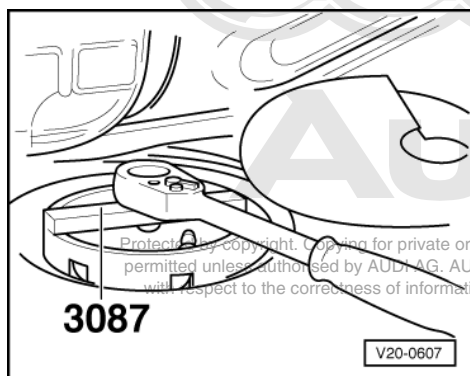
Attention:

- ♦ **Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.**
- ♦ **After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.**

- Detach fuel return pipe -4- and breather pipe -1-.
- Unscrew fuel supply pipe -3-.

Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.

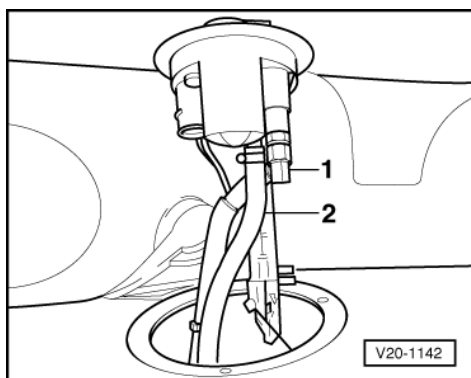


All models:

Attention:

When removing fuel gauge sender, fuel tank must not be more than 2/3 full.

- -> Use fuel gauge sender wrench 3087 to unscrew locking ring.
- Lift fuel gauge sender carefully out of opening in fuel tank.



- -> Detach fuel return pipe -2- on inside of fuel gauge sender.
- Unscrew fuel supply pipe -1-.
- Unplug connector to fuel pump.

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Vehicles with auxiliary heater:

- Additionally disconnect fuel supply pipe to auxiliary heater.

All models:

- Take fuel gauge sender carefully out of opening in fuel tank.

Installing

Install in reverse order, paying attention to the following:

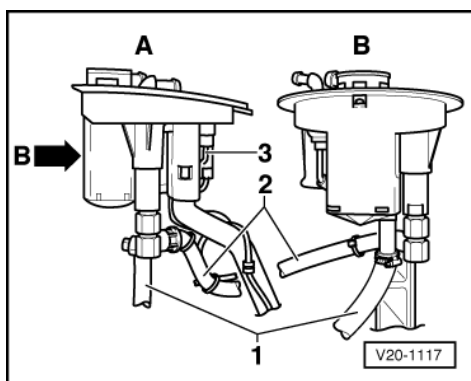
- If fuel delivery unit has been dismantled or fuel pump removed, pre-assemble components as described under "Dismantling fuel delivery unit" for the various engine versions.

Note:

Secure all hose connections with standard hose clamps.

=> Parts List

- Replace O-ring for fuel gauge sender.
- Insert fuel gauge sender in fuel tank.

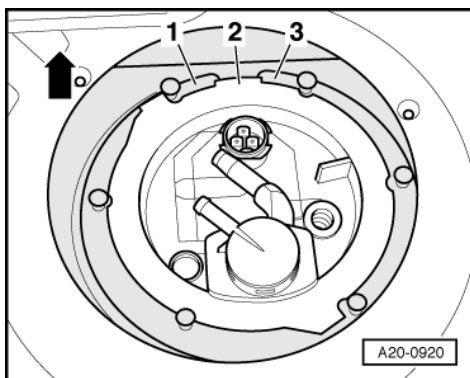


- -> Attach fuel supply pipe -2- and fuel return pipe -1- as illustrated in views -A- and -B-.

Note:

-Arrow B- indicates viewing direction for view -B-.

- Connect wires -3- to sender housing as shown.

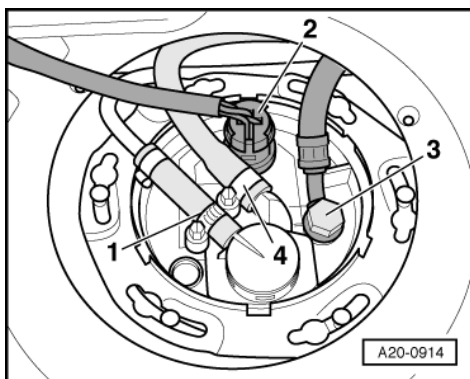


- -> Pay attention to installation position of fuel gauge sender.
- Tab -2- at fuel gauge sender must be located between raised areas -1- and -3- at fuel tank

Note:

Arrow faces in direction of travel.

- Use fuel gauge sender wrench 3087 to secure locking ring.



- -> Screw on fuel supply pipe -3-.
- Attach fuel return pipe -4- and breather pipe -1- and tighten hose clamps.
- Attach connector -2-.

Note:

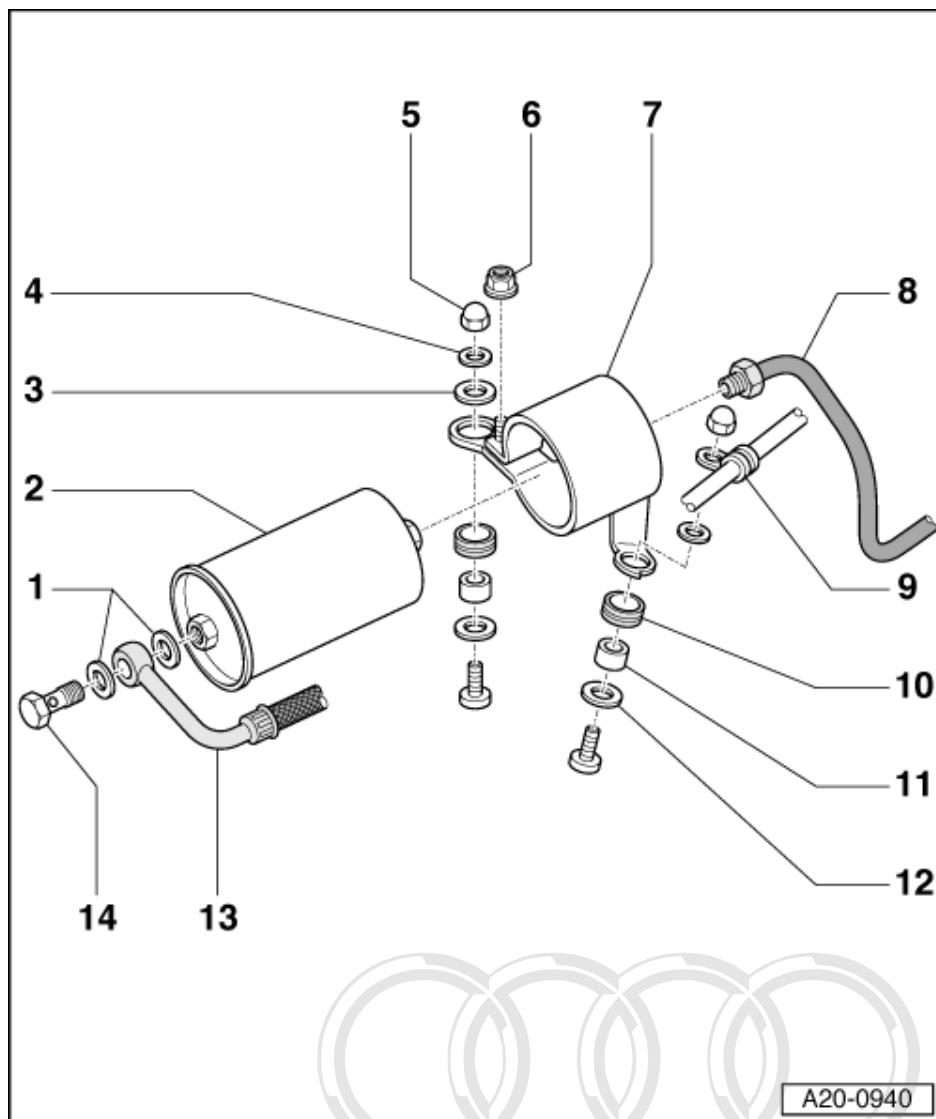
On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters) in line with owner's manual.

Tightening torques

Component	Nm
Supply pipe to sender housing (union nut)	23
Supply pipe to sender housing (banjo bolt)	23
Hose clamps	2
Battery terminal to battery post	6

4 - Exploded view of components - fuel filter

4.1 - Exploded view of components - fuel filter



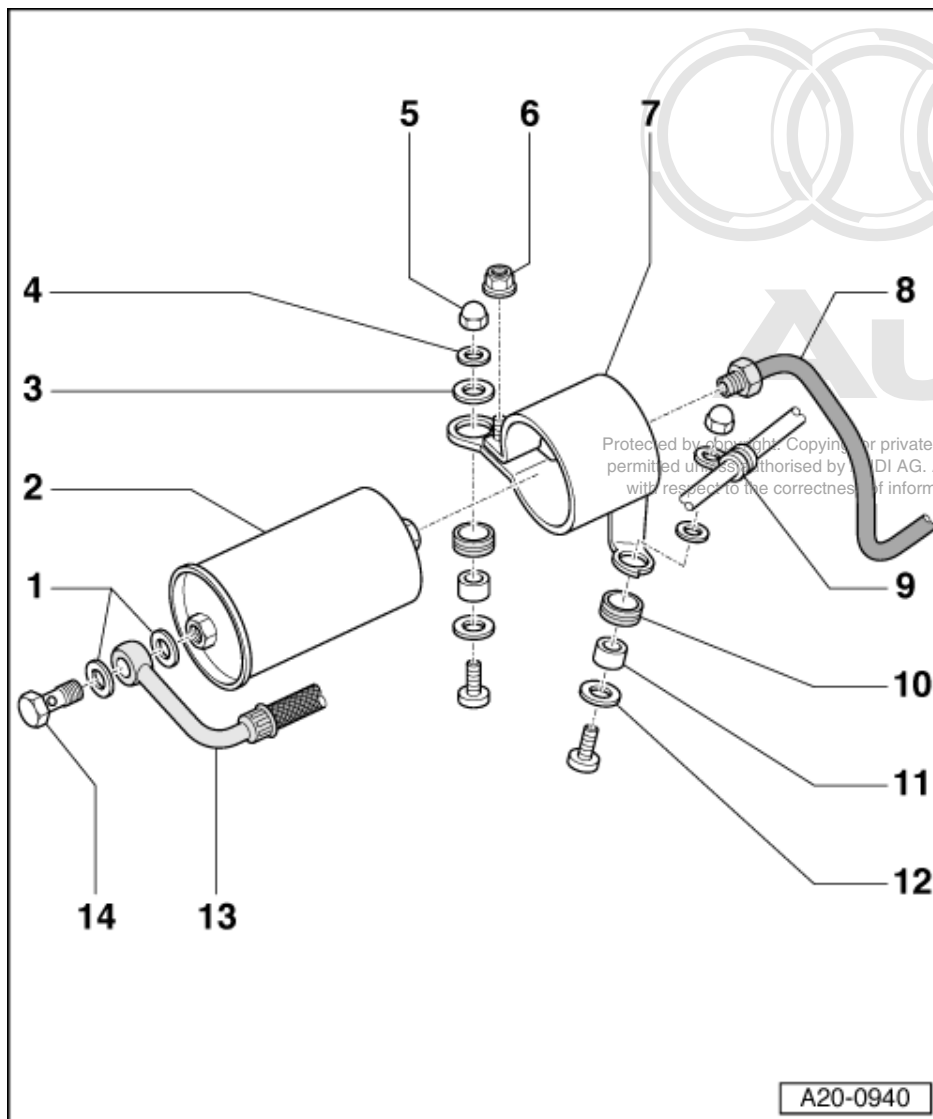
Attention:

- ♦ Fuel system is pressurised. Wrap cloth around joint before opening system. Then dissipate pressure by carefully unfastening joint.
- ♦ After unfastening fuel supply pipe on vehicles with K- or KE-Jetronic and KE-Motronic, pressure container is drained and approx. 10 cm of fuel squirts out.

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1 Sealing rings

- ♦ Replace



2 Fuel filter

- ♦ Fitting location: On right of engine compartment
- ♦ Installation position => Fig. 133

3 Washer

4 Washer

5 Cap nut, 5 Nm

6 5 Nm

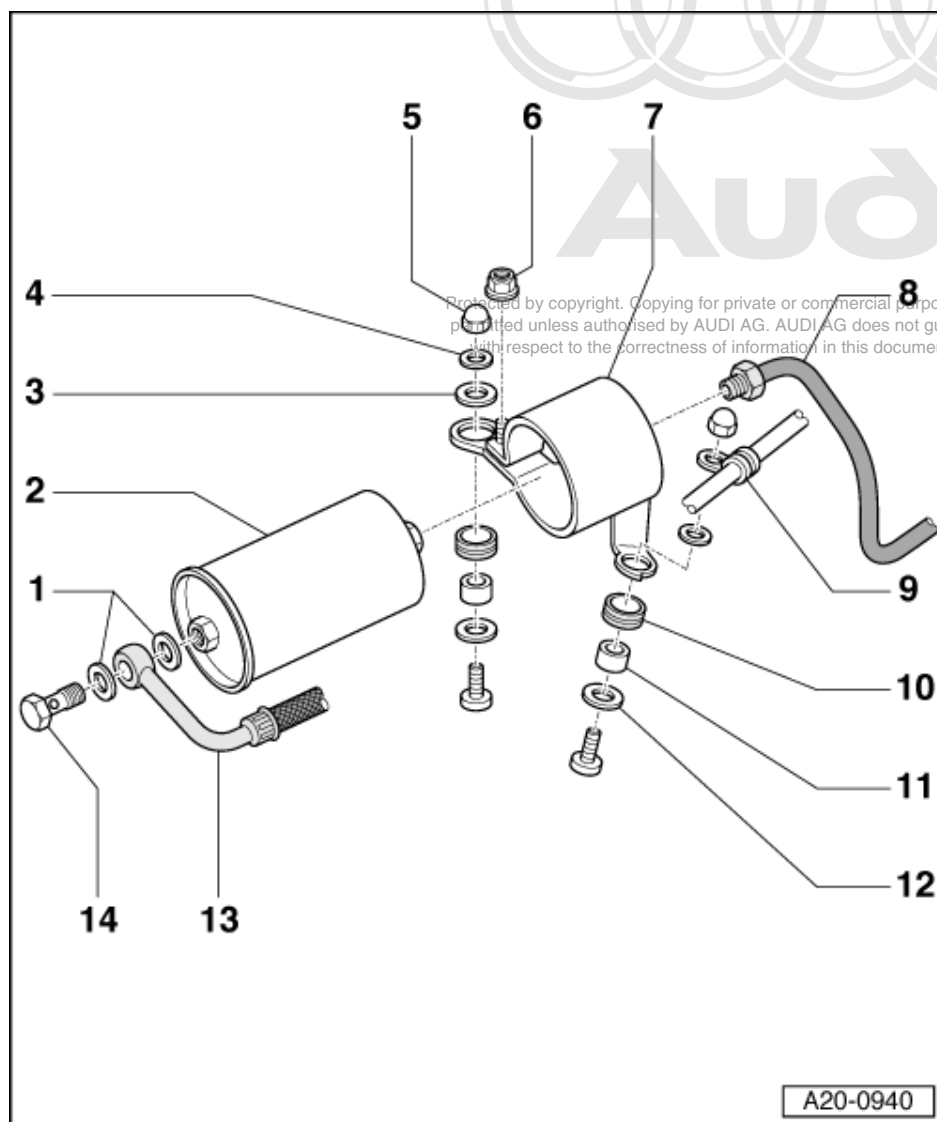
7 Bracket

- ♦ For fuel filter

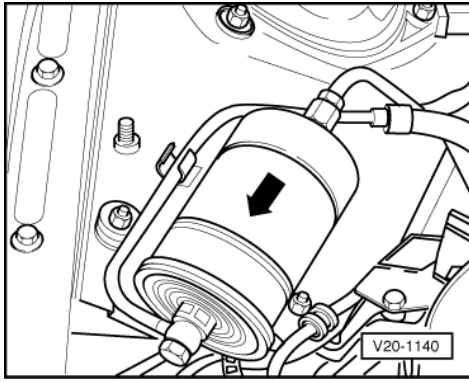
8 Fuel supply pipe

-23 Nm

- ♦ From fuel pump/pressure container
- ♦ Provide support at hexagon of fuel filter when unfastening and tightening



- 9 Retaining clip**
- ♦ For ACF system breather pipe
- 10 Rubber grommet**
- 11 Spacer bush**
- 12 Washer**
- 13 Fuel supply pipe**
- ♦ To engine
- 14 Banjo bolt, 23 Nm**
- ♦ Provide support at hexagon of fuel filter when unfastening and tightening



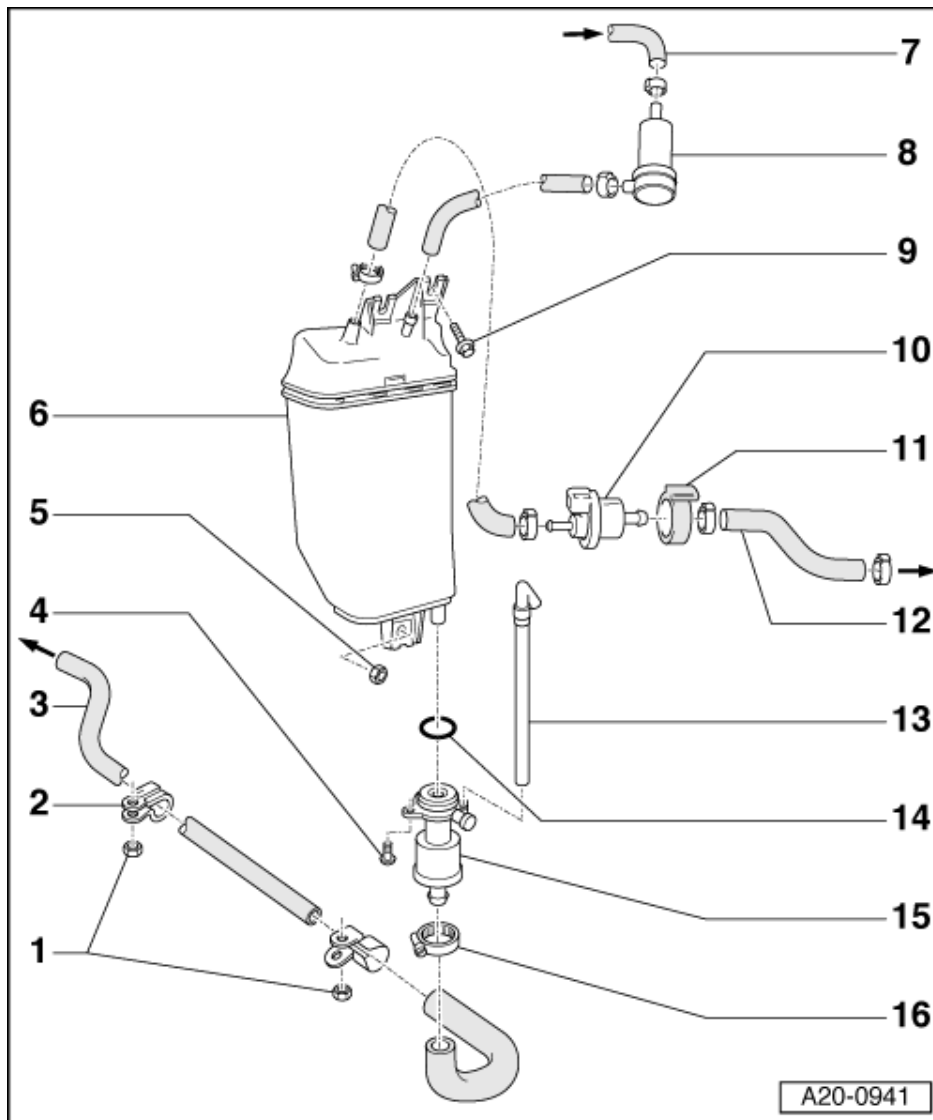
-> Fig. 1 Installation position of fuel filter

- ♦ Arrow on housing = Direction of flow to engine

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5 - Servicing activated charcoal filter system components

