

## 2004 Porsche Cayenne

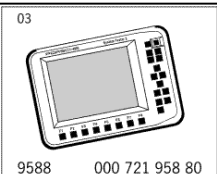
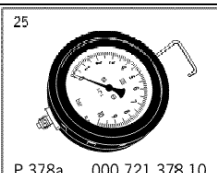
2003-2008 ENGINE Fuel, Actuation

### 2003-2008 ENGINE

#### Fuel, Actuation

## 20 02 01 CHECKING FUEL PRESSURE - AS OF MY 2003 (CAYENNE S TIP, CAYENNE S MAN, CAYENNE TURBO, CAYENNE TURBO S, CAYENNE S TIO TITAN)

### TOOLS

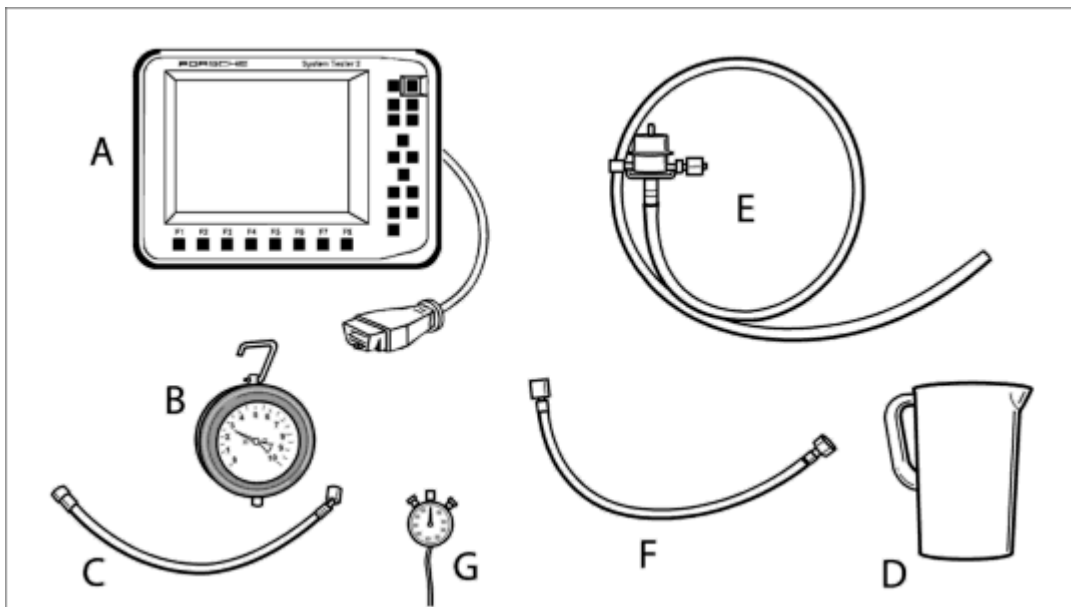
Designation	Type	Number	Explanation	
Porsche System Tester II	commercially available tool	9588		 03 9588 000 721 958 80
pressure gauge	commercially available tool	p378		
Pressure gauge	commercially available tool	p378a		 25 P 378a 000 721 378 10
Connection line	special tool	P 9559		
Measuring adapter	special tool	P 9705		
Connecting lead	special tool	P 9705/1		

### TOOLS AND MATERIALS

#### Special tools

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**Fig. 1: Special tools**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

Item	Designation of tool	Explanation
-A-	<u>Porsche System Tester II 9588</u>	The fuel pumps are required for short-term activation during the delivery rate test.
-B-	<u>Pressure gauge p378a</u>	For fuel pressure test.
-C-	<u>Connection line P 9559</u>	Hose line for pressure gauge. Do not interchange with -G-. There is a sheetmetal clip in the connecting piece for the fuel gallery which opens the scavenging valve during the test procedure.
-D-	Commercially available measuring cup with scale	Must hold at least 3 litres.
-E-	<u>Measuring adapter P 9705</u>	Controls the test pressure when measuring. Must not be impinged with under/overpressure.
-F-	<u>Connecting lead P 9705/1</u>	Hose line for delivery rate test. Must not be interchanged with -C-. There are no metal clips in the connecting piece for the fuel gallery.
-G-	Commercially available stopwatch	A wrist watch can also be used to be able to time exactly 1 minute.

## INFORMATION

### Test conditions

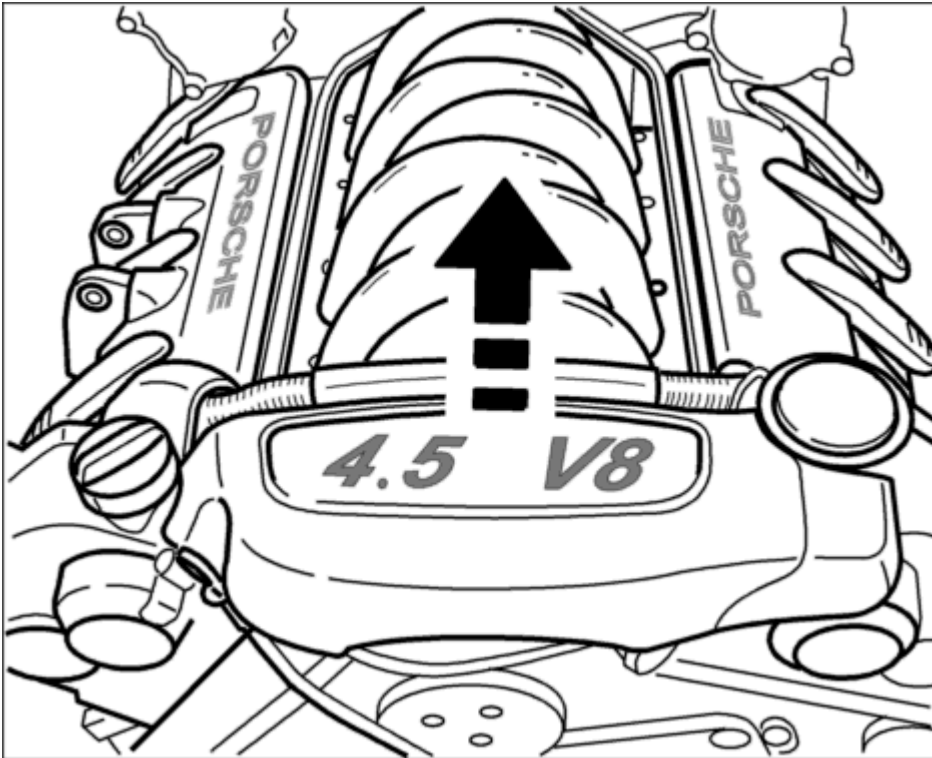
- The battery voltage must not be < 12 volts.

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- If an insufficient delivery rate is determined in the delivery rate test, the measurement on the second scavenging valve of the fuel gallery will be repeated.
- Fuel system parts must not get dirty.

### CHECKING FUEL PRESSURE



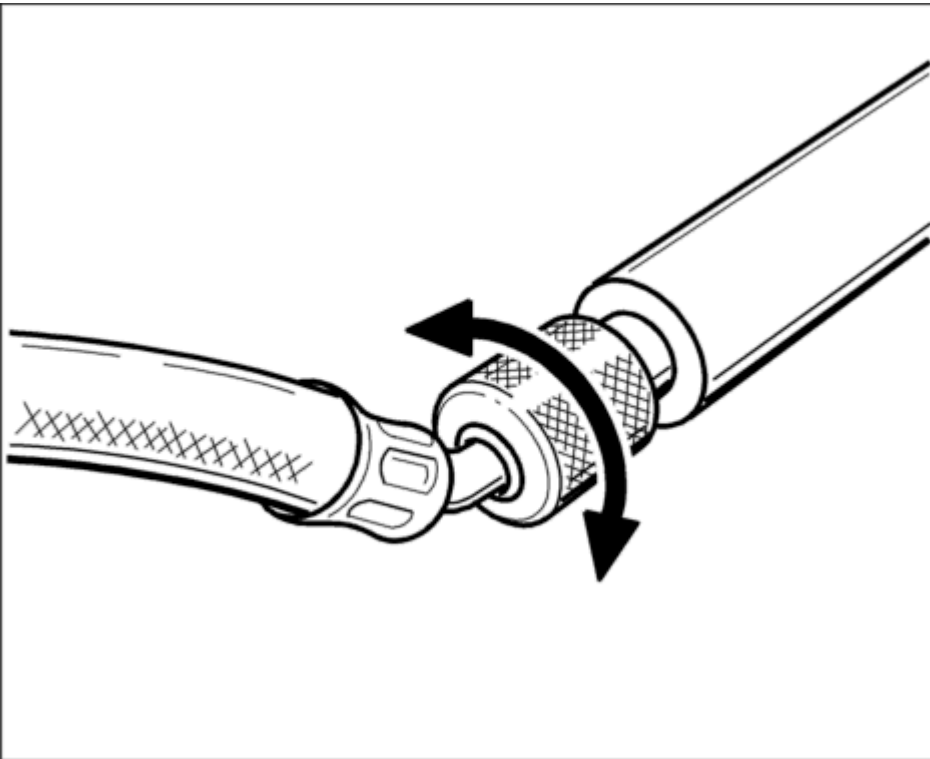
**Fig. 2: Design cover**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Pull the cover of the throttle body up and off.
2. Unscrew cap on the front right of the fuel gallery.

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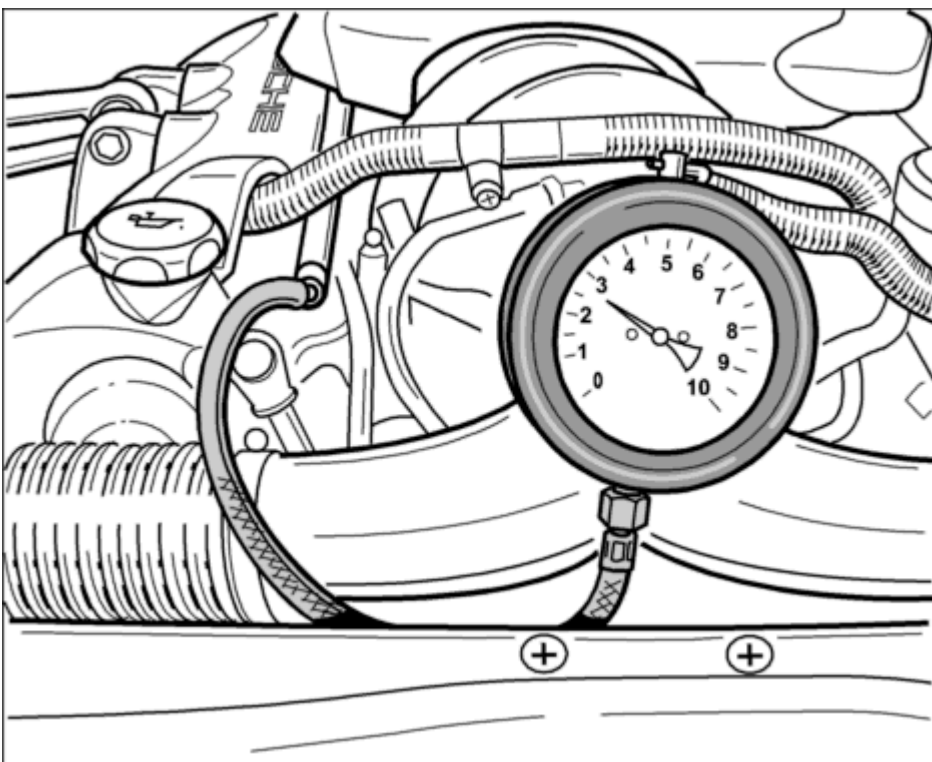
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**Fig. 3: Connection line**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Connect **connection line P 9559** to the **pressure gauge p378**. Screw the other end onto the fuel gallery.



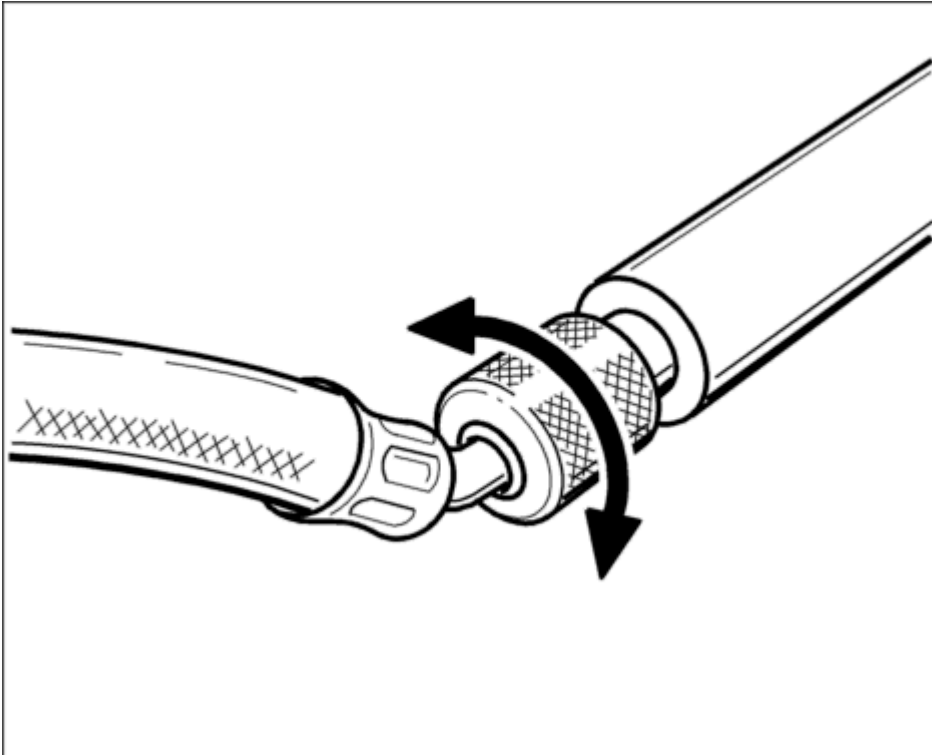
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**Fig. 4: Pressure gauge**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Switch on the ignition and start the engine. Read off fuel pressure on pressure gauge. The value must be  $4.0 \pm 0.2$  bar at idle speed.



**Fig. 5: Connection line**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**WARNING: Danger of fire due to incorrect or faulty scavenging valves!**

- > Replace scavenging valves after removing.
- > Only use the special, Porsche-approved valves in the fuel gallery.
- > Do not replace scavenging valves by tire valves.
- > It is essential that the plastic cap is also replaced.

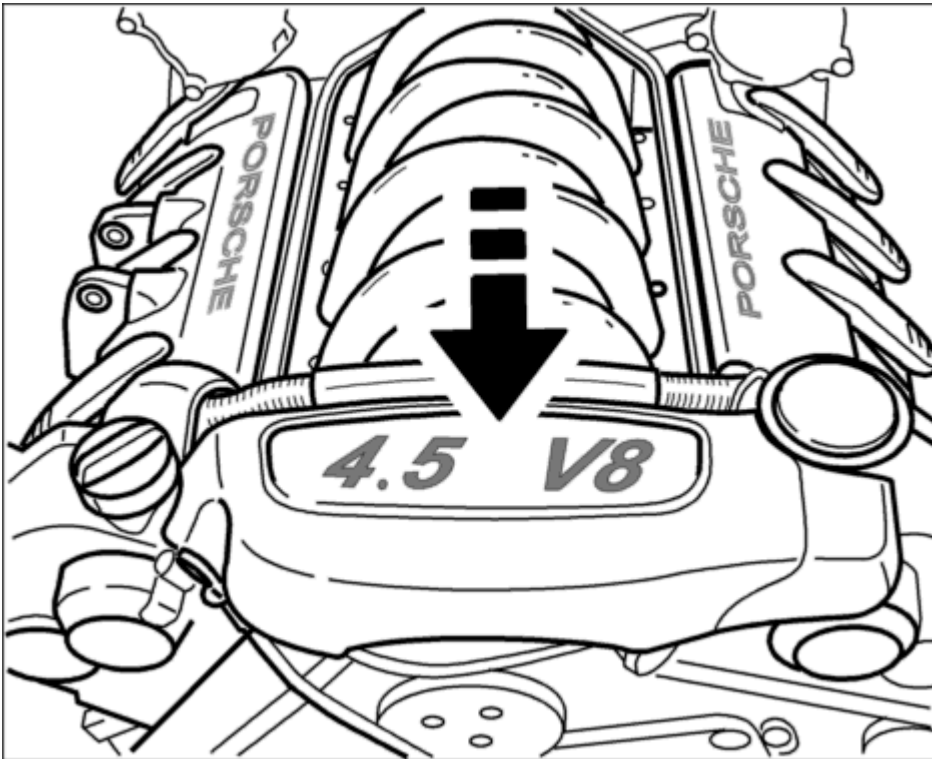
**NOTE:**

- ***The steady-state pressure must be greater than 2.0 bar after 1 hour.***

5. Unscrew connection line and close the fuel gallery with a new plastic cap.

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**Fig. 6: Design cover**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

6. Press the 4 rubber elements in the cover onto the 4 ball head supports. The mounts must be felt to engage.

### 20 02 01 CHECKING FUEL PRESSURE - AS OF MY 2004 (CAYENNE TIP, CAYENNE MAN)

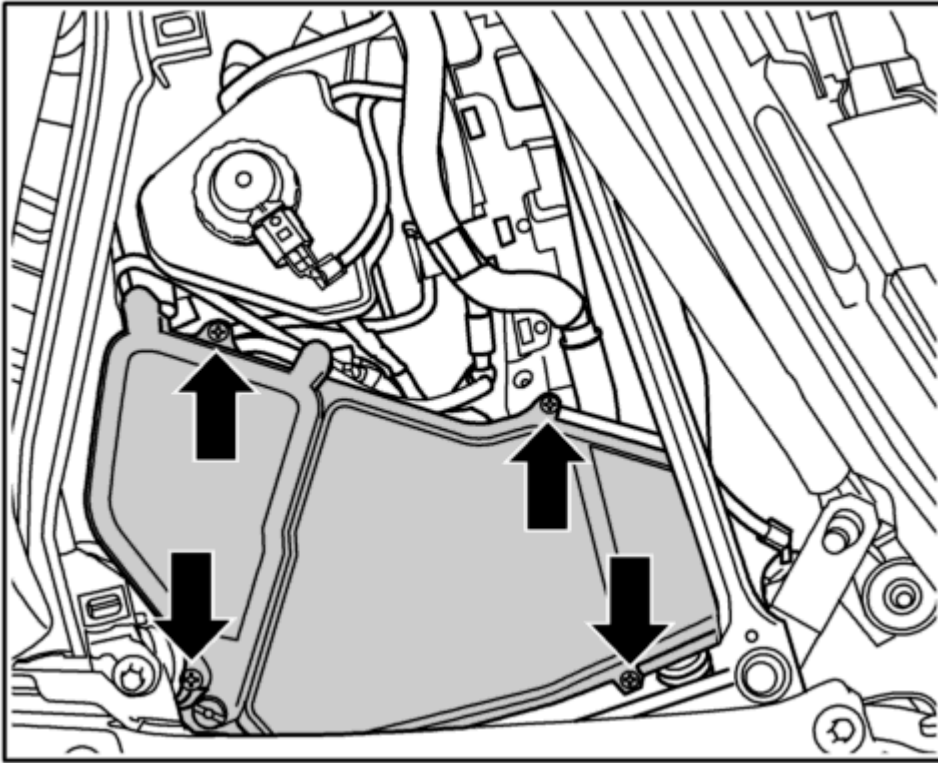
#### TOOLS

Designation	Type	Number	Explanation	
Adapter	special tool	P 9479		

#### PRELIMINARY WORK

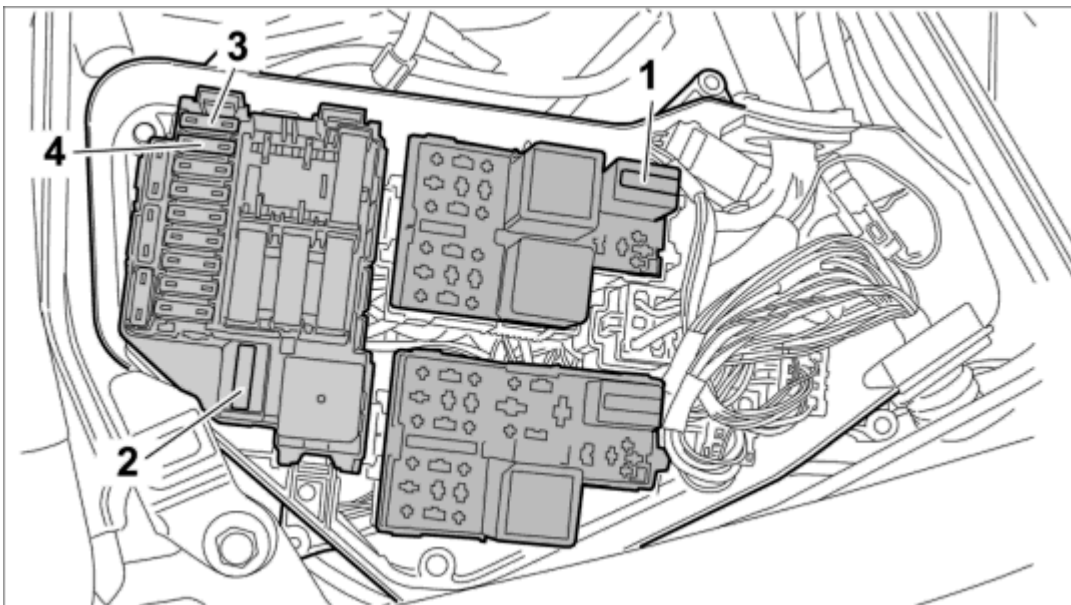
##### Preliminary work

1. Open the bonnet.



**Fig. 7: Central electrics box**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Open lid of central electrics box. To do this, loosen the four fastening screws.
3. Remove fuses -3- for the ignition rod modules, -4- injection system and both fuel pump relays (left pump -1- and right pump -2- ). See **Fig. 8**.

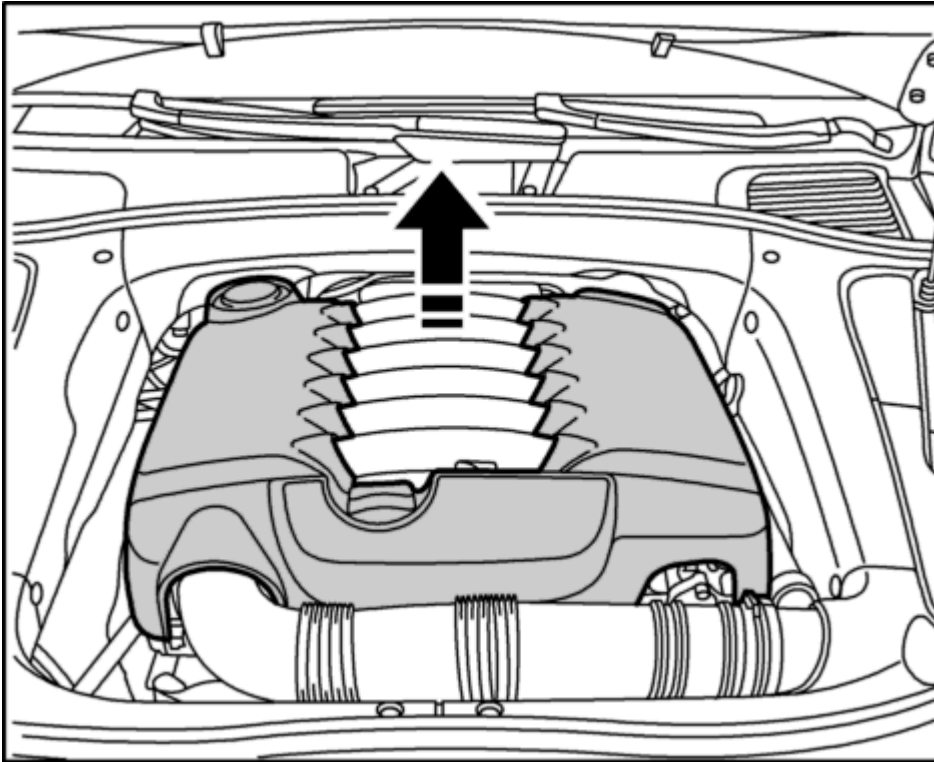


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**Fig. 8: Fuse carrier**

Courtesy of PORSCHE OF NORTH AMERICA, INC.



**Fig. 9: Design cover**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Pull the design cover up and off.

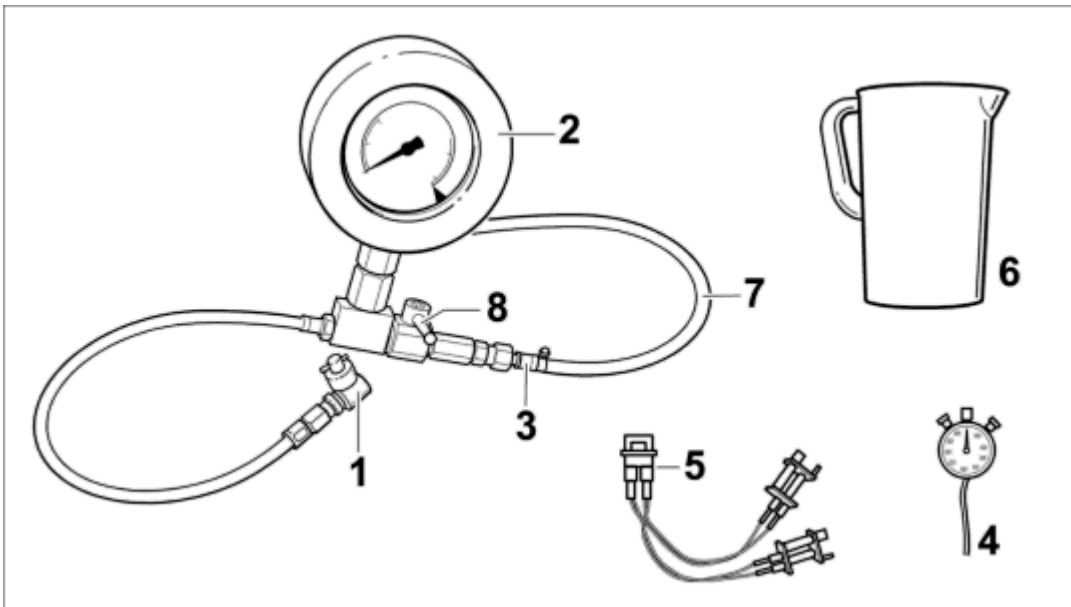
### TOOLS AND MATERIALS

Special tools



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**Fig. 10: Tool for measuring quantity of fuel delivered/fuel pressure**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

Item	Designation of tool	Explanation
-1- See <b>Fig. 10</b> .	Adapter VAG 1318/20	Screwed to the scavenger valve at the V6 fuel gallery.
-2- See <b>Fig. 10</b> .	Pressure gauge VAG 1318	For checking fuel pressure
-3- See <b>Fig. 10</b> .	Adapter VAG 1318/20-1	Adapter for connecting 1318 and 1318/20 to a fuel hose.
-4- See <b>Fig. 10</b> .	Commercially available stopwatch	A wrist watch that shows seconds can also be used.
-5- See <b>Fig. 10</b> .	<b>Adapter P 9479</b>	Serves as a simple "remote control" for activating the fuel pumps manually. It is inserted into the fuse carrier instead of the fuel pump relays.
-6- See <b>Fig. 10</b> .	Commercially available measuring cup with scale	Must hold at least 3 litres.
-7- See <b>Fig. 10</b> .	Commercially available fuel hose	Suitable for adapter VAG 1318/20-1; for draining fuel into a measuring cup
-8- See <b>Fig. 10</b> .	Stop-cock VAG 1318	For bleeding the fuel system and measuring pressure

### TEST CONDITIONS

#### Test conditions

- The battery voltage must not be < 12 volts.
- Fuel system parts must not get dirty.

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### CHECKING FUEL PRESSURE

#### **WARNING: Danger of poisoning from fuels!**

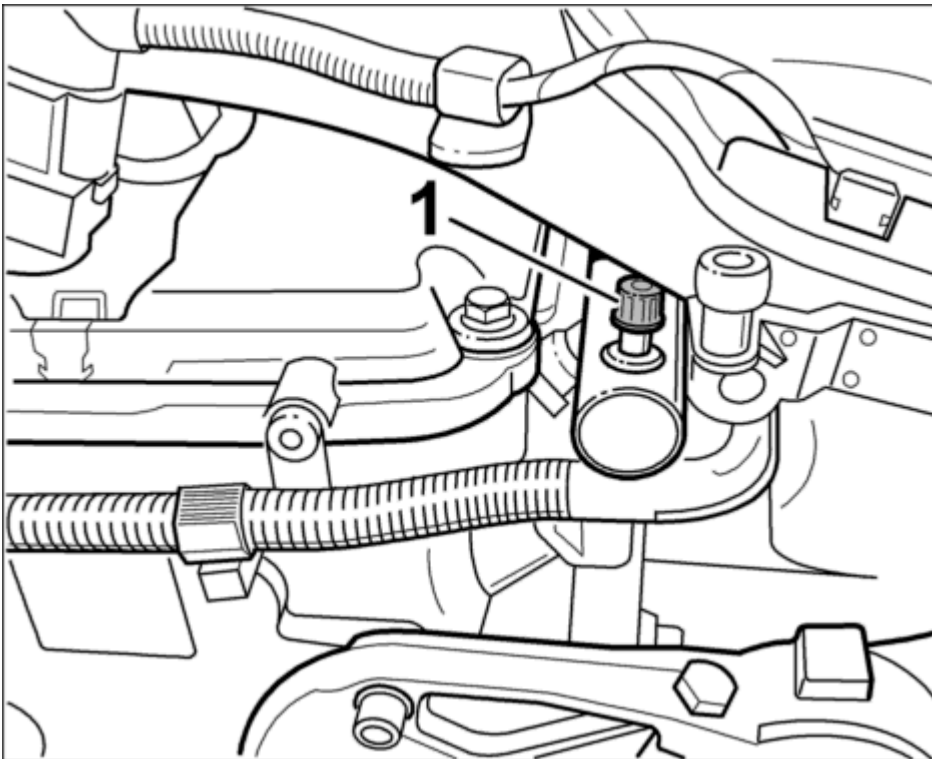
- > Gasoline is toxic.
- > Inhaling vapours can cause irritation of the mucous membranes and eyes.
- > It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.
- > Only work on the fuel system in well-ventilated rooms.
- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.
- > Pay attention to cleanliness when working on the fuel system.

#### **WARNING: Danger of fire from fuel!**

- > Keep clear of ignition sources.
- > Do not smoke.
- > Disconnect battery.
- > Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.
- > Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.
- > Secure the vehicle, e. g. with a warning sign.
- > Change any clothing soaked with fuel immediately.
- > In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

**NOTE:**

- *The ignition must be switched off when working on the fuel system.*
- *Absorb any escaping fuel using a suitable binding material or a cloth.*
- *Cloths which have absorbed fuel must be disposed of according to the applicable national laws.*
- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*



**Fig. 11: Cap of scavenging valve**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**NOTE:**

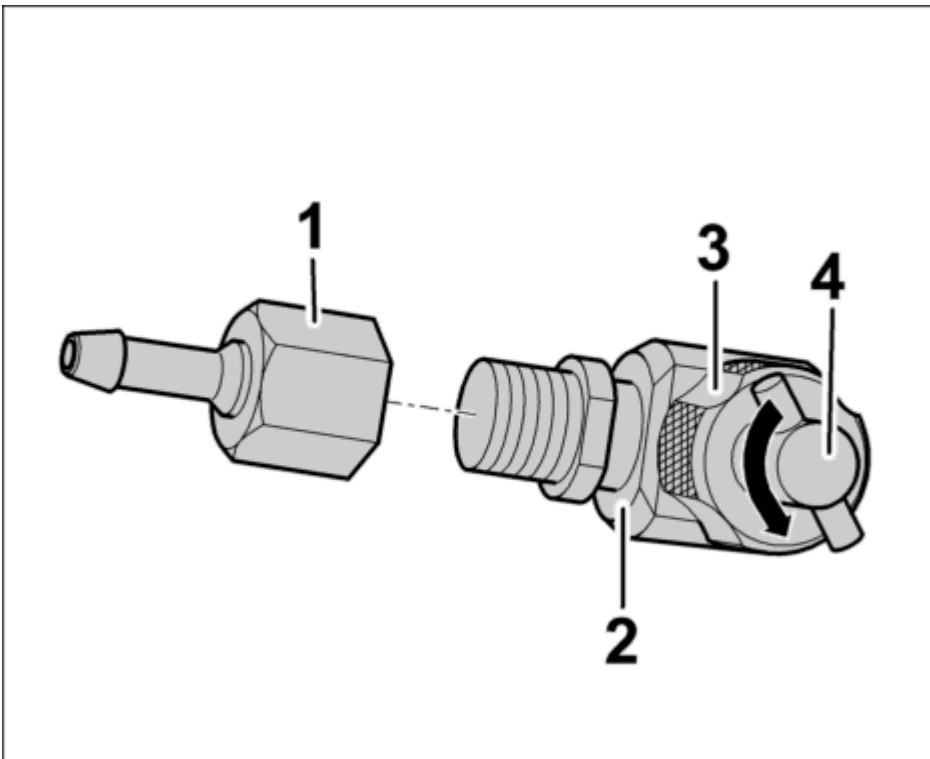
- *The fuel gallery is pressurised. Place a cloth under the areas of the fuel gallery to be opened so that fuel does not drip on to hot engine parts.*

1. Twist off the cap of the fuel scavenging valve -1- . See **Fig. 11**.

**NOTE:**

**Make sure that the switch on the adapter P 9479 is at 0 so that fuel is not pumped immediately when you connect the adapter.**

2. Insert **adapter P 9479** into both relay slots of the fuel pump relay for the fuel supply pumps at the same time (for details of relay assignment, see --> **200201 Checking fuel pressure - section on "Preliminary work"**).

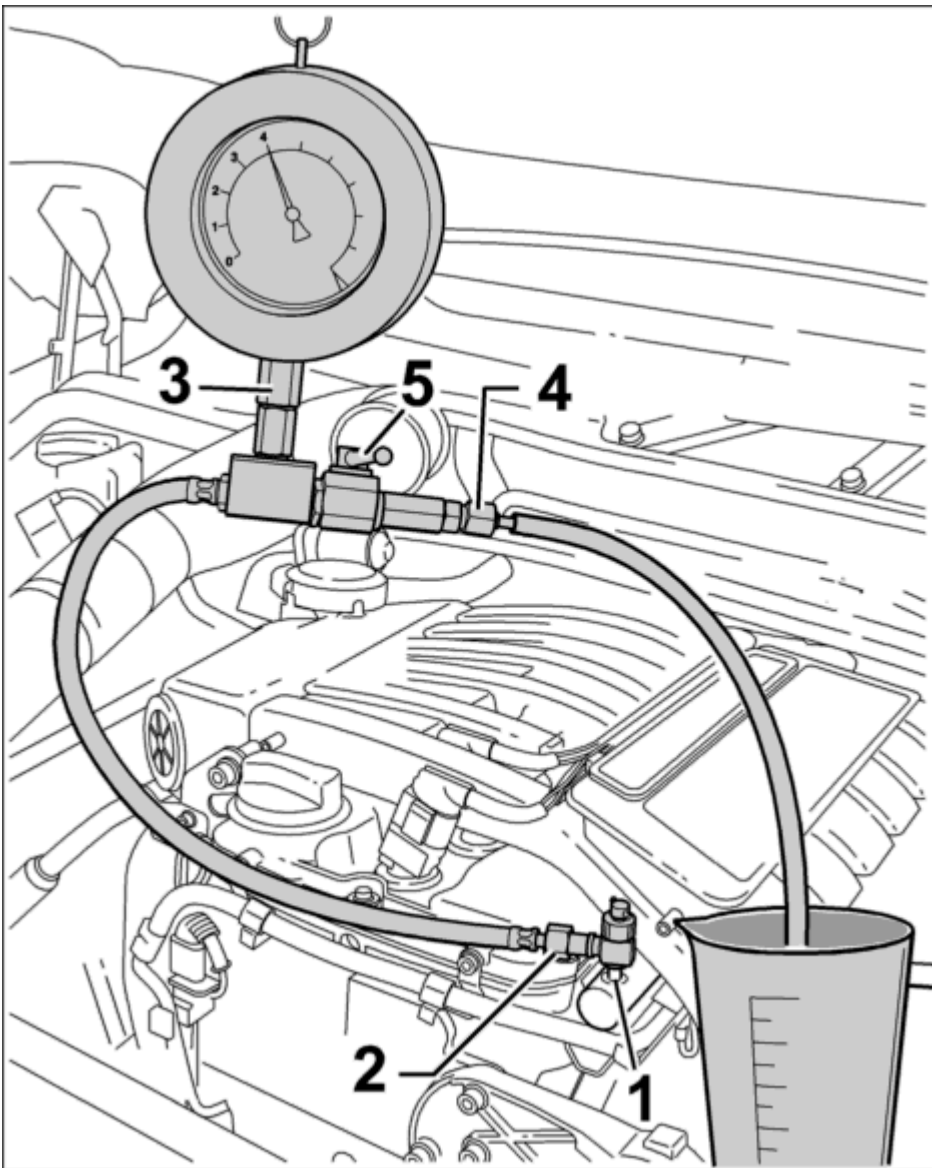


**Fig. 12: Adapter 1318/20**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**NOTE:** Proceed as follows to fit the adapter 1318/20 -2- to the scavenging valve: Turn the valve -4- anti-clockwise at the T-piece until the valve is closed. Place the adapter on the scavenging valve and use the knurled nut -3- to fit the adapter in a clockwise direction until the adapter is attached securely to the scavenging valve. To open the scavenging valve, turn the T-piece of the valve clockwise (the fuel is released immediately and flows out via the adapter 1318/20). If the T-piece touches the intake-air distributor when you turn it, shorten the cross-pin of the T-piece slightly so that it has sufficient clearance. The adapter 1318/20 includes a hose connection 1318/20-1 -1-, to which a suitable fuel hose can be fitted using a screw-type clamp. See Fig. 12.

3. Fit adapter 1318/20 to the scavenging valve (valve closed) -1- . Fit the tool set VAG 1318 to the adapter and support pressure gauge on the bonnet lock -3- . Keep the valve closed with the stop-cock -5- under the pressure gauge (stop-cock is positioned at a right angle to the flow direction). Fit hose connection 1318/20-1 -4- to the stop-cock and route a suitable fuel hose into a measuring cup using a clamp. The tool must be assembled as shown. See Fig. 13.



**Fig. 13: Tool setup for measuring pressure**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**NOTE:**

- *The steady-state pressure must be greater than 3.0 bar after 10 minutes.*

4. Screw the valve (T-piece) in clockwise at the adapter 1318/20. Set the stop-cock under the pressure gauge VAG 1318 to flow direction. Switch on both fuel pumps for a short time using the **adapter P 9479** in order to rinse out the air. Close the stop-cock under the pressure gauge VAG 1318 (stop-cock is positioned at a right angle to the flow direction). Switch on both fuel pumps using the **adapter P 9479** and read the pressure on the pressure gauge. The fuel pressure should be approx. 4.0 bar. Then switch off both fuel pumps and check the steady-state pressure. The fuel pressure must not drop below 3.0 bar after 10 minutes.

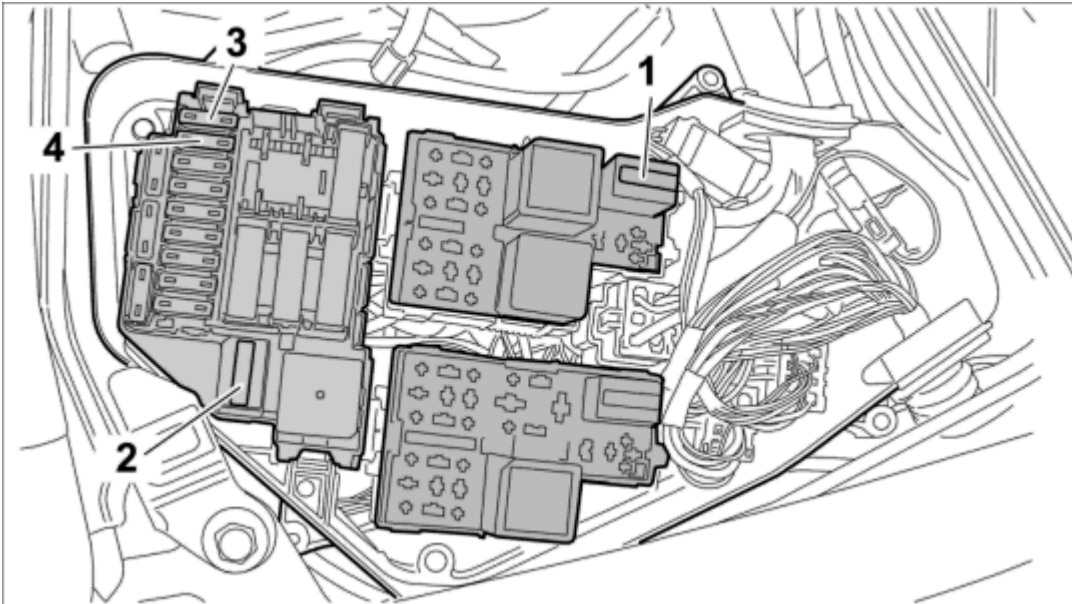
**SUBSEQUENT WORK**

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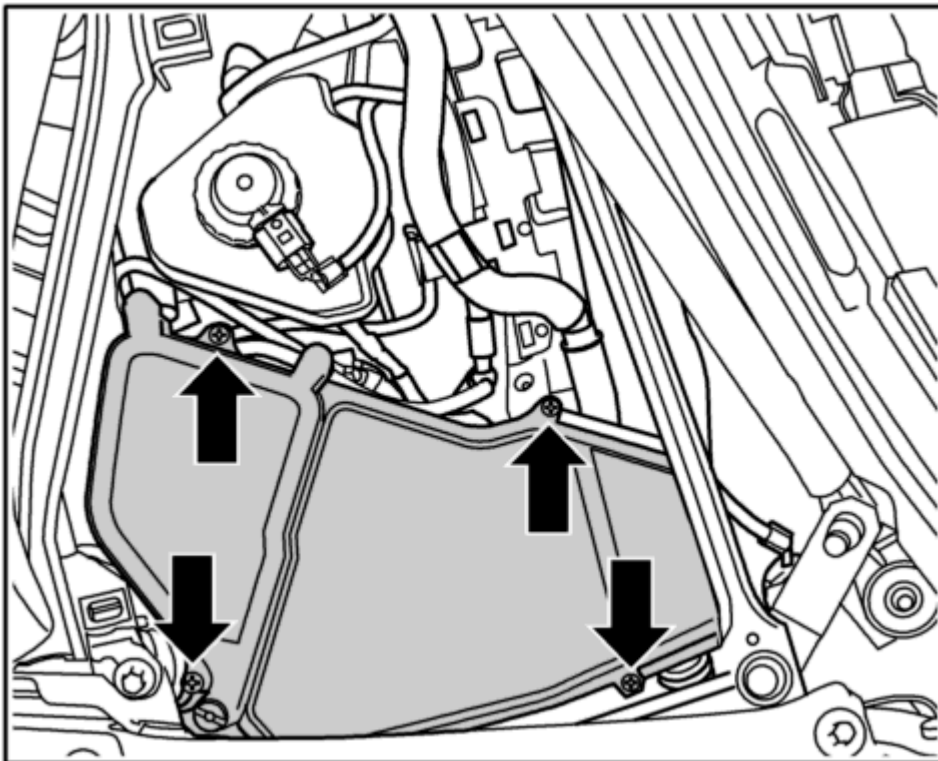
### Subsequent work

1. Insert fuses -3- for the ignition rod modules, -4- injection system and both fuel pump relays (left pump -1- and right pump -2- ). See **Fig. 14**.



**Fig. 14: Fuse carrier**

Courtesy of PORSCHE OF NORTH AMERICA, INC.



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**Fig. 15: Central electrics box**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Fit lid of central electrics box. To do this, fit the four fastening screws.

3. Fit the design cover.

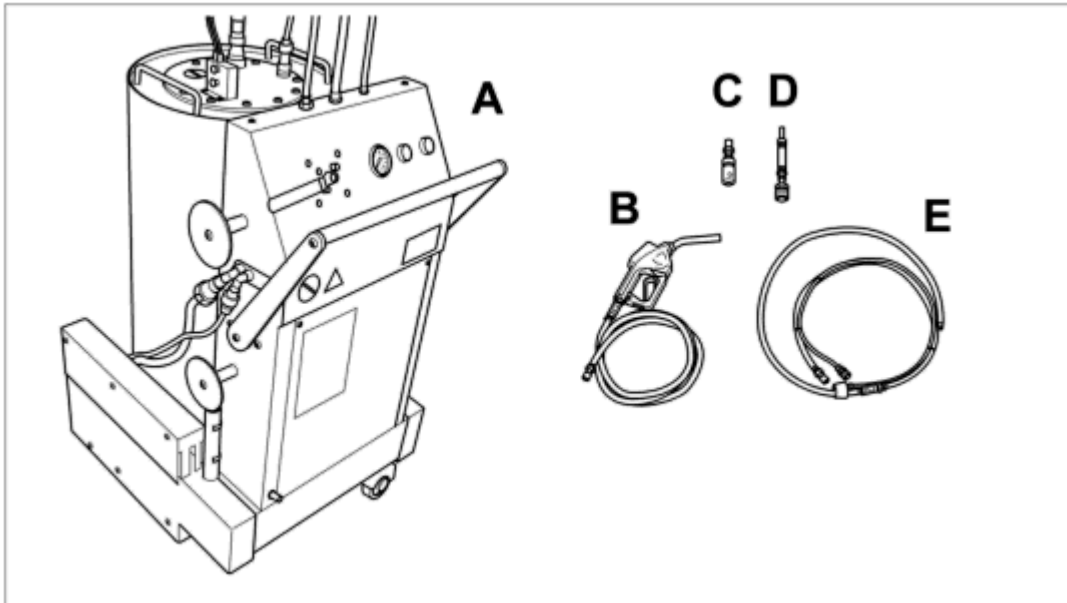
## 20 03 DRAINING AND FILLING FUEL - AS OF MY 2003 (ALL MODELS)

### TOOLS

Designation	Type	Number	Explanation	
adapter	special tool	P 9479		

### TOOLS AND MATERIALS

#### Tools and materials



**Fig. 16: Special tool**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**A** - Fuel transfer unit (This tool has been tested and approved by PORSCHE.); see Workshop Equipment Manual 3.2.2. "WE 1262"

**B** - Fuel nozzle - special accessory (This can be used to refuel the vehicle. The fuel nozzle switches off automatically as soon as the fuel tank is full.); see Workshop Equipment Manual 3.2.2 "WE 1262"

**C** - Porsche adapter (This adapter fits 8-mm to 10-mm fuel lines (986; 996 and Cayenne.); see Workshop Equipment Manual 3.2.2 "WE 1262"

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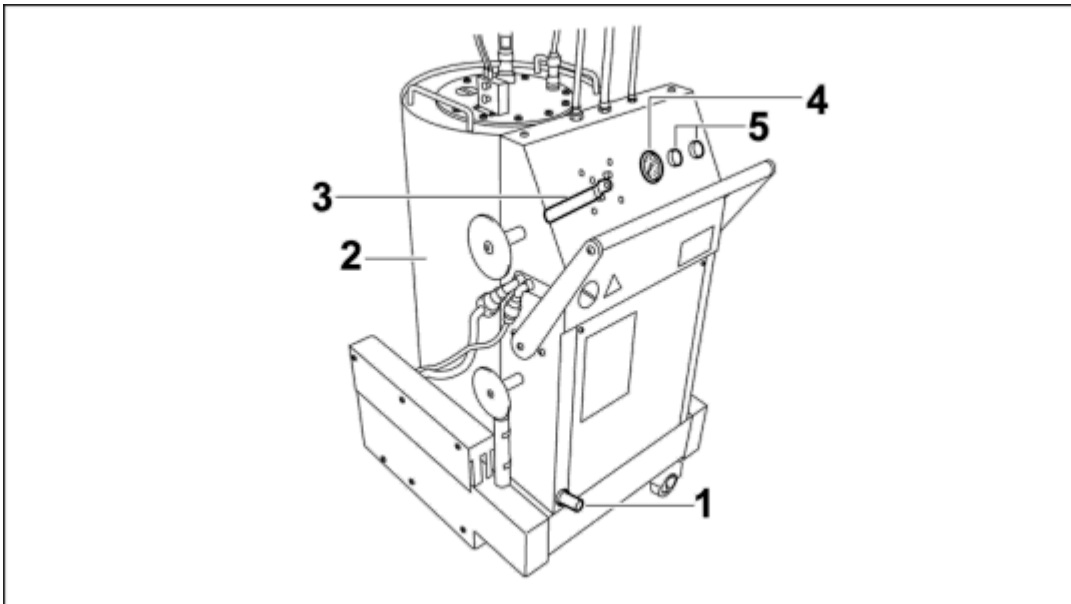
**D** - Connecting piece between Porsche adapter and suction line (This is screwed into suction line E and connected to the Porsche adapter.); see Workshop Equipment Manual 3.2.2 "WE 1262"

**E** - Suction line with venting device (Always attach venting device (rubber taper with transparent hose) to the filler neck. This minimises the amount of escaping fuel vapours.); see Workshop Equipment Manual 3.2.2. "WE 1262"

**ohne Bezeichnung** - Adapter **adapter P 9479** (For controlling the fuel pumps); see Workshop Equipment Manual, Chapter 2.2.2

### INFORMATION

#### Using equipment



**Fig. 17: Overview of fuel transfer system**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**1** - Air connection (connection for unlubricated/oil-free compressed air)

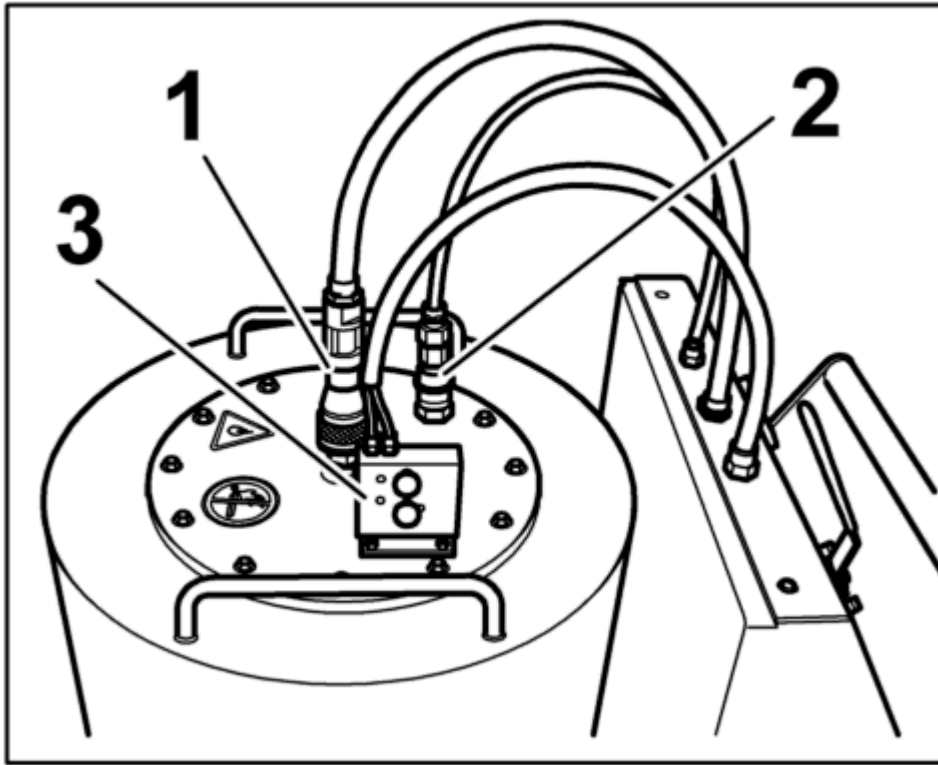
**2** - Fuel tank (capacity: 110 litres), (Tank can be changed. The scale at the side starts at approx. 10 litres. Other markings are shown in 5-litre steps.)

**3** - Pump reversal (This allows you to change the direction of the pump from the fuel feed direction.)

**4** - Operating pressure display (Displays the set operating pressure of the pump. The value cannot be more than 6.5 bar.)

**5** - On/Off switch (For switching the pump on and off.)



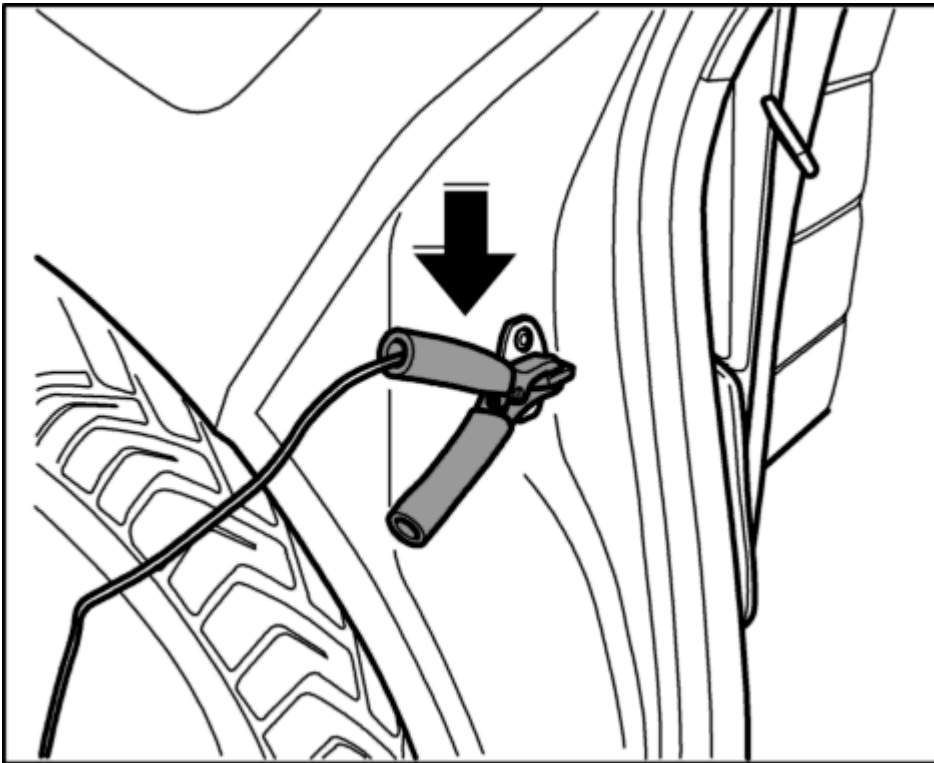


**Fig. 18: Fuel transfer system**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Connect the fuel hose **-1-** to the changeover tank. Connect the venting device (transparent hose) to the changeover tank. Then attach the pneumatic stop switch **-3-** to the tank and tighten the two knurled nuts. See **Fig. 18**.

