

PKD Transmission Diagnosis: Symptoms and Repair Procedures (35/09)



Information

This Technical Information replaces the TI Group 3, #35/09 dated July 13, 2011.

Changes/additions compared to the previous Technical Information:

- ▶ Reference to changed procedure in the Workshop Manuals - “370235 Checking and topping up ATF clutch fluid” and “370255 Changing ATF clutch fluid”.
- ▶ Information about fault locations (FES5) added under “Procedure: 2 – Repair measures in the event of leaks on the PDK transmission” for more exact invoicing and documentation using PQIS (⇒ Cause).



Information

This Technical Information replaces the TI dated June 28, 2010

Changes/additions compared to the previous Technical Information:

- ▶ Steps 3.4 and 3.4.1 added under “Procedure: 3 – Remedial action and repair measures in the event of complaints relating to comfort (gearshift and drive-off quality)”.
- ▶ Additional measure (concerning fault codes P17BD/P17BE) added to flow chart “**SF3 – Pressure sensor**” for this Technical Information (see “3730 – Flow charts for PDK fault codes” in the information medium TI).



Information

This Technical Information replaces the TI dated June 28, 2010.

Changes/additions compared to the previous Technical Information:

- ▶ The following link has been added under **Step 13** in the section “Procedure: 2 – Repair measures in the event of leaks on the PDK transmission”: ⇒ *Technical Information '373400 Leak around the ATF oil pan on PDK transmission (35/11)'*.
- ▶ “References” section now includes the above link.



Information

This Technical Information replaces the TI dated June 28, 2010.

Changes/additions compared to the previous Technical Information:

- ▶ Information added under “Procedure: 2 – Repair measures in the event of leaks on the PDK transmission”: “Information/Traces of oil around the oil pan seal ...” added under item 13.
- ▶ Information added under “Procedure: 4 – Procedure in the event of noises on the PDK transmission”: Additional text “... (if possible) a video recording ...” added under “document the information specified below in PQIS”.

**Information**

This Technical Information replaces the TI Group 3, #35/09, dated June 28, 2010.

Changes/additions compared to the previous Technical Information:

- ▶ All **flow charts** for this Technical Information (see “3730 – Flow charts for PDK fault codes” in the information medium TI) and the information provided here now include **i-information** “Detailed information (e.g. measured values) is stored in the relevant fault code”.
- ▶ Flow chart “**EF – Electrical faults**” now includes: Fault code P17A3.
- ▶ Flow chart “**SF4 – Temperature sensor**” now includes: Fault code P172D.
- ▶ Flow chart “**SF5 – Software errors**” now includes: Fault type “**\$1A**” fault code **P18B4**.
- ▶ Step “1.4” and “References” section now include the following link: ⇒ *Technical Information '373000 PDK transmission in limp-home mode: Fault codes P1552, P1990 and/or P1991 (77/09)'*
- ▶ Step “3.4”: PDK data version was changed from “T079” to “**T082**” and PIWIS Tester software version was changed to **V27.000**.

**Information**

Changes/additions compared to the previous Technical Information:

- ▶ Step “1.4” and “References” section now include the following link: ⇒ *Technical Information '373000 PDK transmission in limp-home mode: Fault codes P1552, P1990 and/or P1991 (77/09)'*.

Vehicle Type:	Boxster (987)/Boxster S (987) Cayman/Cayman S
Model Year:	As of 2009
Equipment:	Porsche Doppelkupplung (PDK) – I-no. 250
Concerns:	PDK transmission/control unit for PDK transmission
Information:	Procedure and repair measures in the event of complaints relating to PDK: <ul style="list-style-type: none"> • Gearbox emergency operation/other warning messages • Fault memory entries in the fault memory of the PDK control unit • Leaks on the PDK transmission • Complaints relating to comfort • Complaints relating to noises



Information

- **Always create a Vehicle Analysis Log (VAL) before starting any measures.**
- Make sure that you are using the **latest version** of the PIWIS Tester I 9718 software (i.e. version 27.000 or higher)/PIWIS Tester II software version 5.200 or higher.
- If **components are replaced**: Return components to Porsche and document all measures in PPN.



