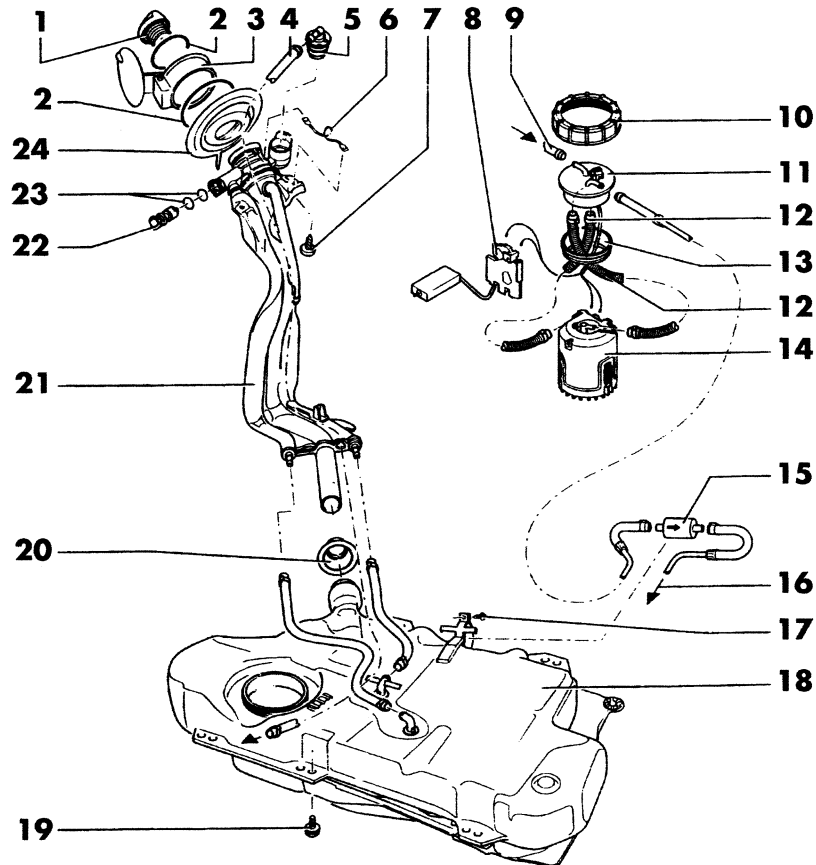


FUEL FEED SYSTEM: EXPLODED VIEW

The hoses are fixed to the connections by means of clamps, either steel strip clamps or bolt clamps. Only strip clamps must be used to fix the flexible fuel tubes to the engine.



20BD20

1. Plug.
2. Attachment circlip.
3. Filling cap/pipe assembly.
4. Vent pipe.
To active carbon tank.
5. Gravity valve.
Checking.
6. Earth connection.
7. 4 Nm.
8. Fuel level sender unit.
9. Fuel return tube.
Blue, from injection unit.

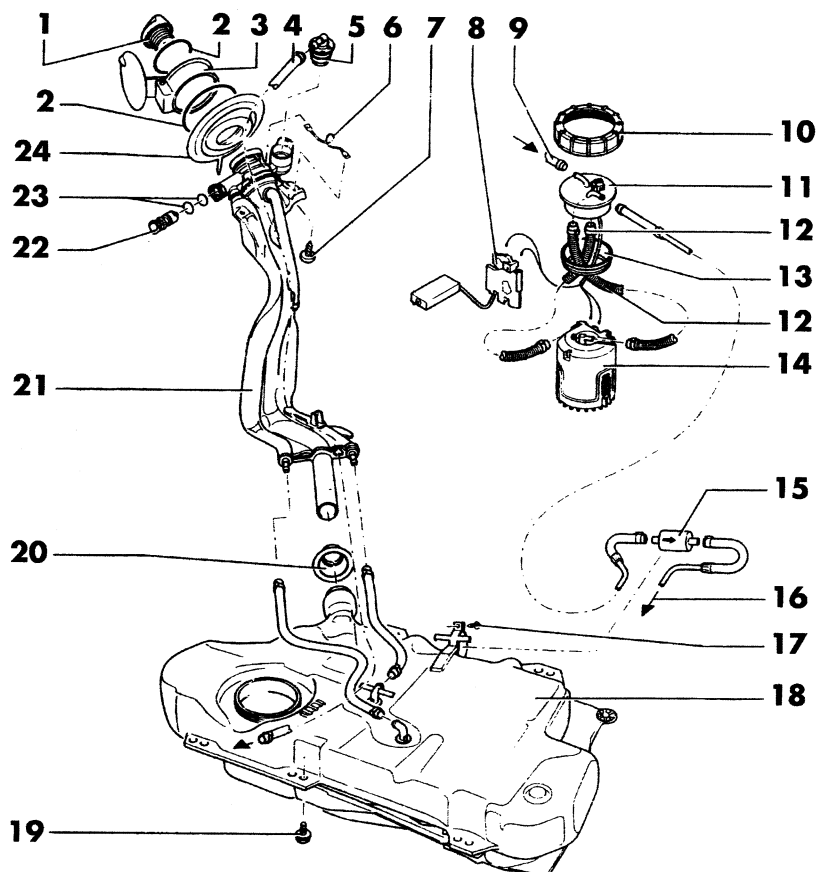
10. Fuel pump-fuel level sender unit assembly fixing nut. 75 Nm.
Remove and refit using the tool U-40055.
11. Fuel level sender unit and fuel pump cover.
Note the mounting position.
12. Corrugated tube.
When carrying out operations with the pump/level transmitter assembly, these tubes must not touch the fuel tank, in order to prevent noise transmission.