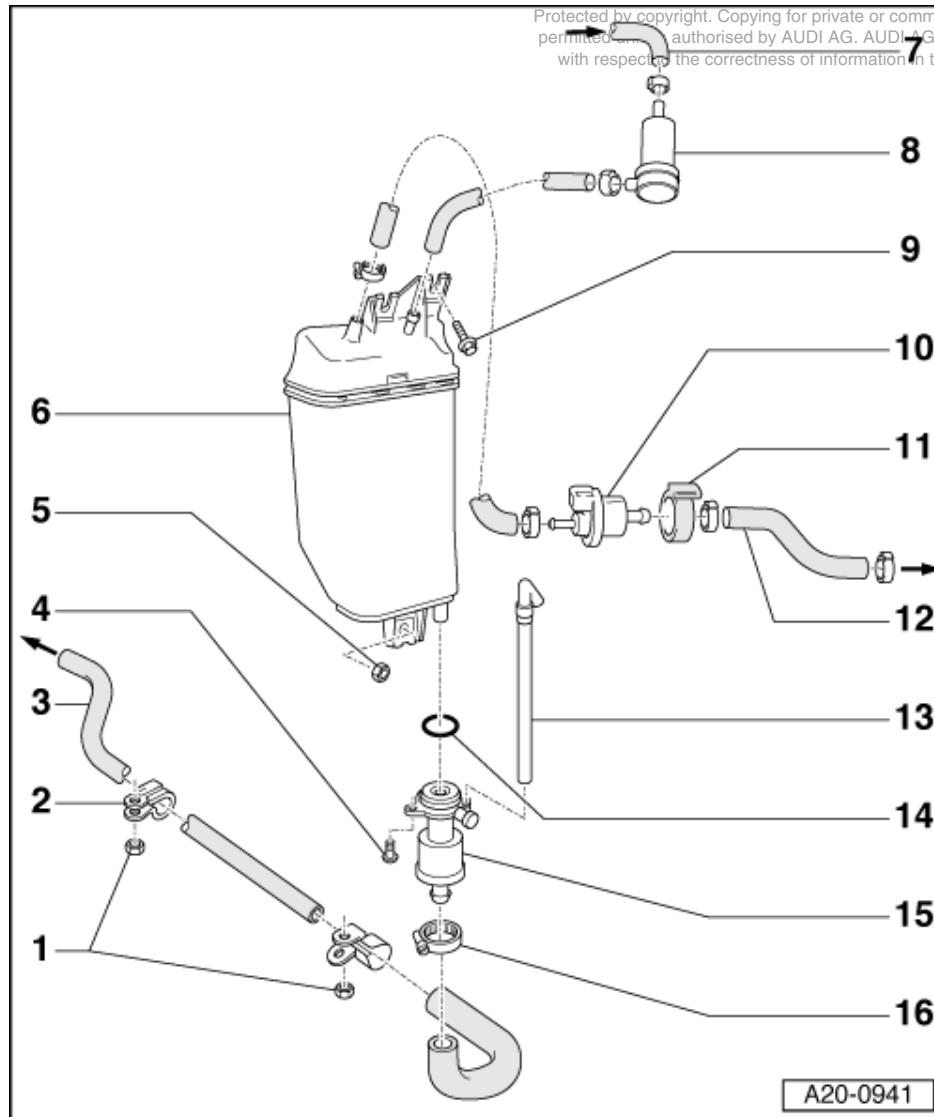
5.1 - Servicing activated charcoal filter system components





5.2 - Exploded view for 4, 5 and 6-cyl. engine

- 1 10 Nm
- 2 Retaining clip
- 3 Hose
 - ♦ Exits from underside of vehicle on right
- 4 Self-tapping screw
- 5 10 Nm



6 Activated charcoal filter

- ♦ Fitting location: In front right wheel housing
- ♦ Connections => Fig. 137
- ♦ Attached to body
- ♦ Removal involves taking out front right wheel housing liner

=> General Body Repairs; Repair Group 66; Wheel housing liners Wheel housing liners

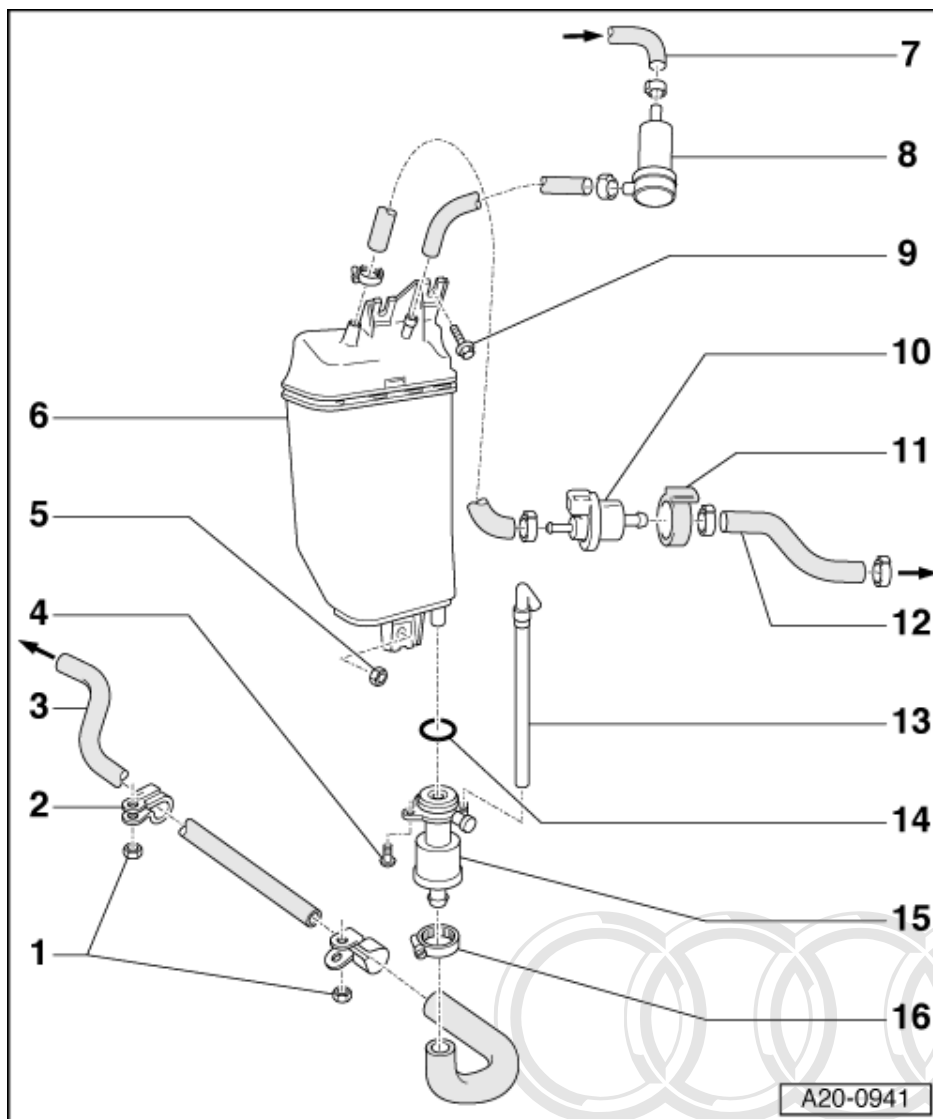
7 Breather pipe

- ♦ From fuel tank

8 Breather valve

- ♦ Maintains admission pressure to prevent overfilling when refuelling
- ♦ Illustration shows version as of approx. 01.93; fitting location: in front right wheel housing

- ♦ Version up to approx. 12.92 => Fig. 2



9 10 Nm

10 Activated charcoal filter solenoid valve -N80

- ♦ Fitting location: On right of engine compartment
- ♦ Installation position: Arrow points in direction of flow
- ♦ Checking operation and actuation

=> Injection and Ignition System; Repair Group 24

=> Injection and Ignition System; Repair Group 25

11 Retaining ring

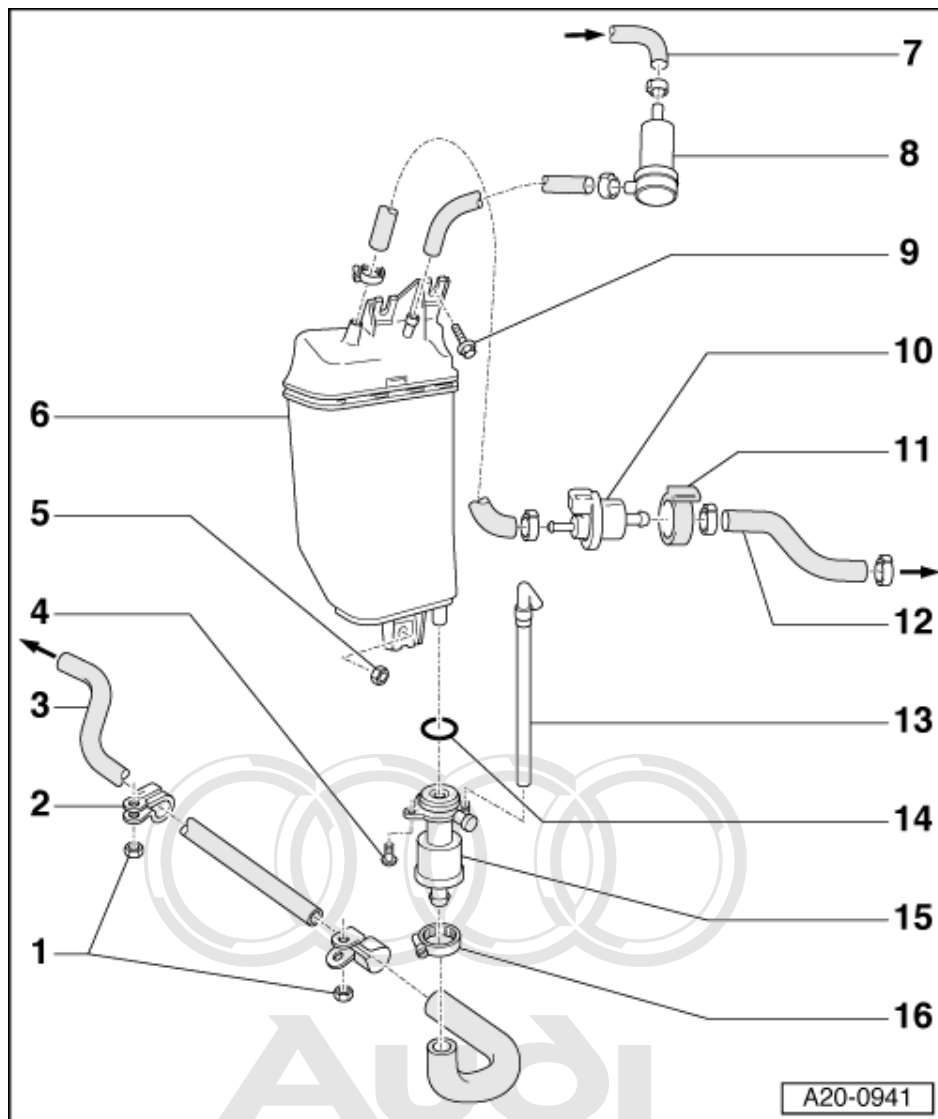
- ♦ For activated charcoal filter solenoid valve -N80

12 Breather pipe

- ♦ To intake manifold

13 Hose

- ♦ Exits out of vehicle
- ♦ Engage in clip at activated charcoal filter



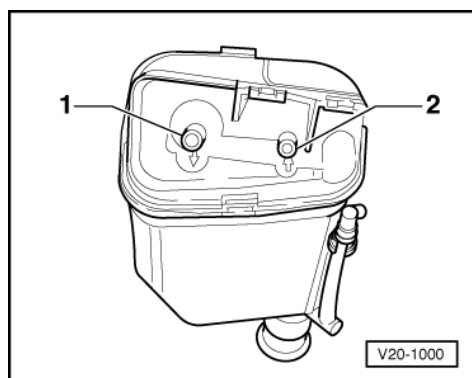
14 O-ring

- ◆ Replace if damaged

15 Breather valve

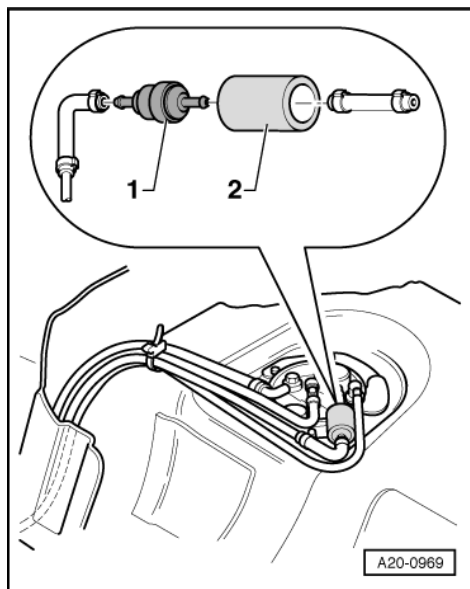
- ◆ Not always fitted
- ◆ Controls activated charcoal filter breather function
- ◆ Stops splash water entering activated charcoal filter

16 Hose clamp



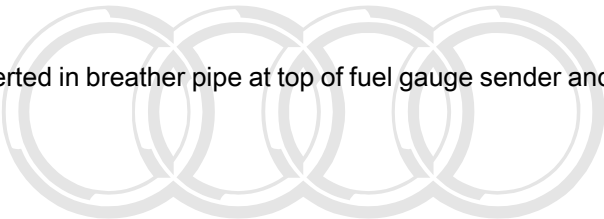
-> Fig.1 Activated charcoal filter connections

- 1 - Breather pipe to activated charcoal filter solenoid valve -N80
- 2 - Breather pipe to fuel tank



-> Fig.2 Breather valve up to approx. 12.92

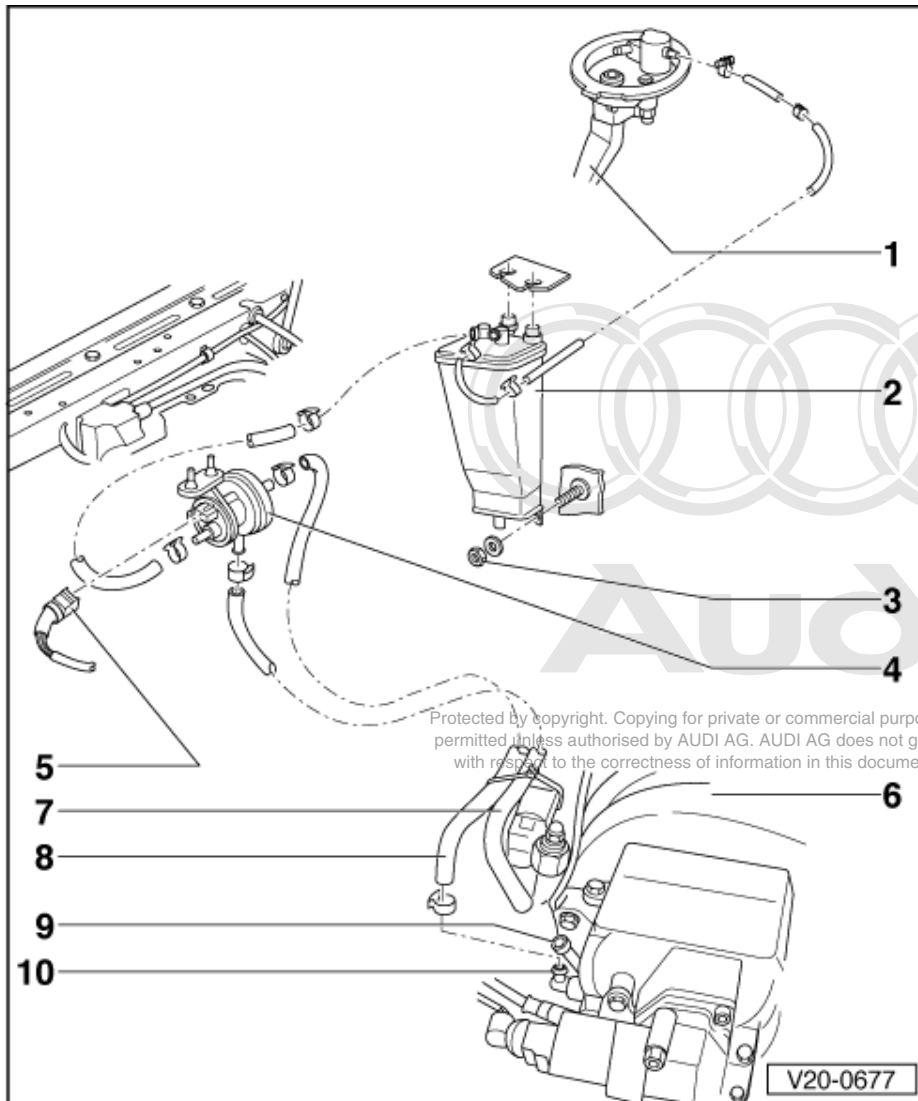
- ♦ Up to approx. 12.92, breather valve -1- is inserted in breather pipe at top of fuel gauge sender and provided with a foam sheath -2-.


Audi

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5.3 - Exploded view for 8-cyl. engine



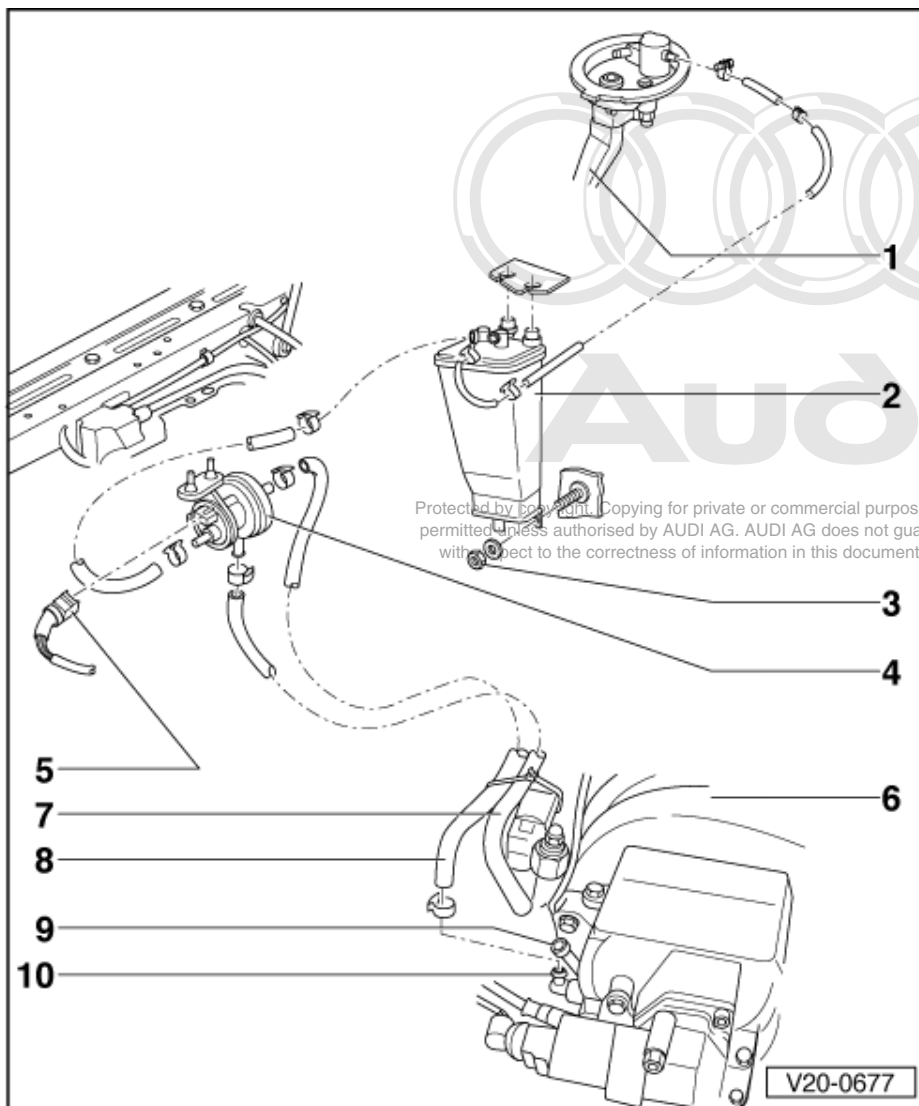
Note:

Always replace gaskets.

- 1 Fuel gauge sender**
- 2 Activated charcoal filter**
 - ◆ Fitting location: In front right wheel housing
 - ◆ Attached to body
 - ◆ Removal involves taking out front right wheel housing liner

=> General Body Repairs; Repair Group 66; Wheel housing liners Wheel housing liners

- 3 10 Nm**



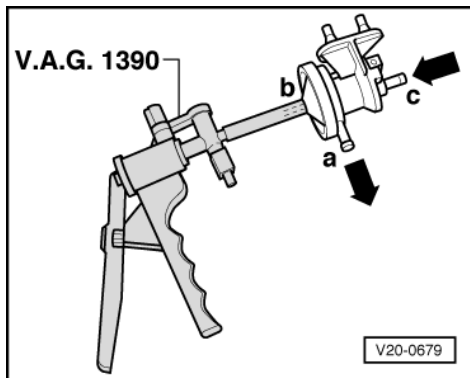
4 Activated charcoal filter solenoid valve -N80

- ◆ Illustration shows version as of approx. 07.94
- ◆ Fitting location: On right of engine compartment
- ◆ Installation position: Arrow points in direction of flow
- ◆ Checking operation and actuation

=> Motronic Injection and Ignition System (8-cylinder); Repair Group 24

- ◆ Leak test for vehicles up to approx. 06.94 => Fig. 1

- 5 Connector
- 6 Intake manifold
- 7 Breather pipe
- 8 Vacuum pipe
- 9 Connection for breather pipe
- 10 Connection for vacuum pipe



-> Fig.1 Checking activated charcoal filter solenoid valve for leaks - vehicles up to approx. 06.94

- Remove activated charcoal filter solenoid valve.
 - It must not be possible to blow through -arrow- at connection -c-
- Attach vacuum pump to connection -b- and actuate pump.
 - It must be possible to blow through at connection -c- -arrows-

If valve does not open or close properly:

- Replace activated charcoal filter solenoid valve -N80.
- Check actuation of activated charcoal filter solenoid valve.

