

WH05 - Performing PCM Software Update (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: 2017

Model Line: Cayenne (92A)
Macan (95B)
718 Boxster/Cayman (982)
911 (991)

Subject: Porsche Communication Management (PCM) 4.0

Situation: **Optimized software for Porsche Communication Management (PCM) 4.0 has been used in standard production in order to further improve the general performance of the system.**

These optimizations must be implemented retrospectively even for vehicles manufactured before the date of introduction.

- Action Required:**
- Update PCM software using an SD card
 - Re-code the PCM using PIWIS Tester test software version **34.800.030** (or higher)

Due to the PCM software update, the following control units must **also** be **re-coded**:

- Bose amplifier (if installed, I-no. 9VL)
- Instrument cluster



Information

It takes about 45 minutes to program PCM 4.0.

Customer Settings

When the instrument cluster is re-coded, the **individual settings** implemented in the instrument cluster by the customer will be **lost** and are reset to the **default values** of the **country version** that applies to the vehicle.

Before carrying out the campaign, therefore, please **take a picture or video of the customer's individual settings** implemented in the instrument cluster.

Once the repair has been completed, please use this documentation to **return the customer's individual settings** implemented in the instrument cluster.

Affected Vehicles: Only the vehicles assigned to the campaign (see also PIWIS Vehicle Information). This campaign affects 9,849 vehicles in North America.

Important: If other programming campaigns that **also affect the PCM** and involve the **identical procedure** are open for a vehicle in addition to this campaign, programming must **only be carried out once** using the current **PIWIS Tester software**.

Please proceed as follows for the campaigns that have not been carried out:

- Mark the campaign as **"cannot be carried out"** with the reason **"Modification of the affected component"** in PQIS. The **"Warranty relevance"** flag must be activated in order to be able to set a warranty claim and close the campaign.

- A warranty claim must be submitted for the campaign in which **0 TU** is entered as the specific **working time** and no material items are specified.

Required tools

NOTICE

Use of a PIWIS Tester software version that is older than the prescribed version

- **Measure is ineffective**
- ⇒ **Always use the prescribed version or a higher version of the PIWIS Tester software for control unit programming and coding.**

Tools:

- **Battery Charger/Power Supply** - Suitable for AGM Type batteries, recommended current rating of 90A fixed voltage 13.5V to 14.5V.

- **9900 - PIWIS Tester 3** with PIWIS Tester software version **34.800.030** (or higher) installed

- **SD memory cards for PCM update**



Information

The PCM update is performed using an SD memory card for each specific region.

The SD memory cards for the PCM update listed below must be re-used as part of the workshop equipment and remain in the Porsche dealership. The SD memory cards must not therefore be left in the vehicle or handed over to the customer.

The **SD memory cards** required for carrying out this campaign are **identical** to the SD memory cards required for carrying out the **PCM update as part of campaigns WG39 and WG47**. **Before ordering** SD cards, please check therefore whether you already have the required number of SD cards.

The **maximum number of SD memory cards that may be ordered for each Porsche Centre depends on how many vehicles will be worked on by the respective Porsche Centre as part of workshop campaigns WH05, WG39 and WG47.**

The following specifications apply here:

Number of vehicles on which work is to be performed by the Porsche Centre as part of campaigns WH05, WG39 and WG47	Maximum order quantity of SD memory cards for the PCM update
• 1 to 20 vehicles	2 ea.
• 21 to 50 vehicles	4 ea.
• 51 to 100 vehicles	6 ea.
• more than 100 vehicles	8 ea.

Overview of SD memory cards for PCM update

Ordering Required Parts:

Please note, **1 SD Memory Card will be allocated to each dealership.** If you require additional SD memory cards, please submit a **PTEC/PAV**.

Part No.	Designation – Region	Vehicle assignment
9P1906961A	SD memory card for PCM update – North America – Mexico	I-no. ER3/ER4



Information

To make it easy to determine which SD card is required for performing the PCM update on each vehicle, the vehicles are assigned fixed campaign scopes.

The campaign scope assigned to the respective vehicle can be displayed by entering the vehicle identification number (VIN) in the 'Vehicle information' menu in PIWIS.

Based on the assigned campaign scope, the SD card required for the PCM update can be determined using the overview of campaign scopes provided under ⇒ *Technical Information 'WG3900 Warranty processing'*.

Preparatory work - Cayenne (92A), Macan (95B)

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 battery charger or power supply, suitable for AGM type batteries, recommended current rating of 70A fixed voltage 13.5V to 14.5V.