2. Connect the suction hose (or fuel nozzle) to the connection **-1-** and then connect the venting device **-2-**. See **Fig. 18**.



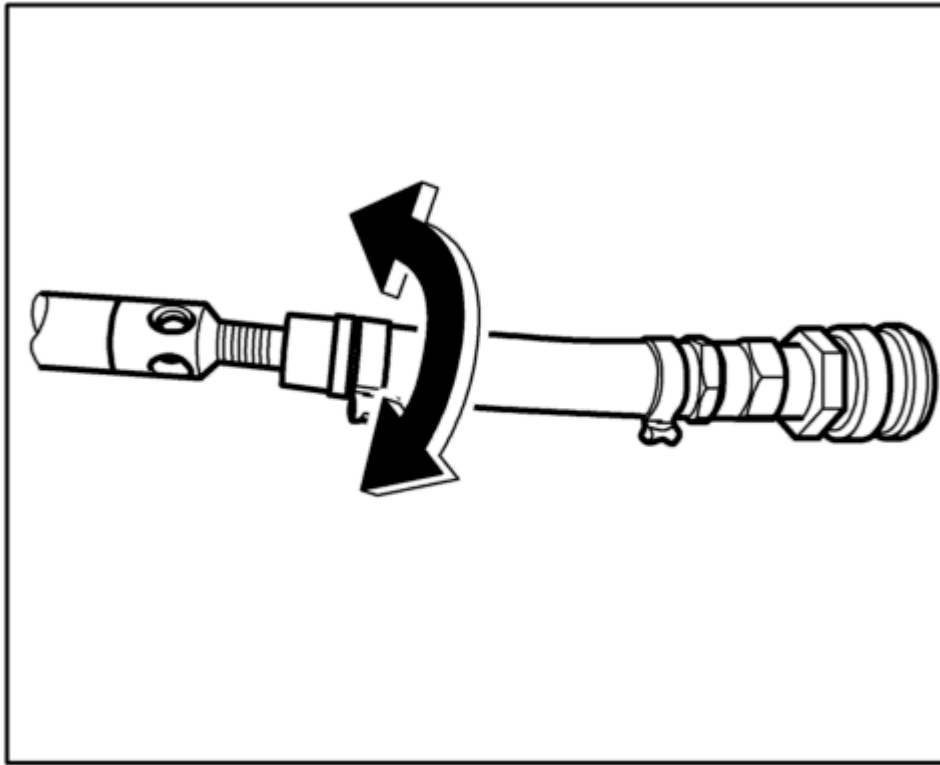
**Fig. 19: Earth cable attached to vehicle**

**Courtesy of PORSCHE OF NORTH AMERICA, INC.**

3. When using the pump, always make sure that the earth cable is attached to the relevant vehicle. Use an unpainted metal part (e. g. the catch bar) for this.

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**Fig. 20: Connecting piece**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**NOTE:**

- *Fuel can be removed directly through the fuel filler neck on older vehicles or vehicles from other manufacturers by removing the connecting piece.*

### **DRAINING FUEL (EMPTYING FUEL TANK)**

Draining fuel (emptying the fuel tank)

**WARNING: Danger of poisoning from fuels!**

--> Gasoline is toxic.

--> Inhaling vapours can cause irritation of the mucous membranes and eyes.

--> It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.

--> Only work on the fuel system in well-ventilated rooms.

--> Wear protective gloves that are fuel-resistant.

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- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.
- > Pay attention to cleanliness when working on the fuel system.

### **WARNING: Danger of fire from fuel!**

- > Keep clear of ignition sources.
- > Do not smoke.
- > Disconnect battery.
- > Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.
- > Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.
- > Secure the vehicle, e. g. with a warning sign.
- > Change any clothing soaked with fuel immediately.
- > In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

### **CAUTION: Damage to the fuel tank!**

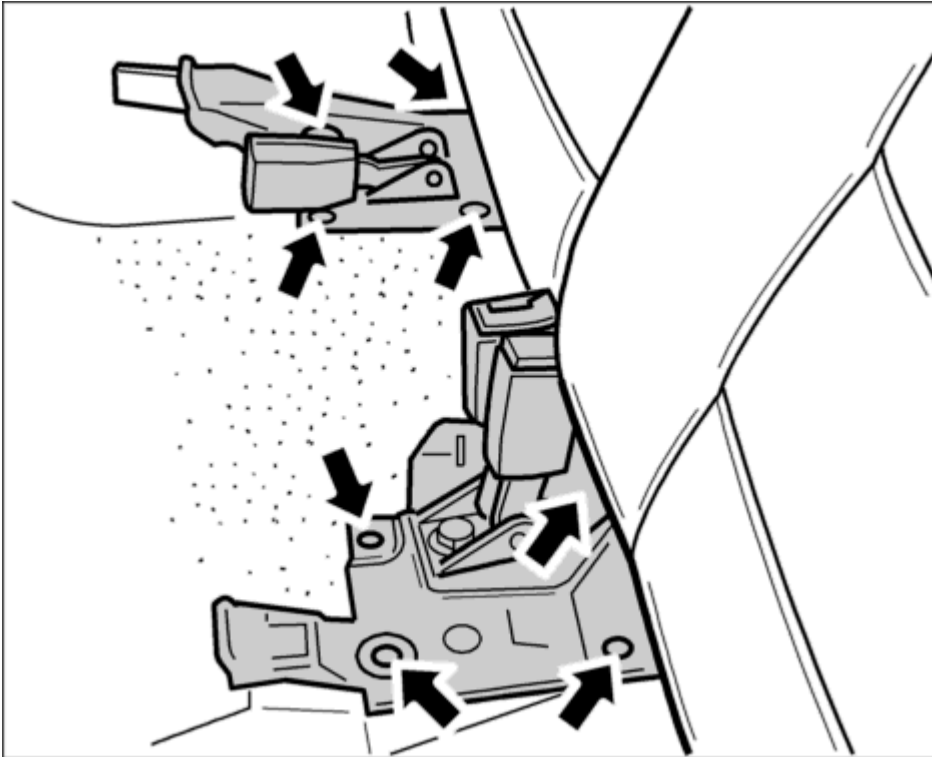
--> Please observe the general warning notes and working regulations. --> **10 01 AW THE MOST IMPORTANT WORKING REGULATIONS AND WARNING NOTES - AS OF MY 2003 (ALL MODELS EXCEPT CAYENNE S TIO TITAN) .**

- > The tank can only be drained using the vehicle's own fuel pumps.
- > It is not possible to extract fuel via the fuel filler opening and doing so may cause damage.

### **NOTE:**

- ***All windows should be opened for better ventilation in the passenger compartment.***

1. Fold rear seat forwards.

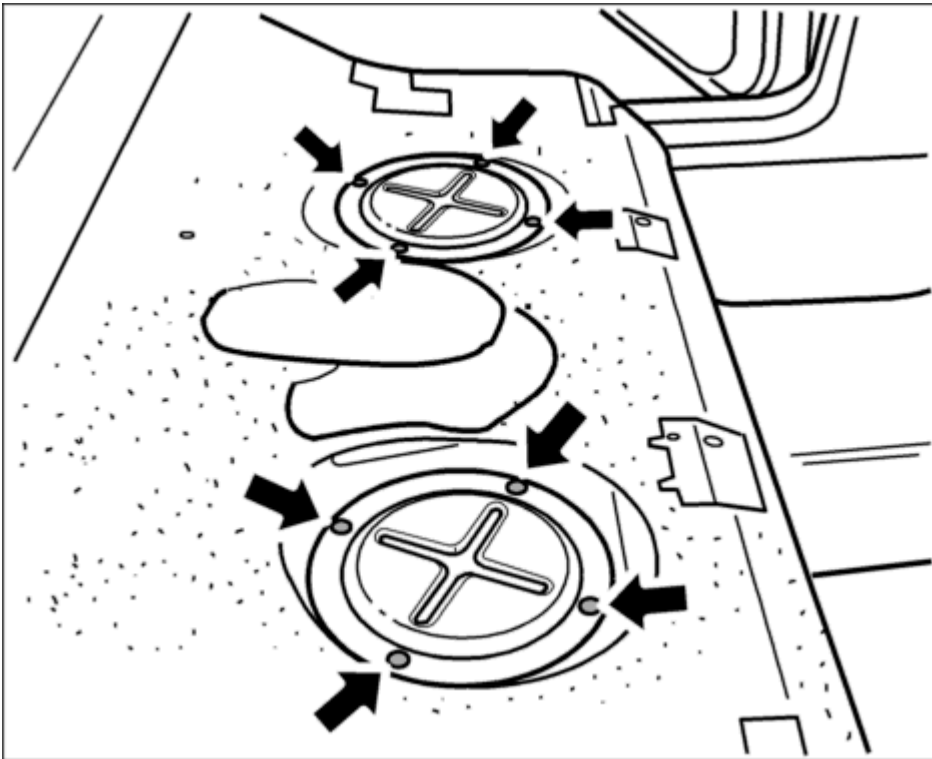


**Fig. 21: Retaining brackets of the right-hand belt anchor**  
**Courtesy of PORSCHE OF NORTH AMERICA, INC.**

2. Fold up the retaining brackets of the right-hand belt anchor. To do so, undo the three fastening screws and fold up the bracket with the belt anchors. Do not use the fastening screws again.

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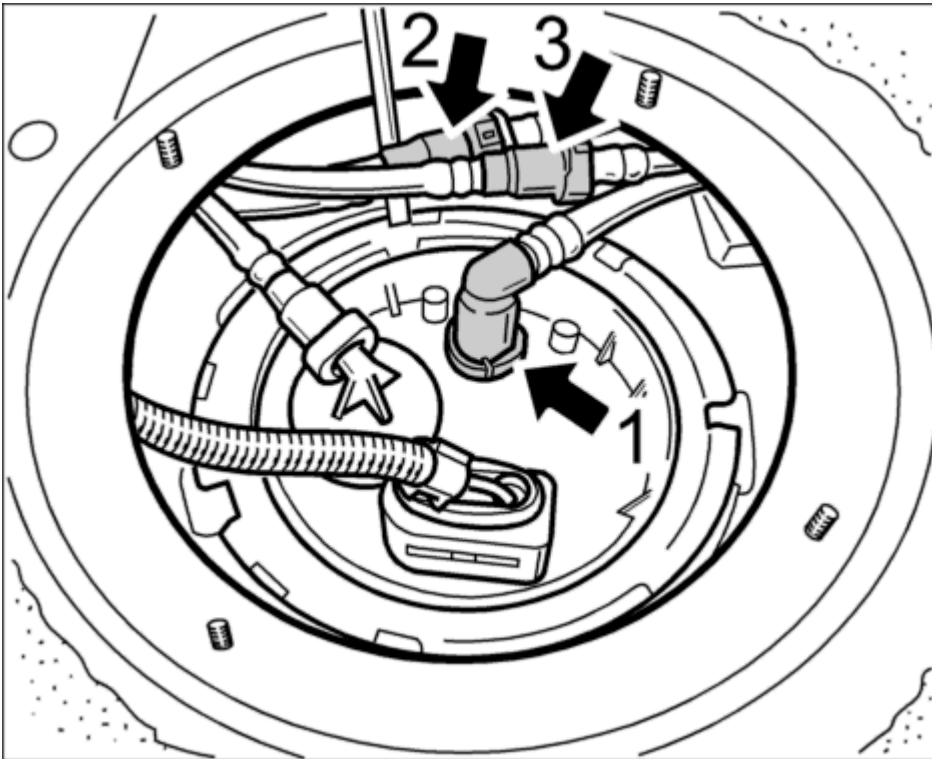
**Fig. 22: Cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Undo the right cap. To do so, cut out the carpeted floor along the perforated lines using a carpet knife and fold it over. Then unscrew the four fastening nuts and remove the lids. View shows both lids.
4. Reduce the fuel pressure in the fuel line. To do so, screw down the protective cap on the fuel gallery and carefully press the valve. Collect emerging fuel with a cloth.

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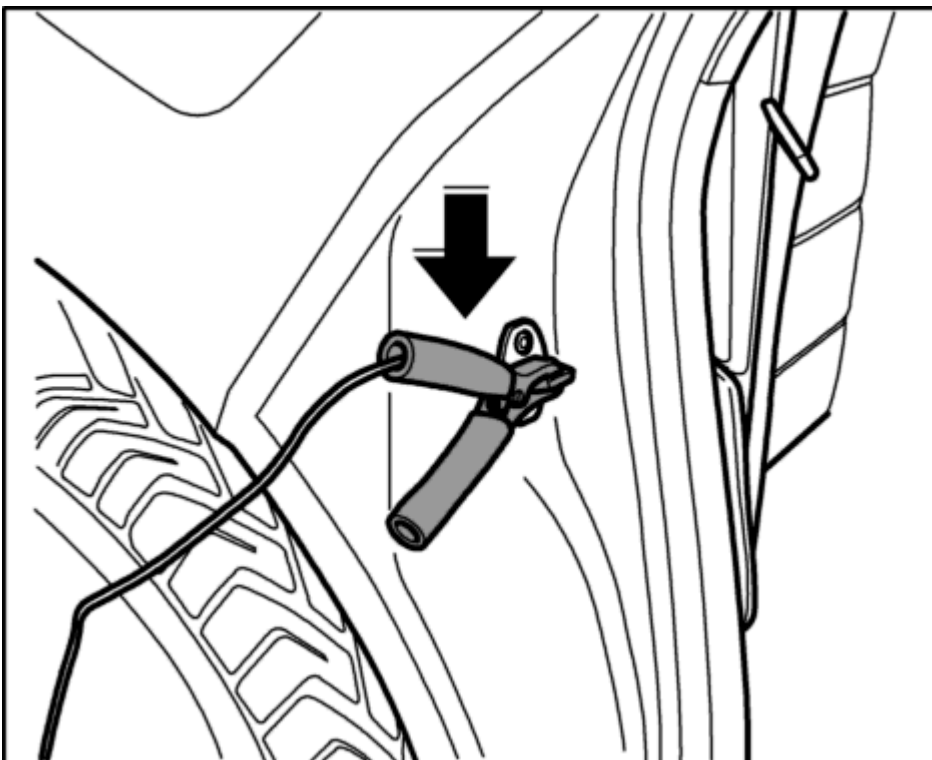
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**Fig. 23: Fuel line**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Carefully pull off the fuel line -1- . Collect emerging fuel with a cloth. See **Fig. 23**.



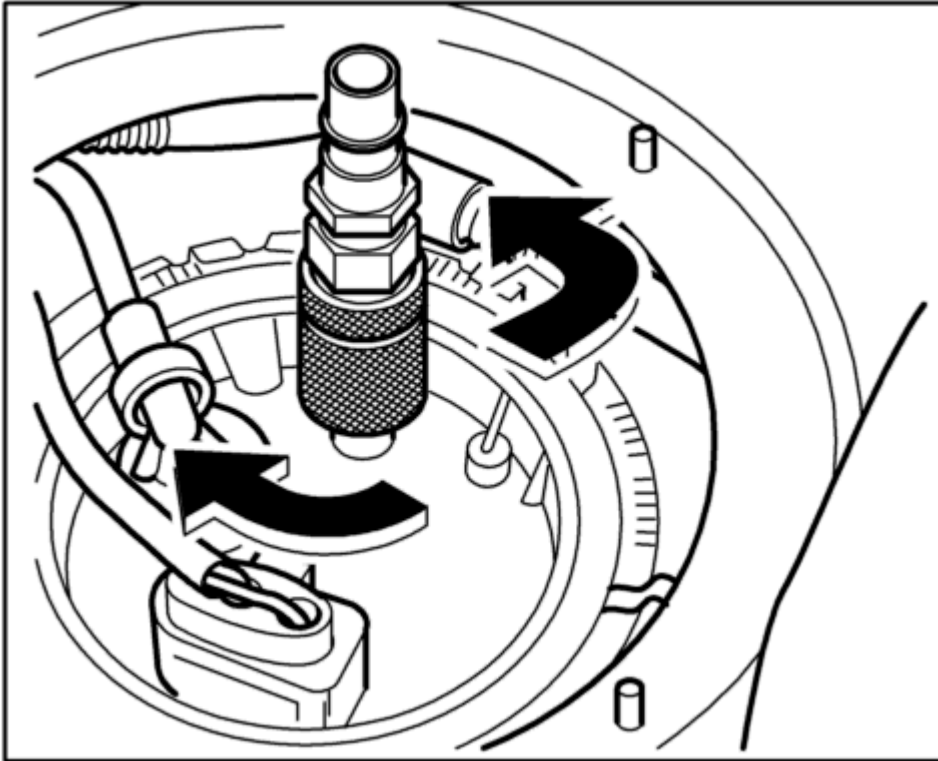
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**Fig. 24: Earth cable attached to vehicle**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

6. Connect earth cable to the vehicle.



**Fig. 25: Porsche adapter**

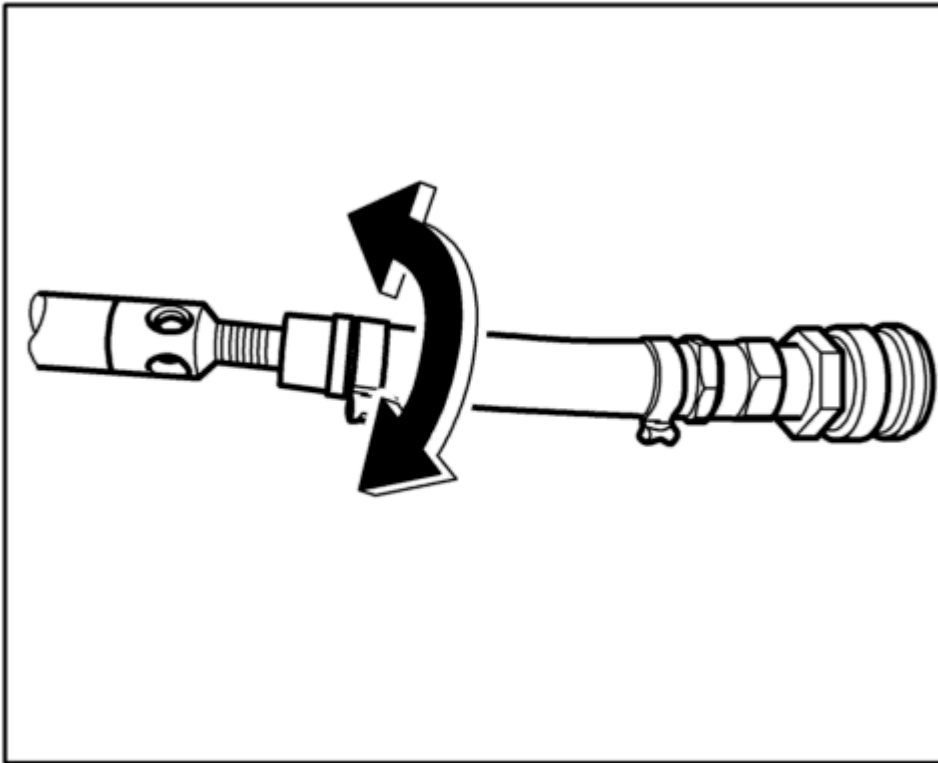
Courtesy of PORSCHE OF NORTH AMERICA, INC.

7. Attach Porsche adapter to the connection piece. Twist top and bottom part of adapter in opposite directions until it is tight.



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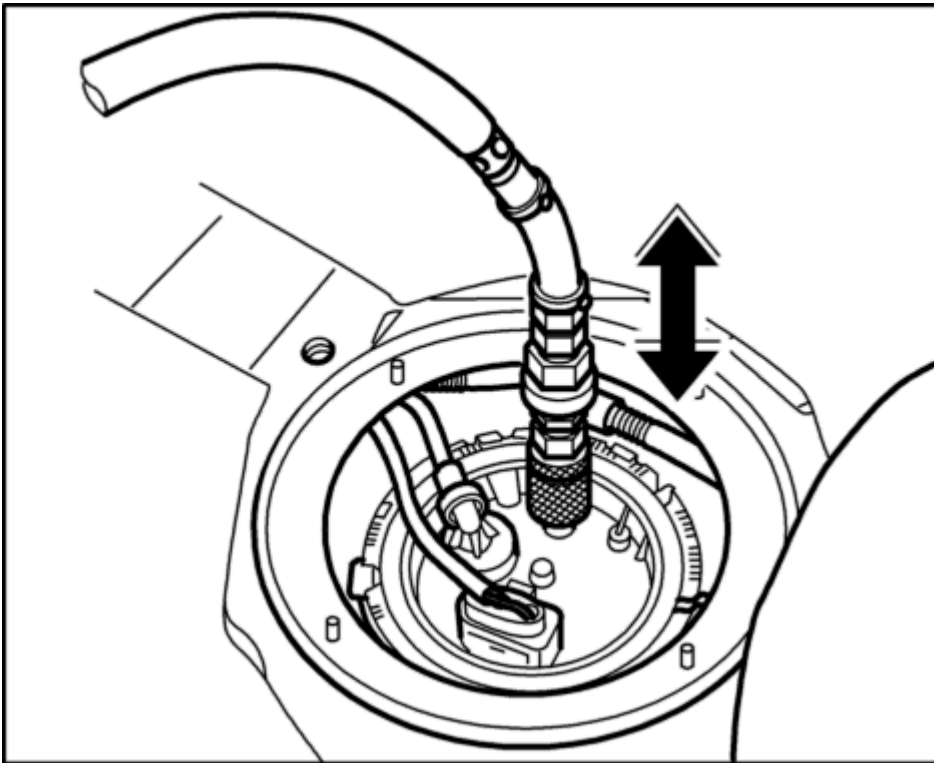
**Fig. 26: Connecting piece**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

8. Screw the connecting piece into the suction hose and tighten it hand tight.

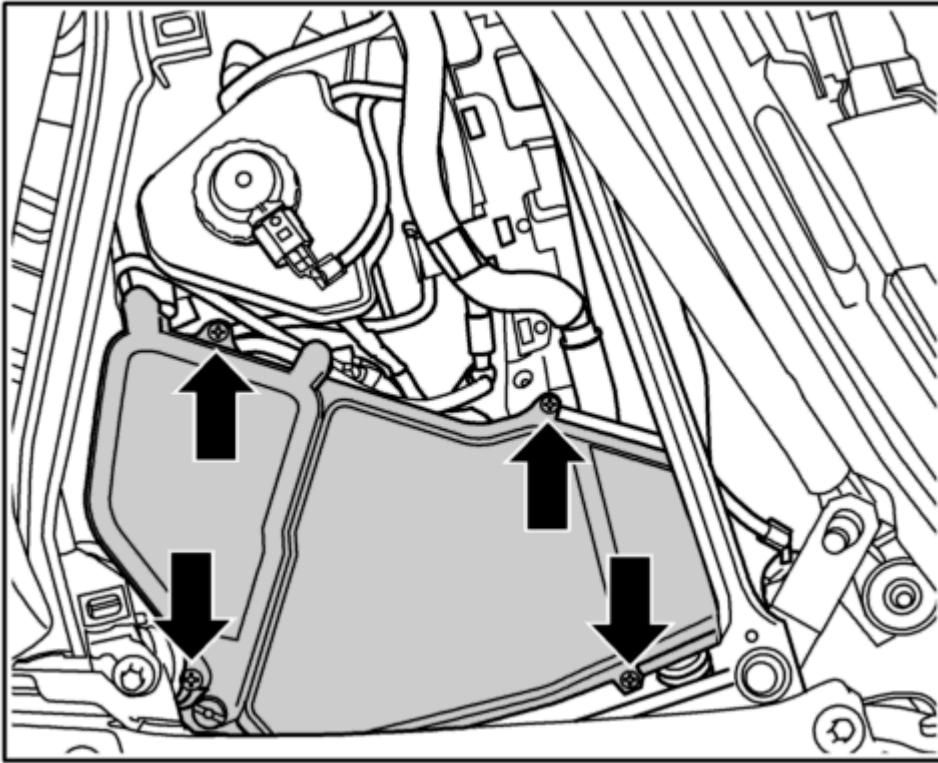
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**Fig. 27: Connecting piece connected to adapter**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

9. Connect the connecting piece to the adapter.



**Fig. 28: Lid of central electrics box**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

10. Open lid of central electrics box. To do this, loosen the four fastening screws.

**CAUTION: Risk of damage to fuel pumps!**

- **The Porsche adapter can slip from the tank connection.**

--> Only switch fuel pumps on after the extraction pump has been switched on.

--> Always set extraction pump to suction mode - never refill mode - when the vehicle pump is running.

**NOTE:**

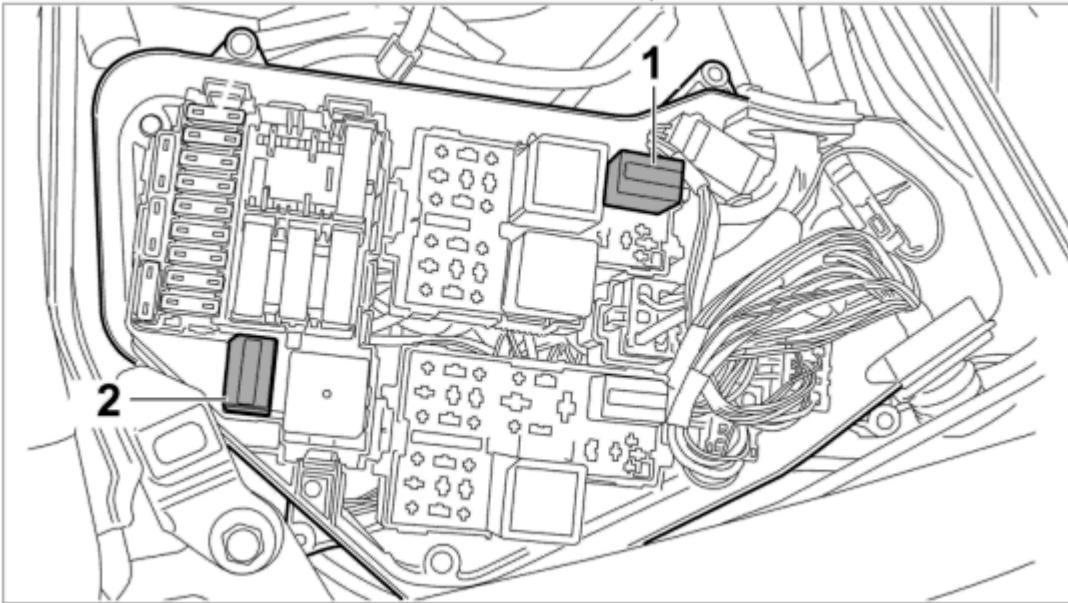
- ***Use special tool***
- ***Alternatively, adapters 26 and 25 can be connected and the fuel relay can be bridged. A fault is stored in the engine control module during this procedure.***

**adapter P 9479 from the measurement tool box to activate the fuel pump.**

11. Remove fuel pump relays **-1-** and **-2-**. The pump can be activated by bridging the relevant contacts. The contact assignment is printed on the corresponding relay. No faults are stored in the engine control module when special tool **adapter P 9479** is used. Both pumps should be activated. As soon as the tank is empty, fit the fuel pump relays again and close the electrics box. See **Fig. 29**.

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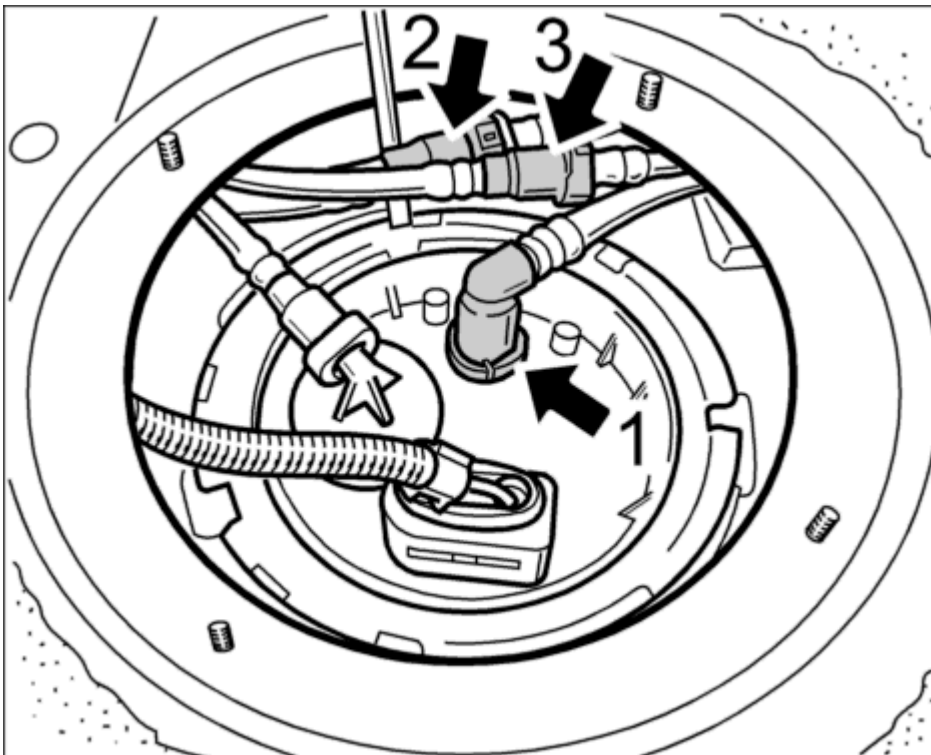
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**Fig. 29: Fuel pump relay**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

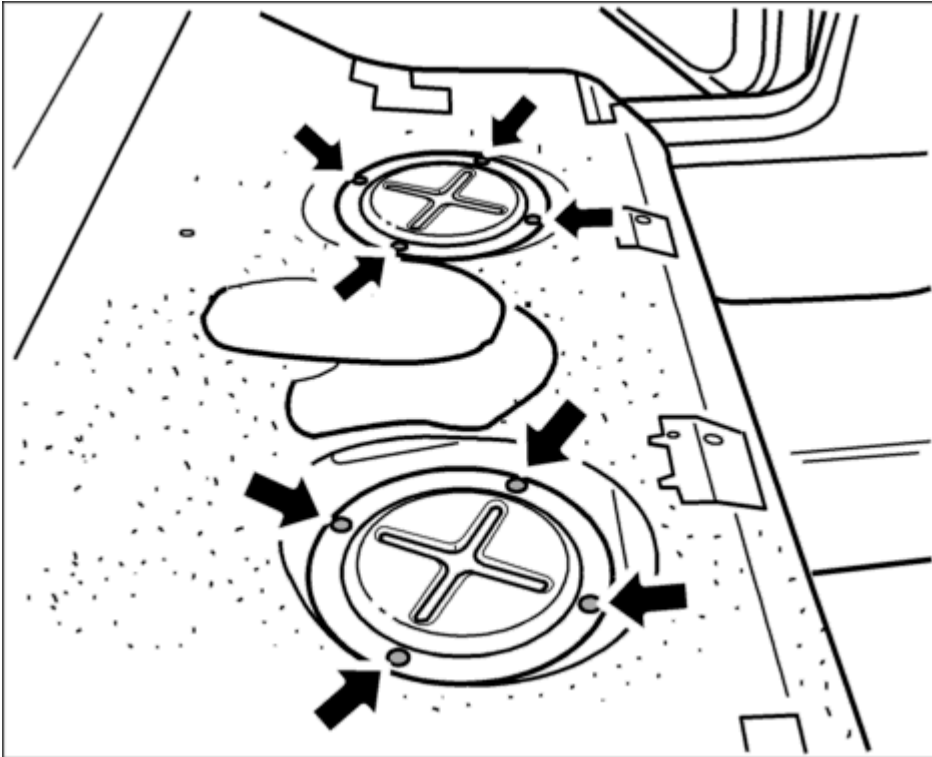
12. Carry out any necessary repair work on the tank. Please observe the warning notes in --> **10 01 AW THE MOST IMPORTANT WORKING REGULATIONS AND WARNING NOTES - AS OF MY 2003 (ALL MODELS EXCEPT CAYENNE S TIO TITAN)** .



**Fig. 30: Connections**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

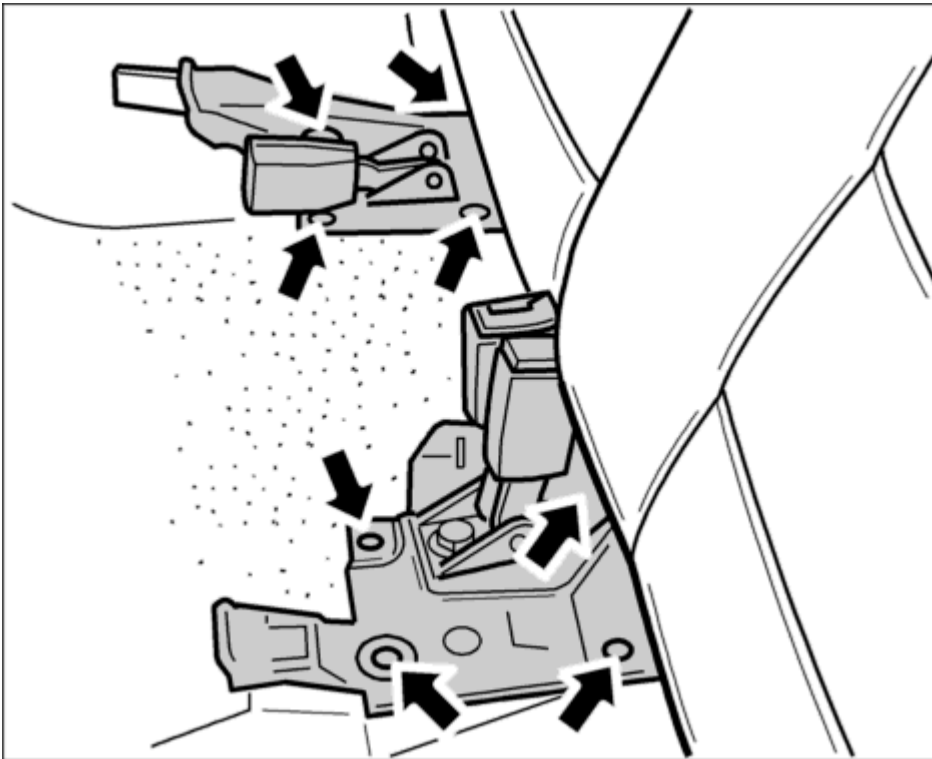
13. Fit all connections (fuel lines, ventilation tubes and electric plugs).



**Fig. 31: Cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

14. Fit the lid. Then tighten the four fastening nuts --> **Tightening torque: 10 (7.5 ftlb.) Nm** . Refit carpeted floor and fix with double-sided adhesive tape.



**Fig. 32: Fastening screws for retaining brackets of seat-belt buckles**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

15. Tighten the seat-belt buckle fastening plates. Use three new fastening screws for this and tighten. For tightening torque Refer to **69 25 19 Removing and installing rear belt lock - as of MY 2003 (All Models)** .

16. Fold rear seat down again.

## FILLING WITH FUEL (FILLING FUEL TANK)

### Filling with fuel (filling fuel tank)

1. Connect the filling device in accordance with operating instructions, fit the fuel nozzle and set to fuel delivery mode. Refuel the vehicle just as you would at a service station. Fuel nozzle switches off automatically.

## 20 10 21 REMOVING FUEL TANK - AS OF MY 2003 (ALL MODELS)

### TOOLS

Designation	Type	Number	Explanation	
Lifting platform	commercially available tool			-
Keys	VW-tool	T10202		

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

20

T 10202

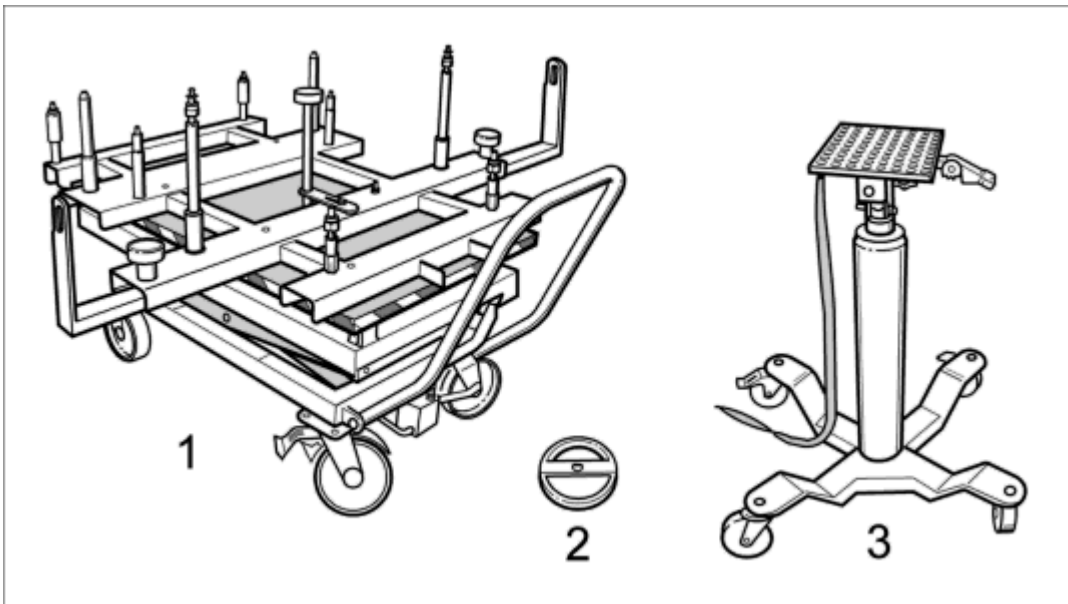
### PRELIMINARY WORK

#### Preliminary work for removing fuel tank

1. Empty the fuel tank. --> **Draining and filling fuel**
2. Remove the carbon canister. Details for loosening in installation location (wheel housing) see --> **202521 Removing carbon canister. The degassing tank is removed with the fuel tank connected (joined).**
3. Remove rear axle (spring struts and rear axle housing) push it aside on the lifting platform (scope of work without further disassembly of rear axle) Refer to **42 05 19 Removing and installing rear axle housing - as of MY 2003 (All Models)** .

### TOOLS AND MATERIALS

#### Required tools



**Fig. 33: Fuel system service tools**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

Item	Designation	Source	Explanation
-1- See <b><u>Fig. 33.</u></b>	<b><u>Lifting platform</u></b>	Can be found in Workshop Equipment Manual, 3.0.13 "WE	For removing and installing the rear axle.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

		1206"	
-2- See Fig. 33.	<u>Keys T10202</u>	See Workshop Equipment Manual 2.2.3	For removing and installing the fuel tank connection unit.
-3- See Fig. 33.	<u>Transmission jack with transmission plate</u>	Workshop Installation Manual 3.3.1	For raising and lowering units and loads.

### GENERAL WARNING NOTES

#### Group 20 - Fuel supply, control

#### **WARNING: Danger of poisoning from fuels!**

- > Gasoline is toxic.
- > Inhaling vapours can cause irritation of the mucous membranes and eyes.
- > It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.
- > Only work on the fuel system in well-ventilated rooms.
- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.
- > Pay attention to cleanliness when working on the fuel system.

#### **WARNING: Danger of fire from fuel!**

- > Keep clear of ignition sources.
- > Do not smoke.
- > Disconnect battery.
- > Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.



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--> Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.

--> Secure the vehicle, e. g. with a warning sign.

--> Change any clothing soaked with fuel immediately.

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

### NOTE:

- *The ignition must be switched off when working on the fuel system.*
- *Absorb any escaping fuel using a suitable binding material or a cloth.*
- *Cloths which have absorbed fuel must be disposed of according to the applicable national laws.*
- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*

## REMOVING FUEL TANK

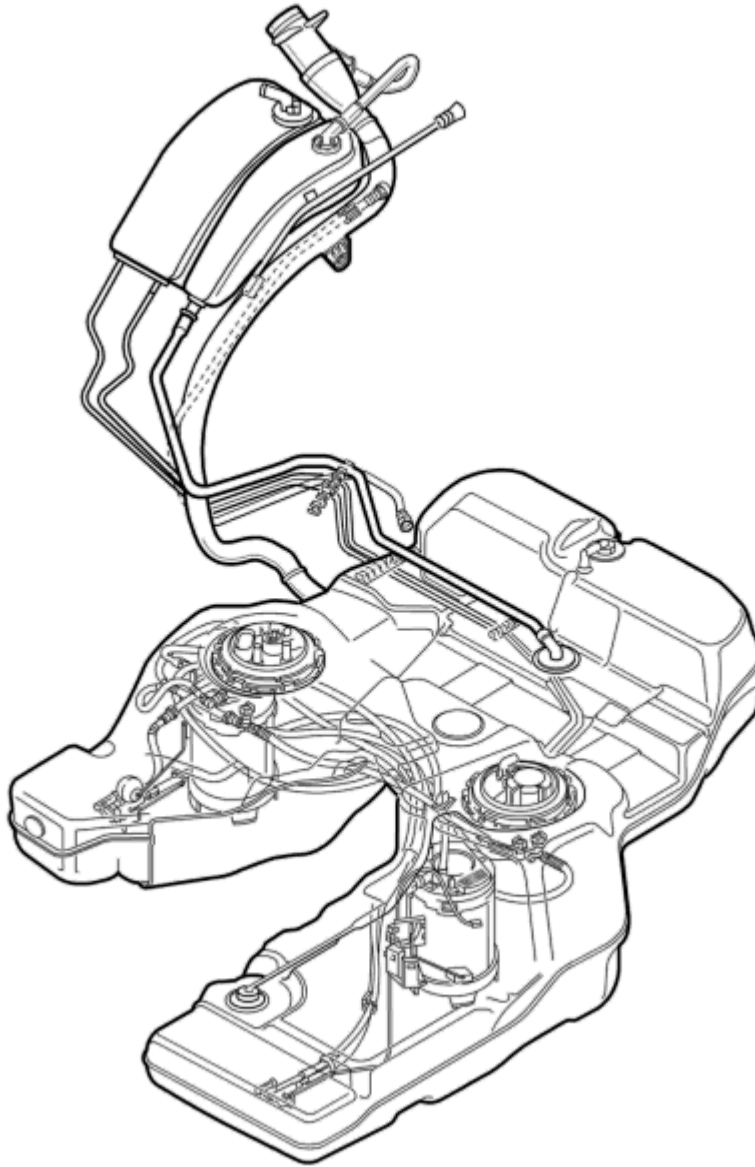
### Removing fuel tank

### NOTE:

- *The repair procedure may vary depending on engine type and country equipment. This relates in particular to components in the right wheel housing.*
- *The description relates to ORVR vehicles.*
- *Sealing rings must generally be replaced.*

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

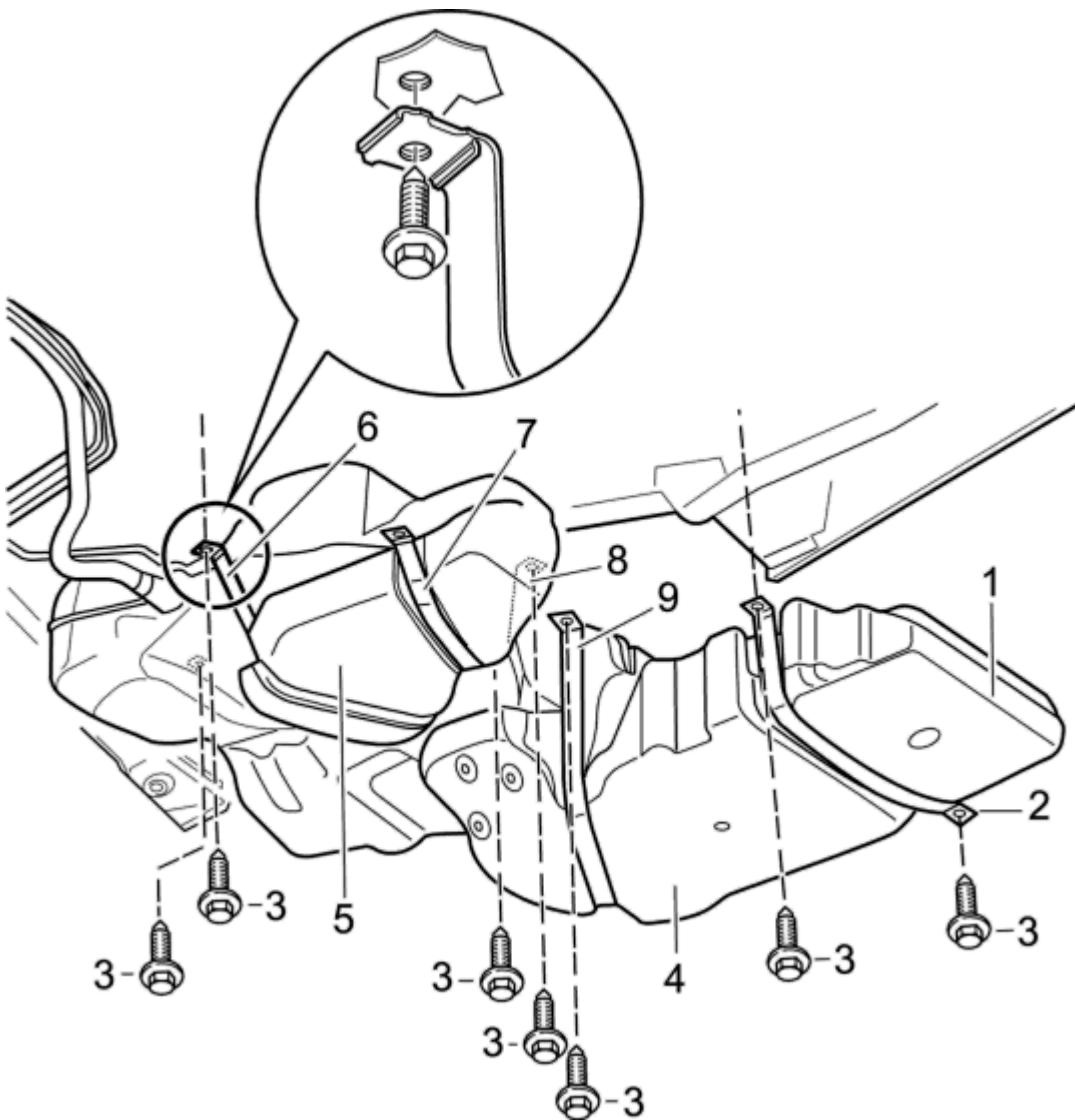


**Fig. 34: Component overview of degassing tank and fuel tank in the network**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

The following exploded drawing shows how the fuel tank is attached to the vehicle floor.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 35: Fuel tank mount**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

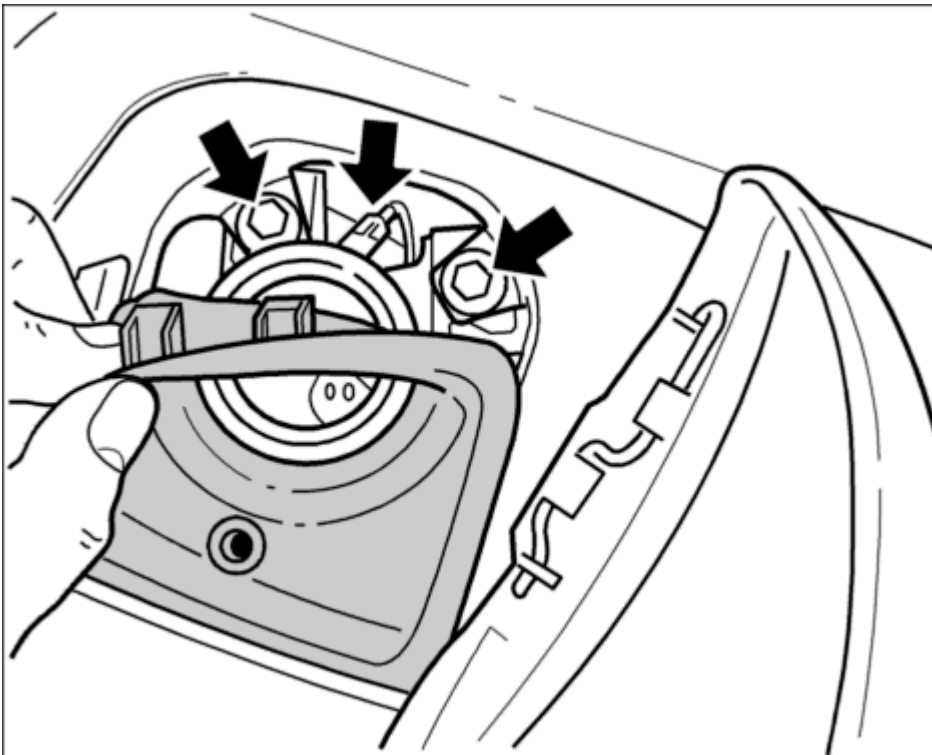
No.	Designation	Qty.	Removal	Fitting
	Fuel tank	1	Do not damage fuel tank and connected lines. Lines cannot be replaced individually.	Do not damage fuel tank and connected lines. Lines cannot be replaced individually.
-2- See Fig. 35.	Restraining strap, front left	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.
-3- See Fig. 35.	Fastening screw, M8 x 25	10		
-4- See	Plastic covers, left	2		

## 2004 Porsche Cayenne

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<b>Fig. 35.</b>				
<b>-5- See Fig. 35.</b>	Plastic cover, right	1		
<b>-6- See Fig. 35.</b>	Restraining strap, rear right	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.
<b>-7- See Fig. 35.</b>	Restraining strap, front right	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.
<b>-8- See Fig. 35.</b>	Restraining strap, center	1		The direction of travel arrow must be pointing forwards.
<b>-9- See Fig. 35.</b>	Restraining strap, rear left	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.

1. Open filler flap.



**Fig. 36: Tank filler neck**

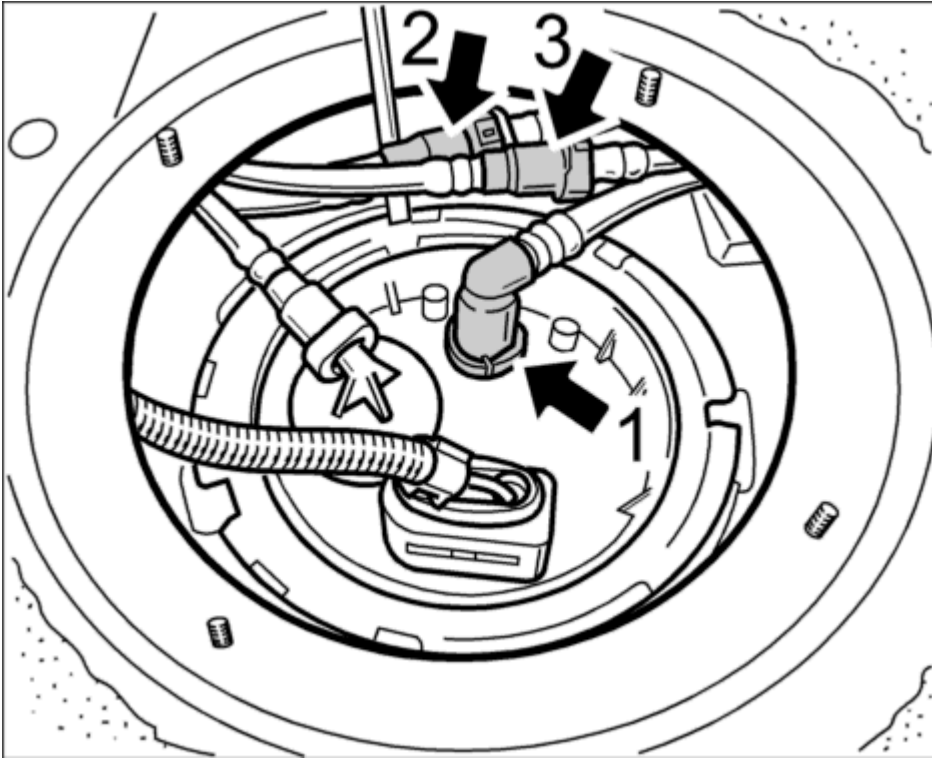
Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Screw the tank cap down. Then remove the rubber sleeve around the fuel filler neck, loosen the two fastening

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

screws M6 x 25 and remove the ground cable.