=> Motronic Injection and Ignition System (8-cylinder); Repair Group 24; Checking tank breather Checking tank breather

6 - Servicing accelerator mechanism

6.1 - Servicing accelerator mechanism

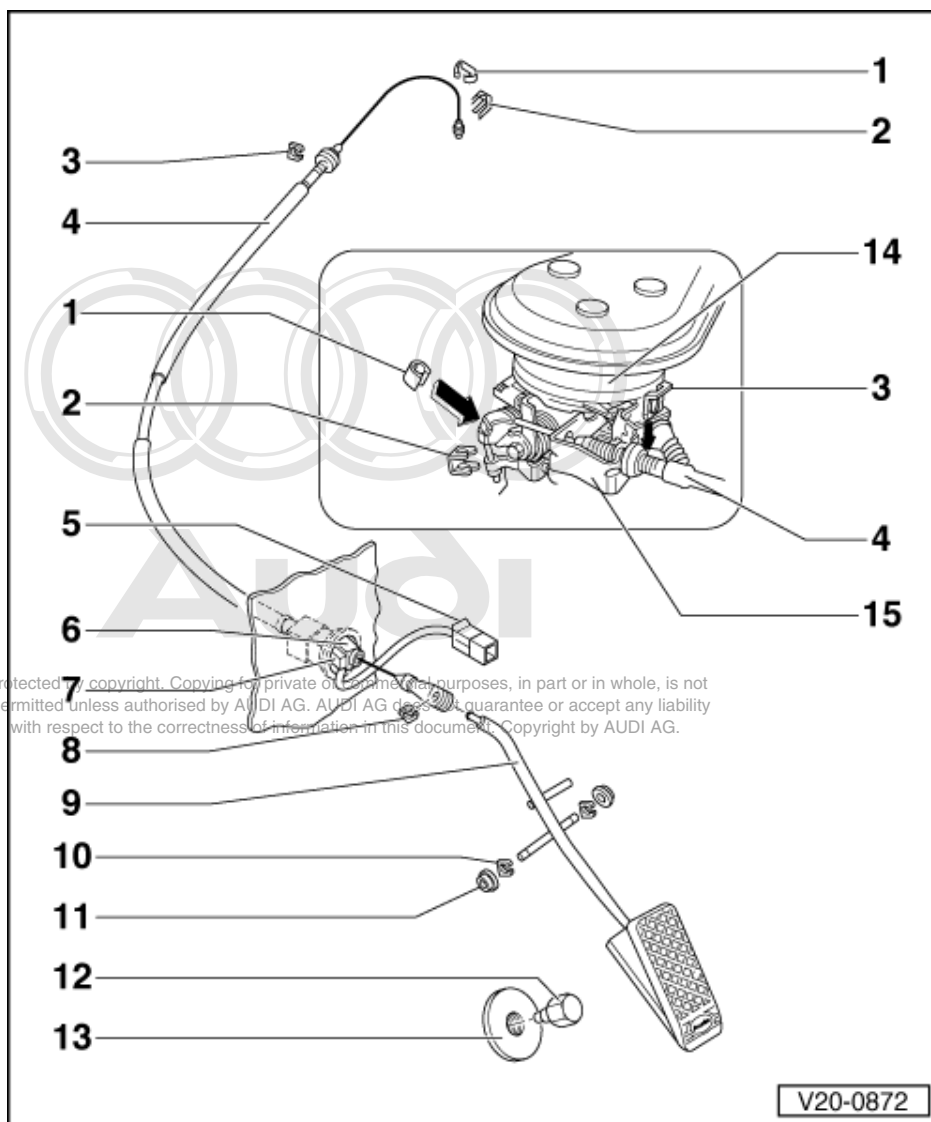
Notes:

- ♦ The throttle cable is extremely sensitive to kinking and must therefore be handled with extreme care on installation.
- ♦ A single slight kink can subsequently cause cable to break whilst driving. If they have been kinked, throttle cables are therefore not to be fitted.
- ♦ Never re-use throttle cable with damaged square mount.
- ♦ On installation, make sure throttle cable is aligned between support brackets and cable attachment points.



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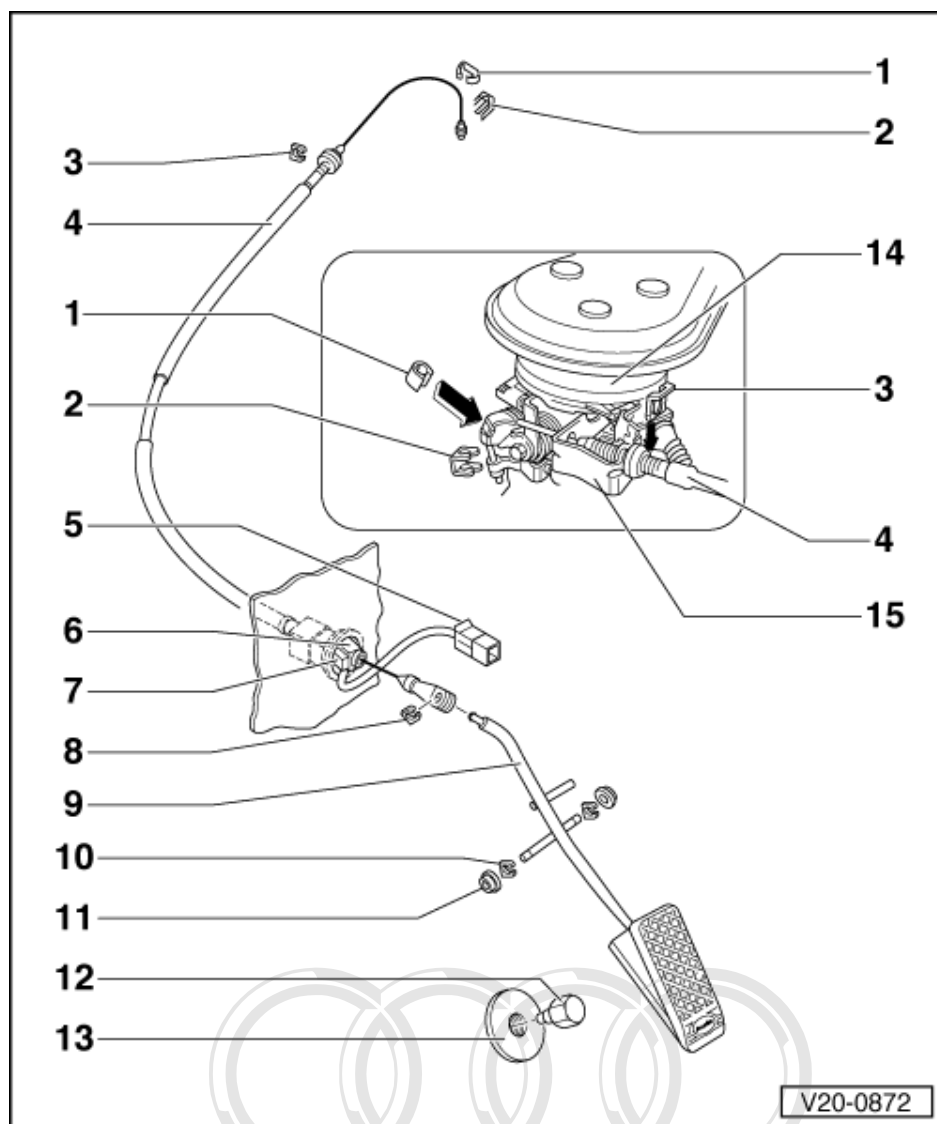
6.2 - Exploded view of accelerator mechanism - 4-cyl. engine (code letters AAE)



Note:

Fig. shows accelerator mechanism for vehicle with automatic gearbox.

- 1 Clip
- 2 Clip
- 3 Retainer
 - ♦ For throttle cable adjustment
 - ♦ Attached at support bracket to detent segment of throttle cable sheath
- 4 Throttle cable
 - ♦ Removing and installing
=> Page 143
 - ♦ Adjusting => Page 144
- 5 Connector
 - ♦ For kickdown switch



6 Square mount

- ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment

7 Kickdown switch -F8

- ♦ Vehicles with automatic gearbox only

8 Retainer

9 Accelerator pedal

10 Retainer

11 Mounting bush

12 Stop screw

- ♦ For accelerator pedal

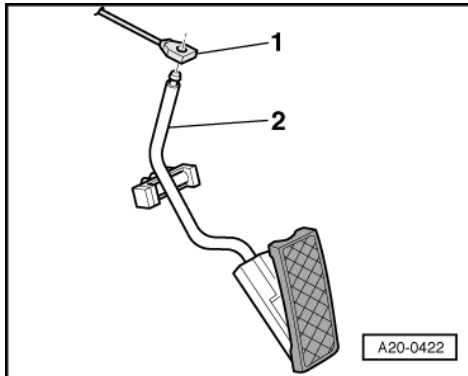
13 Washer

14 Injection unit

15 Support bracket

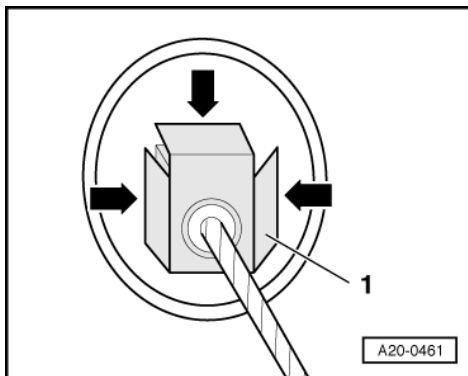
- ♦ With rubber grommet

6.3 - Removing and installing throttle cable - 4-cyl. engine (code letters AAE)

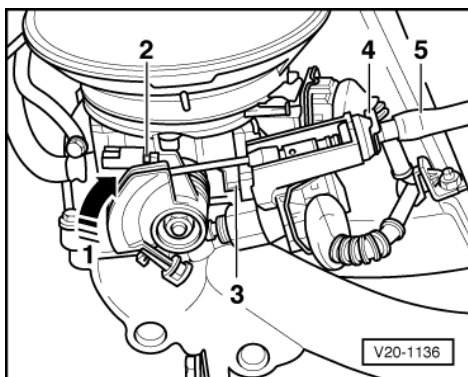


Removing

- Remove driver's storage compartment.
- => General Body Repairs; Repair Group 70; Dash Panel Dash Panel
- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.



- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.



- Prise off clips at cable cam of injection unit.
- -> Disengage throttle cable -5- at cable cam -1- and support bracket (leave retainer -4- in position).
- Pull out throttle cable towards engine compartment.

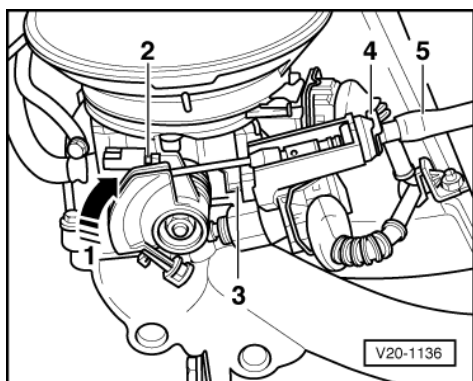
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Installing

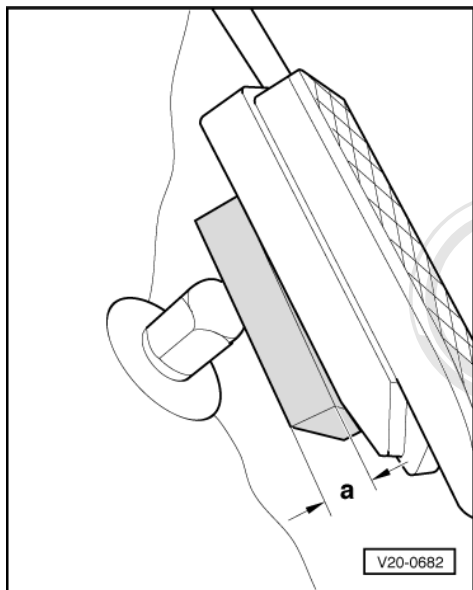
Install in reverse order, paying attention to the following:

- Heed notes => Page 140 .
- Adjust throttle cable => Page 144 .

6.4 - Adjusting throttle cable - 4-cyl. engine (code letters AAE)



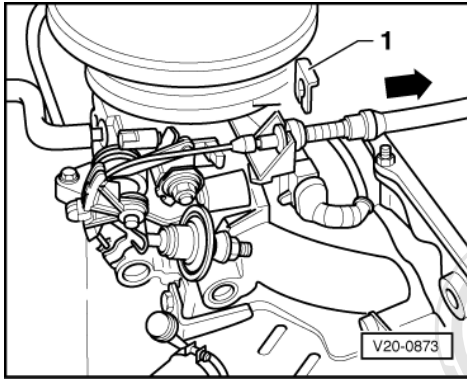
- -> Throttle cable -5- engaged at accelerator pedal, cable cam -1- of injection unit and support bracket; clip fitted
- Pull off retainer -4- at detent segment of throttle cable sheath.



- -> Insert spacer a = 9 mm between accelerator pedal and stop screw and secure (insulating tape).
- Press accelerator pedal into full throttle position.

Note:

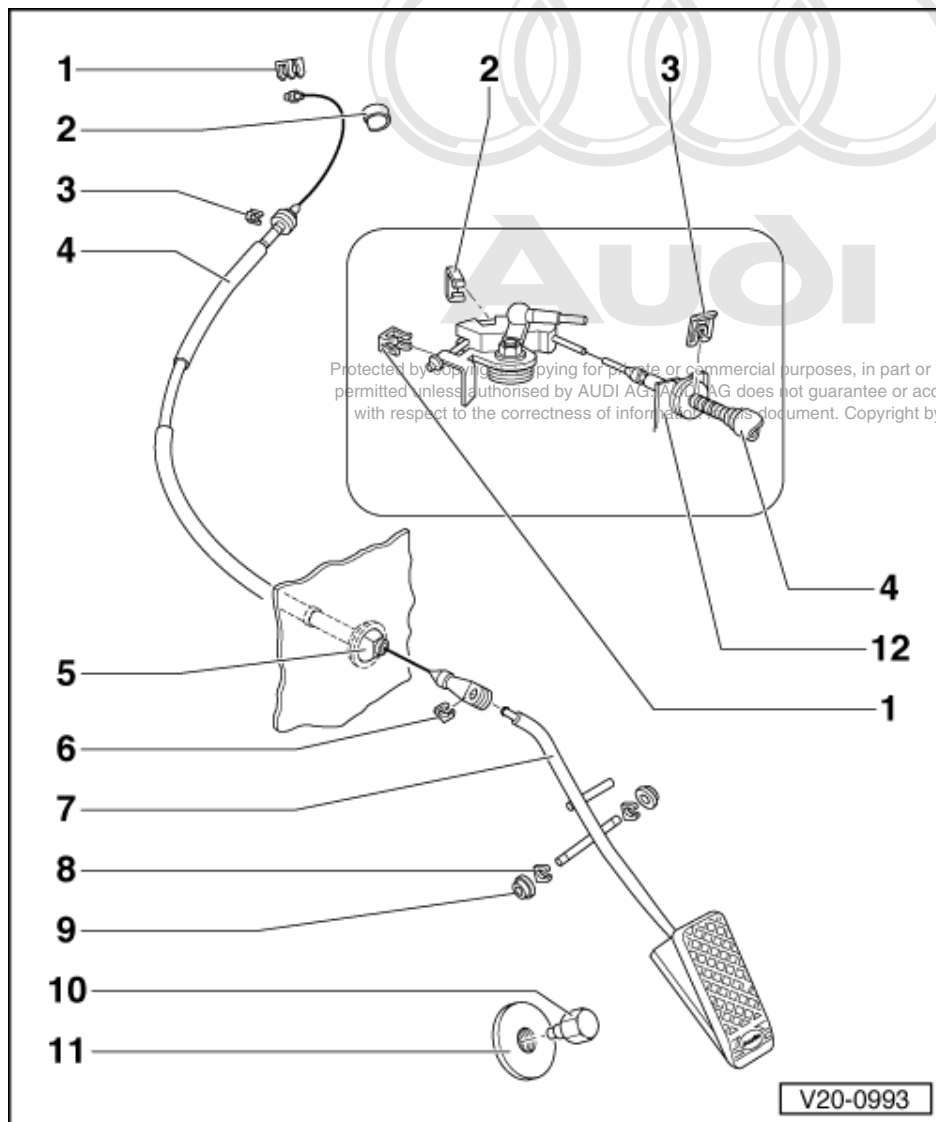
This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.



- -> Pull throttle cable sheath in direction of arrow and - by re-positioning retainer -1- at rubber grommet of support bracket - adjust such that full throttle position is attained at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.

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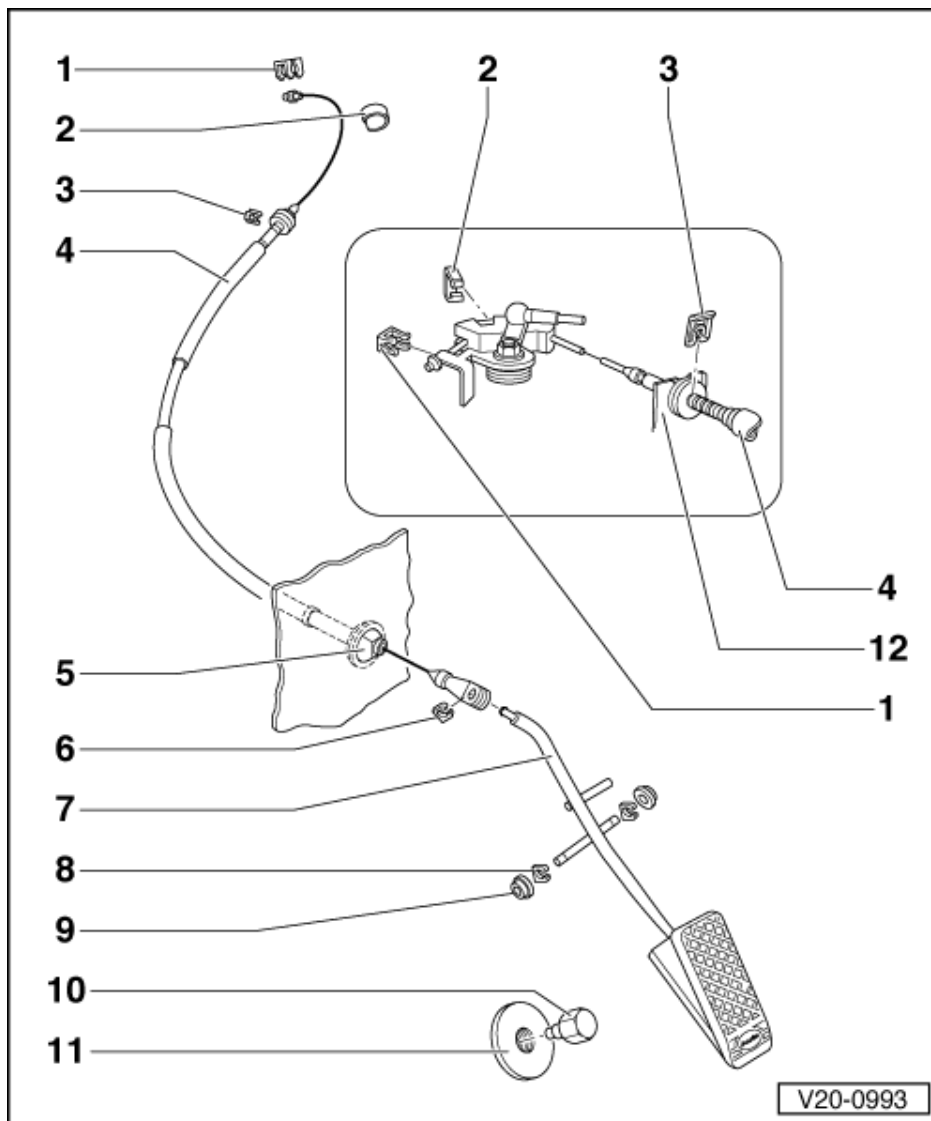
6.5 - Exploded view of accelerator mechanism - 4-cyl. engine (code letters AAD, ABB, ABK, ACE, ADA, ADW)



Note:

Fig. shows accelerator mechanism for vehicle with manual gearbox.