NOTICE

Control unit programming will be aborted if the vehicle key is not recognized

- If the vehicle key is not recognized in vehicles with Porsche Entry & Drive, programming cannot be started or will be interrupted.
- ⇒ Switch on the ignition using the original vehicle key. To do this, replace the original vehicle key in the ignition lock with the plastic key fob if it was previously removed at the start of this procedure.

- Work Procedure: 1 Connect a battery charger to the jump-start terminals in the engine compartment and switch it on.
- 2 Switch on the ignition using the **original driver's key**. For vehicles with "Porsche Entry & Drive", replace the control panel in the ignition lock with the original driver's key, if necessary.

Preparatory work - Sport Cars (982/991)

NOTICE

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

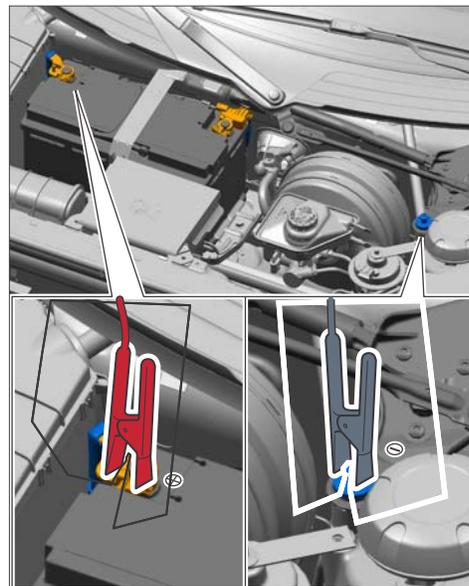
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NOTICE

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- Work Procedure: 1 Connect battery charger.
First connect the positive cable of the charger to the positive terminal of the battery and then connect the negative cable of the charger to the ground point for jump-lead starting ⇒ *External power connection*.
Then switch on the charger and start trickle charging.
- 2 Switch on the ignition using the **original driver's key**. For vehicles with "Porsche Entry & Drive", replace the control panel in the ignition lock with the original driver's key, if necessary.



External power connection

Perform PCM software update - Cayenne (92A), Macan (95B), Sport Cars (982/991)

- Work Procedure: 1 Switch on PCM.
- 2 Open the flap covering the drives on the PCM.
- 3 Remove any inserted SD cards from the SD card slots.
To do this, first press on the SD card to release it. Then, pull the SD card out of the card slot.
- 4 **Insert SD card** for the **PCM update** into the **left SD card slot (SD 1)** in such a way that the bevelled edge of the SD card is at the front right.
- 5 Press the **•CAR•** and **•MEDIA•** buttons on the PCM **for at least 3 seconds at the same time** to go to the Developer menu.
- 6 Select the **'Software update'** function in the **'Developer menu (SWDL)'**.
- 7 Select and confirm the installation medium **'SD1'**.
The status messages "Reading version description" and "Loading metadata" then appear.
- 8 Select and confirm the update scope **'Standard'**.
- 9 Select the option **'Start update'** in the display of devices in the footer.
- 10 Confirm the message "Update must not be interrupted" by pressing **'Start update'** again.

The PCM is then restarted and the message "Update will continue after restart" appears. The individual components and modules are then updated. The update progress is shown as a percentage for each module.

The time required for the update depends on the respective vehicle equipment and can be up to 45 minutes.

The PCM is restarted several times during the update. The PCM screen remains dark for up to 3 minutes.



Information

If the software update is interrupted or if **error messages** are displayed (e.g. as a result of read errors), the update must be **repeated**.

- 11 When the update is finished, '**OK**' will appear next to the updated components and modules in the 'Summary of devices' display. Press '**Continue**'.

After the PCM update, you are prompted to perform the **backup documentation** process using the PIWIS Tester.

NOTICE

Communication will be interrupted 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, coding or backup documentation may be aborted.**
- ⇒ **During control unit programming, coding or backup documentation, always connect the PIWIS Tester to the vehicle communication module (VCI) via the USB cable.**

- 12 Connect the PIWIS Tester to the vehicle and switch it on.
- 13 On the PIWIS Tester start screen, call up the '**Diagnostics**' application.
The vehicle type is then read out, the diagnostic application starts and the control unit selection screen is populated.
- 14 Select the **PCM** control unit in the control unit selection screen ('Overview' menu) and press •F12" ("Next") to confirm your selection.
- 15 Call up the '**Maintenance/repairs**' menu.

Update confirmation

- 16 Select '**Update confirmation**' in the menu and press •F12" ("Next") to continue .
- 17 Read the information that is displayed and press •F12" ("Next") to confirm.

