

AKB6 AEM Correction - Re-Programming DME Control Unit

Revision: This bulletin replaces bulletin Group 2 100/19 AKB6, dated January 28, 2020.

Model Year: **As of 2013 up to 2016**

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.

Vehicle Type: **Cayenne Diesel (92A)**

Subject: **3.0 l Diesel Engine – Approved Emissions Modification Correction (AEM-C)**

Information: **A software calibration update to the Approved Emissions Modification (AEM) is available.**

This software update will include the following changes to the vehicles' emissions control and on-board diagnostics (OBD) software:

- It will correct an issue that is causing the Check Engine light (MIL) to come on incorrectly under certain driving conditions. This has resulted in the replacement of the diesel oxidation catalyst (DOC) for certain customers
- It will reduce the likelihood of experiencing an engine shudder that could occur during certain warm-up driving conditions
- It will improve OBD monitoring of the vehicle emissions system and otherwise improve the software used by the affected vehicles

Remedial Action: Re-program the DME control unit using the PIWIS Tester with test software version 39.050.010 (or higher) installed.



Information

Important:

- This Approved Emissions Modification Correction (AEM-C) **only applies** to vehicles on which the Approved Emissions Modification (AEM) **AG01** has been carried out.
- **If the Approved Emissions Modification (AEM) AG01 has not been carried out on a vehicle, this Approved Emissions Modification Correction (AEM-C) does not apply.**
- This Approved Emissions Modification Correction (AEM-C) **must** be explicitly selected by the customer and must be clearly marked on the repair order **prior** to commencing the update.

- Dealers **must** provide a copy of the customer letter to each customer who presents their vehicle for repairs under this Approved Emissions Modification Correction (AEM-C).



Information

In addition to the **DME control unit**, the **Tiptronic control unit** is also re-programmed automatically. It takes **approx. 13 minutes** in total to **program** both control units.

Once the control units have been programmed successfully, the procedure for sending **backup documentation** of the re-programmed software versions for the DME and Tiptronic control units to the Porsche After Sales systems will be started **automatically**.

Affected Vehicles: Only the vehicles assigned to the campaign (see also PCSS Vehicle Information). This campaign affects 11,422 vehicles in North America.

Required tools

- Labels:
- 9900 - PIWIS Tester 3** with PIWIS Tester software version **39.050.010** (or higher) installed
 - Battery charger with a current rating of **at least 90A and a current and voltage-controlled charge map for lithium starter batteries**, e.g. **VAS 5907 - battery charger 90A or equivalent**

Required parts

Labels:	Part No.	Designation	Qty.
		– Use	
	PNA AKB 600 00	Label	1 each
		– Recall Proof of Completion	



Information

Proof of Completion labels should be ordered using the part number PNA EMI 000 00 in packs of 100, but for Warranty purposes the part # PNA AKB 600 00 should be claimed with this pricing: Dealer Net: \$0.24 / label Warranty Retail Price: \$0.34 / label

Preparatory work

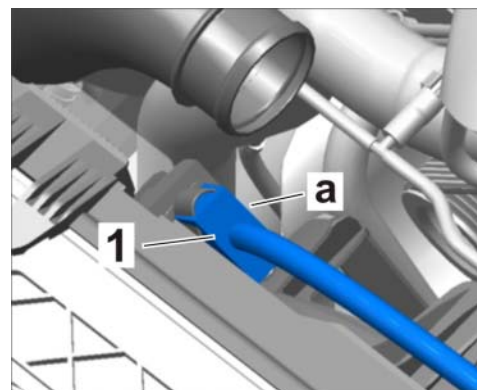
NOTICE

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 commencing work, connect a suitable battery charger with a charging current of at least 90 A to the jump-start terminals in the engine compartment.**

Work Procedure: 1 Disconnect electric plug connection for the fan blower ⇒ *Electric plug connection for fan blower -1-* (⇒ *Electric plug connection for fan blower -a-*) to prevent the fan blower from coming on during control unit programming. Having the fan on and the associated increased current draw can cause a drop in voltage, which can result in abnormal termination of control unit programming.