Engine 20

Fuel feed: 2.0 I 16 V engine

FUEL FEED SYSTEM: EXPLODED VIEW

The hoses are fixed to the connections by means of clamps, either steel strip clamps or bolt clamps. Only strip clamps must be used to fix the flexible fuel tubes to the engine.



20BD20

- | | |
|--|--|
| <p>13. Gasket.
Replace if damaged.
Wet with fuel when fitting.</p> <p>14. Fuel pump.
Remove and refit using the tool U-40073.
Checking.</p> <p>15. Fuel filter.
The arrow on the fuel filter shows the fuel flow direction.</p> <p>16. Feed pipe.
Black, to injection unit.</p> <p>17. 3 Nm.</p> | <p>18. Fuel tank.
Removal and replacement.</p> <p>19. 25 Nm.</p> <p>20. Dust boot.</p> <p>21. Filling mouth.</p> <p>22. Vent valve.
Checking.</p> <p>23. O-ring.
Replace if damaged.</p> <p>24. Dust boot.
The waste tube must be located underneath.</p> |
|--|--|

CLEANING AND SAFETY PRECAUTIONS

When removing and refitting fuel level sender units-fuel pumps, if the tanks are full or partially full, the following safety measures must be observed:

- Before starting any fitting work, a gas suction equipment must be placed close to the fuel tank, so that the fuel vapours released when the fuel level sender unit cover is removed, are sucked immediately.

If no vapour suction equipment is available, a fan (motor out of the air flow) with a capacity higher than 15 m³/h can be used.

- Avoid any contact with the fuel using fuel resistant gloves.

When working on the fuel feed/injection system, the following rules regarding cleanliness must be observed:

- Before disconnecting any joint, carefully clean the connection and the surroundings.
- The parts removed must be placed on a clean surface and then must be covered. As a cover use plastic or paper sheets, never use clothes which may release fibers.
- Carefully cover or plug the parts removed if the repair is not to be completed immediately.
- Fit clean parts only; do not use, therefore, parts which are not properly packaged.
- Unpack the parts immediately before fitting them only.
- With the fuel feed system open, neither use compressed air nor move the vehicle.

FUEL TANK

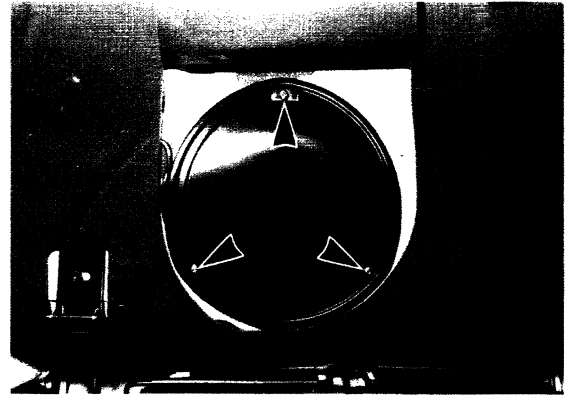
Removal and replacement

Removal

Place the vehicle on a bridge filter.

Disconnect the battery ground lead.

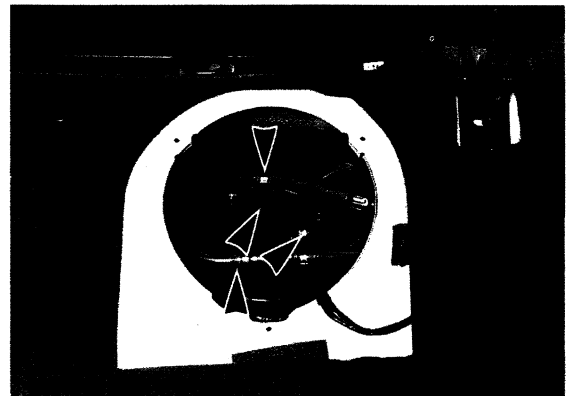
Drain the fuel tank.



20D001

Tilt forward the back seat.

Remove the fuel level sender unit-fuel pump assembly cover.



20D002

Disconnect the fuel feed and return pipes.

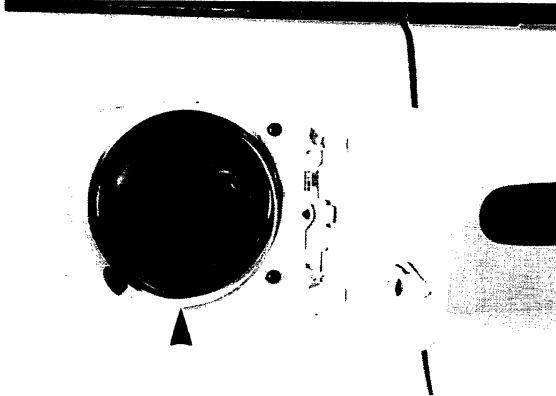
Unplug the connector from the fuel level sender unit-fuel pump assembly.