- 18 Start the update confirmation process by pressing •F8“ (“Execute”). The backup documentation process is performed.
- 19 When the backup documentation process is complete, all status fields will be ticked. If the backup documentation process is **not** completed successfully, the process must be **repeated**. Then press •F12“ (“Next”) to return to the start page of the '**Maintenance/repairs**' menu.
- 20 Remove SD card for the PCM update from the left SD card slot on the PCM. To do this, first press on the inserted card to release it. Then, pull the SD card out of the card slot.
- 21 Any SD cards that were removed before starting the PCM update must now be re-inserted into the SD card slots.

Re-coding PCM - Cayenne (92A), Macan (95B), Sport Cars (982/991)

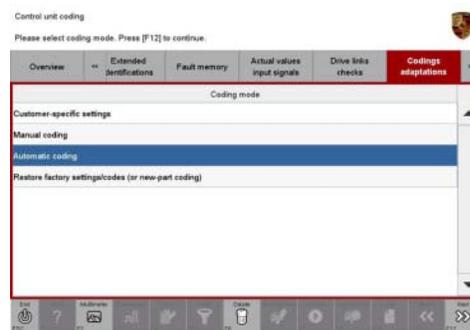
NOTICE

Use of a PIWIS Tester software version that is older than the prescribed version

- Measure is ineffective
- ⇒ **Always use the prescribed version or a higher version of the PIWIS Tester software for control unit programming and coding.**

Work Procedure: 1 Using the PIWIS Tester, call up the '**Coding/programming**' menu in the '**PCM**' control unit.

- 2 Select the '**Automatic coding**' function and press •F12“ (“Next”) to start coding ⇒ *Automatic coding*.

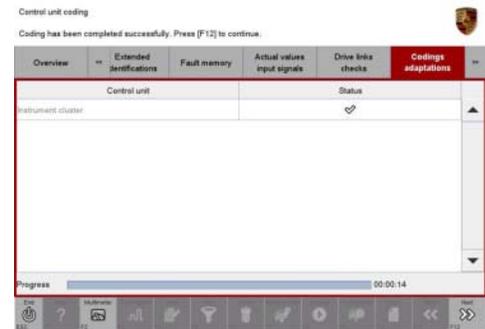


Automatic coding

- When coding is complete, the message "Coding has been completed successfully" is displayed and a tick appears in the 'Status' box ⇒ *Coding successful*.

If coding is not completed successfully (error message "Coding was not completed successfully"), coding must be **repeated**.

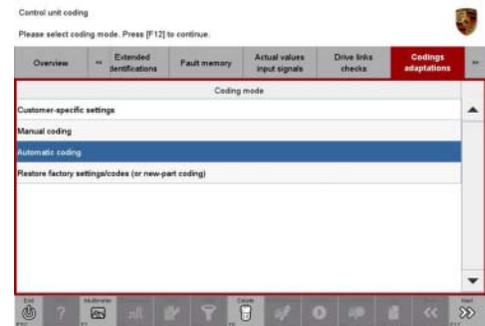
- Once coding has been completed successfully, press •F12" ("Next") to return to the start page of the '**Coding/programming**' menu.
- Select the '**Overview**' menu and press •F11" ("Back") to return to the control unit selection screen.



Coding successful

Re-coding Bose amplifier (if installed, I-no. 9VL) - Cayenne (92A), Macan (95B), Sport Cars (982/991)

- Work Procedure:
- Select the **External amplifier** control unit in the control unit selection screen ('Overview' menu) and press •F12" ("Next") to confirm your selection.
 - Call up the '**Coding/programming**' menu.
 - Select the '**Automatic coding**' function and press •F12" ("Next") to start coding ⇒ *Automatic coding*.

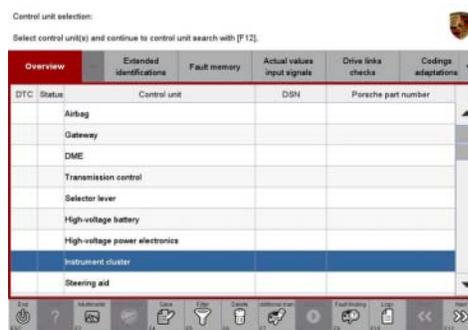


Automatic coding

- When coding is complete, the message "Coding has been completed successfully" is displayed and a tick appears in the 'Status' box.
If coding is not completed successfully (error message "Coding was not completed successfully"), coding must be **repeated**.
- Once coding has been completed successfully, press •F12" ("Next") to return to the start page of the '**Coding/programming**' menu.
- Select the '**Overview**' menu and press •F11" ("Back") to return to the control unit selection screen.

