

WSJO – Update to Software Network VR28.13 (Workshop Campaign)

Model Line: **Macan Electric (XAB)**

Model Year: **As of 2024 up to 2025**

Concerns: **Software update (software version VR28.13)**

Cause: **Software optimizations are available for various control units for the Macan Electric.**

An overview of the improvements that will be integrated with this software update can be found in the appendix under ⇒ *Technical Information 'Overview of new features of the software update'*

Action:

- Perform reprogramming of the affected vehicle using the Porsche Tester on software network VR28.13.
- Minimum requirement: Release **43.700.021** (or higher)

Checklist: Due to the high number of programming steps **incorrectly** carried out as part of the last software update, a checklist was created to improve the overview of the work to be carried out. This can be used as a tool at the start and for support during the update.
The checklist **must be** completed, signed and attached to the PQIS quality line in the PCSS.
For the checklist, see ⇒ *Technical Information 'Checklist'*

Supporting Videos: For a better overview of the work to be carried out, several supporting videos have been created for individual work steps.
Note: Some videos have German language voiceover.
The supporting videos are available in PCSS: ⇒ *Workshop Manual '9X00IN10 Electrical system – general information (implementation of a software network update)'*

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

Required tools

Tools:

- Porsche Tester **P90999 - Porsche Tester 4**
- Battery charger with a current rating of **at least 90 A**, e.g., **VAS 5908 - 90-A battery charger**. For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '270689 Charge battery and vehicle electrical system'*

Update to software network VR28.13

NOTICE

Sitting inside the vehicle during the update

- Update cancelled by automatic ignition activation

⇒ Avoid sitting inside the vehicle during the update.

NOTICE

The specified update process was not followed

- Update cancellation
- Destruction of control units

⇒ Observe and follow the procedures displayed for the update and instructions for the Porsche Tester

⇒ Do not switch the ignition on/off without instruction from Porsche Tester

⇒ Repeat the programming only if a failed update is displayed on the Porsche Tester



Information

Vehicle update – general information

The entire vehicle network will be checked for a necessary update or computed to ensure fault-free functioning of the vehicle. For this purpose, the following preparations are to be made:

- Latest release on available on Porsche Tester 4 and PiUS
- Vehicle is fully assembled
- **To prevent potential faults due to insufficient data transfer, carry out the software update using a cable (between VCI and Porsche Tester). Only if sufficient WLAN availability is ensured in the workshop can a wireless update be performed**
- The user must be logged into the Porsche Tester 4 in the PPN
- The vehicle must be supported with an external charger
- Seat heating and seat ventilation are not active
- Place the original hand-held transmitter in the emergency start tray (see Workshop Manual)

For this update procedure, the respective vehicle no longer needs to be in transport mode

Procedure for new vehicles with active transport protection:

Perform “**Vehicle handover**” routine according to the Porsche Tester instructions, **to deactivate transport protection**.

Always make sure: to answer the question of “Is this a new vehicle?” asked by the Tester with **No**!

As a result, no complete vehicle commissioning is carried out and only transport protection can be deactivated.

- Work Procedure: 1 Observe preconditions for control unit programming.
 ⇒ *Technical Information '9X10IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*



Information

An **active** internet connection with the Porsche Tester must be ensured.

The technician **must** log in to PPN with the Porsche Tester.

The Porsche Tester must not be charged using the cigarette lighter.



Information

Before starting the diagnosis, it is essential for an ignition change to be performed on the vehicle.

Subsequently, after starting the diagnosis, the VCI will be automatically initialized and the control unit data is loaded.

For additional information on the programming procedure and when the process is aborted, see ⇒ *Technical Information '9X10IN Additional information on control unit programming and coding'*.

