

**WMB1 - Re-Programming High-Voltage Battery Control Unit (BMCe) (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:** 2021

**Model Line:** Taycan (Y1A)

**Concerns:** High-voltage battery control unit (BMCe)

**Information:** **Optimized software is available for the high-voltage battery control unit (BMCe) in the Taycan.** This software update prevents incorrect calculation of the state of charge (SoC) of the high-voltage battery. Incorrect calculation of the state of charge can reduce the range in some cases.

**Action required:** Re-program the high-voltage battery control unit (BMCe) using the PIWIS Tester with test software version 39.900.075 (or higher) installed.

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

**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 a **current and voltage-controlled charge map** for lithium starter batteries, e.g. **VAS 5908 Battery charger 90 A**
  - **9900 - PIWIS Tester 3** with test software version **39.900.075** installed

## 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 WiFi 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.
- ⇒ Position the driver's key with the back facing forward upright between the holding struts in the rear cupholder (emergency start tray) to ensure 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

The procedure described here is based on the PIWIS Tester 3 software version **39.900.075**.

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.

- Work Procedure: 1 Remove plenum panel cover ⇒ *Workshop Manual '85221901 Removing and installing (front) plenum panel cover'*.
- 2 Observe general instructions for isolating the vehicle from the power supply prior to performing maintenance tasks ⇒ *Workshop Manual '2X00IN Isolation from power supply prior to performing maintenance tasks on BEV vehicles'*.
- 3 Isolate the high-voltage system from the power supply ⇒ *Workshop Manual '2X00IN Isolating high-voltage system from power supply/Starting high-voltage system'*.
- 4 Connect a suitable battery charger, e.g. **Battery charger 90A**, to the jump-start terminals in the luggage compartment and switch it on.
- 5 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*.
- 6 Connect **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.
- 7 Establish operational readiness (switch on ignition).
- 8 On the PIWIS Tester start screen, call up the '**Diagnostics**' application.



*Emergency start tray*

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

## Re-programming high-voltage battery control unit (BMCE)



### 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 **Re-program high-voltage battery control unit (BMCE).**

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:	<b>39.900.075</b> (or higher)
Type of control unit programming:	Control unit programming using the ' <b>Campaign</b> ' <b>function in the Additional menu</b> on the PIWIS Tester by entering a programming code.
Programming code:	<b>K5N6Y</b>
Programming sequence:	Read and follow the <b>information and instructions on the PIWIS Tester</b> during the guided programming sequence.  <b>Do not interrupt programming and coding.</b>  A backup documentation process for the re-programmed software versions starts as soon as programming and coding is complete.
Programming time (approx.):	<b>6 minutes</b>
Software version programmed during this campaign:	<b>1441</b>  Following control unit programming, the software version can be read out of the high-voltage DC charger (booster) control unit in the 'Extended identifications' menu using the PIWIS Tester.
Procedure in the event of abnormal termination of control unit programming:	Repeat control unit programming by entering the programming code again.
Procedure in the event of error messages appearing during the programming sequence:	⇒ <i>Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Fault finding"</i> .

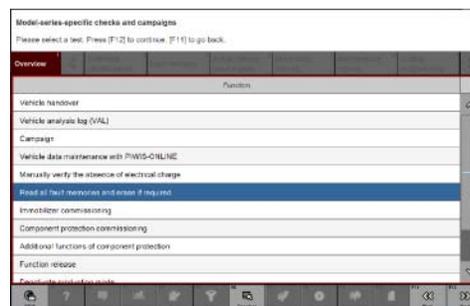
## Concluding work

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.

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



*Erasing fault memories*



### 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.



### 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/ 33 ft).
- **Wait approx. 15 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.

- 1.6 Once you have erased the fault memories, select the **'Overview'** menu to return to the control unit selection screen ⇒ *Control unit selection*.
- 2 Manually retract the rear spoiler, which extended automatically during programming.
- 2.1 Select the **'Rear spoiler'** control unit in the control unit selection screen (**'Overview'** menu) and press •F12" ('Next') to confirm.
- 2.2 Once the rear spoiler control unit has been found and is displayed in the overview, select the **'Maintenance/repairs'** menu.
- 2.3 Select the function **'Teach rear spoiler'** and press •F12" ('Next') to confirm.
- 2.4 Read the instructions and confirm by pressing •F12" ('Next').
- 2.5 Meet the displayed conditions that must be checked manually and tick the relevant **'Status'** box.
- 2.6 Select the **Teach rear spoiler** function and press •F8" ('Execute') to confirm.
- 2.7 Once the rear spoiler has been taught and retracted fully, select the **'Overview'** menu to return to the control unit selection screen.
- 3 End operational readiness (switch off ignition).
- 4 Disconnect the PIWIS Tester from the vehicle.
-  **Information**  
Connect the PIWIS Tester to a network as soon as possible and log into the PPN in order to transfer the backup documentation created during this campaign to the PAG systems.
- 5 Switch off and disconnect the battery charger.
- 6 Start the high-voltage system ⇒ *Workshop Manual '2X00IN Isolating high-voltage system from power supply/Starting high-voltage system'*.
- 7 Enter the campaign in the Warranty and Maintenance booklet.



Control unit selection

**Warranty processing**



**Information**

The specified working time was determined specifically for carrying out this campaign and may differ from the working time published in the Labor Operation List in the PCSS.

Scope 1:

**Working time:**

Re-programming high-voltage battery control unit (BMCE)

Labor time: **96 TU**

- Includes:
- Connecting and disconnecting battery charger
  - Connecting and disconnecting PIWIS Tester
  - Isolating vehicle from power supply and commissioning vehicle
  - Reading out and erasing fault memories
  - Retracting (teaching) rear spoiler

⇒ **Damage Code WMB1 066 000 1**

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