Re-coding instrument cluster - Cayenne (92A), Macan (95B)

- Work Procedure: 1 Using the PIWIS Tester, select **'Instrument cluster'** in the control unit selection screen (**'Overview'** menu) and press •F12" ("Next") to confirm your selection ⇒ *Control unit selection – Instrument cluster.*
- 2 Once the instrument cluster has been found and is displayed in the overview, select the **'Coding/programming'** menu.



Control unit selection – Instrument cluster

Instrument cluster - Automatic coding

- 3 Select the **'Automatic coding'** function and press •F12" ("Next") to start coding .

Coding successful

- 4 When coding is complete, the message "Coding has been completed successfully" is displayed and a tick appears in the 'Status' box .

If coding is not completed successfully (error message "Coding was not completed successfully"), coding must be **repeated**.



Information

If coding cannot be carried out successfully **repeatedly**, the individual **"Auto Memory"** setting implemented by the customer for locking the vehicle in the Vehicle menu must be checked **before starting coding again**.

To do this, select **'Vehicle'** ⇒ **'Settings'** ⇒ **'Locking'** in the multi-function display on the instrument cluster and configure the **"Auto Memory"** function as follows:

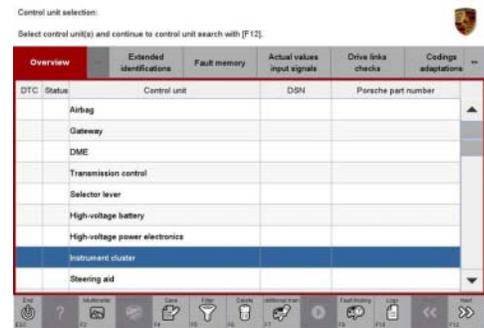
- **Vehicles in USA/Canada:** Function **deactivated (not ticked)**.
- **All other vehicles:** Function **activated (ticked)**.

Then re-code the instrument cluster using the "Automatic coding" function.

- 5 Select the **'Overview'** menu to return to the instrument cluster control unit overview.

Re-coding instrument cluster - Sport Cars (982/991)

- Work Procedure: 1 Using the PIWIS Tester, select '**Instrument cluster**' in the control unit selection screen ('**Overview**' menu) and press •F12" ("Next") to confirm your selection ⇒ *Control unit selection – Instrument cluster*.
- 2 Once the instrument cluster has been found and is displayed in the overview, select the '**Coding/programming**' menu.



Control unit selection – Instrument cluster

Instrument cluster - Automatic coding

- 3 Select the '**Automatic coding**' function and press •F12" ("Next") to start coding .

Coding successful

- 4 When coding is complete, the message "Coding has been completed successfully" is displayed and a tick appears in the 'Status' box .

If coding is not completed successfully (error message "Coding was not completed successfully"), coding must be **repeated**.



Information

If coding cannot be carried out successfully **repeatedly**, the instrument cluster must be **reset to factory settings before starting coding again** and then re-coded using the "**Automatic coding**" function.

To do this, select '**Vehicle**' ⇒ '**Settings**' ⇒ '**Reset**' ⇒ '**Factory settings**' in the multi-function display on the instrument cluster and confirm with '**Yes**'.

When the instrument cluster is reset to factory settings, the **individual settings** implemented in the instrument cluster by the customer will be **lost** and are reset to the **default values** of the country version that applies to the vehicle.

After carrying out the campaign, therefore, please inform your customers that personal settings they have implemented in the instrument cluster will have to be **set again** and provide them with any **help and support** they need for setting the relevant options.

- 5 Select the '**Overview**' menu to return to the instrument cluster control unit overview.

Concluding work - Cayenne (92A), Macan (95B), Sport Cars (982/991)



Information

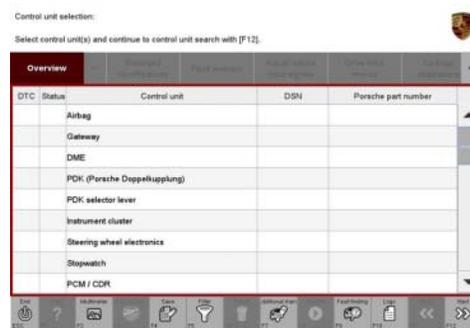
The values for the Tire Pressure Monitoring (TPM) system may be lost during re-coding of the instrument cluster.

If the Tire Pressure Monitoring (TPM) system is reset, you must select **main menu > TPM > Settings** in the instrument cluster to reset the **tire type** and **tire size**. The wheel position values will then be re-taught in the control unit during the **test drive** (at a speed of over **15 mph (25 km/h)**).

