WSC7 - Re-Programming High-Voltage Power Electronics and PSM Control Unit (Workshop Campaign)

Model Line: **Cayenne E-Hybrid (9YA / 9YB)**

Model Year: **As of 2019 up to 2023**

Concerns: **High-voltage power electronics control unit**

PSM (Porsche Stability Management) control unit

Cause: **There is a possibility that the software of the high-voltage power electronics and PSM (Porsche Stability Management) control units on the affected vehicles does not meet the required specifications.**
If this is the case, the yellow warning message "PSM failed" in the instrument cluster can light up and lead to a fault memory entry (P05FF00). In the further consequence, this can be perceived by the customer subjectively as a sensory change of the brake pedal in the form of a long footbrake stroke.

Action: Re-programming high-voltage power electronics and PSM control units with the PIWIS tester.

Information
The minimum programming requirement is the PIWIS Tester software release **43.200.041** (or higher).

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

Required Tools

Tool:

- **P90999 - PIWIS Tester 4**
- Battery charger with a current rating of **at least 90 A** and a **current and voltage-controlled charge map** for lithium starter batteries, e.g. **VAS 5908 battery charger 90 A**. For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '270689 Charging vehicle electrical system battery'*

Re-programming high-voltage power electronics and PSM control unit

Work Procedure: 1 Re-program control unit for high-voltage power electronics.

The basic procedure for control unit programming is described in the Workshop Manual. ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*

For specific information on control unit programming during this campaign, see the table below.

Required PIWIS Tester software release:	**43.200.041** (or higher)
Type of control unit programming:	Control unit programming using the **'Campaign' function in the additional menu** on the PIWIS Tester by entering a programming code.
Programming code:	**M2Q3S**
Programming sequence:	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. During the programming sequence, the **high-voltage power electronics control unit** is re-**programmed** and then **automatically** re–**coded**. **Do not interrupt programming.**
Programming time (approx.):	**5 minutes**
Software release programmed during this action:	▪ **High-voltage power electronics control unit** Software release: **0071 / 0072** (or higher) Upon completion of the control unit programming, the software release can be read out from the relevant control unit using the PIWIS Tester in the menu ⇒ 'Incremented identifications'.
Procedure in the event of error messages appearing during the programming sequence:	For work procedure, see: ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*
Procedure in the event of a termination in the control unit programming:	Repeat control unit programming by re-entering the programming code.

2 Re-program PSM control unit.

The basic procedure for control unit programming is described in the Workshop Manual. ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*

For specific information on control unit programming during this campaign, see the table below.

Required PIWIS Tester software release:	**43.200.041** (or higher)
Type of control unit programming:	Control unit programming using the **'Campaign' function in the additional menu** on the PIWIS Tester by entering a programming code.

Programming code:	**G4A8Y**
Programming sequence:	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. During the programming sequence, the **PSM control unit** is re-**programmed** and then **automatically** re–**coded**. **Do not interrupt programming.**
Programming time (approx.):	**14 minutes**
Software release programmed during this action:	▪ **PSM control unit** Software release: **0192** (or higher) Upon completion of the control unit programming, the software release can be read out from the relevant control unit using the PIWIS Tester in the menu ⇒ 'Incremented identifications'.
Procedure in the event of error messages appearing during the programming sequence:	For work procedure, see: ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*
Procedure in the event of a termination in the control unit programming:	Repeat control unit programming by re-entering the programming code.

3 Read out all **fault memories** process and delete existing faults if necessary.

Information

If control units are found to have faults that are **not** caused by control unit programming, these must first be **located** and **corrected**. This work **cannot** be invoiced under the workshop campaign number.

4 End the diagnostic application. Switch off ignition. Disconnect **P90999 - PIWIS Tester 4** from the vehicle.

5 Switch off and disconnect the battery charger.
⇒ *Workshop Manual '270689 Charge vehicle electrical system battery'*

6 Enter the campaign in the Warranty and Maintenance logbook.

Information

If no programming is available via the Campaign procedures, proceed with Automatic update procedures for each control unit as described below.