- 2 Prepare an update of the various control units on software network VR28.13.
 - 2.1 Start new logging via **(P2)**.
 - 2.2 As soon as the control unit overview is displayed, open the additional menu **(F7)**.
 Create a Vehicle Analysis Log (VAL). Mark the created VAL with the attribute "Pre-VAL" and, after carrying out the campaign, return it using the Porsche Tester.
 An overview of all campaigns to be carried out for the respective vehicle is then displayed automatically.
 - 2.3 Exit the overview of the actions to be carried out for the respective vehicle by pressing **(F12)**.
 - 2.4 **Cancel the automatic integration test** on the Porsche Tester by pressing **(F11)**.



Information

Due to overload of the onboard tester, an interruption may occur intermittently in the step "Onboard tester downloads update".

In this case, the Porsche Tester will automatically restart the entire update process.

No intervention by the user is required! The Tester should automatically begin the update again. If it does not automatically begin again, manually execute the function "Programming and coding control units (campaign)" again

- 3 Update the software of various control units on software network VR28.13.
 In the displayed additional menu, select and confirm the **"Control unit programming and coding (campaign)"** menu item.
 The required updates to the incremented software network VR28.13 are then displayed.
 Start the software update with **(F8)** and program as per the menu.

After the update has been completed, a corresponding confirmation is displayed on the Porsche Tester. All affected control units should now be successfully programmed or checked in the results view showing the control units and their status.



Information

If a deviation in the integration test is still indicated despite the programming carried out, this must be repeated. If the deviation persists, contact Technical Support.



Information

The download speed of the update package depends on the performance of the local network and can vary accordingly.

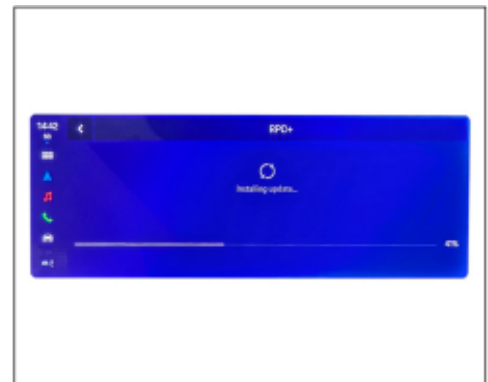


Information

During the update process, all displays in the vehicle (instrument cluster, central display and passenger display) are occasionally switched off. Nevertheless, the programming is ongoing, **the ignition must not be switched on/off**, as this can result in the destruction of the control units.

During the update, a buzzing of the acoustic simulator will sound several times. This noise is normal and indicates an ongoing update of the HCP1 drive and chassis main control unit (J1312).

If Wi-Fi coverage is insufficient, the connection between the Porsche Tester and VCI can be interrupted (battery charge indicator at the top right inactive on the Tester display). The vehicle will, nevertheless, continue programming **independently**. In the meantime, no entry may be made on the Porsche Tester, and the programming must not be restarted. In this case, the update progress can still be checked in the vehicle in the front display and control panel (R238) by going to the **"Messages" (RPC+)** tile.



Update progress on central display

NOTICE

Switch ignition on/off in the event of faults in the HCP4 body electronics main control unit (J519)

- **Destruction of control units**

⇒ **Do not switch the ignition on/off after completing the update if faulty HCP4 (J519) programming and coding is displayed.**

If the main HCP4 body electronics control unit (J519) has a programming and coding error in the results view after programming is completed, follow the corresponding procedure in the section *⇒ Technical Information '9X10IN Additional information on control unit programming and coding'*.

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

Required Porsche Tester software release:	43.700.021 (or higher)
Type of control unit programming:	Control unit programming via the "Programming and coding control units (campaign)" function.
Campaign to be carried out: WSJO	
Programming sequence:	Read and follow the information and instructions on the Porsche Tester during the guided programming sequence. Do not interrupt the programming and coding process. A backup documentation process for the re-programmed software releases starts after programming and coding.
Programming time (up to):	120 minutes
Control units programmed as part of this campaign:	See <i>⇒ Technical Information '9X10IN Overview of the new features of the software update'</i> .
Procedure if error messages appear during the programming sequence:	<i>⇒ Technical Information '9X10IN Basic instructions and procedure for control unit programming using the PIWIS Tester'</i>
Procedure in the event of a termination in the control unit programming:	Continue the campaign sequence to the end and, once it is completed, perform the integration test again and restart the programming. Specific information on the procedure in the event of cancellation: <i>⇒ Technical Information '9X10IN Additional information on control unit programming and coding'</i>

- 4 After the software update is complete, perform a vehicle bus idle.

