

**Symptom - Engine - Knocking, Jerking or Vibrations During Acceleration: Checking Fuel Injectors (SY 41/21)**

Model Line: **Cayenne (9YA)  
Cayenne Coupé (9YB)**

Model Year: **As of 2018**

Concerns: **Fuel injector**

Symptom: The customer complains about knocking, jerking or vibrations in the vehicle during acceleration. This can occur while driving both at partial load and full load.

Cause: This may be caused by a faulty fuel injector, which can result in misfiring. No fault codes are stored in the fault memory of the (DME) control unit in this case.

Remedial Action: Before replacing a transfer box, a test drive should therefore be performed to rule out the possibility that the drive train knocking is being caused by an injector. The following diagnostic drive must be performed for this purpose.

**Checking fuel injectors**

Work Procedure: 1 Connect **9900 - PIWIS Tester 3** to the vehicle communication module (VCI) via the **USB cable**. Then connect the communication module to the vehicle and switch on the PIWIS Tester.

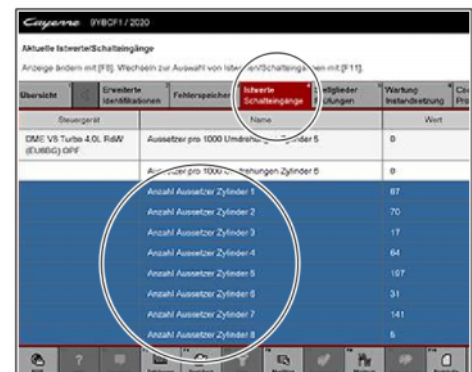
2 Prepare for test drive.

2.1 Select **'DME control unit'**, then select the **'Actual values/input signals'** menu.  
⇒ *Actual values/input signals*

2.2 Select the actual value **'Number of misfires per cylinder'** for **all** cylinders and start **'Data logger'** with **•F3** .

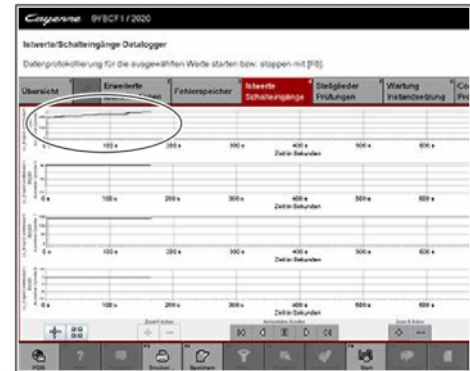
3 Test-drive the vehicle by driving in the **range in which the problem occurred (partial load and/or full load)**.

4 If the problem occurs several times, stop the test drive and stop logging.



*Actual values/input signals*

- 5 Look at the log and check the cylinder misfire counter during acceleration. ⇒ *Misfires per cylinder*



*Misfires per cylinder*

Result of check		Action required
(✓)	There is <b>no</b> increase in misfiring on a cylinder.	<b>End of action required.</b> Fuel injectors and ignition system OK.
(✗)	There is increased misfiring on a cylinder.	<b>Continue with Step 6.</b>

- 6 Swap the **spark plug and ignition coil** from the adjacent cylinder with the spark plug and ignition coil on the affected cylinder, see ⇒ *Workshop Manual '287020 Removing and installing spark plugs'* and repeat the test drive.

Result of check		Action required
(✓)	The fault still occurs on the cylinder that was originally affected.	<b>End of check.</b> Install a new fuel injector on the original cylinder, see ⇒ <i>Workshop Manual '244019 Removing and installing fuel injector'</i> .
(✗)	The fault now occurs on the adjacent cylinder.	<b>Continue with Step 7.</b>

- 7 Replace the ignition coil on the cylinder that is now affected with the **original** ignition coil, see ⇒ *Workshop Manual '282020 Removing and installing ignition coils (V6 Turbo)'* or ⇒ *Workshop Manual '282020 Removing and installing ignition coils (V8 biturbo)'* and repeat the test drive.

