

**WMA1 - Check Installation Position of Brake Fluid Return Line and Correct it if Necessary (Workshop Campaign)**

Vehicle Type: **Panamera 4 E-Hybrid (971) / Panamera 4 E-Hybrid Executive (971) / Panamera 4 E-Hybrid Sport Turismo (971)  
Panamera 4S E-Hybrid (971)  
Panamera Turbo S E-Hybrid (971) / Panamera Turbo S E-Hybrid Sport Turismo (971)**

Model Year: **As of 2020 up to 2022**

Concerns: **Brake fluid return line**

Information: **There is a possibility that the brake fluid return line is not routed according to specifications in the engine compartment on the affected vehicles.**

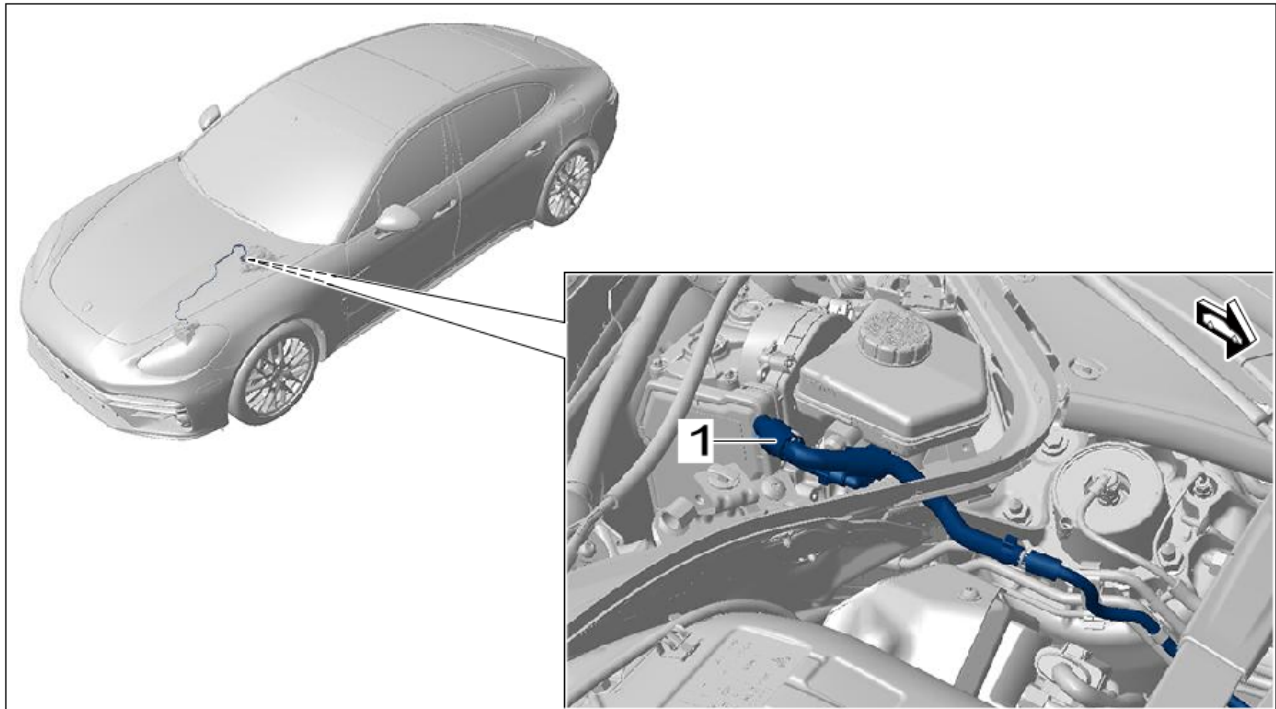
If this is the case, the return line may be damaged over the service life of the vehicle and as a result, brake fluid can leak out of the supply tank.

