WC21 Staking Plug on Crankcase (Workshop Campaign)

Revision 1: **September 14, 2012**
This revision modifies the "Materials" section on page 2 to read: "Note: Please file a PTEC **PAV (Parts Availability) Request** for release of required parts....."

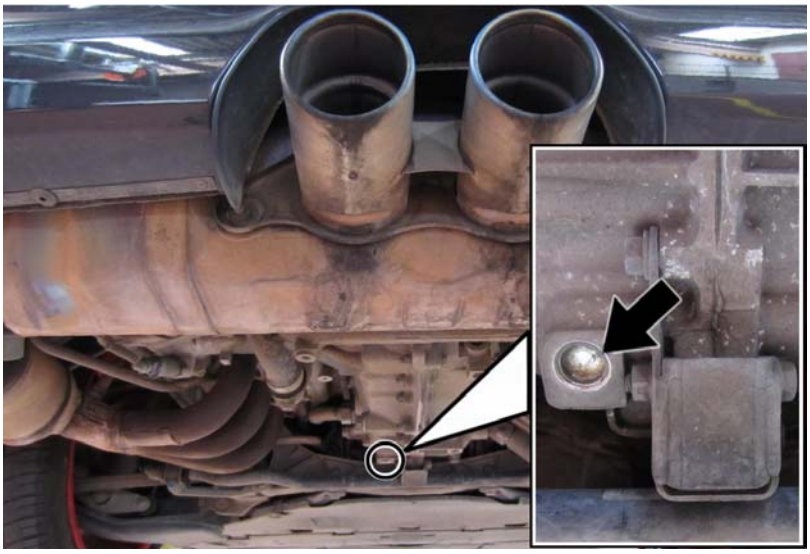
Model Year: **As of 2011 up to 2012**

Vehicle Type: **911 GT3 RS 4.0 (997)**

Concerns: **Plug on crankcase for cylinders 1–3**.

Information: This is to inform you of a voluntary Workshop Campaign on the above-mentioned vehicles. There is the possibility that a plug that was pressed into and sealed to the crankcase is not seated securely enough in the opening on the affected vehicles. As a result, this can cause the plug to become loose and as a result, oil can suddenly leak out of the crankcase, resulting in immediate engine damage.

Information
The affected plug is on the crankcase underneath cylinder 3 ⇒ *Installation position of plug*



Installation position of plug

Action Required:

Stake the plug in the opening on the crankcase and also seal it with sealing compound.

Information

The applied sealing compound must harden for **at least 12 hours** at **room temperature** 64–72° F. (18–22° C.) (leave the vehicle overnight).
Please bear this in mind when arranging an appointment with the customer and when planning your workshop schedule.

Affected Vehicles:

The VIN(s) can be checked by using PIWIS Vehicle Information link to verify if the campaign affects the vehicle. This Campaign is scope specific to the VIN! Failure to verify in PIWIS may result in an improper repair. This campaign affects 158 vehicles in North America.

Materials:

NOTE: PLEASE FILE A PTEC PAV (PARTS AVAILABILITY) REQUEST FOR RELEASE OF REQUIRED PARTS AND/OR TOOLS. NEITHER PARTS NOR TOOLS REQUIRED FOR THIS CAMPAIGN WILL BE AUTOMATICALLY ALLOCATED TO YOUR DEALERSHIP.

Sandpaper, 120 grit
Cleaning agent (isopropanol, acetone, Loctite 7063 or Interflon Metal Clean Aerosol)
Cardboard
Disposable gloves

000.043.204.35	⇒ Sealing compound	50 ml cartridge (approx. 10-15 ml required per vehicle)

Information

The sealing compound comes with a nozzle and a plunger for the cartridge. An additional metering gun is not required.

