

**Engine Symptom – Rough-Running Engine and Engine Indicator Light Has Come On:  
Re-Programming DME Control Unit (SY 07/22)**

**Change overview**

Version	Date	Change
0	04/12/2022	First publication – Replaces Technical Information SY 55/20
1	05/23/2022	"Replacing intake camshaft" section now includes step "Replacing oil filter".

Model Line: **Macan (95B)**

Model Year: **As of 2019 up to 2021**

Equipment: **2.0-liter 4-cylinder petrol engine (engine type: EA888)**

Concerns: **Engine electronics (DME) control unit**

Symptom: Due to a software error in the DME control unit, the engine on the affected vehicles may experience rough running while driving at engine speeds near the idle range.

At least one of the following fault codes is stored in the fault memory of the DME control unit:

- P001100 Intake camshaft adjustment, bank 1 – setpoint position not reached (003A16)
- P001400 Exhaust camshaft adjustment, bank 1 – setpoint position not reached (003A15)

Cause: The adaptation values for camshaft control are out of tolerance.

Remedial Action: In the event of a customer complaint, re-program the DME control unit.



**Information**

After programming the DME control unit, perform a test drive over various engine speed and load ranges. If the fault occurs again during or after the test drive, the camshaft will also need to be checked for excessive axial play.

This may well be the case, particularly in vehicles produced from the production period of March 2021 up to and including August 2021.

**Tool required for programming the DME control unit**

- Tool:
- **9900 - 9900 - PIWIS Tester 3** with PIWIS Tester software version **40.785.090** (or higher) installed.
  - **Battery charger** with a current rating of **at least 90 A**, e.g. **VAS 5908 battery charger 90A**.

For further information about the battery chargers to be used, see the corresponding Workshop Manual.  
⇒ *Workshop Manual '270689 Charging vehicle electrical system battery'*

## Preliminary 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 starting control unit programming, connect a suitable battery charger with a current rating of at least 90 A to the vehicle.

### 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 vehicle 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.

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"*.

## Re-programming DME control unit

### NOTICE

**Use of a PIWIS Tester software version that is older than the specified version.**

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

Work  
Procedure:



### Information

It is imperative that the PIWIS Tester remains online during control unit programming so that backup documentation of the software versions installed on the control units **before and after programming** is sent to the Porsche After Sales systems.

The total time required for control unit programming is **approx. 13 minutes**.

- 1 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"*.

#### Specific information on control unit programming in the context of this Technical Information:

Required PIWIS Tester software version:	<b>40.785.090</b> (or higher)
Type of control unit programming:	Control unit programming using the <b>'Automatic programming'</b> function of the DME control unit. <b>'Engine electronics (DME)'</b> control unit – <b>'Coding/programming'</b> menu – <b>'Automatic programming'</b> function.
Programming sequence:	Read and follow the <b>information and instructions on the PIWIS Tester</b> during the guided programming sequence. During the programming sequence, the <b>DME control unit</b> is <b>re-programmed</b> and then <b>automatically re-coded</b> . <b>Do not interrupt programming and coding.</b> 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. Backup documentation of the new software versions is then performed.
Programming time (approx):	<b>13 minutes</b>
Data record (software part number and software version) programmed for the DME control unit during programming:	See the ⇒ <i>Technical Information '9X00IN Overview of programmed software versions'</i> section.

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 "Fault finding"</i> .
Procedure in the event of abnormal termination of control unit programming:	Repeat control unit programming by restarting programming.

### Overview of the programmed DME software versions

Overview:



#### Information

The software part number and software version of the programmed data record are based on the specified PIWIS Tester software version. Please note that this may be different in a higher version.