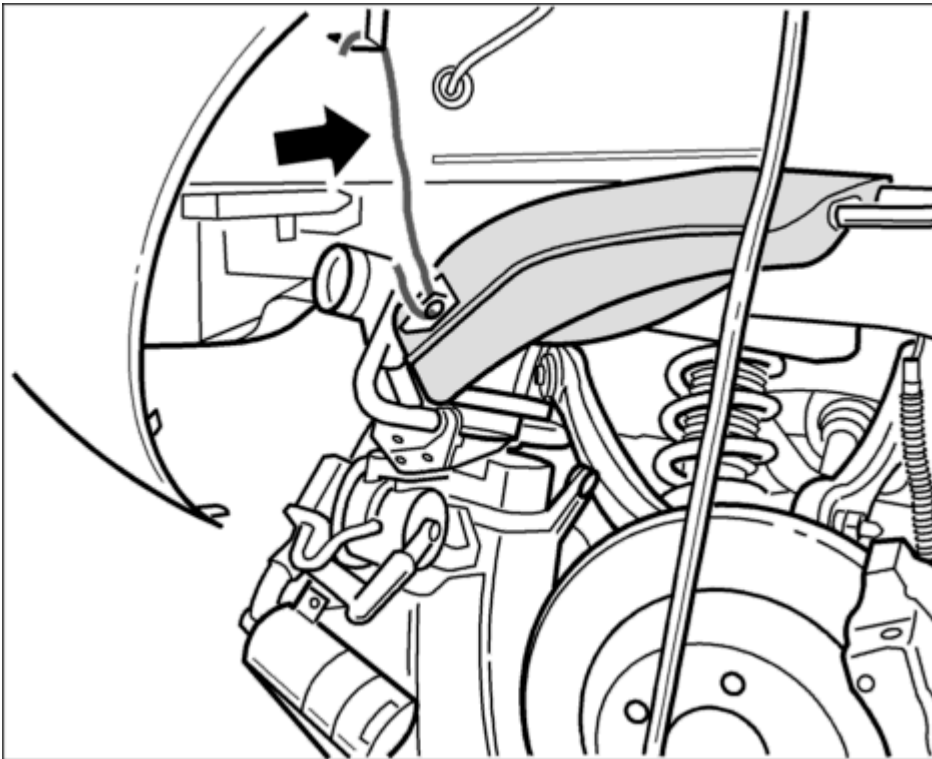
**Fig. 37: Connection unit**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Remove the fuel supply -1- at the connection unit and disconnect the 2 connection points -2 and 3-. See **Fig. 37.**

## 2004 Porsche Cayenne

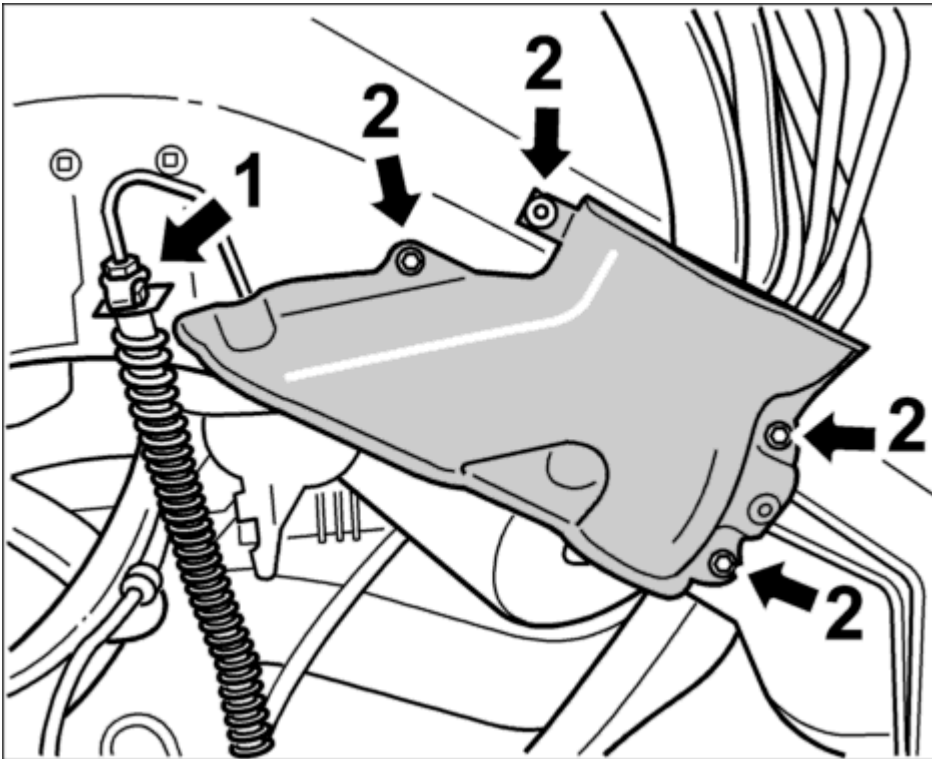
2003-2008 ENGINE Fuel, Actuation



**Fig. 38: Wire protection for degassing tank**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

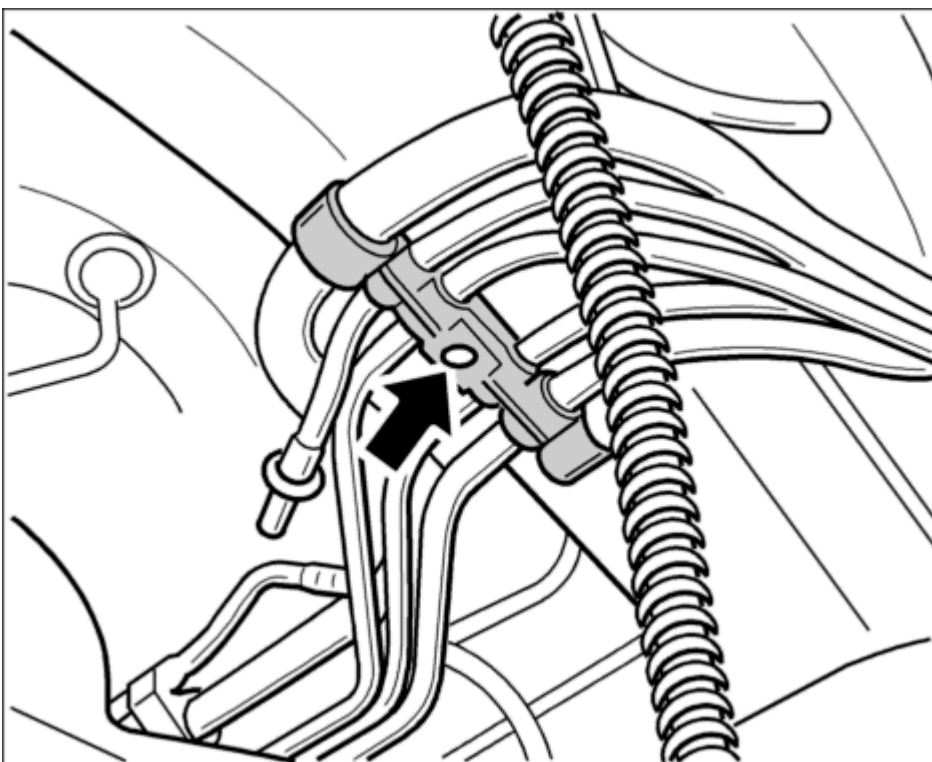
4. Pull fuel filler neck and degassing tank out of the wheel housing and secure with a piece of wire arrow - **arrow-** (picture shows degassing tank with carbon canister). See **Fig. 38**.



**Fig. 39: Stone guard**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Then, loosen the stone guard on the right side. Unscrew screws -2- . See **Fig. 39**.



## 2004 Porsche Cayenne

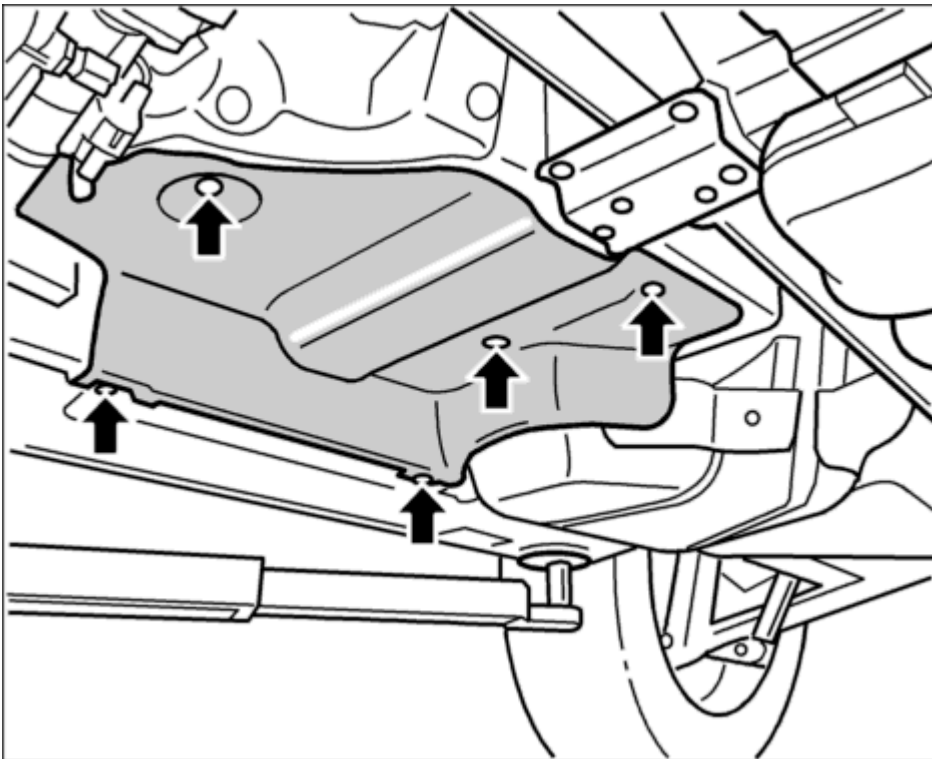
2003-2008 ENGINE Fuel, Actuation

**Fig. 40: Holder**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

6. Remove line holder under the stone shield by pressing on the center plug **-arrow-** . Replace holder. See **Fig. 40.**

7. Remove the center underbody cover at the left and right of the longitudinal side members. Refer to **51 93 19 Removing and installing middle cover - as of MY 2003 (All Models)** .



**Fig. 41: Heat protection shield**

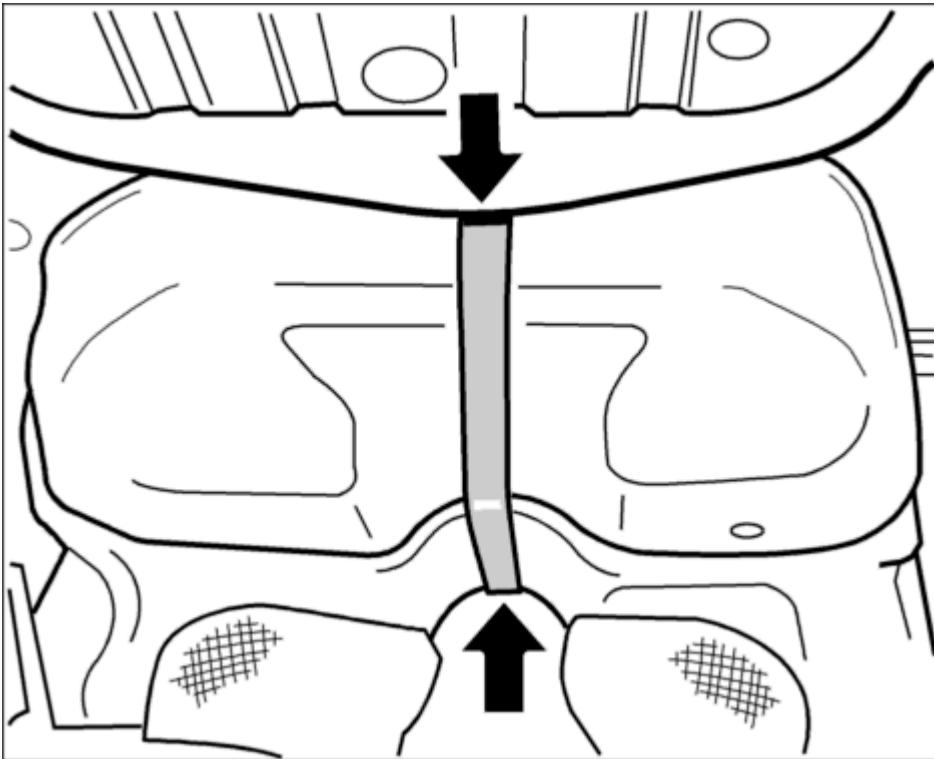
Courtesy of PORSCHE OF NORTH AMERICA, INC.

8. Remove rear heat shield. To do so, undo the three speed nuts and the two screws.



## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 42: Tank attachment band**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

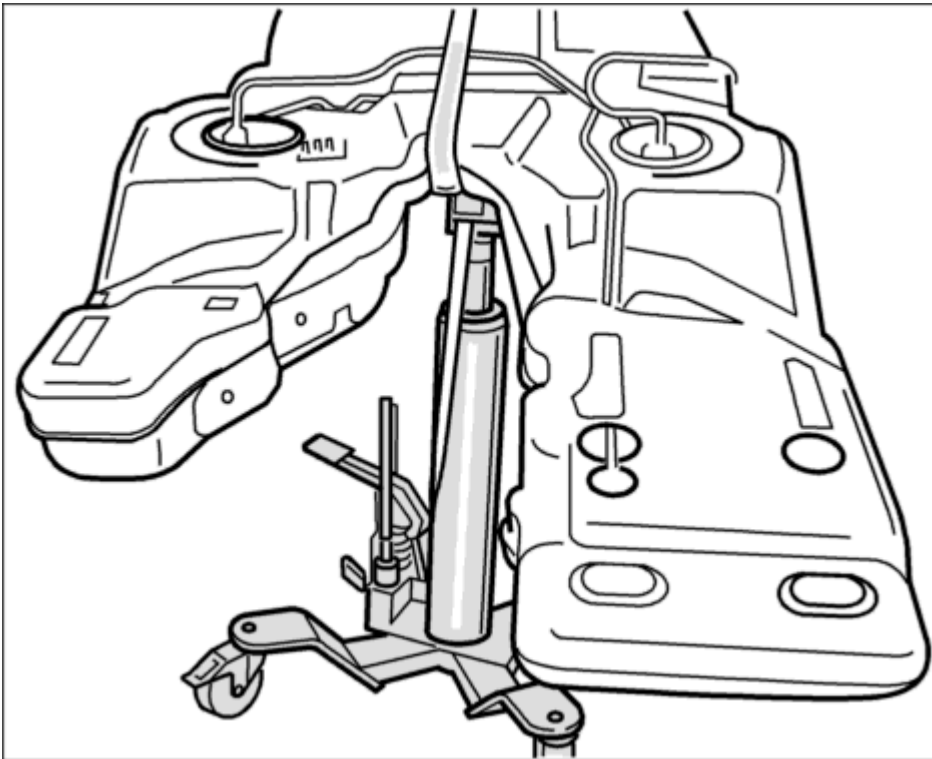
**WARNING: Danger of injury due to heavy filled tank!**

--> For safety reasons, the tank should only be removed and installed when empty!

9. Loosen the tank attachment band, which runs in the direction of travel **-arrows-** . Then, position a transmission jack under the tank and secure the tank from falling using a belt. When doing so, make sure that the fuel lines are not damaged. See **Fig. 42**.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 43: Fuel tank supported on transmission jack**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

**CAUTION: Risk of damaging to fuel lines!**

- Lines can become kinked or can crack.

--> Never leave carbon canister hanging freely on the lines.

--> A second person should hold the carbon canister during removal.

10. Undo and remove the remaining restraining straps with the help of a second worker. Slowly lower the tank with the transmission jack. Also carefully guide the degassing tank in the right wheel housing.

## 20 10 23 INSTALLING FUEL TANK - AS OF MY 2003 (ALL MODELS)

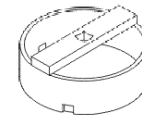
### TOOLS

Designation	Type	Number	Explanation	
Lifting platform	commercially available tool			
Keys	VW-tool	T10202		

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

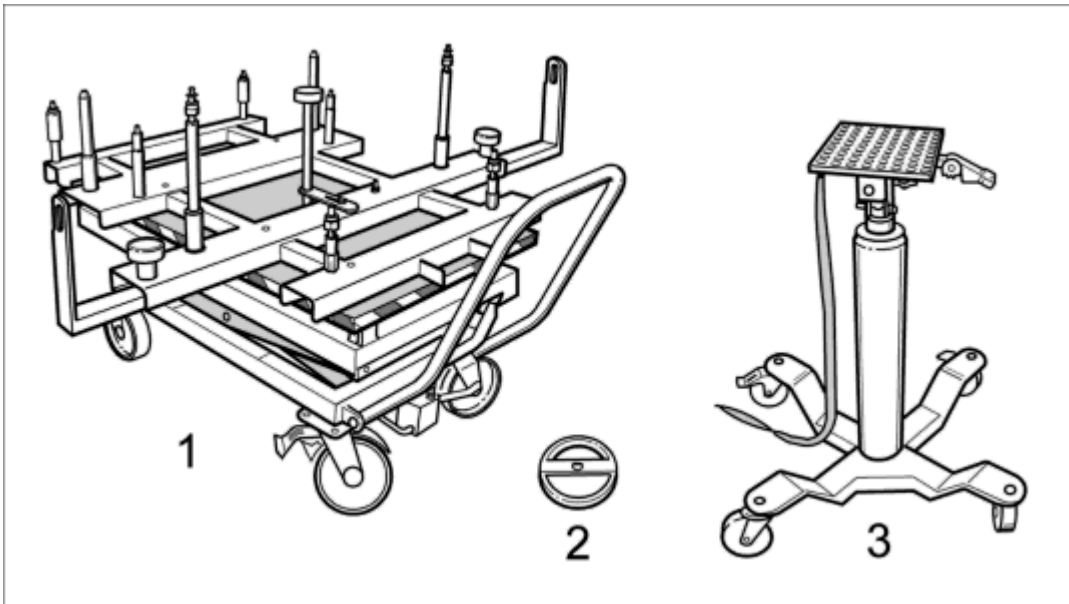
20



T 10202

### TOOLS AND MATERIALS

#### Required tools



**Fig. 44: Fuel system service tools**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

Item	Designation	Source	Explanation
-1- See <b>Fig. 44.</b>	<b><u>Lifting platform</u></b>	Can be found in Workshop Equipment Manual, 3.0.13 "WE 1206"	For removing and installing the rear axle.
-2- See <b>Fig. 44.</b>	<b><u>Keys T10202</u></b>	See Workshop Equipment Manual 2.2.3	For removing and installing the fuel tank connection unit.
-3- See <b>Fig. 44.</b>	<b><u>Transmission jack with transmission plate</u></b>	Workshop Installation Manual 3.3.1	For raising and lowering units and loads.

### GENERAL WARNING NOTES

Group 20 - Fuel supply, control

**WARNING: Danger of poisoning from fuels!**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

--> Gasoline is toxic.

--> Inhaling vapours can cause irritation of the mucous membranes and eyes.

--> It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.

--> Only work on the fuel system in well-ventilated rooms.

--> Wear protective gloves that are fuel-resistant.

--> Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.

--> Ensure that there is adequate ventilation and extract all fuel vapours.

--> Before opening the fuel lines or fuel hoses, relieve the fuel pressure.

--> Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.

--> Pay attention to cleanliness when working on the fuel system.

### **WARNING: Danger of fire from fuel!**

--> Keep clear of ignition sources.

--> Do not smoke.

--> Disconnect battery.

--> Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.

--> Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.

--> Secure the vehicle, e. g. with a warning sign.

--> Change any clothing soaked with fuel immediately.

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

### **NOTE:**

- ***The ignition must be switched off when working on the fuel system.***
- ***Absorb any escaping fuel using a suitable binding material or a cloth.***
- ***Cloths which have absorbed fuel must be disposed of according to the***

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

*applicable national laws.*

- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*

### INSTALLING FUEL TANK

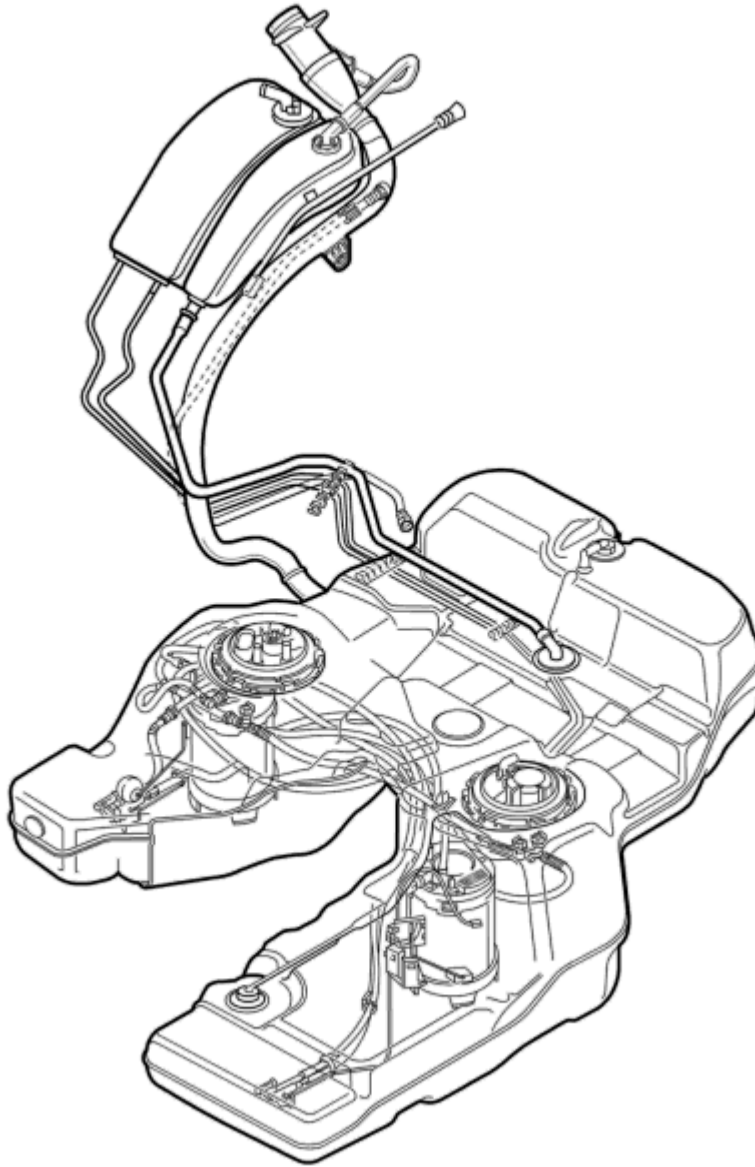
Installing fuel tank

**NOTE:**

- *The repair procedure may vary depending on engine type and country equipment. This relates in particular to components in the right wheel housing.*
- *The description relates to ORVR vehicles.*
- *Sealing rings must generally be replaced.*

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

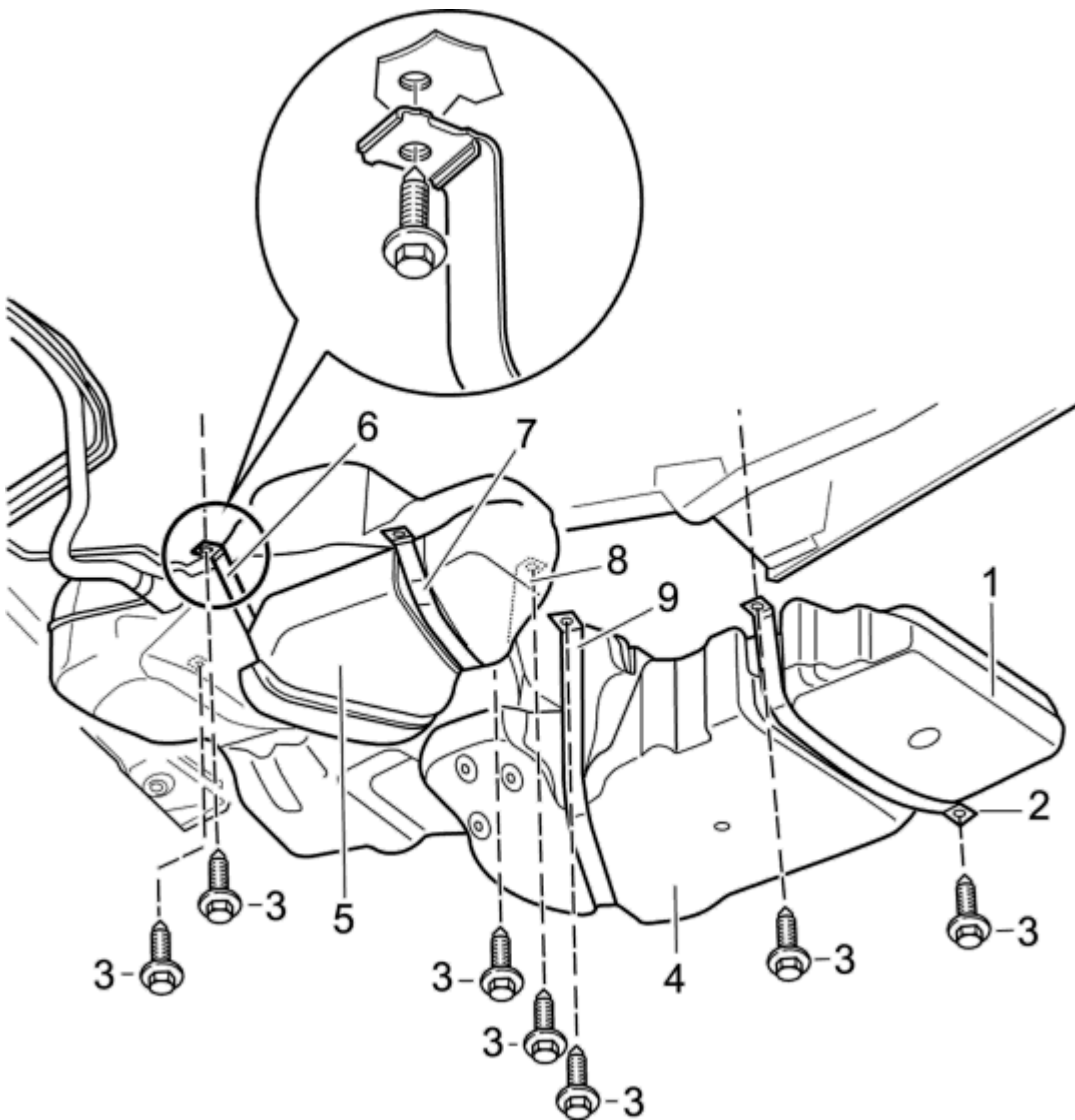


**Fig. 45: Component overview of degassing tank and fuel tank in the network**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

The following exploded drawing shows how the fuel tank is attached to the vehicle floor.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 46: Fuel tank mount**

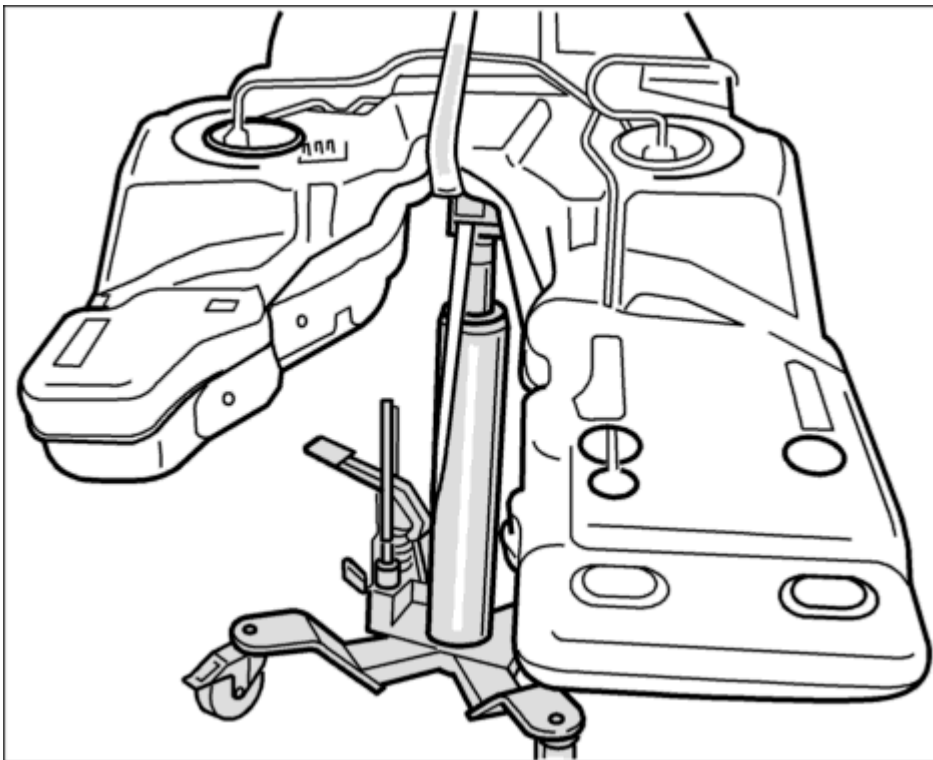
Courtesy of PORSCHE OF NORTH AMERICA, INC.

No.	Designation	Qty.	Removal	Fitting
-1- See <b>Fig. 46.</b>	Fuel tank	1	Do not damage fuel tank and connected lines. Lines cannot be replaced individually.	Do not damage fuel tank and connected lines. Lines cannot be replaced individually.
-2- See <b>Fig. 46.</b>	Restraining strap, front left	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.
-3- See <b>Fig. 46.</b>	Fastening screw, M8 x 25	10		
-4- See	Plastic covers, left	2		

## 2004 Porsche Cayenne

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<b>Fig. 46.</b>				
<b>-5- See Fig. 46.</b>	Plastic cover, right	1		
<b>-6- See Fig. 46.</b>	Restraining strap, rear right	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.
<b>-7- See Fig. 46.</b>	Restraining strap, front right	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.
<b>-8- See Fig. 46.</b>	Restraining strap, center	1		The direction of travel arrow must be pointing forwards.
<b>-9- See Fig. 46.</b>	Restraining strap, rear left	1	Before releasing the restraining straps, make sure that the tank cannot fall down.	The direction of travel arrow must be pointing forwards.



**Fig. 47: Fuel tank supported on transmission jack**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

### NOTE:

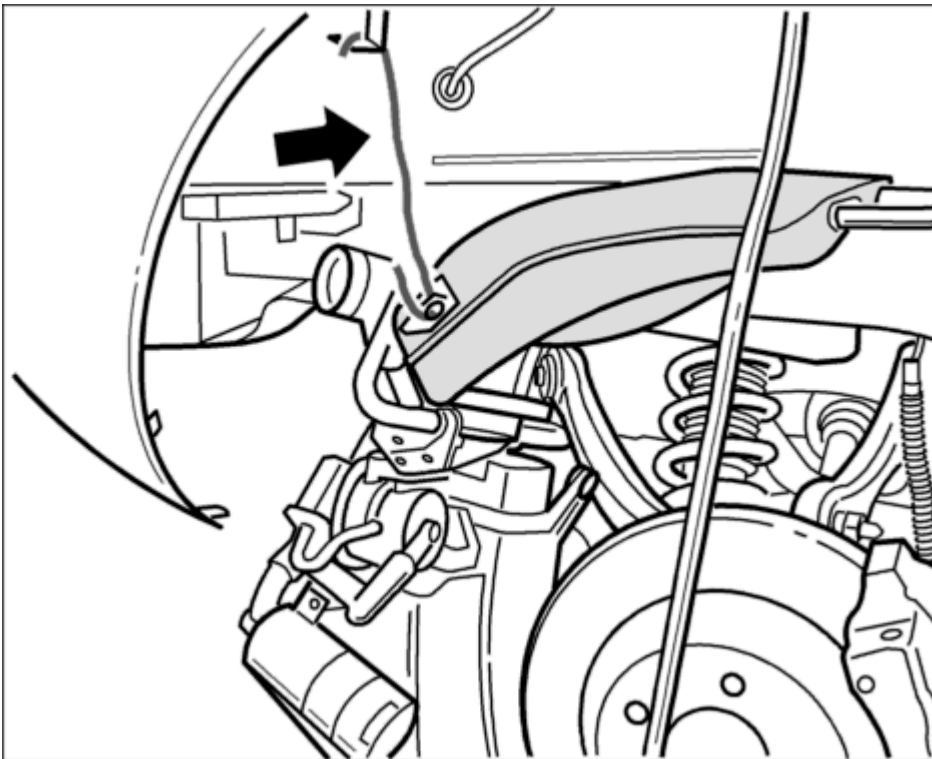
- *The top left cover must be fitted before the tank is installed.*
- *When installing the tank and rear axle, make sure that cables and lines are*



*not damaged and are in the correct installation position.*

- *When introducing the tank into the body, a second person should guide the degassing tank and safeguard it against damage using wire.*

1. Raise the tank with a transmission jack. Make sure to secure the tank with a tension strap to prevent it from falling.
2. With the help of a second worker, put the tank into the installation position. A second person should carefully guide the degassing tank.



**Fig. 48: Figure shows secured degassing tank (shown here with carbon canister attached)**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

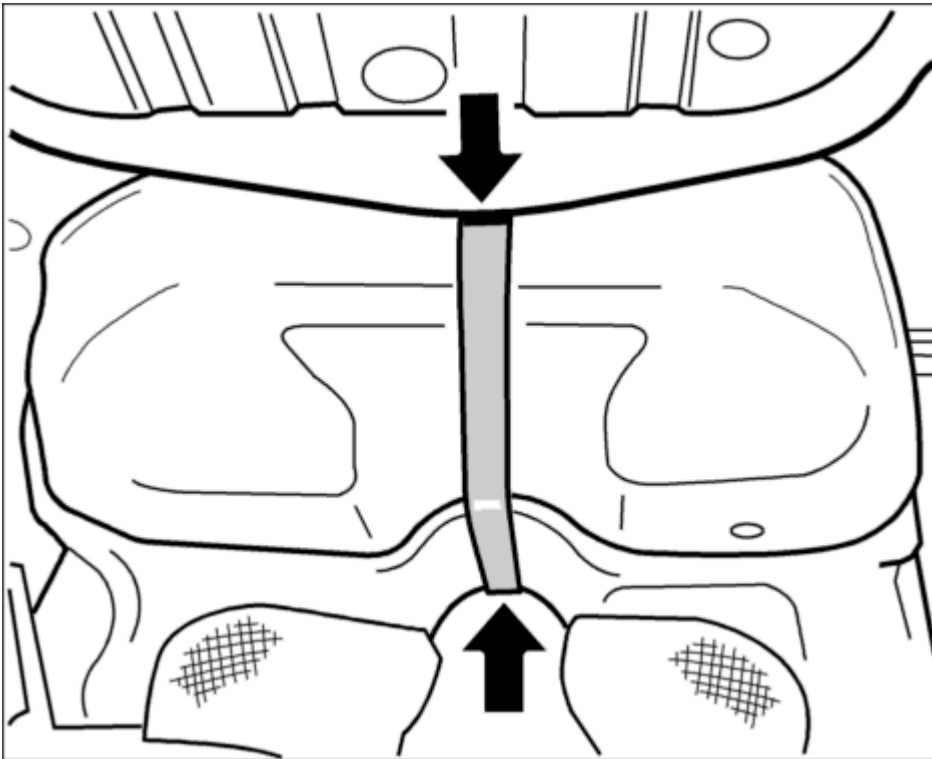
**NOTE:**

- *Note direction arrow stamped on the restraining straps and install these in the direction of travel.*

3. Attach lower covers and fit the four restraining straps, which run at right angles to the direction of travel. Make sure that the stamped arrow is pointing forwards in the direction of travel. Tighten fastening screws to the specified tightening torque. --> **Tightening torque: 17 ftlb.** Secure fuel filler neck and degassing tank again with a wire -arrow-. See **Fig. 48.**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



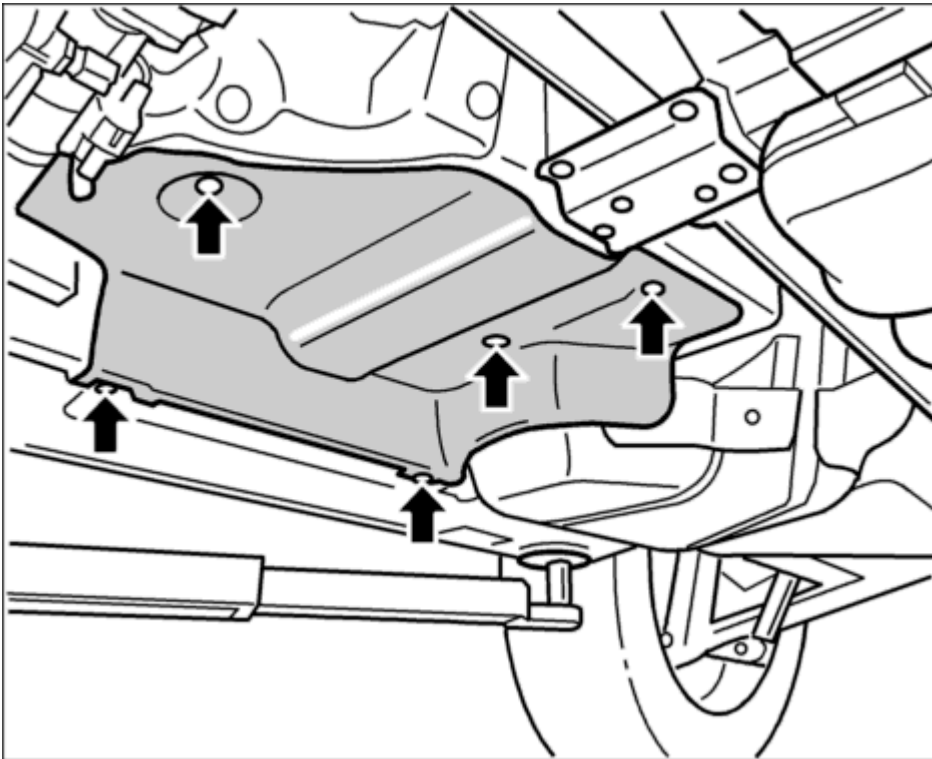
**Fig. 49: center fuel tank restraining strap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Lower the transmission jack and fit the center restraining strap. The arrow must be pointing forwards. Tighten fastening screws to the specified torque. --> **Tightening torque: 17 ftlb.**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

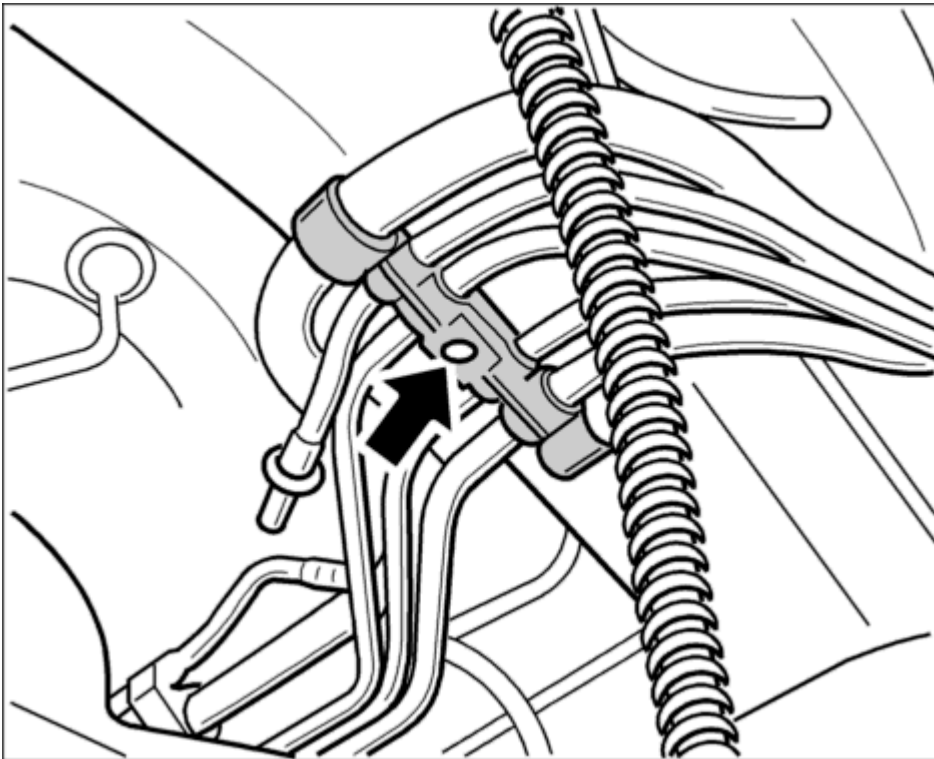


**Fig. 50: Heat protection shield**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Fit the exhaust system heat shield. If the shield is cracked or damaged, it must be replaced. Tighten the 3 sheetmetal nuts and the 2 screws.

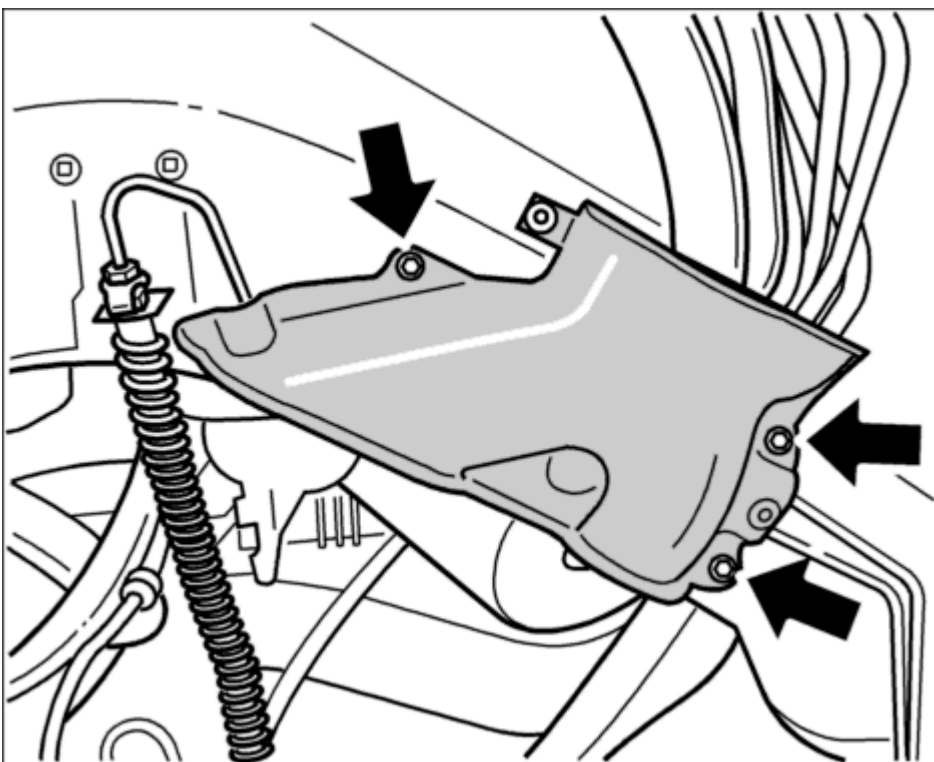
6. Mount the underbody panel of the side member on the left and right. Refer to **51 93 19 Removing and installing middle cover - as of MY 2003 (All Models)** .



**Fig. 51: Holder**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

7. Replace holder and attach to side member. Clip in lines.



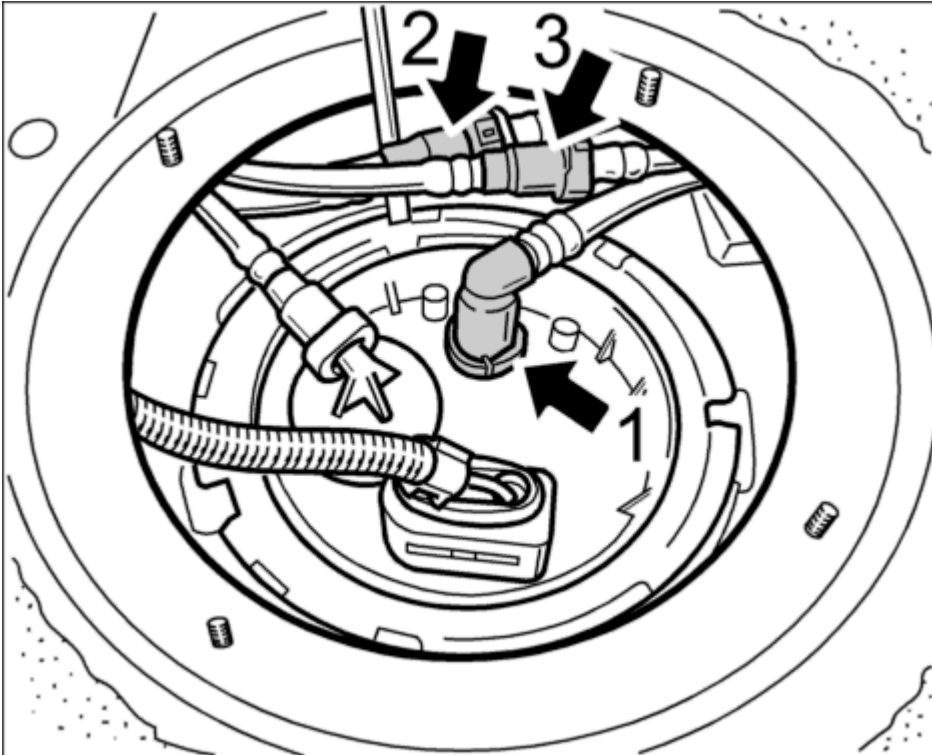
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

**Fig. 52: Stone guard**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

8. Then, fit the stone guard on the right side. Mount nuts -arrows- and tighten to the specified torque. -->  
**Tightening torque: 7.5 ftlb.** See **Fig. 52**.



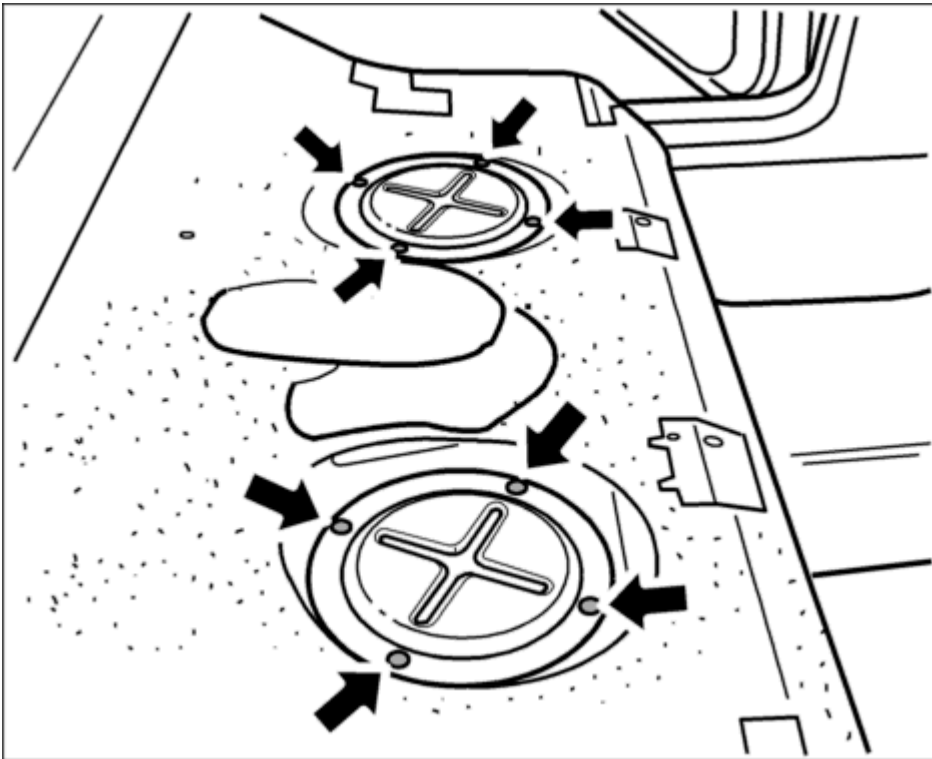
**Fig. 53: Connection unit**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

9. Mount the fuel supply -1- to the connection unit and connect the 2 connection points -2 and 3-. See **Fig. 53**.

### SUBSEQUENT WORK

Subsequent work



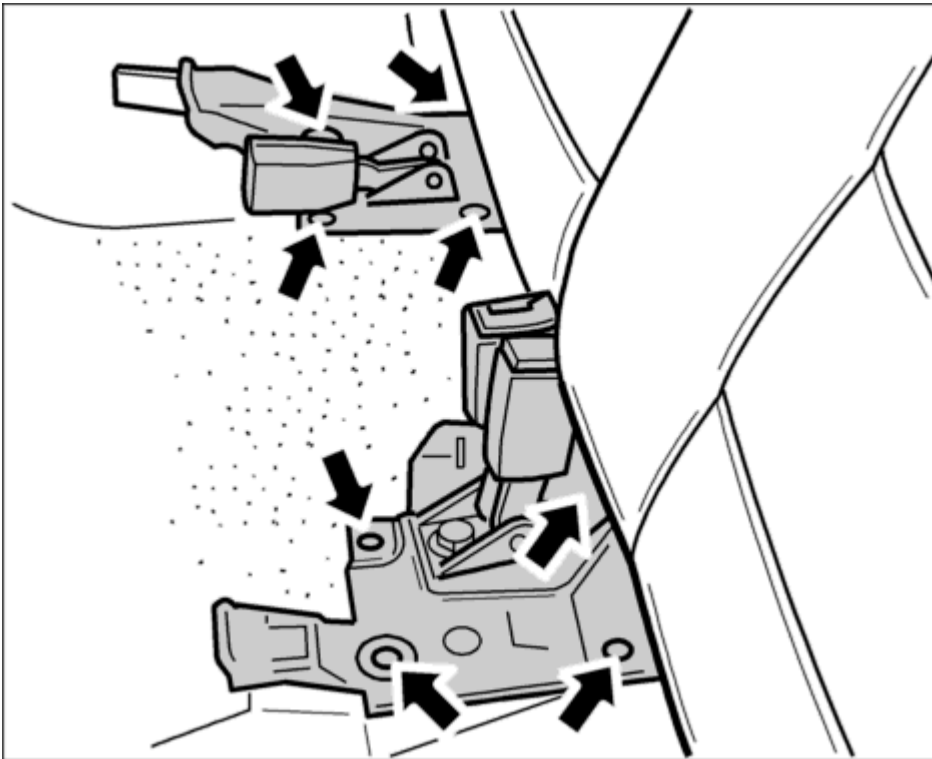
**Fig. 54: Fastening nuts for cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Fit cover. Tighten the 4 fastening nuts. --> **Tightening torque: 7.5 ftlb.** Refit carpeted floor and fix with double-sided adhesive tape.

## 2004 Porsche Cayenne

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**Fig. 55: Fastening screws for retaining brackets of seat-belt buckles**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Tighten the seat-belt buckle fastening plates. Use 3 new fastening screws for this and tighten. For tightening torque Refer to **69 25 19 Removing and installing rear belt lock - as of MY 2003 (All Models)** .
3. Fold rear seat down again.
4. Mount rear axle (spring struts and rear axle housing). Refer to **42 05 19 Removing and installing rear axle housing - as of MY 2003 (All Models)** .
5. Mount carbon canister. --> **202523 Installing carbon canister**
6. Fill fuel tank (refuel). --> **Filling with fuel**

## **20 15 19 REMOVING AND INSTALLING FUEL LEVEL SENSOR - AS OF MY 2003 (ALL MODELS)**

### **TOOLS**

Designation	Type	Number	Explanation	
key	VW-tool	T10202		

## 2004 Porsche Cayenne

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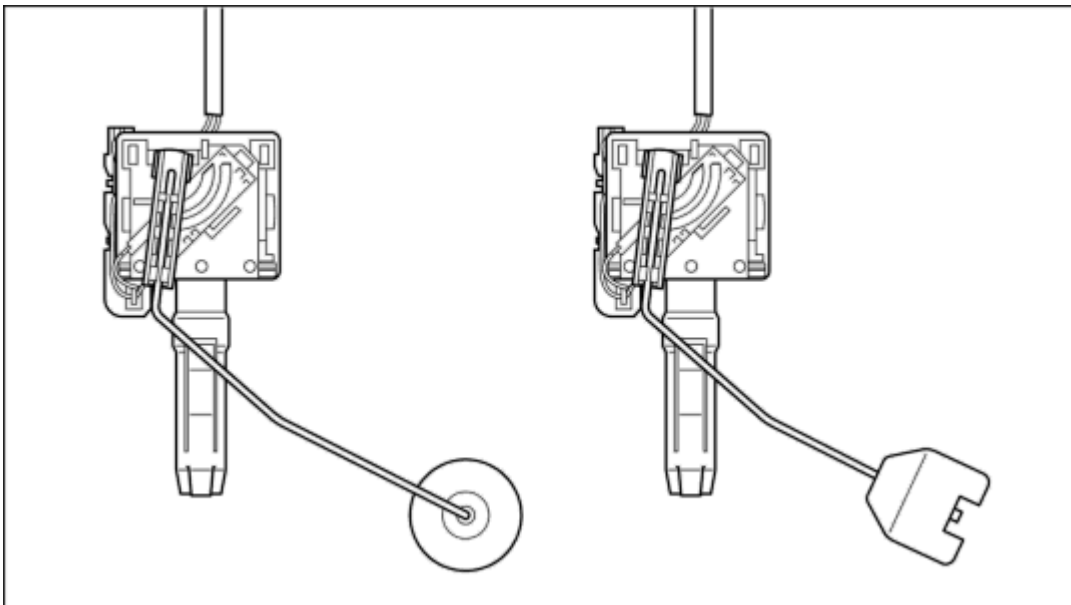
T 10202

### INFORMATION

#### Component information

#### NOTE:

- *The two senders have different shapes and may not be switched.*
- *The float installed in the left direction of travel is flat, while the float installed in the right direction of travel is spherical.*
- *The removal of both senders is explained in parallel in this description. If only one sender has to be removed, the other side of the tank can remain untouched.*



**Fig. 56: Both fuel level sensors**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

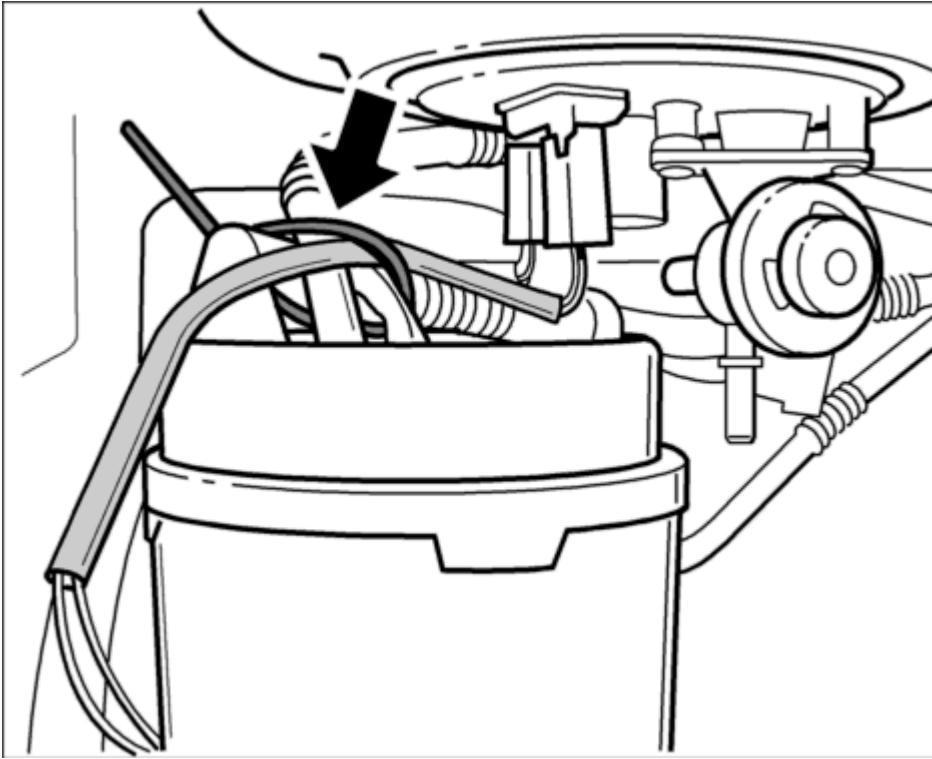
#### Jammed fuel-level sensor

The effect of fuel and various tolerances means that the left fuel level sensor can become jammed under fuel lines or the sensor's electric cable. The instrument cluster would then display an incorrect fuel level.



## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 57: Tie-wrap fixed electric cable**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

To prevent this, the two fuel lines coming from the left pump and the electric cable should be tied together with a tie-wrap following repairs.