Information

The following procedure applies in relation to calibration:

Engine torque loss adaptation must always be performed **before** carrying out calibration (for details of procedure/conditions, see Step 3.6).

Essentially, calibration is required **only after replacing parts** or if you are **expressly** instructed to do so during troubleshooting.

A **Calibration after part replacement** routine (“major calibration routine”) must always be carried out after replacing one of the following components:

- PDK control unit
- Electrohydraulic control unit
- PDK transmission

Calibration **without previous part replacement** (“minor calibration routine”) must be carried out if you are expressly instructed to do so (e.g. during troubleshooting in the event of complaints relating to comfort).

When **control unit programming** is complete (DME/PDK – with or without part replacement), **engine torque loss adaptation** must be performed.

If a control unit was only re-programmed (without replacing parts), **calibration is not** required unless there are other faults present (e.g. problems relating to gearshift and drive-off quality) for which calibration is recommended in order to correct the faults.

Procedure: 1 **Procedure and repair measures in the event of fault entries in the fault memory of the PDK control unit.**

The required procedure for correcting faults for the groups of fault memory entries listed below is described using flow charts.

A separate **flow chart** is used for each of the fault groups specified below.



Information

You will find the flow charts under the heading “3730 – Flow charts for PDK fault codes” in the information medium TI – Technical Information releases, main group 3 – Transmission.

Sequence for correcting faults if various fault entries from various fault groups are present:

- 1) Electrical faults

- 2) Gear skip/engagement block
- 3) Sensor faults/software faults
- 4) Gear selection faults

Fault correction for **complaints relating to comfort and noise** must only be carried out after the faults listed above (if present) have been found and corrected.

1.1 **Electrical faults**

Electrical faults include all fault memory entries relating to fault type

- Short circuit to ground
- Short circuit to B+
- Shunt
- Open circuit
- Incorrect voltage (operating limit, undervoltage, overvoltage)

.

Correct faults as shown in **Flow chart EF – Electrical faults**.

1.2 **Gear skip/engagement block (fault memory entries P176x)**

Gear skips/engagement blocks are identified by the fault memory entries 176x in the PDK control unit:

- P1764: Synchronisation engagement blocks or gear skips
- P1768, P1769 and P176A ... to P176F: Synchronisation fault (gear cannot be engaged)
- P1760: Double faults

Correct faults as shown in **Flow chart EB – Gear skip/engagement block – P176x**.

1.3 **Sensor faults/software faults**

“Sensor faults” include all fault memory entries relating to the components

- Distance sensor
- Speed sensor
- Pressure sensor
- Temperature sensor

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Correct faults as shown in **Flow chart SF0 – SF5**.

Overview of fault memory entries for distance sensor (Flow chart SF1)

- P1731 ... to P1734: Distance sensor information/shift rod faults (outside of validity range)

Overview of fault memory entries for speed sensor (Flow chart SF2)

- P0730: Transmission monitoring symptom - incorrect gear ratio
- P1743: Plausibility of transmission input shaft speed sensor clutch 1
- P1744: Plausibility of transmission input shaft speed sensor clutch 2
- P1745: Input shaft overspeed

Overview of fault memory entries for pressure sensor (Flow chart SF3)

- P0841 and P0846: Pressure sensor fault (measured value implausible)
- P17B1 and P17B2: Clutch fault (activation pressure implausible)
- P17B3 and P17B4: Clutch valve pressure stays too high mechanically during overlap switching after quick filling
- P17BB ... to P17BE: Clutch fault (clutch cannot be open)

Overview of fault memory entries for temperature sensor (Flow chart SF4)

- P0711: Transmission temperature sensor implausible
- P172D: Transmission temperature sensor gradient fault
- P17F0 to P17F2: Transmission overtemperature fault

Overview of fault memory entries for software faults (Flow chart SF5)