#### Model year 2019:

Exhaust emission standard	Control unit	Software part No.	Software version
<b>C6B without RDE</b> (M No. 7CM)	DME	95B906259G	0011
<b>EU 6 AG/H/I</b> (M No. 7CP)	DME	95B906259AB	0002
<b>EU 6 Plus / EU 4 or EOBD or CRT</b> (M No. 7MM/7GH)	DME	95B906259T	0002
<b>LEV3 / Tier3 70</b> (M No. 7CE)	DME	95B906259AA	0003

#### Model year 2020:

Exhaust emission standard	Control unit	Software part No.	Software version
<b>C6B without RDE</b> (M No. 7CM)	DME	95B906259G	0012
<b>EU 6 DG</b> (M No. 4BF)	DME	95B906259F	0007
<b>EU 6 Plus / EU 4 or EOBD or CRT</b> (M No. 7MM/7GH)	DME	95B906259J	0009
<b>LEV3 / Tier3 70</b> (M No. 7CE)	DME	95B906259H	0007

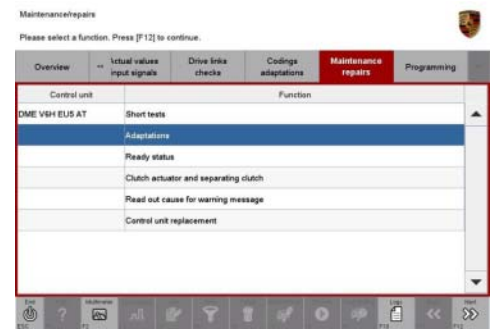
## Model year 2021:

Exhaust emission standard	Control unit	Software part No.	Software version
<b>C6B without RDE</b> (M No. 7CM)	DME	95B906259G	0012
<b>EU6 AP</b> (M No. 4BI)	DME	95B906259R	0003
<b>EU 6 DG</b> (M No. 4BF)	DME	95B906259F	0007
<b>EU 6 Plus / EU 4 or EOBD or CRT</b> (M No. 7MM/7GH)	DME	95B906259J	0009
<b>LEV3 / Tier3 70</b> (M No. 7CE)	DME	95B906259S	0003

## Concluding work following control unit programming

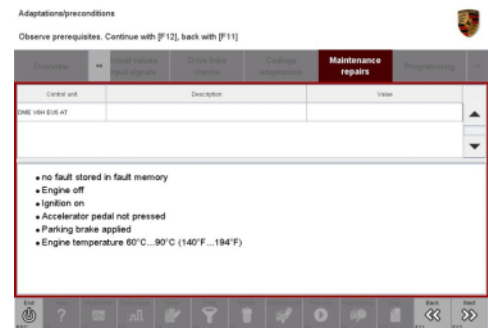
Work Procedure: 1 Perform throttle valve adaptation.

- 1.1 Select the '**DME**' control unit in the control unit selection screen ('Overview' menu) and press •F12" ('Next') to confirm your selection.
- 1.2 Once the DME control unit has been found and is displayed in the overview, select the '**Maintenance/repairs**' menu.
- 1.3 Select menu item ⇒ '**Adaptations**' and confirm your selection by pressing •F12" ('Next') ⇒ *DME adaptations*.



*DME adaptations*

- 1.4 Comply with the displayed preconditions and press •F12" ('Next') to confirm ⇒ *Adaptation preconditions*.



*Adaptation preconditions*

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



*Throttle valve adaptation*

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

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

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

- 1.7 Press •F8" ('Stop') to end throttle valve adaptation.

## 2 Perform radiator shutter adaptation.

- 2.1 Select the ⇒ **'Radiator shutter adaptation'** function so that the corresponding text line turns blue and then press •F8" ('Start') to start radiator shutter adaptation ⇒ *Radiator shutter adaptation*.



*Radiator shutter adaptation*

- 2.2 Follow the instructions on the PIWIS Tester while radiator shutter adaptation is being performed ⇒ *PIWIS instructions*.

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

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

- 2.3 End radiator shutter adaptation by pressing
    - F8" ('Stop').
  - 2.4 Press •F11" ('Back') to return to the start page of the ⇒ **'Maintenance/repairs'** menu.
  - 2.5 Select the ⇒ **'Overview'** menu to return to the control unit selection screen ⇒ *Control unit selection*.
- 3 Carry out other 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"*.
  - 4 Perform a test drive over various engine speed and load ranges.