Disconnect the vapour pipes from the fuel tank to the activated carbon filter (according to the version).

Engine 20

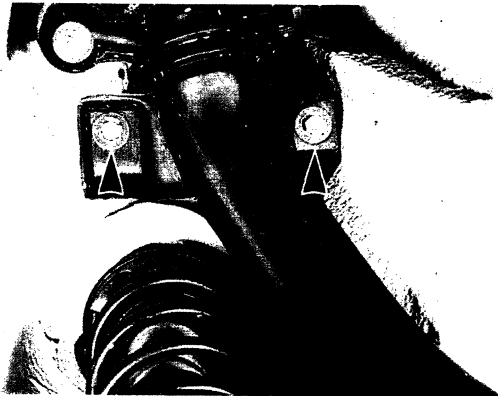
Fuel feed: 2.0 I 16 V engine

Remove the right rear wheel and mark the mounting position with regard to the wheel hub; the mark must be taken into account when refitting.



20B003

Remove the circlip fixing the filling mouth protection cap.



20B004

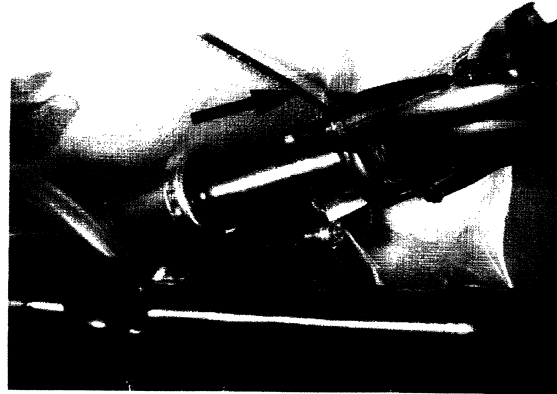
Raise the vehicle.

Remove the bolts fixing the filling mouth to the bodywork.
(In some versions the existing protection on the wheel arch has to be detached.)

Remove and partially separate the final section of the exhaust installation from its attachment to the two rear rubber supports.

Place a jack with platform to support the fuel tank while removing it.

Separate the screws attaching the tank to the bodywork and partially remove the fuel tank unit, together with the antithermal plate.



20B043

Then extract the filler hole from its attachment to the fuel tank, for which purpose it is necessary to separate the dustguard and the fuel pipes.
When separating the filler hole take special care so as not to damage the internal retainers in the tank.

Once the filler hole has been detached, proceed to remove the tank.

Refitting

To reassemble, reverse the above operations taking the following into account:

To facilitate the placement of the filler hole in the tank apply a light coat of Vaseline to the bottom of the filler hole and to the internal retainers in the tank.

When fitting the fuel or deaeration pipes make sure that they are not bent or have no leaks.

The fuel pipes should be fixed with screw clamps.

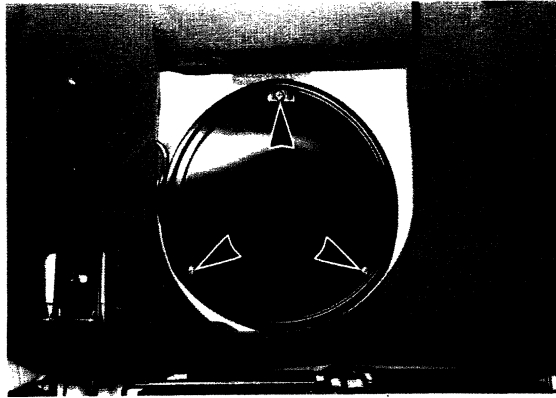
Do not swap the fuel pipes (supply pipes black and return pipes are blue, or blue mark).

When filling the tank with fuel make sure there are no leaks through the area where the filler hole is joined to the tank.

FUEL LEVEL SENDER UNIT AND FUEL PUMP
Removal and replacement

Removal

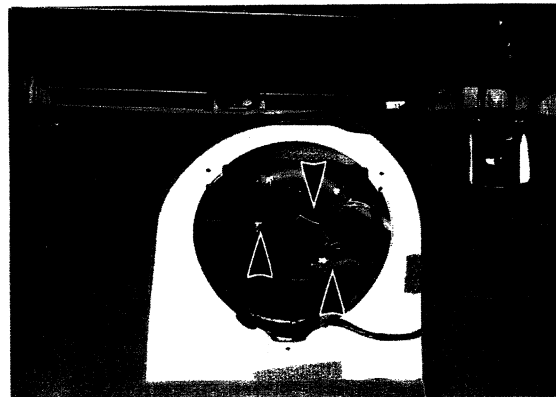
Disconnect the battery ground lead.



20D001

Tilt forward the back seat.

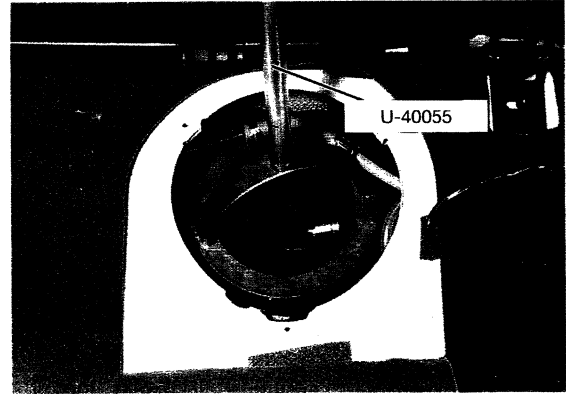
Remove the fuel level sender unit-fuel pump assembly cover.



