

**911 GT3: Information on Measuring Engine-oil Level and Engine Oil Consumption (22/15)**

Revision: This bulletin replaces bulletin Group 1, #22/15, dated June 12, 2015.  
 A second attachment was added, titled "Engine Oil Level Measurement" and should be handed to the customer. Additional information was added to the end of Step 2.2 announcing this customer hand-out.

Model Year: **As of 2014**

Vehicle Type: **911 GT3/GT3 RS (991)**

Concerns: **Engine-oil level and engine oil consumption**

- Information:
- **Information for measuring the engine-oil level**
  - **Always measure the engine-oil level before using the vehicle on a race track**
  - **Information on engine oil consumption**
  - **Measure the oil consumption if the customer complains of "high engine oil consumption"**

This Technical Information is divided into the following two sections:

⇒ *Technical Information '170100 Engine-oil level and measuring engine-oil level'*

⇒ *Technical Information '170100 Engine oil consumption and measuring oil consumption'*

**Engine-oil level and measuring engine-oil level**

**NOTICE**

**Insufficient lubrication when engine-oil level is too low.**

- **Risk of damage to engine components**
  - **Risk of engine damage**
- ⇒ **Check the engine-oil level regularly before refuelling and before using the vehicle on the race track.**

Measuring the oil level: To **check the engine-oil level**, the **oil level must be measured** using the **multi-function display** in the instrument cluster under the **following general conditions**:

- Operating temperature of the engine is **at least 176° F (80° C)**
- Vehicle is stopped and **parked on a level surface**
- Transmission in selector-lever position "**P**", "**D**" or "**N**"
- Engine running for at least **3 minutes** at **idle speed**

Make sure, in particular, that you **do not interrupt idle speed** in the meantime by pressing the **accelerator pedal** because if you do, the **measurement will be cancelled**.

There are essentially two different ways of starting an oil level measurement:

1 Open the engine cover for at least 20 seconds.

⇒ The previously determined oil level value is deleted.

1.1 Call up the “**Oil measurement**” function in the multi-function display (main menu “**Vehicle**” > “**Oil measurement**”). The message “**No information on the oil level is available at present**” is displayed (⇒ *Oil level information in the multi-function display*).



*Oil level information in the multi-function display*

1.2 Measure the oil level by observing the required **general conditions**:

- Operating temperature of the engine is **at least 176° F (80° C)**
- Vehicle is stopped and **parked on a level surface**
- Transmission in selector-lever position “**P**”, “**D**” or “**N**”
- Engine running for at least **3 minutes** at **idle speed**

After measuring the oil level, the determined oil level is displayed on the multi-function display in the instrument cluster (⇒ *Oil level information in the multi-function display*).

2 Oil level measurement without first opening the engine cover.

When measuring the oil level without first opening the engine cover, the **oil level that was determined last** is displayed in the multi-function display.



*Oil level display on the multi-function display*



**Information**

The **displayed oil level value** might **not** correspond to the **current oil level** in some cases if, for example, the general conditions required for measuring the oil level have not been met for a long time and as a result, the oil level could not be measured during this time period.

If a distance of more than approx. 200 miles (300 km) was driven since the oil level was last measured, the oil level value that was determined last is deleted (similar to opening the engine cover for at least 20 seconds).

2.1 Call up the “**Oil measurement**” function in the multi-function display (main menu “**Vehicle**” > “**Oil measurement**”).

Depending on the distance driven since the oil level was last measured, either the message **"No information on the oil level is available at present"** (see ⇒ *Oil level information in the multi-function display -top-*) or the **oil level** that was determined **when the oil level was last measured** is displayed (⇒ *Oil level information in the multi-function display -bottom-*).

- 2.2 Measure the oil level by observing the required **general conditions**:
- Operating temperature of the engine is **at least 176° F (80° C)**
  - Vehicle is stopped and **parked on a level surface**
  - Transmission in selector-lever position **"P", "D" or "N"**
  - Engine running for at least **3 minutes** at **idle speed**

After measuring the oil level, the **new oil level** is displayed on the multi-function display in the instrument cluster.



*Oil level information in the multi-function display*



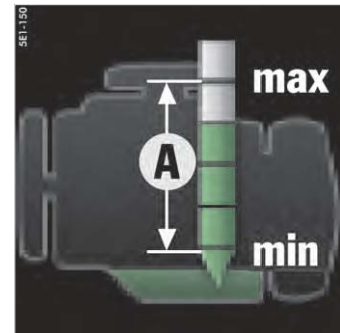
**Information**

If the oil level has not changed since it was measured last, the customer will see no change in the oil level display.

To ensure that the oil level is measured and the current oil level value is displayed, we recommend therefore that you **always open the engine cover for at least 20 seconds before measuring the oil level** in order to delete the previously determined oil level value.