#### Information

If the fault occurs again during or after the test drive, the camshaft will also need to be checked for excessive axial play. This may well be the case, particularly in vehicles produced from the production period of March 2021 up to and including August 2021. ⇒ *Technical Information '9X00IN Checking axial play of camshaft'*

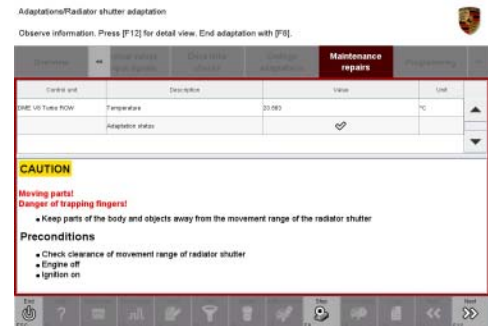
### Checking axial play of camshaft



#### Information

"Indirectly" check whether the axial play of the intake camshaft is outside of the tolerance range by checking for any signs of wear on the actuator for the camshaft controller or the camshaft itself.

- Work Procedure: 1 Remove the actuator for the camshaft controller of the intake camshaft.  
For instructions, see:  
⇒ *Workshop Manual '153919 Removing and installing camshaft controller actuator (R4)'*



PIWIS instructions

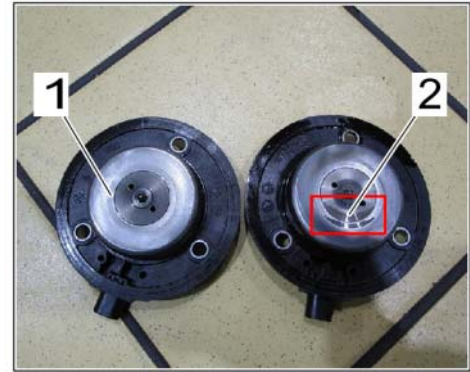


Control unit selection

2 Check the actuator for the camshaft controller of the intake camshaft for scoring and seizure marks.

2.1 If the actuator for the camshaft controller of the intake camshaft does not ⇒ *Appearance of scoring and seizure marks on the actuator for the camshaft controller -1-* have any scoring or seizure marks, check the intake camshaft actuator and the intake camshaft itself for scoring and seizure marks as well. To do this, continue with Step 3.

2.2 If the actuator for the camshaft controller of the intake camshaft ⇒ *Appearance of scoring and seizure marks on the actuator for the camshaft controller -2-* has scoring or seizure marks, continue with ⇒ *Technical Information '153919 Replacing intake camshaft'*.



*Appearance of scoring and seizure marks on the actuator for the camshaft controller*

3 Remove the intake camshaft actuator.

For instructions, see:

⇒ *Workshop Manual '158419 Removing and installing camshaft actuator'*

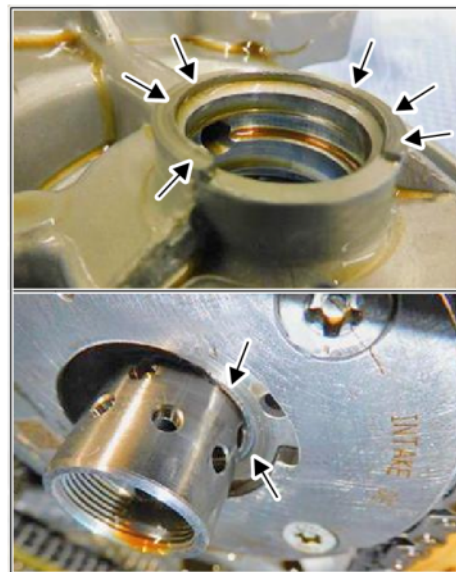
4 Check the intake camshaft actuator for scoring and seizure marks.



#### Information

The axial play of the intake camshaft is not guaranteed if the spacer of the intake camshaft actuator shows signs of wear.

- 5 Check the intake camshaft for scoring and seizure marks.
  - 5.1 If the intake camshaft and the actuator do not have scoring or seizure marks, the fault will need to be located and remedied another way. In this case, discuss and agree on how to proceed with your Technical Support contact. For information on the subsequent work required for completing the vehicle, see ⇒ *Technical Information '158419 Concluding work after checking or replacing the intake camshaft'*.
  - 5.2 If the intake camshaft or the actuator has scoring or seizure marks, continue with ⇒ *Technical Information '158419 Replacing intake camshaft'*.