Action required:

- Checking installation position of return line
- Correct the installation position of the return line, depending on the result of the check
- Check the return line for damage and replace it if necessary

Affected Vehicles: Only vehicles assigned to the campaign (see also PCSS Vehicle Information).

Installation  
Position:



*Overview of installation position*

**1** – Brake fluid return line (**check installation position**)

### Required parts

Parts Info: No **parts are required** for **checking** and correcting the **installation position** of the return line.

**If the return line is damaged**, parts required for **replacing** the return line:

Part No.	Designation – Location	Number
971614724B	⇒ Brake fluid supply line - for left-hand drive vehicles (I-no. LOL) - for vehicles with hybrid drive: (I-no. OK3)	1 piece
N 91157202	⇒ Collared cheese head bolt, M8 x 30 – Side strut to body front	1 piece

N 10664503	⇒ Hexagon-head bolt, M8 x 45 - Side strut to body, rear:	1 piece
00004321086	⇒ Brake fluid, 30-liter/ 7.92 gal container - Brake system	As required (approx. 2 liter/ 67.6 fl oz required per vehicle)

### Required tools

- Tools:
- Suitable pole terminal puller, e.g. **VAS 6935 - pole terminal puller**
  - Torque wrench, 6-50 Nm (4.5-37 ftlb.) e.g. **V.A.G 1331A - torque wrench, 6-50 Nm** or equivalent
  - Plastic assembly wedge
  - Flashlight

**Additional tools** required if the **return line is damaged and must be replaced:**

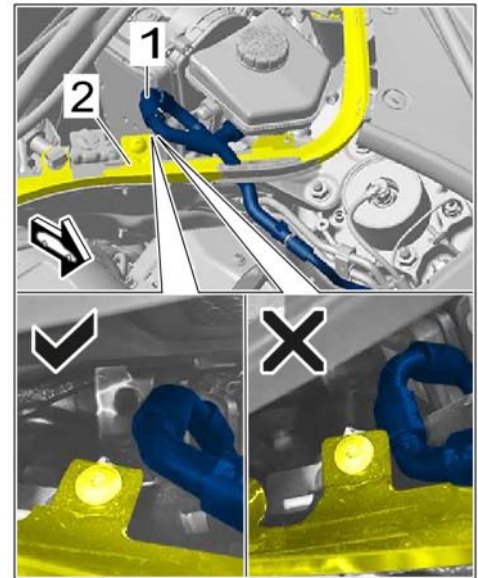
- **VAS 6883 - Insulated tool set**
- **VAS 6558A - High-voltage test adapter**
- **VAS 6558/9-6 - High-Voltage Test Adapter HVA 280**
- **T40262 - T40262 - Locking cap**
- **VAS 6410 - Contact surface cleaning set**
- Suitable brake filling and bleeding equipment, e.g. **VAS 6860 - Brake filling and bleeding equipment**
- Torque wrench, 40–200 Nm (30–148 ftlb.), e.g. **V.A.G 1332 - Torque wrench, 40-200 Nm (30-148 ftlb.)**
- Electronic torque angle torque wrench, e.g. **9768 - 9768 - Electronic torque wrench, 2 - 100 Nm (1.5 - 74 ftlb.)**

### Check installation position of return line and correct it if necessary

- Work Procedure: 1 Remove cowl panel cover.
- 1.1 Remove windscreen moulding at the left and right ⇒ *Workshop Manual '666119 Removing and installing moulding for windscreen'*.
  - 1.2 Remove both wiper arms ⇒ *Workshop Manual '922519 Removing and installing wiper arm'*.
  - 1.3 Remove rear seal on front lid. ⇒ *Workshop Manual '553319 Removing and installing front lid seal'*.
  - 1.4 Remove cowl panel cover ⇒ *Workshop Manual '508719 Removing and installing cowl panel cover'*.

- 2 **Visually inspect** the brake fluid return line ⇒ *Checking installation position of return line -1-* to see whether the **return line is routed above the fastening clip** ⇒ *Checking installation position of return line -2-* for the cross panel.