20D007

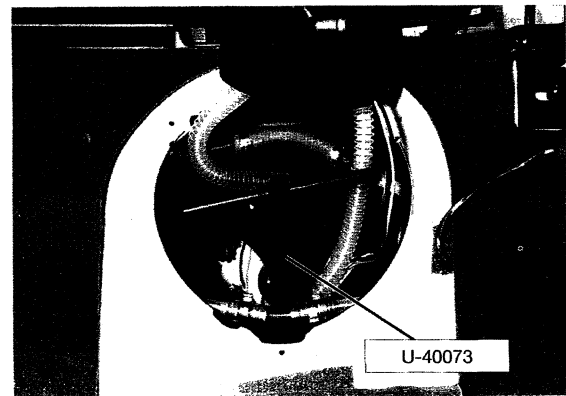
Disconnect the fuel feed and return pipes.

Unplug the connector from the fuel level sender unit-fuel pump assembly.



20D008

Remove the nut fixing the fuel level sender unit-fuel pump assembly using tool **U-40055**.



20D014

Remove the fuel level sender unit-fuel pump assembly by turning it counterclockwise until the assembly is released from the inside attachment (bayonet type). Use the tool **U-40073** to carry out this operation.

Note

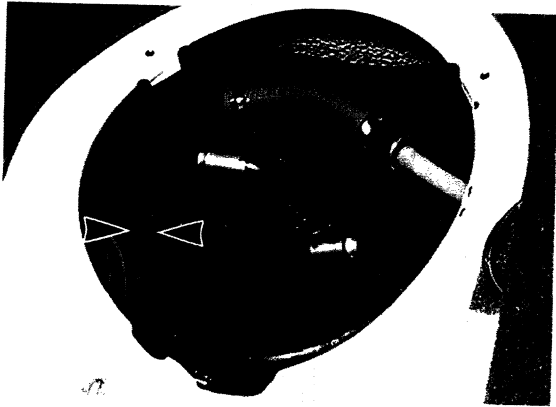
If the assembly is still filled with fuel, drain the contents before replacing the assembly.

Engine 20

Fuel feed: 2.0 I 16 V engine

Refitting

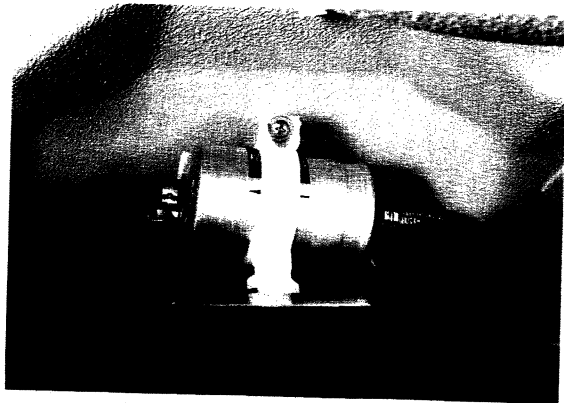
For refitting, note the proper mounting.



20D009

The mark (arrow) on the fuel level sender unit cover must match the mark on the fuel tank.

FUEL FILTER Replacement



20B011

The fuel filter is located at the rear of the fuel tank, attached by means of a clamp.

To replace the filter, note that the arrow on the filter housing must be pointing in the fuel flow direction.

VENT VALVE
Checking

To remove the vent valve, removing the fuel tank is not required.



20B009

Remove the valve from the filling mouth. To do this, detach the fixing tab and pull out the valve.



20B010

To check the valve, blow through the valve hole.

With the lever at the rest position, the air must not pass through the valve. When the lever is moved in the direction of the arrow, the air must pass through the valve.

Otherwise, replace the vent valve.

GRAVITY VALVE
Checking

To remove the gravity valve, removing the fuel tank is not required.



20B008

Disconnect the pipe and remove the valve from the filling mouth. To do this, detach the fixing tab and pull the valve upwards.

To check the valve, connect an auxiliary flexible pipe to the pump connection and blow through the pipe.

With the valve in vertical position, the air must pass through.

When the valve is tilted 45°, the air flow must stop.

Otherwise, replace the gravity valve.

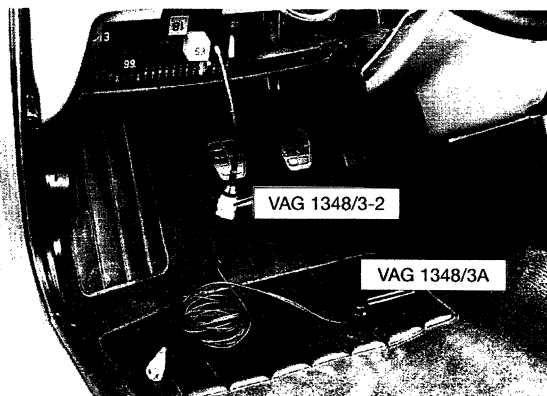
FUEL PUMP

Checking the power supply

Check that the No. 18 fuse is in good condition and the battery voltage is correct.

