WE83 - Check Front Level Sensors, Left and Right (Workshop Campaign)

Vehicle type: **918 Spyder**

Model Year: **2015**

Concerns: **Front level sensors, left and right**

Information: This is to inform you of a voluntary Workshop Campaign on the above-mentioned vehicles. **It is possible that the sensors for the levelling system on the front axle of the relevant vehicles may be damaged or incorrectly positioned in relation to the control arms.**

If a sensor is damaged, a fault entry may occur in the PASM control unit over the service life of the vehicle and, as a result, a "Chassis system fault" warning message may appear in the instrument cluster.
This fault type may occur after only a short time if a sensor is incorrectly positioned.

Action Required: Check the front level sensors, left and right.

Affected vehicles: The VIN(s) can be checked by using PIWIS Vehicle Information link to verify if the campaign affects the vehicle. This campaign is scope specific to the VIN! Failure to verify in PIWIS may result in an improper repair. This campaign affects 24 vehicles in North America.

Parts Info: **ALL PARTS AND MATERIALS SHOULD BE ORDERED VIA A PTEC / PAV.**
NOTE: Parts allocation to PCNA for Scopes 3 & 4 is based upon an extremely low failure rate being experienced in rest-of-world. **PLEASE BE CONSERVATIVE IN ORDERING PARTS AS THEY WILL REMAIN IN EXTREMELY SHORT SUPPLY THROUGHOUT THE DURATION OF THIS CAMPAIGN.** Any parts or materials required for Scopes 3 and 4 should be ordered via a PTEC / PAV.

Materials:

Part No.	Designation – Use	Qty.
000.043.300.35	⇒ McLube Sailkote High Performance Dry Lube – central wheel lock Also commercially available at marine supply stores.	428 g spray can As much as required

Tools:

- **9002 - Lifting platform holders**
- **9003 - Socket wrench** for central wheel lock
- **9004 - Socket wrench** for central wheel lock cover
- **9453 - Access ramps** (or similar)
- Torque wrench 150 – 800 Nm (111 - 592 ftlb.), e.g. **V.A.G 1601 - Torque wrench 150 – 800 Nm (111 - 592 ftlb.)**

- Torque wrench, 6 – 50 Nm (4.5 – 37 ftlb.), e.g. **V.A.G 1331 - Torque wrench, 6-50 Nm (4.5-37 ftlb.)**
- Torque wrench, 2 – 10 Nm (1.5 – 7.5 ftlb.), e.g. **V.A.G 1783 - Torque wrench, 2-10 Nm (1.5-7.5 ftlb.)**

Work Procedure: See Attachment “A”.

Claim Submission. See Attachment “B”.

Attachment "A"

Work Procedure: 1 Raise the vehicle on a lifting platform ⇒*Workshop Manual '4X00IN Lifting the vehicle'*.

1.1 Position the vehicle between the arms of the lifting platform and push it onto the **9453 - access ramps**.

1.2 Remove underbody covers on the and fit mounting plates **9002 - Lifting platform holders**, ⇒*Workshop Manual '518119 Removing and installing jacking points'*.

1.3 Jack and raise the vehicle at the mounting plates.

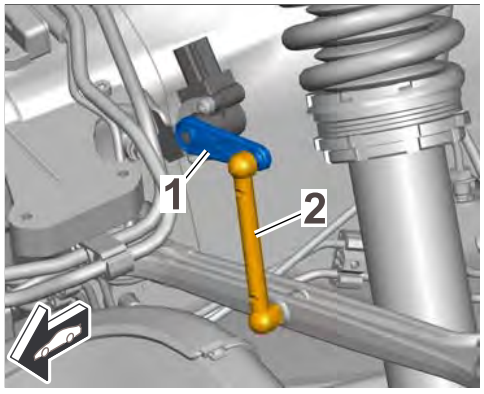
2 Remove both front wheels ⇒*Workshop Manual '440519 Removing and installing wheel'*.

Check the front level sensors, left and right

Work Procedure: 1 Check the lever arm ⇒*Checking the level sensor for damage* **-1-** and connecting link ⇒*Checking the level sensor for damage* **-2-** of the front level sensors on left and right for damage.