- P0602: Control unit not programmed
- P0603: EEPROM emulation checksum incorrect
- P0604: RAM test failed
- P0605: Flash checksum incorrect
- P0614: Data status does not match engine
- P0702: Watchdog (Monitoring Unit)
- P1749: Variant coding invalid
- P1870: Data record for shift rod synchronisation invalid
- P1871: Data record for clutch synchronisation invalid
- P1872: Data record for HYTI synchronisation invalid (HYTI = **H**ydraulic **T**each **I**n).
- P1897: Software monitoring: Calculation of speed control intervention by engine implausible
- P174B: Invalid allocation of control unit and transmission hardware (cross-installation)
- P174C: BIN file does not match software version
- P174E: EEPROM content at system start incorrect/implausible
- P186F: Data record for electric synchronisation data invalid
- P189A ... to P189D: Software monitoring
- P18A0 ... to P18B5: Software monitoring
- Uxxxx: CAN fault

1.4 **Overview of fault memory entries for gear selection**

- P17D0 ... to 17D9: Hydraulic gear selection fault
- P1779, P177A ... to P177F: Synchronisation fault (gear cannot be disengaged)

Other fault entries relating to the fault memory entries specified above that can be entered in the fault memory of the PDK control unit.

- P18B4: Software monitoring with fault type \$24/\$25/\$26
- P1990, P1991: Engine torque intervention not possible (see also ⇒ *Technical Information '373000 PDK transmission in limp-home mode: Fault codes P1552, P1990 and/or P1991 (77/09)'*)

Correct faults as shown in **Flow chart GS**.

Procedure: 2 **Repair measures in the event of leaks on the PDK transmission**



Information

Changed procedures for avoiding “apparent leaks” are described under ⇒ *Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'* and ⇒ *Workshop Manual '370255 Changing ATF (clutch fluid)'* in the Workshop Manuals.

Item	Designation	Possible cause(s)	Remedial action
1	Leaks in the short halfshaft flange/differential area ⇒ <i>Figure 1 -Pos. 1-</i> FES5: 3922L – Sealing ring for halfshaft flange, left	Sealing ring for short halfshaft flange damaged	Replace sealing ring ⇒ <i>Workshop Manual '392219 Removing and installing sealing ring for short halfshaft flange'</i>
		Housing cover seal damaged	Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i>
		Housing screws loose	
2	Leaks at the threaded joint between rear part of housing and clutch housing ⇒ <i>Figure 1 -Pos. 2-</i> FES5: 37343 - Gear housing seal	Seal damaged	Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i>
		Housing screws loose	