- 1 Clip
- 2 Clip
- 3 Retainer
 - ◆ For throttle cable adjustment
 - ◆ Attached at support bracket to detent segment of throttle cable sheath
- 4 Throttle cable
 - ◆ Removing and installing
=> Page 148
 - ◆ Adjusting => Page 149
 - ◆ On vehicles with automatic gearbox with kickdown switch



5 Square mount

- ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment

6 Retainer

7 Accelerator pedal

8 Retainer

9 Mounting bush

10 Stop screw

- ♦ For accelerator pedal

11 Washer

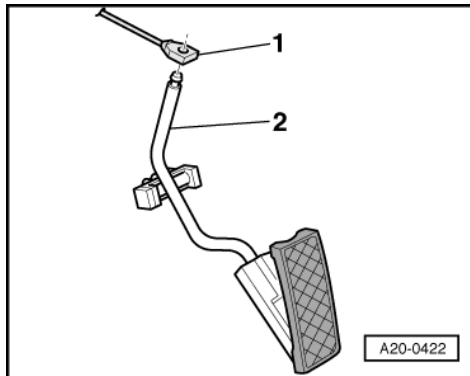
12 Support bracket

- ♦ With rubber grommet

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6.6 - Removing and installing throttle cable - 4-cyl. engine (code letters AAD, ABB, ABK, ACE, ADA, ADW)



Removing

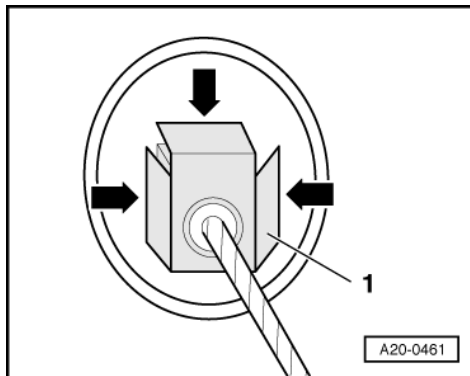
- Remove driver's storage compartment.

=> General Body Repairs; Repair Group 70; Dash Panel Dash Panel

- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.

Vehicles with automatic gearbox:

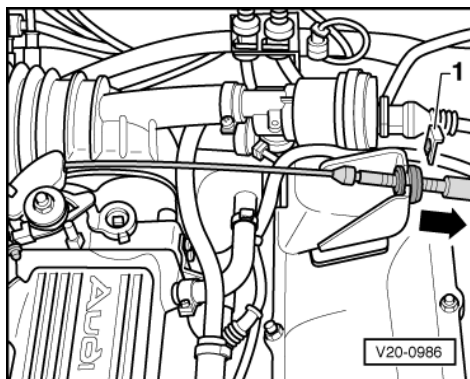
- Unplug connector at kickdown switch.



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All models:

- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.



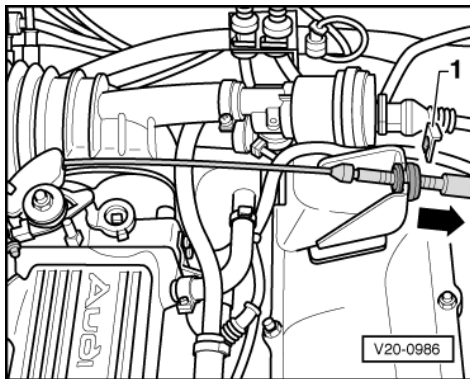
- Prise off clips at cable cam of throttle valve control part.
- Disengage nipple at end of throttle cable from cable cam.
- -> Pull detent segment of throttle cable sheath in direction of arrow out of rubber grommet of support bracket; leave retainer -1- attached.
- Pull out throttle cable towards engine compartment.

Installing

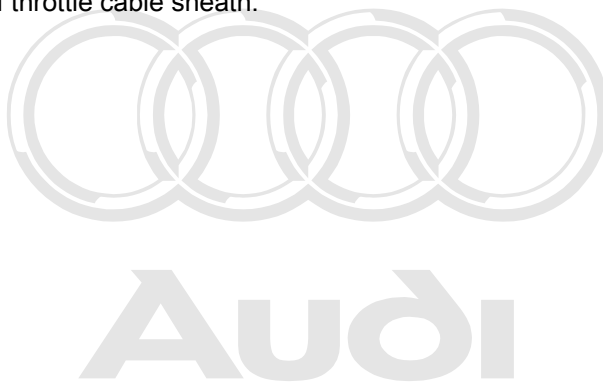
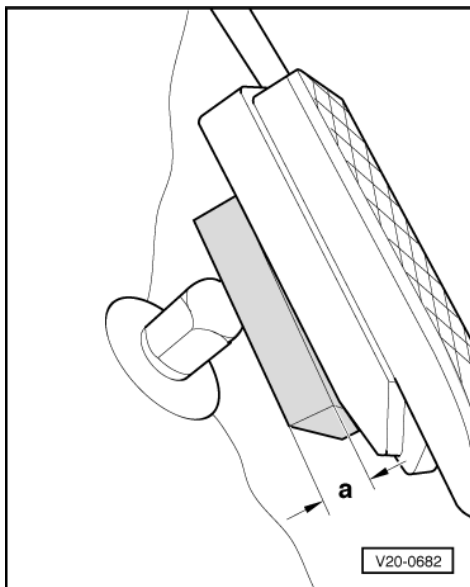
Install in reverse order, paying attention to the following:

- Heed notes => Page **140**.
- Adjust throttle cable => Page **149**.

6.7 - Adjusting throttle cable - 4-cyl. engine (code letters AAD, ABB, ABK, ACE, ADA, ADW)



- -> Throttle cable engaged at accelerator pedal and cable cam of throttle valve control part, clips fitted
- Pull off retainer -1- at detent segment of throttle cable sheath.



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Vehicles with automatic gearbox:

- -> Insert spacer a = 9 mm between accelerator pedal and stop screw and secure (insulating tape).

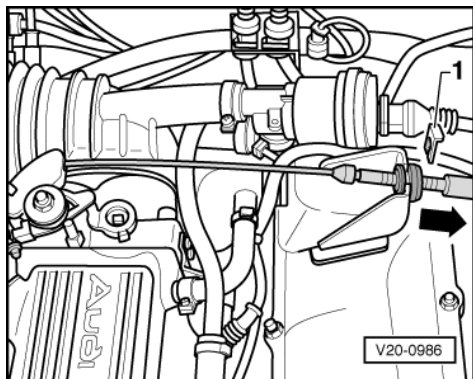


All models:

- Press accelerator pedal into full throttle position.

Note:

This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.



- -> Pull throttle cable sheath in direction of arrow and - by re-positioning retainer -1- at rubber grommet of support bracket - adjust such that full throttle position is attained at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.

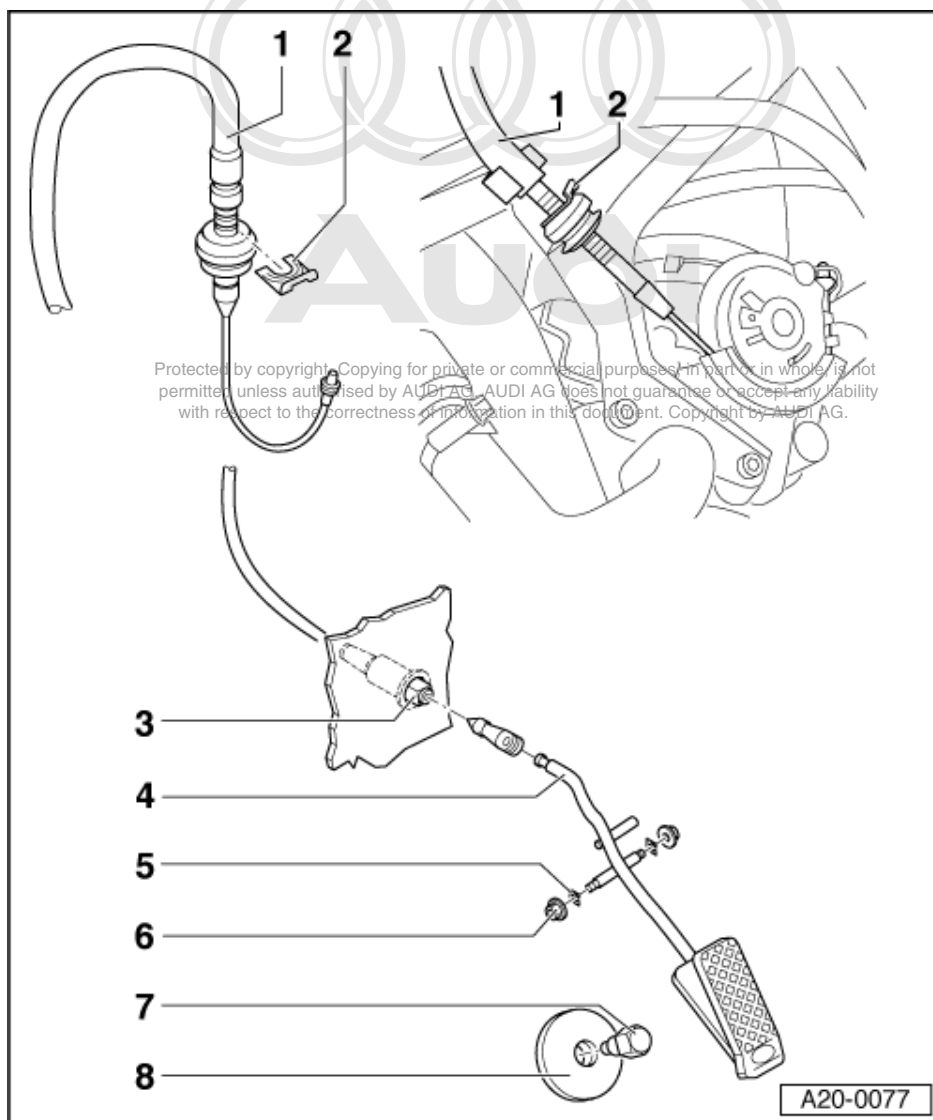
Vehicles with automatic gearbox:

- Check throttle cable adjustment => Page **186** .



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6.8 - Exploded view of accelerator mechanism - 4-cyl. engine (code letters ADR)



Note:

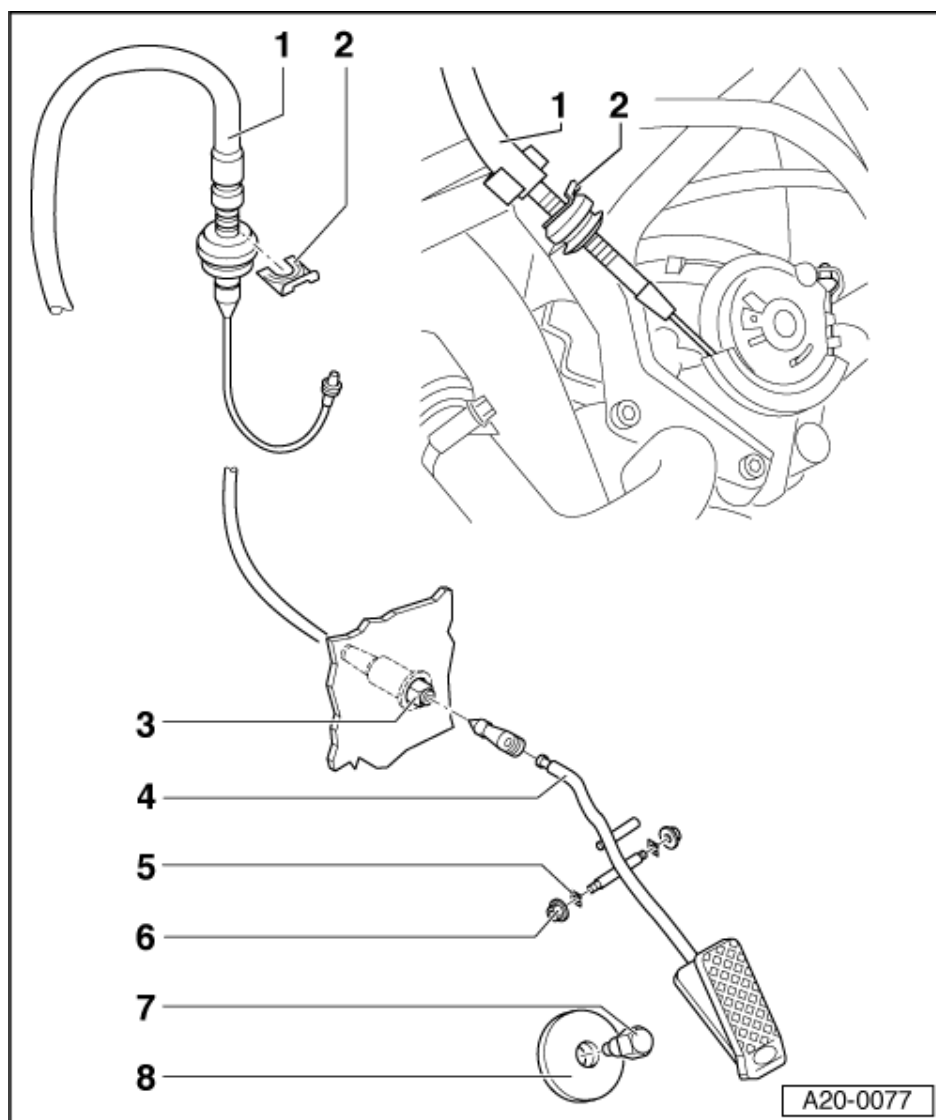
Fig. shows accelerator mechanism for vehicle with manual gearbox.

1 Throttle cable

- ♦ Removing and installing
=> Page **153**
- ♦ Adjusting => Page **154**
- ♦ On vehicles with automatic gearbox with kickdown switch

2 Retainer

- ♦ For throttle cable adjustment
- ♦ Attached at support bracket to detent segment of throttle cable sheath



3 Square mount

- ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment

4 Accelerator pedal

5 Retainer

6 Mounting bush

7 Stop screw

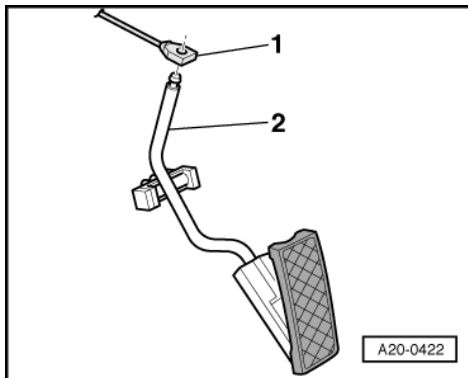
- ♦ For accelerator pedal

8 Washer



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6.9 - Removing and installing throttle cable - 4-cyl. engine (code letters ADR)

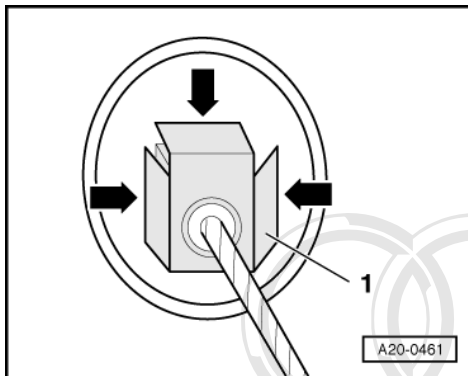


Removing

- Remove driver's storage compartment.
- => General Body Repairs; Repair Group 70; Dash Panel Dash Panel
- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.

Vehicles with automatic gearbox:

- Unplug connector at kickdown switch.



All models:

- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.
- Disengage nipple at end of throttle cable from cable cam.
- Pull detent segment of throttle cable sheath out of rubber grommet of support bracket; leave retainer attached.
- Pull out throttle cable towards engine compartment.

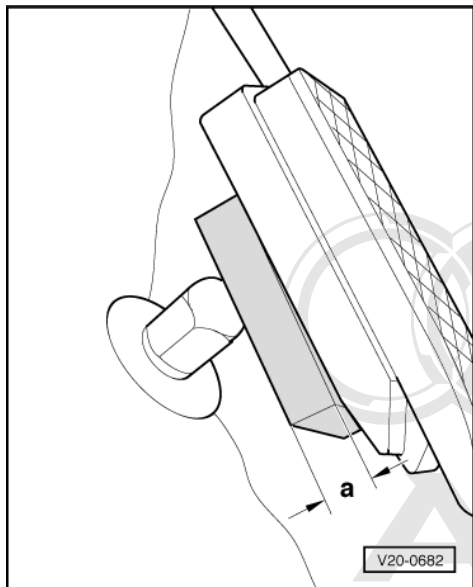
Installing

Install in reverse order, paying attention to the following:

- Heed notes => Page 140 .
- Adjust throttle cable => Page 154 .

6.10 - Adjusting throttle cable - 4-cyl. engine (code letters ADR)

- Throttle cable engaged at accelerator pedal and cable cam of throttle valve control part
- Pull off retainer at detent segment of throttle cable sheath.



Vehicles with automatic gearbox:

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- -> Insert spacer a = 9 mm between accelerator pedal and stop screw and secure (insulating tape).

All models:

- Press accelerator pedal into full throttle position.

Note:

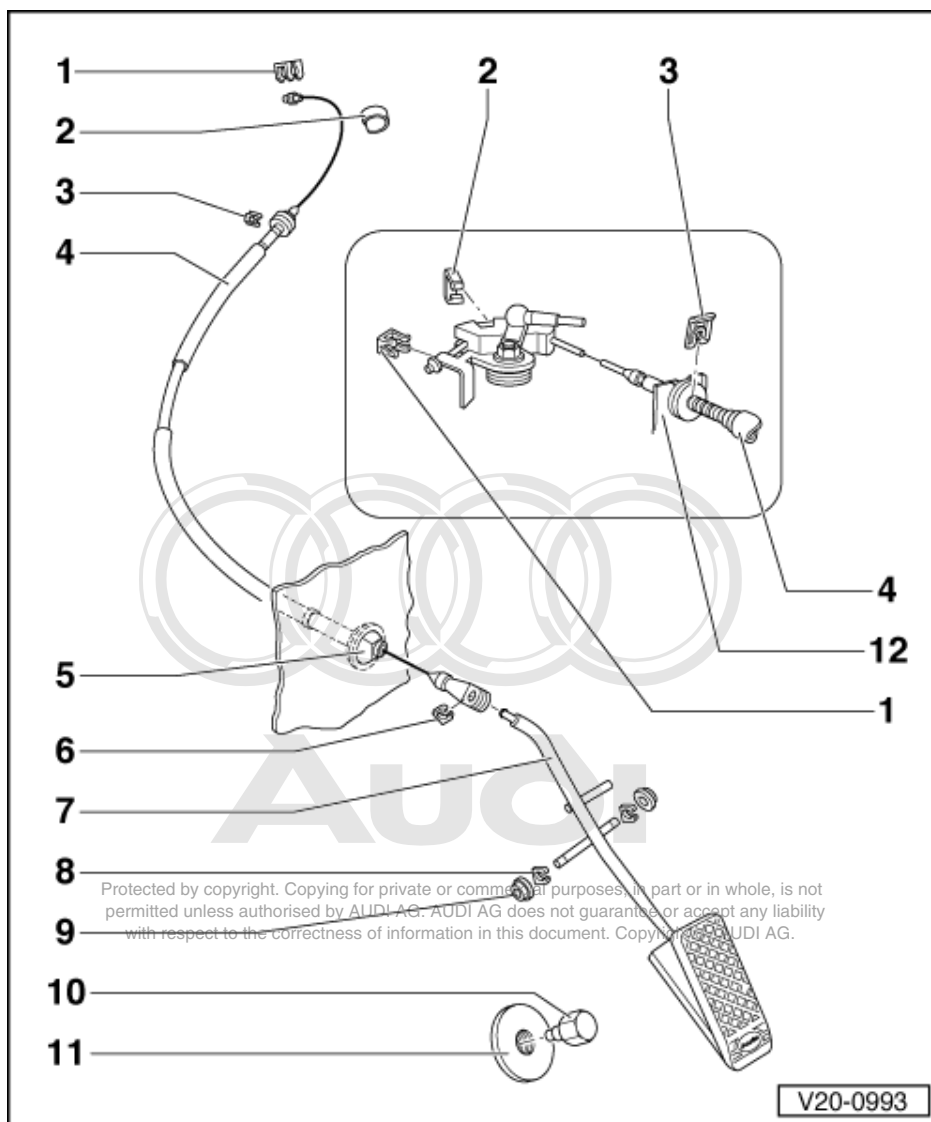
This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.