If the **lever arm is bent or cracked** or the **connecting link is damaged,** the relevant **level sensor must be replaced** ⇒*Technical Information 'WE8300 Replacing the front level sensor(s)'*.

Otherwise continue with **Step 2** and check the installation position of the level sensors.



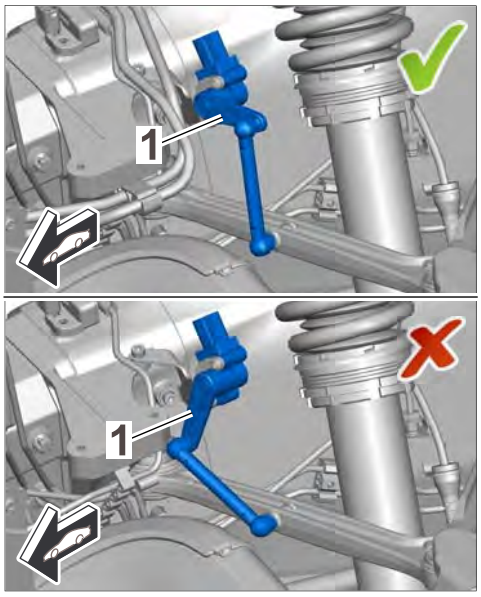
Checking the level sensor for damage

2 Check the installation position of the front level sensors, left and right.

- The lever arm ⇒*Installation position of the level sensor* **-1-** of the level sensor faces **outwards** towards the front wheel ⇒*Installation position of the level sensor* **-top-**: The level sensor is **correctly positioned**.

- The lever arm ⇒*Installation position of the level sensor* **-1-** of the level sensor faces **inwards** towards the vehicle body ⇒*Installation position of the level sensor* **-bottom-**: The level sensor is **incorrectly positioned**.

If one or both level sensors are **incorrectly positioned,** the installation position must be corrected ⇒ *Technical Information 'WE8300 Correcting the installation position of the front level sensor(s)'*.



Installation position of the level sensor

If **both** level sensors are **undamaged** and **positioned correctly⇒ End of action required, complete the vehicle** ⇒ *Technical Information 'WE8300 Subsequent work'*.

Correcting the installation position of the front level sensor(s)

Tools:
- Suitable removal lever, e.g. **VAS 6933 - disassembly tool**.
- **9818 - PIWIS Tester II**
- **Battery Charger / Power Supply** - Suitable for lithium ion type batteries, recommended current rating of 70A fixed voltage 13.8V. Refer to Equipment Information EQ-1105.

Work Procedure:

NOTICE

Incorrect handling of the level sensor

- **Damage to the level sensor**
- **Damage to the connecting link for the level sensor**

⇒ **Disconnect the connecting link only at the control arm.**

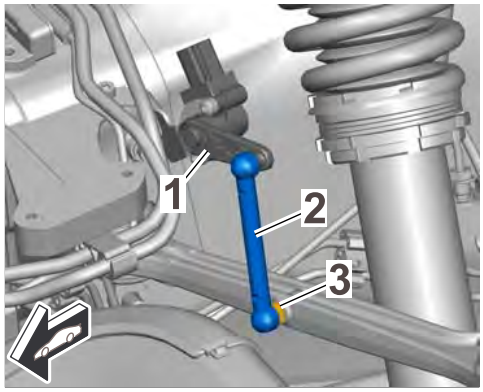
⇒ **Do not use sharp-edged tools to lever off the connecting link.**

⇒ **Do not bend the lever arm.**

⇒ **Do not push the lever arm forwards or backwards.**

1 Carefully press the connecting link ⇒*Correct the installation position* **-2-** of the level sensor off the ball joint⇒*Correct the installation position* **-3-** on the trailing arm using the disassembly tool **VAS 6933 - Disassembly tool**.

2 Check the ball socket of the connecting link ⇒*Correct the installation position* **-2-** for damage.
If the **connecting link is damaged,** the relevant **level sensor must be replaced** ⇒*Technical Information 'WE8300 Replacing the front level sensor(s)'*.



Correct the installation position

3 Place the lever arm ⇒*Correct the installation position* **-1-** in the correct installation position, so that the lever arm **faces** outwards towards the front wheel.