**Information**

A bus idle is always required upon completion of a software update.

The duration of the required bus idle, however, depends on the number and type of control units previously updated.

Therefore, please always note the information on the duration of the required bus idle in this Technical Information.

- 4.1 Go back to the control unit overview by pressing **F11** .
- 4.2 End the readiness for operation of the vehicle (ignition off). Central computer (PCM) screen switches off. The VCI can remain connected, and key can remain inside.
- 4.3 Wait for **10 minutes** with the driver's door open.
- 5 Check readiness for driving the vehicle.
 - 5.1 Restore readiness for operation (ignition on).
 - 5.2 Operate the footbrake and keep it pressed.
 - 5.3 Use the selector lever to engage driving gears D and R one after the other. The selected gear must be displayed in the gear indicator on the instrument cluster.
 - 5.4 Activate the parking lock via button P.
- 6 End readiness for operation (ignition off) and restore it after waiting for approx. 30 seconds (ignition on).
- 7 Standardize the side windows (pulling and holding all four switches).

Note: The rear spoiler should standardize automatically during the final test drive after the update is complete.
- 8 Read out and delete the fault memory.

**Information**

Due to the vehicle diagnosis and programming status (new vehicles), fault memory entries that do not indicate an actual fault in the vehicle may be stored.

These fault memory entries, for the most part, can be deleted after vehicle handover has been completed and a test drive.

The following fault memory entry is always stored as part of a vehicle diagnosis with the Porsche Tester and does not represent an actual fault.

Control unit	Fault code	Description
Various control units	B184C00	Protection of vehicle diagnostics, actuation active

Main control unit for gateway HCP5 (J1273)	U17A000	Diagnostic filter, access protection deactivated
Drive and chassis main control unit HCP1 (J1312)	C140DF0	Vehicle Protected Environment (VPE), vehicle protection activated

- 8.1 Press **F7** to call up the additional menu on the Porsche Tester.
 - 8.2 Select and confirm the menu item **"Read/delete all fault memories"** and confirm.
 - 8.3 Press **F8** to delete the displayed fault memory entries.
- 9 **For new vehicles only** – commission the vehicle; for this, carry out the **"Vehicle handover"** routine in full according to the Porsche Tester instructions.
 - 10 Create a Vehicle Analysis Log (VAL) using the Porsche Tester. To do this, press **F7** to access the additional menu and select the creation of the protocol.
Mark the created vehicle analysis log with the attribute "Post-VAL" and return it using the Porsche Tester after the campaign has been carried out.
 - 11 Carry out a plausibility check of the battery capacity according to the instructions of the Porsche Tester.
 - 11.1 Open high-voltage battery control unit **(J1120)**.
 - 11.2 Open **"Maintenance/Repairs"** menu
 - 11.3 Select the menu item **"Plausibility check of battery capacity"** and carry it out.
 - If **no** abnormalities were detected during the plausibility check of the battery capacity, end the procedure with **F12** and continue with **work step 13. Scope 1** of this campaign will need to be invoiced.
 - If the plausibility check of the battery capacity results in a deviation, repeat the test as described and follow the guided Tester procedure. If it was not possible to re-initialize the calculation of the battery capacity, it is not necessary to create the Vehicle Analysis Log at this point; ignore the corresponding instructions of the Tester.



Information

If the plausibility check of the battery capacity has resulted in a deviation and the Tester procedure has been carried out to reset the battery capacity learning values, **scope 2** of this campaign will then need to be invoiced.