Turn the ignition on and listen to the fuel pump noise; the pump must run for about 1 second (to hear the pump noise, being as close as possible to the fuel tank is required, as the fuel pump is located inside the fuel tank).

— If the fuel pump does not run:



24B014

Remove the fuel pump relay (R17) from relay board (relay position 12).

Connect the remote control **VAG 1348/3A** together with the adaptor cable **VAG 1348/3-2** to the contact number 4 on the relay board and to the battery positive terminal.

By operating the remote control **VAG 1348/3A**, the fuel pump must start running.

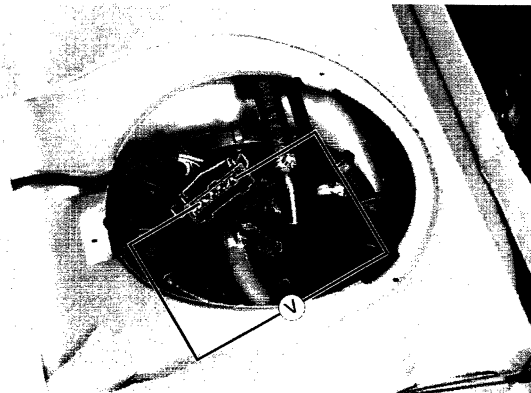
— If the fuel pump runs:

Check the operation of the fuel pump relay, as described in the Repair Group 24.

— If the fuel pump does not run:

Tilt forward the back seat. Remove the fuel level sender unit-fuel pump assembly cover.

Unplug the fuel level sender unit-fuel pump assembly connector.



20B041

Connect the **VAG 1526** digital multimeter to the outer contacts of the connector using the **VAG 1594** auxiliary cables.

Set the multimeter's selector to the voltage measurement position.

Operate the **VAG 1348/3A** remote control. The reading on the voltmeter should be:

Power supply voltage: **approx. battery voltage.**

— If the power supply voltage is not reached:

Check the electrical system with the help of the wiring diagram to locate and fix the discontinuity.

— If the power supply voltage is reached:

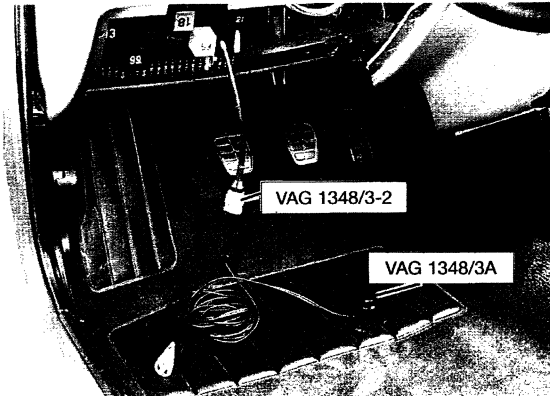
Remove the fuel level sender unit-fuel pump assembly fixing nut using the tool **U-40055**.

Check that the wiring between the cover and the pump is correct.

If the cables do not show any discontinuity, replace the pump.

Checking the fuel flow

The battery voltage must be correct.

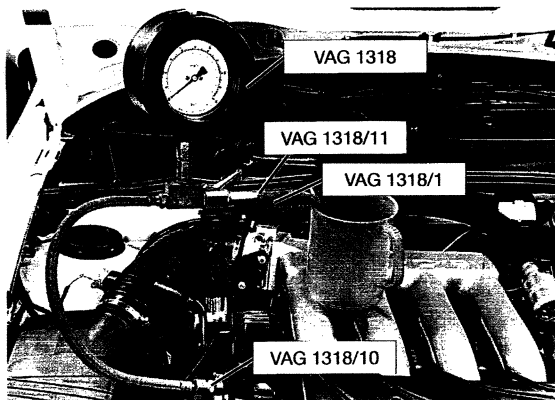


24B014

Remove the fuel pump relay (R17) from relay board (relay position 12).

Connect the remote control **VAG 1348/3A** together with the adaptor cable **VAG 1348/3-2** to the contact number 4 on the relay board and to the battery positive terminal.

Remove the fuel filling mouth cover.



20B035

Disconnect the supply pipe from its attachment to the fuel distributor.

Connect the pressure gauge equipment **VAG 1318** together with the adaptor **VAG 1318/10** to the feed pipe previously disconnected.

Connect the flexible pipe **VAG 1318/1** to the adaptor **VAG 1318/11** of the pressure gauge equipment. Place the flexible pipe end inside a graduated container.

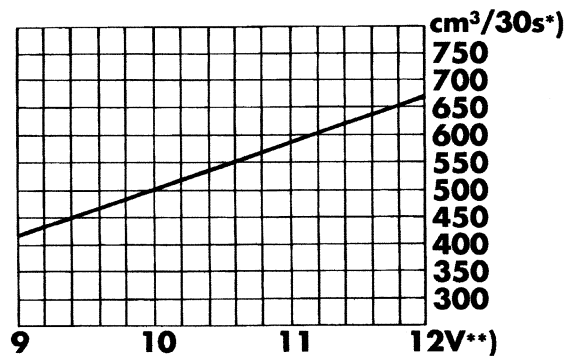
Open the pressure gauge equipment valve (handle in the flow direction).

Operate the remote control **VAG 1348/3A**, slowly close the pressure gauge equipment valve until the pressure reading is 3 bar.