4 Carefully push the connecting link ⇒*Correct the installation position* **-2-** onto the ball head⇒*Correct the installation position* **-3-**, until the connecting link is felt to engage.

5 Read out and erase the fault memory ⇒*Technical Information 'WE8300 Reading out and erasing the fault memory'*.

Replacing the front level sensor(s)

Parts Info: **ALL PARTS AND MATERIALS SHOULD BE ORDERED VIA A PTEC/PAV.**
NOTE: Parts allocation to PCNA for Scopes 3 & 4 is based upon an extremely low failure rate being experienced in rest-of-world. **PLEASE BE CONSERVATIVE IN ORDERING PARTS AS THEY WILL REMAIN IN EXTREMELY SHORT SUPPLY THROUGHOUT THE DURATION OF THIS CAMPAIGN.** Any parts or materials required for Scopes 3 and 4 should be ordered via a PTEC/PAV.

Part No.	Designation – Location	Qty.
918.343.021.00	⇒ Left level control sensor	1 ea.
and/or		
918.343.022.00	⇒ Right level control sensor	1 ea.

The following parts are **additionally** required for **each level sensor to be replaced**:

N 105.447.03	⇒ Cheese head bolt, M6 x 10 – Level sensor to body	2 ea.

Tools:
- **9768 - Electronic torque wrench, 2 - 100 Nm/1.5 - 74 ftlb.**

- Torque wrench, 2 – 10 Nm (1.5 – 7.5 ftlb.), e.g. **V.A.G 1783 - Torque wrench, 2-10 Nm (1.5-7.5 ftlb.)**
- **9818 - PIWIS Tester II**
- **Battery Charger / Power Supply** - Suitable for lithium ion type batteries, recommended current rating of 70A fixed voltage 13.8V. Refer to Equipment Information EQ-1105.

Work Procedure: 1 Remove the center part of the wheel housing liner on the affected side of the vehicle ⇒ *Workshop Manual '50561903 Removing and installing front wheel housing liner (centre part)'*.

2 Remove the trim panel at the front right and – if affected – left ⇒ *Workshop Manual '700219 Removing and reinstalling front trim panel'*.

3 Replace the front level sensor on the affected side of the vehicle ⇒ *Workshop Manual '431855 Replacing front level sensor'*.

Information

The lever arm of the level sensor must face towards the front wheel when installed. It must be ensured that the level sensor is fitted with the swivel area of the lever towards the outside of the vehicle.

4 If previously removed, install the front left trim panel ⇒ *Workshop Manual '700219 Removing and installing front trim panel'*.

5 Install the center part of the wheel housing liner ⇒ *Workshop Manual '50561903 Removing and installing front wheel housing liner (centre part)'*.

6 Read out and erase the fault memory.
Then use the PIWIS Tester to **calibrate** the level sensors.

Reading out and erasing fault memories

Work Procedure: 1 Remove the front right trim panel ⇒ *Workshop Manual '700219 Removing and installing the front trim panel'*.

2 Connect the Schumacher INC-700A to the jump-start terminals in the luggage compartment, set the charger to "Flash Reprogram" and adjust the charging voltage to 13.8V. ⇒ *Installation position of external power connection*.

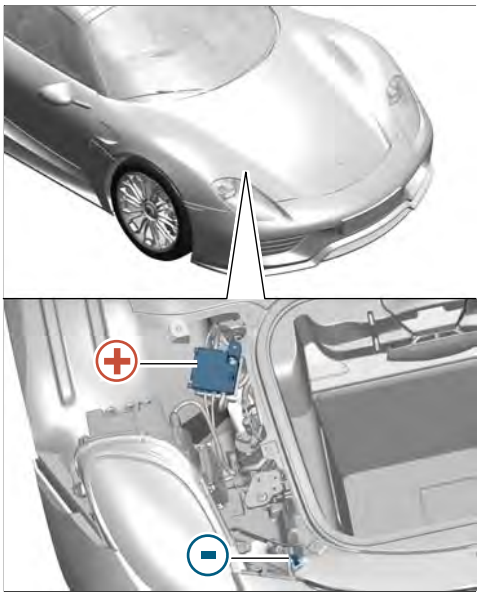
For further details, see ⇒ *Workshop Manual '9X00IN Battery trickle charging'*.