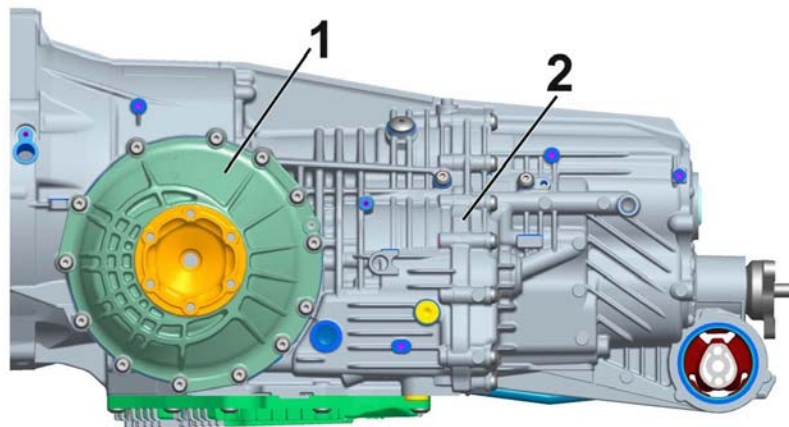


Figure 1

3	Leaks in the oil cooler area or around the oil lines for the oil cooler ⇒ <i>Figure 2 -Pos. 3-</i> FES5: 3862R - ATF line for oil cooler, return FES5: 3862V - ATF line for oil cooler, supply FES5: 38600 - ATF cooler	Retaining brackets for oil lines loose/O-rings on oil lines for oil cooler damaged.	Replace retaining brackets or O-rings on the oil lines for the oil cooler ⇒ <i>Workshop Manual '386219 Removing and installing lines for ATF cooler'</i> .
		Oil line damaged	Replace oil line for the oil cooler ⇒ <i>Workshop Manual '386219 Removing and installing lines for ATF cooler'</i> .
		Oil cooler leaking	Replace oil cooler ⇒ <i>Workshop Manual '386019 Removing and installing ATF cooler'</i>
4	Leaks at the sensor connector (16-pin) ⇒ <i>Figure 2 -Pos. 4-</i> FES5: 37344 - Porsche Doppelkupplung (PDK) connector	O-ring damaged	Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i>
		Connector leaking	
5	Oil leak from bleeder screw ⇒ <i>Figure 2 -Pos. 5-</i> FES5: 3734A - Hydraulic-oil inspection plug	Radial shaft seal on mounting for drive shaft 1/drive shaft 2 damaged	Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i>
6	Leaks at the sensor connector (20-pin) ⇒ <i>Figure 2 -Pos. 6-</i> FES5: 37344 - Porsche Doppelkupplung (PDK) connector	O-ring damaged	Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i>
		Connector leaking	
7	Leak around the parking lock ⇒ <i>Figure 2 -Pos. 7-</i> FES5: 37330 - Selector-shaft sealing ring	O-ring damaged	Replace O-ring ⇒ <i>Workshop Manual '373319 Removing and installing sealing ring for parking lock shaft'</i>

8	<p>Leak close to the oil filler screw for clutch fluid ⇒ <i>Figure 2 -Pos. 8-</i></p> <p>FES5: 3734C - PDK transmission filler screw</p> <p>FES5: 3734D - PDK transmission drain plug</p>	<p>Replace oil filler screw for clutch fluid and sealing ring</p>	<p>Replace oil filler screw and sealing ring, correct oil level ⇒ <i>Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'</i></p>
9	<p>Leak in the flanged shaft/long halfshaft flange area ⇒ <i>Figure 2 -Pos. 9-</i></p> <p>FES5: 3922R - Sealing ring for halfshaft flange, right</p>	<p>Radial shaft seal damaged Halfshaft flange seal damaged Housing screw on halfshaft flange loose</p>	<p>Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i></p>
10	<p>Oil leak from inspection bore (centring plate) ⇒ <i>Figure 2 -Pos. 10-</i></p> <p>FES5: 37348 - Inspection bore on centring plate</p>	<p>Radial shaft seal on drive shaft 2 – centring plate damaged</p>	<p>Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i></p>