In addition, the customer must be informed about the temporary deviation of the range display based on the FAQs for this campaign when returning the vehicle.

- 12 Read out the fault memory again and erase it.

For other valid fault codes, see ⇒ *Technical Information '9X10IN Valid fault codes after update to the incremented software network VR28.13'*

- 12.1 Press **F7** to call up the additional menu on the Porsche Tester.
 - 12.2 Select and confirm the menu item **"Read/delete all fault memories"** and confirm.
 - 12.3 Press **F8** to delete the displayed fault memory entries.
- 13 Create a Vehicle Analysis Log (VAL) using the Porsche Tester. To do this, press **F7** to access the additional menu and select the creation of the protocol.
Mark the created vehicle analysis log with the attribute "Post-VAL" and, after carrying out the campaign, return it using the Porsche Tester

Note: 2 different Post-VALs are required. The first Post-VAL is to analyze the programming sequence and the second Post-VAL is to analyze the plausibility check of the battery capacity.

- 14 End the diagnostic application. Switch off the ignition. Disconnect the Tester from the vehicle.
- 15 Switch off and disconnect the battery charger.



Information

During the test drive, the GPS is reconnected, and the tire settings must be checked and, if necessary, adjusted again.

After the test drive, individual customer settings must be restored.

The activities performed during the test drive and after the test drive do **not** have to be carried out by the technician.

Note: The test drive does not necessarily have to be carried out by a technician but could be done by another service employee at the Porsche Center, for example.

- 16 Carry out the test drive, then restore the customer settings.
- 17 Attach the completed checklist to the PCSS campaign line. See section 'Checklist' in WSJO TI below
- 18 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 times may differ from those published in the Labor Operation List in the PCSS.

Scope 1: **Update to software network VR28.13**

Labor time:

Update to software network VR28.13

Labor time: **197 TU**

Includes:

- Connect and disconnect the battery charger
- Connect and disconnect Porsche Tester
- Standardize the side windows
- Check readiness for driving
- Perform a plausibility check of battery capacity
- Read out and delete the fault memory
- Create Vehicle Analysis Log (VAL) before and after campaign

⇒ **Damage number WSJO 066 000 1**

Scope 2: **Run an update on software network VR28.13 and re-initialize the calculation of the battery capacity**

Labor time:

Update to software network VR28.13

Labor time: **231 TU**

Includes:

- Connect and disconnect the battery charger
- Connect and disconnect Porsche Tester
- Standardize the side windows
- Check readiness for driving
- Carry out the plausibility check of the battery capacity and reset the values
- Read out and erase the fault memory
- Create the Vehicle Analysis Log (VAL) before and after the campaign
- Re-initialize the calculation of the battery capacity

⇒ **Damage number WSJO 066 000 1**

Overview of the new features of the software update

Overview:

Function	Description
Drive and chassis	▪ Optimization of vehicle starting behavior ▪ Improvement in air suspension adjustment speed ▪ Optimization of the e-sound display to avoid unintentional warning messages
Battery charge	▪ Improvement of preconditioning availability ▪ Increased robustness of charging behavior

Infotainment system	- Numerous stability, robustness and comfort improvements. Optimization of passenger display touch input - Optimization of the passenger display for an improved display when using third-party apps - Increased robustness of Bluetooth connectivity - Improvement of the microphone function for voice messages through Apple CarPlay and Android Auto. Improved contacts synchronization between vehicle and mobile device
My Porsche app	- New function for opening and closing the charge port door directly from the app - Improvement of data transmission for a more accurate display of the remaining range in the My Porsche app
Driver assistance systems	- Numerous stability, robustness and comfort improvements. Increased system stability to avoid unintended white and yellow warning messages, e.g. for fatigue warning, "Assistance systems not available" warning message, "Clean sensor" warning message - Optimization of traffic sign recognition - Expansion of the Porsche voice assistant to include Google Search for more convenient and quicker information retrieval while driving
Navigation system	Improved 5G connectivity
Comfort systems	- Optimization of vehicle key recognition - Improved ParkAssist stability
Air-conditioning system	Optimization of the dehumidification function to more effectively prevent misted windows
High-voltage system	Numerous stability and robustness improvements