Do not change the valve position.

Drain the fuel from the graduated container. Operate the remote control **VAG 1348/3A** for 30 seconds.

Compare the amount of fuel supplied with the value shown in the graph.



20BD03

*) Minimum volume in cm³ for 30 seconds.

**) Voltage at the fuel pump with the engine stopped and the pump running (about 2 volts below the battery voltage).

If the above minimum volume is not reached, the following are some of the possible reasons:

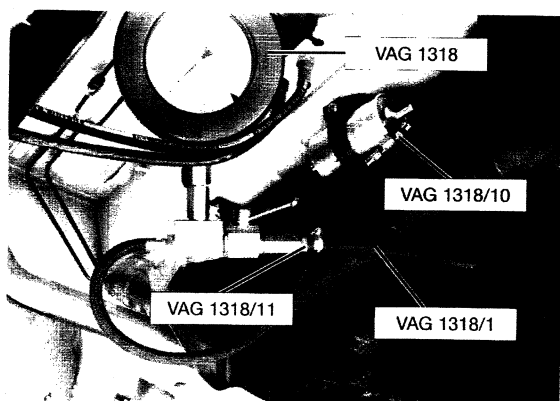
Fuel pipe bent or plugged.

Fuel filter clogged.

Faulty fuel pump; replace the pump.

Carry out the following tests to determine the exact cause of the fault:

Check that the fuel pipes are free from dents, pinching or blockages.



20D016

Remove the fuel inlet tube to the filter and connect the **VAG 1318** manometer with the **1318/10** adapter to the feed pipe disconnected previously.

Re-check the fuel flow and if it is correct, replace the fuel filter.

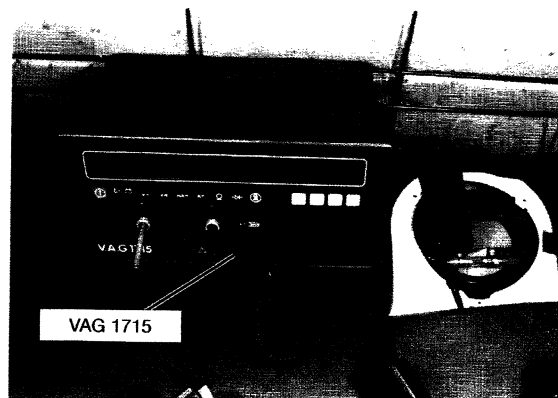
If the minimum flow is still not reached, remove the fuel pump assembly and check for faults in the pipes or dirt in the filter.

If no fault is found after carrying out these checks, replace the fuel pump.

Note

If the minimum fuel flow is obtained but a fault exists (for example, a sporadic failure in the fuel supply) check the electrical functioning of the fuel pump.

In order to do this, re-connect all the pipes previously disconnected.



20D017

Check the fuel pump power supply by connecting the **VAG 1715** tester to the red/yellow cable in the system.

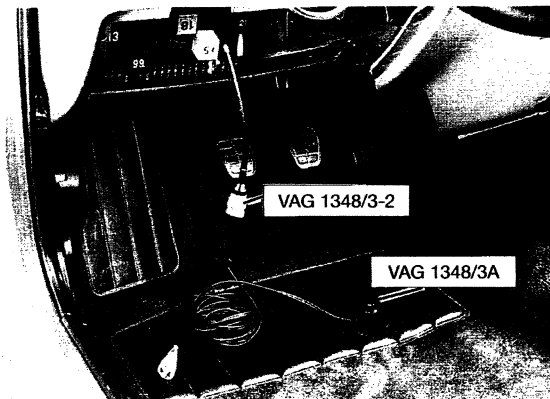
Start up the engine and let it run at the idle speed.

Measure the power consumption, which should not exceed **8 A**. If the value is higher, replace the fuel pump.

If the fault is sporadic, the test may be carried out during a test run, in which case the help of a second person will be required.

FUEL PUMP NON-RETURN VALVE Checking

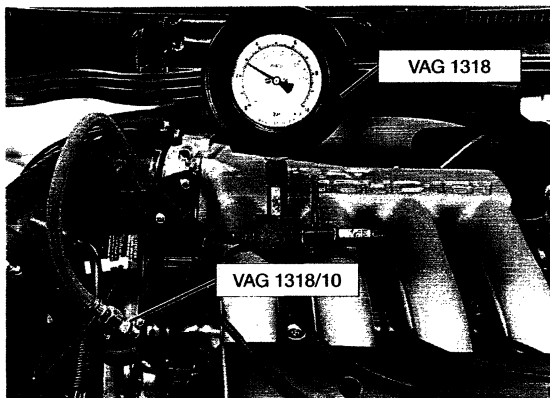
The following checking also allows to check that the fuel feed pipes from the injection central unit to the connecting point to pressure gauge equipment **VAG 1318**, are leakproof.



Remove the fuel pump relay (R17) from relay board (relay position 12).

Connect the remote control **VAG 1348/3A** together with the adaptor cable **VAG 1348/3-2** to the contact number 4 on the relay board and to the battery positive terminal.

Connect the **VAG 1318** pressure gauge as follows:



Disconnect the supply pipe from its attachment to the fuel distributor.

