WLC5 - Updating Software for Various Control Units (Workshop Campaign)

Important: **CRITICAL WARNING -** This campaign includes steps where control unit(s) in the vehicle will be programmed with the PIWIS Tester. The vehicle voltage must be maintained between 13.5 volts and 14.5 volts during this programming. Failure to maintain this voltage could result in damaged control unit(s). Damage caused by inadequate voltage during programming is not a warrantable defect. The technician must verify the actual vehicle voltage in the PIWIS Tester before starting the campaign and also document the actual voltage on the repair order.

Model Year: **2020**

Model line: **Taycan (Y1A)**

Subject:

- Over-the-air (OTA) control unit
- Control unit for high-voltage power electronics, front and rear
- Control unit for high-voltage charger (OBC)
- High-voltage battery control unit (BMCe)
- Control unit for chassis control (PASM)
- Air-conditioning system regulator control unit, rear
- Instrument cluster
- Porsche Communication Management (PCM) control unit
- Thermal management (TME)
- Roll stabilisation (PDCC)
- Brake electronics (PSM)
- Headlight, left and right
- Rear-end electronics (BCM2)

Information: **Software optimizations for various control units are available for the Taycan.**
With these software optimizations, various improvements are implemented in the vehicle.

Information

Before carrying out this campaign, check whether other campaigns must be carried out on the relevant vehicles. On vehicles affected by campaign **WLB3** as well as this campaign, **always** make sure that campaign **WLB3** has already been **carried out** before carrying out this campaign, when possible. In urgent or escalated cases, for example, if the required parts for campaign WLB3 are not yet or not sufficiently available, WLC5 can still be carried out.

For these cases please ensure the following points are observed:

1) Always connect the terminal clip of the negative cable vertically from above to the ground point for the external power connection.

2) Make sure that the negative cable of the terminal clip is laid without any tension to prevent the terminal clip from tilting sideways at the ground point.

3) When connecting the terminal clips, make sure that there is sufficient distance to peripheral parts (e.g. pneumatic supply line for air spring strut).

4) Before the vehicle is lifted with a lifting platform, always disconnect the external battery charger completely from the vehicle to avoid that the power supply wire of the terminal clip will get under tension and as a result may tilt sideways at the ground point.

Remedial Action: Update the software for the following control units using the PIWIS Tester with test software version **39.200.031** or USB storage medium. For details of affected control units, see overview below.

Control unit	Programming time	Update via	
		USB storage medium	PIWIS Tester
Combined software update of various control units **Includes:** **Programming and coding** • Over-the-air (OTA) control unit • Control unit for high-voltage power electronics, front and rear • Control unit for high-voltage charger (OBC) • High-voltage battery control unit (BMCe) • Control unit for chassis control (PASM) • Air-conditioning system regulator control unit, rear • Instrument cluster **Only for coding** • Porsche Communication Management (PCM) control unit • Thermal management (TME) • Roll stabilisation (PDCC) • Brake electronics (PSM) • Headlight, left and right	approx. 120 minutes		■

• Rear-end electronics (BCM2)			
Porsche Communication Management (PCM) control unit	approx. 30 minutes	■	

An overview of the new features that will be included with the software update can be found in the Appendix under ⇒ *Technical Information 'Overview of new features provided by the software update'*.

Affected Vehicles: Only vehicles assigned to the campaign (see also PCSS Vehicle Information). There are 698 vehicles affected by this campaign in North America.

Required tools

Information

The Taycan (Y1A) is equipped as standard with a **lithium starter battery**.

Lithium starter batteries must only be charged using a **suitable battery charger** that has a current and voltage-controlled charge map.

For further information about the battery chargers to be used, see ⇒ *Workshop Manual '270689 Charging battery/vehicle electrical system'*.

Tools:

- Battery charger with a current rating of **at least 90 A** and - if required - **also** with a **current- and voltage-controlled charge map** for lithium starter batteries, e.g. **VAS5908 / battery charger 90 A**
- **9900 - PIWIS Tester 3** with test software version **39.200.031**
- **USB storage medium Type A+C 32 GB (for PCM update)**, Part No. V04014999WW000

Information

The PCM control unit software update is performed using a USB storage medium. The software version that is specific to each region must be **downloaded** using the software tool **PiUS** (Porsche Integrated Update Service) and **installed** on a blank USB storage medium.

