Eliminating Symptoms in Body Interior: Re-programming DME Control Unit (Warning in instrument cluster “Maximum oil level exceeded - Below minimum oil level” / SY3511)

Vehicle Type: Cayenne S Hybrid (92A)
Cayenne S E-Hybrid (92A)

Model Year: As of 2011

General information

Information
These symptom-based repair instructions replace the repair instructions dated February 17, 2015.
Changes / additions compared to the previous repair instructions:

- The sections ‘Cause’ and ‘Remedial Action’ now include information on “Below minimum oil level”.
- The **PIWIS Tester III software 34.010.020** (or higher) must be installed.

Symptom

The warning message “Maximum oil level exceeded” appears in the instrument cluster.

Cause, remedial action and validity

Cause

Frequent short trips and city driving can cause the warning “Maximum oil level exceeded” to appear in the instrument cluster.

Information
If the engine-oil level is increased, the implausible warning message "Below minimum oil level" can also be displayed if the oil level is outside of the measuring range detected by the oil level sensor.

Remedial action

Information
If an oil level warning message ("Maximum oil level exceeded" **or** "Below minimum oil level") appears in the instrument cluster, **the current oil level must always be checked using the AfterSales Service dipstick before doing any other work**, see ⇒ *Workshop Manual '170101 Checking engine-oil level'*.

Re-program DME control unit using PIWIS Tester III with software version 34.010.020 (or higher) installed. Then, change the engine oil **by adding the updated engine oil fill quantity**.

Information

The previous engine oil fill quantity specifications in the Additional Owner's Manual (chapter "Technical Data" ⇒ "Filling capacities") must be covered over by affixing the relevant sticker showing the changed engine oil fill quantity of 6.25 l from the sticker set WKD.948.812.12.

The sticker showing the changed engine oil fill specifications must also be affixed on the engine cover, right next to the engine oil filler neck.

Vehicle type	Model year	Procedure for adapted DME software:	Adapted DME software available for:
Cayenne S Hybrid	B; 2011	Enter I-no. 738 (Bad fuel region) using the Additional menu •F7 " /Maintenance of vehicle data, then perform "Automatic programming" of the DME control unit.	Emission variants and country versions EU5, China, ULEV (USA, Canada)
	Porsche part number: 958.601.65x.13		
Cayenne S Hybrid	C; 2012	Enter I-no. 738 (Bad fuel region) using the Additional menu •F7 " /Maintenance of vehicle data, then perform "Automatic programming" of the DME control unit.	Emission variants and country versions EU5, China, ULEV (USA, Canada)
	Porsche part number: 958.601.65x.15		
Cayenne S Hybrid	D; 2013 / E; 2014	⇒ **No adapted DME software available.**	
Cayenne S E-Hybrid	from F; 2015	Enter I-no. 738 (Bad fuel region) using the Additional menu •F7 " /Maintenance of vehicle data, then perform "Automatic programming" of the DME control unit.	All emission variants and country versions ⇒ PIWIS Tester III software version 34.010.020 or higher
	Porsche part number: 958.601.67x.06		

Tools and materials

Tools and materials

Battery Charger / Power Supply - Suitable for AGM Type batteries, recommended current rating of 70A fixed voltage 13.5V to 14.5V

9900 - PIWIS Tester III with software version 34.010.020 (or higher) installed

WKD.948.812.12 **NEW** ⇒ 'Engine oil fill quantity' sticker set

Information

The sticker set can be ordered through POLARIS.

Preliminary work

Preliminary work

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

2 Connect PIWIS Tester III with software version **34.010.020** (or higher) installed to the vehicle communication module (VCI) via the **USB cable**. Then, connect the communication module to the vehicle and switch on the PIWIS Tester.

3 On the PIWIS Tester start screen, call up the ⇒ **'Diagnostics'** menu. The vehicle type is determined via "Automatic model line detection".

The diagnostic application is then started and the control unit selection screen is populated.

Information

In order to program the DME control unit, **I-no. 738** (as described below) must first be **entered in the vehicle data**.

⇒ Entering **I-no. 738 for these Hybrid vehicles serves only** to allow you to select the modified **oil level parameters** during programming.

These **parameters only change**:

- the **maximum oil level display** for measurement/display in the instrument cluster (based on the reduced engine oil fill quantity) and
- the trigger threshold until the **yellow "Oil level over maximum" warning** is displayed in the instrument cluster.

The designation of the I-no. in the PIWIS Tester "738 – Bad fuel region" does **not affect engine control** on the **Hybrid vehicles**.

4 Press •F7 “ to call up the Additional menu in the 'Control unit overview' menu on the PIWIS Tester.

5 Select the 'Maintenance of vehicle data' function and press •F12 “ to confirm your selection.

6 Press •F12 “ four times and jump to the "M numbers” menu (menu sequence: 1 x •F12 “ Vehicle data, 2 x •F12 “ Equipment, 3 x •F12 “ X numbers, 4 x •F12 “ M numbers)

7 Scroll to the M number “738” and tick the 'Installed' column.

8 Press •F4 “ to save the updated vehicle data and then press •F12 “ to end.

9 Press •F11 “ to return to the 'Control unit overview'.

Re-programming DME control unit

Re-programming DME control unit

Information

The tasks specified below may only be carried out by an employee who is **at least** qualified as an **electrically instructed person (eip)**. Employees **without the corresponding qualification** must **not** carry out the tasks.