Connect the pressure gauge equipment **VAG 1318** together with the adaptor **VAG 1318/10** to the feed pipe previously disconnected.

Close the pressure gauge equipment valve by placing the handle perpendicular to the flow direction.

Operate the remote control **VAG 1348/3A** during short time intervals until the pressure reading is approximately 3 bar.

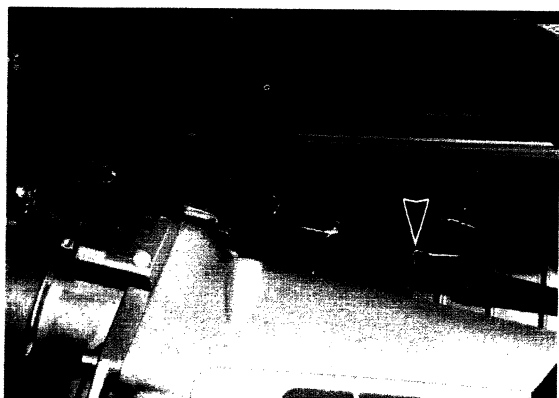
Release the excess pressure by carefully opening the valve. Placing a container or a cloth on the pressure gauge equipment free connection is recommended, as there may be fuel splashing when opening the valve.

Note the pressure drop. During a 10 minute period the pressure must not come down below 2 bar.

If the pressure drop is higher, check the fuel feed pipes for leaks and if the pipes are correct replace the fuel pump.

ACCELERATOR CABLE ADJUSTMENT

To check the accelerator cable proper adjustment, the accelerator pedal must be fully depressed; in this position the throttle valve must be fully open.

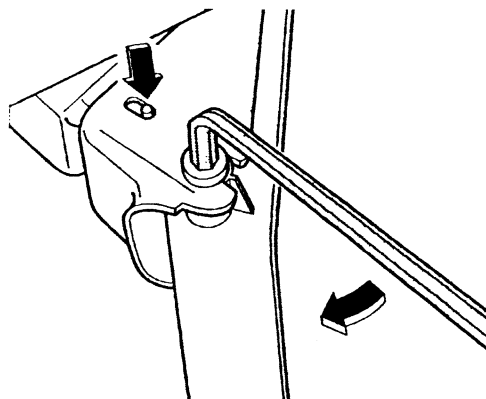


20B044

To adjust the accelerator cable, remove the clamp on the cable sheath, change the cable sheath position on the support and refit the fixing clamp.

ACCELERATOR PEDAL Removal and replacement

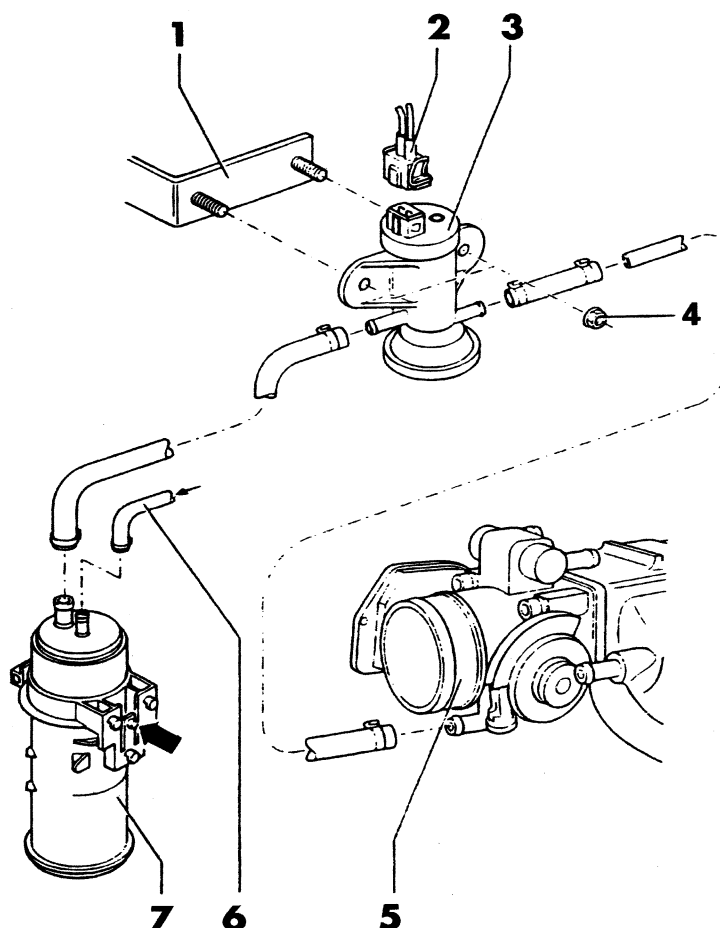
To remove the accelerator pedal the parcel tray and the pedals protector must be removed.



20DD04

Carefully push the pedal fastener and remove the shaft with an Allen key.