3 **9818 - PIWIS Tester II** must be connected to the vehicle communication module (VCI) via the **USB cable**. Then connect the communication module to the vehicle and switch on the PIWIS Tester.

4 Switch on ignition.

5 On the start screen of the PIWIS Tester, call up the ⇒ **'Diagnostics'** ⇒ **'Other models'** menu and select vehicle type ⇒ **'918 Spyder'**.
The diagnostic application then starts and the control unit selection screen is populated.

6 Read out and erase fault memories.



Installation position of external power connection

6.1 In the control unit selection screen (⇒ **'Overview'** menu), press •F7 “ to call up the ⇒ **'Additional menu'** (⇒ *Control unit selection*).

6.2 When the question “Create Vehicle Analysis Log (VAL)?” appears, either press •F12 “ to create a VAL or press •F11 “ if you do not want to create a VAL.

6.3 Press •>> “ to acknowledge the message that may appear informing you that campaigns for the vehicle are stored in the PIWIS information system.

Control unit selection

6.4 Select the function ⇒ **'Read all fault memories and erase if required'** and press •>> “ to confirm ⇒ *Erasing fault memories*.

The fault memories of the control units are read out.

6.5 Once you have read out the fault memories, delete the fault memory entries by pressing •F8 “ .

6.6 Press •>> “ (“Yes”) in response to the question as to whether you really want to delete all fault memory entries.

The faults stored in the fault memories of the various control units are deleted.

Erasing fault memories

Information

If the fault memories of individual control units cannot be erased, steps 7 and 8 must first be carried out and the fault memories of these control units must then be erased separately before starting to locate and correct faults.

7 Select the ⇒ **'Overview'** menu on the PIWIS Tester and press •<< “ to return to the control unit selection screen.

8 Calibrate electric machines.

Information

The electric machines must generally be calibrated after the fault memories of the OBD-relevant control units or the fault memories of all control units have been erased.

When calibrating the electric machines, the relevant rotor position (phase angle) of the two electric machines is stored.
The process is performed synchronously for both electric machines and must only be performed once in accordance with the description provided below.

8.1 Press the brake pedal and keep it pressed during the entire calibration process.

8.2 Turn the ignition key in the ignition lock to position 2 (terminal 50 – 'engine start') and hold it at this position for about 2 to 3 seconds.
Calibration of the electric machines is clearly audible. Calibration is complete once the calibration noise can no longer be heard.

8.3 Release the ignition key and switch off ignition.

9 Check that the electric machines were calibrated successfully by starting the combustion engine.

Information

After the ignition is switched on, "E-power" driving mode is activated automatically if the state of charge of the high-voltage battery is high enough (SOC > 35%). Given that purely electric driving is the preferred driving style in this driving mode, the combustion engine is not started when terminal 50 (engine start) is actuated.

To check whether calibration of the electric machines was successful and that the combustion engine can be started, the “Sport Hybrid” or “Race Hybrid” driving mode must first be selected using the Map switch on the steering wheel.

9.1 Switch on ignition.

9.2 Select “Sport Hybrid” or “Race Hybrid” driving mode. To do this, turn the Map switch (driving mode controls) on the steering wheel until the LED corresponding to the letter "S" or "R" in the MAP switch lights up.
The display "Sport mode" or "Race mode" also appears in the information display on the instrument cluster.

9.3 Turn the ignition key in the ignition lock to position 2 (terminal 50 – 'engine start') to check whether the combustion engine starts.

9.4 Then stop the combustion engine again.

10 If the fault memories of individual control units could not be erased before, read out and erase the relevant fault memories again.

It may then be necessary to calibrate the electric machines again and check the function as described in Steps 7 and 8.

11 If one or both **level sensors have been replaced**, first **calibrate** these using the PIWIS Tester ⇒ *Technical Information 'WE8300 Calibrating the level sensors'*.
Otherwise continue with Step 12.