Tools:

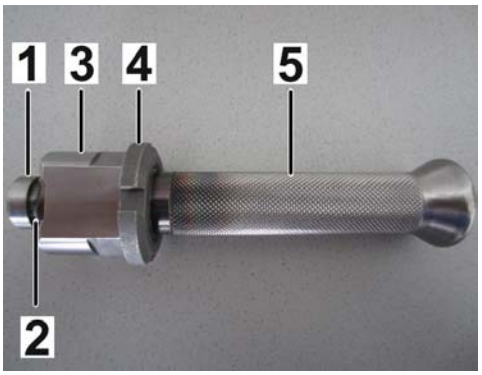
Wire brush
Steel hammer, 500 g
Metal or plastic spatula

000.043.207.87	Staking tool	1*

Information

* **One** staking tool is provided for each affected Porsche dealership.
Only **one** staking tool may be ordered for each affected Porsche dealership.

Overview of staking tool parts ⇒ *Overview of staking tool*
– Item 1: Guide pin
– Item 2: staking lugs
– Item 3: Stop
– Item 4: Lock nut
– Item 5: Grip handle



Overview of staking tool

NOTICE

Incorrect staking tool penetration depth setting

- **Risk of damage to bonding on plug**
- **Oil leak**

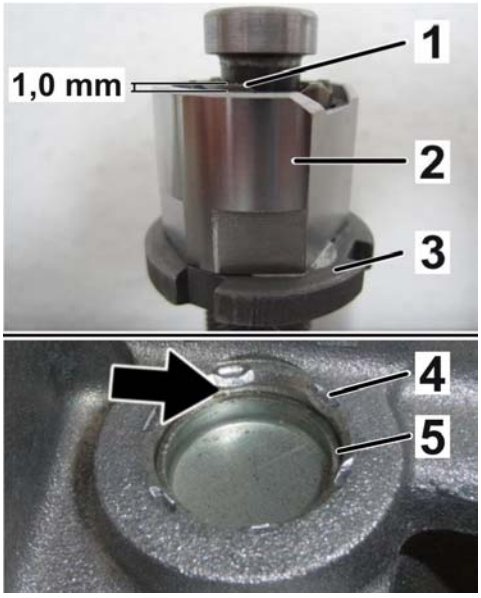
⇒ **Check that the staking tool penetration depth is set correctly.**

Information

The penetration depth of the staking tool is already preset correctly for the intended area of application when the tool is delivered and must not be changed.

The correct setting for the tool in the as-delivered condition is marked by a green marking on the tool.

- When the penetration depth of the staking tool is set correctly, the distance between the staking lugs ⇒ *staking tool setting* **-1-** and the stop ⇒ *staking tool setting* **-2- is 1.0 mm** ⇒ *staking tool setting*.



staking tool setting

- This setting ensures that the staking tool will not press the plug deeper into the bore, thereby damaging the bonding on the plug.
- Once staking is complete, the distance between the staking marks ⇒ *staking tool setting* **-4-** and the edge of the plug ⇒ *staking tool setting* **-5-** will be **approx. 0.3 mm** (⇒ *staking tool setting* **-arrow-**).

Work Procedure: See Attachment “A”.

Claim Submission: See Attachment “B”.

Attachment "A": **Work Procedure**

Stake the plug in the bore on the crankcase and seal it.

CAUTION

Hot components

- **Risk of burns**

⇒ **Let hot components cool down.**

⇒ **Wear personal protective gear.**

1 Raise the vehicle on a lifting platform ⇒ *Workshop Manual '4X00IN01 Lifting the vehicle'*.

2 Clean the area around the bore on the crankcase using a wire brush.
Also sand down the chamfer of the bore if necessary using fine sandpaper (120 grit) to get a smooth, even surface.