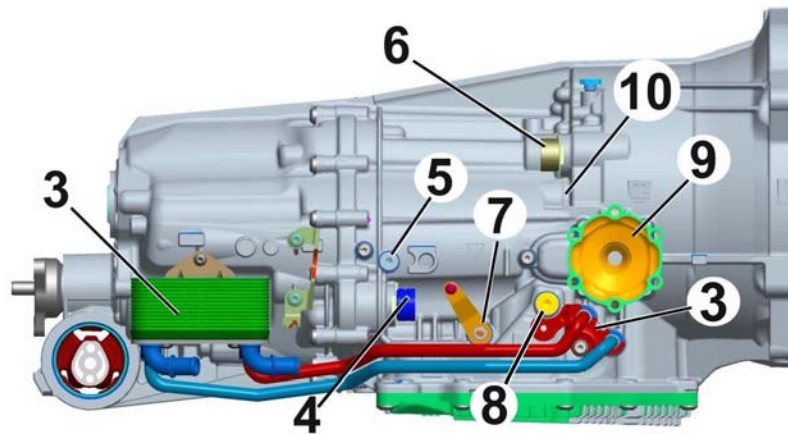


Figure 2

11	Oil leak from the hydraulic space bleeder ⇒ <i>Figure 3</i> -Pos. 11- FES5: 3747H - Hydraulic space bleeder	Oil over-filled	<p>Check clutch fluid level and transmission oil level ⇒ <i>Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'</i> and ⇒ <i>Workshop Manual '399035 Checking and topping up oil for final drive (with transmission oil)'</i></p> <p>If the clutch fluid level is too high and the transmission oil level is OK, correct the clutch fluid level as required.</p> <p>If the clutch fluid level is too high and the transmission oil level is too low (>= 500 ml), check the PDK transmission for leaks (e.g. around the oil filler screw or oil drain plug for transmission oil) and repair it.</p> <p>If no leaks are found, replace the PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i></p>
		Not enough anti-foam additive in clutch fluid	<p>Check clutch fluid level and transmission oil level ⇒ <i>Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'</i> and ⇒ <i>Workshop Manual '399035 Checking and topping up oil for final drive (with transmission oil)'</i>.</p> <p>If both oil levels are OK, change the clutch fluid. Follow the instructions on the container (shake, stir) ⇒ <i>Workshop Manual</i></p>

12	<p>Oil leak from the gearwheel set space bleeder ⇒ <i>Figure 3 -Pos. 12-</i></p> <p>FES5: 3734R - Gear housing bleeder</p>	Oil over-filled	<p>'370255 Changing ATF (clutch fluid)'.</p> <p>Check clutch fluid level and transmission oil level ⇒ <i>Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'</i> and ⇒ <i>Workshop Manual '399035 Checking and topping up oil for final drive (with transmission oil)'</i></p> <p>If the clutch fluid level is OK and the transmission oil level is too high, correct the transmission oil level as required.</p> <p>If the clutch fluid level is too low and the transmission oil level is too high (>= 500 ml), check the PDK transmission for leaks (e.g. around the oil filler screw or oil drain plug for clutch fluid) and repair it.</p> <p>If no leaks are found, replace the PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i></p>
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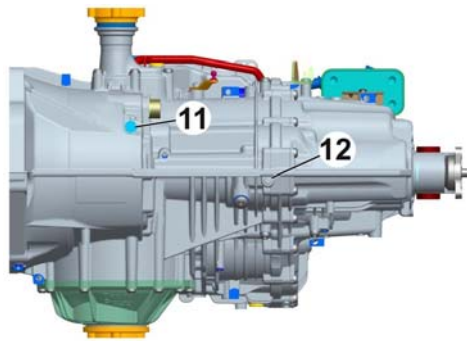


Figure 3

13	Leak around the oil pan/oil drain plug ⇒ <i>Figure 4</i> -Pos. 13- FES5: 37550 – ATF pan FES5: 37560 – Seal for ATF pan	Information	
		Traces of oil around the oil pan seal must only be classified as a “leak” if droplets are clearly visible . A suspected leak can be caused by an ATF check or ATF top-up carried out earlier. To check this, refer to the vehicle documents or the vehicle history. In this case, only clean around the oil pan seal. For more information, see also ⇒ <i>Technical Information '373400 Leak around the ATF oil pan on PDK transmission (35/11)'</i>	
		Traces of oil after opening the hydraulic space	Clean the oil pan
		Fastening screws on oil pan loose/oil pan seal damaged	Replace oil pan and fastening screws ⇒ <i>Workshop Manual '375519 Removing and installing ATF pan'</i>
		Oil drain plug for clutch fluid loose or leaking	Replace oil drain plug, correct oil level ⇒ <i>Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'</i>
Oil drain plug for gearwheel set oil loose or leaking	Replace oil drain plug, correct oil level ⇒ <i>Workshop Manual '399035 Checking and topping up oil for final drive (with transmission oil)'</i>		