- Adjust throttle cable by re-positioning retainer at rubber grommet of support bracket such that full-throttle position is reached at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.

Vehicles with automatic gearbox:

- Check throttle cable adjustment => Page 186 .

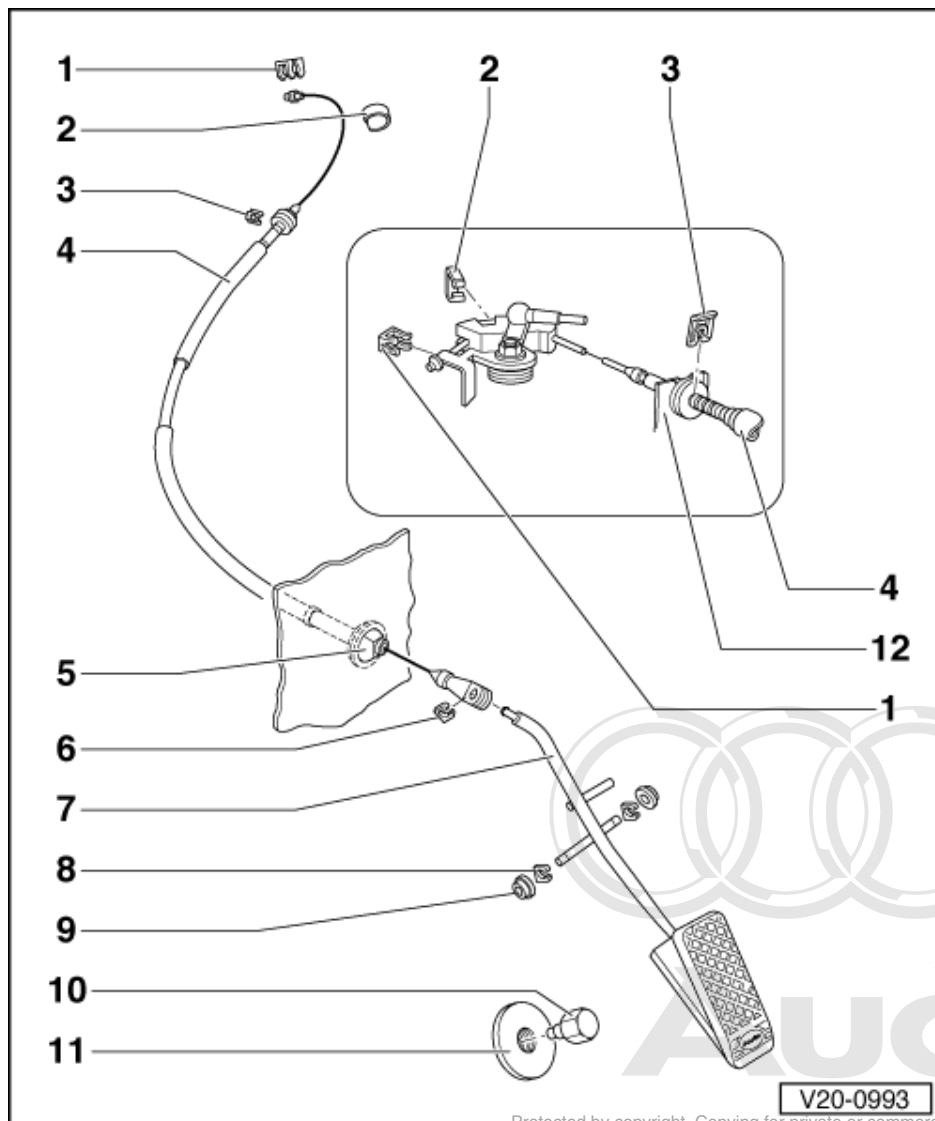
6.11 - Exploded view of accelerator mechanism - 5-cyl. engine (code letters AAR)



Note:

Fig. shows accelerator mechanism for vehicle with manual gearbox.

- 1 Clip
- 2 Clip
- 3 Retainer
 - ♦ For throttle cable adjustment
 - ♦ Attached at support bracket to detent segment of throttle cable sheath
- 4 Throttle cable
 - ♦ Removing and installing
=> Page 157
 - ♦ Adjusting => Page 158
 - ♦ On vehicles with automatic gearbox with kickdown switch



5 Square mount

- ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment

6 Retainer

7 Accelerator pedal

8 Retainer

9 Mounting bush

10 Stop screw

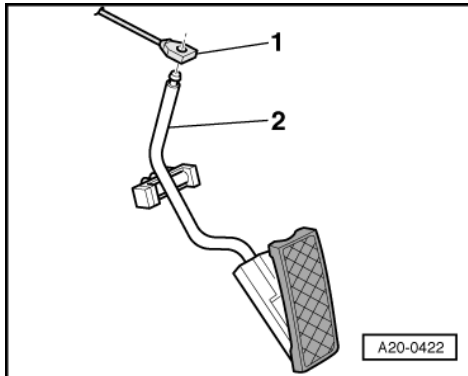
- ♦ For accelerator pedal

11 Washer

12 Support bracket

- ♦ With rubber grommet

6.12 - Removing and installing throttle cable - 5-cyl. engine (code letters AAR)



Removing

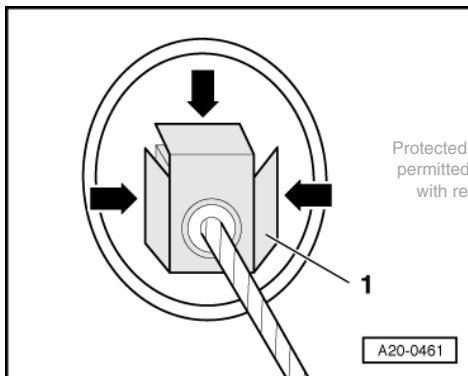
- Remove driver's storage compartment.

=> General Body Repairs; Repair Group 70; Dash Panel Dash Panel

- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.

Vehicles with automatic gearbox:

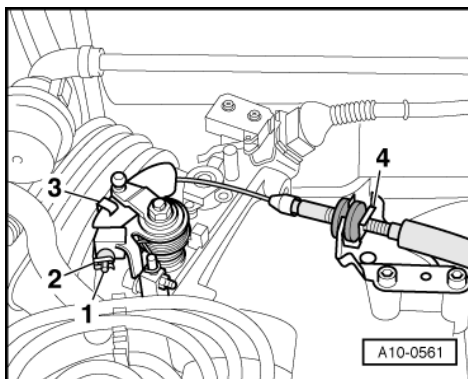
- Unplug connector at kickdown switch.



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All models:

- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.





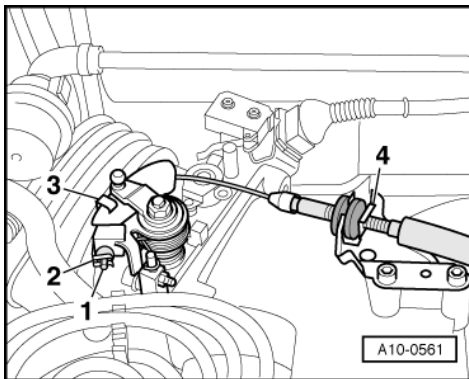
- -> Prise off clips -2- and -3-.
- Disengage nipple -1- at end of throttle cable from cable cam.
- Pull detent segment of throttle cable sheath out of rubber grommet of support bracket; leave retainer -4- attached.
- Pull out throttle cable towards engine compartment.

Installing

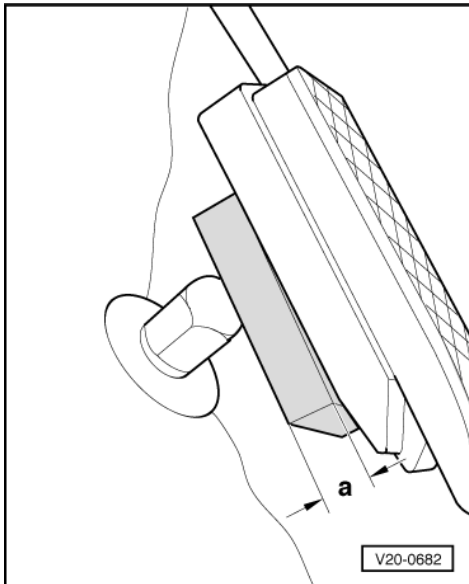
Install in reverse order, paying attention to the following:

- Heed notes => Page **140** .
- Adjust throttle cable => Page **158** .

6.13 - Adjusting throttle cable - 5-cyl. engine (code letters AAR)



- -> Throttle cable -1- engaged at accelerator pedal and cable cam of throttle valve control part, clips -2- and -3- fitted
- Pull off retainer -4- at detent segment of throttle cable sheath.



Vehicles with automatic gearbox:

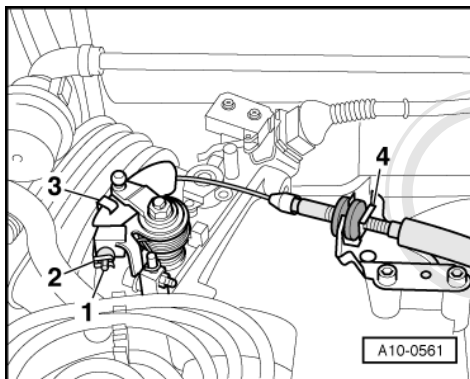
- -> Insert spacer a = 9 mm between accelerator pedal and stop screw and secure (insulating tape).

All models:

- Press accelerator pedal into full throttle position.

Note:

This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.



- -> Adjust throttle cable by re-positioning retainer -4- at rubber grommet of support bracket such that full-throttle position is reached at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.

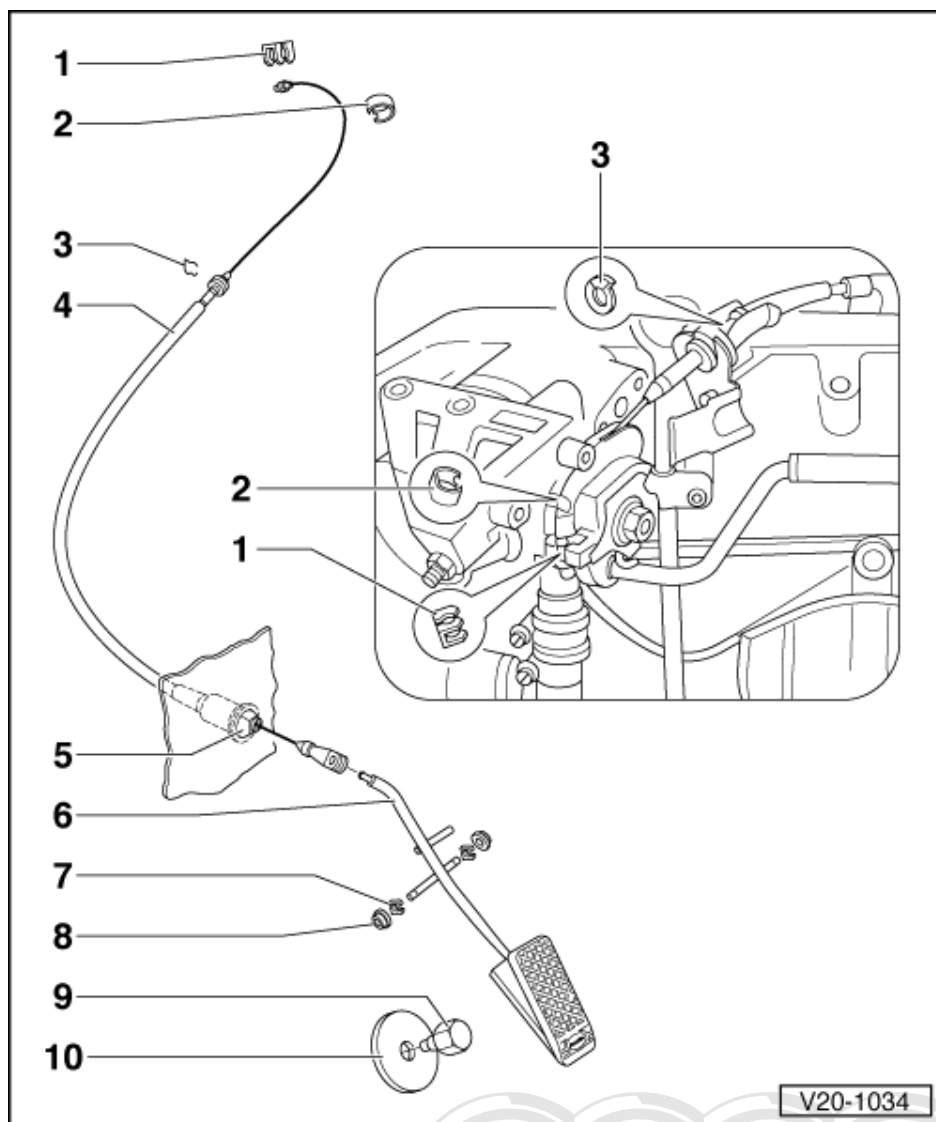
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Vehicles with automatic gearbox:

- Check throttle cable adjustment => Page **186** .

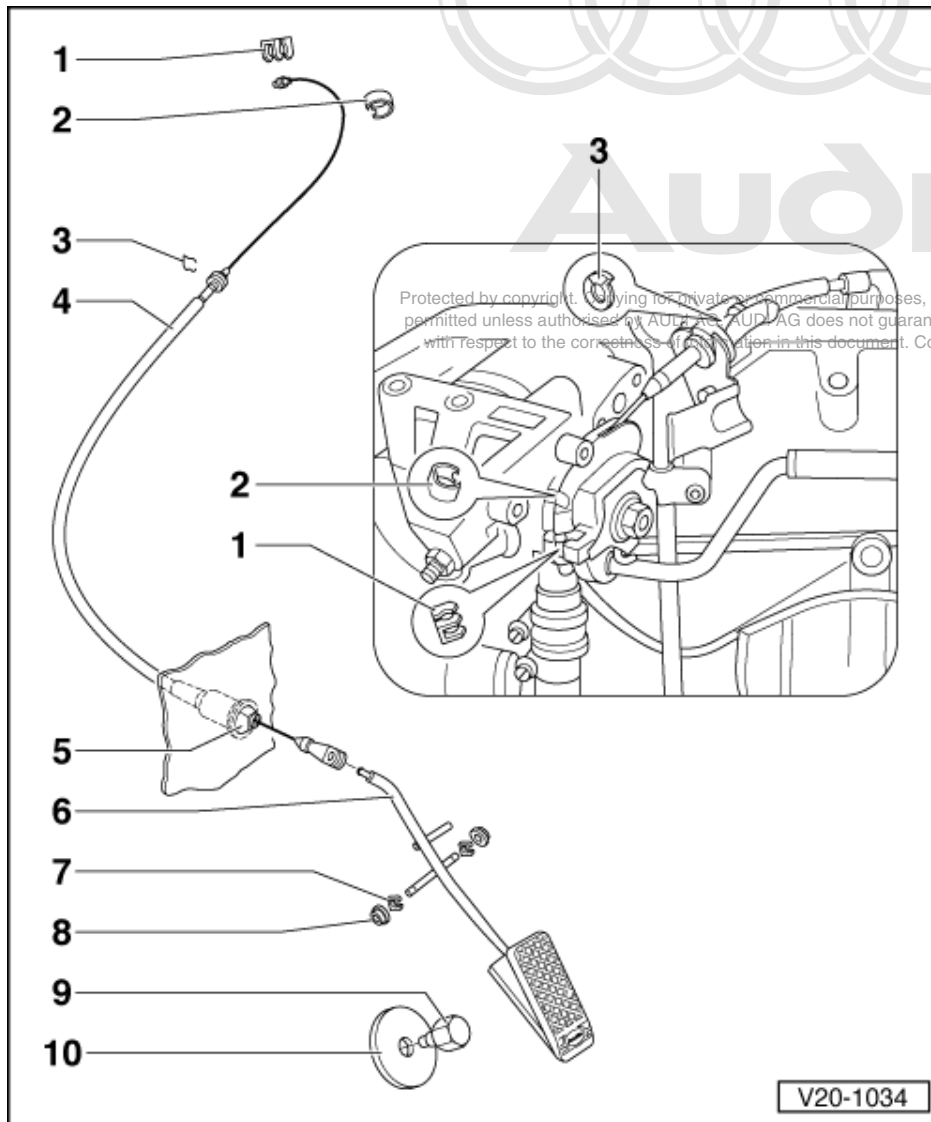


6.14 - Exploded view of accelerator mechanism - 5-cyl. engine (code letters AAN, ABY)



- 1 Clip
- 2 Clip
- 3 Retainer
 - ♦ For throttle cable adjustment
 - ♦ Attached at support bracket to detent segment of throttle cable sheath
- 4 Throttle cable
 - ♦ Removing and installing
=> Page 162
 - ♦ Adjusting => Page 163
- 5 Square mount
 - ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment
- 6 Accelerator pedal

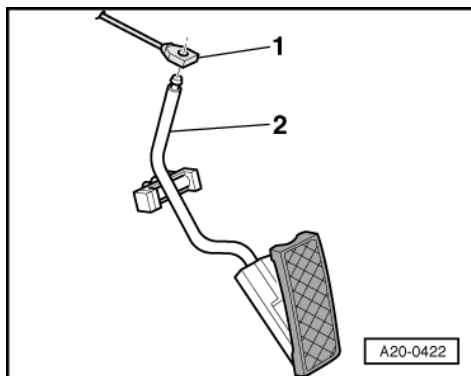
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- 7 Retainer
- 8 Mounting bush
- 9 Stop screw
 - ♦ For accelerator pedal
- 10 Washer



6.15 - Removing and installing throttle cable - 5-cyl. engine (code letters AAN, ABY)

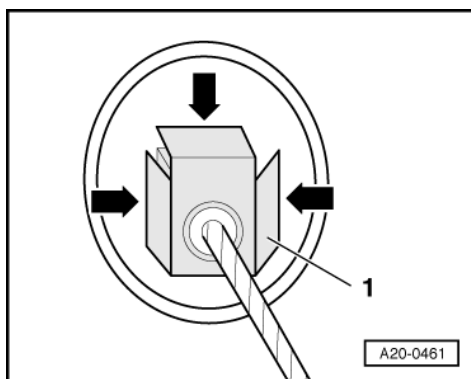


Removing

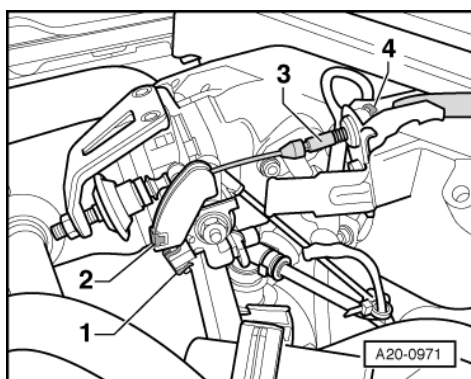
- Remove driver's storage compartment.

=> General Body Repairs; Repair Group 70; Dash Panel Dash Panel

- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.



- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.



- -> Prise off clip -2-.
- Disengage nipple -1- at end of throttle cable from cable cam.
- Pull detent segment of throttle cable sheath -3- out of rubber grommet of support bracket; leave retainer -4- attached.
- Pull out throttle cable towards engine compartment.



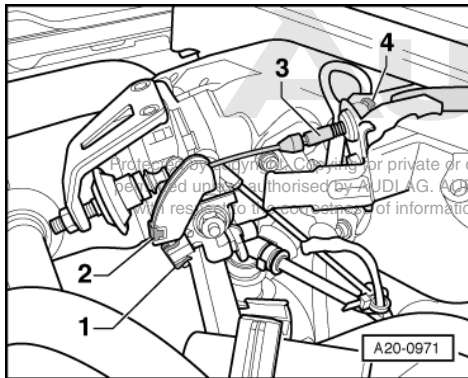
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Installing

Install in reverse order, paying attention to the following:

- Heed notes => Page 140 .
- Adjust throttle cable => Page 163 .

6.16 - Adjusting throttle cable - 5-cyl. engine (code letters AAN, ABY)



- -> Throttle cable -1- engaged at accelerator pedal and cable cam of throttle valve control part, clip -2- fitted
- Pull off retainer -4- at detent segment of throttle cable sheath-3-.
- Press accelerator pedal into full throttle position.