Electric plug connection for fan blower

- 2 Connect a battery charger with a current rating of **at least 90 A** (e.g. **Battery Charger, 45 A**) to the jump-start terminals in the engine compartment and switch it on.
- 3 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.
- 4 **9900 - PIWIS Tester 3** must be connected to the vehicle communication module (VCI) via the **USB cable**. Then connect the communication module to the vehicle and switch on the PIWIS Tester.
- 5 Check the vehicle to make sure that the Approved Emissions Modification (AEM) AG01 was carried out successfully.
To do this, read out the software version and the Porsche part number of the DME control unit and compare it with the table below.
 - 5.1 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.
 - 5.2 Select the **'DME'** control unit in the control unit selection screen (**'Overview'** menu) and press **•F12** ("Next") to confirm your selection.
 - 5.3 Once the DME control unit has been found and is displayed in the overview, select the **'Extended identifications'** menu.

- 5.4 Read out the value for **software version** and **Porsche part number** in the data displayed for the DME control unit and compare it with the table below ⇒ *DME control unit: Extended identification (e.g. MY 2015).*

Extended identifications:

Developer	Extended identifications	Fault memory	Actual values input signals	Drive data checks	Maintenance repairs	Cloning programming
Control unit	Identification			Value	Unit	Changed
DME V6 Diesel BMS from model year 2014 (E)	Last programming date			180629		
	Last programming date			180629		
	Control unit variant			EV_ECM307D0117P5907401Q		
	Software version			0007		
	Hardware part number			7P5907401H		
	Hardware version			X21		
	Porsche part number			7P5907401Q		
	System name			3.0TDI FSA		
	Engine code letters			CNFB		

DME control unit: Extended identification (e.g. MY 2015)

Model year	Software version	Porsche part number
2013–2014	0011	7P5907401H
2015–2016	0007	7P5907401Q

If the **data that was read out matches** the values specified in the table above, **continue** with this campaign.

If the data that was read out does not match the values specified in the table, this campaign must not be carried out. The Approved Emissions Modification (AEM) AG01 must be carried out first.

Talk to the customer about this and ask whether he/she agrees to have both campaigns carried out.

Performing software update (MY 2013-2014)

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 commencing work, connect a suitable battery charger with a charging current of at least 40 A to the jump-start terminals in the engine compartment.

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 vehicles with Porsche Entry & Drive, programming cannot be started or will be interrupted.
- ⇒ Switch on the ignition using the original driver's key. To do this, replace the control unit in the ignition lock with the original driver's key if necessary.



Information

The procedure described here is based on the PIWIS Tester 3 software version **39.050.010**.

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.

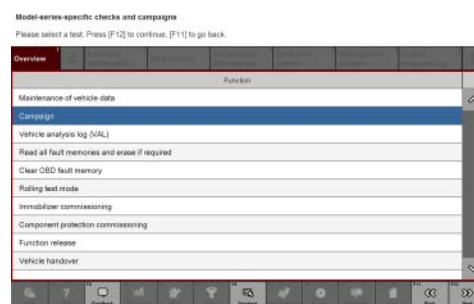
The PIWIS Tester must be online during control unit programming so that the re-programmed software versions for the DME and Tiptronic control units are backed up to the Porsche After Sales systems.

- Work Procedure: 1 In the control unit selection screen ('Overview' menu), press •F7" to call up the 'Additional menu' (⇒ Control unit selection).
- 2 Select the 'Campaign' function in the Additional menu on the PIWIS Tester and press •F12" ('Next') to confirm your selection ⇒ Additional menu - Campaign.



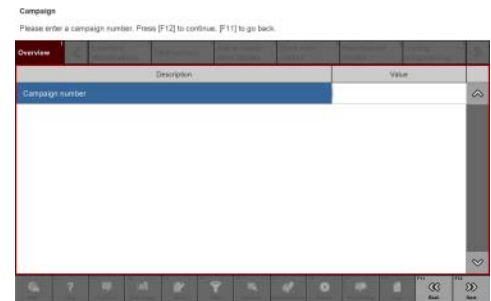
Control unit selection

You are then prompted to enter a programming code.



Additional menu - Campaign

- 3 To enter the programming code, click in the relevant text box so that the cursor starts to flash ⇒ *Programming code input field*.
- 4 Enter the programming code **F9H3D** and press •Enter• to confirm your entry.
The text box turns blue.
- 5 Then press •F12• ('Next') to start the guided programming sequence.



Programming code input field

Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. Then press •F12• ('Next') to continue.

During the programming sequence, the control units for DME and Tiptronic transmission are re-programmed and then re-coded automatically.

Programming and coding takes approx. 13 minutes. Do not interrupt programming and coding.