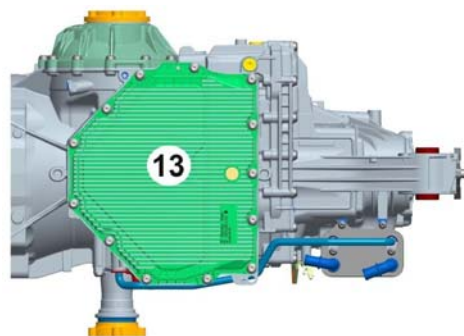
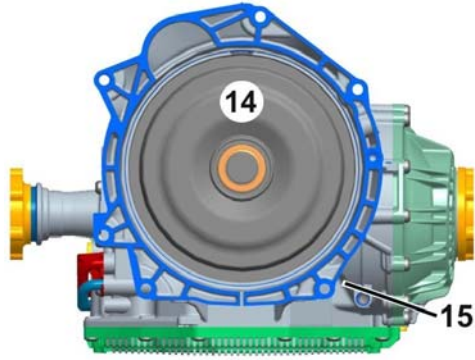
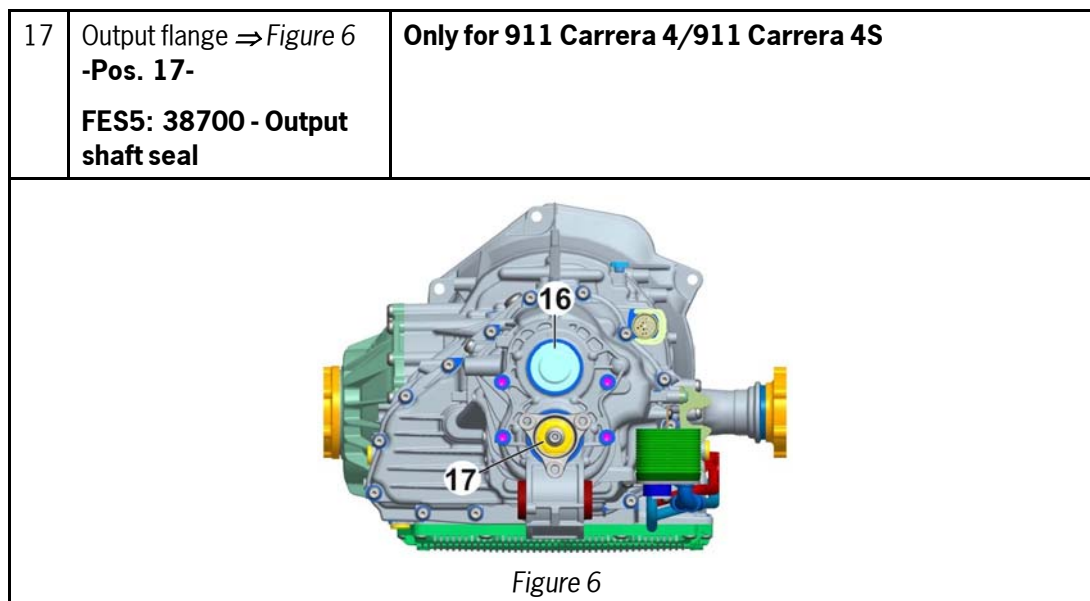


Figure 4

14	Leak around the clutch bell-housing ⇒ <i>Figure 5</i> -Pos. 14- FES5: 37530 - Seal for transmission housing	Apparent preservative grease leak	Check whether the leaking fluid is preservative grease or oil. If residual grease is leaking out, no further measures are required.
		Engine leaking	Find and repair leaks on the engine.
		Radial shaft seal on coupling hub damaged	Replace radial shaft seal ⇒ <i>Workshop Manual '386919 Removing and installing radial shaft seal on Porsche Doppelkupplung (PDK)'</i>
		O-ring on clutch cover damaged	Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i>
15	Oil leak from inspection bore for differential ⇒ <i>Figure 5</i> -Pos. 15- FES5: 37349 - Inspection bore for differential	Radial shaft seal on differential damaged	Replace PDK transmission ⇒ <i>Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'</i>
 <p><i>Figure 5</i></p>			
16	Leak in the assembly cover area ⇒ <i>Figure 6</i> -Pos. 16-	Assembly cover damaged	Replace assembly cover ⇒ <i>Workshop Manual '375019 Removing and installing assembly cover'</i>



Procedure: 3 **Remedial action and repair measures in the event of complaints relating to comfort (gearshift and drive-off quality).**

- 3.1 Create and save the Vehicle Analysis Log (VAL) using the PIWIS Tester.
- 3.2 Find and correct any faults that are present in other control units (DME, PSM, air conditioning, etc.).
- 3.3 Check both oil levels (clutch and transmission) and correct them if necessary ⇒ *Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'* and ⇒ *Workshop Manual '399035 Checking and topping up oil for final drive (with transmission oil)'*.