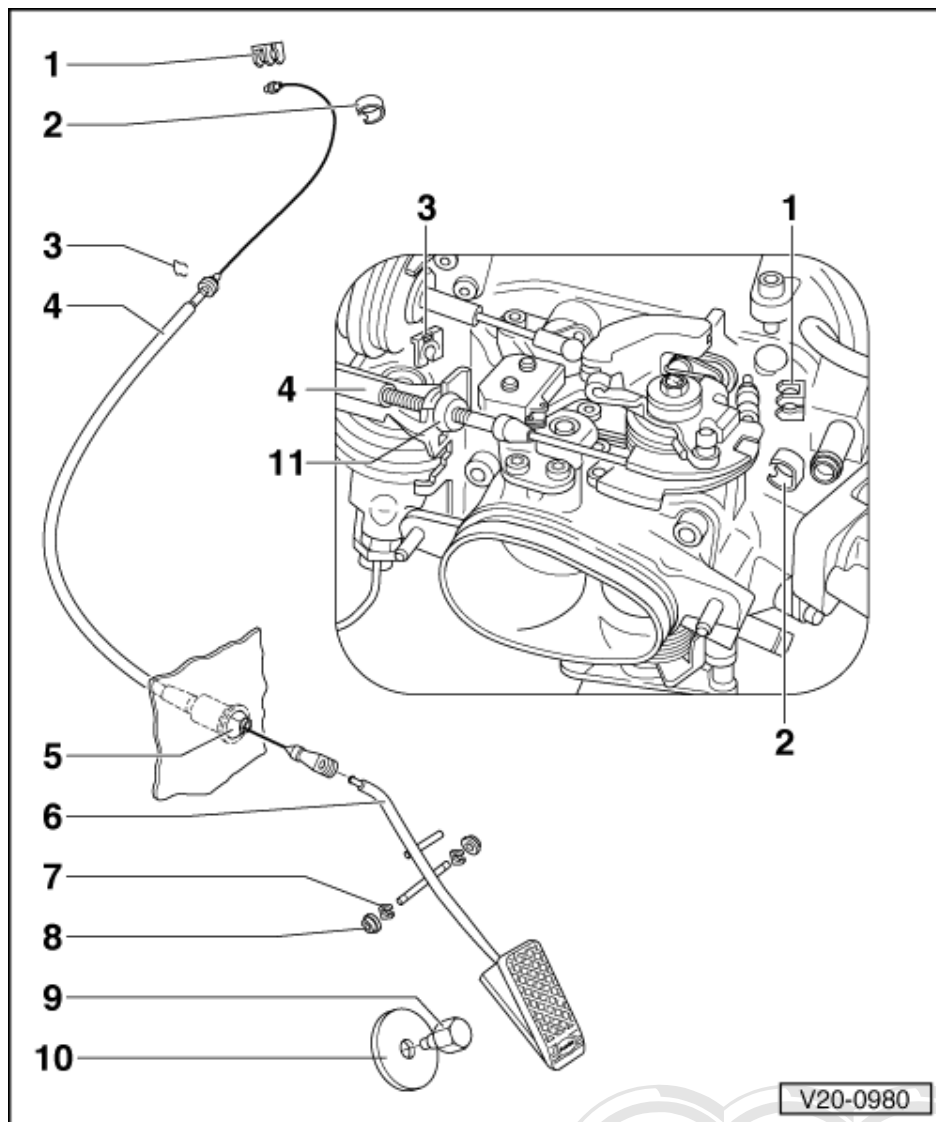
Note:

This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.

- Adjust throttle cable by re-positioning retainer at rubber grommet of support bracket such that full-throttle position is reached at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.

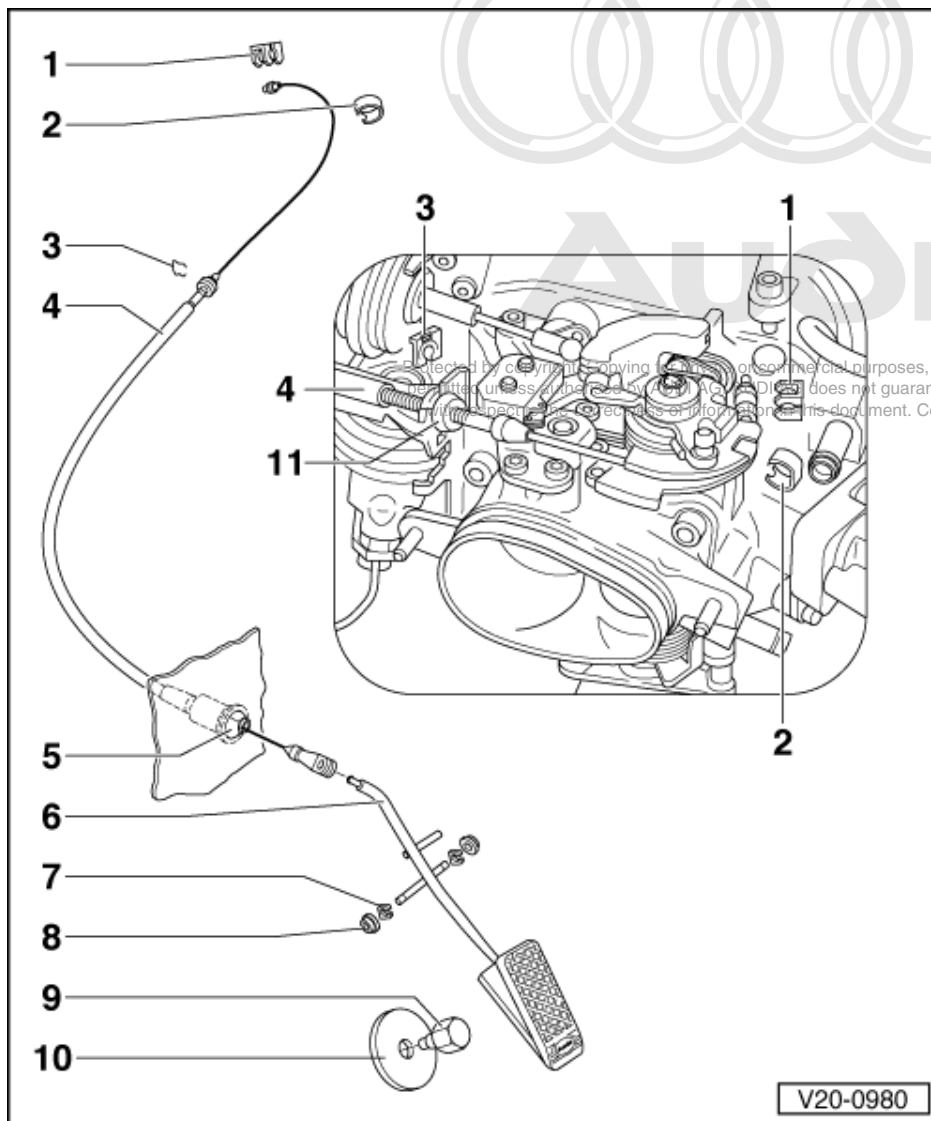


6.17 - Exploded view of accelerator mechanism - 6-cyl. engine (code letters AAH, ABC, ACZ, AEJ)



- 1 Clip
- 2 Clip
- 3 Retainer
 - ♦ For throttle cable adjustment
 - ♦ Attached at support bracket to detent segment of throttle cable sheath
- 4 Throttle cable
 - ♦ Removing and installing
=> Page 166
 - ♦ Adjusting => Page 168

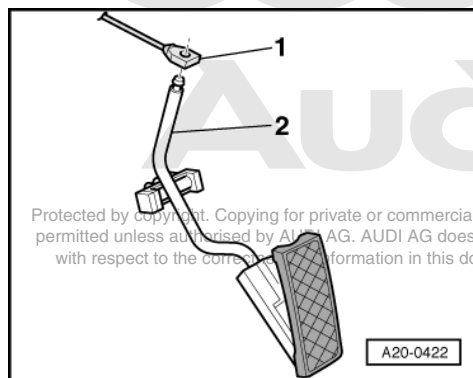
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- 5 Square mount**
 - ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment
- 6 Accelerator pedal**
- 7 Retainer**
- 8 Mounting bush**
- 9 Stop screw**
 - ♦ For accelerator pedal
- 10 Washer**
- 11 Support bracket**
 - ♦ With rubber grommet



6.18 - Removing and installing throttle cable - 6-cyl. engine (code letters AAH, ABC, ACZ, AEJ)

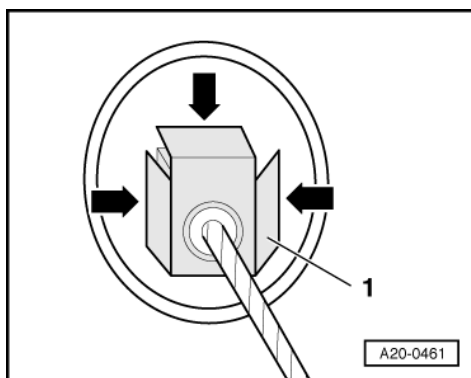


Removing

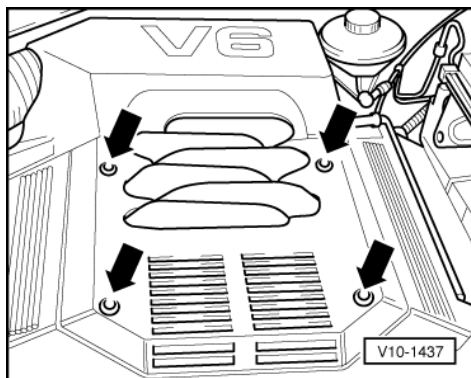
- Remove driver's storage compartment.

=> General Body Repairs; Repair Group 70; Dash Panel Dash Panel

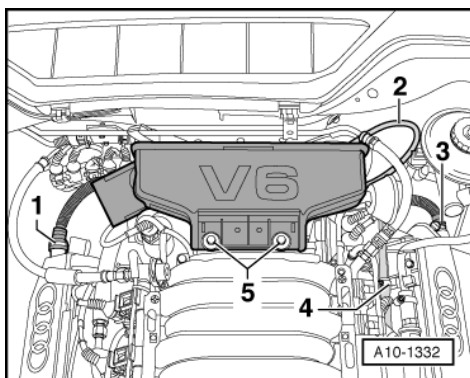
- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.



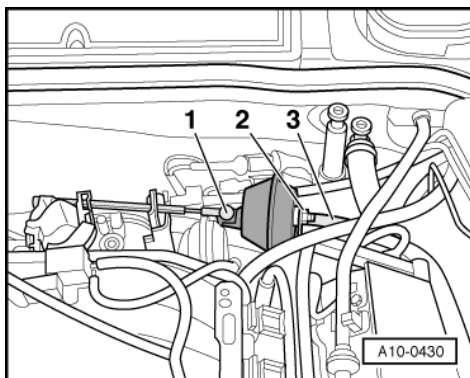
- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.



- -> Remove engine cover -arrows-.

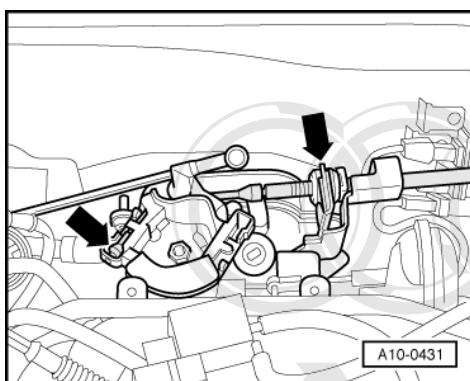


- Detach air hose to air cleaner housing.
- -> Detach crankcase breather hose -1- at right cylinder head cover.
- Detach left crankcase breather hose -3- from cylinder head cover.
- Carefully detach vacuum hose -2-.
- Screw out bolts -5- and detach air duct from throttle valve assembly.



Vehicles with cruise control system:

- -> Disengage operating rod -1- at vacuum unit.



All models:

- -> Disengage throttle cable at throttle valve assembly and support bracket -arrows- (do not remove throttle cable retainer)
- Pull out throttle cable towards engine compartment.



Installing

Install in reverse order, paying attention to the following:

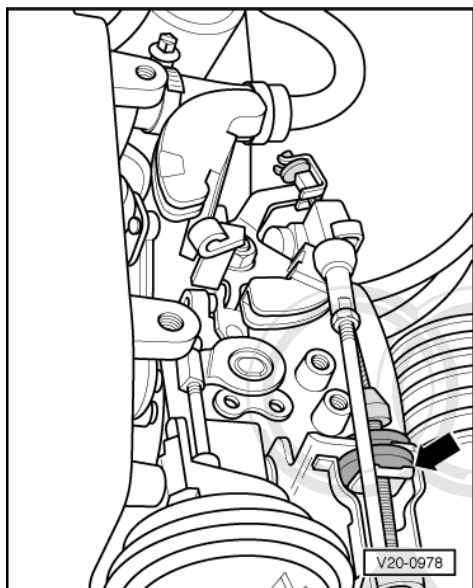
- Heed notes => Page **140** .
- Adjust throttle cable => Page **168** .

6.19 - Adjusting throttle cable - 6-cyl. engine (code letters AAH, ABC, ACZ, AEJ)

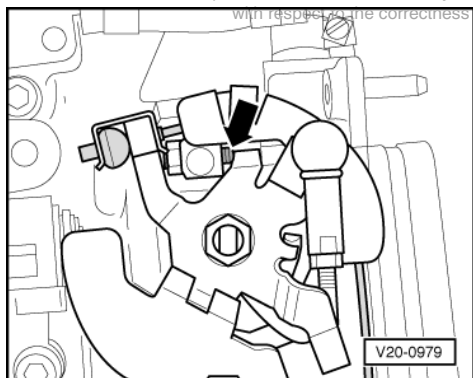
- Throttle cable engaged at accelerator pedal, cable cam of throttle valve control part and support bracket; clip fitted
- Pull off retainer at detent segment of throttle cable sheath.
- Press accelerator pedal into full throttle position.

Note:

This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.



- -> Adjust throttle cable by re-positioning retainer -arrow- at rubber grommet of support bracket such that full-throttle position is reached at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.



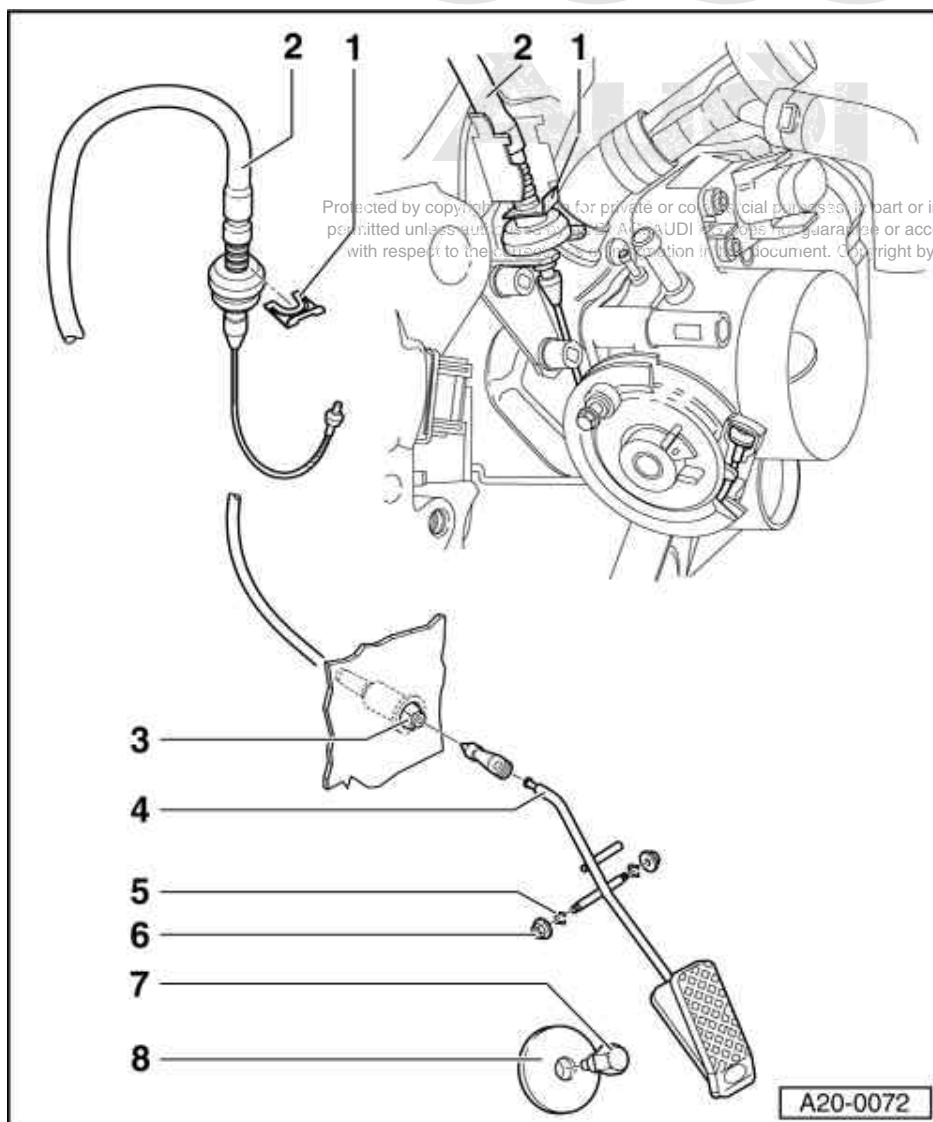
- -> Accelerator pedal in idle position

- Throttle valve lever must make contact with idle stop -arrow-.

Vehicles with automatic gearbox:

=> Automatic Gearbox 01F and 01K Self-diagnosis; Repair Group 01; Electrical/Electronic Components and Fitting Locations; Adjusting kickdown switch -F8 Electrical/Electronic Components and Fitting Locations Adjusting kickdown switch -F8

6.20 - Exploded view of accelerator mechanism - 6-cyl. engine (code letters ACK)



Note:

Fig. shows accelerator mechanism for vehicle with manual gearbox.

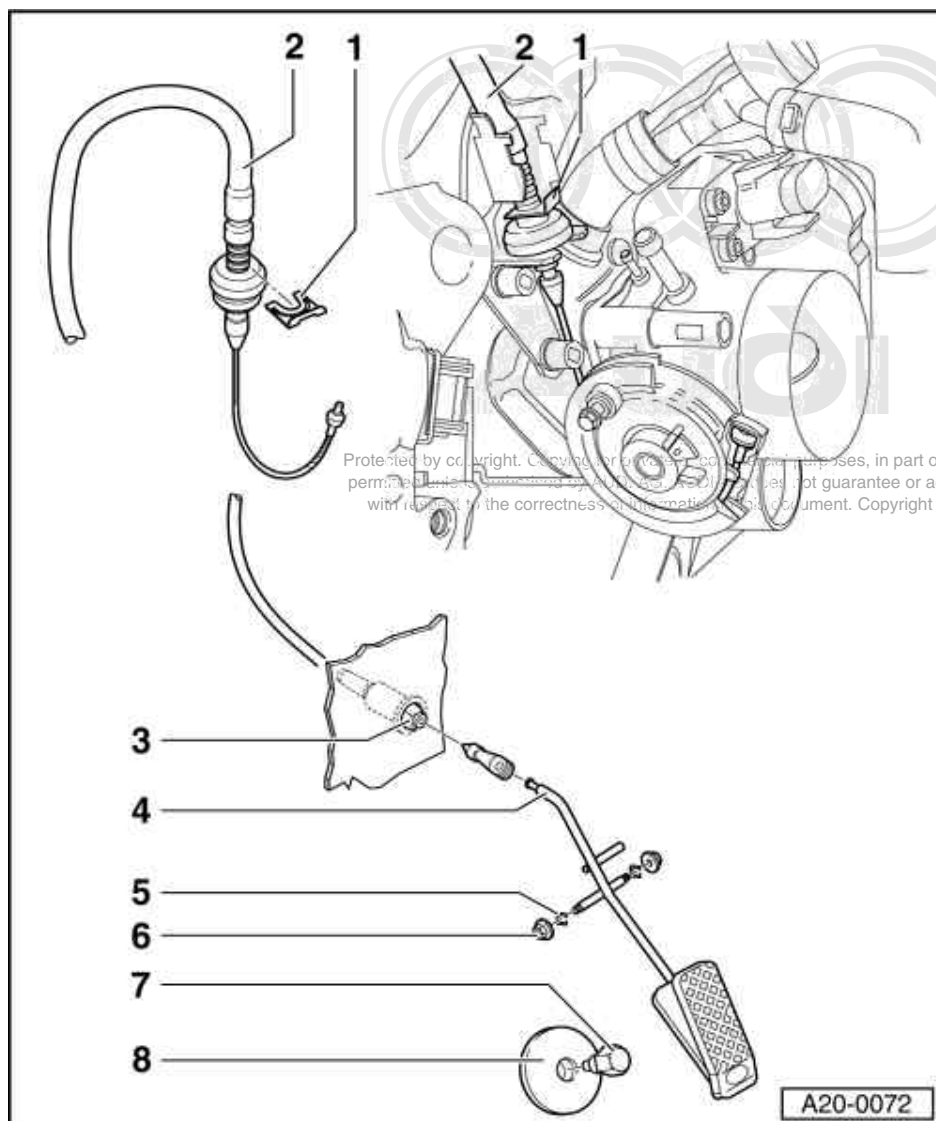
1 Retainer

- ♦ For throttle cable adjustment
- ♦ Attached at support bracket to detent segment of throttle cable sheath

2 Throttle cable

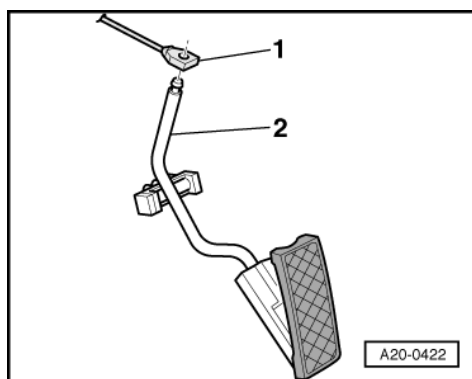
- ♦ Removing and installing
=> Page 171
- ♦ Adjusting => Page 172

- ♦ On vehicles with automatic gearbox with kickdown switch



- 3 Square mount**
 - ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment
- 4 Accelerator pedal**
- 5 Retainer**
- 6 Mounting bush**
- 7 Stop screw**
 - ♦ For accelerator pedal
- 8 Washer**

6.21 - Removing and installing throttle cable - 6-cyl. engine (code letters ACK)



Removing

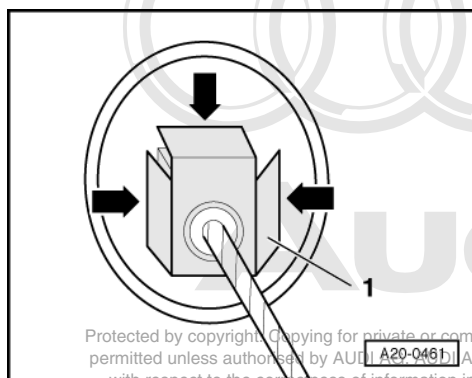
- Remove driver's storage compartment.