**Recommendation for race track use:**

- Always check the engine-oil level **before driving the vehicle on a race track** in accordance with the procedure described earlier and by complying with the **required general conditions**.
- Set the oil level so that it is **3 segments above the Minimum marking** (⇒ *Segment display for engine-oil level*) because the engine oil expands at higher temperatures (approx. 212° F/100° C) and the display can then rise up as far as the Maximum marking.



*Segment display for engine-oil level*

⇒ Please also **inform your customers about this procedure** and give the additional information on engine oil level measurement and oil level display on the 911 GT3 (991) to your customers. This information for the 911 GT3 (991) from model year 2014 onwards can be found under >Standard forms>**Engine oil level measurement** and oil level display – Porsche 911 GT3 (991) "in the PIWIS information system.

## Engine oil consumption and measuring oil consumption

### Information: **General information on engine oil consumption**

Complaints relating to "oil consumption being too high" can generally be attributed to the following causes:

#### **a) The customer's perception:**

The customer's gut feeling is telling him/her that the engine oil consumption is too high, but the vehicle's actual oil consumption corresponds to technical requirements.

Porsche AG confirms that engine oil consumption of

- **US: up to 0.84 US qt per 620 miles (up to 0.8 liter per 1,000 km)**

under normal conditions (**without** race track driving) **does not indicate a technical defect.**

It is important to bear in mind here that new vehicles, especially the GT3, use more oil **in the first 6,200 miles (10,000 km)** or in the **engine's break-in phase** than vehicles with engines that have already been broken in because the components are "run in" during the first 6,200 miles (10,000 km) (even in modern engines). After 6,200 miles (10,000 km) the oil consumption should level off to a lower level.

#### **b) The customer's driving style and vehicle handling can sometimes cause a significant increase in engine oil consumption:**

- **Sporty driving, e.g. race track driving**
- Repeated use of the vehicle **after extended idle periods** of several days/weeks
- High engine load during long highway trips or when driving over high mountain passes
- Poor fuel quality.

### **Measuring oil consumption**

Precondition for measuring oil consumption:

- The customer reports that the engine's oil consumption is **US: greater than 0.84 US qt/620 miles (continuously greater than 0.8 liter/1,000 km)**, although the vehicle **mileage is greater than 6,200 miles (10,000 km)** and the vehicle had **not been driven on a race track** at the time the problem occurred.



**Information**

**Before doing any other work, make sure that:**

- there are **no visible signs of engine oil loss** on the engine and there are **no traces of oil** on the underbody panelling or on the chassis/underbody of the vehicle. ⇒ **Any oil leaks on the engine must** first be found and the causes must be **repaired/fixed** accordingly,
- the **specifications in the Owner's Manual and in the "Race Track Booklet"** for the vehicle concerning **approved engine oils, oil change intervals or oil additives were observed and complied with.**



**Information**

⇒ Enter and document the **test results** for the entire oil consumption measurement in the **"Engine oil consumption - 911 GT3" measurement sheet** ⇒ PIWIS Information system ⇒ **'Standard forms'**.

Tools and materials:

- Clean oil collection container (capacity of 10 liters)
- Oil measuring cup
- For Engine Oil Consumption Measurement Sheet - 911 GT3 (991), see PIWIS Information System > Standard forms >> "Engine Oil Consumption Measurement Sheet - 911 GT3 (991)" (PDF file)

Procedure:

**Measure engine oil consumption**

**1 Determine the engine-oil level using the PIWIS Tester.**

- **Prerequisite:** Vehicle is parked horizontally
- 1.1 **9818 - PIWIS Tester II** must be connected to the vehicle ⇒ Connect a charger to the battery ⇒ Switch on the Tester and ignition ⇒ Select the required vehicle.
- 1.2 Select the **"DME control unit"** in the 'Control unit overview' and press **•F12"** to confirm your selection.
- 1.3 Select **"Oil filling"** in the **'Maintenance/repairs'** menu and press **•F12"** to confirm your selection.
- 1.4 Read and follow the information/instructions on the Tester, carry out the steps as required and press **•F12"** to confirm.

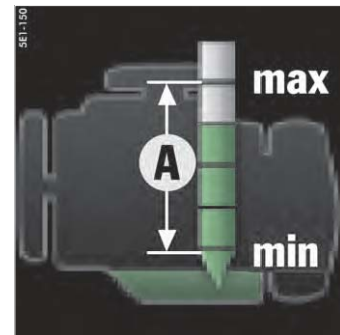
⇒ Once the measuring procedure has been carried out successfully, the oil level is displayed:

Display in %: 100% = Minimum oil level, 200% = Maximum oil level.

