

**Replacement Requirement for Head-Up Display: Subsequent Update After Replacing Head-Up Display Hardware (92/22)**

Model Line: **Cayenne (9YA)**

Model Year: **2019**

Equipment: Head-up display (M-no. KS1)

Concerns: **Head-up display (HUD) control unit**

Information: On model year "K" (2019) vehicles, malfunctions can occur between the head-up display and PCM central computer after replacing the head-up display hardware.

Action required: After replacing the hardware, check the software configuration of the head-up display and PCM central computer. In the event of discrepancies, re-program the control unit for head-up display using the PIWIS Tester with **PIWIS Tester software version 41.100.010** (or higher) installed and the corresponding programming code.



**Information**

The total time required for control unit programming is **approx. 2 minutes**.

Software: **Overview of the software versions affected**

Control unit	Software version (old status)	Software version (new status)
Head-up display	1828	1846

**Required tools**

Tool:



**Information**

The Cayenne is equipped as standard with a **lithium starter battery**, which must only be charged using suitable battery chargers.

For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '2706IN Load general information on the 12-volt lithium-ion battery'* and ⇒ *Workshop Manual '270689 battery, vehicle electrical system'*

- **Battery charger** with a current rating of **at least 90 A**, e.g. **VAS 5908 battery charger 90A**.
- **9900 - PIWIS Tester 3** with PIWIS Tester software version **41.100.010** (or higher) installed

## Preliminary work

### NOTICE

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

- Increased current draw during diagnostics 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 getting started, connect a suitable battery charger with a current rating of at least 90 A to the jump-start terminals.

### NOTICE

Control unit programming will be aborted if the Wi-Fi connection is unstable.

- An unstable Wi-Fi connection can interrupt communication between PIWIS Tester and the vehicle communication module (VCI). As a result, programming may be aborted.
- ⇒ During control unit programming, always connect the PIWIS Tester to the vehicle communication module (VCI) using the USB cable.

### NOTICE

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

- If the driver's key is not detected in the vehicle, programming cannot be started or will be interrupted.
- ⇒ Place the driver's key with the back facing down in front of the lock opening for the center console cover to guarantee a permanent radio link between the vehicle and driver's key.

Work Procedure: 1 Carry out general preliminary work for control unit programming as described in ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming - section on "Preliminary work"*.

## Checking software configuration and re-programming the head-up display control unit, if necessary

- Work Procedure: 1 Check software version of the PCM central computer:
- 1.1 Select '**Central computer**' control unit.
  - 1.2 Select the '**Extended identifications**' menu.
  - 1.3 Check software version of the '**Central computer**'.
    - 1.3.1 If the software version is lower than '2870', no further action is required. Continue with ⇒ *Technical Information '9X00IN Concluding work'*.
    - 1.3.2 If the software version is greater than or equal to '2870', continue with Step ⇒ 2.
- 2 Check software version of the head-up display control unit and re-program control unit for head-up display where necessary:

- 2.1 Select **'Head-up display'** control unit.
- 2.2 Select the **'Extended identifications'** menu.
- 2.3 Check software version of control unit for **'head-up display'**.



**Information**

Only the software version from **'1846'** is compatible with the software version **'2870'** / **'2872'** of the PCM central computer.

- 2.3.1 If the software version is '1846', no further action is required. Continue with ⇒ *Technical Information '9X00IN Concluding work'*.
- 2.3.2 If the software version is '1828', re-program the head-up display control unit. The basic procedure for programming a control unit is described in the Workshop Manual ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Programming"*.



**Information**

The procedure described here is based on the PIWIS Tester 3 software version **41.100.010**.

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

**Specific information on control unit programming in the context of this technical information:**

Required PIWIS Tester software version:	<b>41.100.010</b> (or higher)
Type of control unit programming:	Control unit programming using the <b>'Campaign'</b> function in the Additional menu on the PIWIS Tester by entering a programming code.
Programming code:	<b>S3H5B</b>

Programming sequence:	<p>Read and follow the <b>information and instructions on the PIWIS Tester</b> during the guided programming sequence. During the programming sequence, the control unit for the <b>head-up display</b> is re-<b>programmed</b> and then <b>automatically re-coded</b>.</p> <p><b>Do not interrupt programming and coding.</b></p> <p>Backup documentation of the new software versions is then performed.</p>
Programming time (approx):	<b>2 minutes</b>
Software version programmed during programming:	<p><b>1846</b></p> <p>Following control unit programming, the software version can be selected from the relevant control unit in the ⇒ 'Extended identifications' menu using the PIWIS Tester.</p> <p>The software version information in the programmed data record is based on the specified PIWIS Tester software version. Please note that this may be different in a higher version.</p>
Procedure in the event of a termination in the control unit programming:	<ul style="list-style-type: none"> <li>• Switch ignition off and then switch on again.</li> <li>• Selecting and erasing fault memories. ⇒ <i>Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Rework"</i></li> <li>• Repeat control unit programming by restarting programming.</li> </ul>
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 "Troubleshooting"</i> .

**Concluding work**

Work Procedure: 1 Carry out general rework for control unit programming as described in ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Rework"*.

**Invoicing**

For documentation and invoicing in a warranty case, state the work items required depending on the scope of work required and the specified PCSS encryption in the warranty claim:

APOS	Labor operation	I No.
91520103	Checking central computer	
90860103	Checking windshield projection control unit	
90862553	Programming windshield projection control unit	

PCSS encryption:

Location (FES5)	90860	windshield projection control unit
Damage type (SA4)	1614	function not according to specification

References: ⇒ *Workshop Manual '270689 Battery, charging vehicle electrical system battery'*  
 ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming'*

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