To set the tire type and tire size, see ⇒ Owner’s Manual, chapter Instrument Panel and Multi-Function Display - 'Tire Pressure Monitoring, TPM'.

Work Procedure: 1 Read out and erase all fault memories.

- 1.1 In the control unit selection screen ('Overview' menu), press •F7" to call up the 'Additional menu' (⇒ Control unit selection).
- 1.2 Select the function "Read all fault memories and erase if required" and press •F12" ("Next") to confirm your selection ⇒ Erasing fault memories.



Control unit selection

The fault memories of the control units are read out.

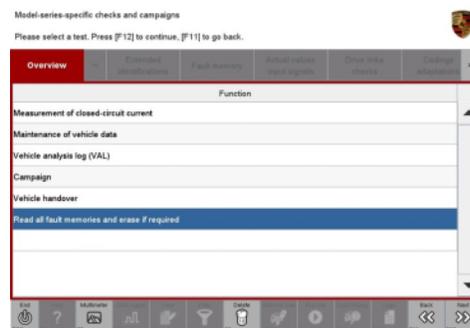
- 1.3 Once you have read out the fault memories, check the fault memory entries.



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.



Erasing fault memories

- 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 the fault memories of individual control units cannot be erased, proceed as follows:

- Switch off the ignition.
 - Disconnect the PIWIS Tester diagnostic connector from the diagnostic socket.
 - Lock the vehicle using the driver's key.
 - Wait approx. 1 minute before unlocking the vehicle again.
 - Plug the PIWIS Tester diagnostic connector into the diagnostic socket again and restore communication with the vehicle.
 - Read out the fault memories of these control units again and erase the fault memories separately.
- 2 Disconnect the PIWIS Tester from the vehicle.
 - 3 Perform a function test on the PCM.
 - 4 Switch off the ignition.
 - 5 Switch off and disconnect the battery charger.
 - 6 On vehicles with Porsche Entry & Drive, replace the original driver's key in the ignition lock with the control unit again if necessary.
 - 7 Enter the campaign in the Warranty and Maintenance booklet.

Warranty processing

Scopes: Scopes 1, 3, 4, 5 & 6 are not for USA

Scope 2: • **Vehicles with I-no. ER3 or ER4 (North America, Mexico)**

Working time:		
Performing PCM software update		Labor time: 56 TU
Includes:	Connecting and disconnecting battery charger	
	Connecting and disconnecting PIWIS Tester	
	Performing update confirmation	
	Re-coding PCM	
	Re-coding TV tuner (if installed)	
	Re-coding Bose amplifier (if installed)	
	Resetting instrument cluster to factory settings	
	Performing function test	
	Reading out and erasing fault memory	
Required tools:		
9P1906961A	SD memory card	up to 8 ea. *
	– PCM update for region ER3 or ER4	
<p>* Only the actual number of SD memory cards that are available to the Porsche dealership for carrying out this campaign must be invoiced for each Porsche dealership.</p> <p>The number of SD cards provided for each Porsche dealership depends on how many vehicles will have to be worked on by each Porsche dealership as part of this campaign and campaigns WG39 and WG47 (see section ⇒ <i>Technical Information 'WH0500 Required tools'</i>).</p> <p>The SD memory cards must only be invoiced once for the first vehicle during warranty processing. Only the working time must be invoiced in the warranty claim for all other vehicles on which work is carried out as part of this campaign in the Porsche dealership.</p> <p>Please note that SD cards that were already invoiced as part of campaigns WG39 or WG47 must not be invoiced again for this workshop campaign.</p>		
⇒ Damage Code WH05 066 000 1		

Important Notice: Technical Bulletins issued by Porsche Cars North America, Inc. are intended only for use by professional automotive technicians who have attended Porsche service training courses. They are written to inform those technicians of conditions that may occur on some Porsche vehicles, or to provide information that could assist in the proper servicing of a vehicle. Porsche special tools may be necessary in order to perform certain operations identified in these bulletins. Use of tools and procedures other than those Porsche recommends in these bulletins may be detrimental to the safe operation of your vehicle, and may endanger the people working on it. Properly trained Porsche technicians have the equipment, tools, safety instructions, and know-how to do the job properly and safely. If a particular condition is described, do not assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your authorized Porsche Dealer for the latest information about whether a particular technical bulletin applies to your vehicle. Part numbers listed in these bulletins are for reference only. Always check with your authorized Porsche dealer to verify the current and correct part numbers. The work procedures updated electronically in the Porsche PIWIS diagnostic and testing device take precedence and, in the event of a discrepancy, the work procedures in the PIWIS Tester are the ones that must be followed.