Information

If implausible test results are obtained (e.g. clutch fluid level too low and transmission oil level too high) and/or if fault memory entries are present in the PDK control unit, these faults must first be found and corrected as shown in the relevant flow chart.

- 3.4 Determine/clarify the exact problem.

When driving off while the engine is cold, there is first a delay and then power is transmitted with a hard slap (**does not concern turbo vehicles**).

Is this the problem?

If **it is**: ⇒ Step 3.4.1

If **not**: ⇒ Step 3.4.2

- 3.4.1 Read out the data version of the PDK control unit under “Extended identification”.

Is the data version **index 44 (or higher)** for the Porsche software part number (e.g. 997.618.375.**44**)?

If **it is**: ⇒ Step 3.5

If not: ⇒ Perform DME and PDK data version update using the PIWIS Tester I (PIWIS Tester V32.000 (or higher) or PIWIS Tester II V9.300 (or higher)):

PIWIS Tester > "(Control unit) Programming in the event of customer complaint" >> "Customer complaint **1**".

⇒ Continue with Step 3.5

3.4.2 Other complaints relating to comfort (gearshift and drive-off quality)

Read out the data version of the PDK control unit (PIWIS Tester > PDK control unit >> Identification menu item).

– If the PDK data version is < "**T082**" ⇒ Re-program the DME and PDK control unit using the PIWIS Tester I and installed software version **27.000** (or higher)/PIWIS Tester II and software versions 5.200 (or higher). Then continue with Step 3.5. If the PDK data version is >= "**T082**" ⇒ Continue with Step 3.5.

3.5 Teach the throttle valve using the PIWIS Tester:

Select PIWIS Tester > DME control unit >> menu item "System adaptation" >>> "Throttle valve adaptation" function.

3.6 Perform engine torque loss adaptation.

Conditions/procedure for engine torque loss adaptation:

- Engine temperature is at least 80°C.
- All loads switched off.
- PDK selector lever in position P.
- Allow engine to run at idle speed for 3 minutes with air conditioning switched off.
- Then allow engine to run at idle speed for 3 minutes with air conditioning switched on (high load).
- Switch off ignition and wait 15 seconds (adaptation values are stored).

3.7 Calibrate PDK by carrying out **minor** calibration routine ("Calibration without previous part replacement"):

Select PIWIS Tester > PDK control unit >> menu item "Calibration" >>> "Calibration without previous part replacement" function.

3.8 Create and save the Vehicle Analysis Log (VAL) using the PIWIS Tester.

3.9 Perform adaptation drive. During the adaptation drive, **change gear at least 30 times** initially (in "M" or "D").

3.10 Perform touchpoint adaptation.

Conditions/procedure for touchpoint adaptation:

- At least 30 gear changes (in "M" or "D") were carried out previously while driving the vehicle.

- Stop the vehicle on a level surface, but do not switch off the engine.
- Position steering wheel straight ahead.
- Do not switch any loads on or off.
- Hold the vehicle for three minutes in transmission range “D” with the foot brake pressed firmly. Do not press the accelerator pedal.
- Switch off ignition for at least 15 seconds (adaptation values are stored).

3.11 Continue the adaptation drive and again **change gear at least 30 times** (in “M” or “D”).

3.12 Repeat touchpoint adaptation (Step 3.10) **once**.

3.13 Continue the adaptation drive using the gears and rev ranges specified below and observe any other specifications.

3.13.1 Accelerate to rev range 1,700 rpm in **5th gear**.

Maintain rev range 1,700 rpm – 3,000 rpm in **5th gear** with a low operating load for three minutes.

3.13.2 Then, accelerate to rev range 1,700 rpm in **6th gear**.

Maintain rev range 1,700 rpm – 3,000 rpm in **6th gear** with a low operating load for three minutes.