### **PRELIMINARY WORK**

Opening the tank

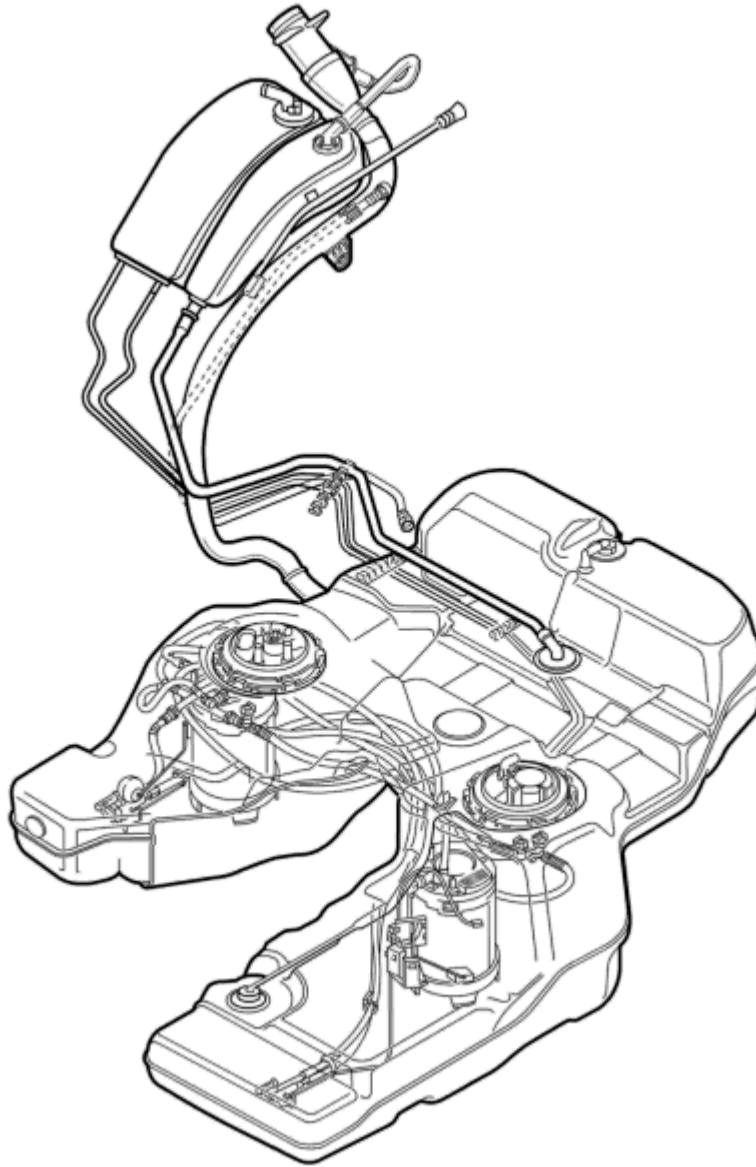
**NOTE:**

- *If the tank must be opened for emptying, disconnect all connections.*

**Installation Location:**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

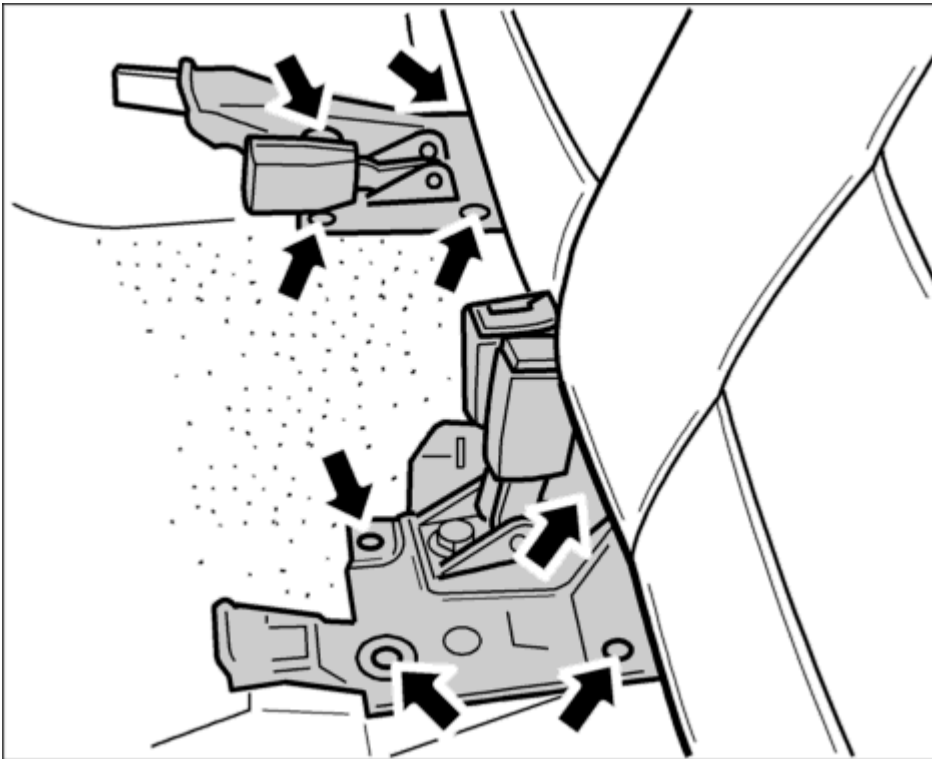


**Fig. 58: Component overview: fuel tank**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Open filler flap.
2. Fold rear seat forwards.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

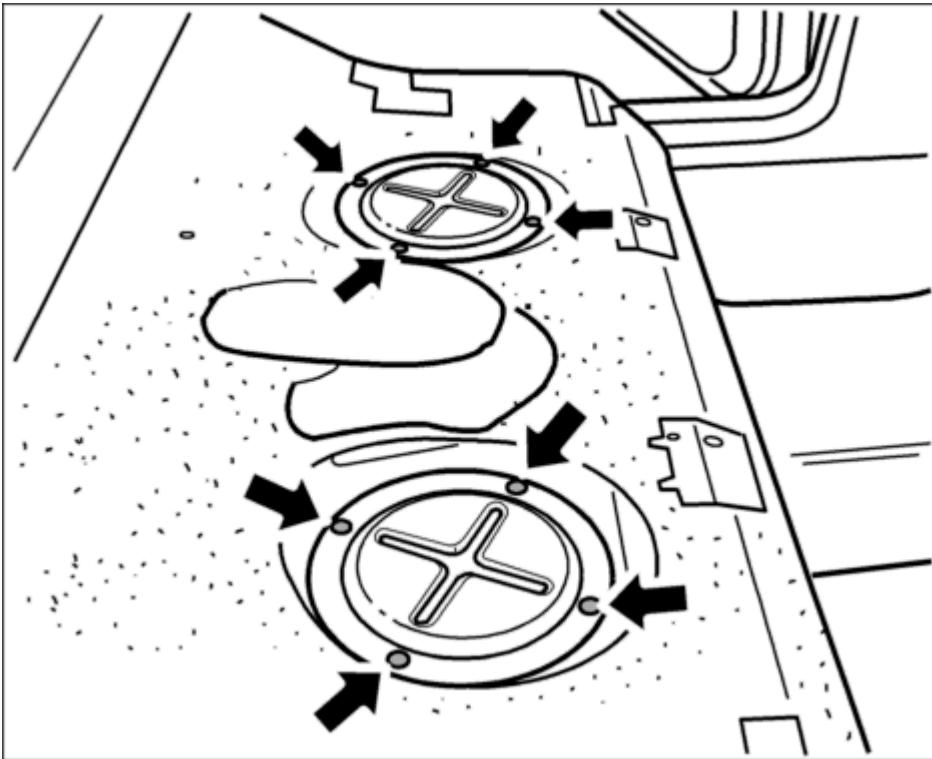


**Fig. 59: Fastening screws for retaining brackets of seat-belt buckles**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Fold up the retaining brackets of the (right and left) seat-belt buckles. To do so, loosen the four fastening screws and fold up the bracket with the seat-belt buckle. Do not use the fastening screws again.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



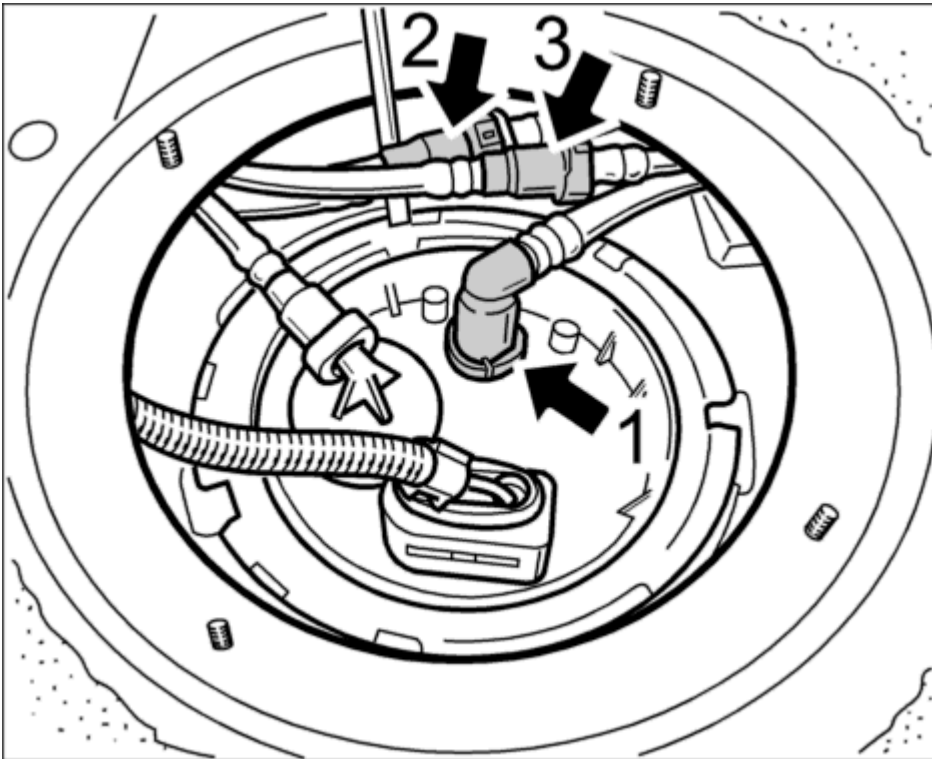
**Fig. 60: Fastening nuts for cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Undo the caps (figure shows both). To do so, cut out the carpeted floor along the perforated lines using a carpet knife and fold it over. Then unscrew the four fastening nuts and remove the lid.

5. Empty the fuel tank if this has not already been done or if the fuel level in the fuel tank is very low. -->

### **Draining and filling fuel**



**Fig. 61: Fuel supply and disconnection points at right connection unit**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

**WARNING: Danger of poisoning from fuels!**

- > Gasoline is toxic.
- > Inhaling vapours can cause irritation of the mucous membranes and eyes.
- > It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.
- > Only work on the fuel system in well-ventilated rooms.
- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

--> Pay attention to cleanliness when working on the fuel system.

### **WARNING: Danger of fire from fuel!**

--> Keep clear of ignition sources.

--> Do not smoke.

--> Disconnect battery.

--> Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.

--> Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.

--> Secure the vehicle, e. g. with a warning sign.

--> Change any clothing soaked with fuel immediately.

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

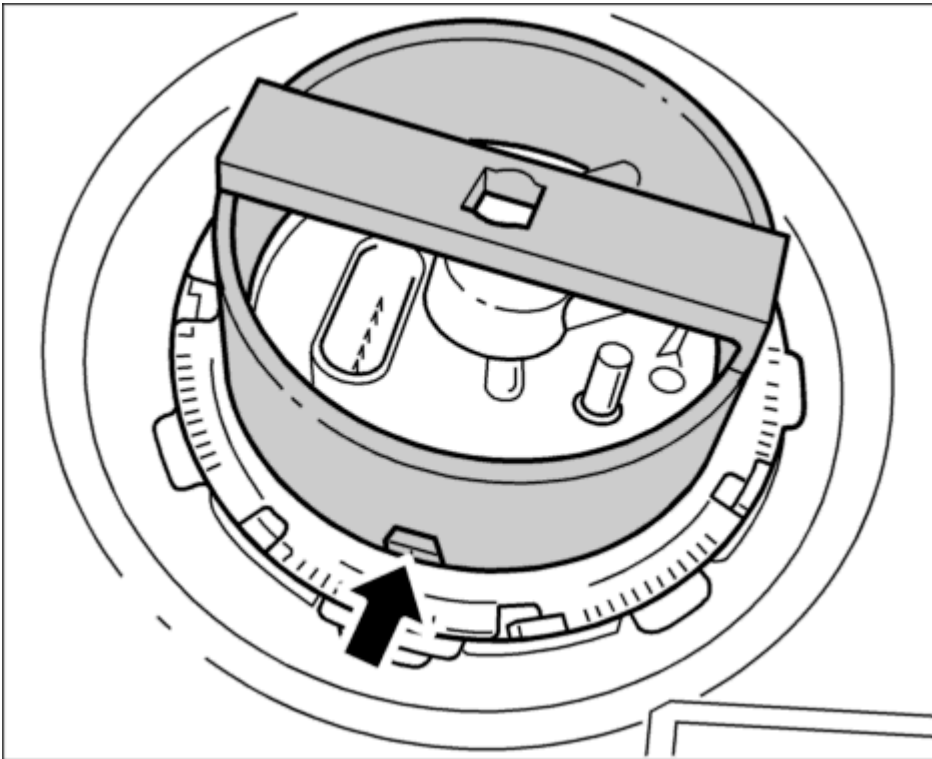
### **NOTE:**

- *The ignition must be switched off when working on the fuel system.*
- *Absorb any escaping fuel using a suitable binding material or a cloth.*
- *Cloths which have absorbed fuel must be disposed of according to the applicable national laws.*
- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*

6. Carefully remove the fuel supply **-1-** at the relevant connection unit (right connection unit here) and loosen the two disconnection points **-2 and 3-**. Also remove line (not shown here) in vehicles with auxiliary heating (auxiliary heater). Do the same at the left connection unit. Disconnect all connections on the connection unit. See **Fig. 61**.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

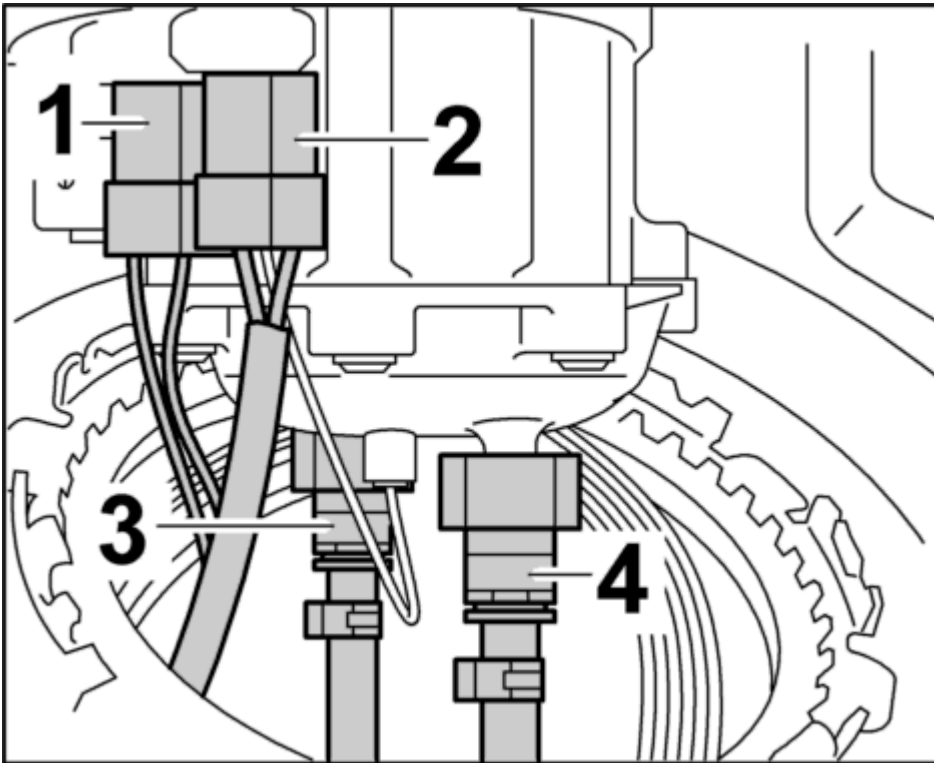


**Fig. 62: Cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

7. Open the relevant cap with the **key T10202** and lift up the connection unit (cap).

**Preliminary work**



**Fig. 63: Connection unit**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

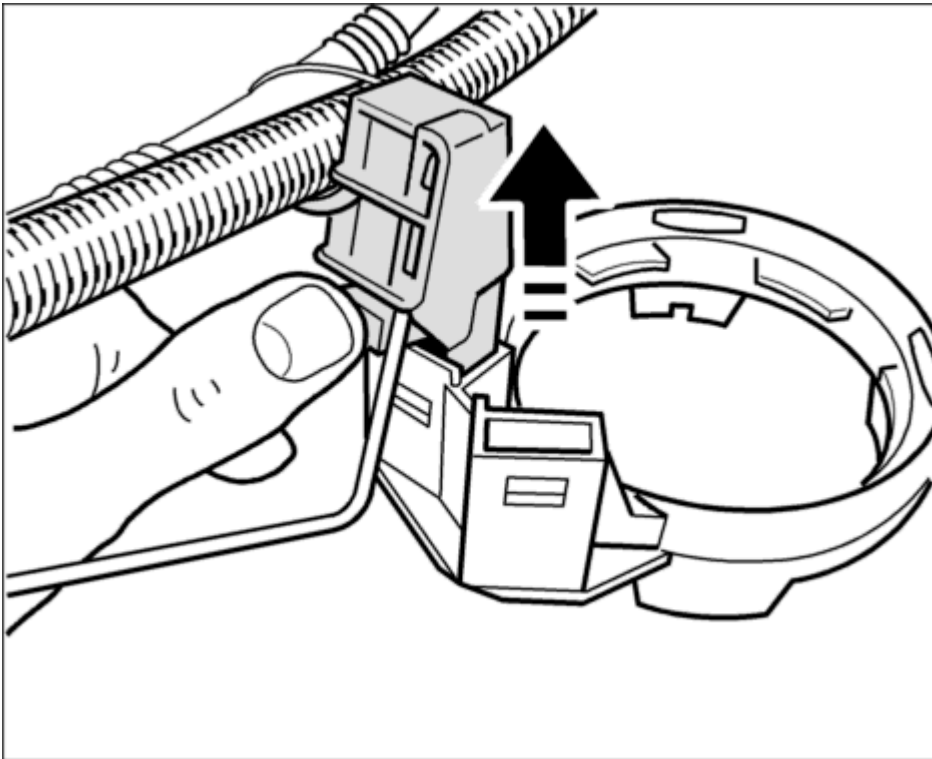
1. Disconnect electric connectors -**1** and **2**- . Then pull off the fuel lines -**3** and **4**- and remove the connection unit. See **Fig. 63**.

## **REMOVING FUEL LEVEL SENSOR**

### **Removing fuel level sensor**

1. Reach carefully past the fuel pump and feel for the sender. This is located in front of the pump, pointing diagonally outwards.





**Fig. 64: Pressing retaining spring on the sender**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

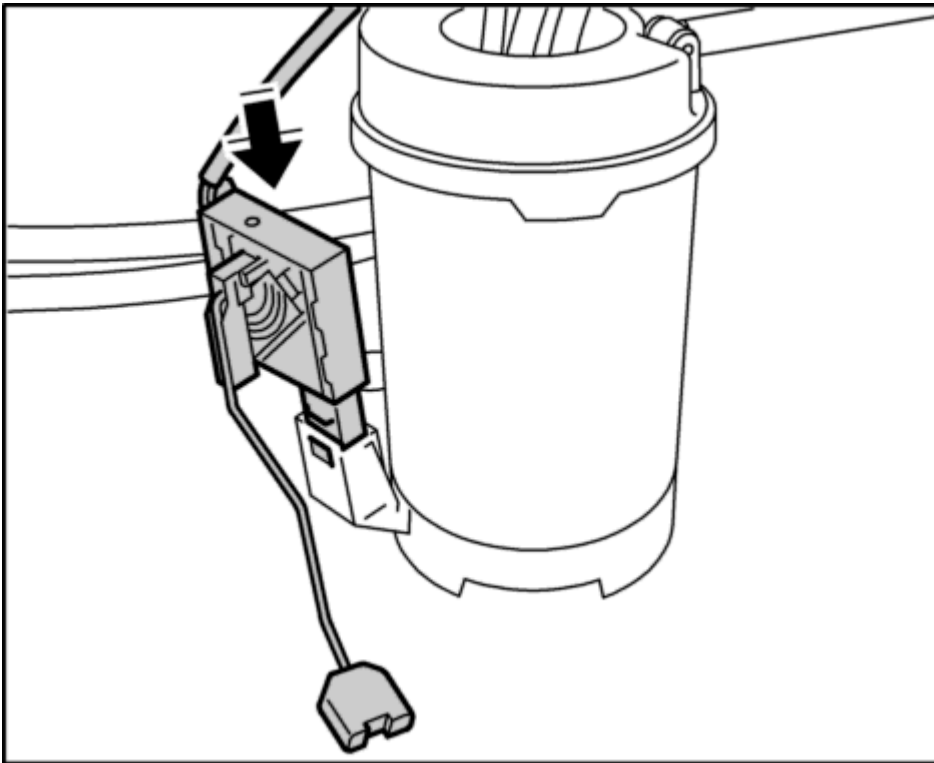
2. Press the retaining spring on the sender by hand while at the same time pulling the sender up.

## **INSTALLING FUEL LEVEL SENSOR**

**Installing fuel level sensor**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



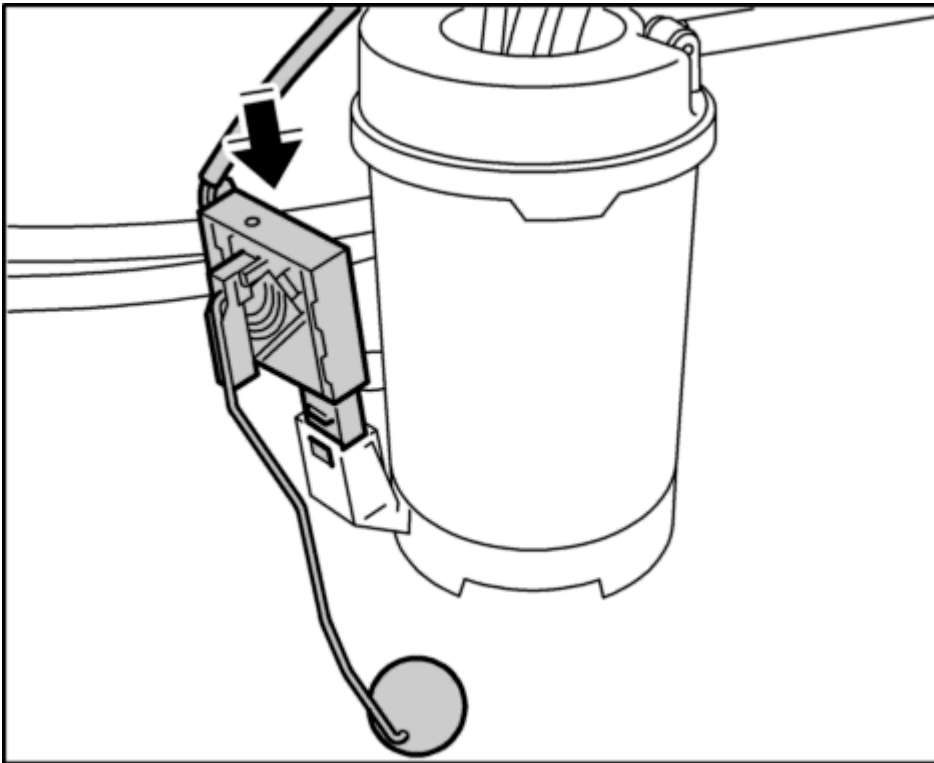
**Fig. 65: View shows the left sender**

**Courtesy of PORSCHE OF NORTH AMERICA, INC.**

1. Install a new tank gauge. Press the sender into its mounting. The retaining spring must engage audibly.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

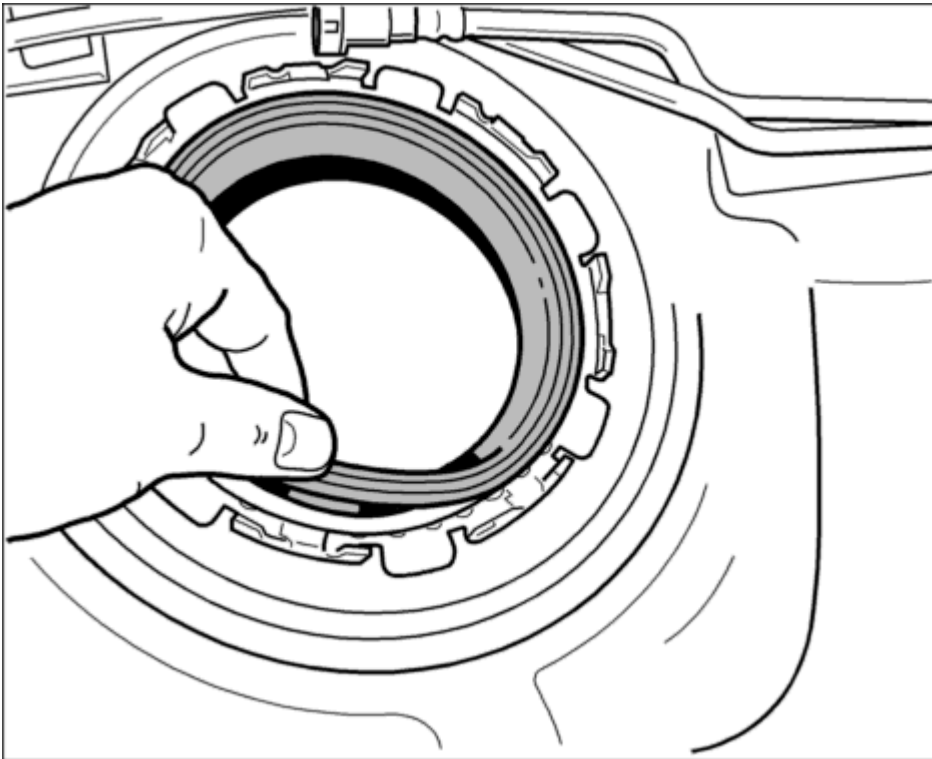


**Fig. 66: View shows the right sender**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

### SUBSEQUENT WORK

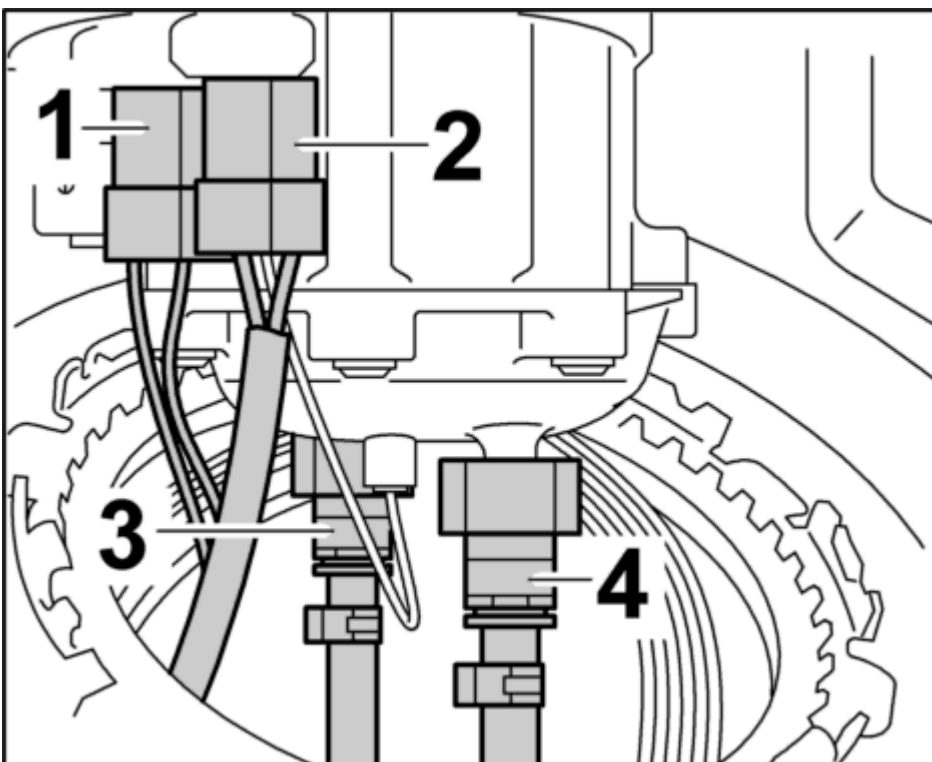
Subsequent work



**Fig. 67: Seal for opening of tank**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Fit new seal in the opening of the tank.

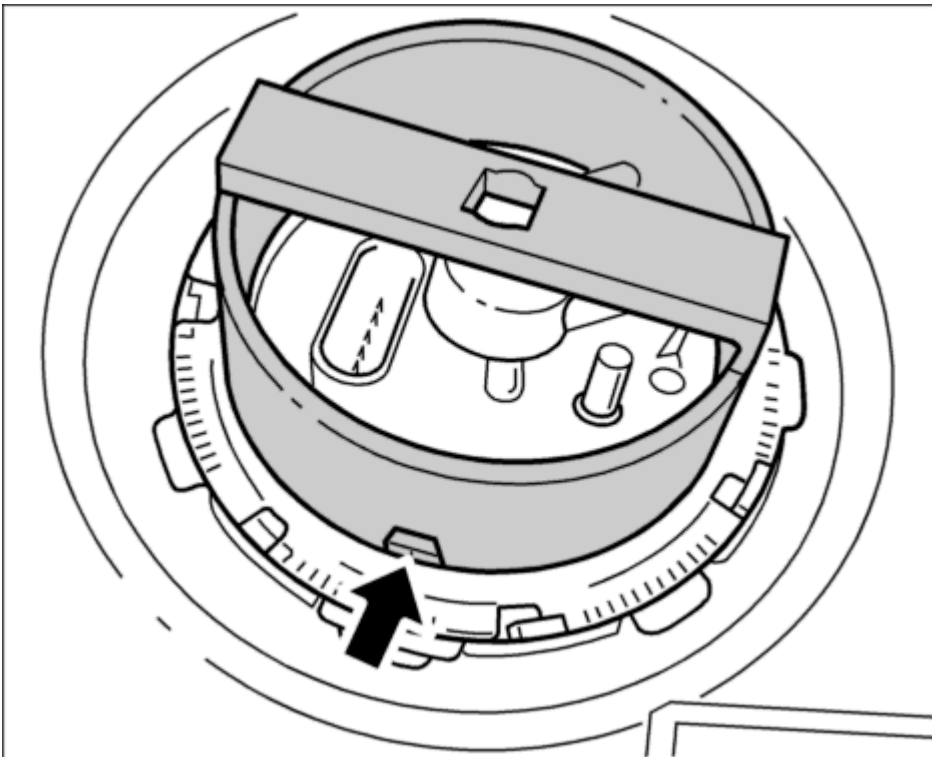


**Fig. 68: Connection unit**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Connect connection unit. Connect the electric connectors for the tank gauge and fuel pump. Then push on the fuel lines. The connectors must engage audibly.
3. Fit connection unit into tank opening. When doing so, make sure that the plastic lug is pointing forwards.

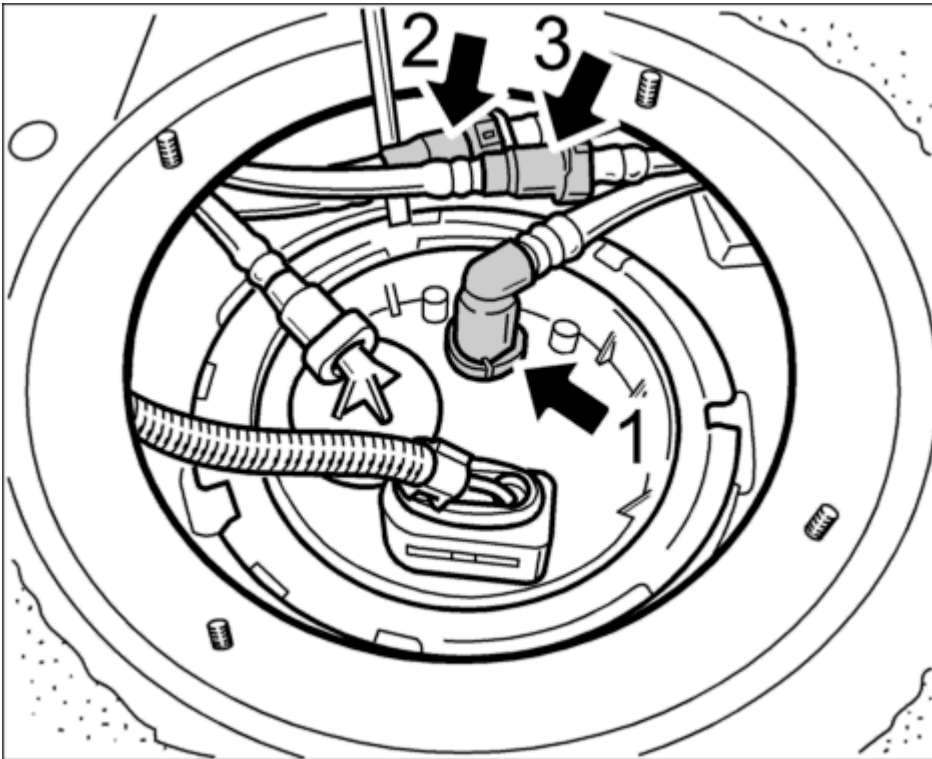
**Closing the tank**



**Fig. 69: Cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

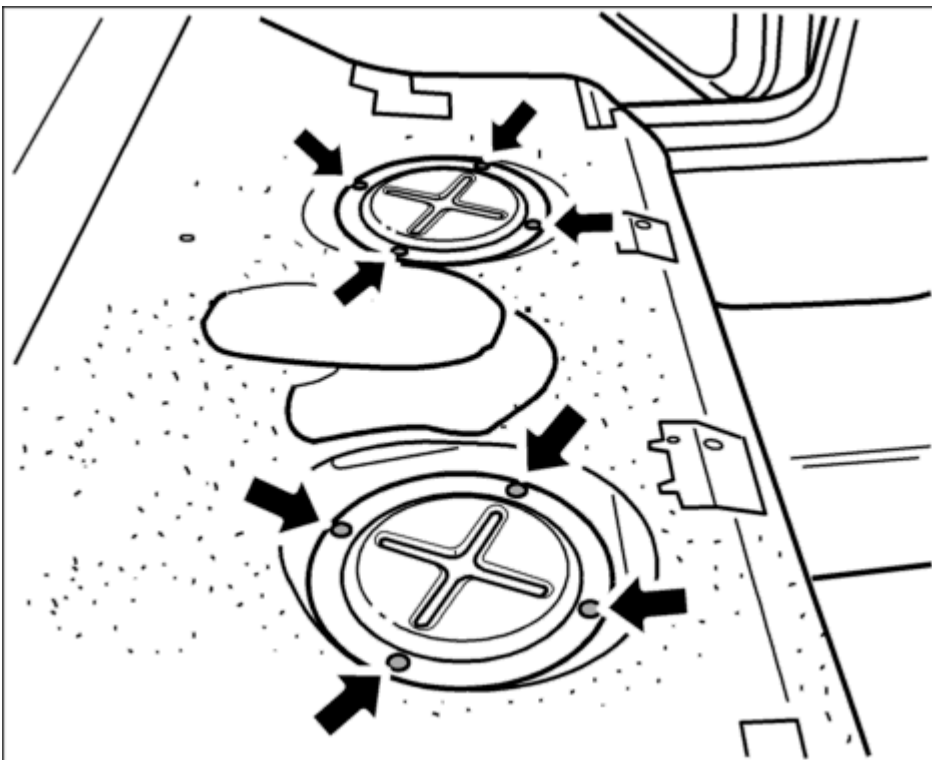
1. Close the tank. To do so, fit the sheetmetal ring and tighten using the **key T10202**. --> **Tightening torque: 104 ftlb.**



**Fig. 70: Fuel lines, ventilation tubes and electric plugs**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

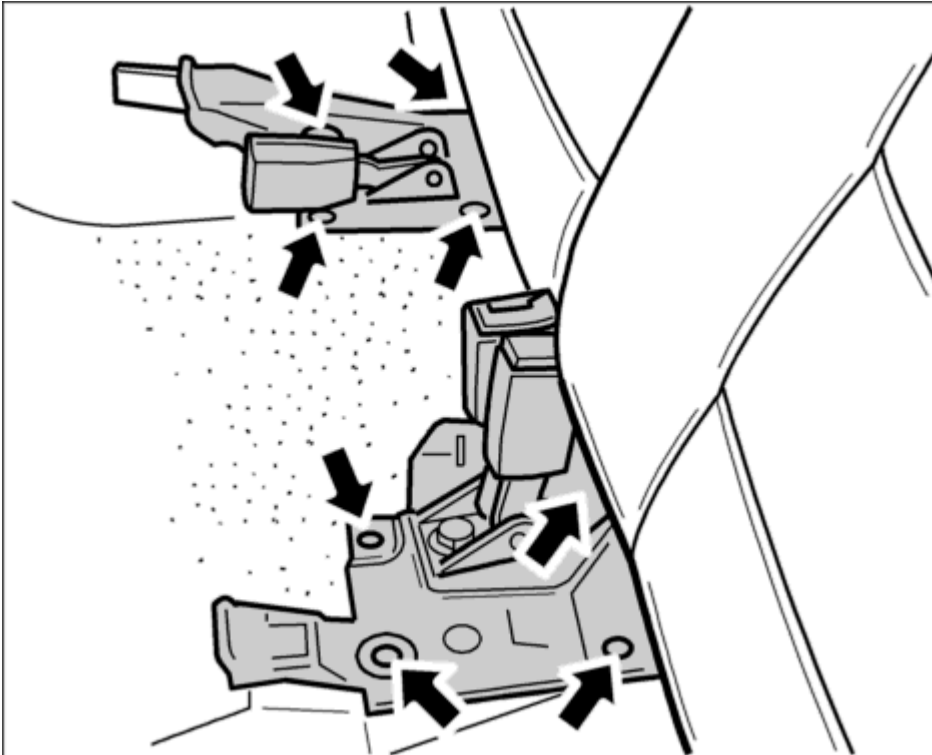
2. Fit all connections (fuel lines, ventilation tubes and electric plugs).



**Fig. 71: Fastening nuts for cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Fit the lid. Then tighten the four fastening nuts. --> **Tightening torque: 7.5 ftlb.** Refit carpeted floor and fix with double-sided adhesive tape.



**Fig. 72: Fastening screws for retaining brackets of seat-belt buckles**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Tighten the seat-belt buckle fastening plates. Use three new fastening screws for this and tighten. For tightening torque, refer to **69 25 19 Removing and installing rear belt lock - as of MY 2003 (All Models)** .
5. Fold rear seat down again.
6. Fill fuel tank (refuel). --> **Draining and filling fuel**

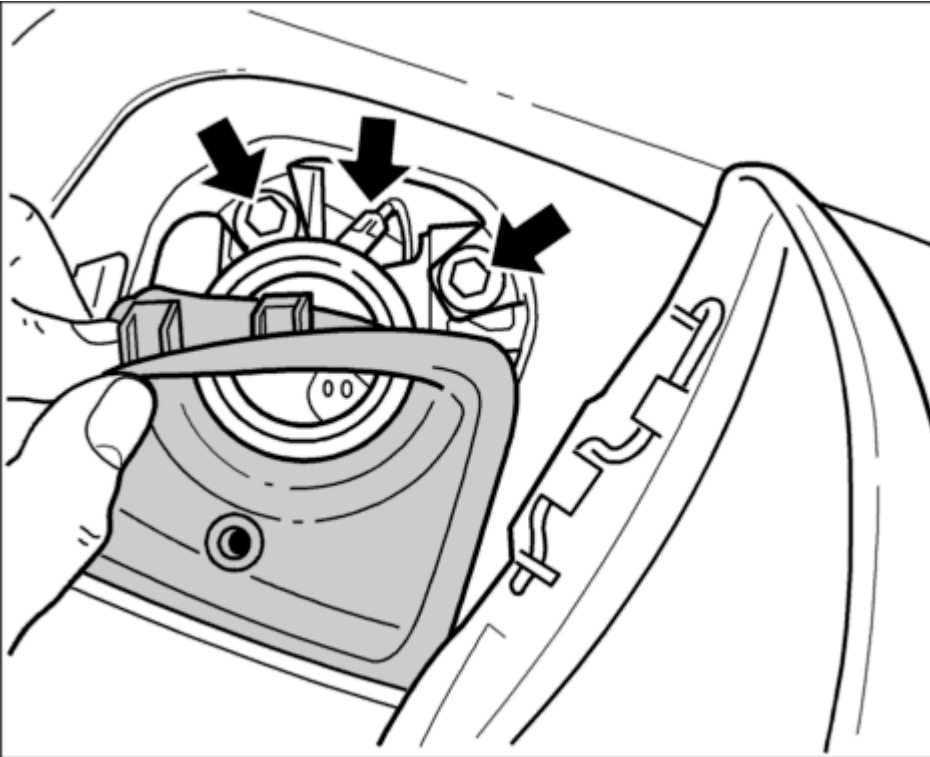
## **20 25 21 REMOVING CARBON CANISTER - AS OF MY 2003 (ALL MODELS)**

### **PRELIMINARY WORK**

#### **Preliminary work**

1. Take up the vehicle at the jacking points provided using a platform lift. Refer to **40 V0 Lifting the vehicle - as of MY 2003 (Cayenne Turbo S, Cayenne S TIO Titan)** . Refer to **40 V0 Lifting the vehicle - as of MY 2003 (Cayenne TIP, Cayenne MAN, Cayenne S TIP, Cayenne S MAN, Cayenne Turbo)** .

2. Open filler flap.



**Fig. 73: Tank filler neck**

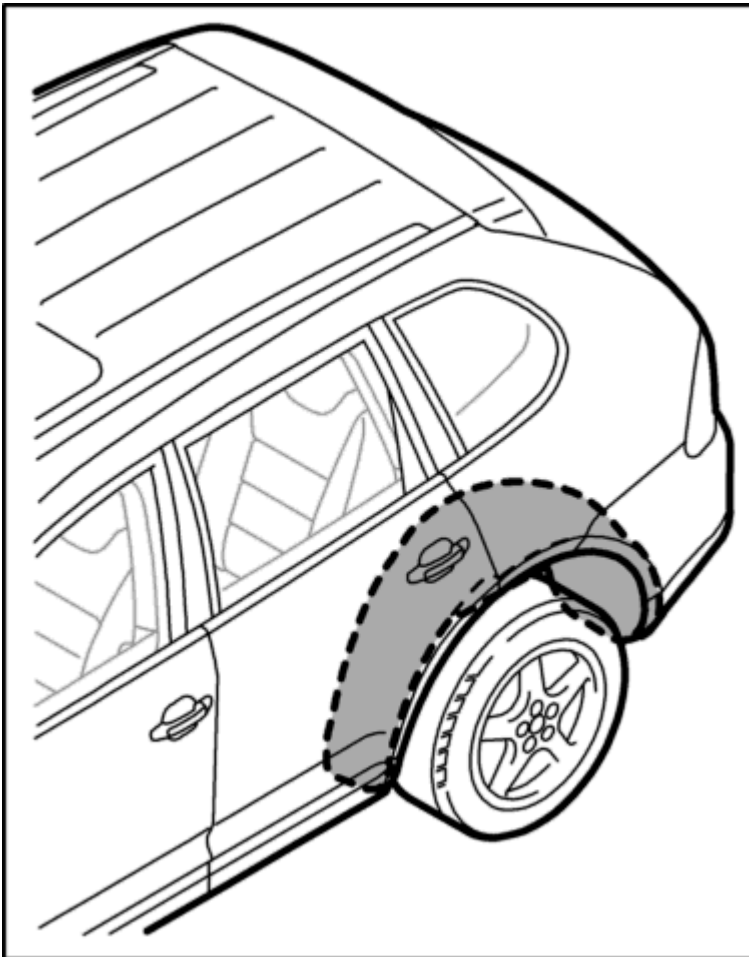
**Courtesy of PORSCHE OF NORTH AMERICA, INC.**

3. Screw the tank cap down. Then remove the rubber sleeve around the tank filler neck, loosen the 2 M6 x 20 fastening screws and remove the ground cable.
4. Remove right rear wheel. Refer to **44 05 19 Removing and installing wheel - as of MY 2003 (All Models)** .



## 2004 Porsche Cayenne

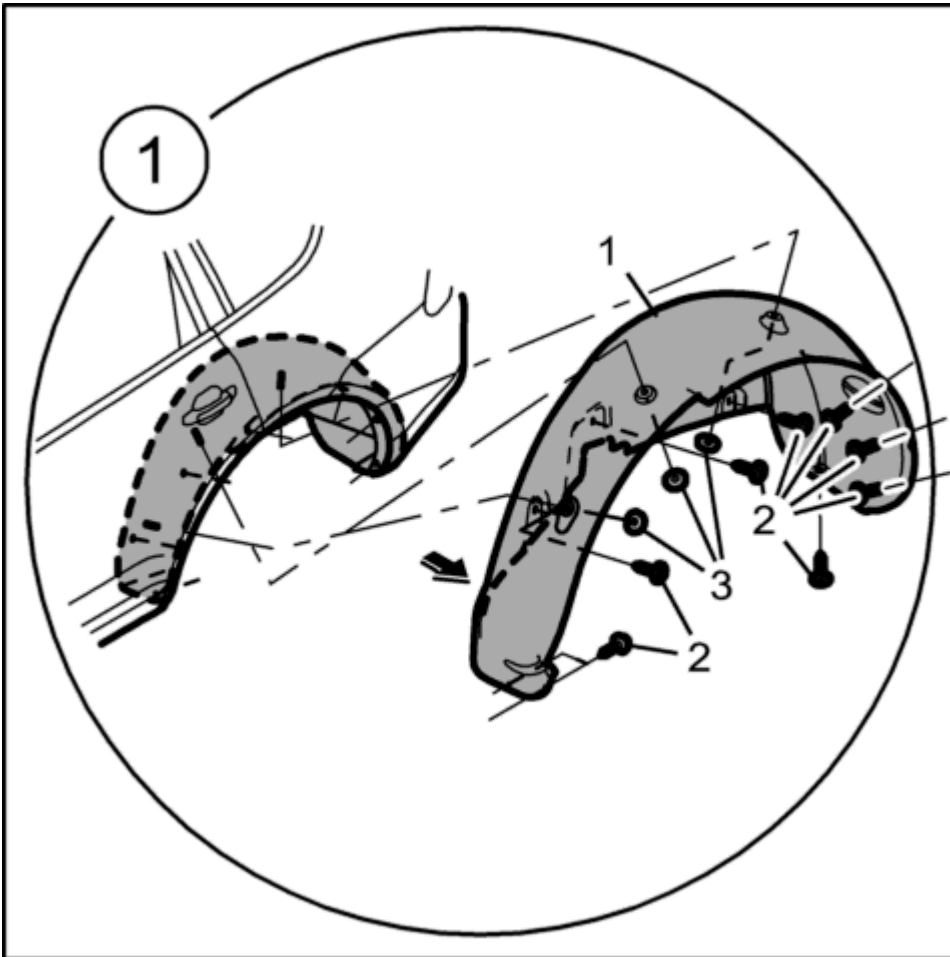
2003-2008 ENGINE Fuel, Actuation



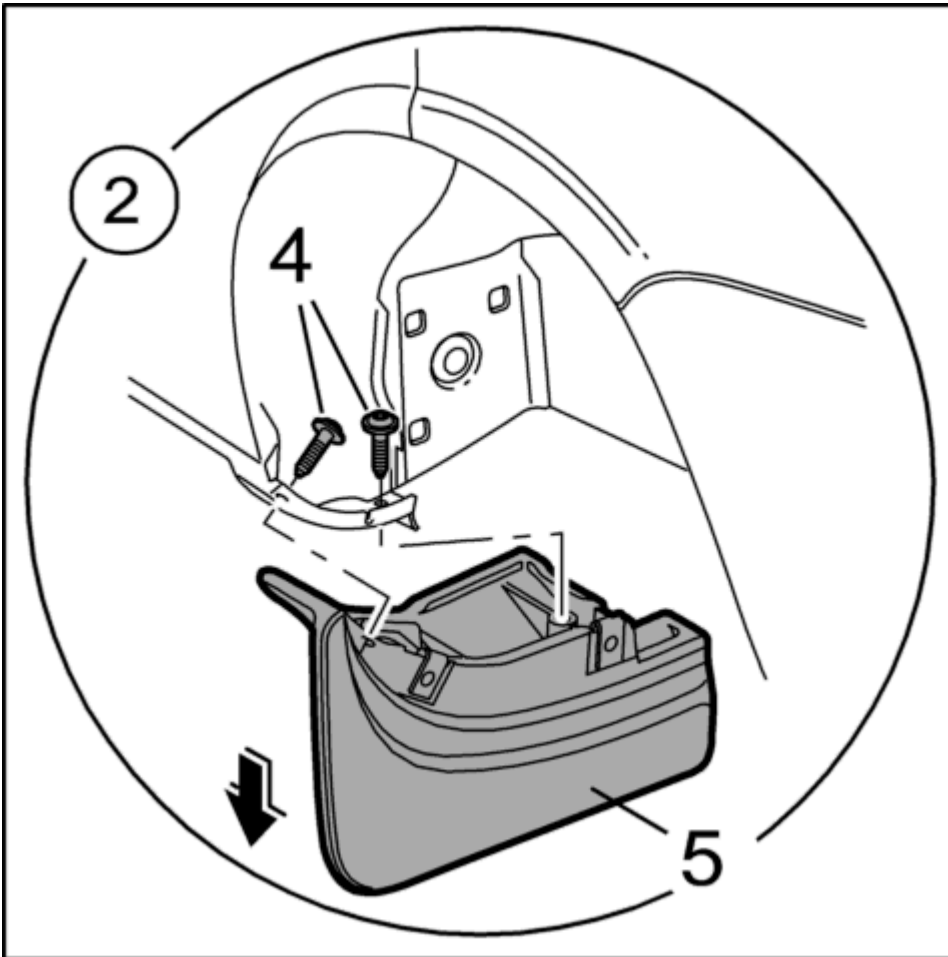
**Fig. 74: Rear wheel housing liner**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Remove right rear wheel housing liner. Refer to **53 69 19 Removing and installing rear wheel housing liners - as of MY 2003 (All Models)** .



**Fig. 75: Rear wheel housing liner mount**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.



**Fig. 76: Mud flap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

## GENERAL WARNING NOTES

### Group 20 - Fuel supply, control

#### **WARNING: Danger of poisoning from fuels!**

--> Gasoline is toxic.

--> Inhaling vapours can cause irritation of the mucous membranes and eyes.

--> It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.

--> Only work on the fuel system in well-ventilated rooms.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.
- > Pay attention to cleanliness when working on the fuel system.

### **WARNING: Danger of fire from fuel!**

- > Keep clear of ignition sources.
- > Do not smoke.
- > Disconnect battery.
- > Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.
- > Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.
- > Secure the vehicle, e. g. with a warning sign.
- > Change any clothing soaked with fuel immediately.
- > In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

### **NOTE:**

- ***The ignition must be switched off when working on the fuel system.***
- ***Absorb any escaping fuel using a suitable binding material or a cloth.***
- ***Cloths which have absorbed fuel must be disposed of according to the applicable national laws.***
- ***The fuel system must be depressurised before starting work on it.***
- ***Only work on the fuel system in well-ventilated rooms.***
- ***Any seals which have been removed must always be replaced.***

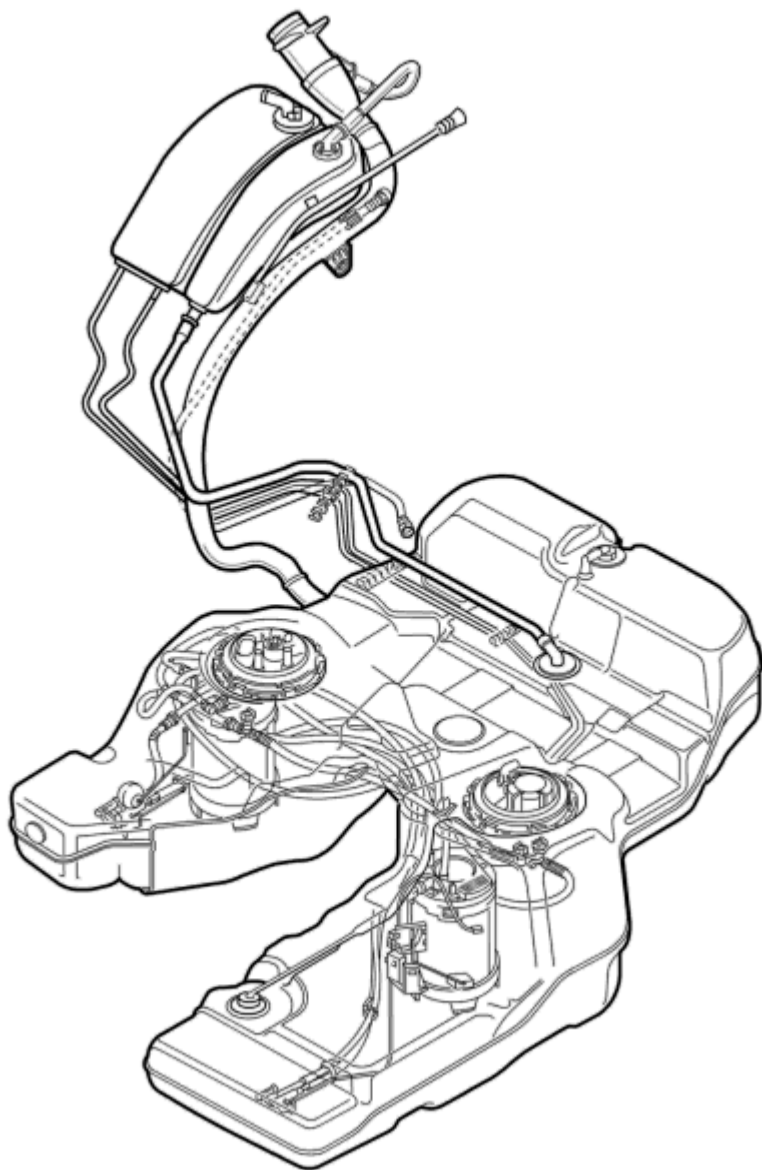
## **INFORMATION**

Component information

**CAUTION: Risk of damage!**

- **There is a risk of leaks if the overflow line on the fuel filler neck is above the valve.**

--> Make sure that the line runs below the valve.



