Symptom - Engine - Hard Gear Changes: Re-programming (Tiptronic) Transmission Control Unit (SY 124/17)

Model Line:	**Cayenne (92A)**
	Panamera S E-Hybrid (970)
Model Year:	**As of 2015**
Equipment:	8-speed automatic transmission for all-wheel drive (G1G, Tiptronic)
Subject:	**Tiptronic and DME control unit**
Symptom:	Hard or jerky gear changes.
Cause:	This is caused by the transition phase when changing from the engaged gear to the target gear. Various components of the powertrain affect the shifting quality.
Remedial Action:	In the event of a customer complaint, use **PIWIS Tester III** with software 36.400.020 (or higher) installed to:

- **re-program and code the Tiptronic control unit** via "Automatic programming" and
- **reset the adaptation values**.

ℹ️ Information

The customer must be informed that:

- The gearshift behavior or shifting quality is temporarily impaired due to the reset adaptation values.
- This process depends on technical factors and re-adapts according to the customer's handling/driving style.

Tools:	**9900 - PIWIS Tester III** with PIWIS Tester software version **36.400.040** (or higher) installed
	Battery Charger/Power Supply - Suitable for AGM Type batteries, recommended current rating of 90A fixed voltage 13.5V to 14.5V.

Work Procedure:

NOTICE

Coding will be aborted in the event of low voltage.

- **Increased current draw during diagnosis can cause a drop in voltage, which can result in one or more fault entries and the abnormal termination of the coding process.**

⇒ **Before commencing work, connect a suitable battery charge or power supply - suitable for AGM Type batteries, recommended current rating of 90A fixed voltage 13.5V to 14.5V to the jump-start terminals in the engine compartment.**

NOTICE

Coding will be aborted if the Internet connection is unstable.

• **An unstable Internet connection can interrupt communication between PIWIS Tester III and the vehicle communication module (VCI). As a result, coding may be aborted.**

⇒ **During control unit coding, always connect PIWIS Tester III to the vehicle communication module (VCI) via the USB cable.**

Information

The procedure described here is based on the PIWIS Tester III software version **36.400.040**.

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.

1 **Preliminary work:**

    1.1   Connect a battery charger/power supply with a current rating of **at least 90 A**.

    1.2   Switch on the ignition using the **original driver's key**. On vehicles with "Porsche Entry & Drive", do this by replacing the control unit in the ignition lock with the original driver's key if necessary.

    1.3   **9900 - PIWIS Tester III** with software version **36.400.040** (or higher) installed must be connected to the vehicle before starting it.

2 **"Control unit for transmission control"** (Tiptronic) ⇒ **re-program and reset adaptation values**:

Menu	⇒	Control unit/Function	⇒	Action	⇒	confirm/ex-ecute
•	**Instructions/information** or			• ⇒ **Result/co**-**nsequence** of action		

• **Only for Panamera S E-Hybrid:**   and if "Automatic programming" is not possible (hidden)   ⇒ **Programming must be performed by entering the campaign number**:

2.1	Control units '**Overview**'	'**Additional menu**'	call up	•F7"
2.2	⇒ **Follow instructions:** • Create Vehicle Analysis Log (VAL) if necessary and • carry out any campaigns that are available for the vehicle.			•Yes" /•N-o" / •F12"
2.3		'**Campaign**'	select	•F12"
2.4	Campaign number	Value: **Panamera S E-Hybrid:** **'W6Z8V'**	enter	•F12"
2.5	'**Drive links/checks**'	**Tiptronic** (transmission control): **Reset adaptation values**	select	•F12"
	• **All other models must be programmed using "Automatic programming"**:			
2.1	Control units '**Overview**'	**Tiptronic** (transmission control)	select	•F12"
2.2	⇒ **Follow instructions:** • Create Vehicle Analysis Log (VAL) if necessary and • carry out any campaigns that are available for the vehicle.			•Yes" /•N-o" / •F12"
2.3	'**Coding/progra-mming**'	**Automatic programming**	select	•F12" •F12"
	Read and follow the **information and instructions on the PIWIS Tester** during the guided programming sequence. Then press •>>" to continue. During the programming sequence, the **Tiptronic control unit** - as well as the **DME control unit** - will be **re-programmed** and then **re-coded automatically**. **Do not interrupt programming and coding.** Once control unit programming - and coding if necessary - is complete, you will be prompted to switch the ignition off and then back on again after a specified waiting time.			
	⇒ If programming is not completed successfully (error message "Programming unsuccessful"), programming must be **repeated**.			
2.4	'**Drive links/checks**'	**Tiptronic** (transmission control): **Reset adaptation values**	select	•F12"

3   **Subsequent work:**

Information

If there are still fault memory entries in individual control units, start the engine briefly and then switch it off again. Wait for approx. 10 seconds before switching the ignition on again and re-establish the connection between the PIWIS Tester and the vehicle. Then read out and erase the fault memories of the affected control units again separately.

3.1   Read out and erase all fault memories.

3.2   **Perform throttle valve adaptation.**

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

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

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

  3.2.4   Follow the instructions on thePIWIS Tester while throttle valve adaptation is being performed.

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

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

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

  3.2.6   Press •F11" ('Back') to return to the start page of the ⇒ **'Adaptations'** menu.

3.3   **Perform cooling-air flap adaptation.**

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

  3.3.2   Follow the instructions on the PIWIS Tester while radiator shutter adaptation is being performed.

  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**.

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

  3.3.4   Press •F11" ('Back') to return to the start page of the ⇒ **'Adaptations'** menu.

3.4   **Perform kickdown threshold adaptation.**

3.4.1   Select the ⟹ **'Kickdown threshold'** function so that the corresponding text line turns blue and press •F8" ('Start') to start kickdown threshold adaptation. Select the ⟹ **'Kickdown threshold'** function so that the corresponding text line turns blue and press •F8" ('Start') to start kickdown threshold adaptation.

3.4.2   Read and follow the instructions on the PIWIS Tester in order to perform kickdown threshold adaptation.

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

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

3.4.3   End kickdown threshold adaptation by pressing •F8" ('Stop').

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

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

3.5   Switch off the ignition.

3.6   Disconnect the PIWIS Tester from the vehicle.

3.7   For vehicles with Porsche "Entry & Drive", replace the original vehicle key in the ignition lock with the control panel again.

3.8   Switch off and disconnect the battery charger/power supply.

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

APOS	Labor operation	I No.
24702500	Programming DME control units	

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

Location (FES5)	37350	Automatic transmission
Damage type (SA4)	1121	Gear change too hard