Pay particular attention to the following:

- For this PCM software update, the USB storage medium USB Type A+C 32 GB with the part number V04014999WW000 must be used.
- To use the software tool, **one** blank or re-writable USB storage medium is required for **each** individual software update.
- The software available in PiUS must **only** be used in accordance with the instructions provided in a Technical Information published for this purpose.

The software mentioned here must **only** be used on the **vehicles assigned to the campaign**. Damage to the control unit cannot be ruled out if the software is used on other vehicles.

You will find further information on how to install and use the PiUS software tool in the PPN portal under *PiUS (Porsche integrated Update Service) goes live*.

Overview of PiUS software versions – PCM update		
Part No.	**Designation – Region**	**Vehicle assignment**
9J1919360A	**PCM update** software – North America – Mexico	I-no. ER3/ER4

Preparatory work

NOTICE

Fault entry in the fault memory and control unit programming aborted due to low voltage.

- **Increased current draw during diagnosis or control unit programming can cause a drop in voltage, which can result in one or more fault entries and the abnormal termination of the programming process.**

⇒ **Before starting control unit programming, connect a suitable battery charger with a current rating of at least 90 A to the vehicle.**

NOTICE

Control unit programming will be aborted if the WLAN connection is unstable.

- **An unstable WiFi connection can interrupt communication between the PIWIS Tester and the vehicle communication module (VCI). As a result, control unit programming may be aborted.**

⇒ **During control unit programming, always connect the PIWIS Tester to the vehicle communication module (VCI) via the USB cable.**

NOTICE

Control unit programming will be aborted if the driver's key is not recognized

- **If the driver's key is not recognized in the vehicle, programming cannot be started or will be interrupted.**

⇒ **Place the driver's key with the back facing forward upright between the holding struts in the rear cupholder (emergency start tray) to guarantee a permanent radio link between the vehicle and remote control.**

NOTICE

Programming interrupted

- **Malfunctions in control unit**
- **Risk of damage to control unit**

⇒ **Route the line between the vehicle communication module (VCI) and diagnostic socket on the vehicle without tension and make sure that the connector is inserted fully into the diagnostic socket.**

⇒ **Check that the rechargeable battery for the PIWIS Tester is charged sufficiently. Connect the PIWIS Tester to the power supply unit if necessary.**

Information

To carry out the campaign, the PIWIS Tester must be online and logged into the Porsche Partner Network (PPN).

Information

The procedure described here is based on the PIWIS Tester 3 software version **39.200.031**.

The PIWIS Tester instructions take precedence and in the event of a discrepancy, these are the instructions that must be followed.
A discrepancy may arise with later software versions for example.

Information

If there are faults in the control units, these must first be **found** and **corrected**. This work **cannot** be invoiced under the workshop campaign number.

Work Procedure: 1 Connect a suitable battery charger, e.g. **VAS5908 / battery charger 90 A**, to the jump-start terminals in the luggage compartment and switch it on.

2 Position the **driver's key** with the back facing forward upright between the holding struts in the rear cupholder (**emergency start tray**) to guarantee a permanent radio link between the vehicle and remote control ⇒*Emergency start tray* **-arrow-**.

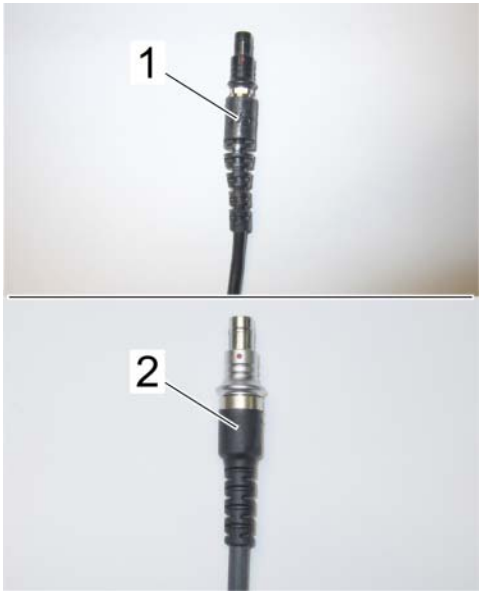
Emergency start tray

3 Connect the **9900 - PIWIS Tester 3** to the Vehicle Communication Module (VCI) via the **USB cable**. Then, connect the Communication Module to the vehicle and switch on the PIWIS Tester.
Due to the long programming time, connect the **PIWIS Testerto the power supply during the operation.**

Information

Use the **new** PIWIS Tester data cable for carrying out the campaign. The difference between the old ⇒ *PIWIS Tester data cable* **-1-** and new ⇒ *PIWIS Tester data cable* **-2-** data cable is shown in the illustration.