- 1.5 Enter the test result from the PIWIS Tester in the "**Engine Oil Consumption Measurement Sheet - 911 GT3 (991)**".

## 2 Display the engine-oil level in the instrument cluster.

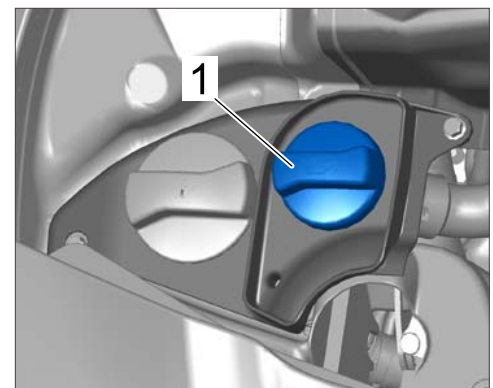
- 2.1 Call up the "**Oil measurement**" function in the multi-function display.
- 2.2 Start measuring the engine oil temperature at at least 194° F (90° C). Leave the engine running at idle speed (for at least 2 minutes) if necessary until the required engine oil temperature is reached.
- 2.3 Read off the engine-oil level on the segment display (⇒ *Segment display for engine-oil level* – example: **3 segments**) in the instrument cluster.
- 2.4 Enter the number of segments in the "**Engine Oil Consumption Measurement Sheet - 911 GT3 (991)**".



*Segment display for engine-oil level*

## 3 Drain engine oil and measure and document the amount of oil drained.

- 3.1 Remove engine guard, see ⇒ *Workshop Manual '108019 Removing and installing engine guard'*.
- 3.2 Open the engine cover.
- 3.3 Open the cap (⇒ *Cap on engine oil filler neck -1-*) on the service tray by turning it anti-clockwise.
- 3.4 Visually inspect the cap for damage.  
⇒ If the cap on the service tray is damaged, it must be replaced.



*Cap on engine oil filler neck*



**Hot fluid**

- **Danger of scalding**
- ⇒ **Let the fluid cool down.**
- ⇒ **Wear personal protective gear.**

3.5 Allow the engine oil temperature to cool down to **exactly 122° F (50° C)** (see oil temperature display in the instrument cluster/PIWIS Tester).

3.6 Unscrew oil drain plugs on the oil pan (⇒ *Oil drain plugs -1-*) and oil tank (⇒ *Oil drain plugs -2-*). **Do not remove the oil filter.**

3.7 Let the engine oil drip into a **clean, empty measuring container** for **exactly 10 minutes** and measure the amount of engine oil drained.

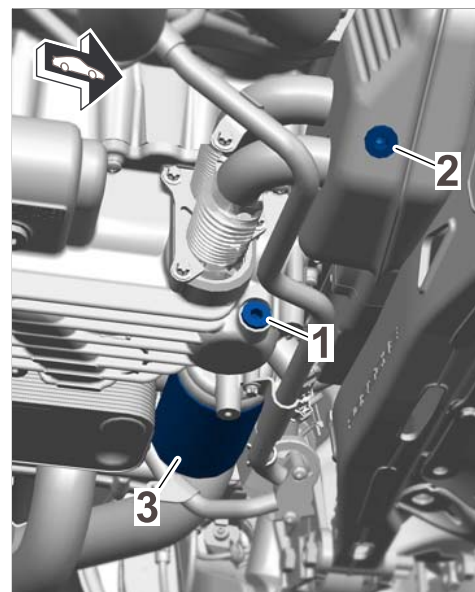
3.8 After draining the engine oil, fit **new** sealing rings on the drain plugs.

- Drain plug on **oil pan**: **Tightening torque 40 Nm (30 ftlb.)**
- Drain plug on **oil tank**: **Tightening torque 30 Nm (22 ftlb.)**

3.9 **Read off the engine number** on the engine and **enter it in the "measurement sheet"**.

3.10 **Measure the amount of engine oil drained** and **enter it in the "measurement sheet"**.

Compare the quantity with the test results shown on the PIWIS Tester and instrument cluster. If the value shown in the instrument cluster is considerably different to the value shown on the PIWIS Tester and the actual amount of engine oil drained, this fault must be checked and corrected separately.



*Oil drain plugs*

**CAUTION**

**Incorrect oil level**

- **Damage to engine and catalytic converter.**
- ⇒ **Always observe specification for oil fill quantities.**

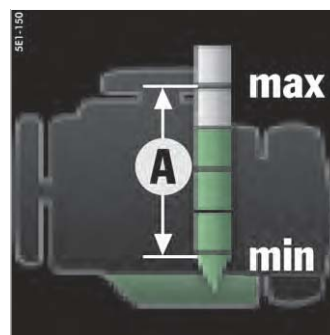


### Information

If you are sure that the existing (drained) engine oil complies with the specifications in the Owner's Manual relating to "approved engine oils, oil change intervals or oil additives", the **drained engine oil** must be **re-used**.