12 Switch off the ignition and disconnect the PIWIS Tester from the vehicle.

13 Switch off and disconnect the battery charger.

14 Reinstall the front right trim panel ⇒ *Workshop Manual '700219 Removing and installing the front trim panel'*.

15 Complete the vehicle ⇒ *Technical Information 'WE8300 Subsequent work'*.

Calibrating the level sensors

Work Procedure:

Information

It is only necessary to calibrate the level sensors using the PIWIS Tester if one or both level sensors has been previously replaced.

1 Select the control unit ⇒ **'PASM'** in the control unit selection screen (⇒ **"Overview"** menu) and press •>> " to confirm your selection ⇒ *Control unit selection - PASM*.

2 Once the 'PASM' control unit has been found and is displayed in the overview, select the ⇒ **'Maintenance / repairs'** menu.

Control unit selection - PASM

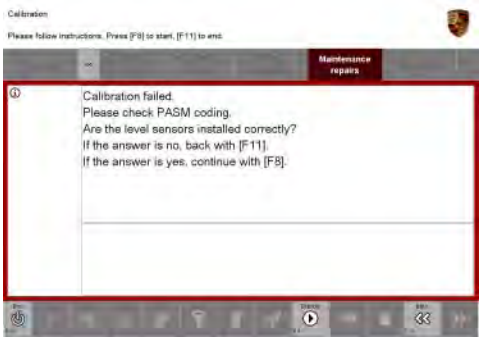
3 Select the ⇒ **'Calibration'** function and confirm your selection by pressing •>> " ⇒ *'Calibration' function*.

4 Note the preconditions displayed and start the calibration process by pressing •F8 " .

5 If the error message **"Calibration failed"** appears, confirm the correct installation of the level sensors with •F8 " in order to start calibration again ⇒ *Starting calibration*.

'Calibration' function

Following successful calibration, the message **"Calibration complete"** is displayed on the PIWIS Tester's screen and a **tick** appears in the **'Status'** field ⇒ *Calibration successful*.
If the calibration process has **not** been successfully performed, the process must be **repeated**.



Starting calibration

Calibration successful

6 Complete calibration by pressing •F12 “ .

7 Select the ⇒ **'Overview'** menu on the PIWIS Tester and press •<< “ to return to the control unit selection screen.

8 Switch off the ignition and disconnect the PIWIS Tester from the vehicle.

9 Switch off and disconnect the battery charger.

10 Reinstall the front right trim panel ⇒ *Workshop Manual '700219 Removing and installing the front trim panel'*.

11 Complete the vehicle ⇒ *Technical Information 'WE8300 Subsequent work'*.

Subsequent work

Work Procedure: 1 Install both front wheels and secure using the specified five-step tightening procedure ⇒ *Workshop Manual '440519 Removing and reinstalling the wheel'*.

2 Lower the vehicle and remove it from the lifting platform ⇒ *Workshop Manual '4X00IN Lifting the vehicle'*.

2.1 Lower the vehicle onto the **9453 - access ramps** with the lifting platform.

2.2 Mounting plates **9002 - Remove the lifting platform holders** and install the covers on the underbody ⇒ *Workshop Manual '518119 Removing and installing jacking points'*.

3 Enter the workshop campaign in the Warranty and Maintenance booklet.

Attachment "B"

Claim Submission - Workshop Campaign WE83
Warranty claims should be submitted via WWS/PQIS.
Open campaigns may be checked by using either the PIWIS Vehicle Information system or through PQIS Job Creation.

Labor, parts, and sublet will be automatically inserted when Technician is selected in WWS/PQIS. If necessary, the required part numbers will need to be manually entered into warranty system by the dealer administrator.

Scope 1: **Check** front level sensors – **no level sensor must be corrected or replaced**.

Working time:

Checking front level sensors — Labor time: **107 TU**

Includes: Lifting and lowering the vehicle
Removing and reinstalling front wheels, left and right

Parts required:

000.043.300.35	McLube Sailkote High Performance Dry Lube Also commercially available at marine supply stores.	0.05 ea. (428 g spray can, as much as required)

⇒ **Damage Code WE83 066 000 1**

Scope 2: **Check and correct** front level sensors - **no level sensor must be replaced**.