The work must be done under the instruction of a **high-voltage technician (HVT)**.

The **high-voltage electrical system** must **not be disconnected**.

Observe general warning notes for working on the high-voltage vehicle electrical system ⇒*Workshop Manual '2X00IN General warning notes for working on the high-voltage electrical system'*.

Information

The procedure described here is based on the PIWIS Tester III software version **34.010.020**.

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.

10 Select the control unit ⇒ **'DME'** in the control unit selection screen (⇒ **"Overview"** menu) and press •>> " to confirm your selection.

11 When the question "Create Vehicle Analysis Log (VAL)?" appears, either press •F12 " to create a VAL or press •F11 " if you do not want to create a VAL.

12 Press •>> " to acknowledge the message informing you that campaigns for the vehicle are stored in the PIWIS information system.

13 Once the DME control unit has been found, select the ⇒ **'Programming'** menu and press •>> " to confirm.

14 Select the ⇒ **'Automatic programming'** function and press •>> " to confirm your selection.

The name of the control unit to be programmed (in this case: DME), the data record name, Porsche part number and status will be displayed.

15 Press •F8 " ("Execute") to start programming.

Several bars, showing the progress of the programming process, appear consecutively during programming.
The programming process runs automatically.
Do not interrupt programming.

When programming is completed successfully, the message "Programming has been completed successfully" is displayed and a tick appears in the 'Status' box.

Information

If programming is interrupted (e.g. due to a voltage drop or if communication is aborted, etc.) or if programming could not be carried out successfully (error message "Programming unsuccessful"), programming must be **repeated**.

16 Once programming is completed successfully, press •>> " to continue.

17 Select the ⇒ **'Overview'** menu and press •<< " to return to the control unit selection screen.

18 Switch off ignition.

19 Disconnect the PIWIS Tester diagnostic connector from the diagnostic socket.

20 Lock the vehicle with the vehicle key and wait for approx. 1 minute. In the meantime, connect the electric plug connection for the fan blower.

21 Switch on the ignition and restore communication between the PIWIS Tester and the vehicle.

Carrying out control unit coding

1 Select the **'DME'** control unit in the control unit selection screen (⇒ 'Overview' menu) and press •>> " to confirm your selection.

2 Once the DME control unit has been found and is displayed in the list, select the ⇒ **'Coding / adaptations'** menu.

3 Select the ⇒ **'Automatic coding'** function and press •>> " to start coding.

Once coding is completed successfully, 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**.

4 Once coding is completed successfully, press •>> " to continue.

Performing throttle valve adaptation

1 Select the ⇒ **'Maintenance / repairs'** menu.

2 Select menu item ⇒ **'Adaptations'** and confirm your selection by pressing •>> " .

3 Note the preconditions displayed (engine off, ignition on, do not press the accelerator pedal) and confirm by pressing •>> " .

4 Select the ⇒ **'Throttle valve adaptation'** function so that the corresponding text line turns blue and press •F8 " to start throttle valve adaptation.

5 Follow the instructions on the PIWIS Tester while throttle valve adaptation is being performed.

Once throttle valve adaptation is complete, a tick appears in the "Value" field on the PIWIS Tester display.

If throttle valve adaptation is **not** completed successfully, the adaptation must be **repeated**.

6 Press •F8 " ("Stop") to end throttle valve adaptation.

7 Press •<< " to return to the start page of the ⇒ **'Maintenance / repairs'** menu.

8 Select the ⇒ **'Overview'** menu and press •<< " to return to the control unit selection screen.

Reading out and erasing fault memory

1 In the control unit selection screen (⇒ 'Overview' menu), press •F7 “ to call up the Additional menu.

2 Select the function “Read all fault memories and erase if required” and press •>> “ to confirm.

The fault memories of the control units are read out.

3 Once you have read out the fault memories, erase the fault memory entries by pressing •F8 “ .

4 Press •F12 “ (“Yes”) in response to the question as to whether you really want to erase 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, switch the ignition off and then on again and erase the fault memories of these control units separately.

If control units are found to have faults, which cannot be erased and are not caused by control unit programming, these faults must be located and corrected.

5 Once you have erased the fault memories, select the ⇒ **'Overview'** menu and press •<< “ to return to the control unit selection screen.

Calibrating electric motor

The electric motor **must generally be calibrated** if the fault memories of the OBD systems (or the fault memories of all control units) have been erased.

The rotor position (phase angle) and rotor temperature are stored during calibration.