- The return line is **free in the cowl panel area and is routed above the fastening clip** ⇒ *Checking installation position of return line -bottom left-*: The installation position corresponds to the specification; no further action **is** required. Continue with ⇒ *Technical Information '508719 Subsequent work'*.
- If the return line is positioned **below the fastening clip** and/or is touching the **tab** ⇒ *Checking installation position of return line -bottom right-*, the line must be **routed correctly** and checked **for damage**, to do this, continue with **Step 3**.



*Checking installation position of return line*

- 3 Route the return line correctly by guiding out the line underneath the fastening clip.



#### Information

Due to the design of the return line, there is sufficient **distance of approx. 10–15 mm** between the line and the fastening clip for the cross panel on the assembly side.

- 4 Check return line in the cowl panel area for damage.



#### Information

A **superficial impression** of the fastening clip on the rubber-coated spacer (toothed ring) of the line is **not a damage** to the return line.

**In this case, the return line does not have to be replaced.**

- If the **return line is damaged** by contact with the fastening clip, the **line must be replaced**. To do this, continue with ⇒ *Technical Information '508719 Replacing brake fluid return line'*
- If the brake fluid **return line is not damaged**, continue with ⇒ *Technical Information '508719 Concluding work'*

## Replacing brake fluid return line

Work Procedure: 1 Move the vehicle onto a lifting platform, but do not raise it yet ⇒ *Workshop Manual '4X00IN Lifting the vehicle'*.

- 2 Remove front left trim panel in the engine compartment ⇒ *Workshop Manual '700219 Removing and installing front trim panel (engine compartment)'*.
- 3 Read warning notes for the high-voltage system ⇒ *Workshop Manual '2X00IN General warning notes for working on the high-voltage vehicle electrical system'*
- 4 Isolate the high-voltage system from the power supply and complete the relevant documentation ⇒ *Workshop Manual '2X00IN Isolating high-voltage electrical system from power supply/Starting high-voltage electrical system'*.
- 5 Remove side strut at the left and dome strut.
  - 5.1 Remove cover for front lock support ⇒ *Workshop Manual '703919 Removing and installing cover for front lock support'*.
  - 5.2 Remove side strut at the left and dome strut ⇒ *Workshop Manual '408619 Removing and installing strut (dome strut)'*.
- 6 Disconnect electric passenger compartment heater and set it aside with coolant lines connected. For instructions, see ⇒ *Workshop Manual '828019 Removing and installing electric passenger compartment heater'*.
- 7 Remove damaged brake fluid return line.
  - 7.1 Have suitable stoppers ready for closing off connection openings on the brake fluid reservoir and hydraulic unit.
  - 7.2 Place suitable material underneath for collecting emerging brake fluid.

#### NOTICE

##### Aggressive fluids

- **Risk of damage to components and surfaces**

⇒ **Do not spill fluids.**

⇒ **In the event of contact, wash the component or surface with water.**

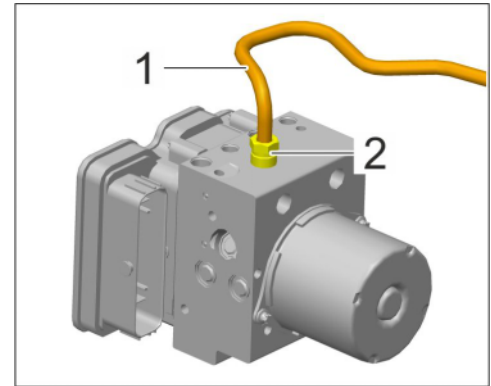
⇒ **Replace components that are already damaged.**

7.3 **Completely** extract brake fluid from brake fluid reservoir.