If the connection between the vehicle and PIWIS Tester is interrupted, check the data cable for the PIWIS Tester for signs of damage. If the data cable is damaged, it **must** be **replaced**. To do this, follow the instructions in the PPN for "Returning faulty USB cable caps" (PPN portal > Dr Ing. h.c. F. Porsche AG > Aftersales > Workshop > PIWIS > Documents).



PIWIS Tester data cable

4 Establish operational readiness (switch on ignition).

5 On the PIWIS Tester start screen, call up the **'Diagnostics'** application.

The vehicle type is then read out, the diagnostic application is started and the control unit selection screen is populated.

6 Create vehicle analysis log (VAL) using the PIWIS Tester.
Mark the vehicle analysis log you have just created with the attribute "Initial VAL" and after carrying out the campaign, return it using the PIWIS Tester.

Updating software for various control units

WARNING

Electrically moved side windows and rear spoiler

- **Danger of limbs being trapped or severed**
- **Risk of damage to components**

⇒ **Do not reach into the danger area.**

⇒ **Keep third parties away from the danger area.**

⇒ **Do not move components or tools into the danger area.**

Information

If fault memory entries for individual control units cannot be deleted, proceed as follows:

- End operational readiness (switch off ignition).
- Disconnect the PIWIS Tester diagnostic connector from the diagnostic socket.
- Lock the vehicle using the driver's key and remove the driver's key from the proximity of the vehicle (approx. 10 meter).
- Wait approx. 5 minutes before unlocking the vehicle again.
- Restore operational readiness (switch on ignition).
- Plug the PIWIS Tester diagnostic connector into the diagnostic socket again and restore communication with the vehicle.
- Read out the fault memory again and delete any fault memory entries that are stored.

Work Procedure: 1 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 version:	**39.200.031** (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:	**P5P8E**
Programming sequence:	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. **Do not interrupt programming and coding.** A backup documentation process for the re-programmed software versions starts as soon as programming and coding is complete.
Programming time (approx):	**approx. 120 minutes**

Software versions programmed during this campaign:	• Over-the-air (OTA) control unit	0861
	• High-voltage power electronics, front and rear	0006
	• Control unit for high-voltage charger (OBC)	1073
	• High-voltage battery control unit (BMCe)	E860
	• Chassis control (PASM)	0896
	• Rear air conditioning control	0897
	• Instrument cluster	0394
	Following control unit programming, the software version can be read out of the relevant control unit in the 'Extended identifications' menu using the PIWIS Tester.	
Procedure in the event of abnormal termination of control unit programming:	• End and restore operational readiness (switch ignition off and then on again). • Read out and erase fault memories ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*. • Repeat control unit programming by entering the programming code again.	
Procedure in the event of error messages appearing during the programming sequence:	⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Fault finding"'*.	

2 Continue with re-programming Porsche Communication Management (PCM) ⇒ *Technical Information '9X00IN Re-program Porsche Communication Management (PCM 6.0)'*.

Re-programming Porsche Communication Management (PCM 6.0)

Work Procedure: 1 Open the armrest and remove the external device, e.g. iPod, USB storage medium, from the USB interface if necessary.

NOTICE

Using the software on vehicles that are not assigned to this campaign:

- **Risk of damage to control unit**

⇒ **Use the listed software versions only for the vehicles assigned to the campaign.**

2 Insert the **USB storage medium** with the software version specific to the respective region for the **PCM update** into the **USB interface**.