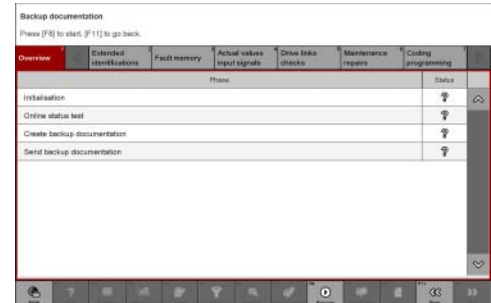
Once the control units have been programmed and coded, you will be prompted to switch the ignition off and then back on again after a certain waiting time.



Information

The PIWIS Tester must be on-line to carry out the backup documentation process.

After switching the ignition on again, the backup documentation process has to be started. Read and follow the information and instructions on the PIWIS Tester and press •F8• ('Execute') to continue ⇒ *Starting backup documentation*.

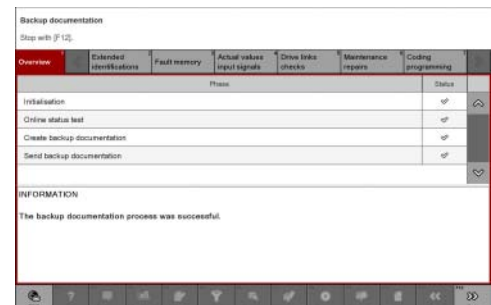


Starting backup documentation

When the backup documentation process has been carried out successfully, corresponding information is shown on the Tester display and ticks are set in the "Status" column ⇒ *Backup documentation successful*.

Once programming and coding has been carried out **completely**, press •F11• ('Back') to return to the control unit selection screen.

Then, carry out the concluding work described below.



Backup documentation successful

Performing software update (MY 2015-2016)

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.
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- ⇒ 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 vehicles with Porsche Entry & Drive, programming cannot be started or will be interrupted.
- ⇒ Switch on the ignition using the original driver's key. To do this, replace the control unit in the ignition lock with the original driver's key if necessary.



Information

The procedure described here is based on the PIWIS Tester 3 software version **39.050.010**.

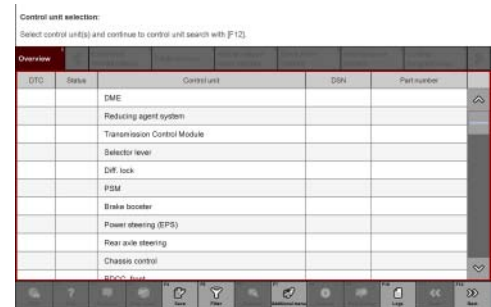
The PIWIS Tester instructions take precedence and in the event of a discrepancy, these are the instructions that must be followed.

A discrepancy may arise with later software versions for example.

The PIWIS Tester must be online during control unit programming so that the re-programmed software versions for the DME and Tiptronic control units are backed up to the Porsche After Sales systems.

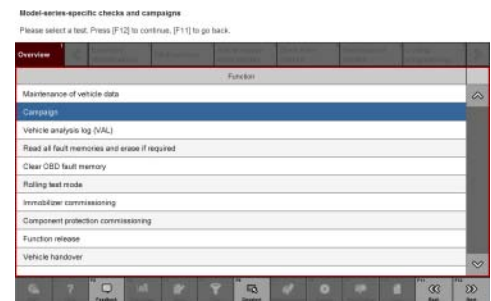
- Work Procedure:
- 1 On the PIWIS Tester start screen, call up the '**Diagnostics**' application. The vehicle type is then read out, the diagnostic application is started and the control unit selection screen is populated.

- 2 In the control unit selection screen ('Overview' menu), press •F7" to call up the 'Additional menu' (⇒ *Control unit selection*).
- 3 Select the '**Campaign**' function in the Additional menu on the PIWIS Tester and press •F12" ('Next') to confirm your selection ⇒ *Additional menu - Campaign*.



Control unit selection

You are then prompted to enter a programming code.



Additional menu - Campaign

- 4 To enter the programming code, click in the relevant text box so that the cursor starts to flash ⇒ *Programming code input field*.
- 5 Enter the programming code **J3H5Y** and press •Enter" to confirm your entry. The text box turns blue.
- 6 Then press •F12" ('Next') to start the guided programming sequence.



Programming code input field

Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. Then press •F12" ('Next') to continue.

During the programming sequence, the control units for DME and Tiptronic transmission are re-programmed and then re-coded automatically.

Programming and coding takes approx. 13 minutes. Do not interrupt programming and coding.