Re-programming high-voltage power electronics and PSM control unit

Work Procedure: 1 Re-program control unit for high-voltage power electronics.

The basic procedure for control unit programming is described in the Workshop Manual. ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*

For specific information on control unit programming during this campaign, see the table below.

Required PIWIS Tester software release:	**43.200.041** (or higher)
Type of control unit programming:	Control unit programming using the **'Automatic programming'** function of the control unit for high-voltage power electronics: **"High-voltage power electronics"** control unit – **"Coding / Programming"** menu – **"Automatic programming"** function.
Programming sequence:	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. During the programming sequence, the high-voltage charger control unit is **re-programmed** and then **automatically** re-**coded**. **Do not interrupt the programming and coding process.** Once the control units have been programmed and coded, you will be prompted to switch the ignition off and then back on again after a certain waiting time. Backup documentation of the new software versions is then performed.
The programming sequence takes (approx.):	**5 minutes**
Software release programmed during this action:	▪ **High-voltage power electronics control unit** Software release: **0071 / 0072** (or higher)
Procedure in the event of error messages appearing during the programming sequence:	For work procedure, see: ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*
Procedure in the event of a termination in the control unit programming:	Repeat control unit programming by restarting programming.

2 Re-program PSM control unit.

The basic procedure for control unit programming is described in the Workshop Manual. ⇒*Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*

For specific information on control unit programming during this campaign, see the table below.

Required PIWIS Tester software release:	**43.200.041** (or higher)
Type of control unit programming:	Control unit programming using the **'Automatic programming'** function of the PSM control unit: **'PSM'** control unit – **'Coding/programming'** menu – **'Automatic programming' function**.
Programming sequence:	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. During the programming sequence, the PSM control unit is re-**programmed** and then **automatically** re–**coded**. **Do not interrupt the programming and coding process.** Once the control units have been programmed and coded, you will be prompted to switch the ignition off and then back on again after a certain waiting time. Backup documentation of the new software versions is then performed.
The programming sequence takes (approx.):	**14 minutes**
Software release programmed during this action:	▪ **PSM control unit** Software release: **0192** (or higher)
Procedure in the event of error messages appearing during the programming sequence:	For work procedure, see: ⇒*Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*
Procedure in the event of a termination in the control unit programming:	Repeat control unit programming by restarting programming.

3 Press F3 to start the integration test in the control unit selection.
All affected control units should now be successfully programmed or checked in the control unit overview and their status.

Information

Cycle the electric parking brake switch after the programming sequence has completed successfully to clear the warning in the instrument cluster.
If a deviation in the integration test is still indicated despite programming being carried out, this must be repeated. If the deviation persists, contact Technical Support.

4 Read out all **fault memories** process and delete existing faults if necessary.

Information

Cycle the electric parking brake switch after the programming sequence has completed successfully to clear the warning in the instrument cluster.
If control units are found to have faults that are **not** caused by control unit programming, these must first be **located** and **corrected**. This work **cannot** be invoiced under the workshop campaign number.

5 End the diagnostic application. Switch off ignition. Disconnect **P90999 - PIWIS Tester 4** from the vehicle.

6 Switch off and disconnect the battery charger.
⇒ *Workshop Manual '270689 Charge vehicle electrical system battery'*

7 Enter the campaign in the Warranty and Maintenance logbook.

Warranty processing

Information

The specified labor times were determined specifically for carrying out this campaign and include all necessary preliminary and subsequent rework. The labor time may differ from the labor time published in the Labor Operation List in the PCSS.

Scope 1: **Re-programming high-voltage power electronics and PSM control unit**

Labor time:

Re-programming high-voltage power electronics and PSM control unit		Labor time: **55 TU**
Includes:	Connecting and disconnecting battery charger	
	Connect and disconnect PIWIS Tester	
	Reading out and deleting fault memories	

⇒ **Damage number WSC7 066 000 1**