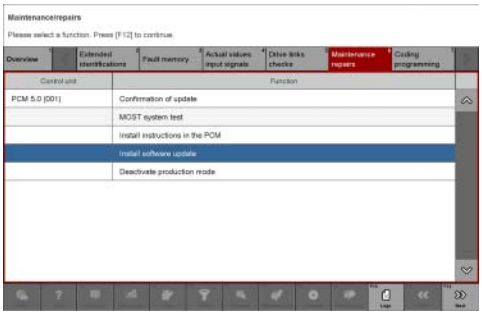
Part No.	Designation – Region	Vehicle assignment
9J1919360A	USB storage medium for PCM update – North America – Mexico	I-no. ER3/ER4

3 Start the PCM 6.0 software update using the PIWIS Tester.

3.1 Select the **PCM central computer** control unit in the control unit selection screen (**'Overview'** menu) and press • F12 " ('Next') to confirm your selection.

3.2 Once the PCM central computer control unit has been found and is displayed in the 'Overview', select the **'Maintenance / repairs'** menu.

3.3 Select the **'Install software update'** function and press • F12 " ('Next') to perform the software update ⇒ *Installing PCM 6.0 software update*.

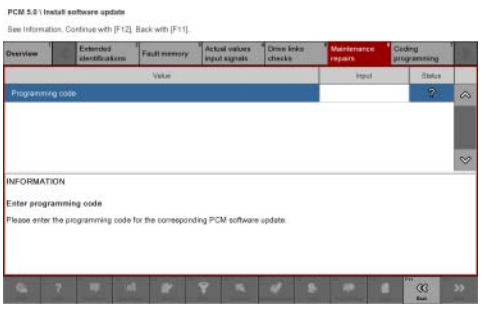


Installing PCM 6.0 software update

3.4 Confirm the information that is displayed by pressing • F12 " ('Next').

3.5 After meeting the preconditions, confirm by ticking the 'Status' column. Then, press • F12 " ('Next') to continue.

3.6 Enter the programming code **U2C6J** in the relevant column ⇒ *Entering PCM 6.0 programming code* and press • F12 " ('Next') to confirm ⇒ *Entering PCM 6.0 programming code*.



Entering PCM 6.0 programming code

3.7 Press • F8 " ('Start') to start.

3.8 After checking the software data, press • F8 " ('Start') to start programming.

Once the update has started, the PCM is restarted in the Update menu and the individual components are then updated.

The update can take up to 30 minutes.

Read and follow the instructions displayed on the PIWIS Tester during the update. The PCM is restarted several times. The PCM screen remains dark for up to 3 minutes.

3.9 Once the update is complete, an overview is displayed showing processes that have been completed successfully marked with a tick in the Status box. Press • F12 " ('Next') to confirm.

- **Software version programmed during this campaign: 3276**

Following control unit programming, the software version can be read out of the PCM central computer control unit in the 'Extended identifications' menu using the PIWIS Tester.

4 Open the armrest and remove the USB storage medium from the USB interface.

Reading out and erasing fault memory

WARNING

Electrically moved side windows and rear spoiler

- **Danger of limbs being trapped or severed**
- **Risk of damage to components**

⇒ **Do not reach into the danger area.**

⇒ **Keep third parties away from the danger area.**

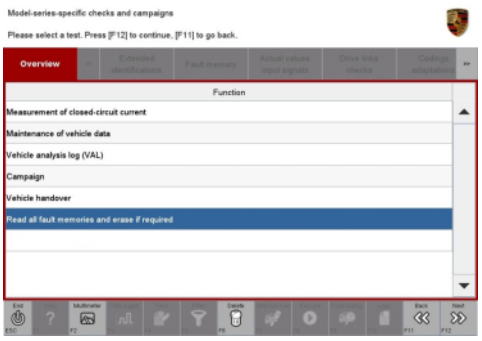
⇒ **Do not move components or tools into the danger area.**

Work Procedure: 1 Read out and erase the fault memories of all control units.

1.1 Press •F7 “ in the control unit selection screen ('Overview' menu) to call up the Additional menu.

1.2 Select the function “Read all fault memories and erase if required” and press •F12 “ ('Next') to confirm your selection ⇒*Erasing fault memories*.

The fault memories of the control units are read out.