=> General Body Repairs; Repair Group 70; Dash Panel Dash Panel

- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.

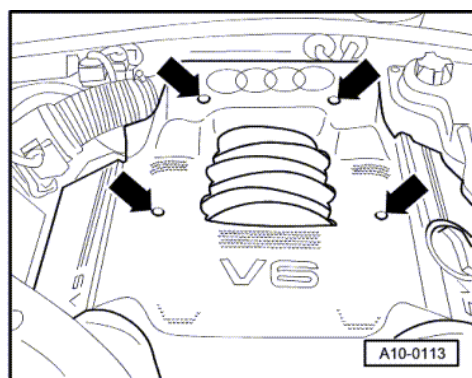
Vehicles with automatic gearbox:

- Unplug connector at kickdown switch.



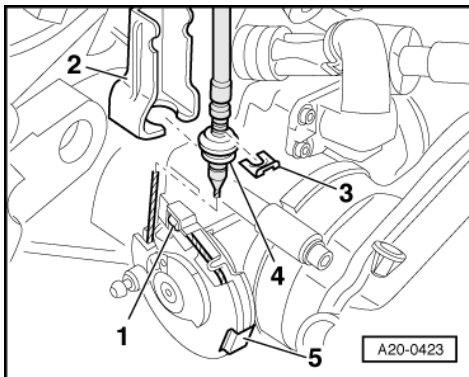
All models:

- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.





- -> Remove engine cover -arrows-.



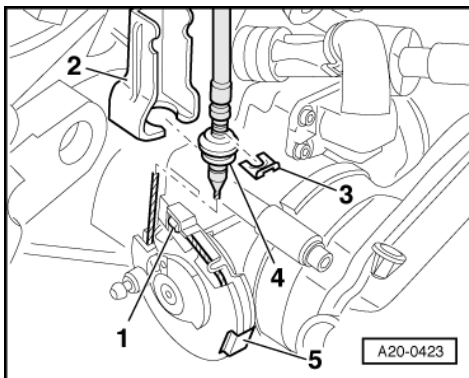
- -> Pull retainer -3- at detent segment of throttle cable sheath out of support bracket.
- Disengage nipple -1- at end of throttle cable from cable cam.
- Take throttle cable with rubber bush -4- out of support bracket -2-.
- Pull out throttle cable towards engine compartment.

Installing

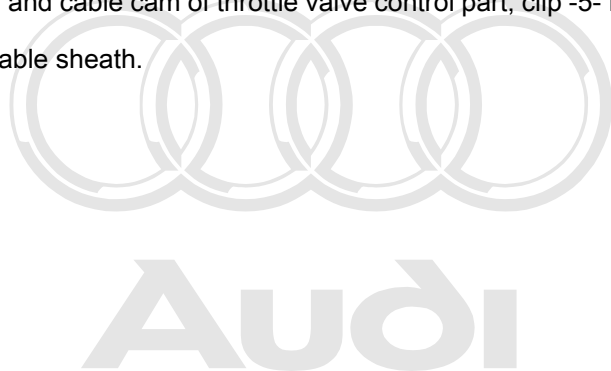
Install in reverse order, paying attention to the following:

- Heed notes => Page 140 .
- Adjust throttle cable => Page 172 .

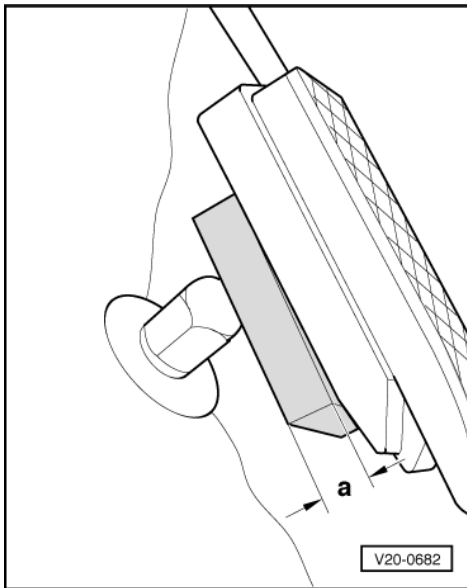
6.22 - Adjusting throttle cable - 6-cyl. engine (code letters ACK)



- -> Throttle cable -1- engaged at accelerator pedal and cable cam of throttle valve control part, clip -5- fitted
- Pull off retainer -3- at detent segment of throttle cable sheath.



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Vehicles with automatic gearbox:

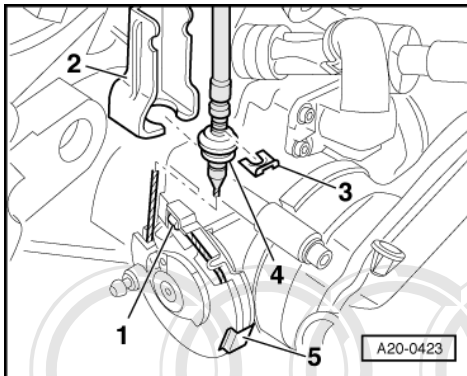
- -> Insert spacer a = 9 mm between accelerator pedal and stop screw and secure (insulating tape).

All models:

- Press accelerator pedal into full throttle position.

Note:

This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.



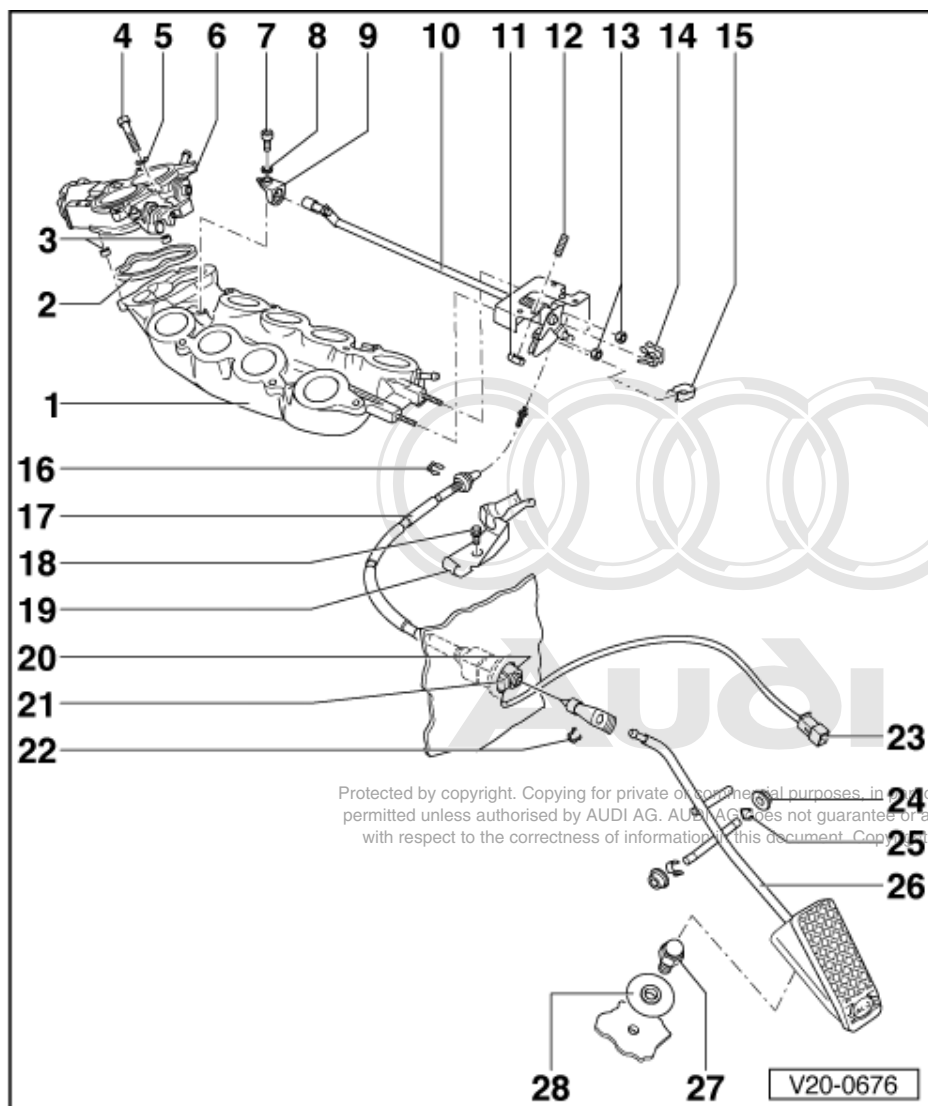
- Adjust throttle cable by re-positioning retainer -3- at rubber grommet-4- of support bracket -2- such that full-throttle position is reached at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.

Vehicles with automatic gearbox:

- Check throttle cable adjustment => Page 186 .

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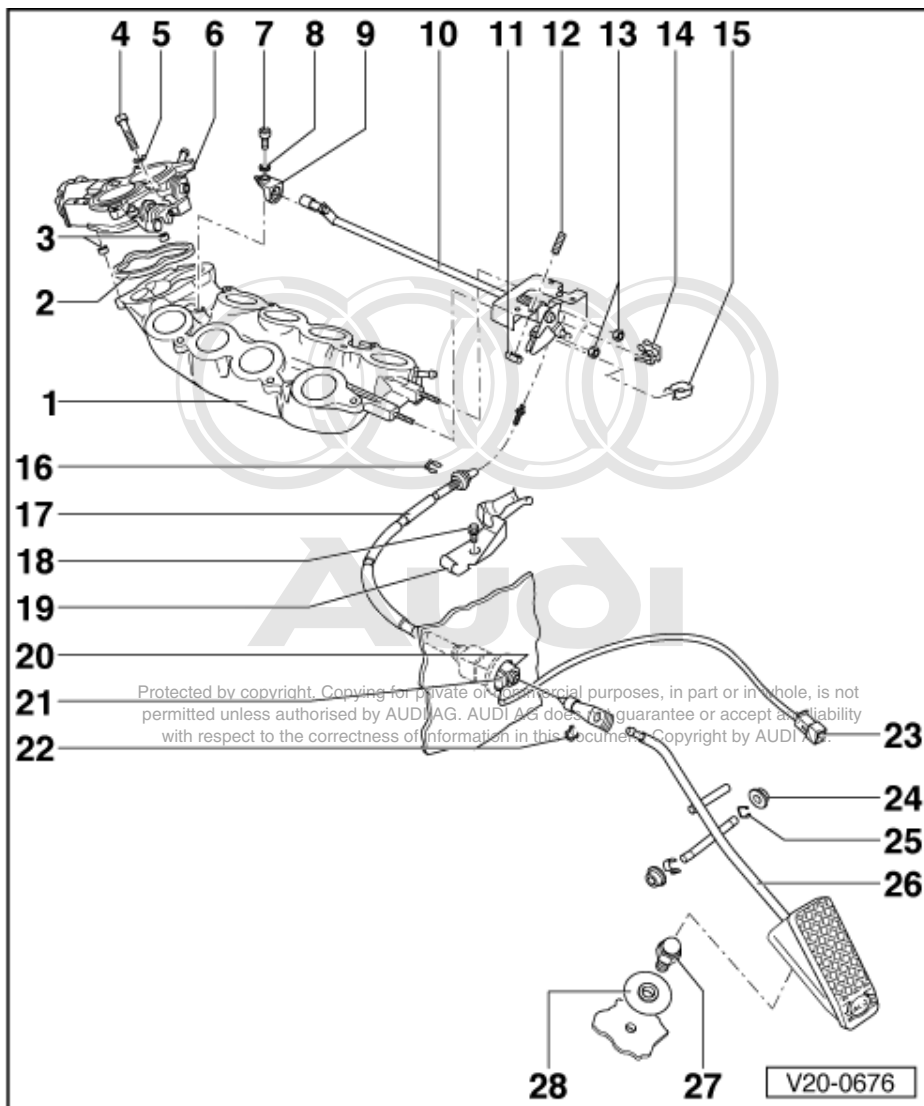
6.23 - Exploded view of accelerator mechanism - 8-cyl. engine



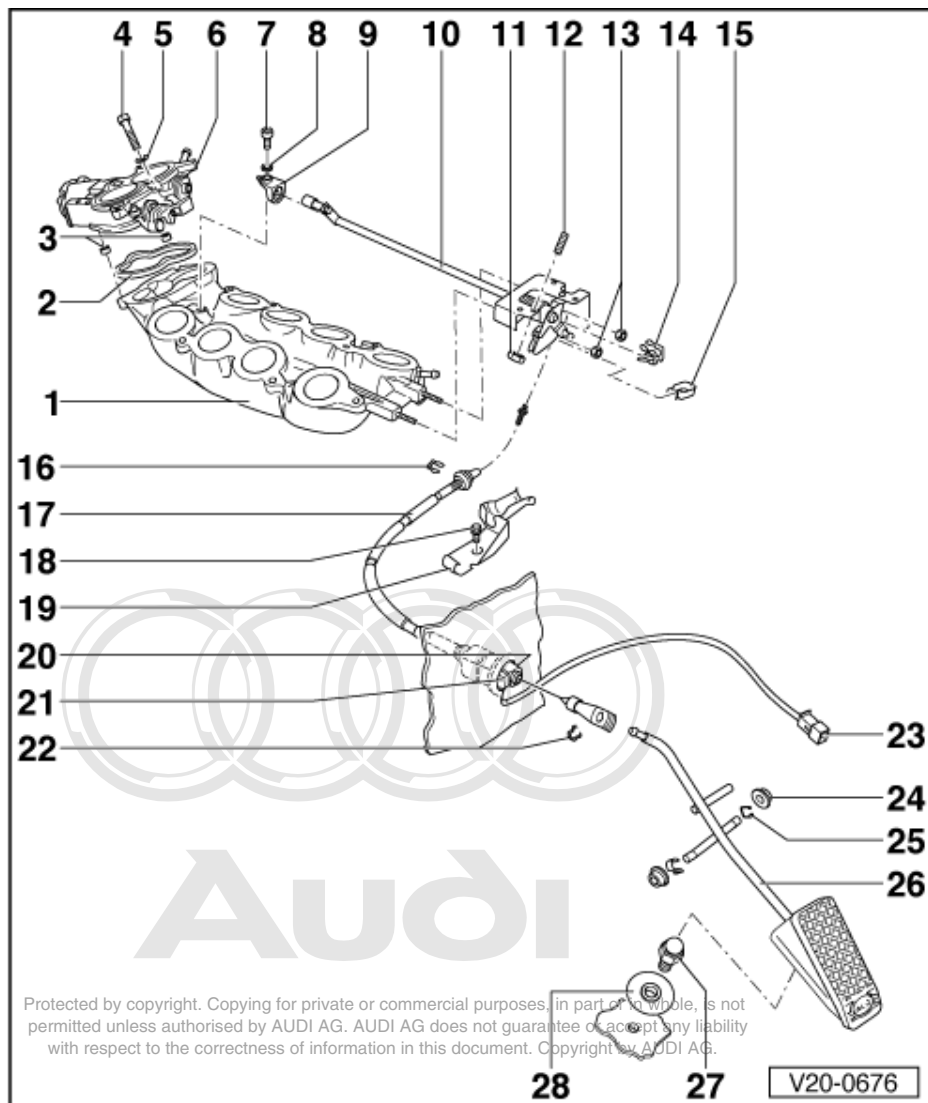
Note:

Fig. shows accelerator mechanism for vehicle with automatic gearbox.

- 1 Lower part of intake manifold
- 2 Moulded gasket
 - ♦ Replace
- 3 Sleeve
- 4 10 Nm
- 5 Washer
- 6 Throttle valve unit
- 7 10 Nm



- 8 Circlip
- 9 Mount
- 10 Accelerator mechanism
- 11 Nut for full throttle stop
- 12 Bolt for full throttle stop
 - ◆ Secure with AMV 197 000
- 13 10 Nm
 - ◆ Secure with AMV 197 000
- 14 Clip
- 15 Clip
- 16 Retainer
 - ◆ For throttle cable adjustment
 - ◆ Attached at support bracket to detent segment of throttle cable sheath



17 Throttle cable

- ♦ Removing and installing
=> Page 183
- ♦ Adjusting => Page 185
- ♦ On vehicles with automatic gearbox with kickdown switch

18 10 Nm

19 Support bracket

- ♦ With rubber grommet

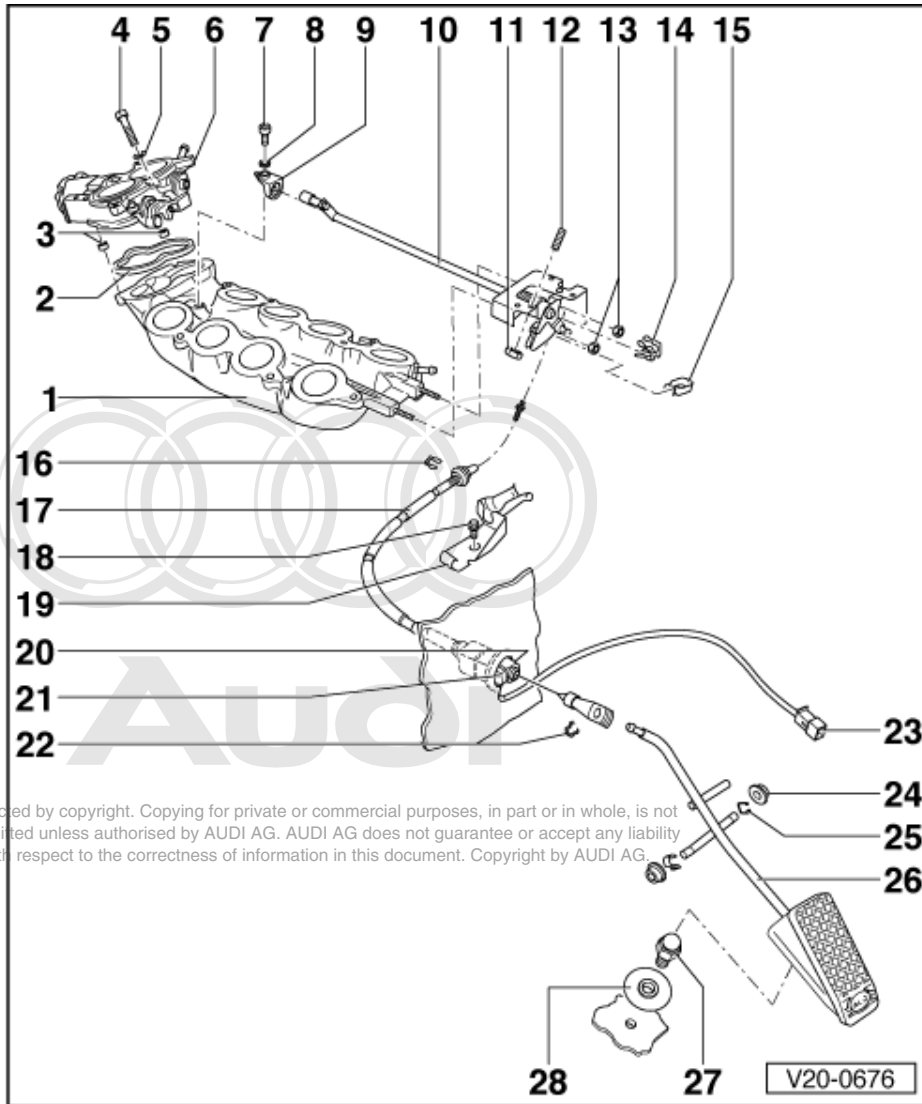
20 Square mount

- ♦ To remove throttle cable, squeeze retainer tabs together working from passenger compartment

21 Kickdown switch -F8

- ♦ Vehicles with automatic gearbox only
- ♦ Checking =>Page 186

22 Retainer

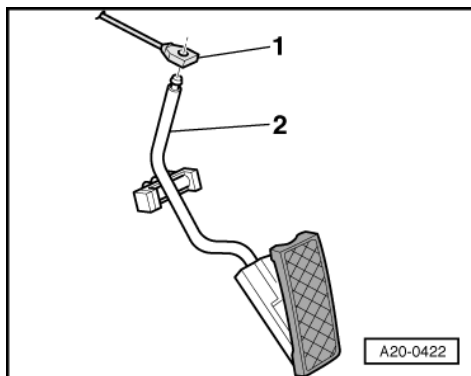


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- 23 Connector**
 - ♦ For kickdown switch
- 24 Mounting bush**
- 25 Retainer**
- 26 Accelerator pedal**
- 27 Stop screw**
 - ♦ For accelerator pedal
- 28 Washer**



6.24 - Removing and installing throttle cable - 8-cyl. engine (code letters ABH, AEC)



Removing

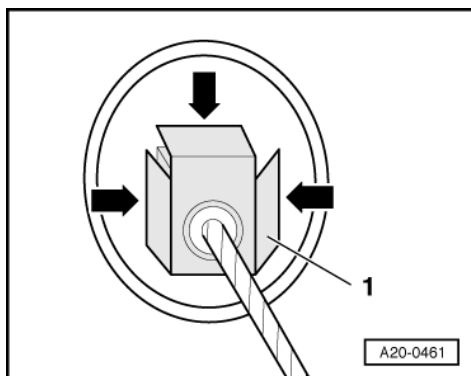
- Remove driver's storage compartment.