Result of check		Action required
(✓)	The fault still occurs on the <b>adjacent</b> cylinder.	<b>End of check.</b> Install new spark plug on the <b>adjacent</b> cylinder, see ⇒ <i>Workshop Manual '287020 Removing and installing spark plugs'</i> .
(x)	The fault now occurs again on the <b>original cylinder</b> .	<b>End of check.</b> Install new ignition coil on the <b>original cylinder</b> , see ⇒ <i>Workshop Manual '282020 Removing and installing ignition coils (V6 Turbo)'</i> or ⇒ <i>Workshop Manual '282020 Removing and installing ignition coils (V8 biturbo)'</i> .

### Required parts and materials - depending on the result of the check

Parts Info: **Parts required for V6 monoturbo and V6 biturbo engines:**

Part No.	Designation	Qty.
	<b>Only if fuel injector is replaced:</b>	
PAB906036	⇒ High-pressure injector	1 ea.
	<b>Only if ignition coil is replaced:</b>	
PAC905110A	⇒ Ignition coil with spark plug connector	1 ea.
	<b>Only if spark plug is replaced:</b>	
9A790560150	⇒ Spark plug	1 ea.

### Parts required for V8 biturbo engines:

Part No.	Designation	Qty.
	<b>- Use</b>	
	<b>Only if fuel injector is replaced:</b>	
PAC906036H	⇒ High-pressure injector	1 ea.
	<b>Only for left cylinder bank:</b>	
9A712750700	⇒ Pressure line - left	1 ea.
	<b>Only for right cylinder bank:</b>	
9A712750710	⇒ Pressure line - right	1 ea.

PAB25372500	⇒ Clamp – Primary catalytic converter, right	1 ea.
9A725311500	⇒ Seal – Primary catalytic converter, right	1 ea.
PAB25311500	⇒ Seal – Primary catalytic converter, right	1 ea.
PAF911308	⇒ Hexagon nuts, self-locking, M8 – Primary catalytic converter, right	3 ea.
N 90335004	⇒ Clamping washers – Damping for plenum panel	6 ea.
PAF00072900	⇒ Hexagon socket head bolt, M8 x 20 – Front underbody panelling	3 ea.
PAF82595100	⇒ Screw, M6 x 20 – Center underbody panelling, right	1 ea.
9A700768900	⇒ O-ring – Turbocharger	6 ea.
9A700875500	⇒ O-ring – Turbocharger	1 ea.
9A700653700	⇒ O-ring – Turbocharger	2 ea.
N 90925002	⇒ O-ring – Turbocharger	1 ea.
N 90925001	⇒ O-ring – Turbocharger	1 ea.
95813302610	⇒ Seal – Intake pipe	1 ea.
<b>Only if ignition coil is replaced:</b>		
PAC905110A	⇒ Ignition coil with spark plug connector	1 ea.
<b>Only if spark plug is replaced:</b>		
9A790560150	⇒ Spark plug	1 ea.

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

Part No.	Designation – Use	Qty.
00004321083	⇒ Lubricant for ignition coil – Ignition coil	20 gram/ 0.7 oz tube 1)
	<b>Only if fuel injector is replaced:</b>	
00004320935	⇒ Special lubricant for fuel lines – Fuel lines	400 ml/ 13.5 fl oz spray can 2)

1) approx. 1 gram/ 0.035 oz required per vehicle

2) approx. 0.1 liter/ 3.38 fl oz required per vehicle

## Invoicing

For documentation and warranty invoicing, enter the PQIS coding and parts specified below in the warranty claim, depending on the time and effort involved:

<b>Location (FES5)</b>	2440A	Injector
<b>Damage type (SA4)</b>	1613	does not function at times

The labor operations must be selected using the Labor Operation List for the work that was carried out.

- References
- ⇒ *Workshop Manual '287020 Removing and installing spark plugs'*
  - ⇒ *Workshop Manual '244019 Removing and installing fuel injector'*
  - ⇒ *Workshop Manual '282020 Removing and installing ignition coils (V6 Turbo)'*
  - ⇒ *Workshop Manual '282020 Removing and installing ignition coils (V8 biturbo)'*

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