Working time:

Checking front level sensors and correcting the installation position — Labor time: **133 TU**

Includes: Lifting and lowering the vehicle
Removing and installing front wheels, left and right
Removing and reinstalling front right trim panel
Connecting and disconnecting the battery charger
Connecting and disconnecting the PIWIS Tester
Reading out and erasing the fault memory

Parts required:

000.043.300.35	McLube Sailkote High Performance Dry Lube Also commercially available at marine supply stores.	0.05 ea. (428 g spray can, as much as required)

⇒ **Damage Code WE83 066 000 1**

Scope 3: Check front level sensors and replace **one level sensor.**

NOTE: Parts allocation to PCNA for Scopes 3 & 4 is based upon an extremely low failure rate being experienced in rest-of-world. **PLEASE BE CONSERVATIVE IN ORDERING PARTS AS THEY WILL REMAIN**

IN EXTREMELY SHORT SUPPLY THROUGHOUT THE DURATION OF THIS CAMPAIGN. Any parts or materials required for Scopes 3 and 4 should be ordered via a PTEC/PAV.

Working time:

Checking the installation position of the front level sensors and replacing one level sensor — Labor time: **169 TU**

Includes:
- Lifting and lowering the vehicle
- Removing and installing front wheels, left and right
- Removing and reinstalling trim panel, front right and left if necessary
- Removing and installing wheel housing liner (centre part), front left or right
- Connecting and disconnecting the battery charger
- Connecting and disconnecting the PIWIS Tester
- Calibrating the level sensors
- Reading out and erasing the fault memory

Parts required:

918.343.021.00	Left level control sensor	1 ea.
or		
918.343.022.00	Right level control sensor	1 ea.

Additional parts required:

N 105.447.03	Cheese-head bolt, M6 x 10	2 ea.
000.043.300.35	McLube Sailkote High Performance Dry Lube Also commercially available at marine supply stores.	0.05 ea. (428 g spray can, as much as required)

⇒ **Damage Code WE83 066 000 2**

Scope 4: **NOTE:** Parts allocation to PCNA for Scopes 3 & 4 is based upon an extremely low failure rate being experienced in rest-of-world. **PLEASE BE CONSERVATIVE IN ORDERING PARTS AS THEY WILL REMAIN IN EXTREMELY SHORT SUPPLY THROUGHOUT THE DURATION OF THIS CAMPAIGN.** Any parts or materials required for Scopes 3 and 4 should be ordered via a PTEC/PAV.

Check front level sensors and **replace both level sensors.**

Working time:

Checking the installation position of the front level sensors and replacing both level sensors — Labor time: **203 TU**

Includes:
- Lifting and lowering the vehicle
- Removing and installing front wheels, left and right
- Removing and reinstalling the trim panel, front left and right
- Removing and installing wheel housing liner (centre part), front left and right
- Connecting and disconnecting the battery charger
- Connecting and disconnecting the PIWIS Tester
- Calibrating the level sensors
- Reading out and erasing the fault memory

Parts required:

918.343.021.00	Left level control sensor	1 ea.
918.343.022.00	Right level control sensor	1 ea.
N 105.447.03	Cheese-head bolt, M6 x 10	4 ea.
000.043.300.35	McLube Sailkote High Performance Dry Lube Also commercially available at marine supply stores.	0.05 ea. (428 g spray can, as much as required)

⇒ **Damage Code WE83 066 000 2**

References:
- ⇒ *Workshop Manual '4X00IN Lifting the vehicle'*
- ⇒ *Workshop Manual '431855 Replacing the front level sensor'*
- ⇒ *Workshop Manual '440519 Removing and installing the wheel'*
- ⇒ *Workshop Manual '50561903 Removing and installing the wheel housing liner (centre part)'*
- ⇒ *Workshop Manual '518119 Removing and installing the jacking point'*
- ⇒ *Workshop Manual '700219 Removing and installing the front trim panel'*

⇒ *Workshop Manual '9X00IN Battery trickle charging'*

Dealership Distribution Routing	Service Manager	_____	Shop Foreman	_____	Service Technician	_____	_____	_____	_____
	Asst. Manager	_____	Warranty Admin.	_____	Service Technician	_____	_____	_____	_____