Complaint - Check Engine Light Active and Fault Memory Entry "P138800" (TI 109/19)

Vehicle Type:	**Macan (95B)**
Model Year:	**As of 2017 up to 2018**
Equipment:	2.0-liter 4-cylinder petrol engine
Subject:	**Engine electronics (DME) control unit**
Symptom:	Check Engine light active and fault memory entry "P138800 - Control unit faulty"
Cause:	**Due to a software error, the fault memory entry "P138800 - Control unit faulty" can be stored in the engine electronics (DME) control unit in certain driving situations.**
Remedial Action:	Re-program engine electronics (DME) control unit using the PIWIS Tester with test software version **38.600.020** (or higher) installed.

Required tools

Tools:
- Battery charger with a current rating of **at least 90 A** and - if required - **also** with a **current and voltage-controlled charge map** for lithium starter batteries, e.g. **Battery Charger, 90 A**
- **9900 - PIWIS Tester 3** with PIWIS Tester software version **38.600.020** (or higher) installed

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.**

> **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 the vehicle, programming cannot be started or will be interrupted.

⇒ Place the driver's key with the back facing down into the front left storage compartment in the center console to guarantee a continuous radio link between the vehicle and the driver's key.

Re-programming engine electronics (DME) control unit

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 or coding.

Information

The procedure described here is based on the PIWIS Tester 3 software version **38.600.020**.

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.

Work Procedure: 1   **Re-program engine electronics (DME) 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"'*.

For specific information on control unit programming during this campaign, see table below.

Required PIWIS Tester software version:	**38.600.020** (or higher)
Type of control unit programming:	Control unit programming using the **'Automatic programming'** function of the control unit.
	Select the **Engine electronics (DME)** control unit in the control unit selection screen and re-program it using the **'Coding/Programming'** menu and the **'Automatic programming'** function.

Programming sequence:	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. The **engine electronics (DME) control unit** and the **PDK control unit** are **re-programmed** and then **re-coded automatically** during the programming sequence. **Do not interrupt programming and coding.** Once the control units have been programmed and coded, the PIWIS Tester will prompt you to switch the ignition off and then back on again after a **waiting time of approx. 10 seconds**.
Procedure in the event of error messages appearing during the programming sequence:	⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester - section on "Fault finding"'.*
Procedure in the event of abnormal termination of control unit programming:	Repeat control unit programming by restarting programming.

i **Information**

Specifications for the new software version and identifying features on the vehicle

The software versions that are re-programmed during this programming step can be read out of the DME and PDK control unit in the **'Extended identifications'** menu using the PIWIS Tester.

Overview of the **new** software versions for the **DME and PDK control unit**:

Emissions concept:	Control unit	during this campaign:	Software version:
R4 TFSI ULEV NAR	**Engine electronics (DME)**	95B.906.259.D	0004
	PDK control unit	95B.927.156.BQ	0022

Concluding work

Work Procedure: 1   Read out and erase the fault memories of all control units.

    1.1   Press •F7" in the control unit selection screen ('Overview' menu) to call up the Additional menu.

    1.2   Select the function "Read all fault memories and erase if required" and press •F12" ('Next') to confirm.

        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.

i **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 must be invoiced using a separate warranty claim.

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.

i **Information**

If fault memory entries for individual control units cannot be deleted, 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.

•   Start the engine, leave it running for a short time and then stop it again.

•   Switch off the ignition and wait approx. 10 seconds before switching it back on again.

•   Plug the PIWIS Tester diagnostic connector into the diagnostic socket again and restore communication with the vehicle.

•   Read out the fault memory again and delete any fault memory entries that are stored.

1.6   Once you have erased the fault memories, select the **'Overview'** menu to return to the control unit selection screen.

2   Perform adaptations.

2.1   Select the **'Engine electronics (DME)'** control unit in the control unit selection screen ('Overview' menu) and press •F12" ('Next') to confirm your selection.

2.2   Once the DME control unit has been found and is displayed in the overview, select the **'Maintenance/repairs'** menu.

2.3   Select menu item **'Adaptations'** and press •F12" ('Next') to confirm your selection.

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

2.5   Select **'Throttle valve'** in the overview of adaptations and press •F8" ('Start') to start the adaptation.

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

Once the adaptation is completed successfully, a tick will appear in the "Status" field for the throttle valve on the PIWIS Tester display.

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

2.7   End throttle valve adaptation by pressing •F8" ('Stop').

2.8   Select **'Radiator shutter'** in the overview of adaptations and proceed as described in steps 2.5 to 2.7 in order to adapt the throttle valve.

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

3   Select the 'Overview' menu and press •F11" ('Back') to return to the control unit selection screen.

4   Switch off the ignition.

5   Disconnect the PIWIS Tester from the vehicle.

6   Switch off and disconnect the battery charger.

Invoicing

Invoicing: The work involved is invoiced under the labor operation:

APOS	Labor operation	I No.
24702540	Programming DME control unit (60 TU)	

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

Location (FES5)	2470	DME control unit
Damage type (SA4)	3013	Damaged

References: ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*