Erasing fault memories

1.3 Once you have read out the fault memories, check the fault memory entries.

Information

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

1.4 Press •F8 “ to delete fault memory entries.

1.5 Press •F12 “ ('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.

1.6 Once you have erased the fault memories, select the **'Overview'** menu to return to the control unit selection screen ⇒ *Control unit selection*.

Control unit selection

Concluding work

Work Procedure: 1 Manually retract the rear spoiler, which extended automatically during programming.

1.1 Select the **'Rear spoiler'** control unit in the control unit selection screen (**'Overview'** menu) and press • F12 “ ('Next') to confirm your selection.

1.2 Press • F11 “ ('No') to skip the question as to whether you want to create a vehicle analysis log (VAL).

1.3 Once the rear spoiler control unit has been found and is displayed in the overview, select the **'Maintenance / repairs'** menu.

1.4 Select the function **'Teach rear spoiler'** and press • F12 “ ('Next') to confirm your selection.

1.5 Read the instructions and confirm by pressing • F12 “ ('Next').

1.6 Meet the displayed conditions that are to be checked manually and set a tick in the relevant **'Status'** box.

1.7 Select the **Teach rear spoiler** function and press • F8 “ ('Execute') to confirm your selection.

1.8 Once the rear spoiler has been taught and retracted fully, select the **'Overview'** menu to return to the control unit selection screen.

2 End operational readiness (switch off ignition).

3 Disconnect the PIWIS Tester from the vehicle.

4 Switch off and disconnect the battery charger.

5 Enter the campaign in the Warranty and Maintenance booklet.

Warranty processing

Information

The specified working time was determined specifically for carrying out this campaign and includes all required preliminary and subsequent work.
The working time may differ from the working time published in the Labor Operation List in PIWIS.

Information

Information on the working time:

Generally, the working time includes all work that requires the active participation of the service technician.
This also covers all required preliminary work and subsequent work.

The working time includes the following activities during control unit programming:

- All required steps for starting or finishing programming
- Required interaction during a programming sequence
- Waiting times until programming starts
- Random check of programming status

If no further interaction by the service technician is required once control unit programming has started because programming is performed automatically, there is no need for the service technician to remain at the vehicle for the entire programming time.
These waiting times are not included in the working time if the total programming time is more than 15 minutes.
If programming takes up to 15 minutes, the full waiting time is included in the working time.

Scope:

Working time:

updating software of various control units — Labor time: **114 TU**

Includes:
- connecting and disconnecting battery charger
- connecting and disconnecting PIWIS Tester
- re-programming over the air (OTA) control unit
- re-programming high-voltage power electronics at the front and rear
- re-programming high-voltage charger (OBC)
- re-programming high-voltage battery (BMC)
- re-programming control unit for chassis control (PASM)
- re-programming air-conditioning system regulator control unit
- re-programming instrument cluster

re-programming control unit for Porsche Communication Management (PCM 6.0)
re-programming thermal management (TME)
re-coding wall stabilisation (PDCC) at front and rear
re-coding brake electronics (PSM)
re-coding headlights, left and right
re-coding rear-end electronics (BCM2)
re-coding rear spoiler manually
reading out and erasing the fault memory
creating vehicle analysis logs (VAL) before and after repairs

⇒ **Damage Code WLC5 66 000 1**

Overview of the new features of the software update

Overview:

Function	Description
Navigation and infotainment: Porsche Communication Management (PCM)	• Quick filter "Charging stations" is permanently visible in the PCM in order to select charging stations as a destination • Last destinations and favourites, such as "Home" and "Work", remain stored • Saved satellite map settings are optimized • Registration via Porsche ID is improved
Charging	• The charge state calculation is optimized and thus any limited system shutdowns are avoided.
Air conditioning	• The functionality of the air conditioning is optimized: Temperature settings in the rear air-conditioning control panel thus remain constant and sporadic failures of the air conditioning are corrected
Chassis and driving comfort	• The starting comfort at full acceleration is optimized • Possible chassis noises from the front axle area are reduced

Digital cockpit display (instrument cluster)	• Various software optimisations prevent the sporadic, short-lived display of various messages and thus improve the driving experience
Seat adjustment	• On vehicles in non-Connect markets, the chosen seat memory settings of the driver's seat will now also be preserved after the driving readiness is complete