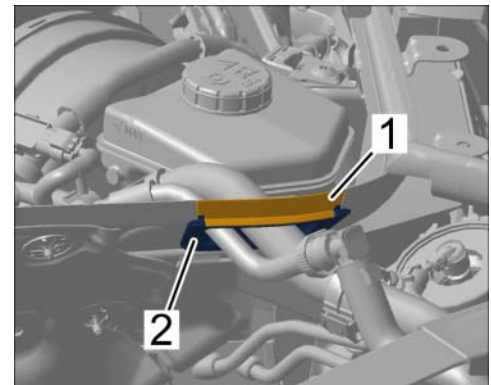
7.4 Release and unplug plug-in coupling for return line at the reservoir. To do this, unclip the return line from the fastening point on the reservoir. Soak up escaping brake fluid **immediately** using suitable aids and close off the connection opening on the reservoir **immediately**.

- 7.5 Loosen the return line to the hydraulic unit.
- 7.5.1 Loosen union nut on the ⇒ *Loosen return line to hydraulic unit -2-* return line ⇒ *Loosen return line to hydraulic unit -1-* and counter at the hydraulic unit at the same time.
- 7.5.2 Pull return line out of the bore and **immediately** close the hole in the hydraulic unit with suitable stoppers. Soak up emerging brake fluid **immediately** using suitable aids.
- 7.6 Guide out return line at the cross panel. To do this, remove the latch ⇒ *Removing line seal -1-* on the line gasket and pull the return line ⇒ *Removing line seal -2-* out of the gasket.
- 7.7 Unclip return line from ⇒ *Loosen return line in the engine compartment. -1-* the fastening points ⇒ *Loosen return line in the engine compartment. -2-* in the engine compartment, then guide it out and remove it.

- 8 Install new brake fluid return line.



*Loosen return line to hydraulic unit*

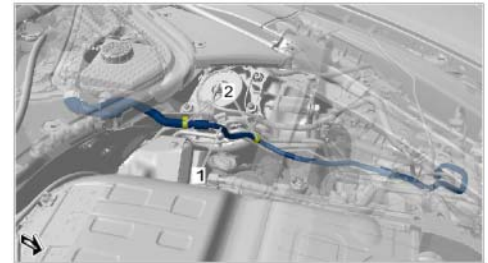


*Removing line seal*



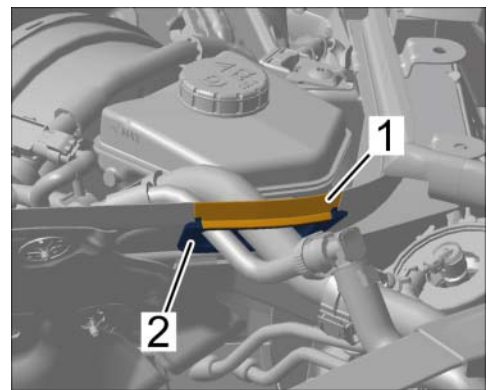
*Loosen return line in the engine compartment.*

8.1 Guide in return line ⇒ *Guide in return line in engine compartment -1-* in the engine compartment and ⇒ *Guide in return line in engine compartment -2-* position it in the fastening points area, but do not clip it in initially.



*Guide in return line in engine compartment*

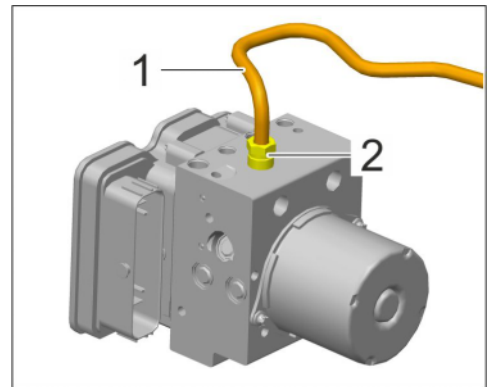
8.2 Guide in return line at the cross panel. To do this, ⇒ *Installing line seal -2-* guide the return line through the gasket and then ⇒ *Installing line seal -1-* secure the gasket with the latch .



*Installing line seal*

8.3 Connect plug-in coupling for the return line to the reservoir until the clutch engages securely with an audible click. Then clip the return line into the fastening point on the reservoir.