3.14 End the adaptation drive.

3.15 Create and save the Vehicle Analysis Log (VAL) using the PIWIS Tester.

3.16 Leave the vehicle overnight if necessary and evaluate it again with regard to gearshift/drive-off quality the next day.

- If the vehicle checks out OK with regard to gearshift/drive-off quality ⇒ End of remedial action.
- If the vehicle does not show any improvement with regard to gearshift/drive-off quality, please contact your importer to find out what to do next.

Procedure: 4 **Procedure in the event of noises on the PDK transmission.**

If a complaint is received in relation to noises from the PDK transmission, please complete the following steps initially:

4.1 Create and save the Vehicle Analysis Log (VAL) using the PIWIS Tester.

4.2 Check to see if the noise is actually coming from the transmission.

4.3 Check how comparable vehicles behave in identical situations.

4.4 Check oil levels (clutch fluid and transmission oil level) and correct them if necessary ⇒ *Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'* and ⇒ *Workshop Manual '399035 Checking and topping up oil for final drive (with transmission oil)'*.

**Information**

If implausible test results are obtained (e.g. clutch fluid level too low and transmission oil level too high) and/or if fault memory entries are present in the PDK control unit, these faults must first be found and corrected as shown in the relevant flow chart.

- 4.5 Read out the data status of the PDK control unit (PIWIS Tester > PDK control unit >> menu item "Identification").
 - If the PDK data status is <"T082" ⇒ Re-program the DME and PDK control unit using the PIWIS Tester with test software version 25.000 (or higher) installed. Then continue with Step 4.6.
 - If the PDK data status is >="T082" ⇒ Continue with Step 4.6.
- 4.6 Teach the throttle valve using the PIWIS Tester:
Select PIWIS Tester > DME control unit >> menu item "System adaptation" >>> "Throttle valve adaptation" function.
- 4.7 Perform engine torque loss adaptation.

Conditions/procedure for engine torque loss adaptation:

- Engine temperature is at least 80°C.
- All loads switched off.
- PDK selector lever in position P.
- Allow engine to run at idle speed for 3 minutes with air conditioning switched off.
- Then allow engine to run at idle speed for 3 minutes with air conditioning switched on (high load).
- Switch off ignition and wait 15 seconds (adaptation values are stored).

If, after carrying out tests and/or correcting faults, the vehicle still has definite symptoms in relation to transmission noises, please document the **information specified below in PQIS:**

- **Create a sound file** of the noise or (if possible) a **video** recording with sound, which also shows the rev counter and the gear indicator.
- Provide a detailed **description** of the noise (e.g. rattling, grinding, whining, whistling, singing, ...)
- In which **rev range** does the noise occur?
- In which **gear** does the noise occur?
- At what **speed** does the noise occur?
- In which **load condition** does the noise occur (traction, overrun, part load, full load)?
- In which **operating state** does the noise occur (cold, warm)?
- Exactly **who** noticed the noise (customer, workshop)?

- What **work** has already been done?

Contact your importer to find out what to do next.

References: **Technical Information releases**

- ⇒ *Technical Information '033500 Vehicle Analysis Log (VAL) (15/08)'*
- ⇒ *Technical Information '373000 PDK transmission in limp-home mode: Fault codes P1552, P1990 and/or P1991 (77/09)'*
- ⇒ *Technical Information '375500 PDK transmission: Modified oil drain plug (23/09)'*
- ⇒ *Technical Information '373400 Leak around the ATF oil pan on PDK transmission (35/11)'*

Workshop Manual

- ⇒ *Workshop Manual '370235 Checking and topping up ATF (clutch fluid)'*
- ⇒ *Workshop Manual '399035 Checking and topping up oil for final drive (with transmission oil)'*
- ⇒ *Workshop Manual '373019 Removing and installing transmission control unit (PDK)'*
- ⇒ *Workshop Manual '387719 Removing and installing electrohydraulic control unit'*
- ⇒ *Workshop Manual '373419 Removing and installing Porsche Doppelkupplung (PDK)'*

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