⇒ If this is not the case, however,

- **only new engine oil** that is **tested and approved by Porsche AG** may be used.
  - Dispose of used oil in accordance with legal requirements in your country.
- 4 **Fill in engine oil and adjust the engine-oil level to the test level for the oil consumption test drive.**
- 4.1 Use a clean funnel to fill **exactly 6.3 US qt (6.0 liters)** of engine oil (from the drained engine oil) **into the engine**.
- 4.2 Screw on and tighten cap on the service tray (⇒ *Cap on engine oil filler neck -1-*).
- 4.3 **Measure the engine-oil level again** as described earlier:
- **Step 1 – using the PIWIS Tester** ("Oil filling" function) **and**
  - **Step 2 – "Oil measurement" via the multi-function display** in the instrument cluster
- 4.4 Set the engine-oil level to **"3 segments above minimum"** using the determined segment display (see ⇒ *Segment display for engine-oil level*).
- One segment** on the segment display **corresponds to approx. 0.21 US qt (0.2 liter)** of engine oil.
- 4.5 Enter the amount of engine oil you have filled - and added, if necessary - in the **"Engine Oil Consumption Measurement Sheet - 911 GT3 (991)"**.



*Segment display for engine-oil level*

- 5 **Oil consumption test drive** can then be **carried out** (by the customer).

During the oil consumption test drive, the customer **must comply with the following specifications:**

- Perform test drive over a distance of **at least 620 miles (1,000 km)**
- **Document the driving profile in %**
- Amount of city driving, cross-country driving (country roads), highway driving and if necessary race track driving

**Also observe and comply with the following conditions:**

- Measure the oil level whenever you refuel, as described in ⇒ *Technical Information '170100 Engine-oil level and measuring engine-oil level'* and document the display in segments

- If the segment display **one segment above minimum** is reached **before a distance of 620 miles (1,000 km)** has been driven, contact a Porsche dealer about checking consumption and go to the workshop immediately
- The customer should not add engine oil unless the red warning message "Oil level below minimum" is displayed, but should contact and call to a Porsche dealer if necessary
- Otherwise, the test drive is only complete **after driving a distance of 620 miles (1,000 km)**

**Call to a Porsche dealer in order to determine the oil consumption.**

**6 Determine oil consumption on completing the test drive.**

- 6.1 Read off the current **mileage** and enter it in the "**Engine Oil Consumption Measurement Sheet**".
- 6.2 **Complete Steps 1, 2 and 3 again (as described earlier)** and document the determined values in the "**Engine Oil Consumption Measurement sheet**".
  - **Step 1 – Measure the engine-oil level using the PIWIS Tester ("Oil filling" function)**
  - **Step 2 – "Oil measurement" via the multi-function display** in the instrument cluster
  - **Step 3 – Drain engine oil and measure and document the amount of oil drained**



**Hot fluid**

- **Danger of scalding**
- ⇒ **Let the fluid cool down.**
- ⇒ **Wear personal protective gear.**

When draining the engine oil and measuring the amount of engine oil drained, pay particular attention to the following points:

- Allow the engine oil temperature to cool down to **exactly 122° F (50° C)** (see oil temperature display in the instrument cluster/PIWIS Tester).
- Let the engine oil drip into a **clean, empty measuring container** for **exactly 10 minutes** and measure the amount of engine oil drained.

- 6.3 After completing the test drive, compare the amount of engine oil drained with the amount of engine oil that was filled in before carrying out the test drive and calculate the **actual oil consumption** using the difference based on the mileage (km/mls) driven during the test drive. For help with the calculation, see "**Engine Oil Consumption Measurement Sheet - 911 GT3 (991)**".
- 6.4 Document the results in the "**Engine Oil Consumption Measurement Sheet**".

**7 Evaluate the actual oil consumption.**

- An engine oil consumption of **up to 0.84 US qt (0.8 liter) based on 620 miles (1,000 km)** must always be evaluated as **OK**.

**Exceptions:**

- The vehicle/engine (even with a replacement engine) still has not exceeded the first **6,200 miles (10,000 km)** or
- The vehicle is also used **for race track driving**.

**The engine oil consumption can be significantly higher under these conditions.**

If engine oil consumption of **significantly more than 0.84 US qt (0.8 liter) per 620 miles (1,000 km)** is calculated and if the vehicle was **neither used for race track driving nor shows a mileage of less than 6,200 miles (10,000 km)**, always contact the **Technical Support Dept.** to find out how to proceed.

References: ⇒ *Workshop Manual '170101 Checking engine-oil level'*

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