PORSCHE

Advanced Technical Information

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Taycan: Tips for completing HV Battery State of Health (SoH) Test Procedure in PIWIS Tester

Vehicles Affected

Models	Model Year	Model Type	VIN Range	Vehicle-Specific Equipment
Taycan	As of 2020	Y1A	N/A	N/A
Taycan Cross Turismo	As of 2021	Y1B	N/A	N/A
Taycan Sport Turismo	As of 2022	Y1C	N/A	N/A

Revision History

Revision	Release Date	Changes
0	July 19, 2024	Original document

Condition

Successfully completing the HV Battery SoH test can be difficult without supporting information. The following documentation aims to assist Porsche Center service and support personnel with relevant and necessary information to successfully perform the SOH test procedure.

Technical Background

The HV Battery SoH long-term test procedure is designed to estimate the useable capacity of the HV battery as accurately as possible. Currently, this involves completely discharging the battery before beginning the multi-day procedure of holding and charging. Keep in mind that this procedure must be completed with the same PIWIS tester that it was started with. Make sure that the PIWIS Tester is updated to the latest software before beginning the procedure. Updating the software before the procedure is complete will erase the current progress and restart the procedure from the first step.

Service Information

When starting the procedure in the Maintenance repairs section of the HV Battery Control Unit, the tester will give a full overview of the long-term measurement procedure. All steps must be performed in the order listed with the same tester. It is highly recommended to reconnect the VCI to the vehicle to verify completion of each step in the calculation preparation process.

Tips for discharging:

- While the tester says to reach an SOC below 10%, this equates to a customer-facing SOC of 5% or less in the instrument cluster.
- Due to the potential of self-balancing during the first 6.5 hour holding period, a customer-facing SOC of 1-2% is highly recommended to ensure the minimum SOC criteria is met over the course of the holding time.

Tips for holding time 1:

- Once the discharging process is complete, the internal timer for the first 6.5 hour holding time will start automatically. and display the time elapsed. Note that this timer restarts each time the tester is connected to the vehicle, until the 6.5 hour minimum is surpassed.
- Set a separate timer of at least 6.5 hours from the point you disconnect the tester and lock the vehicle to begin the first holding period.
- Do not disturb the vehicle during this time. Reconnecting the tester at any point before the 6.5 hour holding period will restart the internal timer in the test procedure criteria.
- There is no maximum time limit for either holding time. If the car needs to sit overnight or over the weekend, the procedure can still be resumed afterward.

Tips for charging:

- This process must be performed with an AC charger. The power level does not matter, but level 2 AC charging is obviously recommended due to the kWh required to reach >90% SOC.
- To save time charging, it is recommended to set at least a 95% SOC limit charge profile in the PCM for this charging session. This will display the soonest time to unplug the charger in the lower display when the profile is active.
- Anything less could risk the 90% SOC requirement not being met in the PIWIS tester for completion of the charging step.

Tips for holding time 2:

- The timer behavior for the second holding time is identical to the first one. Make sure to leave the vehicle undisturbed in a temperature-controlled environment for at least 6.5 hours from the moment you lock the car after completing the charging session if you removed the charging plug immediately after charging.
- This period will start automatically after the vehicle is done charging. It is possible to leave the charger connected until the 2nd 6.5 hour holding time is complete (overnight for example). A calculation should be prepared after this point.

Generating a certificate:

- While the procedure has become more robust with the latest PIWIS tester software, the possibility remains that the calculation could fail. The only option in this case is to end the process and start over. Be sure to check fault memory for any new faults that might be affecting the communication of the HV Battery Control Unit.
- Once a calculation is prepared and a certificate available, this value can be referenced again by returning to the SoH test routine in the tester.
- An additional long-term test can be started from that point, but the current value from the previous calculation serves as the "short test" from previous tester software versions. So far it is not possible to prepare a calculation of SoH without performing the long-term measurement procedure first.

This document will be updated as the procedure changes in future PIWIS tester software releases.

Warranty

No warranty Labor Operations are currently available as this procedure is performed on an as-needed basis.

Search Items

Taycan, HV Battery, high voltage, state of health, SOH, Capacity, PIWIS