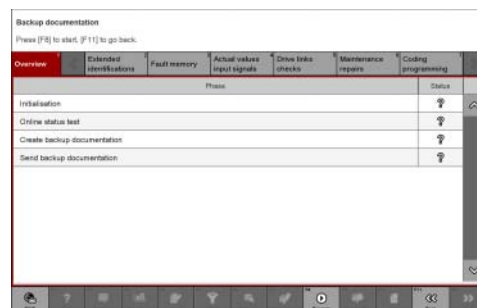
Once the control units have been programmed and coded, you will be prompted to switch the ignition off and then back on again after a certain waiting time.



Information

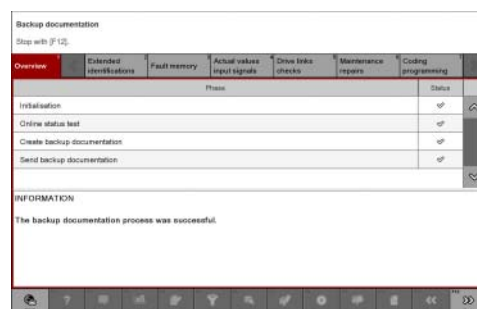
The PIWIS Tester must be on-line to carry out the backup documentation process.

After switching the ignition on again, the backup documentation process has to be started. Read and follow the information and instructions on the PIWIS Tester and press •F8" ('Execute') to continue ⇒ *Starting backup documentation.*



Starting backup documentation

When the backup documentation process has been carried out successfully, corresponding information is shown on the Tester display and ticks are set in the "Status" column ⇒ *Backup documentation successful.*



Backup documentation successful

Once programming and coding has been carried out **completely**, press •F11" ('Back') to return to the control unit selection screen. Then, carry out the concluding work described below.

Concluding work

- Work Procedure: 1 Switch off the ignition.
- 2 Connect electric plug connection for the fan blower again.
- 3 Switch on ignition and restore communication between the PIWIS Tester and the vehicle.
- 4 Read out and erase fault memory.
- 4.1 In the control unit selection screen ('**Overview**' menu), press •F7" to call up the '**Additional menu**'.
- 4.2 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.

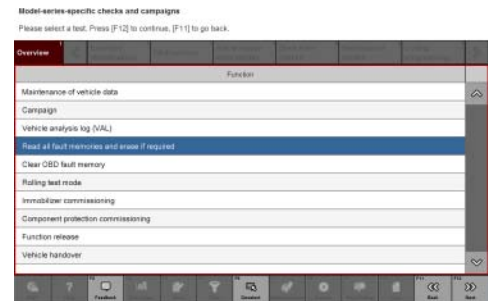
- 4.3 Once you have read out the fault memories, check the fault memory entries.



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

- 4.4 Press **•F8** to delete fault memory entries.
- 4.5 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

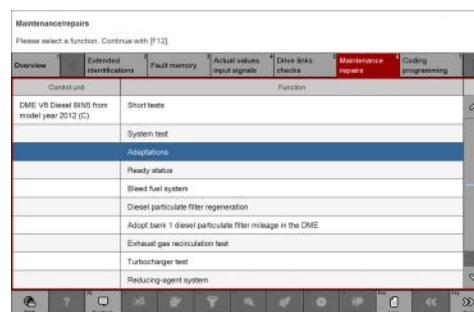
If the fault memories of individual control units cannot be erased, proceed as follows:

- 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.

- 4.6 Once you have erased the fault memories, select the **'Overview'** menu to return to the control unit selection screen.
- 5 Perform kickdown switch adaptation.
- 5.1 Select the **'DME'** control unit in the control unit selection screen ('Overview' menu) and press **•F12** ('Next') to confirm your selection.
- 5.2 Once the DME control unit has been found and is displayed in the overview, select the **'Maintenance/repairs'** menu.

5.3 Select menu item '**Adaptations**' and confirm your selection by pressing •F12" ('Next') ⇒ *DME - Adaptations*.

5.4 Comply with the displayed preconditions and press •F12" ('Next') to confirm.



DME - Adaptations

5.5 Select the '**Kickdown switch**' function so that the corresponding text line turns blue and press •F8" to start kickdown switch adaptation ⇒ *Kickdown switch adaptation*.

5.6 To perform kickdown switch adaptation, press the accelerator pedal down fully when instructed by the PIWIS Tester and hold it down until the adaptation is complete. Once kickdown switch adaptation is complete, a tick will appear in the "Value" field on the PIWIS Tester display.



Kickdown switch adaptation

If kickdown switch adaptation is **not** completed successfully, the adaptation must be **repeated**.