=> General Body Repairs; Repair Group 70; Dash Panel/Dash Panel

- Unscrew footwell vents in driver's footwell.
- -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.

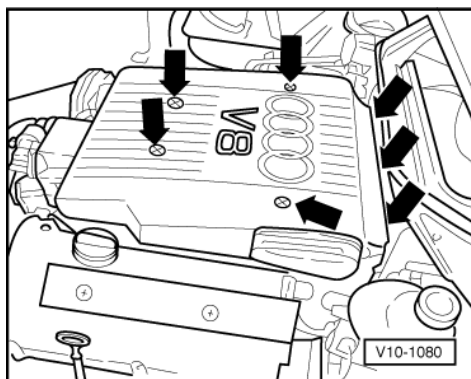
Vehicles with automatic gearbox:

- Unplug connector at kickdown switch.



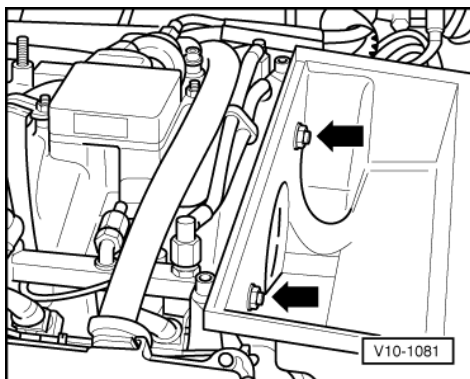
All models:

- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.

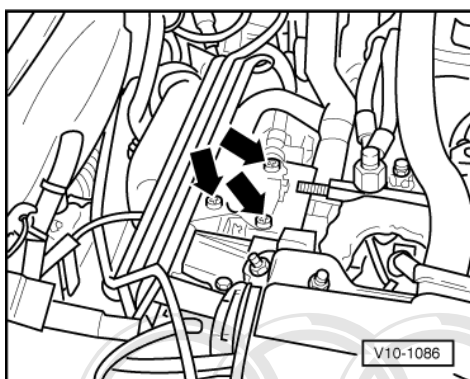


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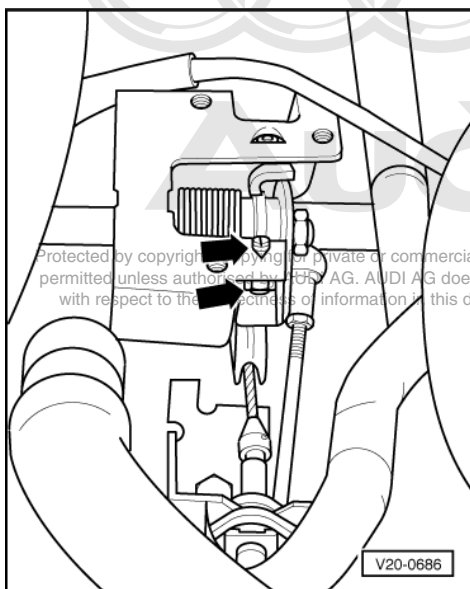
- -> Remove upper part of air cleaner -arrows-.



- -> Remove lower part of air cleaner -arrows-.



- -> Unscrew retaining plate of ignition cable holder -arrows-.



- Prise off clips at cable cam of throttle valve control part.
- -> Disengage nipple at end of throttle cable from cable cam.
- Pull detent segment of throttle cable sheath out of rubber grommet of support bracket; leave retainer attached.
- Pull out throttle cable towards engine compartment.



Installing

Install in reverse order, paying attention to the following:

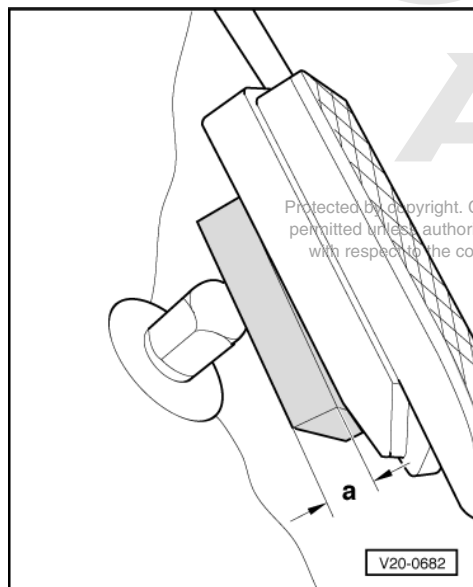
- Heed notes => Page **140** .
- Adjust throttle cable => Page **180** .

Tightening torque

Component	Nm
Retaining plate for ignition cable holder	10

6.25 - Adjusting throttle cable - 8-cyl. engine (code letters ABH, AEC)

- Throttle cable engaged at accelerator pedal and cable cam of throttle valve control part, clips fitted
- Pull off retainer at detent segment of throttle cable sheath.



Vehicles with automatic gearbox:

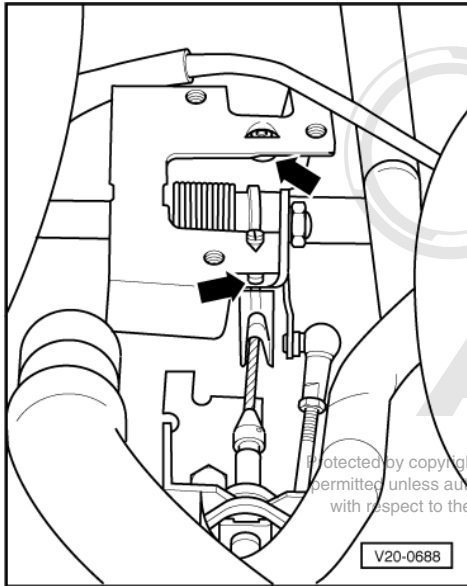
- -> Insert spacer a = 15 mm between accelerator pedal and stop screw and secure (insulating tape).

All models:

- Press accelerator pedal into full throttle position.

Note:

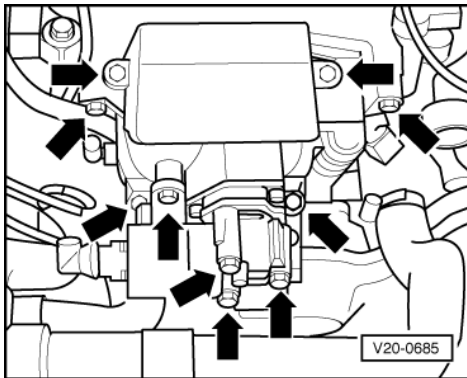
This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.



- -> Adjust throttle cable by re-positioning retainer at rubber grommet of support bracket such that full-throttle position -arrow- is reached at throttle valve.

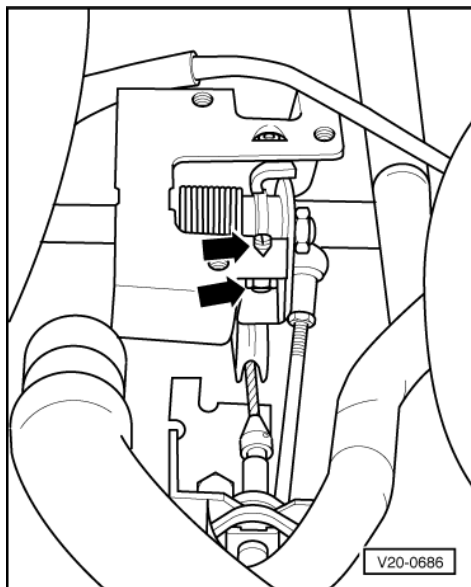
Check

- Release accelerator pedal.
 - Cable cam must make contact with idle stop
- Press accelerator pedal into full throttle position.
 - Lever of cruise control system must make contact with bolt for full throttle stop

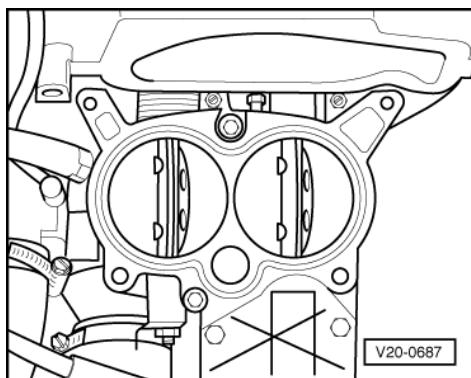


Adjusting full throttle stop at throttle linkage

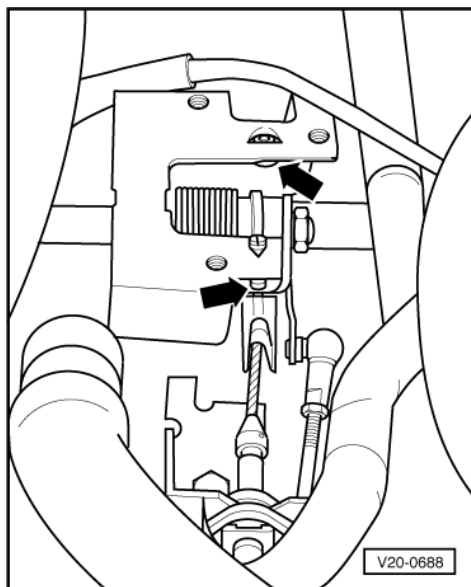
- -> Unscrew intake-air temperature sender and idling-speed stabilization valve -arrows-.
- Unscrew connection at intake manifold.



- -> Start by unscrewing lock nut -bottom arrow- and then screw out bolt for full throttle stop -top arrow-.



- -> Fully open throttle valves during adjustment process.



- -> Apply locking fluid AMV 197 00 to bolt for full throttle stop.
- Screw in bolt for full throttle stop until it makes contact with cruise control system lever -bottom arrow-.



Audi

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- Lock bolt for full throttle stop with nut.

Check

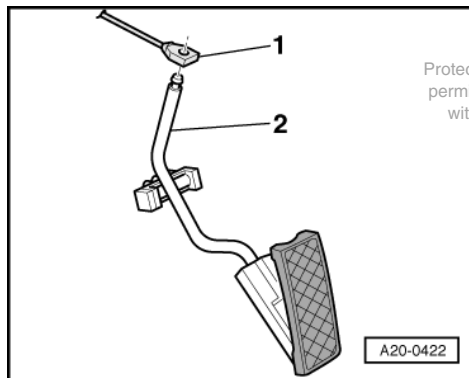
- Operate throttle linkage until cruise control system lever makes contact with stop screw for full throttle. In doing so, pay attention to full opening angle (90°) of throttle valves.

Installing

Perform further installation in reverse order, paying attention to the following:

- Bolt on connection as follows:
 1. - Start by hand-tightening all bolts
 2. - Finish-tighten bolts in upper part of intake manifold to 10 Nm
 3. - Finish-tighten bolts at rear in throttle valve unit to 10 Nm
 4. - Finish-tighten bolts at front in throttle valve unit to 10 Nm

6.26 - Removing and installing throttle cable - 8-cyl. engine (code letters AHK)



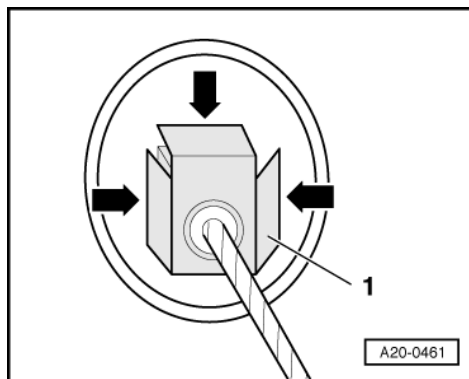
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Removing

- Remove driver's storage compartment.
- => General Body Repairs; Repair Group 70; Dash Panel Dash Panel
- Unscrew footwell vents in driver's footwell.
 - -> Disengage end of throttle cable -1- at top of accelerator pedal -2-.

Vehicles with automatic gearbox:

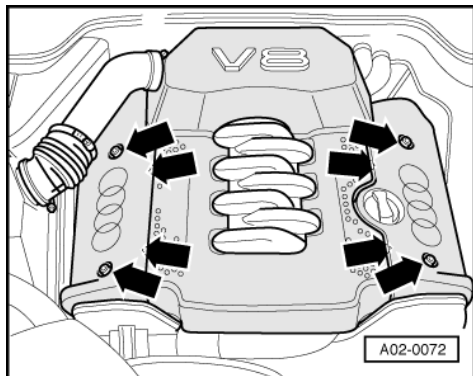
- Unplug connector at kickdown switch.



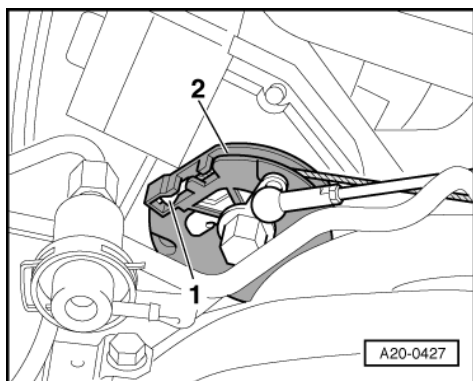


All models:

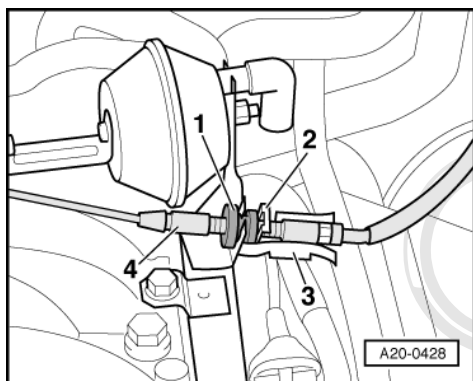
- -> Working from passenger compartment, squeeze together/break off retainer tabs -arrows- of square mount -1- at bulkhead.
- Press out square mount to front towards engine compartment.



- -> Remove engine cover -arrows-.



- -> Disengage nipple -1- at end of throttle cable from cable cam-2-.



- -> Pull off retainer -2- at detent segment of throttle cable sheath.
- Take throttle cable -4- with rubber grommet -1- out of support bracket -3-.
- Pull out throttle cable towards engine compartment.

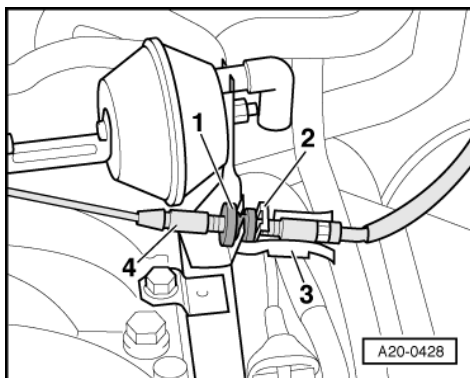
Installing

Install in reverse order, paying attention to the following:

- Heed notes => Page 140 .
- Adjust throttle cable => Page 185 .

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6.27 - Adjusting throttle cable - 8-cyl. engine (code letters AHK)



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- Throttle cable engaged at accelerator pedal and cable cam of throttle valve control part

- -> Pull off retainer -2- at detent segment of throttle cable sheath.
- Press accelerator pedal into full throttle position.

Note:

This requires a second mechanic or accelerator pedal must be supported against steering wheel using, for example, V.A.G 1788/10.

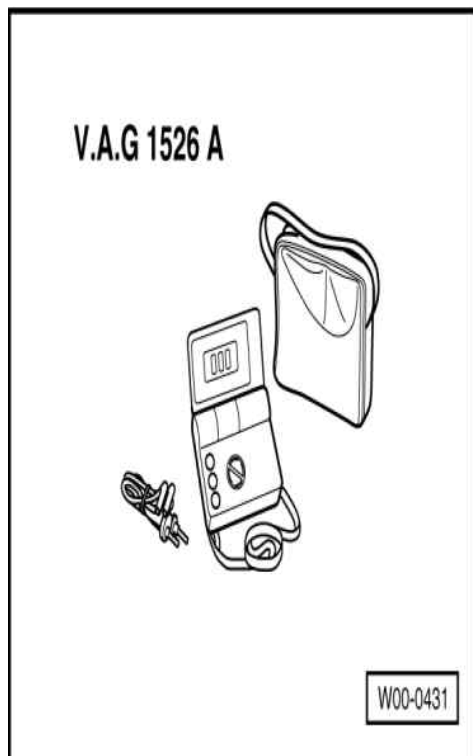
- Adjust throttle cable by re-positioning retainer -2- at rubber grommet-1- of support bracket -3- such that full-throttle position is reached at throttle valve.
- Release accelerator pedal.
- After performing adjustment, check idle and full-throttle stops of throttle valve.

Vehicles with automatic gearbox:

- Check throttle cable adjustment => Page **186** .

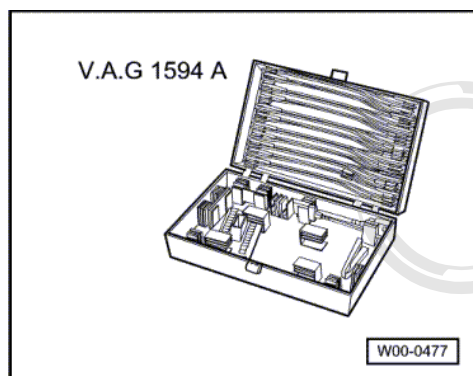


6.28 - Checking throttle cable adjustment on vehicles with automatic gearbox (checking kickdown switch)



Special tools and workshop equipment required

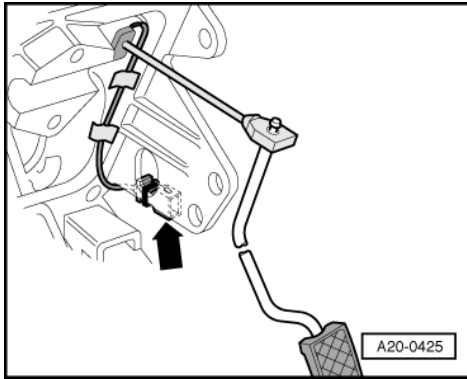
- ♦ V.A.G 1526 A



- ♦ V.A.G 1594 A

All models except vehicles with 6-cyl. engine (2-valve):

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- Remove driver's storage compartment.
- => General Body Repairs; Repair Group 70; Dash Panel Dash Panel
- Unscrew footwell vents in driver's footwell.



- -> Unplug connector -arrow- for kickdown switch.
- Connect multimeter to kickdown switch for resistance measurement.
 - Specification: $\infty \omega$ (no continuity)
- Slowly move accelerator pedal in full-throttle direction.
 - Resistance must drop to 0 ω shortly after kickdown pressure point
 - Accelerator pedal must be just before stop

Vehicles with 6-cyl. engine (2-valve):

=> Automatic Gearbox 01F and 01K Self-diagnosis; Repair Group 01; Electrical/Electronic Components and Fitting Locations; Adjusting kickdown switch -F8 Electrical/Electronic Components and Fitting Locations Adjusting kickdown switch -F8



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