ACTIVATED CARBON TANK SYSTEM: EXPLODED VIEW



20BD17

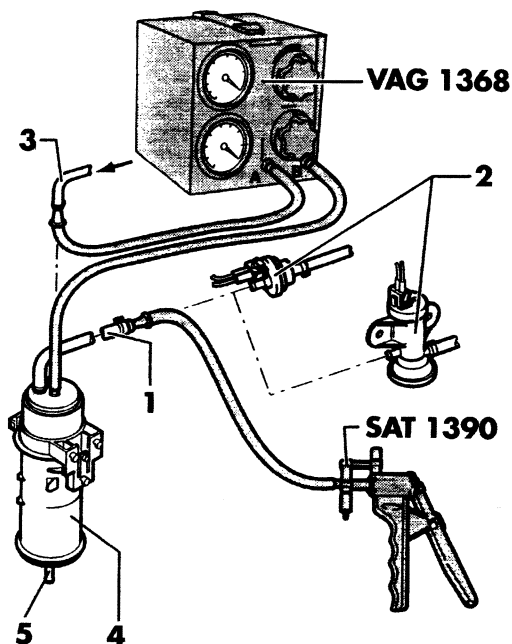
1. **Support.**
2. **Connector.**
3. **Electromagnetic valve for the active carbon tank (N80).**
The valve is driven by the control unit with the engine running.
Checking. (Refer to Repair Group 24.)
4. **10 Nm.**

5. **Damper unit.**
6. **Vapour pipe from the fuel tank**
(comes from the gravity valve).
In some vehicles you may find a safety valve inserted next to the active carbon tank.
7. **Activated carbon tank.**
It is located in the right front wheel arch.
For removing, partially remove the wheel arch guard and press the safety tab in the direction shown by the arrow.

BLEEDING THE FUEL SYSTEM Checking

These checks should be made with the ignition off.

Checking the active carbon tank



20BD18

Separate the flexible deaeration pipe "1" which goes from the active carbon tank to the electromagnetic valve "2", from its attachment to the latter. Then place the SAT 1390 vacuum gun to the pipe which was previously disconnected.

Detach flexible deaeration pipe "3" which comes from the fuel tank to the active carbon tank "4" from its attachment to the latter, and connect it to inlet "A" of the VAG 1368 depression verifier.

Connect inlet "B" of the VAG 1368 depression verifier to the active carbon tank which is free and set the verifier key to position -B-.

Operate the SAT 1390 vacuum pump several times; no suction should be created.

- If suction is created:

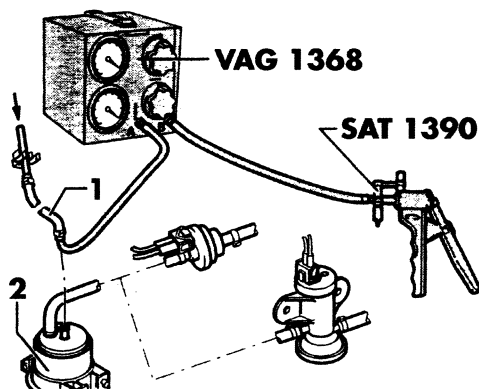
Check that the deaeration pipe at the bottom of active carbon tank "5", is not blocked. Clean if necessary.

- If no suction is created:

Cover the deaeration pipe at the bottom of the active carbon tank (to do so use a suitable top such as the ones delivered with the vacuum pump SAT 1390).

Act upon the vacuum gun several times, to create depression. If there is none, locate the watertightness problem in the active carbon tank or in the installation section being checked.

Checking the fuel tank and filling top



20BD19

Detach flexible deaeration pipe "1" which comes from the fuel tank to the active carbon tank "2" from its attachment to the latter, and connect it to inlet "A" of the **VAG 1368** depression verifier.

Note

In vehicles fitted with safety valve, flexible deaeration pipe "1", must be detached from its attachment to the safety valve, it cannot remain in the section of pipe being checked.

Connect the **SAT 1390** suction pistol to the "B" connection of the **VAG 1368** tester and set the tester's key to the A/B position.

Unscrew the fuel filler cap.

Operate the **SAT 1390** vacuum pump several times; no suction should be created.

- If suction is created:

Verify that the safety valve is not in the section of pipe being checked.

Check the gravity valve, as described elsewhere in this group.

Check that the tube between the gravity valve and the active carbon tank is not obstructed.

- If no suction is created:

Fit the fuel filling cap, and act upon the vacuum pump **SAT 1390** several times, there should be no depression.

- If suction is created:

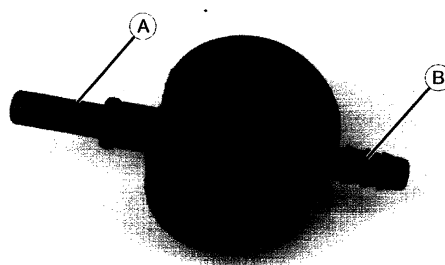
Replace the fuel filler cap.

Note

When the fuel level in the tank is low, the **SAT 1390** must be operated approximately 25 times when carrying out these tests.

Checking the safety valve and assembly position

(Only vehicles with safety valve fitted on the outside of the active carbon tank.)



20B045

To check the safety valve, it must be detached from the vehicle.

Connect vacuum gun **SAT 1390** to the "A" connection of the valve.

- Create pressure, there must be an air flow.
- Create depression, the depression should be maintained.

Then connect the gun to the "B" connection of the valve.

- Create pressure, there must be an air flow.
- Create depression, the depression is not maintained.

If the result of the checks was not as indicated, replace the valve.

● Mounting position

When fitting the valve to the vehicle, remember that the connection "A" should be positioned in the direction of the active carbon tank.