⇒ *Technical Information '270000 Hybrid: Information on special tasks to be performed after servicing/repairs, in the event of a complaint, etc. (40/10)'* (section on 'Calibrating electric motor', **different for model year B and C**)

Performing decoupler adaptation

1 Select the **'DME'** control unit in the control unit selection screen and press •>> “ to confirm your selection.

2 Once the DME control unit has been found, select the ⇒ **'Maintenance / repairs'** menu.

3 Select the menu item ⇒ **'Clutch actuator and decoupler'** and press •>> “ to confirm your selection.

4 Read and comply with the preconditions for the state of charge of the high-voltage battery and confirm by pressing •>> “ .

5 Select the ⇒ **'Clutch adaptation'** function and press •>> “ to confirm your selection.

6 Read and follow the instructions for starting the electric motor and performing adaptation.
Press the brake pedal and then press •>> “ to start the adaptation.

7 During adaptation, the adaptation values will first be deleted.
The clutch contact point and the clutch characteristic will then be adapted.
Start each step by pressing •F8 “ and follow the instructions on the PIWIS Tester.

8 Adaptation is complete once the characteristic has been adapted. Press •>> “ to continue.

9 Return to the start page of the ⇒ **'Maintenance / repairs'** menu.

10 Select the ⇒ **'Overview'** menu and go back to the control unit selection screen.

Draining and filling in engine oil

Draining and filling in engine oil

Information

When changing engine oil, please observe the **new engine oil fill quantity** of **6.25 l**.

⇒ *Workshop Manual '170117 Changing engine oil and oil filter'*

Affixing sticker

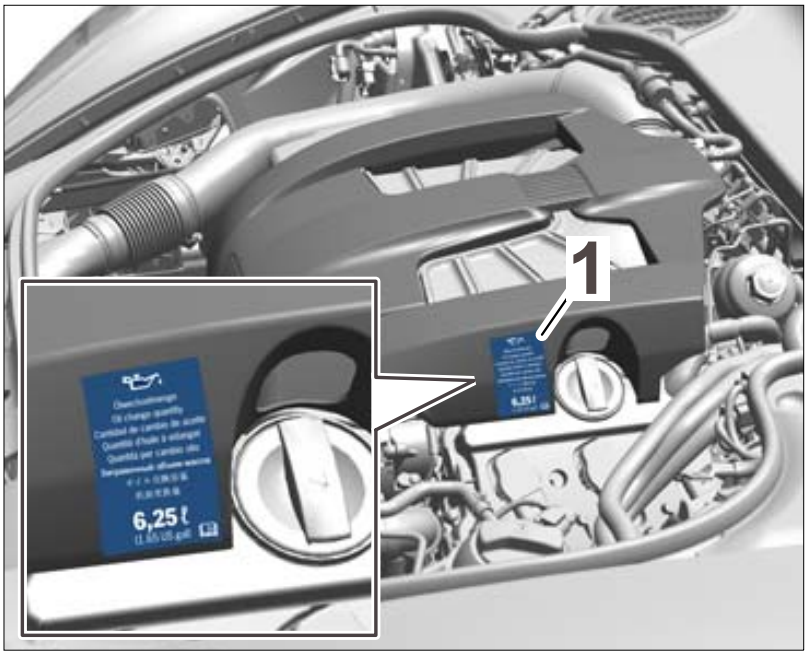
11 Affix sticker ⇒ *Sticker set allocation* **-1-** in the Additional Owner's Manual.

11.1 The previous engine oil fill quantity specification in the **Additional Owner's Manual for hybrid vehicles** (chapter ⇒ "Technical Data", section ⇒ "Filling capacities") must be covered over by affixing the relevant sticker ⇒ *Sticker set allocation* **-1-** showing the **changed engine oil fill quantity of 6.25 l** from the sticker set WKD.948.812.12.

Sticker set allocation

12 Affix sticker ⇒ *Sticker set allocation* **-2-** on the engine cover.

12.1 Clean the surface ⇒ *Bonding surface on engine cover* **-1-** on which you want to affix the sticker using suitable cleaning agent to remove any dust and grease.



Bonding surface on engine cover

12.2 Affix the sticker at an equal distance to the lower edge of the engine cover and engine oil filler neck ⇒ *Bonding surface on engine cover* **-inset-** and press it on firmly.

Information

Please inform your customers about the modified engine oil fill quantity and the related stickers on the engine cover and in the Additional Owner's Manual.

Subsequent work

Subsequent work

1 Carry out general subsequent work for control unit programming as described in the Workshop Manual ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Subsequent work"'*.

Invoicing

Invoicing

The work involved is invoiced under the labor operation:

APOS	Labor operation	I No.
17013553	Checking and topping off engine oil	
10801901	Removing and installing engine guard	
17011765	Draining and filling engine oil	
17301965	Removing and installing oil filter	
03350053	On-board diagnosis	
24702515	Programming DME control units	

For invoicing and documentation using PQIS, enter the following coding:

Location (FES5)	17010	Engine oil
Damage type (SA4)	1035	Too much fluid/material

Dealership	Service Manager	_____	Shop Foreman	_____	Service Technician	_____	_____	_____	_____
Distribution									
Routing	Asst. Manager	_____	Warranty Admin.	_____	Service Technician	_____	_____	_____	_____