*Appearance of scoring and seizure marks on the camshaft actuator*

## Replacing intake camshaft

- Work Procedure: 1 Replace the intake camshaft and damaged accessories.  
 For instructions, see:  
 ⇒ *Workshop Manual '158219 Removing and installing cylinder head cover'*
- 2 Replace oil filter.  
 For instructions, see:  
 ⇒ *Workshop Manual '173055 Replacing oil filter (R4)'*

## Required parts and tools

Part No.	Designation – Location	Number
9A714511320	⇒ Seal – Vacuum pump	2 pieces
9A710351710	⇒ Seal – Oil separator	1 piece
N 91232801	⇒ Collared cheese head bolt with hexagon socket head, M6 x 52 – Bearing saddle	6 pieces

N 10451409	⇒ Internal hexagon round countersunk screw, self-locking, M6 x 16 – Bearing saddle	6 pieces
PAF105540	⇒ Countersunk screw, M6 x 35 – Cylinder head cover	22 pieces
WHT005184	⇒ O-ring, 31 x 2 – High-pressure pump	1 piece
PAF108682	⇒ Internal serration screw, M8 x 22 – High-pressure pump	2 pieces
9A7109021	⇒ Camshaft – Intake	1 piece
	<b>or</b>	
PAC109021	⇒ Camshaft – Intake	1 piece
95810925911	⇒ Magnet – Intake camshaft	1 piece
95810358300	⇒ Seal – Magnet	1 piece
N 10451409	⇒ Internal hexagon round countersunk screw, self-locking, M6 x 16 – Magnet	3 pieces
95811556201	⇒ Oil filter with seal – Oil filter housing	1 piece
N 10746301	⇒ Hexagon flange bolt M8 x 60 – Belt tensioner	2 pieces
WHT003463	⇒ O-Ring 11.8 x 2.5 – Oil dipstick	1 piece
N 10451409	⇒ Internal hexagon round countersunk screw, self-locking M6 x 16 – Oil dipstick	1 piece
9A7109210	⇒ Timing chain housing – Chain drive	1 piece
PAF910967	⇒ Internal hexagon round/oval-head screw M6 x 16 – Timing chain housing	15 pieces
PAC103085	⇒ Shaft sealing ring 45 x 60 x 8 – Timing chain housing	1 piece

Materials: **Required materials** (usually already available at the Porsche dealer):

Part No.	Designation	Quantity
00004330510	⇒ Sealing compound (1 tube)	5 grams/ 0.18 oz
00004330636	⇒ Sealing compound (1 tube)	18 grams/ 0.63 oz
00004321046	⇒ Engine oil (1 liter/ 33.8 fl oz)	5.2 liter/ 1.37 gal

- Tool:
- T10352C - T10352C - Assembly tool
  - T10352/4 - T10352/4 - Assembly tool
  - VAS 6890 - Spring band clamp pliers
  - T10352C - T10352C - Assembly tool
  - T10352/4 - T10352/4 - Assembly tool
  - VAS 6079 - Dial gauge
  - T10170A - T10170A - Dial gauge adapter
  - T40243 - T40243 - Lever
  - T40267 - T40267 - Staking tool
  - T40011 - T40011 - Staking pin
  - T40271 - T40271 - Camshaft clamp
  - T40266 - T40266 - Fit adapter

### Concluding work after checking or replacing intake camshaft

- Work Procedure: 1 Install camshaft actuator.  
For instructions, see:  
⇒ *Workshop Manual '158419 Removing and installing camshaft actuator'*
- 2 Install actuator for the camshaft controller of the intake camshaft.  
For instructions, see:  
⇒ *Workshop Manual '153919 Removing and installing camshaft controller actuator (R4)'*

### Invoicing

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

APOS	Labor operation	I No.
15050141	Checking intake camshaft	
15821940	Removing and installing cylinder head cover	
24702541	Re-programming DME control unit	
15390141	Checking camshaft controller actuator	
17305590	Replacing oil filter	

PCSS encryption:

<b>Location (FES5)</b>	24700	DME control unit
<b>Damage type (SA4)</b>	1134	Programming error

- References:
- ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*
  - ⇒ *Workshop Manual '153919 Removing and installing camshaft controller actuator (R4)'*
  - ⇒ *Workshop Manual '158219 Removing and installing cylinder head cover'*
  - ⇒ *Workshop Manual '158419 Removing and installing camshaft actuator'*

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