**Fig. 77: Overview of fuel tank**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

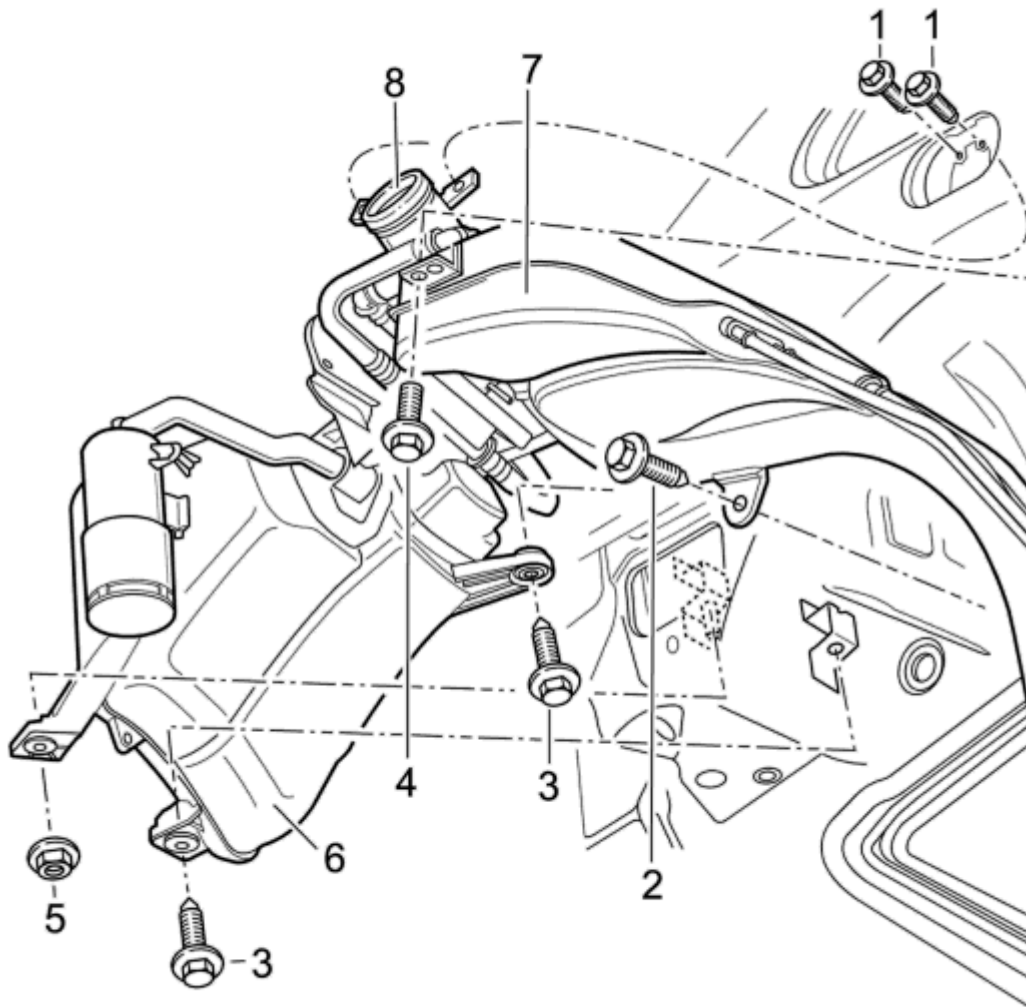
**NOTE:**

- ***The repair procedure may vary depending on engine type and country equipment. This relates in particular to components in the right wheel***

*housing.*

- *The description relates to ORVR vehicles.*

The following exploded drawing shows the attachment of the tank filler neck and carbon canister in the right wheel housing.



**Fig. 78: Carbon canister mount**

**Courtesy of PORSCHE OF NORTH AMERICA, INC.**

**1** - Fastening screw, M6 x 28

**2** - Fastening screw M6 x 20

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

3 - Fastening screw

4 - Fastening screw M6 x 28

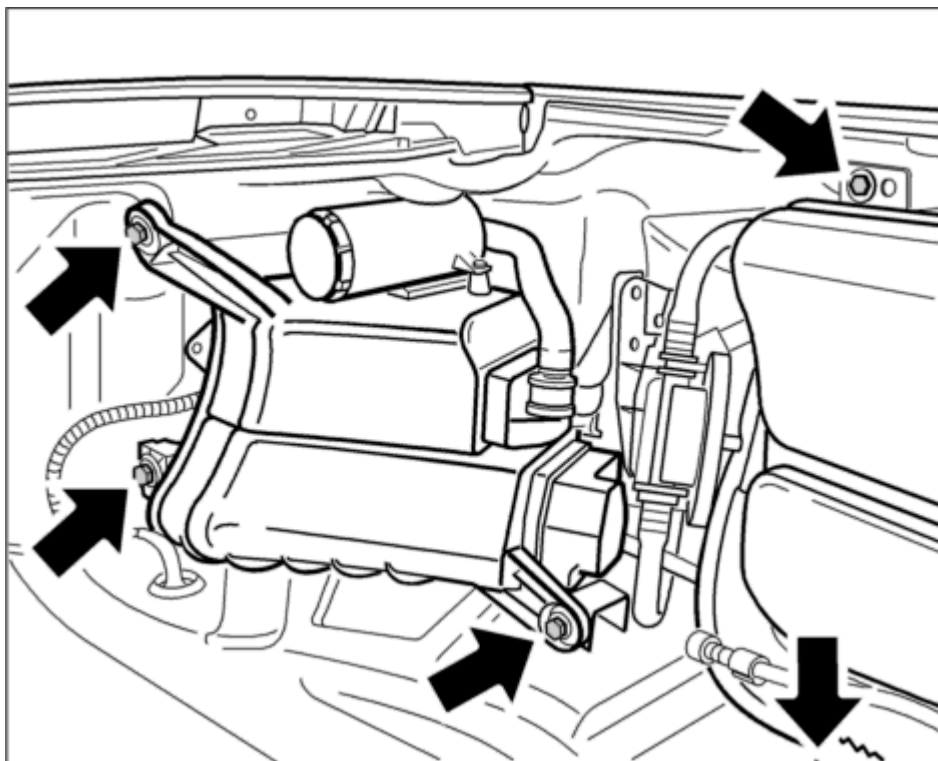
5 - Fastening nut M6

6 - Carbon canister

7 - Degassing tank

### REMOVING CARBON CANISTER

Removing carbon canister



**Fig. 79: Fastening screws**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**CAUTION: Risk of damage!**

- Lines can become kinked or can crack.

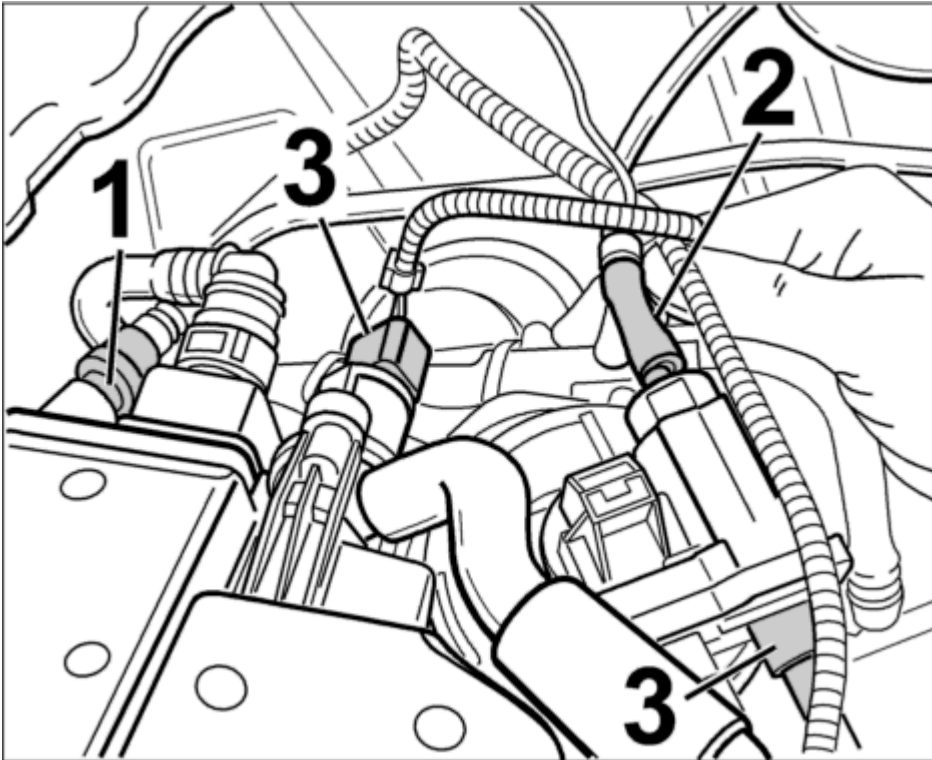
--> Never leave carbon canister hanging freely on the lines.

--> A second person should hold the carbon canister during removal.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

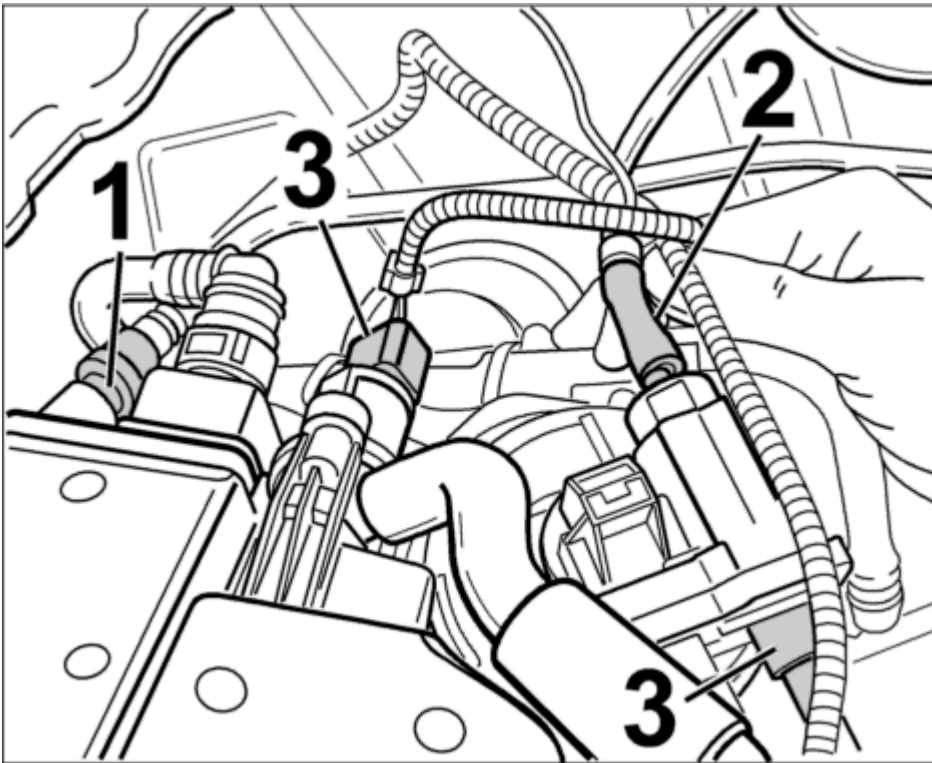
1. Loosen the 5 fastening screws on the carbon canister and the two on the degassing tank in the right wheel housing -arrows- . See **Fig. 79**.



**Fig. 80: Carbon canister connections**

Courtesy of PORSCHE OF NORTH AMERICA, INC.





**Fig. 81: Carbon canister connections**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

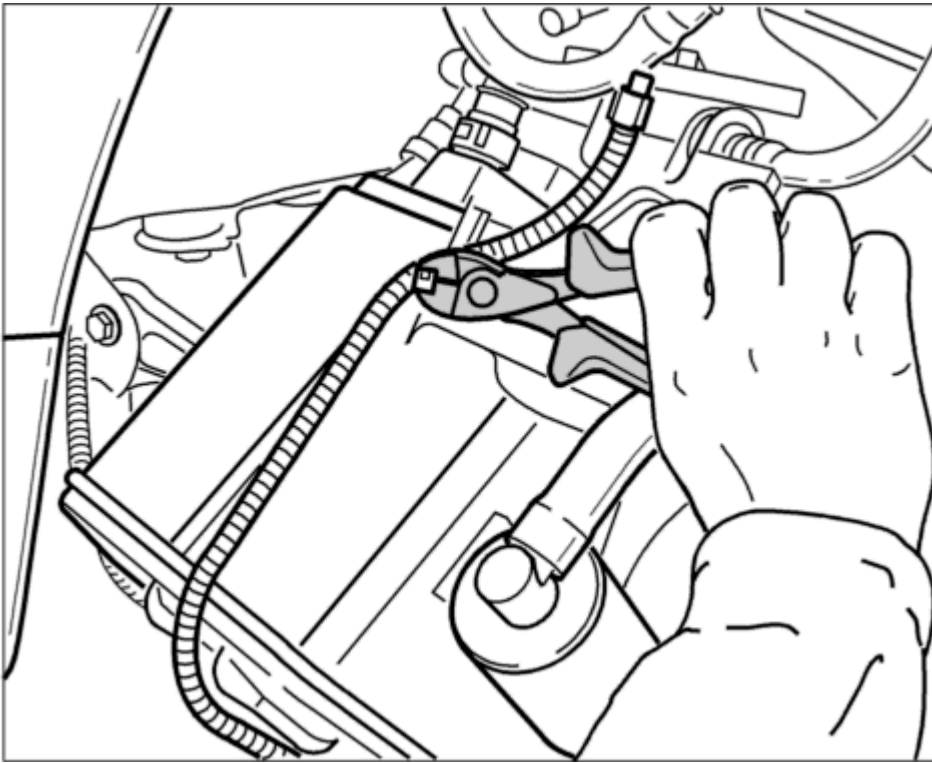
**NOTE:**

- In USA vehicles, the rubber hose -2- of the leak diagnosis pump is extremely tight. If the hose is pulled, the connection piece can break off at the leak diagnosis pump. See Fig. 81.

2. Carefully remove the 2 electric connectors -3- on the carbon canister and on the leak diagnosis pump and the hose on the connection piece -2- of the leak diagnosis pump (USA). There is always a risk of damage. Then, disconnect plastic line -1- . See Fig. 80.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



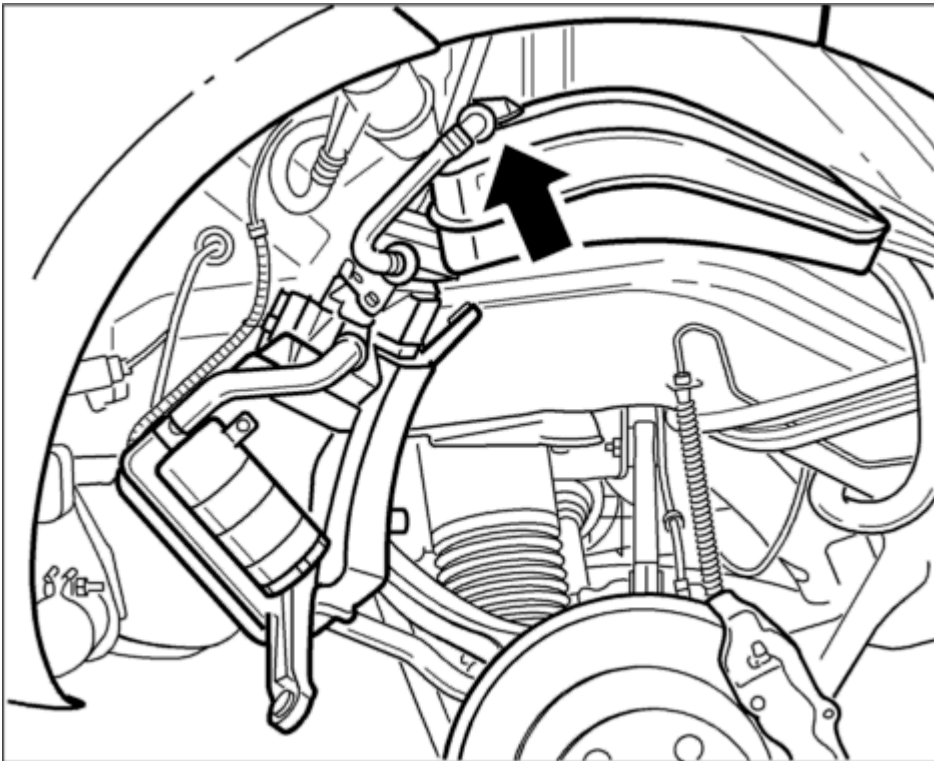
**Fig. 82: Cutting tie-wraps**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Cut through the tie-wraps of the ground cable on the carbon canister and take the carbon canister out of the wheel housing. Replace tie-wraps.

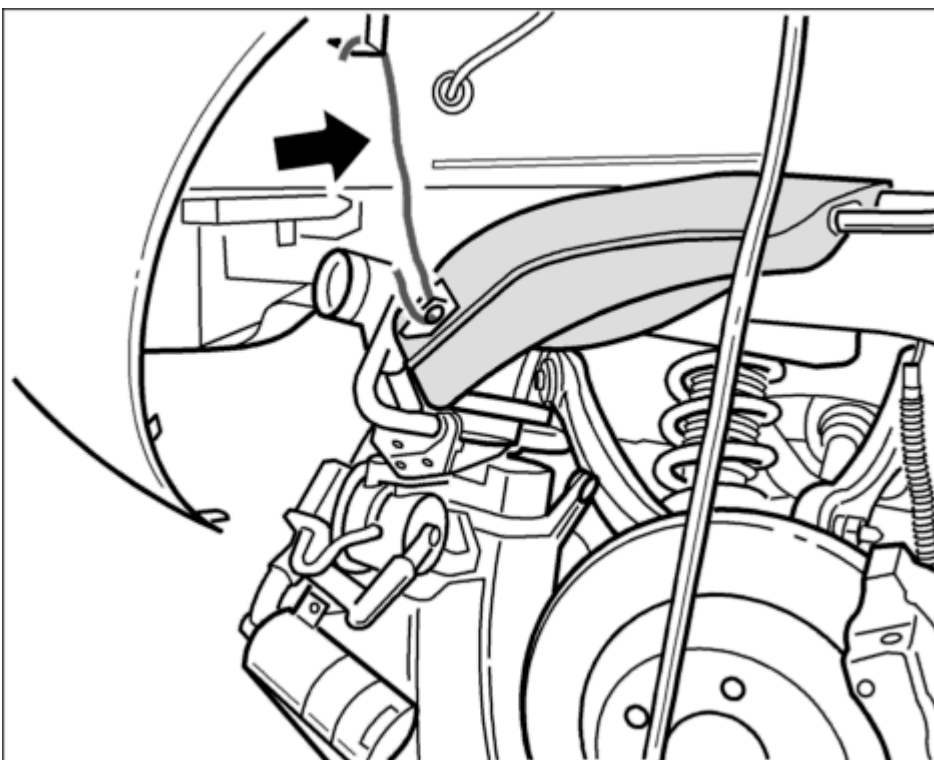
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 83: Hose connection on the degassing tank**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Remove hose connection on the degassing tank.



## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

### **Fig. 84: Wire protection**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

#### **CAUTION: Risk of damage!**

- **Lines can become kinked or can crack.**

--> Never leave carbon canister hanging freely on the lines.

--> A second person should hold the carbon canister during removal.

5. Pull fuel filler neck and degassing tank out of the wheel housing and secure with a piece of wire **-arrow-** (figure shows degassing tank with carbon canister). See **Fig. 84**.

## **20 25 23 INSTALLING CARBON CANISTER - AS OF MY 2003 (ALL MODELS)**

### **GENERAL WARNING NOTES**

#### **Group 20 - Fuel supply, control**

#### **WARNING: Danger of poisoning from fuels!**

--> Gasoline is toxic.

--> Inhaling vapours can cause irritation of the mucous membranes and eyes.

--> It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.

--> Only work on the fuel system in well-ventilated rooms.

--> Wear protective gloves that are fuel-resistant.

--> Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.

--> Ensure that there is adequate ventilation and extract all fuel vapours.

--> Before opening the fuel lines or fuel hoses, relieve the fuel pressure.

--> Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.

--> Pay attention to cleanliness when working on the fuel system.

#### **WARNING: Danger of fire from fuel!**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

--> Keep clear of ignition sources.

--> Do not smoke.

--> Disconnect battery.

--> Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.

--> Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.

--> Secure the vehicle, e. g. with a warning sign.

--> Change any clothing soaked with fuel immediately.

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

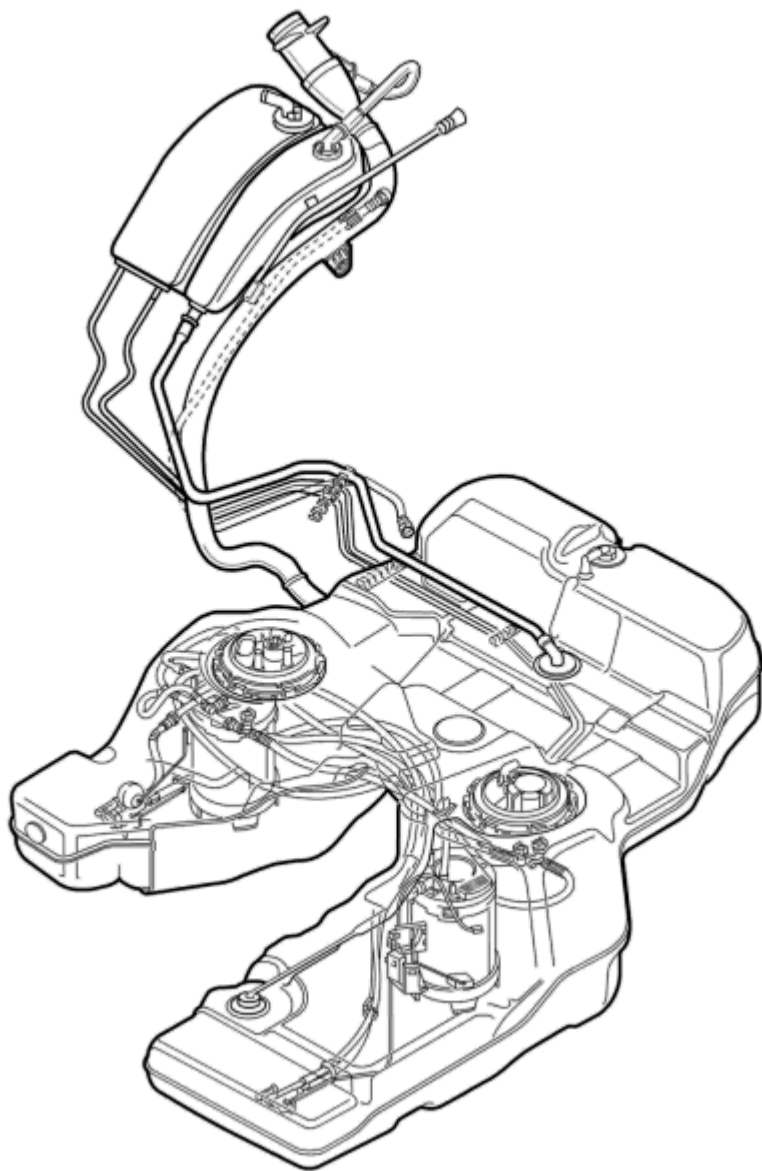
### NOTE:

- ***The ignition must be switched off when working on the fuel system.***
- ***Absorb any escaping fuel using a suitable binding material or a cloth.***
- ***Cloths which have absorbed fuel must be disposed of according to the applicable national laws.***
- ***The fuel system must be depressurised before starting work on it.***
- ***Only work on the fuel system in well-ventilated rooms.***
- ***Any seals which have been removed must always be replaced.***

Component information

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 85: Overview of fuel tank**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

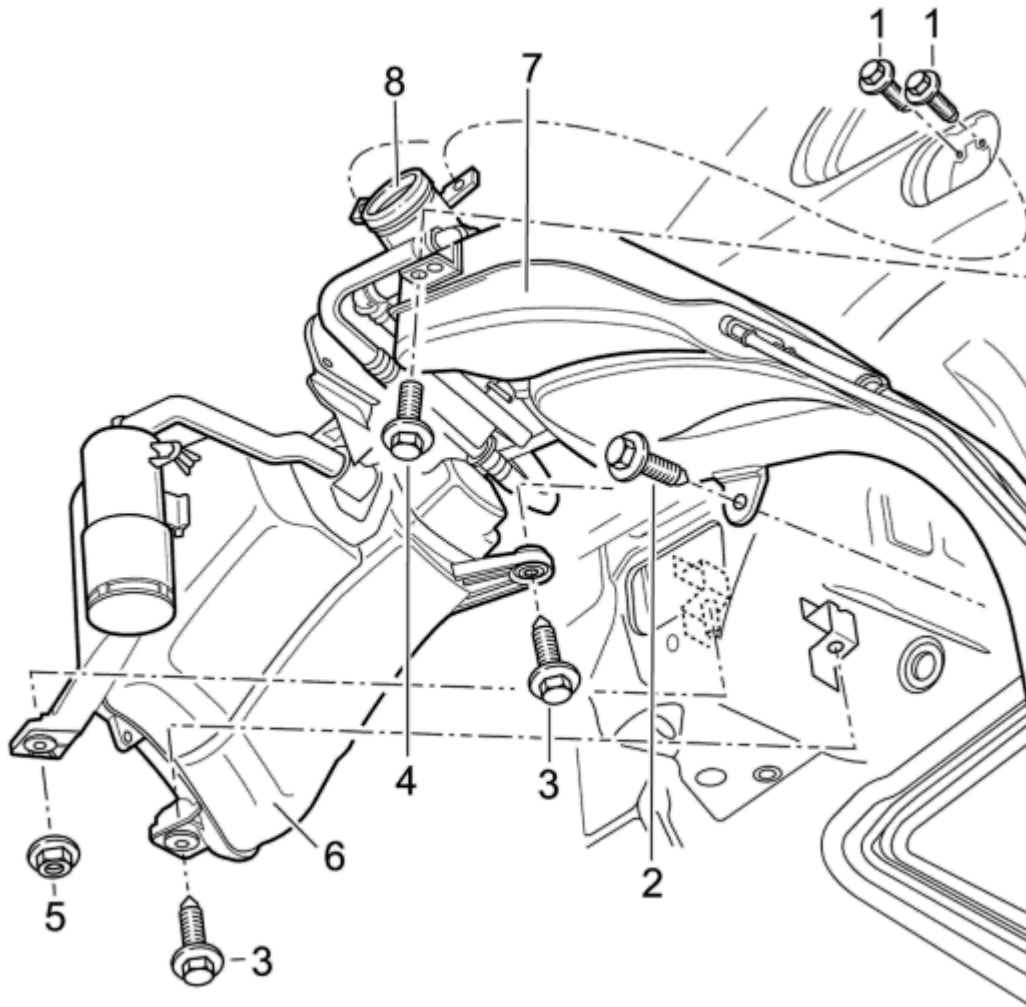
**NOTE:**

- *The repair procedure may vary depending on engine type and country equipment. This relates in particular to components in the right wheel housing.*
- *The description relates to ORVR vehicles.*

The following exploded drawing shows the attachment of the tank filler neck and carbon canister in the right wheel housing.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 86: Carbon canister mount**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1 - Fastening screw, M6 x 28

2 - Fastening screw M6 x 20

3 - Fastening screw

4 - Fastening screw M6 x 28

5 - Fastening nut M6

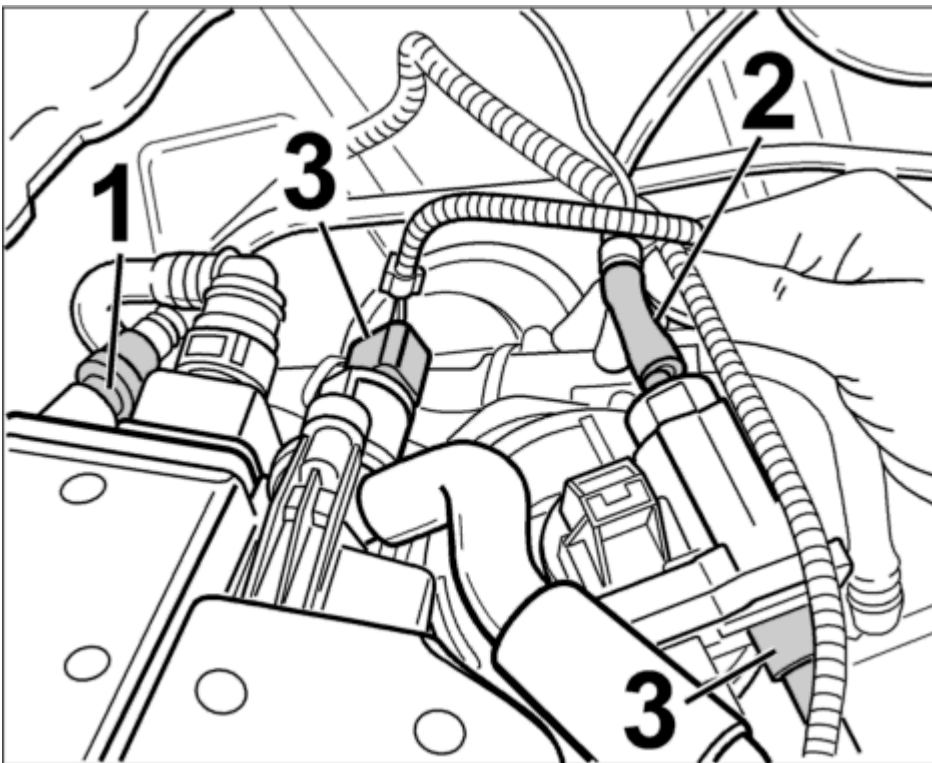
**6** - Carbon canister

**7** - Degassing tank

## **INSTALLING CARBON CANISTER**

### **Installing carbon canister**

1. Replace the ground cable tie-wraps on the carbon canister and pre-assemble the ground cable. Lift the carbon canister into the wheel housing.
2. Join all lines on the carbon canister and degassing tank at the plug connections.

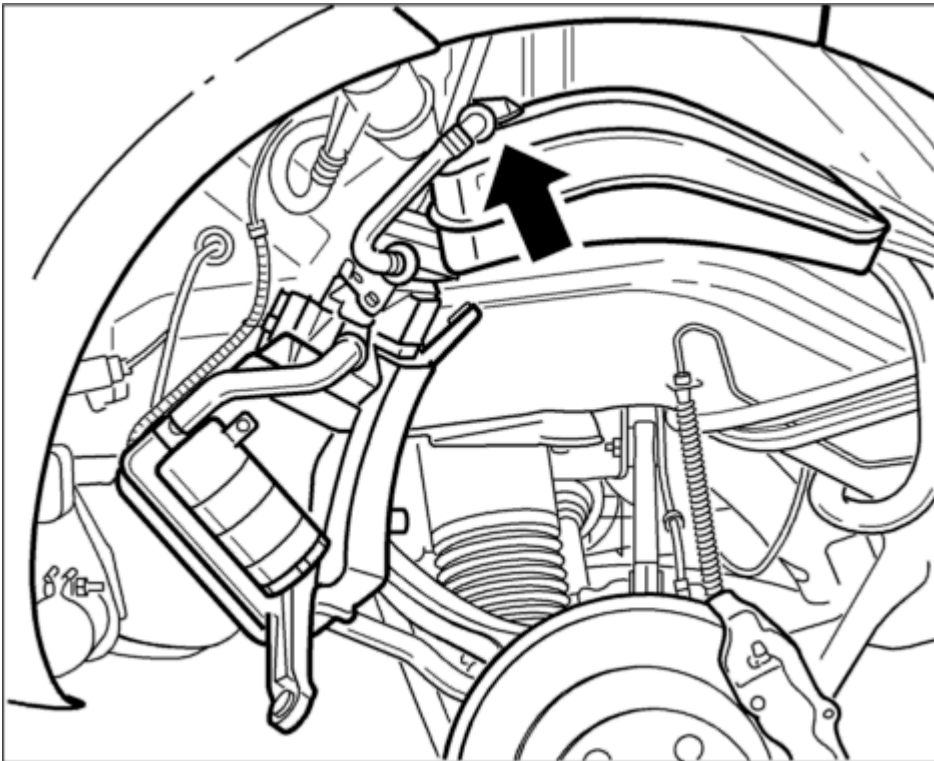


**Fig. 87: Carbon canister connections**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Carefully mount the 2 electric connectors -3- on the carbon canister and on the leak diagnosis pump and the hose on the connection piece -2- of the leak diagnosis pump (USA). Then connect plastic line -1- . See **Fig. 87**.





**Fig. 88: Degassing tank**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Insert the hose on the degassing tank.

**CAUTION: Risk of damage!**

- **There is a risk of leaks if the overflow line on the fuel filler neck is above the valve.**

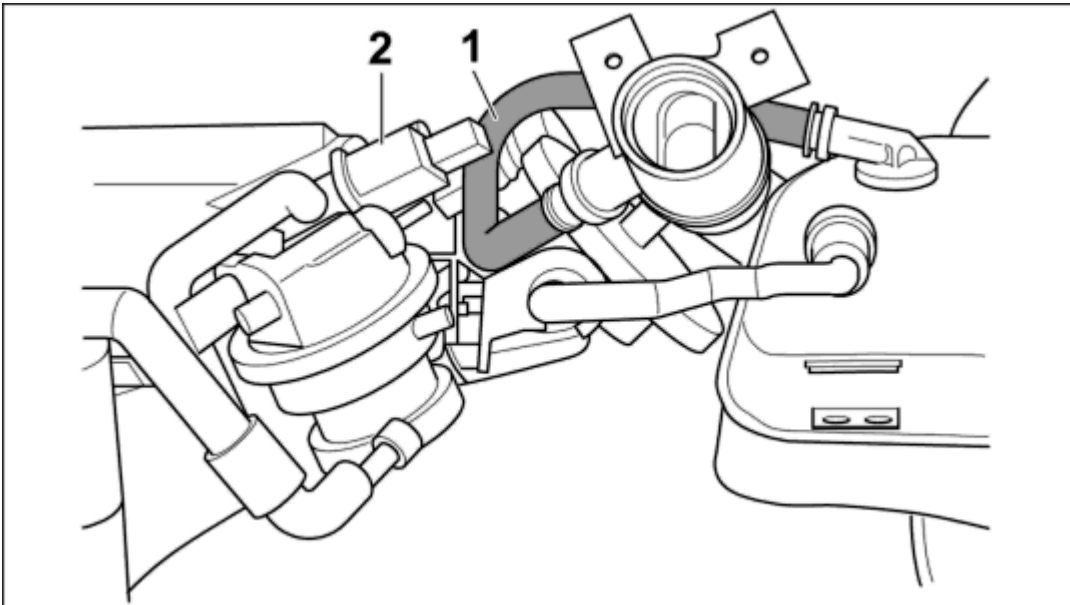
--> Make sure that the line runs below the valve.

5. Swivel carbon canister down into installation position from behind. Make sure that the fuel overflow line **-1-** is below the solenoid valve **-2-** . If the line is not routed correctly, this will cause damage during subsequent operation. See **Fig. 89**.

Picture shows the correct position of the line. View from above without rear side panel.

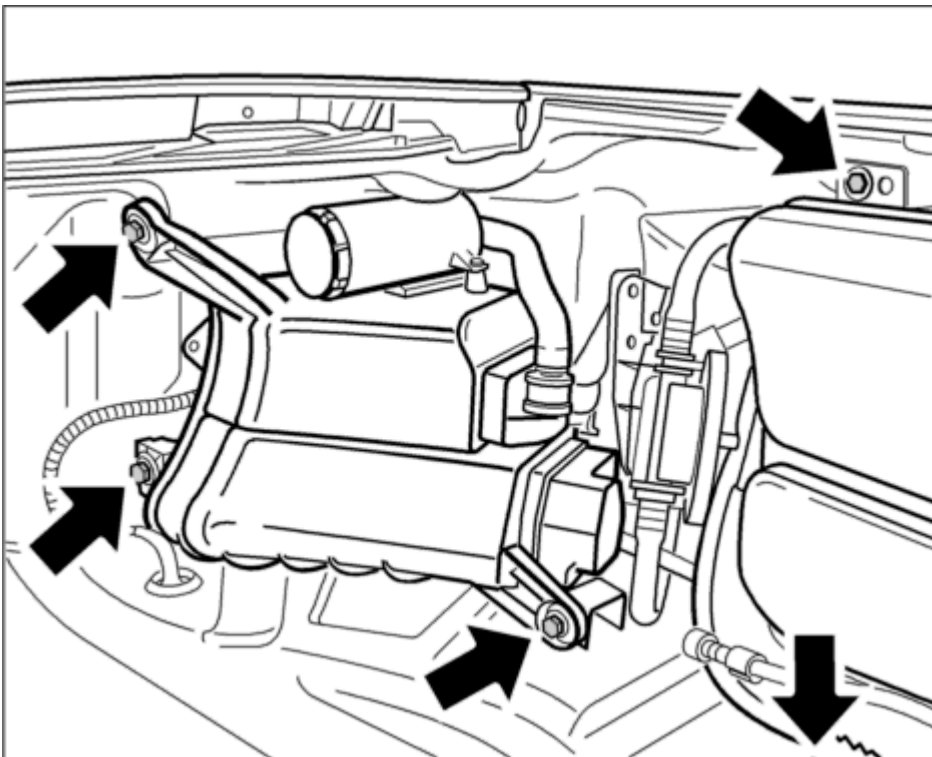
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 89: Fuel overflow line and solenoid valve**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

- 1 - Overflow line
- 2 - Solenoid valve



**Fig. 90: Fastening screws**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

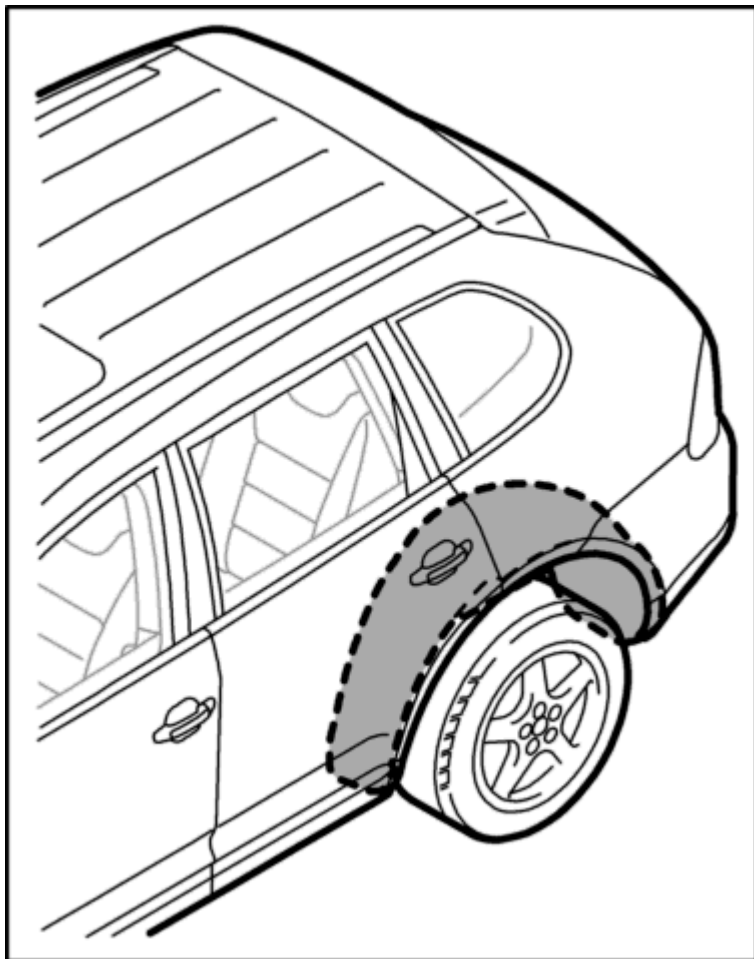
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

6. Tighten the 5 fastening screws on the carbon canister and the 2 on the degassing tank in the right wheel housing -arrows- . --> **Tightening torque: 7.5 ftlb.** See **Fig. 90**.

### SUBSEQUENT WORK

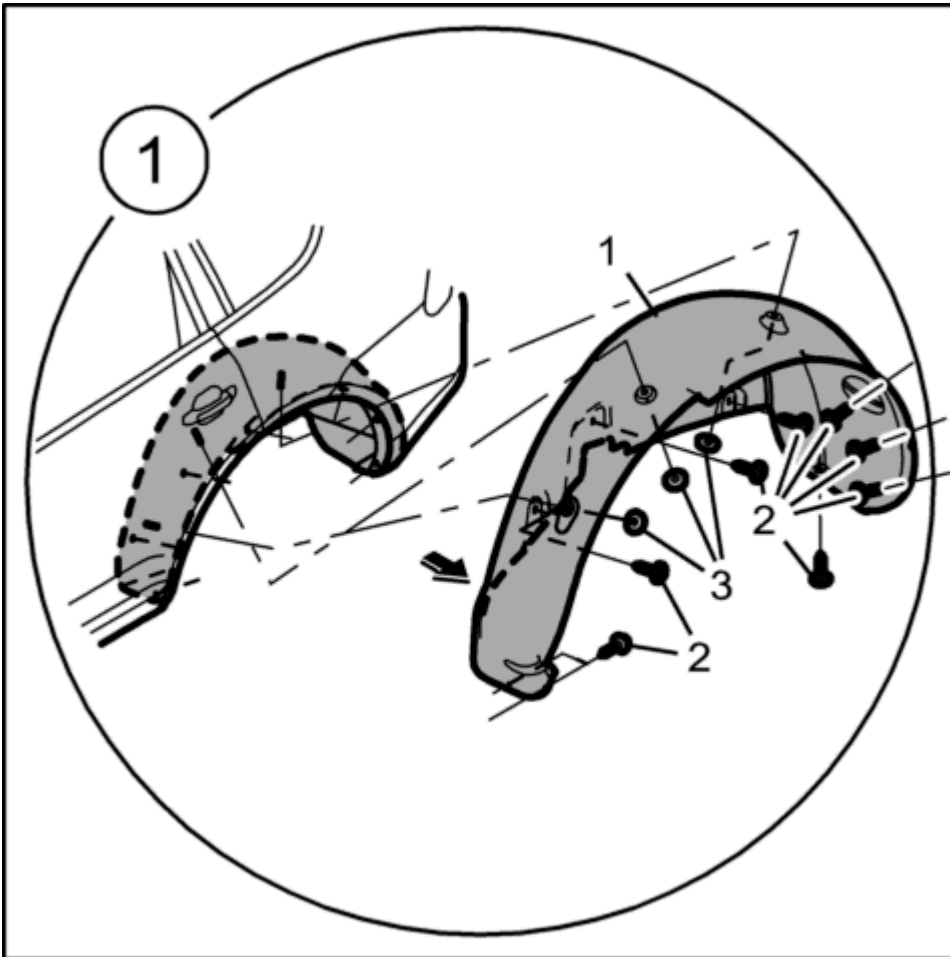
#### Subsequent work



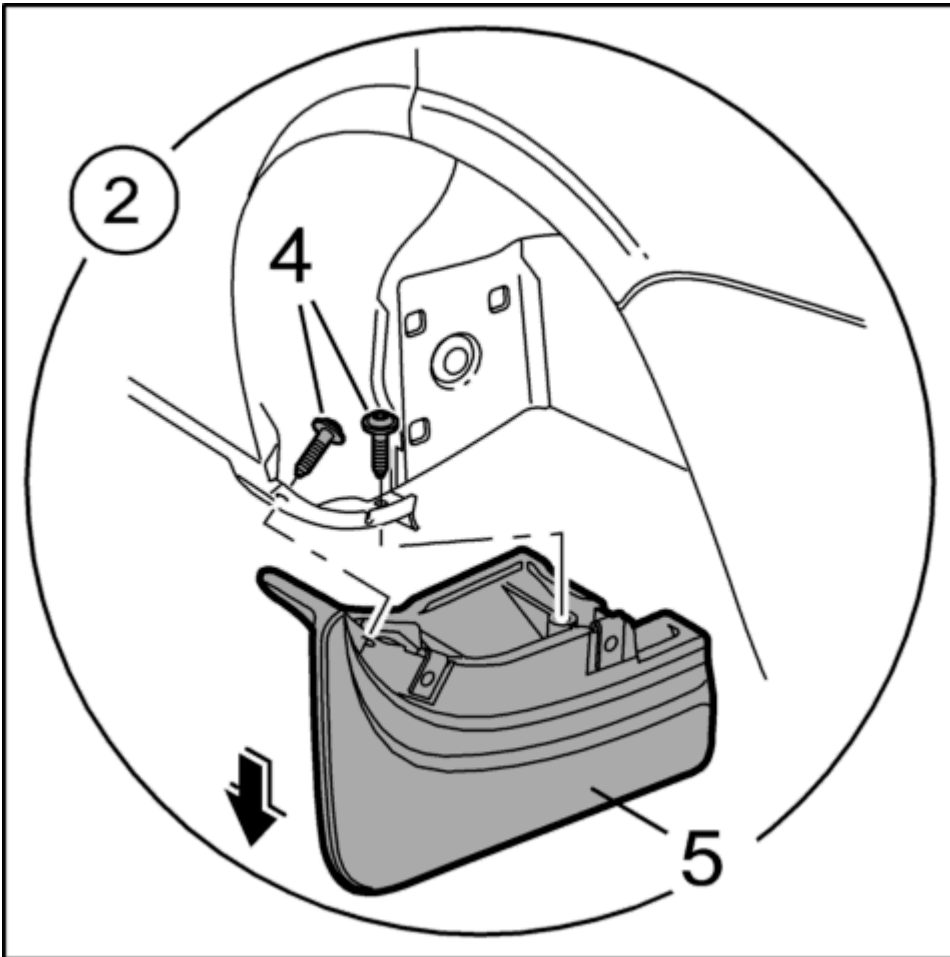
**Fig. 91: Rear wheel housing liner**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Install the right rear wheel housing liner. Refer to **53 69 19 Removing and installing rear wheel housing liners - as of MY 2003 (All Models)** .



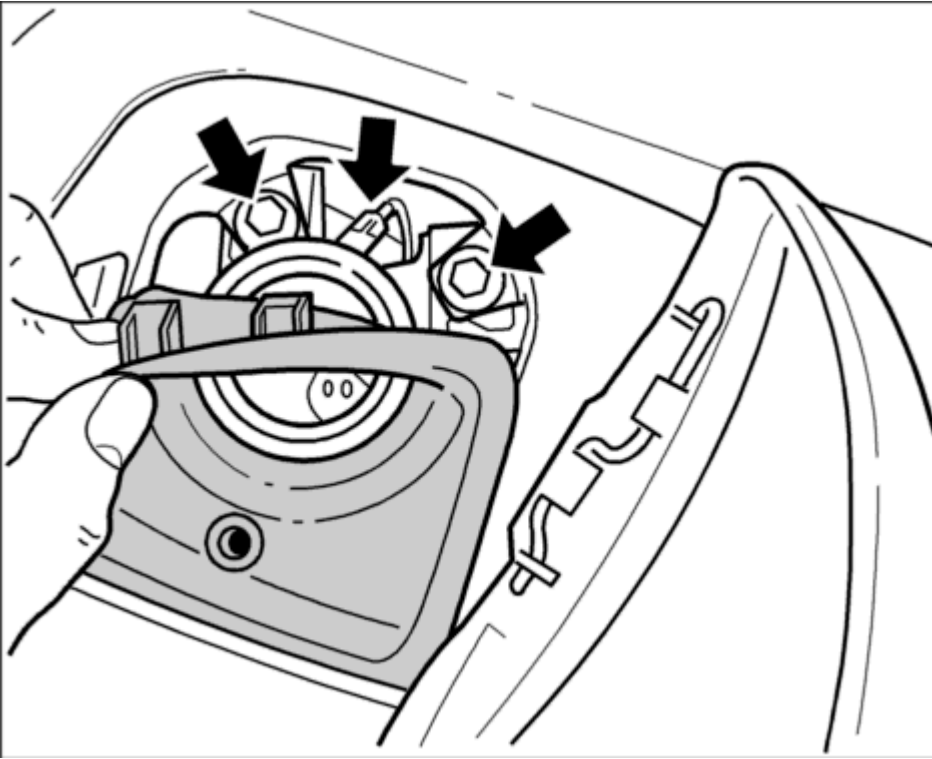
**Fig. 92: Rear wheel housing liner mount**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.



**Fig. 93: Mud flap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Mount rear wheel. Refer to **44 05 19 Removing and installing wheel - as of MY 2003 (All Models)** .



**Fig. 94: Fuel filler neck fastener**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Connect ground cable to fuel filler neck. Screw down the 2 fastening screws and mount rubber sleeve around the tank filler neck. --> **Tightening torque: 7.5 ftlb.**
4. Screw on tank cap.
5. Activate air suspension.

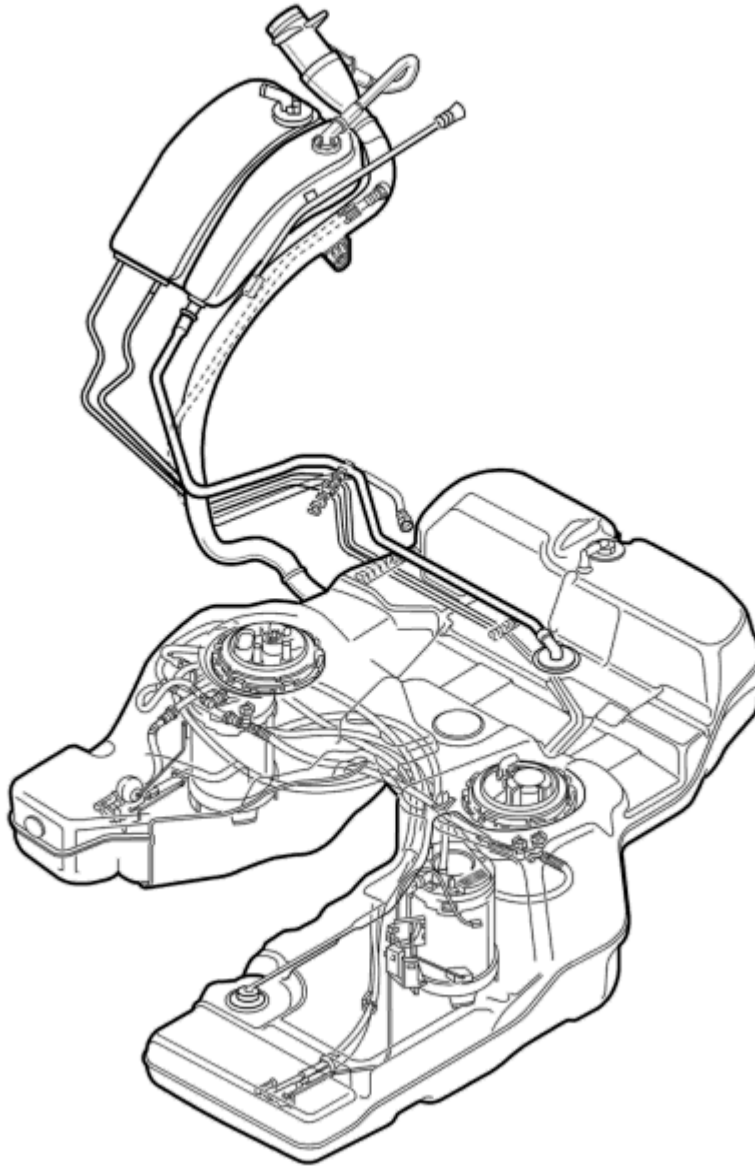
## **20 43 02 FUEL FILTER LINES CHECKED (IN TANK) - AS OF MY 2003 (ALL MODELS)**

### **INFORMATION**

**Installation Location:**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

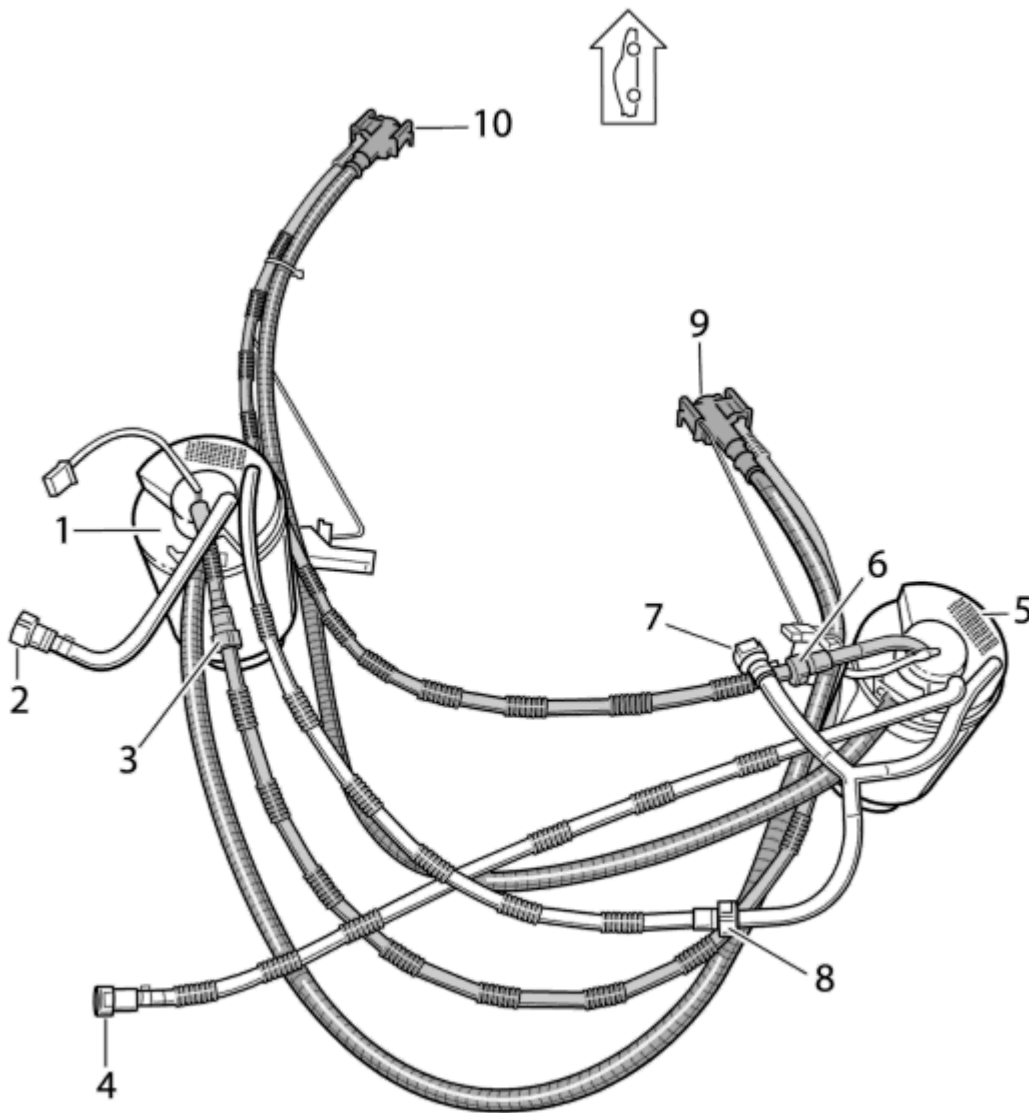


**Fig. 95: Overview - lines for fuel filter**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 96: Connection overview, lines for fuel filter**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

- 1 - Fuel pump, left
- 2 - Connection to fuel filter
- 3 - Fuel supply line connection
- 4 - Connection to fuel filter
- 5 - Fuel pump, right



## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

- 6 - Fuel supply line connection
- 7 - Connection to fuel pressure regulator
- 8 - Connection point for left fuel pump and pressure regulator
- 9 - Sucking jet pump of left pump
- 10 - Sucking jet pump of right pump

### **20 48 19 REMOVING AND INSTALLING LEAKAGE DIAGNOSIS PUMP (LDP) - AS OF MY 2003 (ALL MODELS EXCEPT CAYENNE S TIO TITAN)**

#### **GENERAL WARNING NOTES**

##### **Group 20 - Fuel supply, control**

#### **WARNING: Danger of poisoning from fuels!**

- > Gasoline is toxic.
- > Inhaling vapours can cause irritation of the mucous membranes and eyes.
- > It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.
- > Only work on the fuel system in well-ventilated rooms.
- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.
- > Pay attention to cleanliness when working on the fuel system.