Back to introduction ⇒ *Technical Information '9X10IN Introduction'* ⇒ *Technical Information '9X10IN Introduction'*

Additional information on control unit programming and coding



Information

If individual programming or rework procedures could not be carried out correctly, please refer to the Workshop Manual for the basic procedure for control unit programming with the PIWIS tester. ⇒ *Technical Information '9X10IN Basic information and procedure for control unit programming with the PIWIS tester. Information'*:

In the event of a fault, **always** create a log with the PIWIS tester during programming with **P2**.

Work procedure:

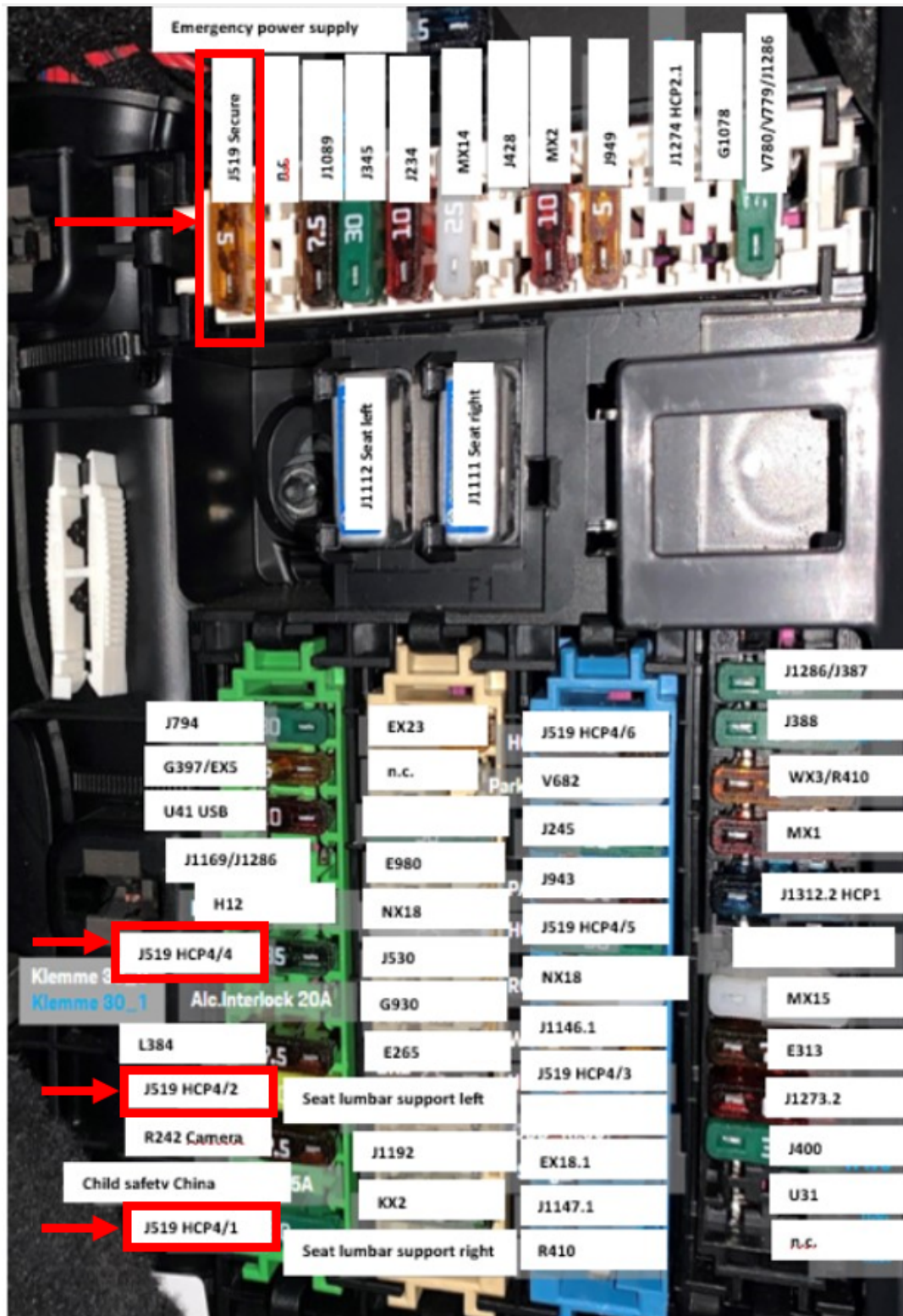
General:			
Fault indication	Cause	Source of fault	Remedial action
After the first update cycle, one or more control units with coding are required or programming is required	The affected control unit was not successfully programmed or coded	Vehicle	- Restart update by pressing F8 - After successful implementation, continue with work step 5