8.4 Fasten return line ⇒ *Fastening return line to hydraulic unit -1-* to the hydraulic unit. To do this, screw ⇒ *Fastening return line to hydraulic unit -2-* in and tighten the union nut . **Tightening torque 18 Nm (13.3 ftlb.)**



*Fastening return line to hydraulic unit*

8.5 Clip in return line ⇒ *Securing return line in engine compartment -1-* at the fastening points ⇒ *Securing return line in engine compartment -2-* in the engine compartment.

9 Install electric passenger compartment heater ⇒ *Workshop Manual '828019 Removing and installing electric passenger compartment heater'.*

10 Install side strut at the left and dome strut.



*Securing return line in engine compartment*

- 10.1 Install side strut at the left. ⇒ *Workshop Manual '408619 Removing and installing strut (dome strut)'*.
- 10.2 Install cover for front lock support ⇒ *Workshop Manual '703919 Removing and installing cover for front lock support'*.
- 11 Commission the high-voltage system and complete the relevant documentation. ⇒ *Workshop Manual '2X00IN Isolating high-voltage electrical system from power supply/Starting high-voltage electrical system'*.
- 12 Install front left trim panel in the engine compartment ⇒ *Workshop Manual '700219 Removing and installing front trim panel (engine compartment)'*.
- 13 Fill in brake fluid at the reservoir up to the Maximum marking and then bleed the brake system ⇒ *Workshop Manual '470107 Bleeding the brake system'*.
- 14 Lower the vehicle and remove it from the lifting platform.

### Concluding work

Work Procedure: 1 Install cowl panel cover.

- 1.1 Install cowl panel cover ⇒ *Workshop Manual '508719 Removing and installing cowl panel cover'*.
- 1.2 Install rear seal on front lid ⇒ *Workshop Manual '553319 Removing and installing front lid seal'*.
- 1.3 Install both wiper arms ⇒ *Workshop Manual '922519 Removing and installing wiper arm'*.
- 1.4 Install windscreen moulding at the left and right ⇒ *Workshop Manual '666119 Removing and installing moulding for windscreen'*.

- 2 Enter the campaign in the Warranty and Maintenance booklet.

### Warranty processing

Scope 1: **Checking installation position of return line** – the line does not have to be re-routed

**Labor time:**

Checking installation position of return line

Labor time: **70 TU**

Includes: Removing and installing both wiper arms  
 Removing and installing cowl panel cover  
 Performing visual inspection of installation position of return line

⇒ **Damage Code WMA1 066 000 1**

Scope 2: **Checking installation position of return line and re-routing return line** – the line does not have to be replaced

**Labor time:**

Checking installation position of return line and correcting installation position Labor time: **74 TU**

Includes:

- Removing and installing both wiper arms
- Removing and installing cowl panel cover
- Performing visual inspection of installation position of return line
- Correcting installation position of return line
- Checking return line for damage

⇒ **Damage Code WMA1 066 000 1**

Scope 3: **Checking installation position of return line and replacing return line**

**Labor time:**

Checking installation position of return line and replacing return line Labor time: **296 TU**

Includes:

- Removing and installing both wiper arms
- Removing and installing cowl panel cover
- Performing visual inspection of installation position of return line
- Checking return line for damage
- Disconnecting high-voltage system from power supply and commissioning
- Removing and installing left side strut
- Removing and installing strut
- Loosening and fastening electric passenger compartment heater
- Draining and filling brake fluid and bleeding the brake system

**Required parts:**

971614724B	Brake fluid supply line	1 piece
N 91157202	Collared cheese head bolt, M8 x 30	1 piece
N 10664503	Hexagon-head bolt, M8 x 45	1 piece
00004321086	Brake fluid, 30-liter/ 7.92 gal container	0.07 piece (approx. 2 liter/ 67.6 fl oz)

⇒ **Damage Code WMA1 066 000 2**

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