#### **WARNING: Danger of fire from fuel!**

- > Keep clear of ignition sources.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

--> Do not smoke.

--> Disconnect battery.

--> Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.

--> Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.

--> Secure the vehicle, e. g. with a warning sign.

--> Change any clothing soaked with fuel immediately.

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

### NOTE:

- *The ignition must be switched off when working on the fuel system.*
- *Absorb any escaping fuel using a suitable binding material or a cloth.*
- *Cloths which have absorbed fuel must be disposed of according to the applicable national laws.*
- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*

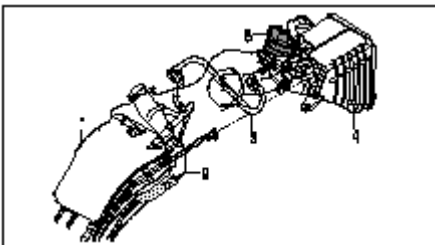
## PRELIMINARY WORK

### Preliminary work

1. Remove carbon canister and place it on a clean surface. --> **202521 Removing carbon canister**

## INFORMATION

### Component information



**Fig. 97: Overview of active carbon filter**

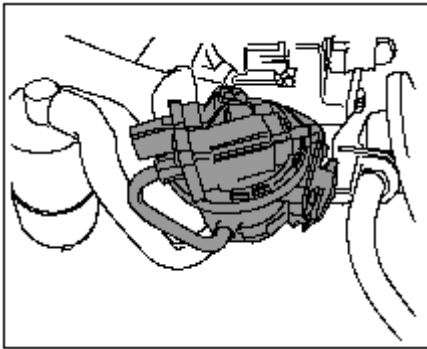
Courtesy of PORSCHE OF NORTH AMERICA, INC.

1 - Degassing tank

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

- 2 - Filler neck
- 3 - Pressure control valve
- 4 - Carbon canister
- 5 - Leakage diagnosis pump

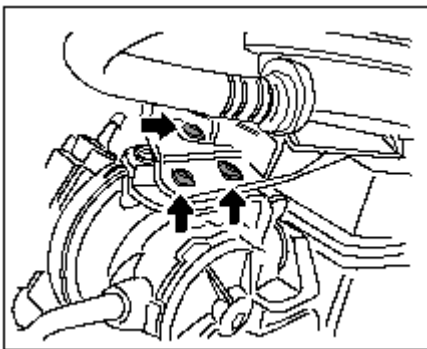


**Fig. 98: Installation position of leakage diagnosis pump**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

--> *Installation position of leakage diagnosis pump* . See **Fig. 98**.

### REMOVING LEAKAGE DIAGNOSIS PUMP (LDP)

Removing leakage diagnosis pump (LDP)

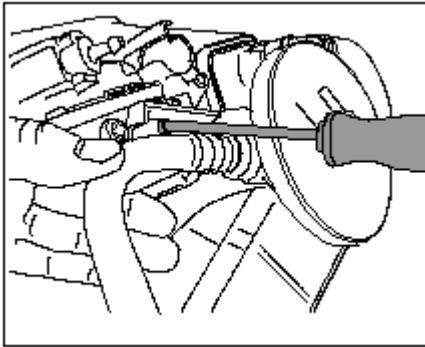


**Fig. 99: Leakage diagnosis pump mount**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Loosen three fastening screws on plastic support for pressure control valve. **-Arrows-** . See **Fig. 99**.

## 2004 Porsche Cayenne

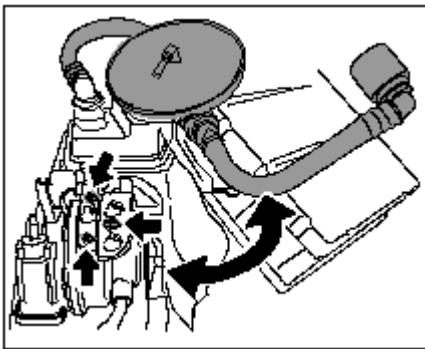
2003-2008 ENGINE Fuel, Actuation



**Fig. 100: Pressure control valve**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

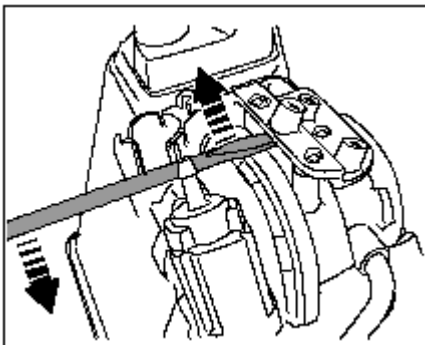
To remove the top fastening screw, carefully press the pressure control valve hose aside using a screwdriver and screw out the fastening screw. --> *Pressure control valve* . See **Fig. 100**.



**Fig. 101: Pressure control valve and leakage diagnosis pump mount**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Turn the pressure control valve to the side and remove the three fastening screws on the leakage diagnosis pump. --> *Pressure control valve and leakage diagnosis pump mount* . See **Fig. 101**.



**Fig. 102: Levering out leakage diagnosis pump**

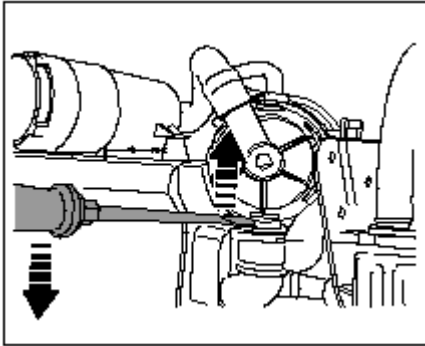
Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Carefully lever the leakage diagnosis pump out of the bracket on the active carbon filter using a screwdriver.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

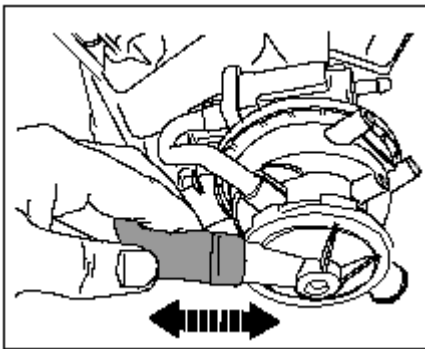
--> Levering out leakage diagnosis pump . See **Fig. 102**.



**Fig. 103: Rubber flange**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

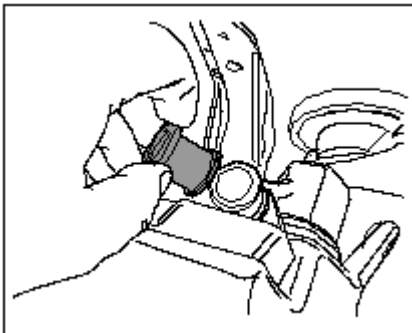
4. Carefully lever the leakage diagnosis pump out of the rubber flange on the housing using a screwdriver. --> *Rubber flange* . See **Fig. 103**.



**Fig. 104: Pulling off air hose**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Pull off the air hose. --> *Pulling off air hose* . See **Fig. 104**.

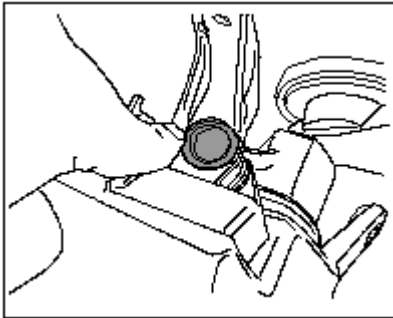


**Fig. 105: Rubber flange**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

6. If the rubber flange slips out of the housing and remains on the connection piece of the leakage diagnosis

pump while you are removing the leakage diagnosis pump, check the rubber flange for damage and insert it back flush into the carbon canister housing if it is OK. --> *Rubber flange --> Inserted rubber flange* . See **Fig. 105, Fig. 106.**

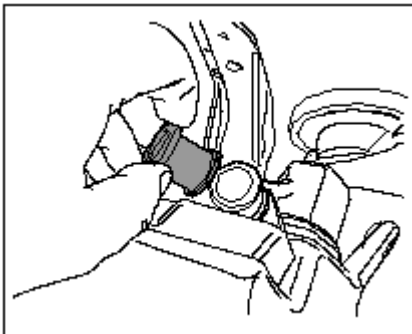


**Fig. 106: Inserted rubber flange**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

## INSTALLING LEAKAGE DIAGNOSIS PUMP (LDP)

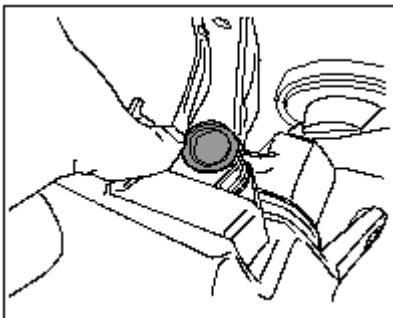
### Installing leakage diagnosis pump (LDP)



**Fig. 107: Rubber flange**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. If the rubber flange slips out of the housing and remains on the connection piece of the leakage diagnosis pump, check the rubber flange for damage and insert it back flush into the carbon canister housing if it is OK. --> *Rubber flange --> Inserted rubber flange* . See **Fig. 107, Fig. 108.**

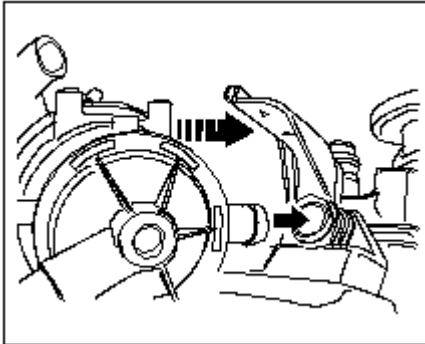


## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

**Fig. 108: Inserted rubber flange**

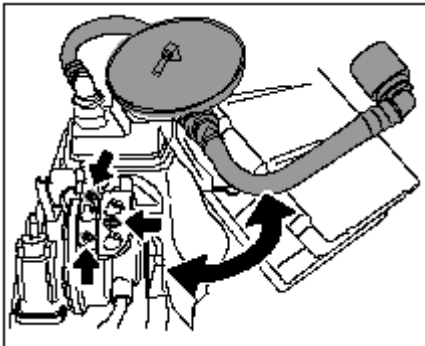
Courtesy of PORSCHE OF NORTH AMERICA, INC.



**Fig. 109: Fitting leakage diagnosis pump**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Lightly lubricate the connection piece of the leakage diagnosis pump and rubber flange with KLUEBER Syntheso Glep 1 (000 043 204 68 status 12/05) and carefully move leakage diagnosis pump into installation position. Make sure that the rubber flange is not pushed into the housing.



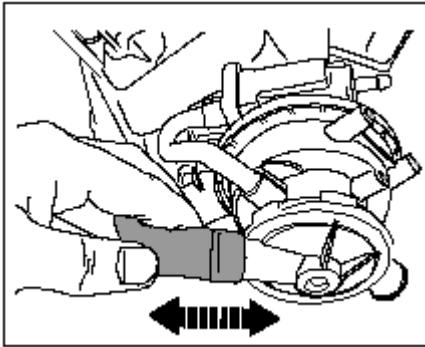
**Fig. 110: Pressure control valve and leakage diagnosis pump mount**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Ensure that the leakage diagnosis pump is seated correctly in the bracket for the active carbon filter. Fit the three fastening screws for the leakage diagnosis pump --> **Tightening torque: 3 (2 ftlb.) Nm** and turn pressure control valve back into installation position. --> *Pressure control valve and leakage diagnosis pump mount* . See **Fig. 110**.

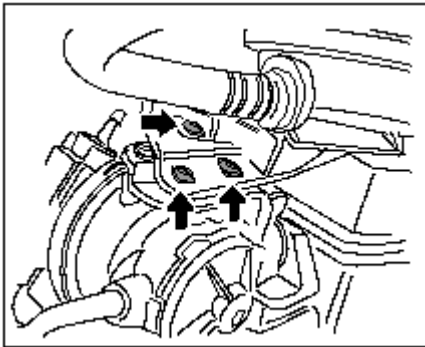
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



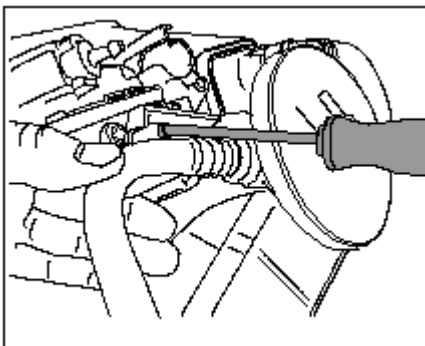
**Fig. 111: Fitting air hose on leakage diagnosis pump**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Fit air hose. --> *Fitting air hose on leakage diagnosis pump* . See **Fig. 111**.



**Fig. 112: Leakage diagnosis pump mount**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Fit three fastening screws on the plastic support for the pressure control valve --> **Tightening torque: 3 (2 ftlb.) Nm** . -Arrows- . See **Fig. 112**.



**Fig. 113: Pressure control valve**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

To fit the top fastening screw, carefully press the pressure control valve hose aside using a screwdriver and screw in the fastening screw. --> *Pressure control valve* . See **Fig. 113**.



## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

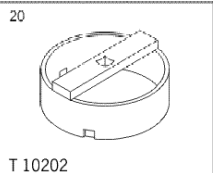
### SUBSEQUENT WORK

#### Subsequent work

1. Install carbon canister. --> **202523 Installing carbon canister**

### 20 60 19 REMOVING AND INSTALLING FUEL FILTER - AS OF MY 2003 (ALL MODELS)

#### TOOLS

Designation	Type	Number	Explanation	
key	VW-tool	T10202		

### PRELIMINARY WORK

#### Preliminary work

**NOTE:** The fuel filter is located under the left connection unit, and the pressure regulator is under the right connection unit. The procedure "Open tank" can be applied to both connection units (right pressure regulator, left fuel filter)

1. Empty the fuel tank. --> **Draining and filling fuel**

#### Opening the tank

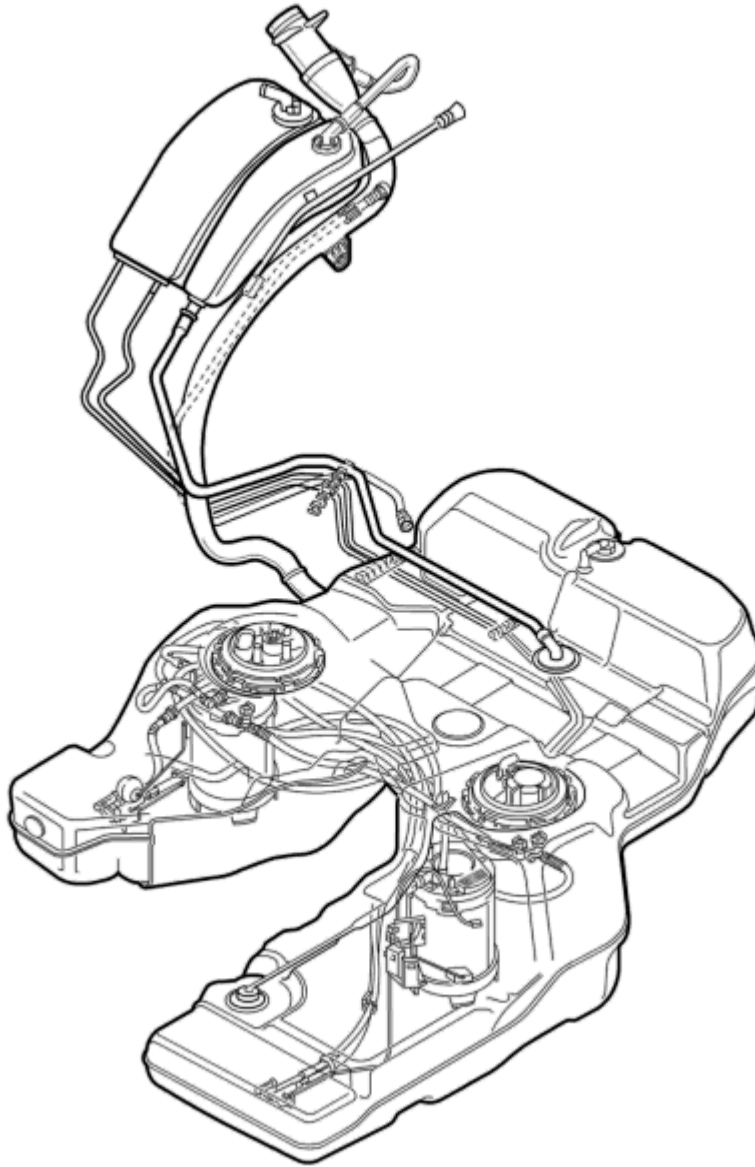
**NOTE:**

- *If the tank must be opened for emptying, disconnect all connections.*

#### Installation Location:

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

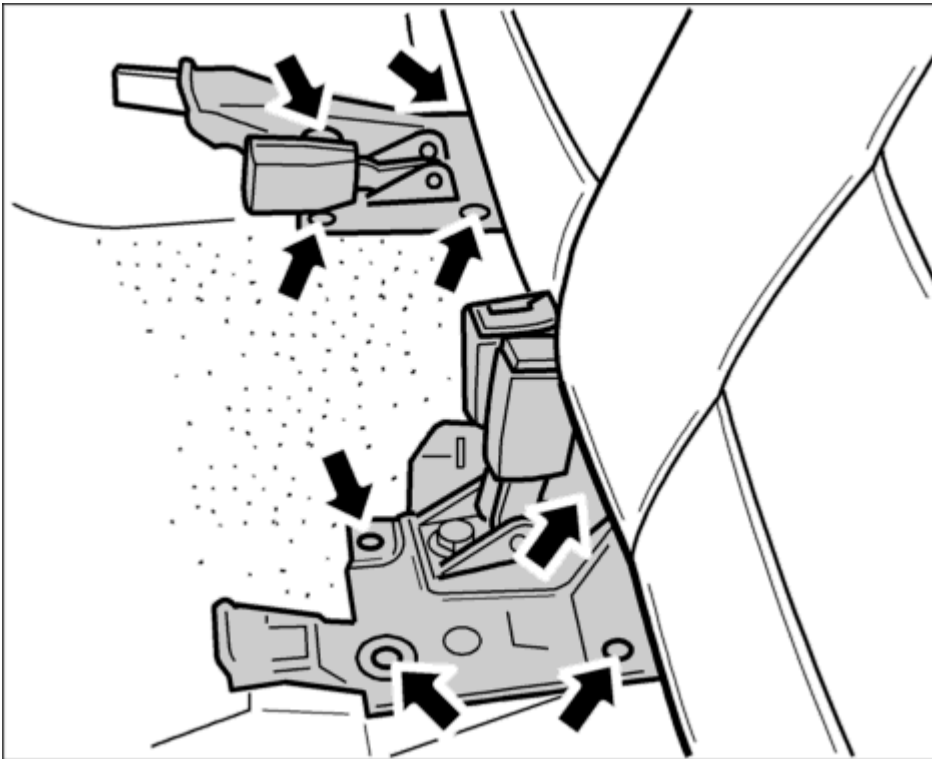


**Fig. 114: Component overview: fuel tank**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Open filler flap.
2. Fold rear seat forwards.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

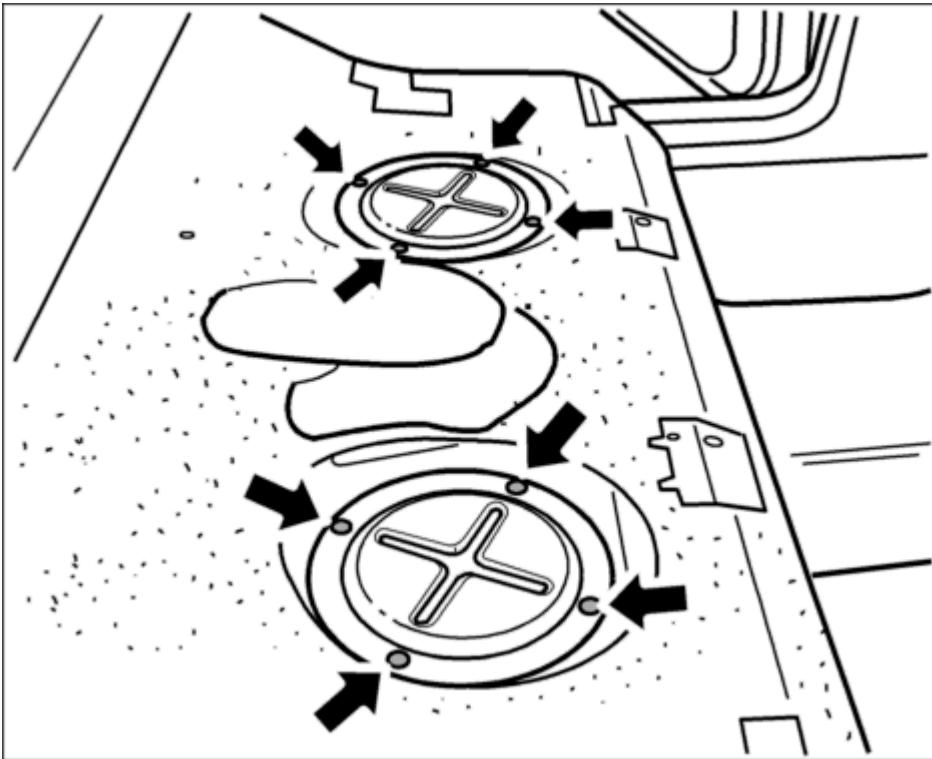


**Fig. 115: Fastening screws for retaining brackets of seat-belt buckles**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Fold up the retaining brackets of the (right and left) seat-belt buckles. To do so, loosen the four fastening screws and fold up the bracket with the seat-belt buckle. Do not use the fastening screws again.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



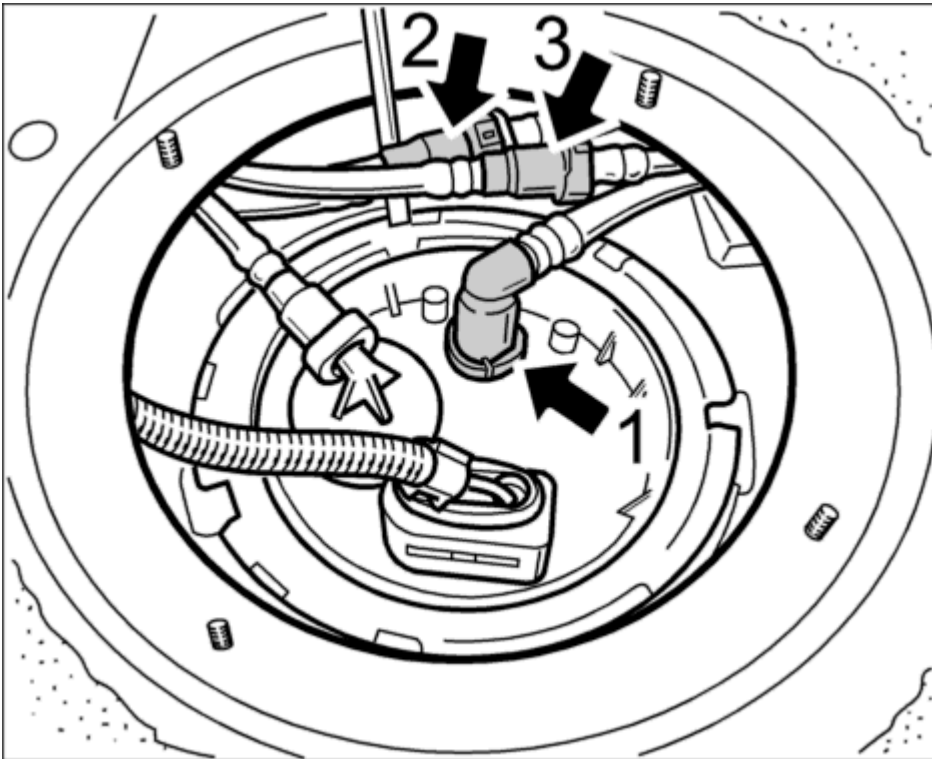
**Fig. 116: Fastening nuts for cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Undo the caps (figure shows both). To do so, cut out the carpeted floor along the perforated lines using a carpet knife and fold it over. Then unscrew the four fastening nuts and remove the lid.

5. Empty the fuel tank if this has not already been done or if the fuel level in the fuel tank is very low. -->

### **Draining and filling fuel**



**Fig. 117: Fuel supply and disconnection points at right connection unit**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

**WARNING: Danger of poisoning from fuels!**

- > Gasoline is toxic.
- > Inhaling vapours can cause irritation of the mucous membranes and eyes.
- > It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.
- > Only work on the fuel system in well-ventilated rooms.
- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

--> Pay attention to cleanliness when working on the fuel system.

### **WARNING: Danger of fire from fuel!**

--> Keep clear of ignition sources.

--> Do not smoke.

--> Disconnect battery.

--> Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.

--> Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.

--> Secure the vehicle, e. g. with a warning sign.

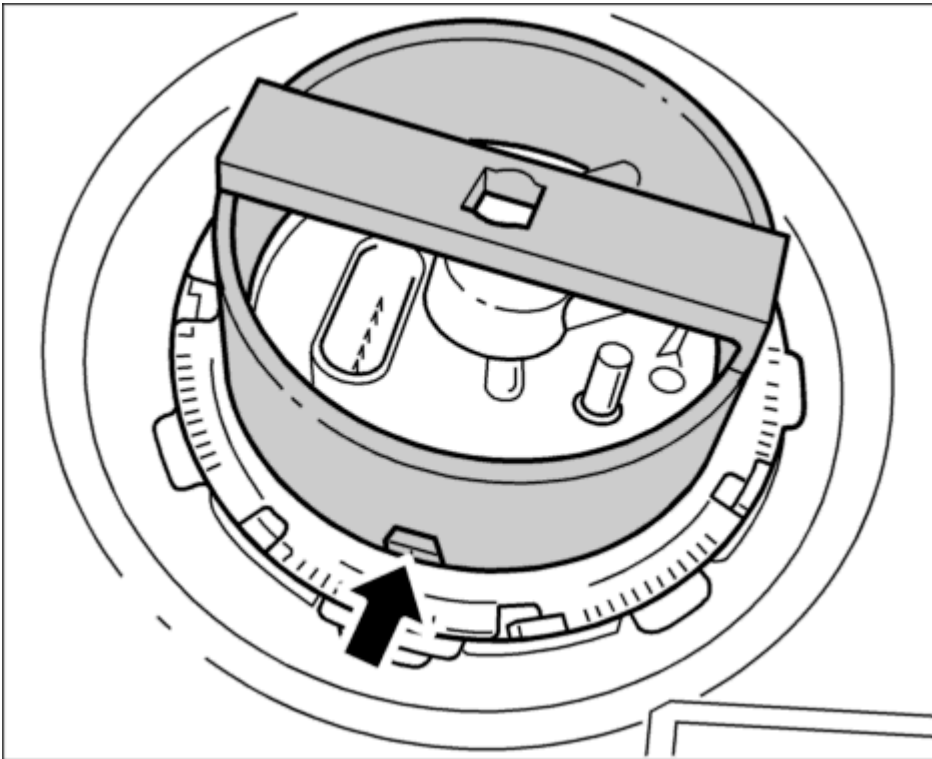
--> Change any clothing soaked with fuel immediately.

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

### **NOTE:**

- *The ignition must be switched off when working on the fuel system.*
- *Absorb any escaping fuel using a suitable binding material or a cloth.*
- *Cloths which have absorbed fuel must be disposed of according to the applicable national laws.*
- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*

6. Carefully remove the fuel supply **-1-** at the relevant connection unit (right connection unit here) and loosen the two disconnection points **-2 and 3-**. Also remove line (not shown here) in vehicles with auxiliary heating (auxiliary heater). Do the same at the left connection unit. Disconnect all connections on the connection unit. See **Fig. 117**.



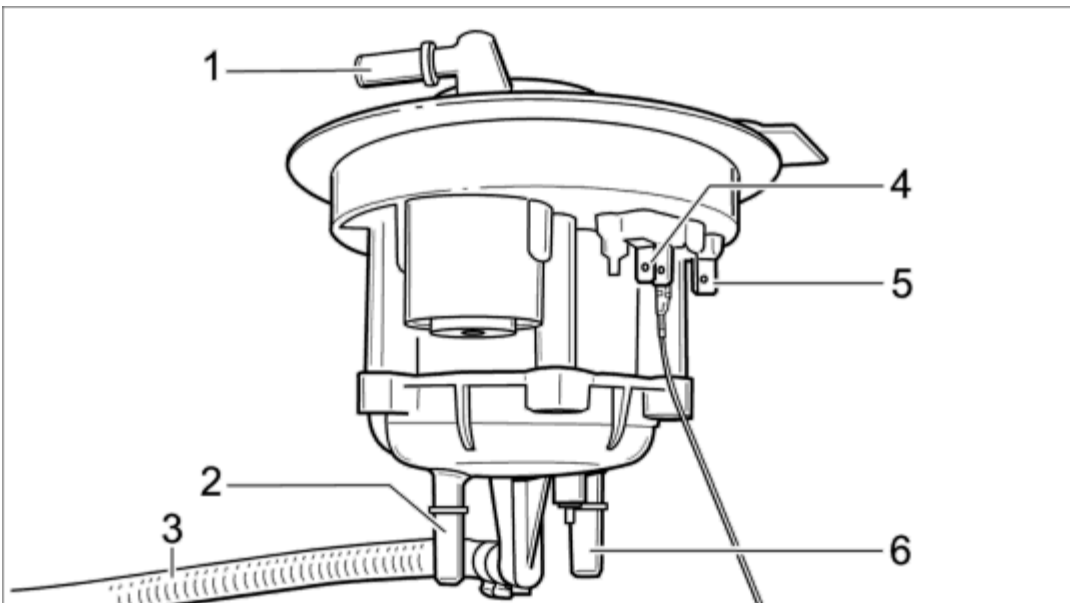
**Fig. 118: Cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

7. Open the relevant cap with the **key T10202** and lift up the connection unit (cap).

## INFORMATION

### Component overview



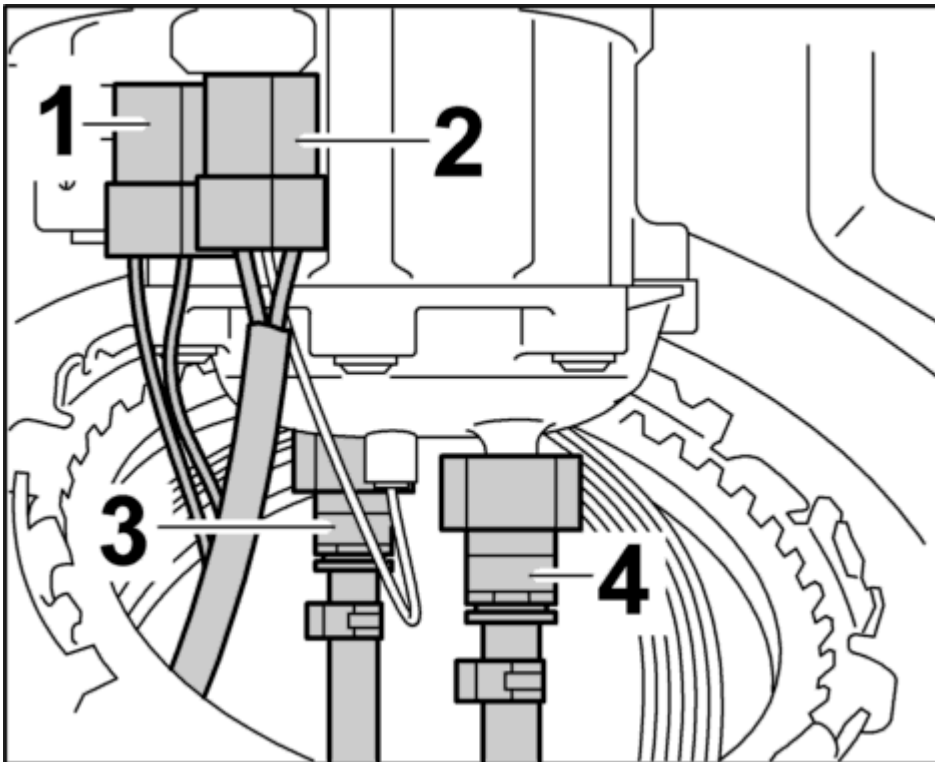
**Fig. 119: Component overview of left connection unit (fuel filter)**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

- 1 - Adapter for bleeding
- 2 - Filter feed from left pump
- 3 - Fuel supply to pressure regulator
- 4 - Electric connection for fuel pump
- 5 - Electric connection for fuel level sensor
- 6 - Filter feed from right pump

## REMOVING FUEL FILTER

### Removing fuel filter



**Fig. 120: Connection unit**

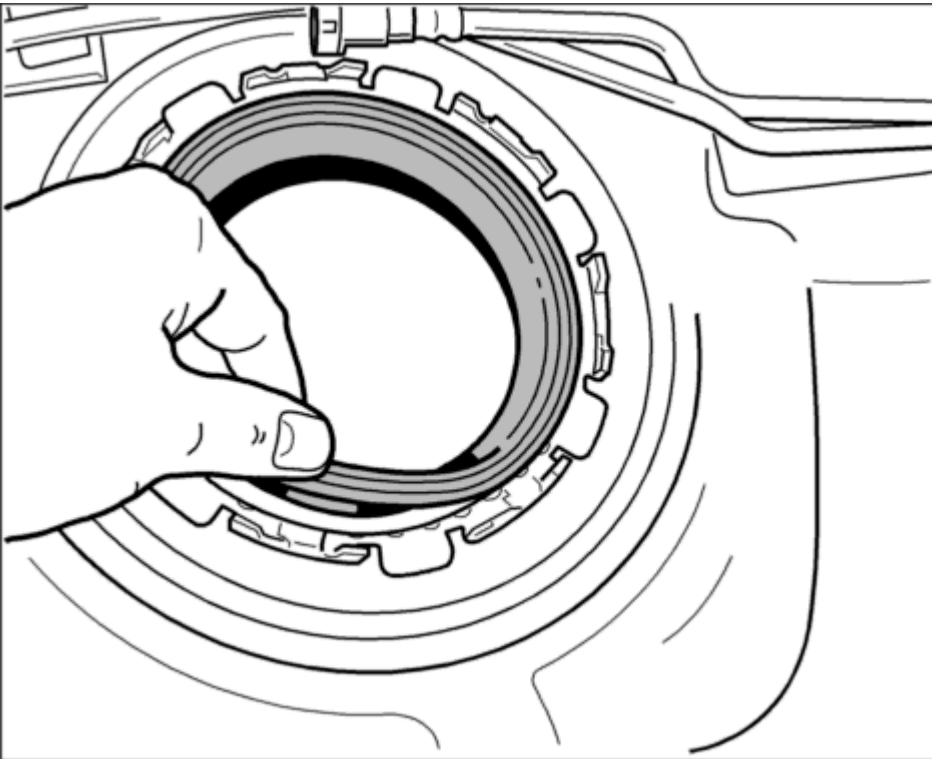
Courtesy of PORSCHE OF NORTH AMERICA, INC.

- 1. Disconnect electric connectors -1 and 2-. Then pull off the fuel lines -3 and 4- and remove the filter unit. See **Fig. 120.**

## INSTALLING FUEL FILTER



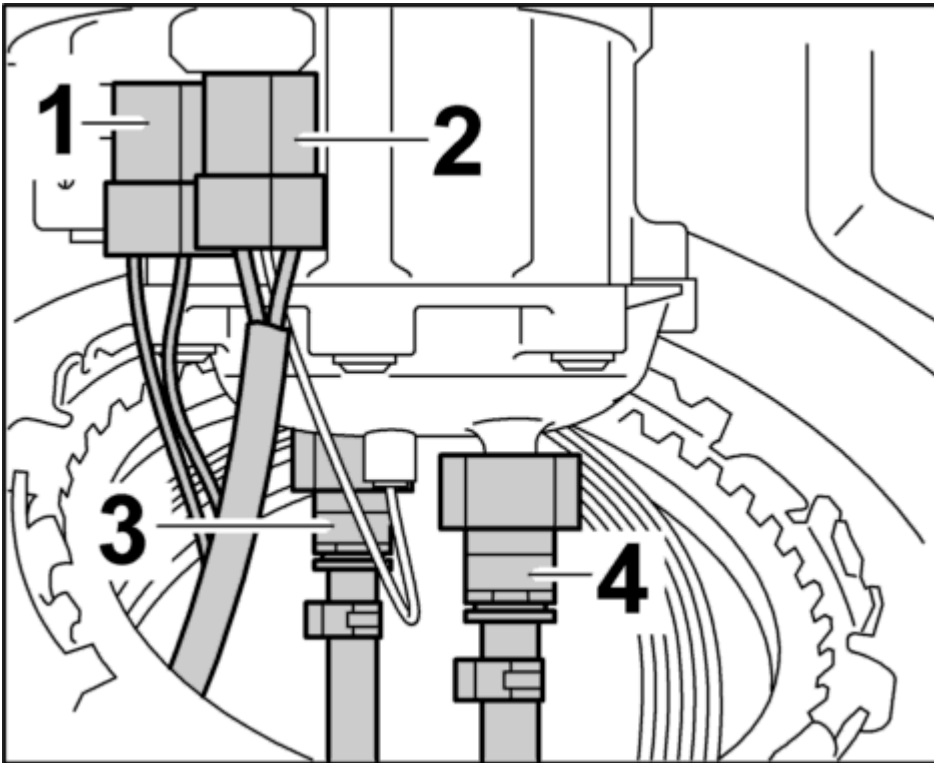
**Installing fuel filter**



**Fig. 121: Seal**

**Courtesy of PORSCHE OF NORTH AMERICA, INC.**

1. Fit new seal in the opening of the tank.



**Fig. 122: Connection unit**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

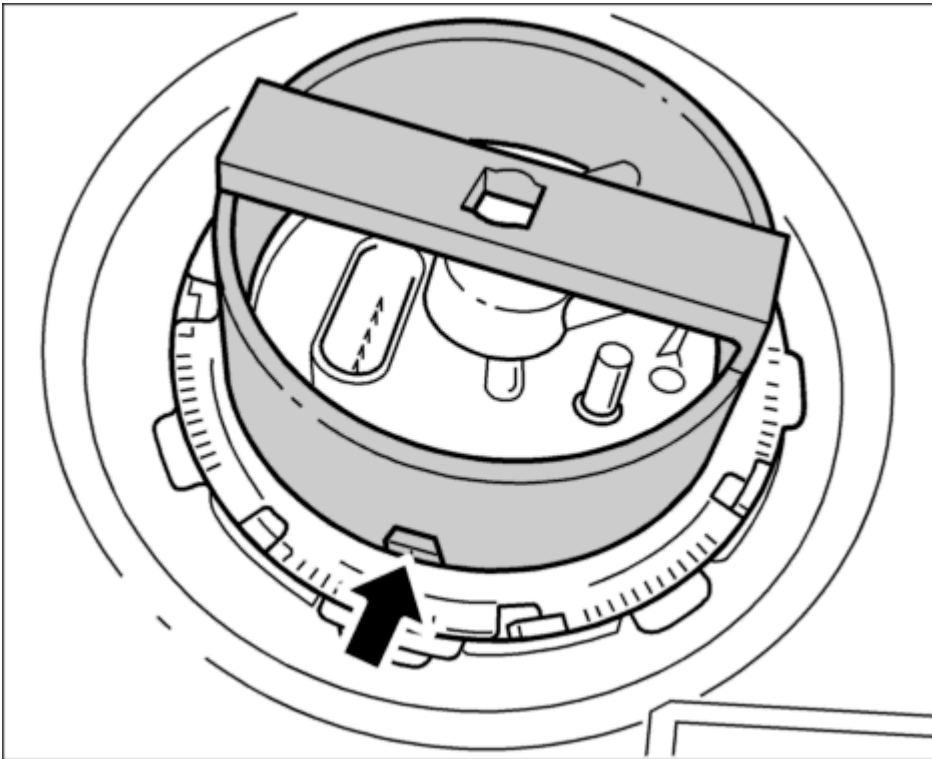
2. Connect filter unit. Mount the electric connector **-1 and 2-** and the hose connections **-3 and 4-** . See **Fig. 122**.
3. Place the connection unit into the tank. When doing so, make sure that the plastic lug is pointing forwards.

## **SUBSEQUENT WORK**

**Closing the tank**

## 2004 Porsche Cayenne

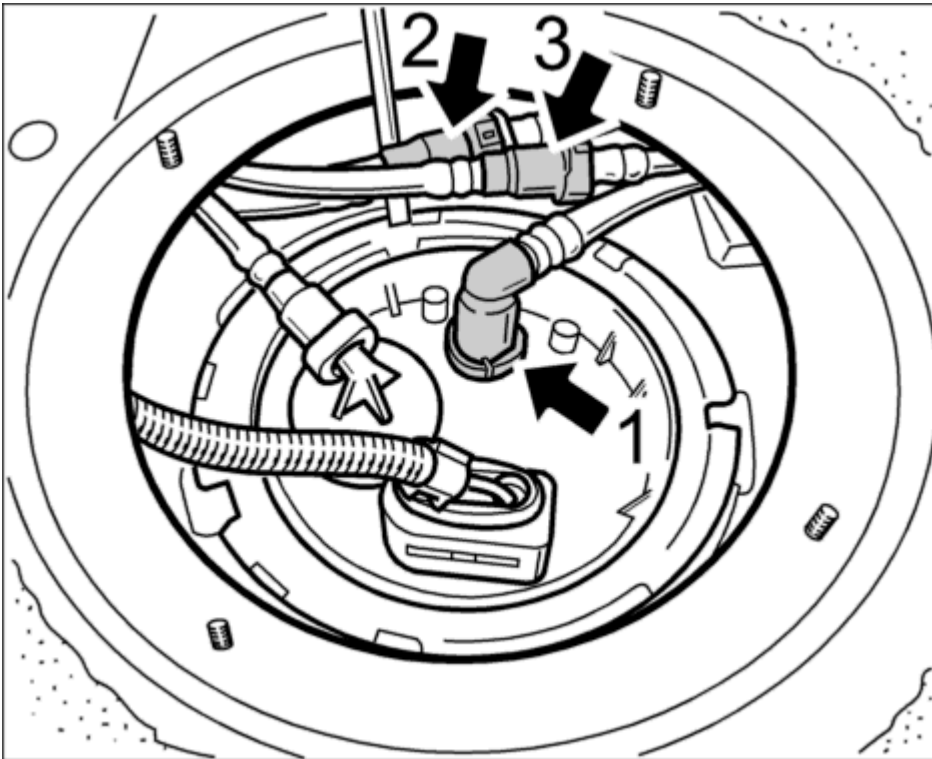
2003-2008 ENGINE Fuel, Actuation



**Fig. 123: Cap**

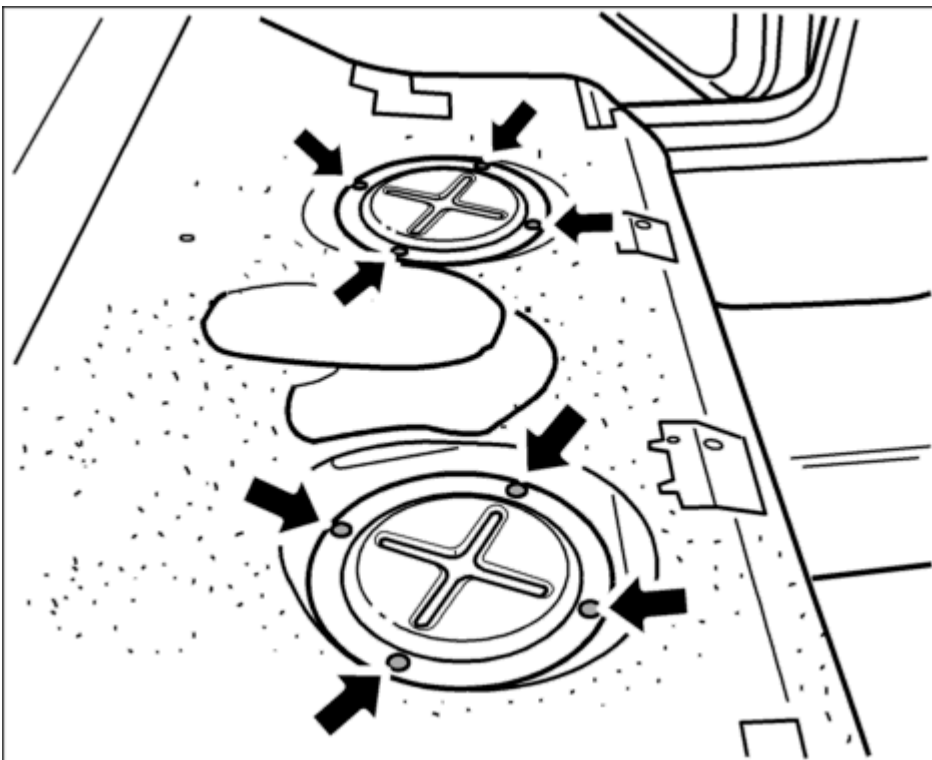
Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Close the tank. To do so, fit the sheetmetal ring and tighten using the **key T10202**. --> **Tightening torque: 104 ftlb.**



**Fig. 124: Fuel lines, ventilation tubes and electric plugs**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

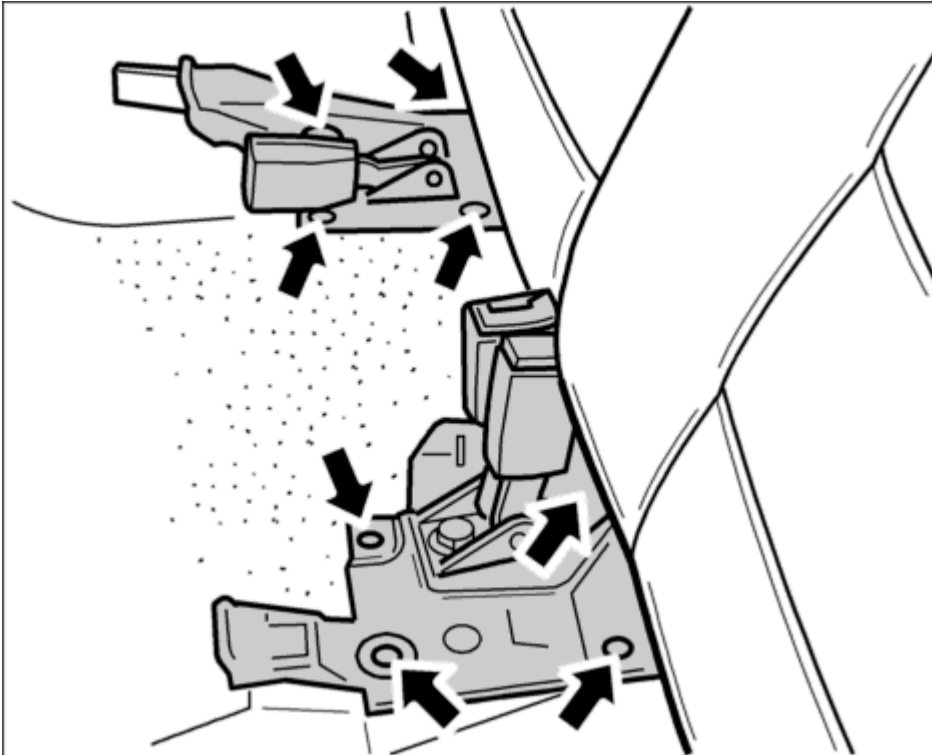
2. Fit all connections (fuel lines, ventilation tubes and electric plugs).



**Fig. 125: Fastening nuts for cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Fit the lid. Then tighten the four fastening nuts. --> **Tightening torque: 7.5 ftlb.** Refit carpeted floor and fix with double-sided adhesive tape.



**Fig. 126: Fastening screws for retaining brackets of seat-belt buckles**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Tighten the seat-belt buckle fastening plates. Use three new fastening screws for this and tighten. For tightening torque, refer to **69 25 19 Removing and installing rear belt lock - as of MY 2003 (All Models)** .
5. Fold rear seat down again.
6. Fill fuel tank (refuel). --> **Draining and filling fuel**

#### Subsequent work



1. Fill fuel tank (refuel). --> **Draining and filling fuel**

## 20 66 01 CHECKING QUANTITY OF FUEL DELIVERED - AS OF MY 2003 (CAYENNE S TIP, CAYENNE S MAN, CAYENNE TURBO, CAYENNE TURBO S, CAYENNE S TIO TITAN)

### TOOLS

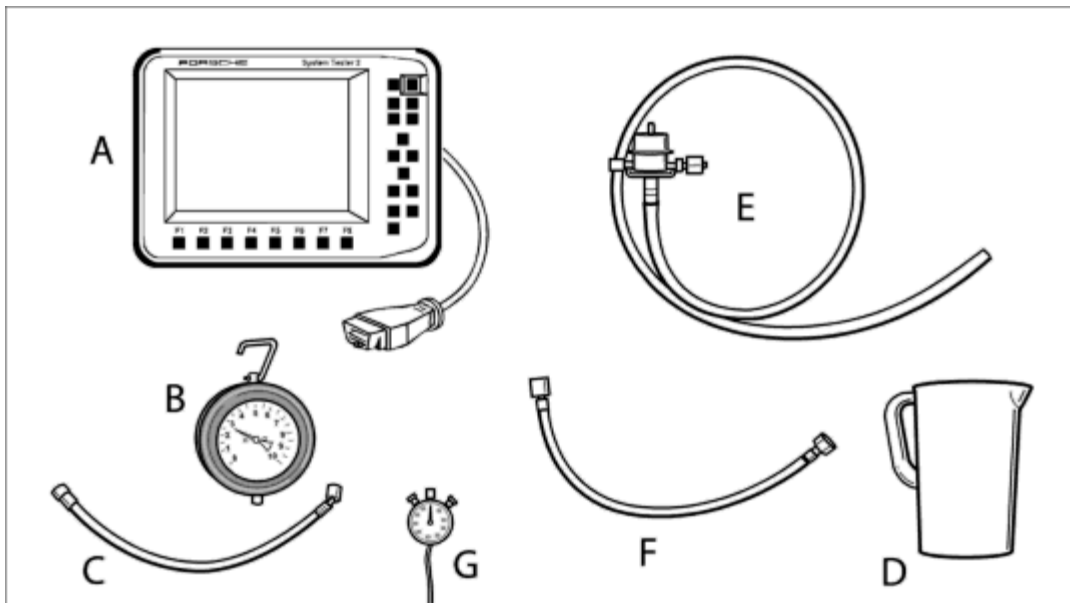
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

Designation	Type	Number	Explanation	
Porsche System Tester II	special tool	9588		 03 9588 000 721 958 80
Pressure gauge	special tool	P 378a		 25 P 378a 000 721 378 10
Connection line	special tool	P 9559		
measurement tool set	special tool	P 9684		
Measuring adapter	special tool	P 9705		
Connecting lead	special tool	P 9705/1		

### TOOLS AND MATERIALS

#### Special tools



**Fig. 127: Tool illustration for fuel pressure**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

Item	Designation of tool	Explanation
-A- See Fig. 127.	<b>Porsche System Tester II 9588</b>	The fuel pumps are required for short-term activation during the delivery rate test.
-B- See Fig. 127.	<b>Pressure gauge P 378a</b>	For fuel pressure test.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

<b>-C-</b> See <b>Fig. 127.</b>	<b><u>Connection line P 9559</u></b>	Hose line for pressure gauge. Do not interchange with <b>-F-</b> . There is a sheetmetal clip in the connecting piece for the fuel gallery which opens the scavenging valve during the test procedure. See <b>Fig. 127.</b>
<b>-D-</b> See <b>Fig. 127.</b>	Commercially available measuring cup with scale	Must hold at least 3 litres.
<b>-E-</b> See <b>Fig. 127.</b>	<b><u>Measuring adapter P 9705</u></b>	Controls the test pressure when measuring. Must not be impinged with under/overpressure.
<b>-F-</b> See <b>Fig. 127.</b>	<b><u>Connecting lead P 9705/1</u></b>	Hose line for delivery rate test. Must not be interchanged with <b>-C-</b> . There is no metal clip in the connecting piece for the fuel gallery. See <b>Fig. 127.</b>
<b>-G-</b> See <b>Fig. 127.</b>	Commercially available stopwatch	A wrist watch can also be used to be able to time exactly 1 minute.

### INFORMATION

#### Test conditions

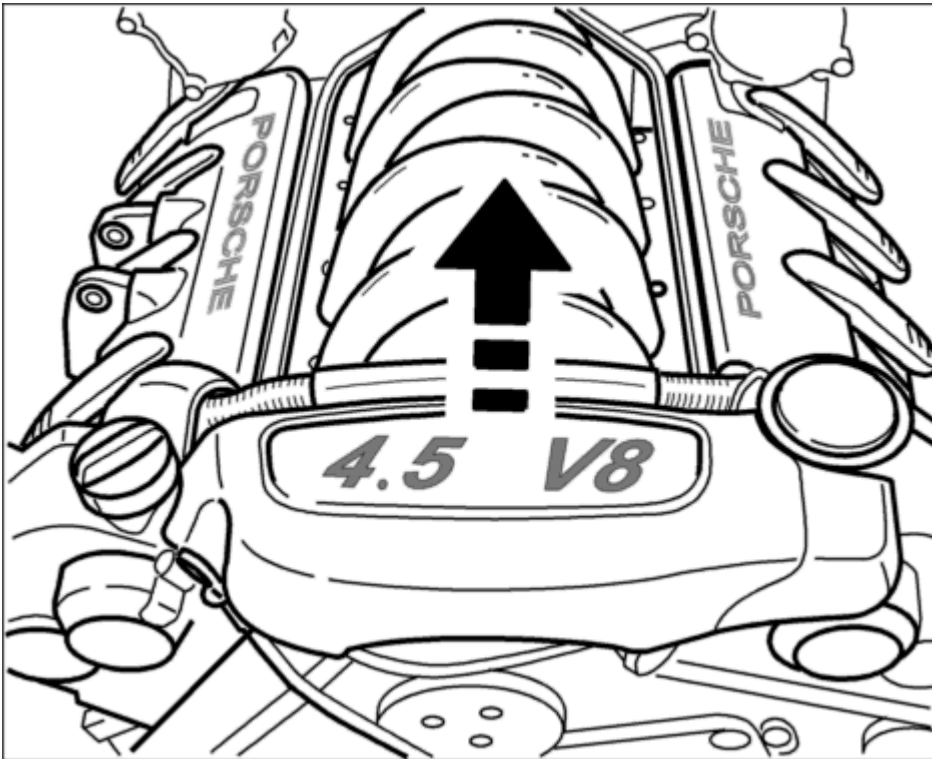
- The battery voltage must not be < 12 volts.
- If an insufficient delivery rate is determined in the delivery rate test, the measurement on the second scavenging valve of the fuel gallery will be repeated.
- Fuel system parts must not get dirty.