Before the update:			
Fault indication	Cause	Source of fault	Remedial action
Diagnostic application crashes or the VCI connection has been aborted (the diagnosis has no information on battery voltage – see the battery symbol at the top right on the Tester display)		VCI has poor Wi-Fi connection	- Restart tester, connect VCI with cable and try again - or: ensure that Wi-Fi connection is stable, moving vehicle to a suitable position in workshop if necessary

During the update:			
Fault indication	Cause	Source of fault	Remedial action
Diagnostic application crashes or the VCI connection has been aborted (the diagnosis has no information on battery voltage – see the battery symbol at the top right on the Tester display)		Diagnostic application	- Checking the update progress in the vehicle is mandatory No ignition change during update - Do not restart the Tester until the update has been completed in the vehicle (tile "Messages" --> Installation "successful") - When the update is concluded in the vehicle, verify that the update is complete. To do this, restart the "Programming"

			and coding control units (campaign)" function on the additional menu in the Porsche Tester
Implementation of vehicle update immediately after starting not successful, Vehicle update failed error message	Date/time in vehicle after disconnecting/re-connecting 12-V battery (terminal 30) incorrect. As a result, no software update can be performed	Vehicle	Correct the date/time in the vehicle: ▪ Open "Control unit overview" ▪ Access "Gateway HCP5" main control unit ▪ Open "Service/Maintenance" menu ▪ Select and execute "Set time" menu item
HCP2 driver assistance main control unit (J1274) reports a "Code signing fault" and a communication error for the Sub System Driver Assistance control unit in the results view	The affected control unit was not successfully programmed	Vehicle	Select "Special function" in the additional menu Enter campaign code: HCP2_ERROR_KD2 and follow the Tester instructions ▪ Select "Control unit programming and coding (campaign)" in the additional menu and restart the update by pressing (F8). ▪ After it has been installed correctly, continue with work step 4
The progress of the vehicle update is shown on the Porsche Tester only from approx. 30% completion . This can be up to 30 minutes after the download	Diagnostic service (RPC+) will not forward the progress of the update to the Tester until it is approx. 30% complete	Vehicle	▪ Correct behavior, no intervention necessary ▪ Wait until the progress is displayed
HCP4 body electronics main control device (J519) reports programming and coding errors in the results view	The affected control unit was not successfully programmed and coded	Vehicle	Do not perform an ignition change! This results in the destruction of the control unit. Fuses ▪ J519 HCP4/1 ▪ J519 HCP4/2 ▪ J519 HCP4/4