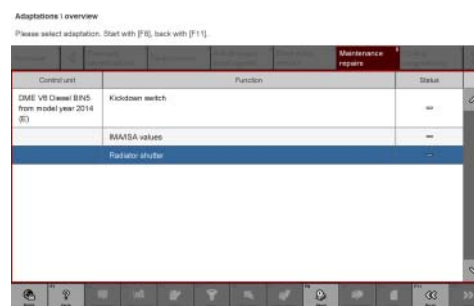
5.7 End kickdown switch adaptation by pressing •F8" ('Stop').

6 **Only for model year 2015 and 2016 vehicles:** Perform radiator shutter adaptation.

6.1 Select the '**Radiator shutter**' function in the adaptations overview so that the corresponding text line turns blue and press •F8" to start radiator shutter adaptation ⇒ *Radiator shutter adaptation*.

6.2 Read and follow the instructions on the PIWIS Tester during radiator shutter adaptation.

6.3 Once radiator shutter adaptation is complete, a tick will appear in the "Value" field on the PIWIS Tester display.



Radiator shutter adaptation

If radiator shutter adaptation is **not** completed successfully, the adaptation must be **repeated**.

6.4 End radiator shutter adaptation by pressing •F8" ('Stop').

6.5 Press •F11" ('Back') to return to the start page of the ⇒ '**Maintenance/repairs**' menu.

- 6.6 Select the '**Overview**' menu and press •F11" ('Back') to return to the control unit selection screen.
- 7 Switch off the ignition.
- 8 On vehicles with Porsche Entry & Drive, replace the original vehicle key in the ignition lock with the control panel again.
- 9 Disconnect the PIWIS Tester from the vehicle.
- 10 Switch off and disconnect the battery charger.
- 11 Attach **additional Recall Proof of Completion label** to the front lid.

Instructions for attaching labels

- Surfaces on which you intend to attach the label must be clean, dry and free from grease and oil residues.
- Before attaching the label, clean the surfaces using a suitable cleaning agent and a clean, grease-free and lint-free cloth.
- This label must not be affixed over existing label.
- Attach label only at the specified positions.

- 11.1 Fill out the Recall Proof of Completion label
Recall Proof of Completion label fully and correctly. This includes the recall code "**AKB6**", your dealer code and the repair date.
- 11.2 Clean the surface in the lower area on the front lid at the left-hand side in direction of travel at which the Recall Proof of Completion label must be attached Proof of Completion label: specified position **-arrow-** using a suitable cleaning agent and a clean, grease-free and lint-free cloth.

RECALL / CAMPAIGN COMPLETION
RECALL CODE
DEALER CODE
REPAIR DATE
DO NOT REMOVE

Recall Proof of Completion Label

11.3 Affix Recall Proof of Completion label in the lower area of the front lid at the lefthand side in direction of travel Proof of Completion label: specified position -**arrow**-, beside the existing labels.

11.4 Close front lid.

12 Enter the campaign in the Warranty and Maintenance booklet. Always use the following designation to describe the campaign in the "Service campaigns" section:

- **AKB6AEM-CA**Approved EmissionsModifi-
cation Correction



*Proof of Completion Label:
specified position*

Warranty processing



Information

The specified working times were determined specifically for carrying out this campaign and include all required preparatory and concluding work. The working times may differ from the working times published in the Labor Operation List in PCSS.

Scope 1:

Warranty processing for AEM-C – MY 2013-2014

Working time:

Performing control unit update

Labor time: **75 TU**

- Includes:
- Disconnecting and connecting electric plug connection for the fan blower
 - Connecting and disconnecting battery charger
 - Connecting and disconnecting PIWIS Tester
 - Re-programming DME control unit
 - Re-programming Tiptronic transmission control unit
 - Reading out and erasing fault memories
 - Performing kickdown switch adaptation
 - Attach Recall Proof of Completion label

⇒ Damage Code AKB6 099 000 1

Scope 2: **Warranty processing for AEM-C – MY 2015-2016**

Working time:

Performing control unit update

Labor time: **78 TU**

Includes:

- Disconnecting and connecting electric plug connection for the fan blower
- Connecting and disconnecting battery charger
- Connecting and disconnecting PIWIS Tester
- Re-programming DME control unit
- Re-programming Tiptronic transmission control unit
- Reading out and erasing fault memories
- Performing kickdown switch adaptation
- Performing radiator shutter adaptation
- Attach Recall Proof of Completion label

⇒ **Damage Code AKB6 099 000 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. Part numbers listed in these bulletins are for reference only. 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.

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