### CHECKING QUANTITY OF FUEL DELIVERED

#### Checking fuel delivery rate

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

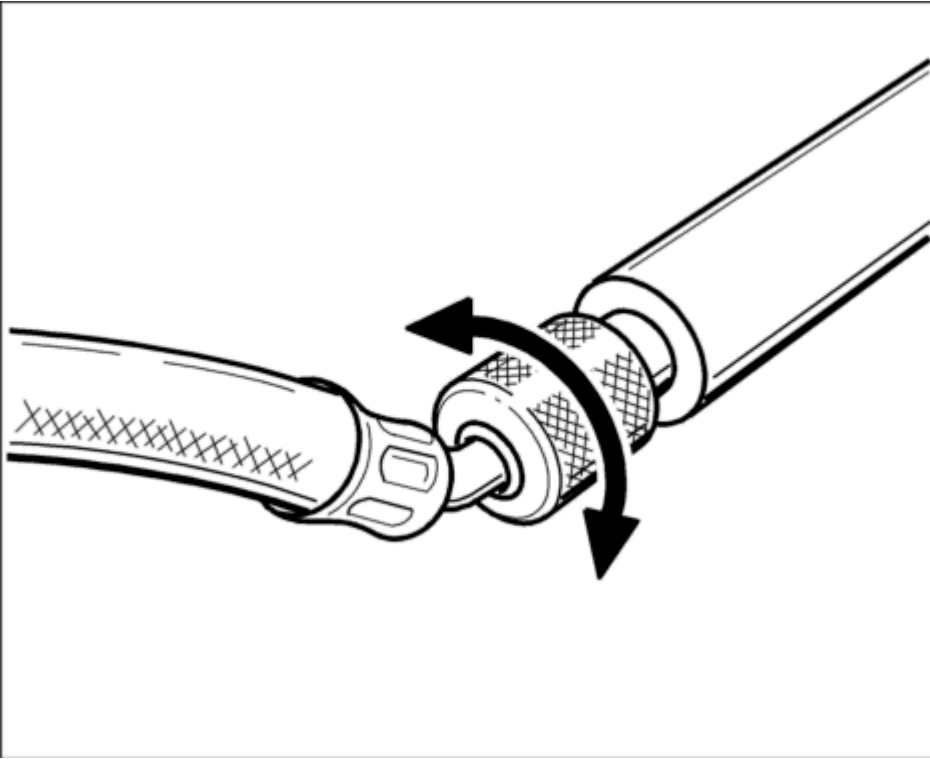


**Fig. 128: Throttle body cover**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Pull the cover of the throttle body up and off.
2. Unscrew cap on the front right of the fuel gallery.





**Fig. 129: Test hose/measuring adapter connection**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**WARNING: Danger of fire and injury!**

- **Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge.**
- **Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.**

--> Secure the vehicle, e. g. with a warning sign.

--> Wear protective gloves that are fuel-resistant.

--> Ensure that there is adequate ventilation and extract all fuel vapours.

--> Before opening the fuel lines or fuel hoses, relieve the fuel pressure.

--> Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.

--> Pay attention to cleanliness when working on the fuel system.

--> Avoid contact with the skin and eyes.

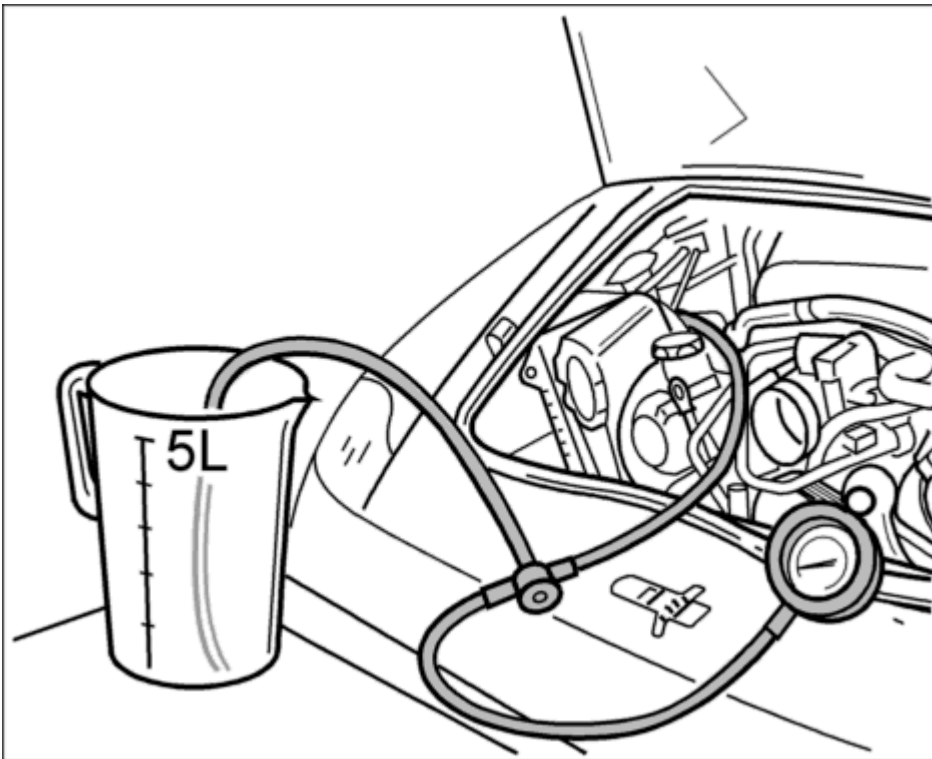
**NOTE:**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

- ***The fuel gallery is pressurised! Place a cloth near the front of the fuel gallery to prevent fuel dripping onto hot engine parts.***

3. Join the test hose to the measuring adapter and connect the other end to the scavenging valve on the fuel gallery.



**Fig. 130: Test setup**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

### NOTE:

- ***For the delivery rate check, a second person should clock the time.***

4. Place the open hose end from the pressure regulator in the measuring beaker.

5. Connect jumper lead 26 to two test leads 16 taken from **measurement tool set P 9684** and use these to bridge the fuel pump. The exact assignment of the contacts can be obtained from Refer to **97 84 IN Fuse carrier - as of MY 2003 (All Models)** .

### NOTE:

- ***To avoid incorrect readings, make sure that the hose lines are already full of fuel at the start of the test.***

6. Keep fuel pump switched on until fuel emerges from the end of the hose. Then empty the measuring beaker.

7. Switch on fuel pump I (left pump) for one minute. Then monitor the fuel delivered and note the quantity. Now repeat the process with pump II (right pump).

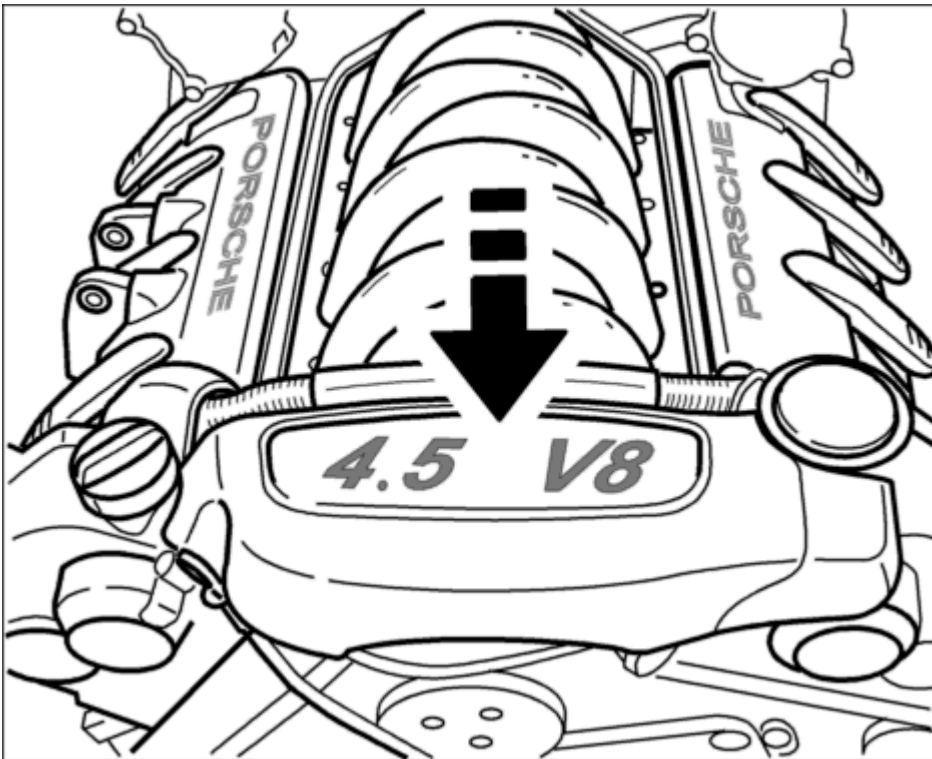
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

Fuel pump	Delivery rate
Fuel pump I (left)	> 1.6 l/min
Fuel pump II (right)	> 1.3 l/min

If the test delivery rate produced in the test is too low, repeat it at the right scavenging valve of the fuel gallery.

8. On completion of the test, switch off the ignition and remove test tool.



**Fig. 131: Cover**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**WARNING: Danger of fire due to faulty scavenging valves!**

--> Only use the special, Porsche-approved valves in the fuel gallery.

--> Do not replace scavenging valves by tire valves.

--> It is essential that the plastic cap is also replaced.

9. Press the four rubber elements in the cover onto the four ball socket holders. The mounts must be felt to engage.

**20 66 01 CHECKING QUANTITY DELIVERED BY FUEL PUMP - AS OF MY**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

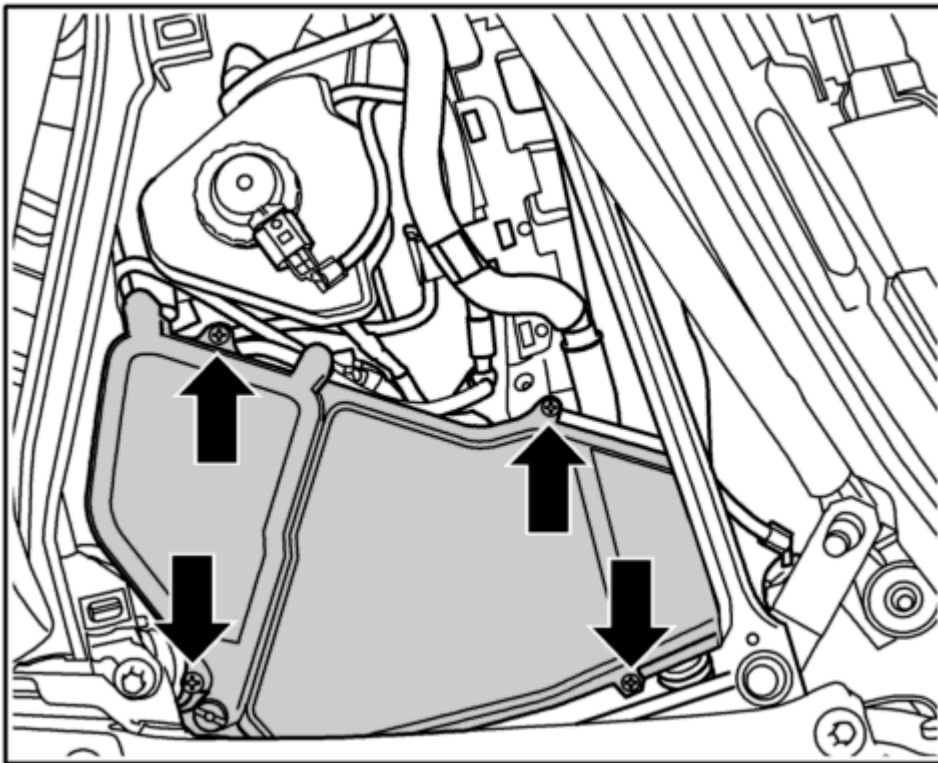
### 2004 (CAYENNE TIP, CAYENNE MAN)

#### TOOLS

Designation	Type	Number	Explanation	
Adapter	special tool	P 9479		

#### PRELIMINARY WORK

1. Open the bonnet.



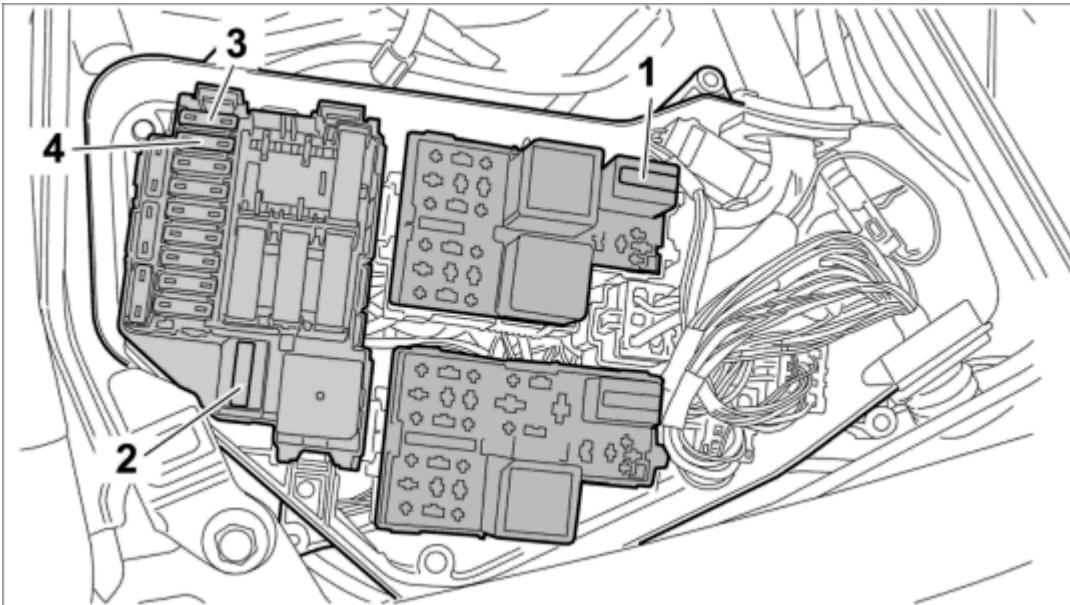
**Fig. 132: Central electrics box**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Open lid of central electrics box. To do this, loosen the four fastening screws.
3. Remove fuses **-3-** for the ignition rod modules, **-4-** injection system and both fuel pump relays (left pump **-1-** and right pump **-2-** ). See **Fig. 133**.

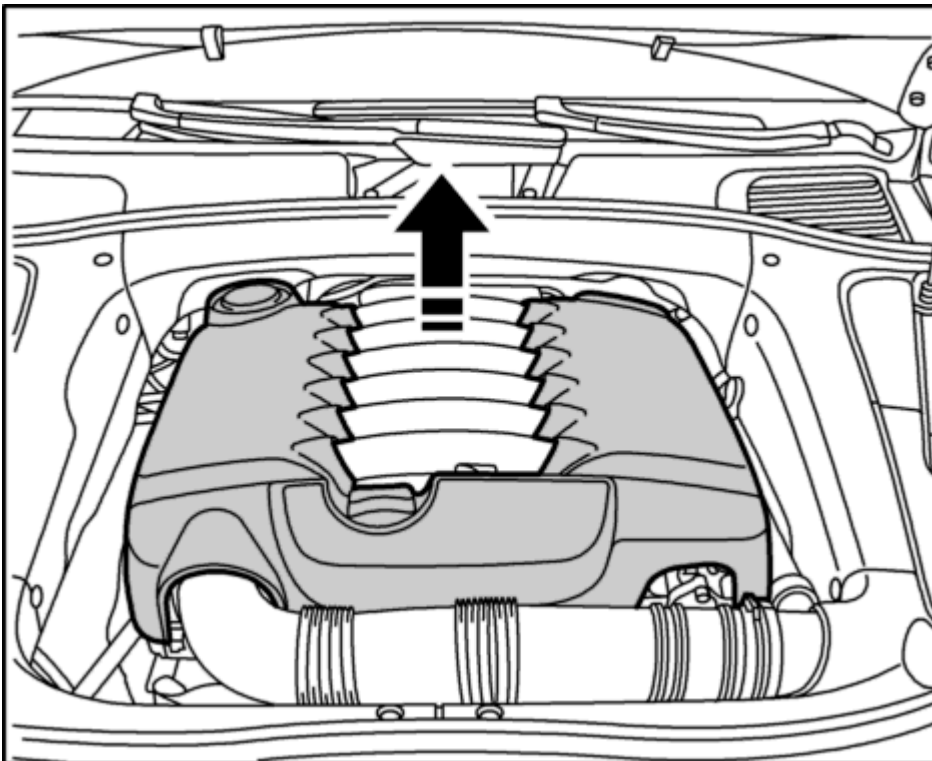
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 133: Fuse carrier**

Courtesy of PORSCHE OF NORTH AMERICA, INC.



**Fig. 134: Design cover**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

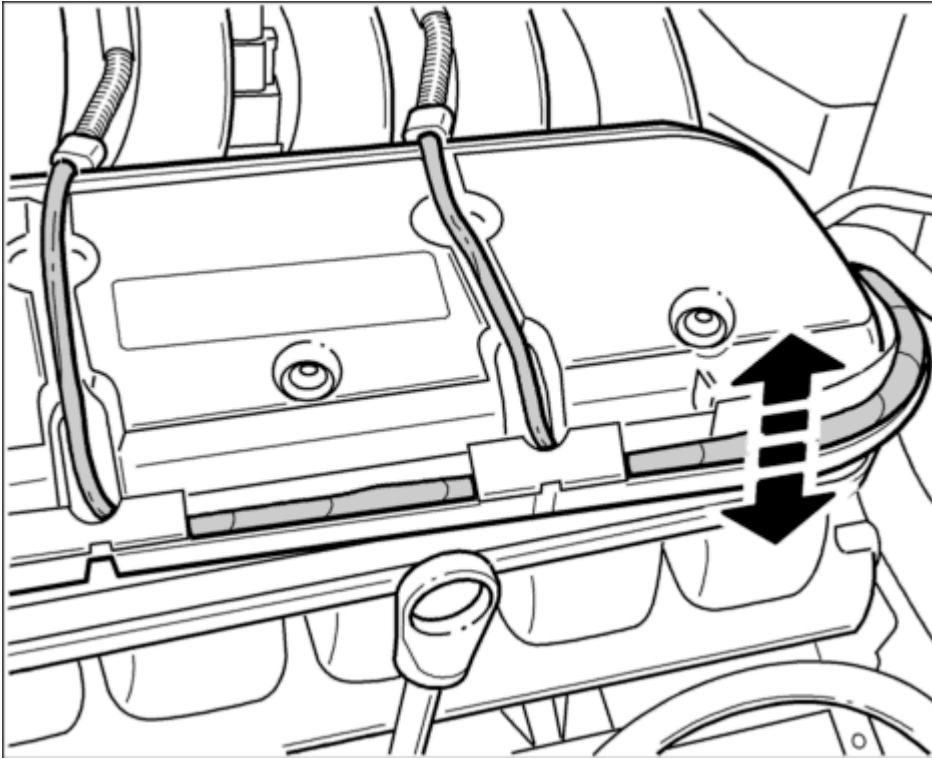
4. Pull the design cover up and off.

5. Remove engine compartment cover at middle rear and left. Refer to **70 02 19 Removing and installing front**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

cover (engine compartment) - as of MY 2003 (All Models) .



**Fig. 135: Wiring for ignition rod modules**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

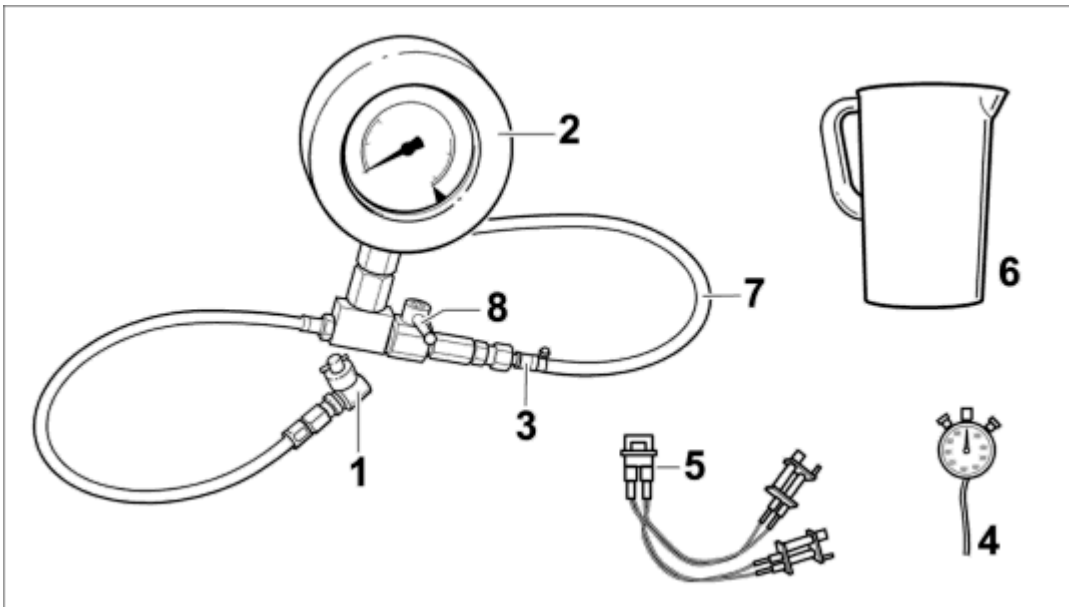
6. Loosen left cable guide of ignition coil cable at the plastic clips for the intake-air distributor --> *Wiring for ignition rod modules* and fold it up for better access to the fuel supply at the fuel distributor. See **Fig. 135**.

### TOOLS AND MATERIALS

Special tools

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 136: Tool for measuring quantity of fuel delivered/fuel pressure**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

Item	Designation of tool	Explanation
-1- See <a href="#">Fig. 136</a> .	Adapter VAG 1318/20	Screwed to the scavenger valve at the V6 fuel gallery.
-2- See <a href="#">Fig. 136</a> .	Pressure gauge VAG 1318	For checking fuel pressure
-3- See <a href="#">Fig. 136</a> .	Adapter VAG 1318/20-1	Adapter for connecting 1318 and 1318/20 to a fuel hose.
-4- See <a href="#">Fig. 136</a> .	Commercially available stopwatch	A wrist watch that shows seconds can also be used.
-5- See <a href="#">Fig. 136</a> .	<b><u>Adapter P 9479</u></b>	Serves as a simple "remote control" for activating the fuel pumps manually. It is inserted into the fuse carrier instead of the fuel pump relays.
-6- See <a href="#">Fig. 136</a> .	Commercially available measuring cup with scale	Must hold at least 3 litres.
-7- See <a href="#">Fig. 136</a> .	Commercially available fuel hose	Suitable for adapter VAG 1318/20-1; for draining fuel into a measuring cup
-8- See <a href="#">Fig. 136</a> .	Stop-cock VAG 1318	For bleeding the fuel system and measuring pressure

### INFORMATION

#### Test conditions

- The battery voltage must not be < 12 volts.
- Fuel system parts must not get dirty.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

### CHECKING QUANTITY OF FUEL DELIVERED

#### Checking quantity of fuel delivered

#### **WARNING: Danger of poisoning from fuels!**

- > Gasoline is toxic.
- > Inhaling vapours can cause irritation of the mucous membranes and eyes.
- > It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.
- > Only work on the fuel system in well-ventilated rooms.
- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.
- > Pay attention to cleanliness when working on the fuel system.

#### **WARNING: Danger of fire from fuel!**

- > Keep clear of ignition sources.
- > Do not smoke.
- > Disconnect battery.
- > Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.
- > Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.
- > Secure the vehicle, e. g. with a warning sign.
- > Change any clothing soaked with fuel immediately.



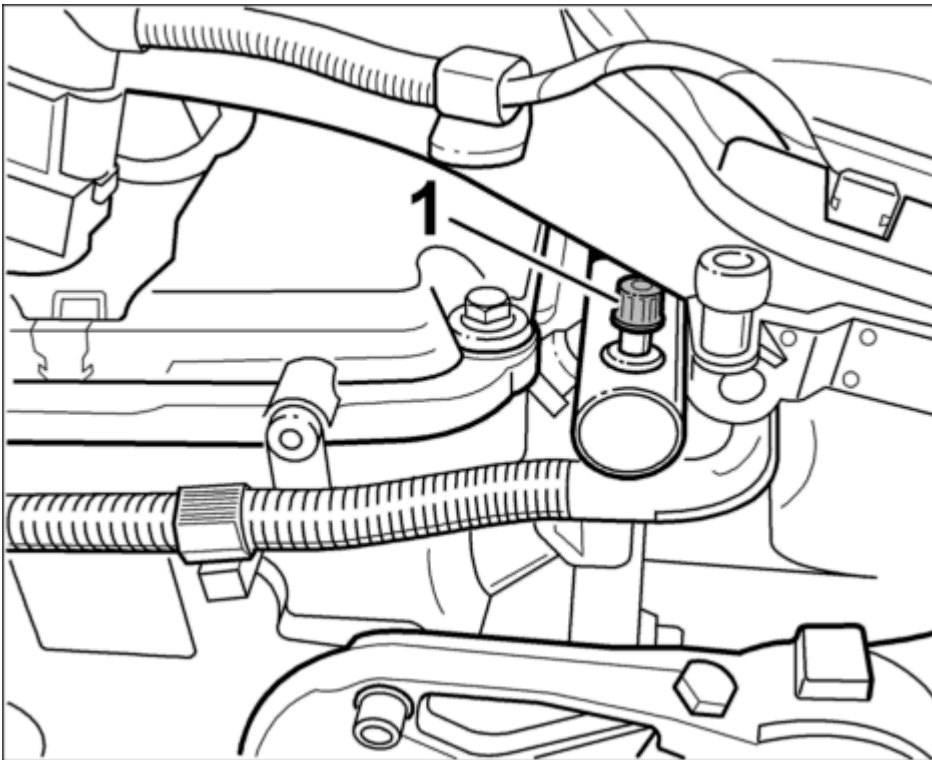
## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

### NOTE:

- *The ignition must be switched off when working on the fuel system.*
- *Absorb any escaping fuel using a suitable binding material or a cloth.*
- *Cloths which have absorbed fuel must be disposed of according to the applicable national laws.*
- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*



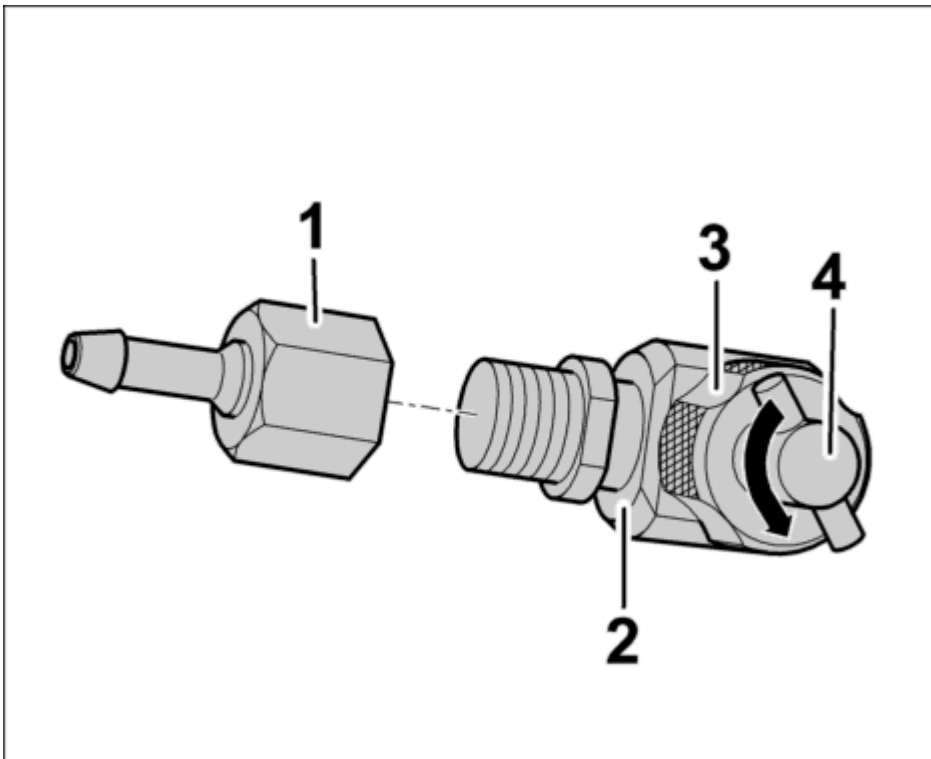
**Fig. 137: Cap of scavenging valve**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

### NOTE:

- *The fuel gallery is pressurised. Place a cloth under the areas of the fuel gallery to be opened so that fuel does not drip on to hot engine parts.*

1. Twist off the cap of the fuel scavenging valve -1- . See **Fig. 137**.



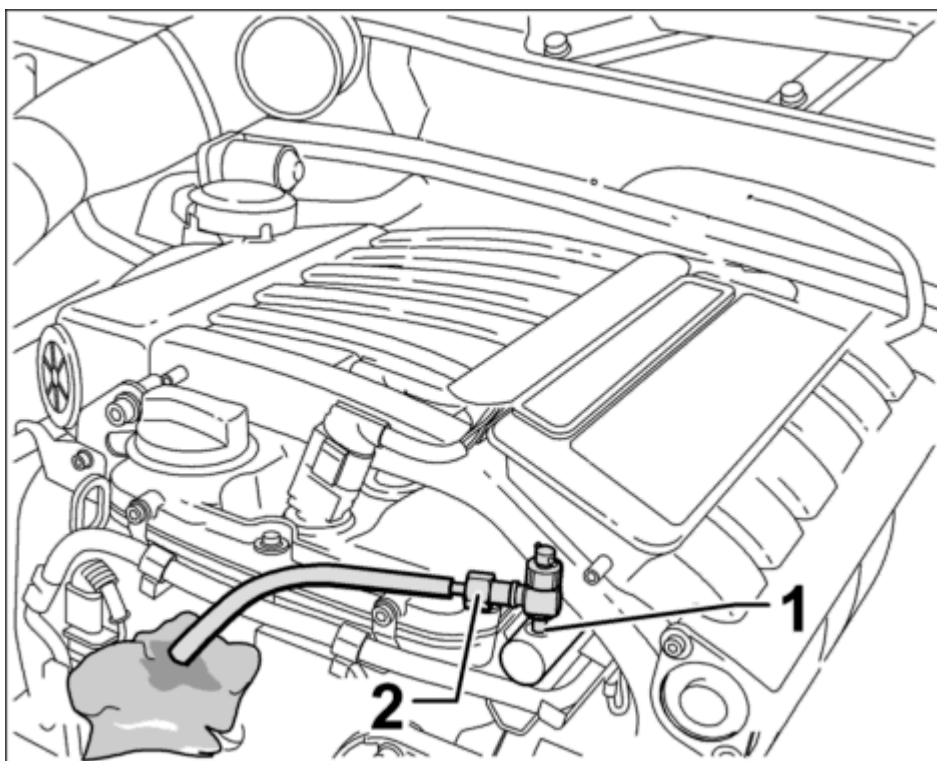
**Fig. 138: Adapter 1318/20**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

**NOTE:** Proceed as follows to fit the adapter 1318/20 -2- to the scavenging valve: Turn the valve -4- anti-clockwise at the T-piece until the valve is closed. Place the adapter on the scavenging valve and use the knurled nut -3- to fit the adapter in a clockwise direction until the adapter is attached securely to the scavenging valve. To open the scavenging valve, turn the T-piece of the valve clockwise (the fuel is released immediately and flows out via the adapter 1318/20). If the T-piece touches the intake-air distributor when you turn it, shorten the cross-pin of the T-piece slightly so that it has sufficient clearance. The adapter 1318/20 includes a hose connection 1318/20-1 -1- , to which a suitable fuel hose can be fitted using a screw-type clamp. See Fig. 138.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



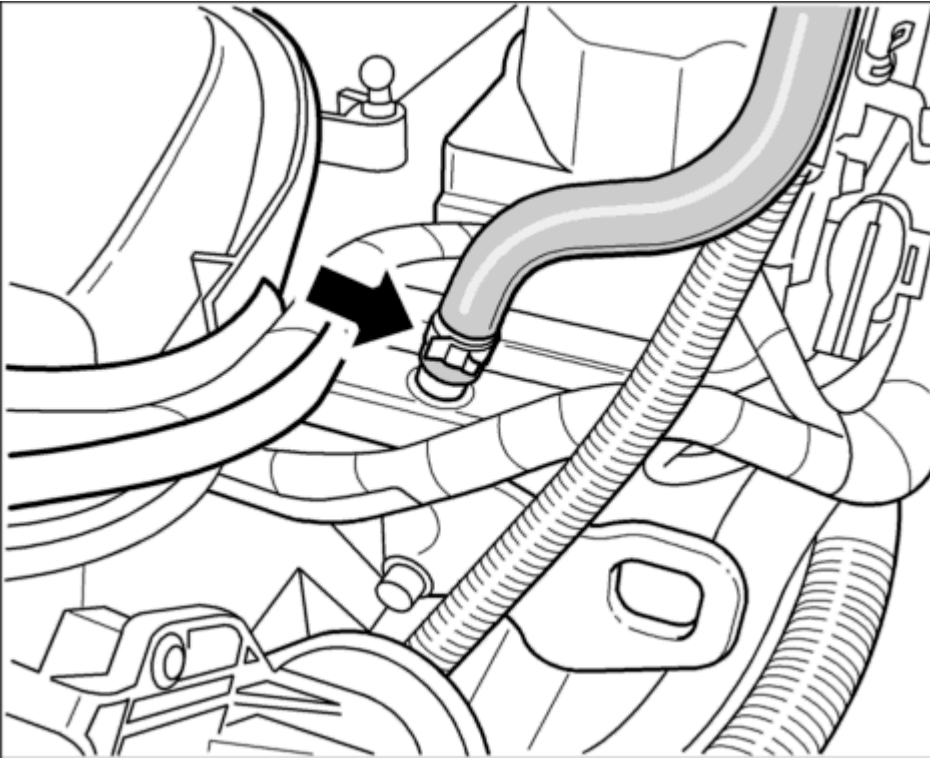
**Fig. 139: Relieving the fuel pressure**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Relieve the fuel pressure. To do this, fit adapter 1318/20 -1- together with 1318/20-1 -2- and a suitable hose to the scavenging valve and relieve the fuel pressure into a cloth (screw T-piece on clockwise) --> *Relieving the fuel pressure* . Only a small quantity flows out. Close the T-piece on the adapter again (unscrew T-piece anti-clockwise). See **Fig. 139**.

## 2004 Porsche Cayenne

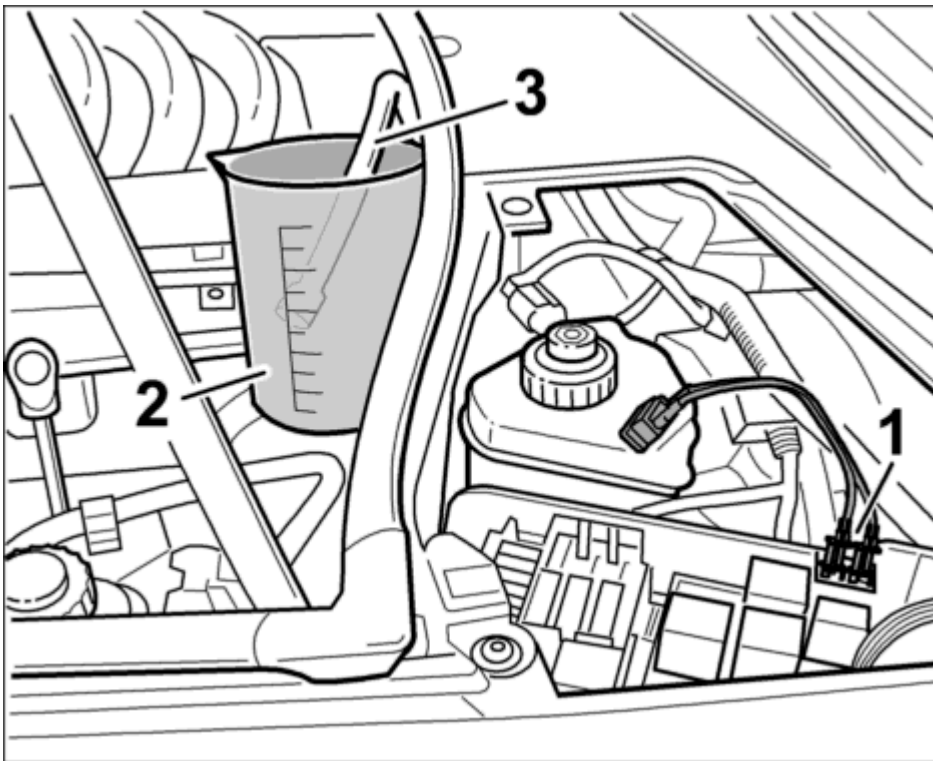
2003-2008 ENGINE Fuel, Actuation



**Fig. 140: Fuel supply**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Pull fuel supply hose off the fuel gallery. To do this, place a cloth underneath, loosen the clamp and pull off the fuel supply hose --> *Fuel supply* . Catch any dripping fuel. See **Fig. 140**.



**Fig. 141: Tool setup for checking quantity of fuel delivered**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

**NOTE:** Make sure that the switch on the adapter P 9479 is at 0 so that fuel is not pumped immediately when you connect the adapter.

4. Hold fuel supply hose into measuring cup -2 and 3- and insert adapter P 9479 into the relay slot of the fuel pump relay for the left pump -1-. (For details of relay assignment, see -->Checking quantity delivered by fuel pump "Preliminary work"). See Fig. 141.

**NOTE:**

- *To avoid incorrect readings, ensure that the hoses are already filled with fuel when you start the test.*

5. Switch fuel pump on using the adapter P 9479 until fuel emerges at the end of the hose. Then empty the measuring cup. This removes the remaining air from the hose.

**NOTE:**

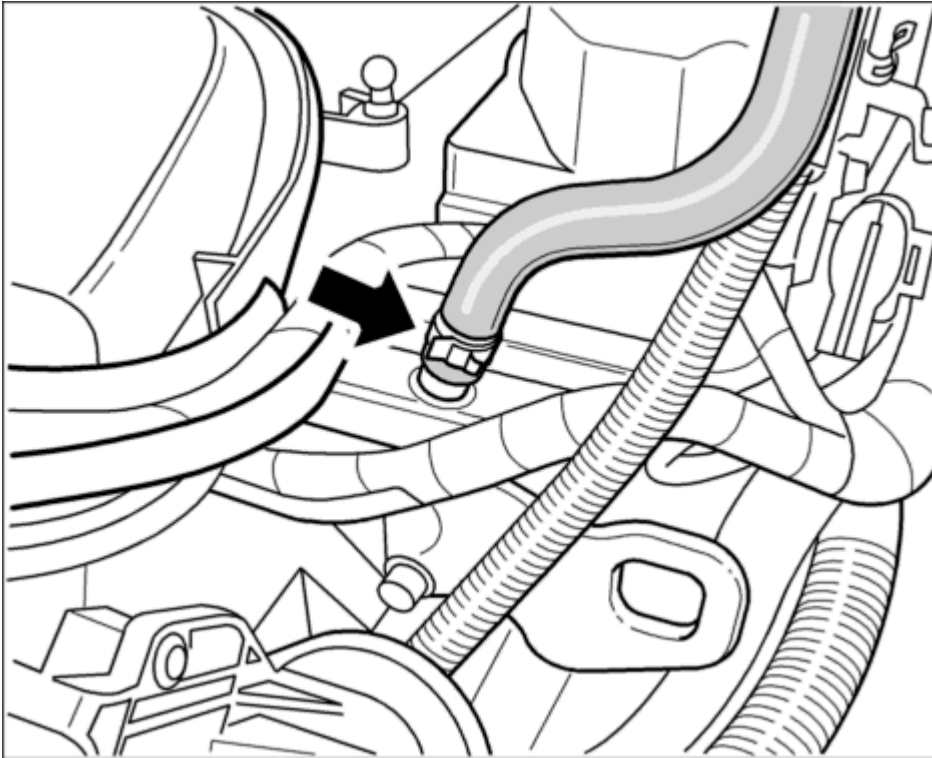
- *Get a second person to record the time for checking the quantity of fuel delivered.*

6. Start the fuel supply in order to measure it. The left pump should supply at least 800 ml of fuel after around 15 seconds. The quantity of fuel delivered for both pumps should be at least 800 ml after around 10 seconds (insert adapter P 9479 into both relay slots at the same time and switch it on for this). Empty the measuring cup between measurements.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

7. If the specified fuel quantities are not delivered, check the fuel lines for kinks and bends and check the fuel filter and power consumption of the pumps.



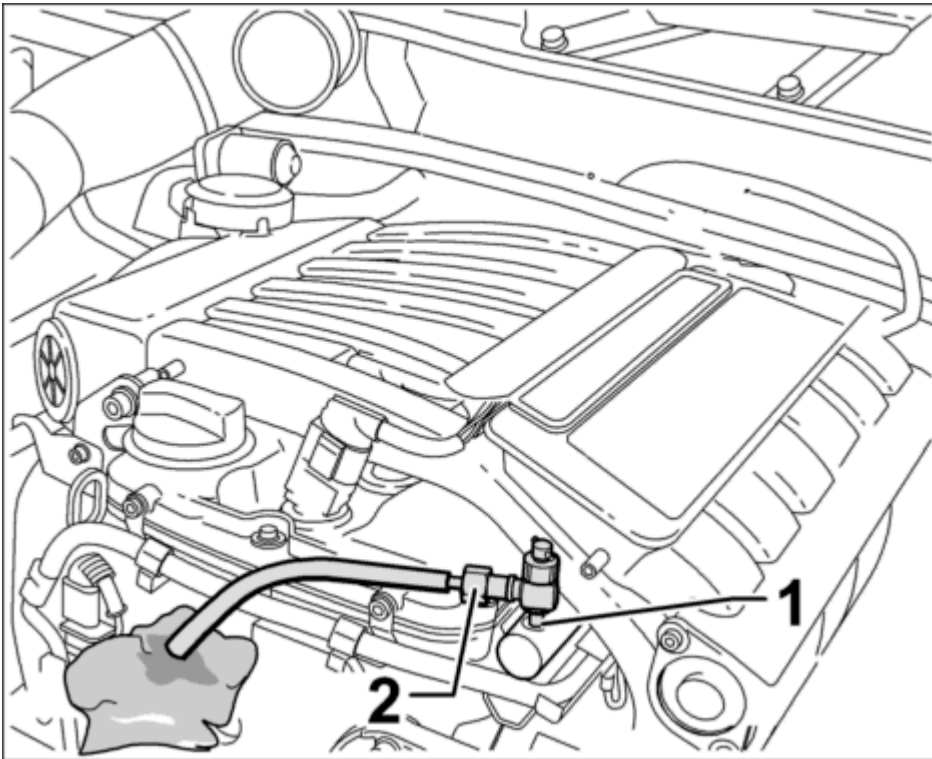
**Fig. 142: Fuel supply**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

8. Fit the fuel supply hose after you have measured the fuel quantity. To do this, push the fuel supply hose on to the connection piece and fit a clamp --> *Fuel supply* . See **Fig. 142**.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



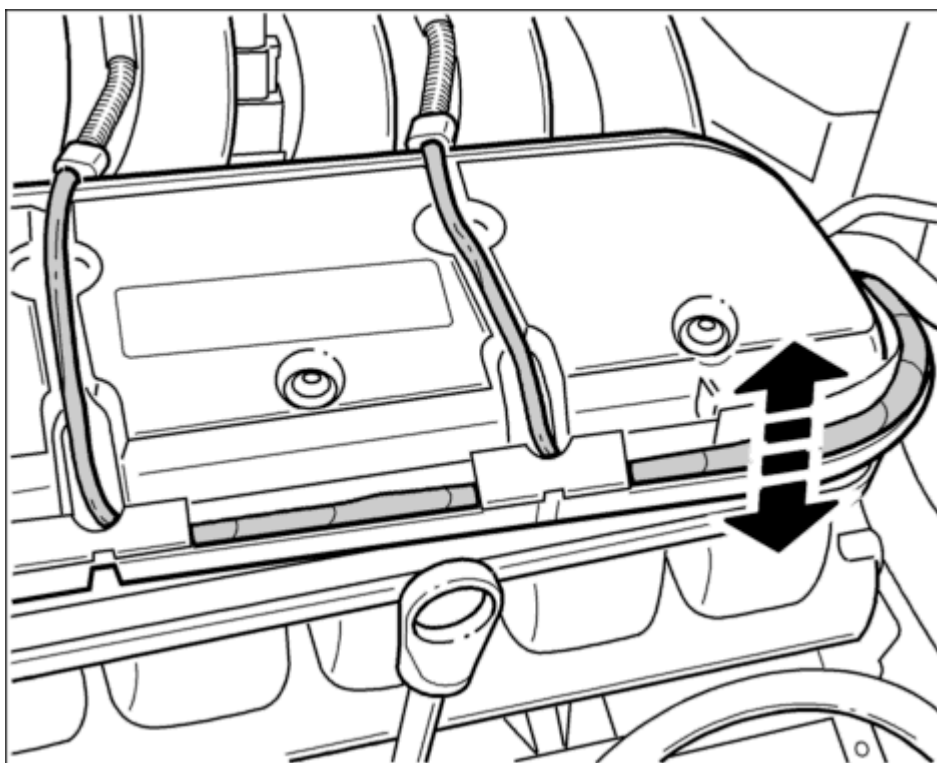
**Fig. 143: Relieving the fuel pressure**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

9. Remove adapter 1318/20 and hose. To do this, turn the knurled nut anti-clockwise until the adapter comes off the scavenging valve.

### **SUBSEQUENT WORK**

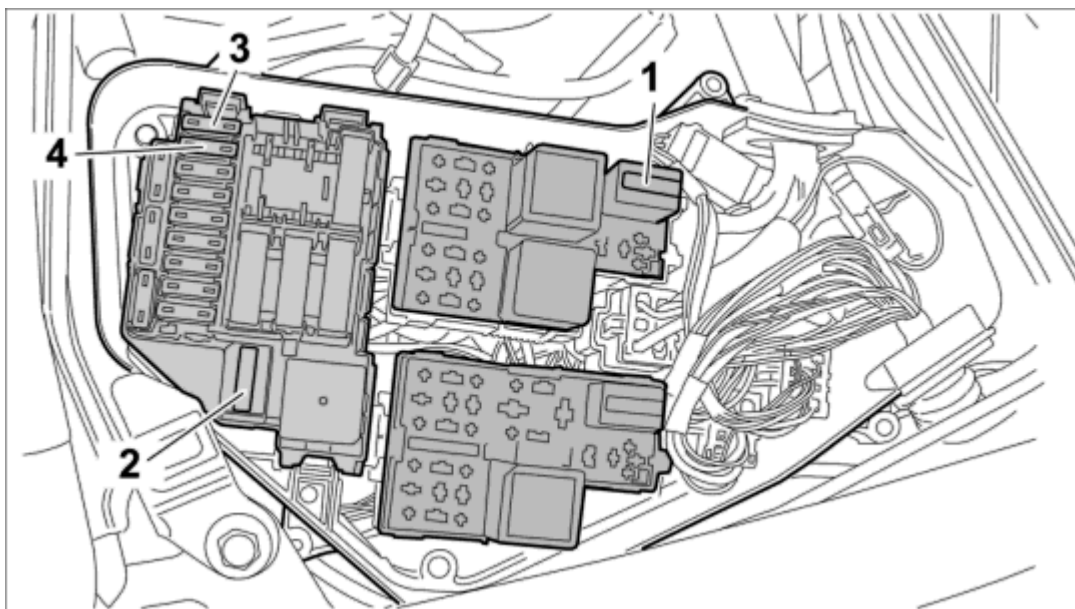
Subsequent work



**Fig. 144: Wiring for ignition rod modules**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

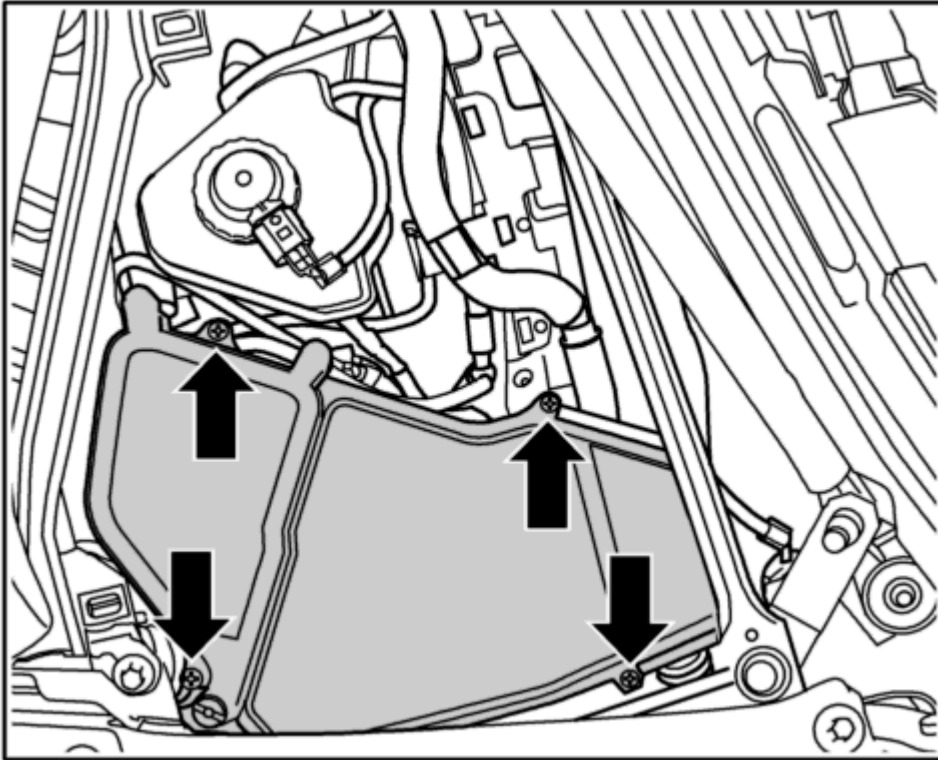
1. Attach left cable guide for ignition coil cable to the plastic clips for the intake-air distributor --> *Wiring for ignition rod modules* . See **Fig. 144**.
2. Insert fuses -3- for the ignition rod modules, -4- injection system and both fuel pump relays (left pump -1- and right pump -2- ). See **Fig. 145**.





**Fig. 145: Fuse carrier**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

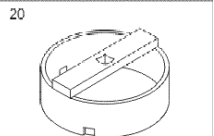
**Fig. 146: Central electrics box**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Fit lid of central electrics box. To do this, fit the four fastening screws.
4. Install engine compartment cover at middle rear and left. Refer to **70 02 19 Removing and installing front cover (engine compartment) - as of MY 2003 (All Models)** .
5. Fit the design cover.