			- J519 Secure Pull, wait 30 seconds and plug it back in correctly. The fuses have different parameters and must be reinserted at exactly the same location; for the correct fuse positions, see: ⇒ <i>Fuse positions</i> Select "Special function" in the additional menu Enter campaign code: HCP4_ERROR_KD2 and follow the Tester instructions - After successfully programming the control unit, select "Control unit programming and coding (campaign)" in the additional menu and restart the update by pressing F8 - After it has been installed correctly, continue with work step 4
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HCP4 body electronics main control unit (J519) - front-end electronics	B1303F1	Rear lid proximity sensor (J938), not taught	- Disconnect and reconnect the plug at the rear disconnection point for the proximity sensor - Then read out and delete the fault memory again
Charging communication 2 (J1246)	U19B200	Motor drive flap power supply 2 (VX87), received error value	- Move the charge port doors by hand twice - Then read out and delete the fault memory again
HCP4 body electronics main control unit (J519) - front-end electronics	U206200.	Intelligent ParkAssist High, function restriction	- Implement bus idle for 15 min - Then read out and delete the fault memory again
Drive and chassis main control unit HCP1 (J1312)	C147596 P1DBD00	For C147596 – oil pump control internal fault For P1DBD00 – rear axle oil pump, engine speed deviation	- Implement bus idle for 15 minutes. - Then read out and delete the fault memory again

Valid fault codes after the incremented software network VR28.13

Control unit	Fault code	Description	Remedy
Brake electronics (J104)	C13F7F1	Bedding-in function, active	Valid fault memory entry after vehicle handover
Front camera (R242)	B200FF2	Implausible signal	After the test drive: Fault memory entry passive
Front camera (R242)	U12EF00	Front camera for driver assistance systems, implausible signal	After the test drive: Fault memory entry passive
Front camera (R242)	U147C00	External communication (J949), implausible signal	After the test drive: Fault memory entry passive
Front camera (R242)	U198C00	Road graph, received fault value	After the test drive: Fault memory entry passive

Drive and chassis main control unit HCP1 (J1312)	U045D00	Driver assistance main control unit HCP2 (J1274), ETHERNET data bus driver assistance, implausible signal	▪ After the test drive: Fault memory entry passive
Driver assistance main control unit HCP2 (J1274)	B200FF2	Road graph, received fault value	▪ After the test drive: Fault memory entry passive

Checklist

Checklist:

Work step:	Scope:	Completed:
The checklist only refers to campaign WSJO . A different checklist from another campaign must not be used.		
1. Battery charger set to charging mode and charging process on charger activated?	All	
2. Ignition switched off and on again?	All	
3. VCI and Porsche Tester 4 connected to one another (with cable or Wi-Fi with good network quality)?	All	
4. Has the user logged into PPN on the Porsche Tester?	All	
5. Seat heating and seat ventilation not active?	All	
6. Original remote control in emergency start tray (position noted)?	All	
7. Logging in the diagnostic tester started?	All	
8. Vehicle Analysis Log (Pre-VAL) created?	All	
9. Automatic integration test cancelled by pressing [F11] ?	All	
10. Only for new vehicles: Vehicle handover performed in part as described in section "Update on software network VR28.13" in order to deactivate transport protection?	New vehicles	
11. Control unit programming and coding (campaign) performed?	All	
12. Bus idle performed for 10 minutes?	All	
13. Vehicle's readiness for driving checked?	All	
14. Side windows standardized?	All	
15. Fault memory read out and erased?	All	
16. Only for new vehicles: Vehicle handover completed?	New vehicles	
17. Plausibility check of the battery capacity performed?	All	

18. Vehicle analysis log (Post-VAL) created?	All
19. Campaign entered in the Warranty and Maintenance logbook?	All
20. During the test drive: 20.1 GPS reconnected? 20.2 Tyre settings checked and adjusted if necessary?	All
21. Were abnormalities detected during the plausibility check of the battery capacity, and was the calculation of the range reset to the initial values? Information is provided through the guided procedure with the Porsche Tester. Inform the customer about FAQs (Service Advisor)!	Scope 2
22. Does the vehicle have the Sport Chrono package (M-number 8LH or 8LU), and is the vehicle also operated by a secondary user? Inform the customer about FAQs (Service Advisor)!	All
VIN:	
Dealer number:	

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