## **20 66 19 REMOVING AND INSTALLING FUEL PUMP - AS OF MY 2003 (ALL MODELS)**

### **TOOLS**

Designation	Type	Number	Explanation	
key	VW-tool	T10202		
				20 T 10202

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

### PRELIMINARY WORK

#### Preliminary work

1. Empty the fuel tank. --> **Draining and filling fuel**

### INFORMATION

#### General note

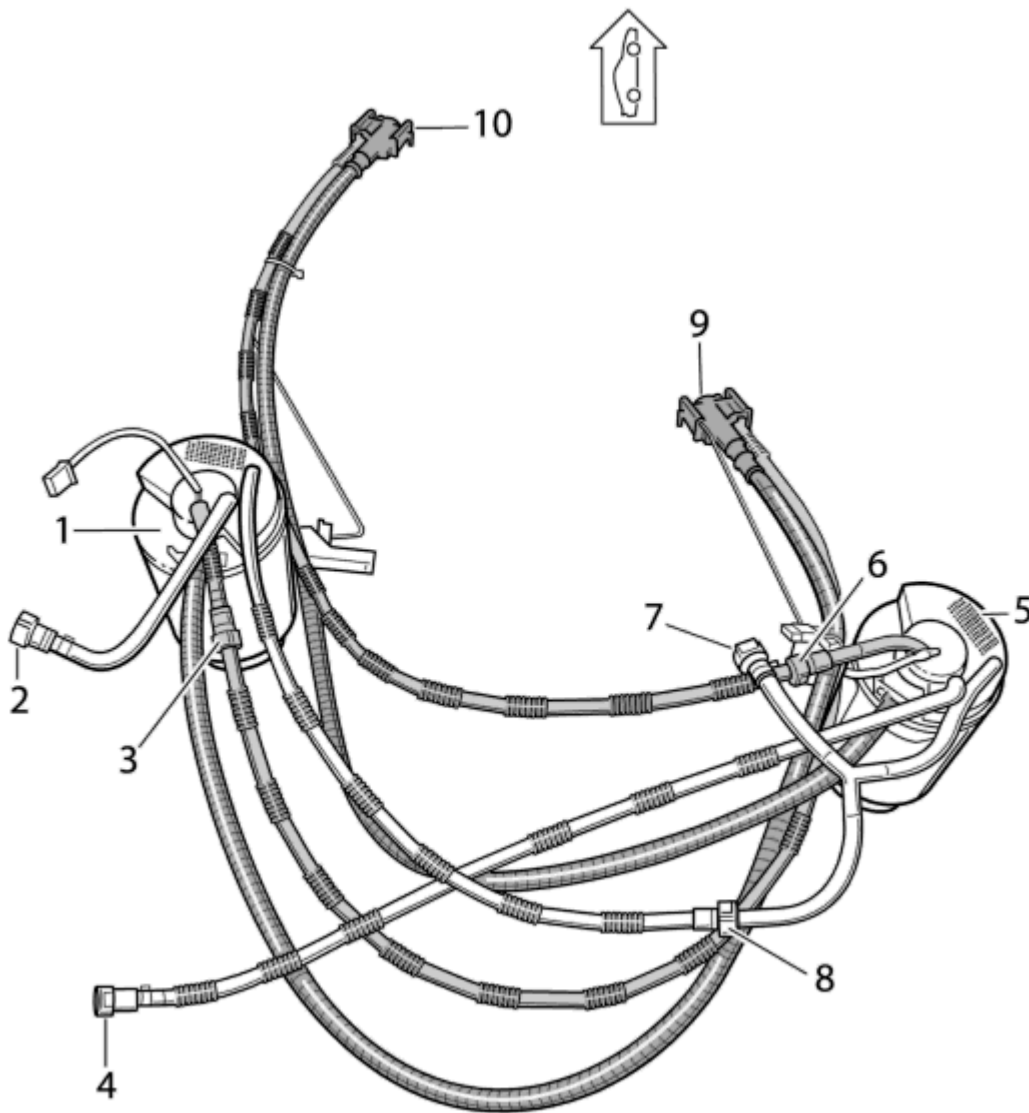
#### NOTE:

- *The fuel pumps have different hose connections and must not be confused.*
- *The connections should be marked for identification when removing.*
- *In order that the connections do not fall in the fuel tank, they should be secured using tie-wraps.*

The following overview is used as an orientation for connecting fuel pumps:

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



**Fig. 147: Connection overview, lines for fuel filter**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

- 1 - Fuel pump, left
- 2 - Connection to fuel filter
- 3 - Fuel supply line connection
- 4 - Connection to fuel filter
- 5 - Fuel pump, right

<b>2004 Porsche Cayenne</b>
2003-2008 ENGINE Fuel, Actuation

**6** - Fuel supply line connection

**7** - Connection to fuel pressure regulator

**8** - Connection point for left fuel pump and pressure regulator

**9** - Sucking jet pump of left pump

**10** - Sucking jet pump of right pump

## **REMOVING FUEL PUMP**

**Opening the tank**

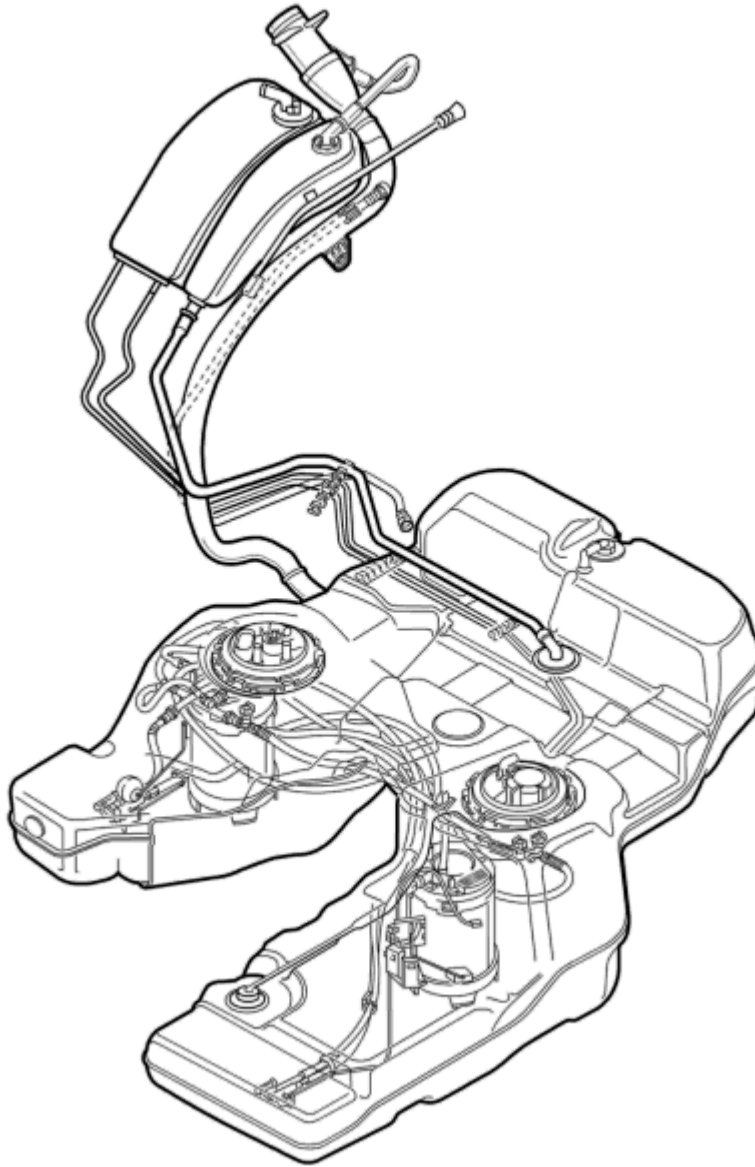
**NOTE:**

- *If the tank must be opened for emptying, disconnect all connections.*

**Installation Location:**

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

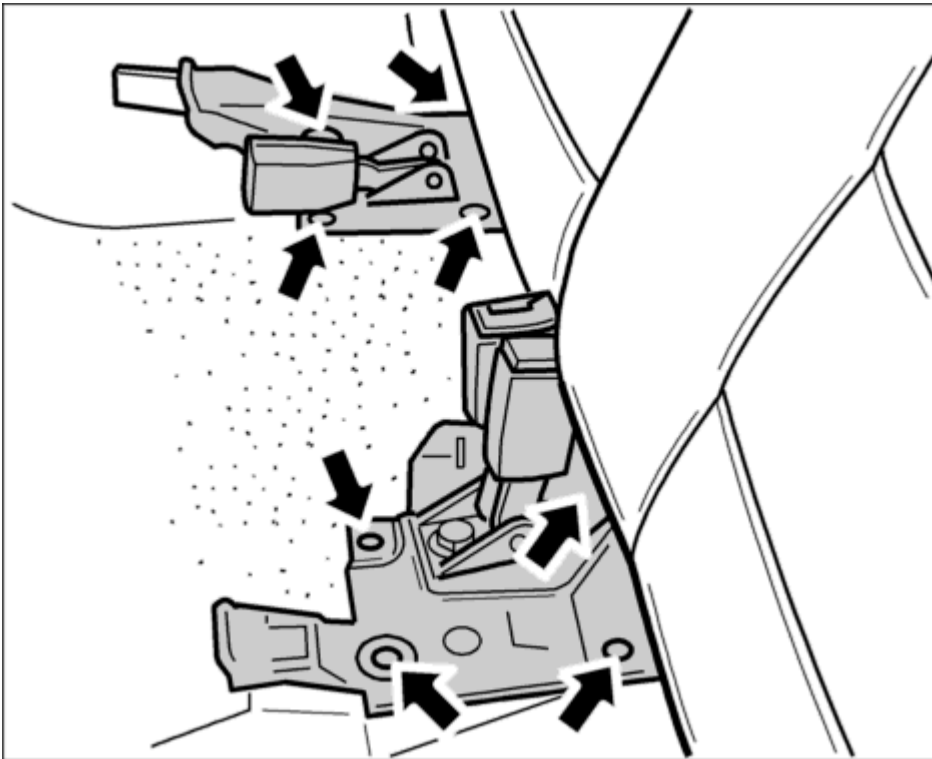


**Fig. 148: Component overview: fuel tank**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Open filler flap.
2. Fold rear seat forwards.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

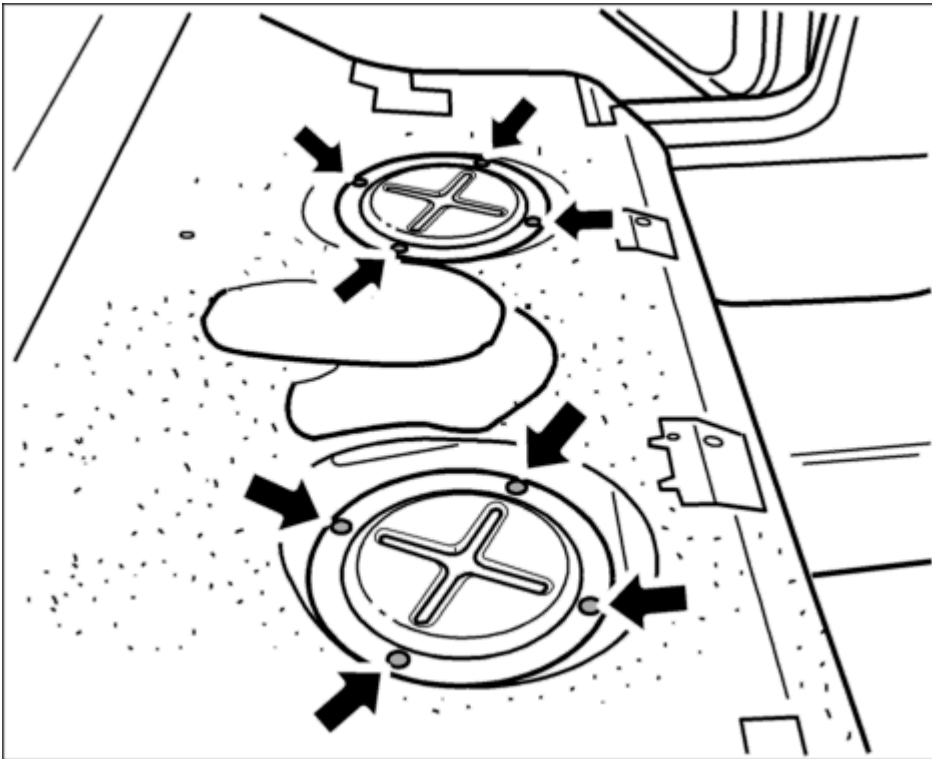


**Fig. 149: Fastening screws for retaining brackets of seat-belt buckles**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Fold up the retaining brackets of the (right and left) seat-belt buckles. To do so, loosen the four fastening screws and fold up the bracket with the seat-belt buckle. Do not use the fastening screws again.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation



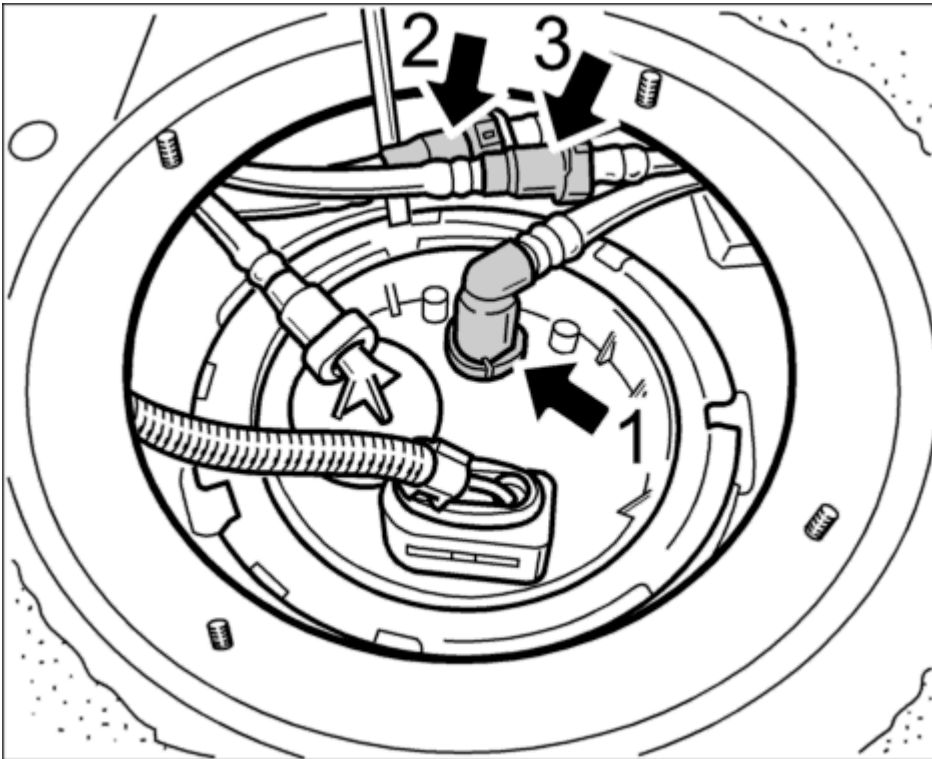
**Fig. 150: Fastening nuts for cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Undo the caps (figure shows both). To do so, cut out the carpeted floor along the perforated lines using a carpet knife and fold it over. Then unscrew the four fastening nuts and remove the lid.

5. Empty the fuel tank if this has not already been done or if the fuel level in the fuel tank is very low. -->

### **Draining and filling fuel**



**Fig. 151: Fuel supply and disconnection points at right connection unit**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

**WARNING: Danger of poisoning from fuels!**

- > Gasoline is toxic.
- > Inhaling vapours can cause irritation of the mucous membranes and eyes.
- > It can be carcinogenic. It represents a serious risk to health when inhaled, touched or swallowed over longer periods.
- > Only work on the fuel system in well-ventilated rooms.
- > Wear protective gloves that are fuel-resistant.
- > Wear a breathing mask with active charcoal filter; do not breathe in any fuel vapours.
- > Ensure that there is adequate ventilation and extract all fuel vapours.
- > Before opening the fuel lines or fuel hoses, relieve the fuel pressure.
- > Collect escaping fuel, absorb it if necessary with a suitable binding material and dispose of properly.



## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

--> Pay attention to cleanliness when working on the fuel system.

### **WARNING: Danger of fire from fuel!**

--> Keep clear of ignition sources.

--> Do not smoke.

--> Disconnect battery.

--> Danger of fire due to naked flames and sparks, e. g. during welding or grinding work.

--> Danger of fire due to escaping fuel, e. g. on hot engine components or due to electrostatic charge. Allow engine to cool down.

--> Secure the vehicle, e. g. with a warning sign.

--> Change any clothing soaked with fuel immediately.

--> In case of fire, use CO<sub>2</sub> or dry powder fire extinguishers.

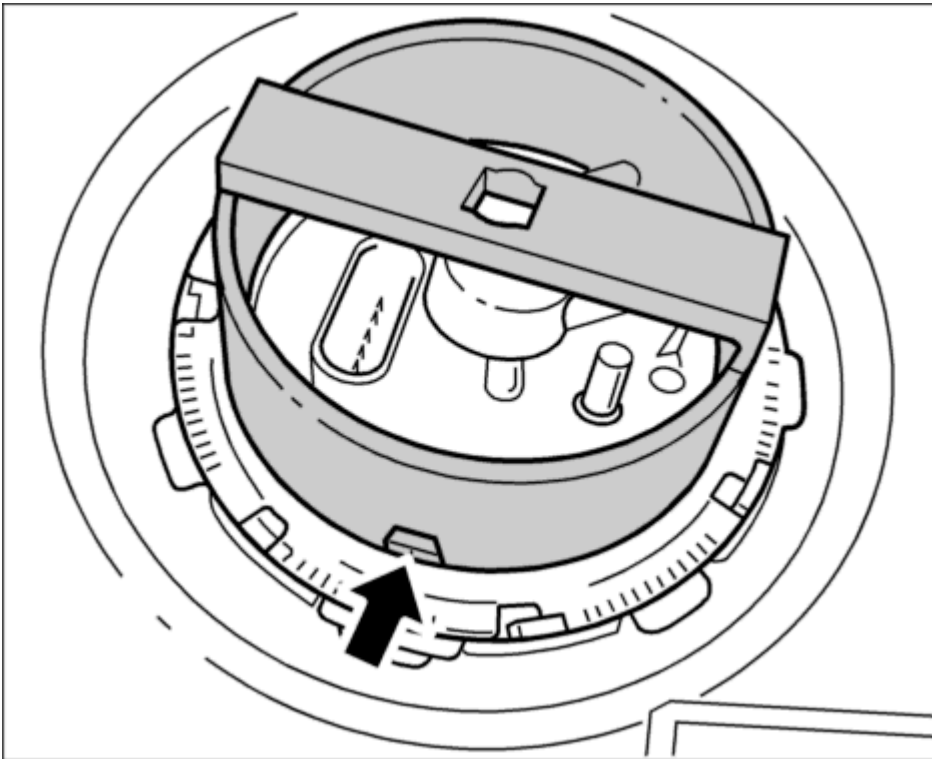
### **NOTE:**

- *The ignition must be switched off when working on the fuel system.*
- *Absorb any escaping fuel using a suitable binding material or a cloth.*
- *Cloths which have absorbed fuel must be disposed of according to the applicable national laws.*
- *The fuel system must be depressurised before starting work on it.*
- *Only work on the fuel system in well-ventilated rooms.*
- *Any seals which have been removed must always be replaced.*

6. Carefully remove the fuel supply **-1-** at the relevant connection unit (right connection unit here) and loosen the two disconnection points **-2 and 3-**. Also remove line (not shown here) in vehicles with auxiliary heating (auxiliary heater). Do the same at the left connection unit. Disconnect all connections on the connection unit. See **Fig. 151**.

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

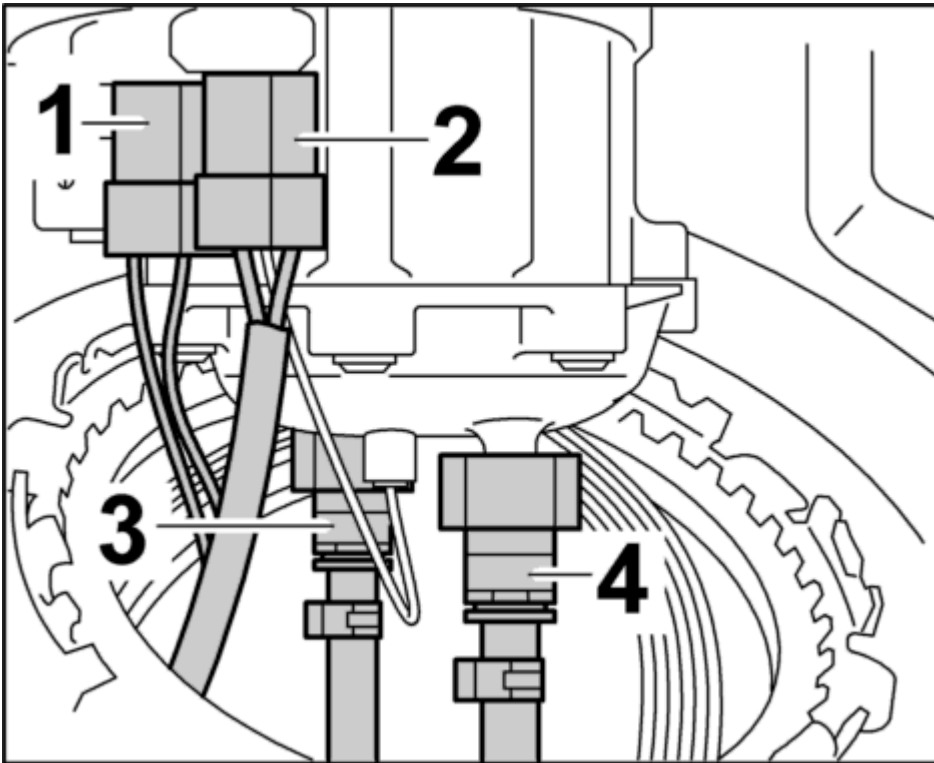


**Fig. 152: Cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

7. Open the relevant cap with the **key T10202** and lift up the connection unit (cap).

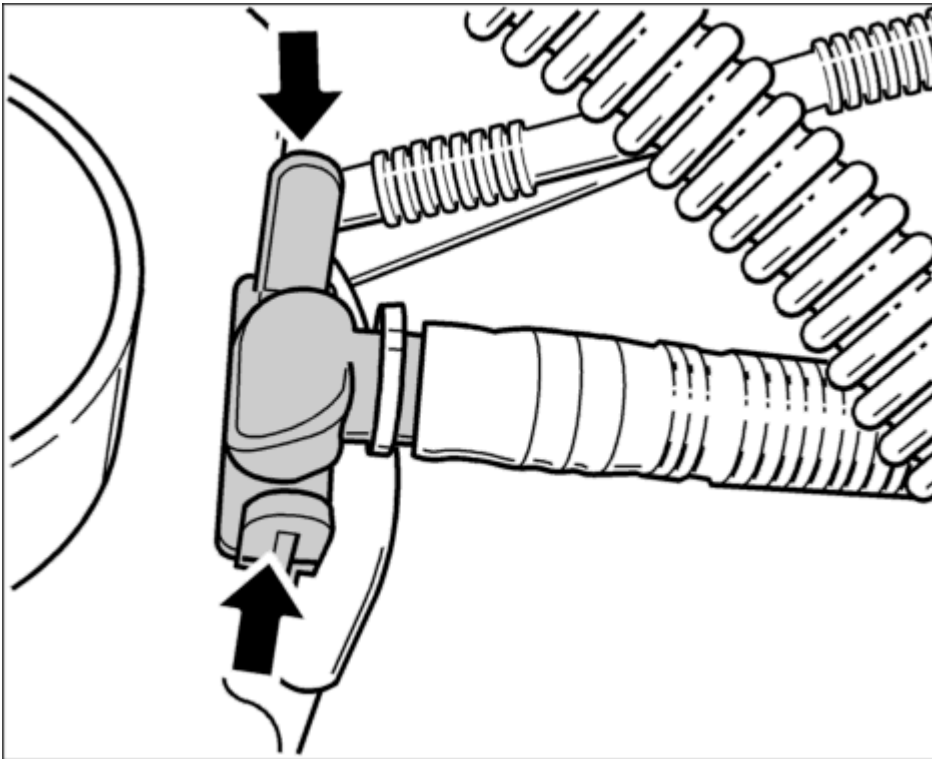
**Removing left fuel pump**



**Fig. 153: Electric connectors and fuel lines**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Pull off electric connectors **-1 and 2-** on the left connection unit. Then pull off the fuel lines **-3 and 4-** and remove the connection unit (filter unit). See **Fig. 153**.

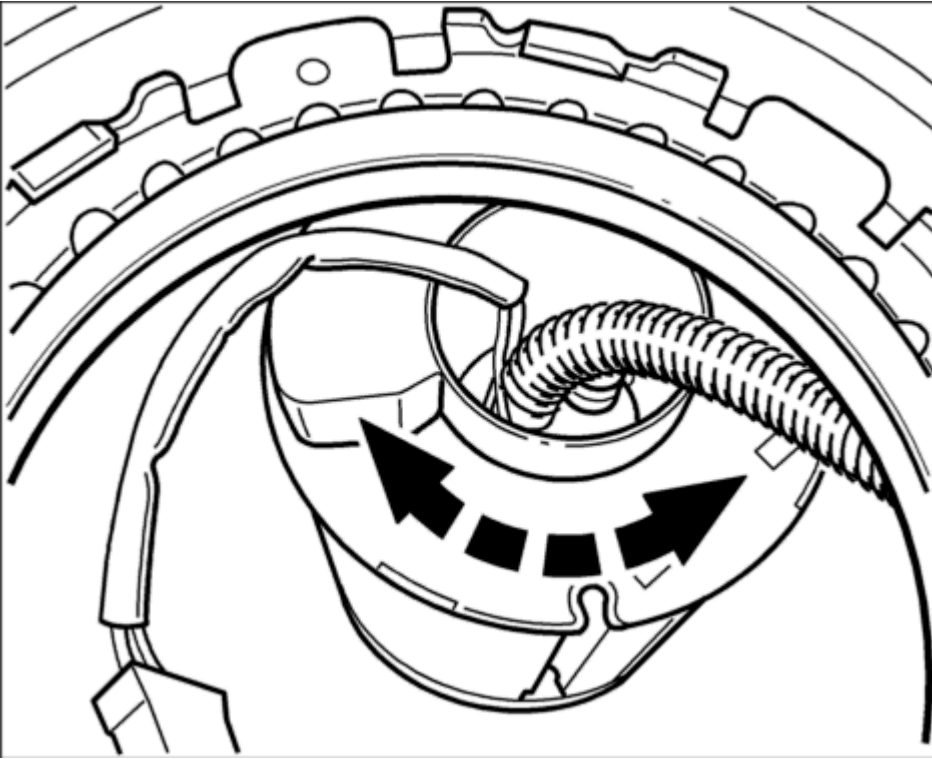


**Fig. 154: Sucking jet pump connection at the fuel pump**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Disconnect the sucking jet pump at the fuel pump. To do this, press on the left and right and pull off the connection.
3. Raise the right connection unit slightly and disconnect the fuel pump line at the Y-piece (on the right side).

## 2004 Porsche Cayenne

2003-2008 ENGINE Fuel, Actuation

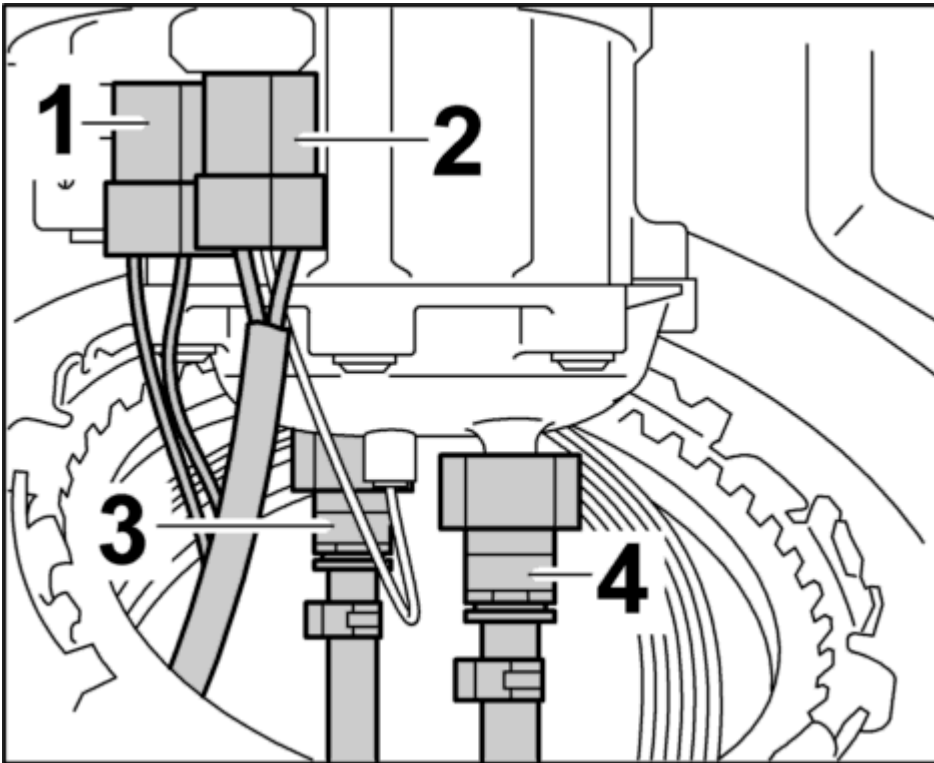


**Fig. 155: Turning the pump**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Turn the pump approx. 90° to the left until it disengages at the tank floor. Remove the pump from the tank.

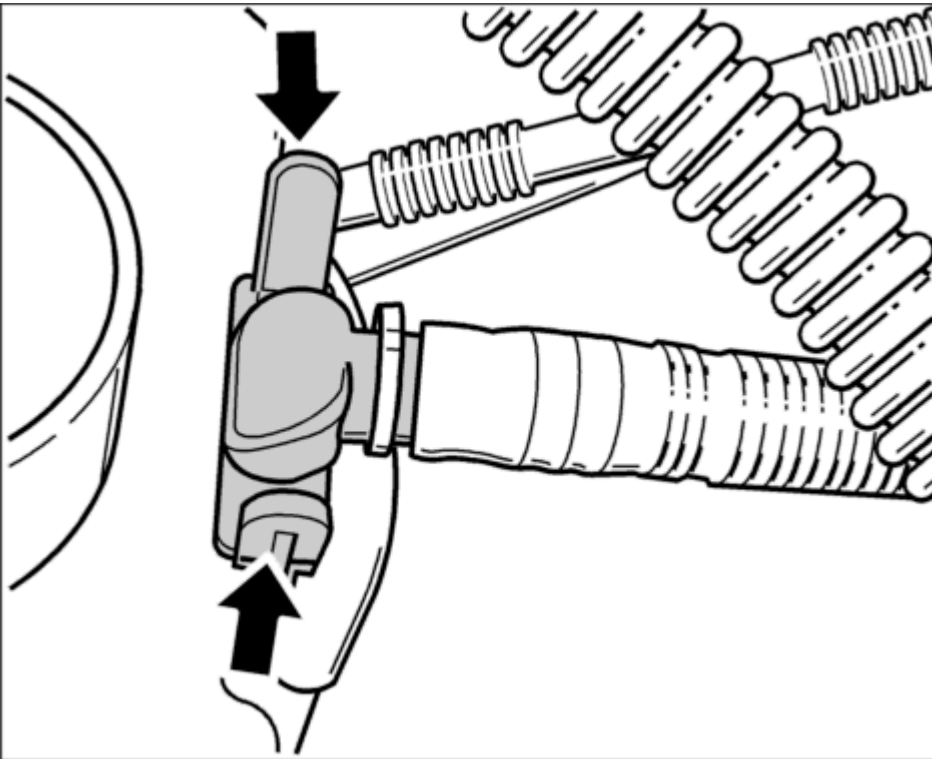
**Removing right fuel pump**



**Fig. 156: Electric connectors and fuel lines**

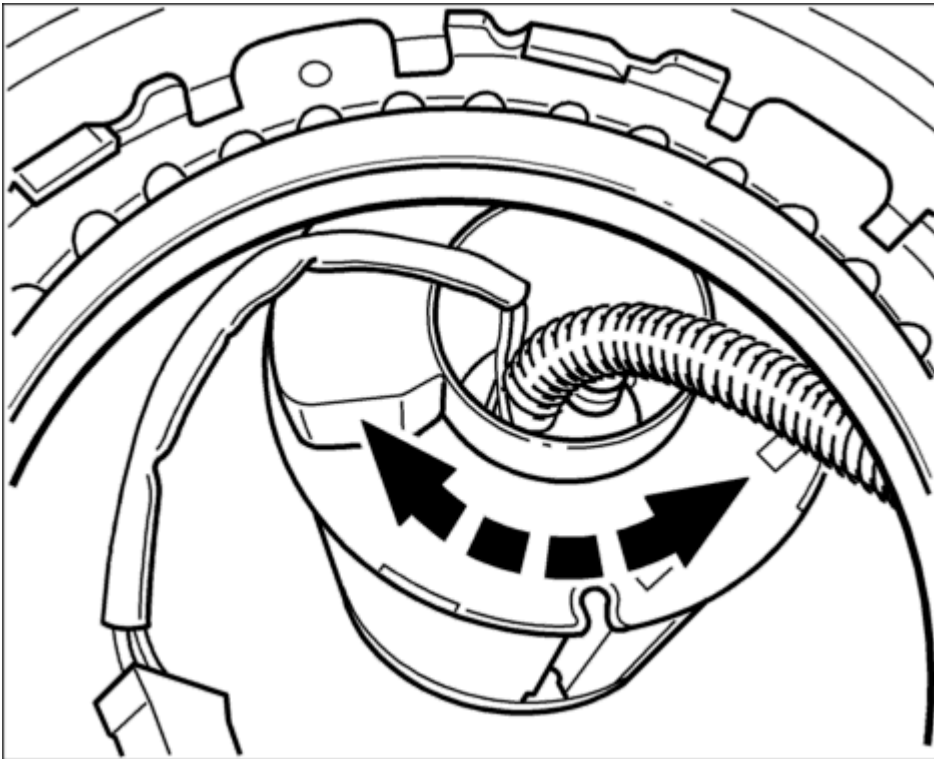
**Courtesy of PORSCHE OF NORTH AMERICA, INC.**

1. Disconnect the electric connectors for the fuel pump and fuel level sensor. Then pull off the fuel lines on the pressure regulator and remove the connection unit.



**Fig. 157: Sucking jet pump connection at the fuel pump**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

2. Disconnect the sucking jet pump at the fuel pump. To do this, press on the left and right and pull off the connection.
3. Disconnect the hose for the right fuel pump at the Y-piece.



**Fig. 158: Turning the pump**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

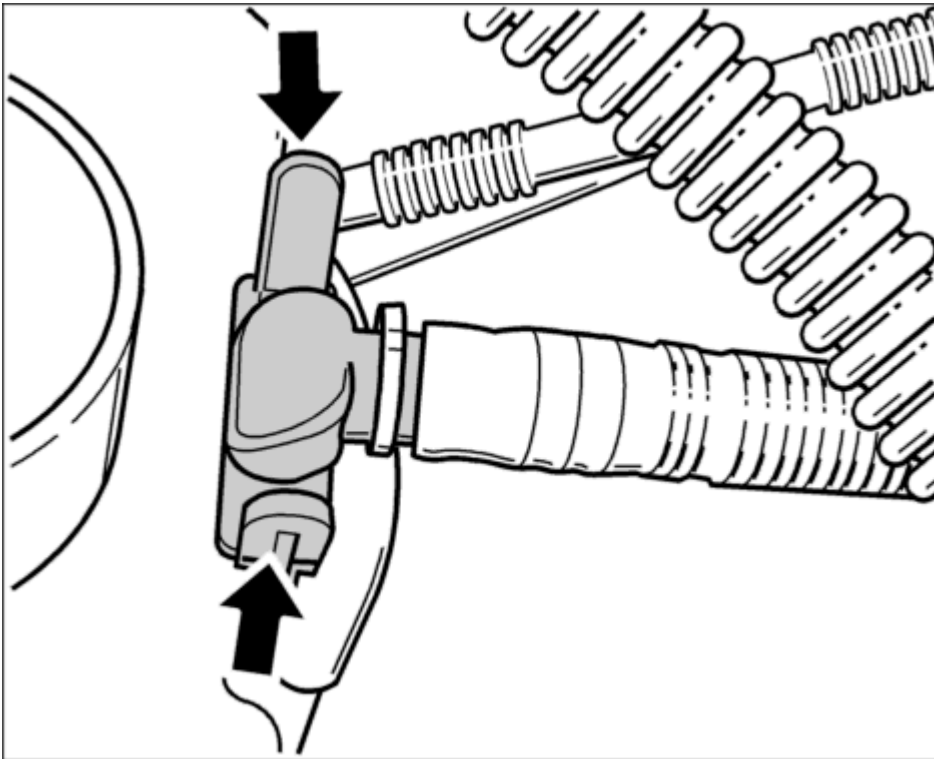
4. Turn the pump approx. 90° to the left until it disengages at the tank floor. Remove the pump from the tank.

## **INSTALLING FUEL PUMP**

### **Installing left fuel pump**

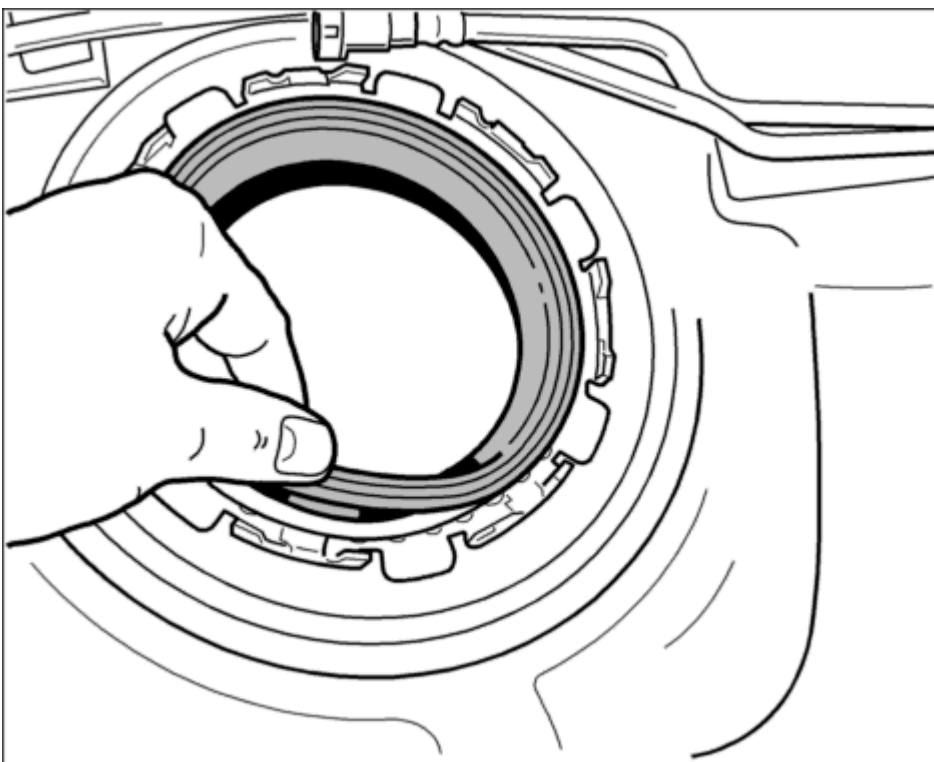
1. Place the pump in the holder on the tank floor and turn it approx. 90° to the right until it is seated securely.
2. Connect the fuel line from the pump to the Y-piece (right side of the tank).





**Fig. 159: Sucking jet pump connection at the fuel pump**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

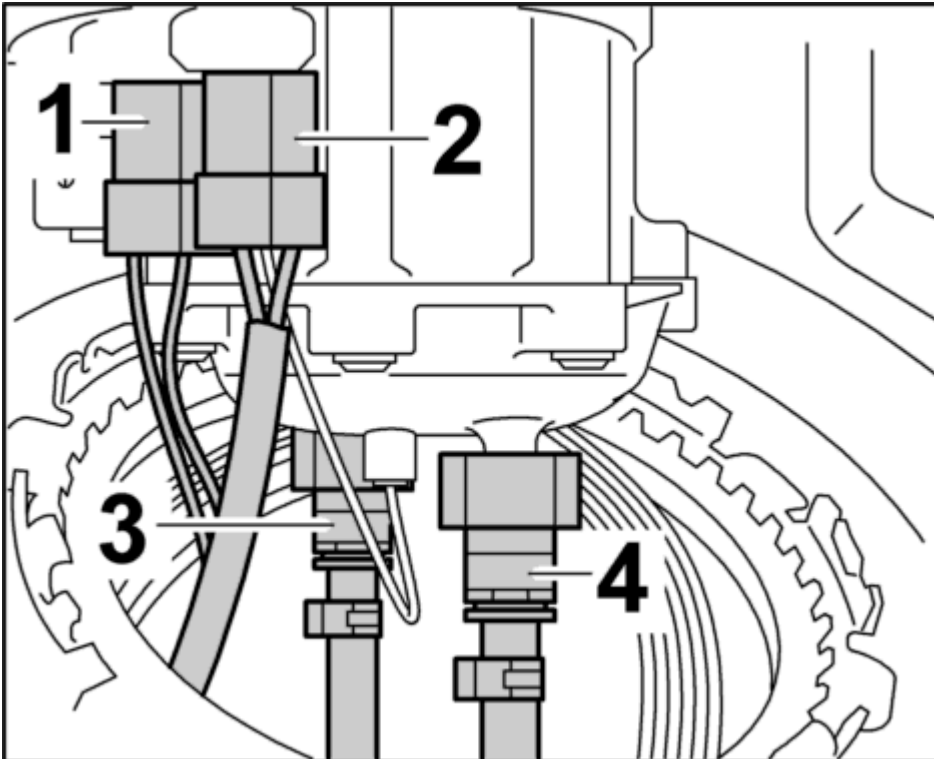
3. Attach the sucking jet pump connection. This must engage audibly.



**Fig. 160: Seals on connection unit**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Replace both seals on the connection units.



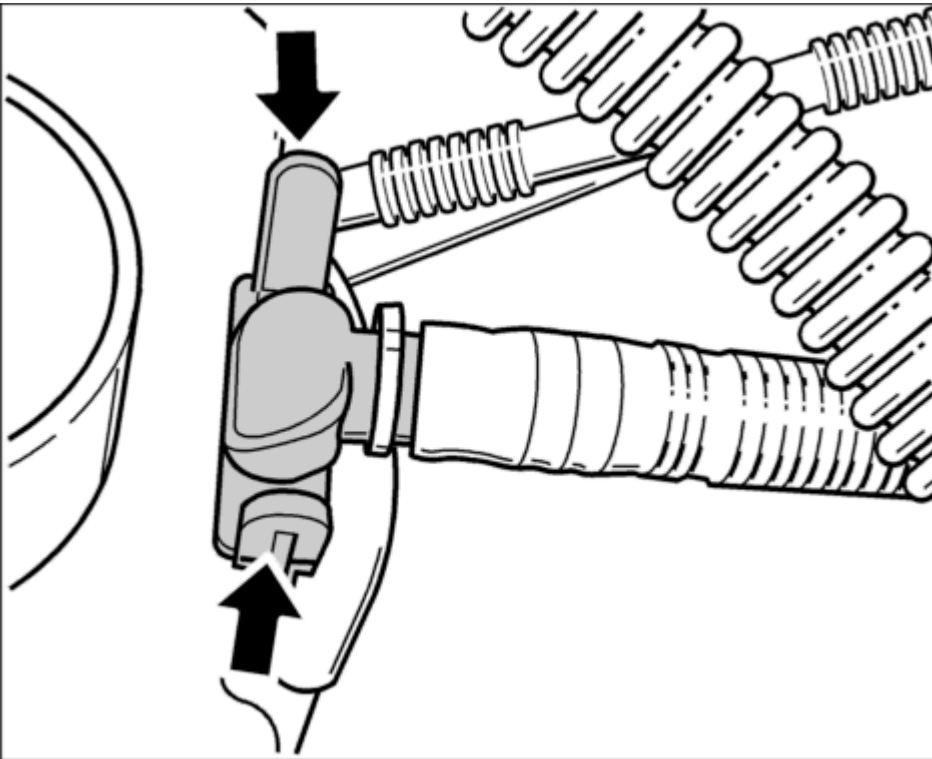
**Fig. 161: Electric connectors and fuel lines**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

5. Connect connection unit. Connect the electric connectors for the tank gauge and fuel pump. Then push on the fuel lines. The connectors must engage audibly.
6. Place the connection unit into the tank. When doing so, make sure that the plastic lug is pointing forwards.

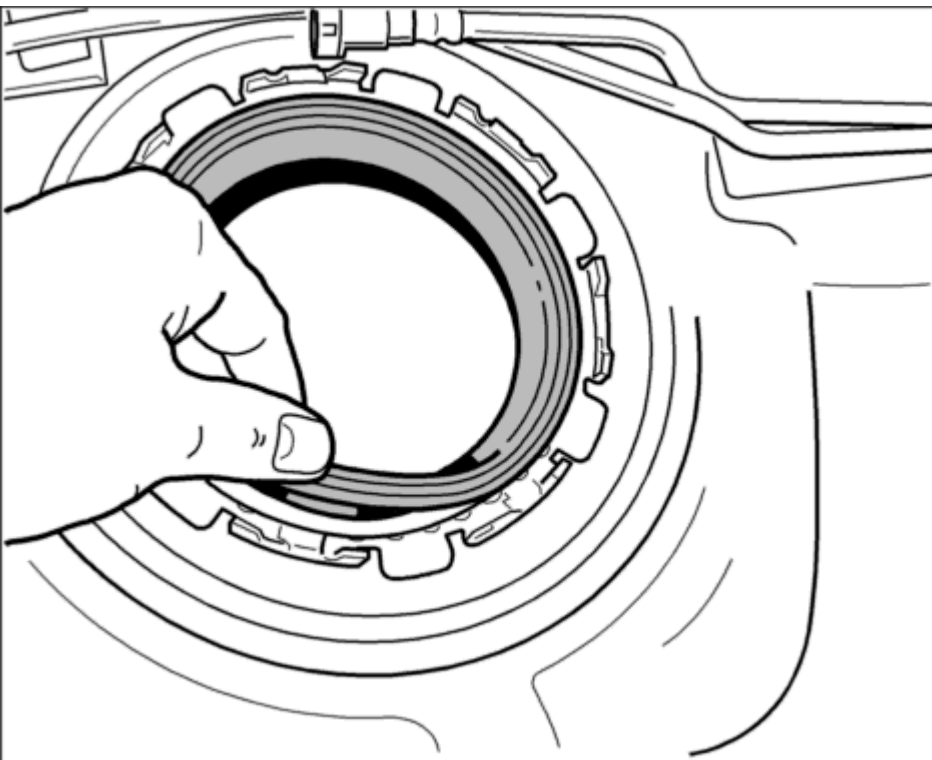
#### **Installing right fuel pump**

1. Place the pump in the holder on the tank floor and turn it approx. 90° to the right until it is seated securely.
2. Connect the fuel line from the right pump to the Y-piece.



**Fig. 162: Sucking jet pump connection at the fuel pump**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Attach the sucking jet pump connection. This must engage audibly.

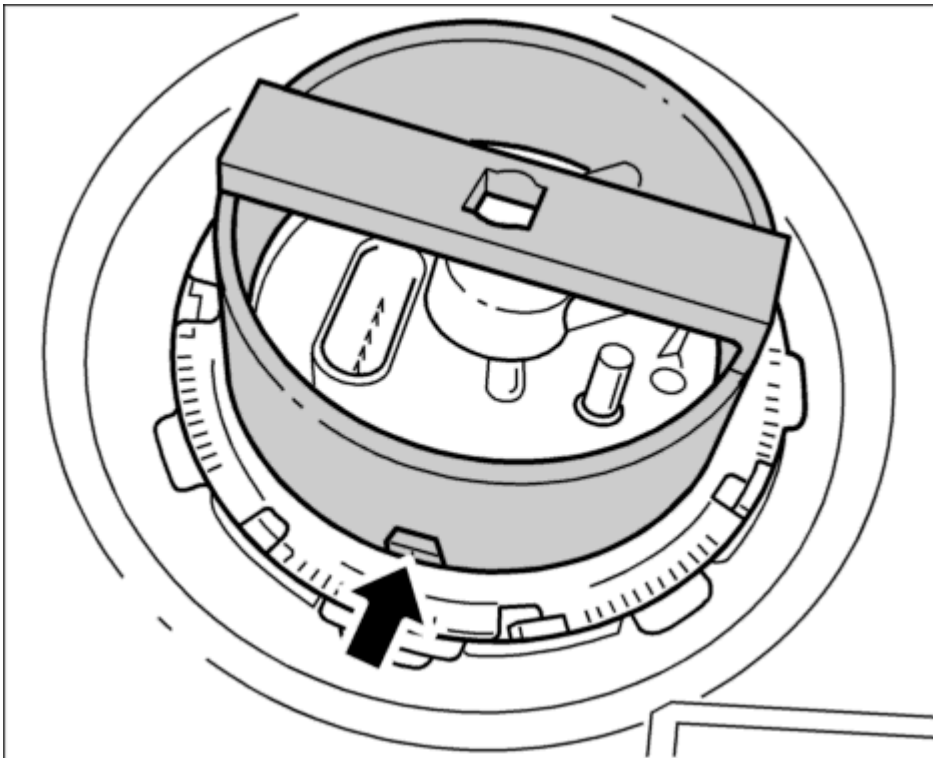


**Fig. 163: Seals on connection unit**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Replace connection unit seal.
5. Connect connection unit. Connect the electric connectors for the tank gauge and fuel pump. Then push on the fuel lines. The connectors must engage audibly.
6. Place the connection unit into the tank. When doing so, make sure that the plastic lug is pointing forwards.

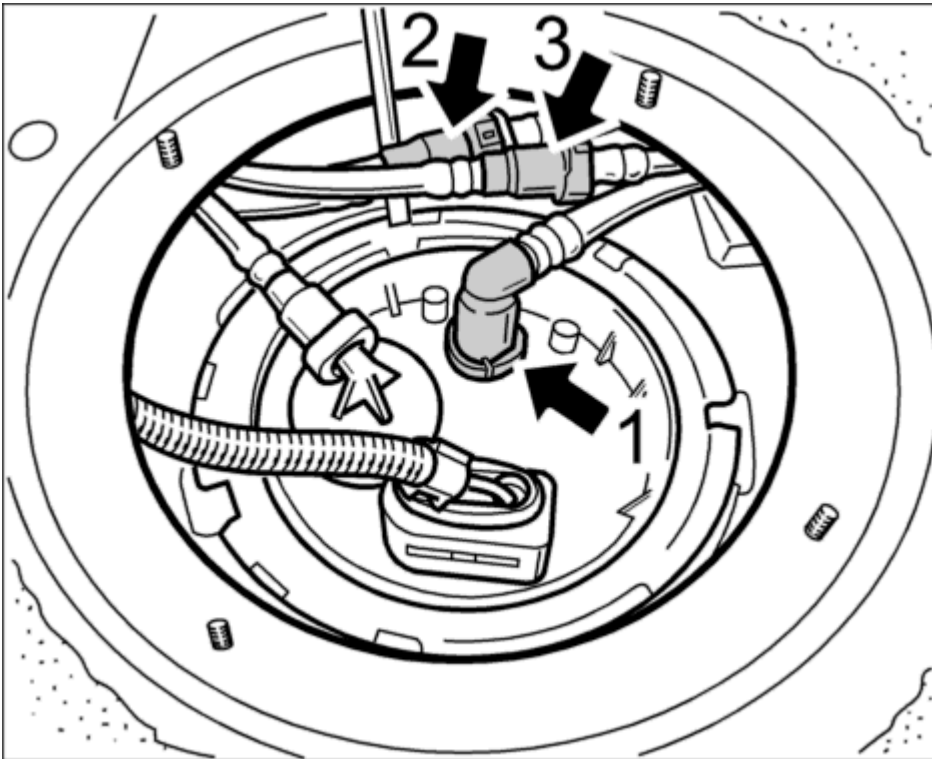
**Closing the tank**



**Fig. 164: Cap**

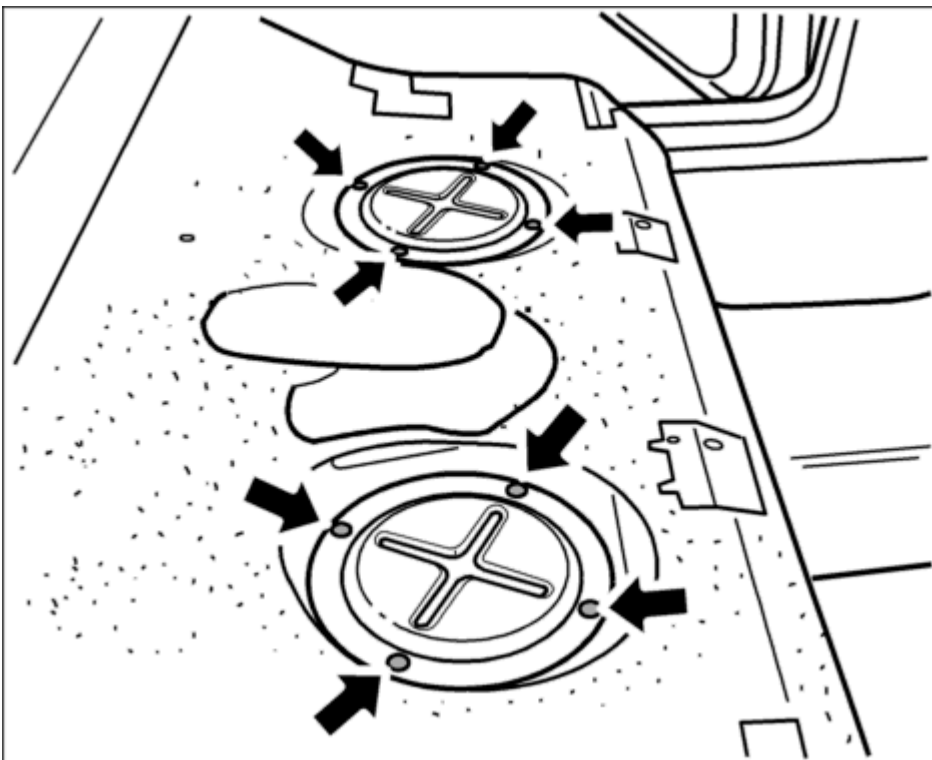
Courtesy of PORSCHE OF NORTH AMERICA, INC.

1. Close the tank. To do so, fit the sheetmetal ring and tighten using the **key T10202**. --> **Tightening torque: 104 ftlb.**



**Fig. 165: Fuel lines, ventilation tubes and electric plugs**  
Courtesy of PORSCHE OF NORTH AMERICA, INC.

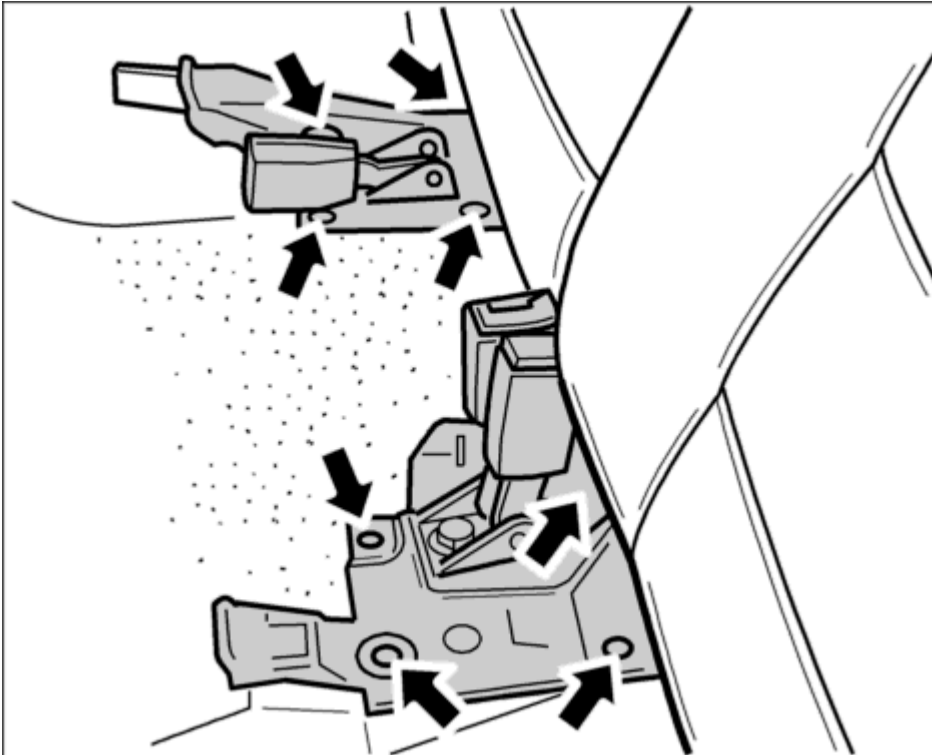
2. Fit all connections (fuel lines, ventilation tubes and electric plugs).



**Fig. 166: Fastening nuts for cap**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

3. Fit the lid. Then tighten the four fastening nuts. --> **Tightening torque: 7.5 ftlb.** Refit carpeted floor and fix with double-sided adhesive tape.



**Fig. 167: Fastening screws for retaining brackets of seat-belt buckles**

Courtesy of PORSCHE OF NORTH AMERICA, INC.

4. Tighten the seat-belt buckle fastening plates. Use three new fastening screws for this and tighten. For tightening torque, refer to **69 25 19 Removing and installing rear belt lock - as of MY 2003 (All Models)** .

5. Fold rear seat down again.

6. Fill fuel tank (refuel). --> **Draining and filling fuel**

## SUBSEQUENT WORK

### Subsequent work

1. Fill fuel tank (refuel). --> **Draining and filling fuel**