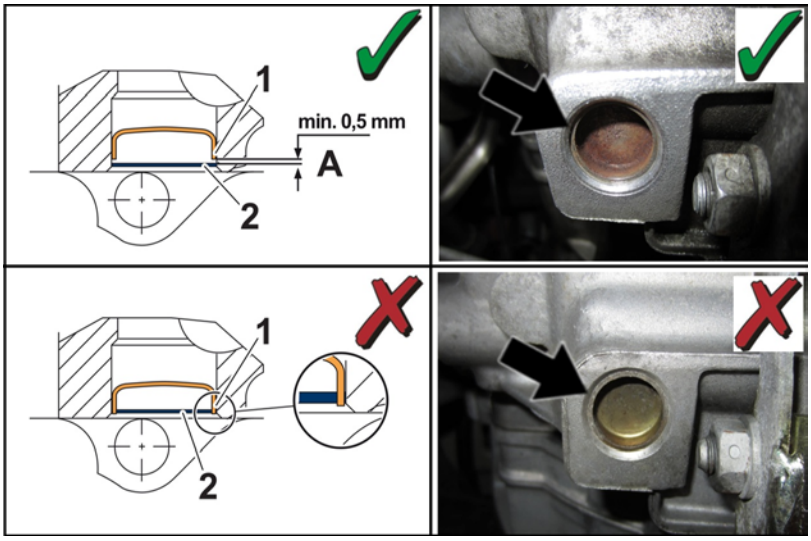
NOTICE

Plug installed at the wrong position

- **Risk of damage to bonding on plug**
- **Oil leak**

⇒ **Before staking, check the installation position of the plug in the bore on the crankcase.**

3 Check that the plug is seated at a sufficient depth in the bore.



Installation position of plug

- Staking is only possible if the plug is seated far enough in the bore so that between the edge of the plug ⇒*Installation position of plug* **-1-** and the edge of the chamfer of the bore ⇒*Installation position of plug* **-2-** there is a gap ⇒*Installation position of plug* **-A-** of **at least 0.5 mm**. If this is the case ⇒ **continue** with **Step 4**.

- If the gap between the edge of the plug ⇒*Installation position of plug* **-1-** and the edge of the chamfer of the bore ⇒*Installation position of plug* **-2- is less than 0.5 mm** or if the edge of the plug is flush with the edge of the chamfer or projects out over the edge of the chamfer ⇒*Installation position of plug* **-bottom, inset-, the plug must not be staked in the bore**. Otherwise, the plug can be pressed deeper into the bore during staking. This will damage the bonding on the plug, resulting in engine oil leaks. If staking is not possible because of the installation position of the plug, please take relevant pictures of the installation situation of the plug and contact Technical Support for advice on how to proceed.

4 Position the staking tool on the bore on the crankcase.

Information

If staking marks ⇒*Existing staking marks on crankcase* **-arrows-** are already visible at the bore on the crankcase, the plug must still be re-staked.
In this case, position the staking lugs of the tool so that they engage in the existing staking marks.

Existing staking marks on crankcase

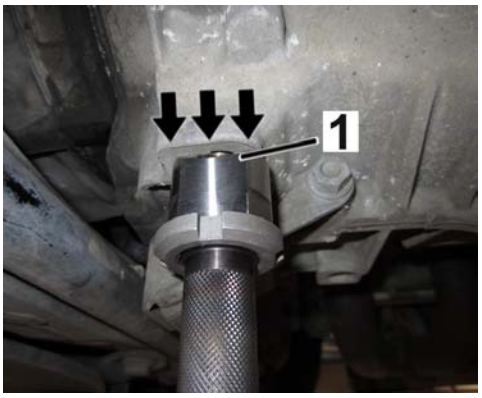
Information

There may be mold parting line burrs in the area around the bore on the crankcase.
To prevent the stop on the staking tool from lying on the burr, there is a cut-out on the stop on the staking tool.
When aligning the staking tool, always turn the cut-out on the tool towards the burr.

4.1 Guide the guide pin of the staking tool into the bore on the crankcase.

4.2 Turn the tool until the cut-out ⇒*Aligning staking tool* **-1-** is facing the burr ⇒*Aligning staking tool* **-arrows-** so that the tool is not lying on the burr.

4.3 Press the staking tool onto the crankcase so that the six staking lugs are touching the crankcase uniformly.



Aligning staking tool

5 Stake the plug in the bore.

To do this, tap the staking tool in as far as the stop (metallic sound) by giving it up to three equally strong taps using a steel hammer (500 g) ⇒ *Staking plug* **-top-**.

6 Check staking.

The plug is staked correctly in the bore as soon as the staking marks ⇒ *Staking plug* **-bottom, arrows-** are visible at the chamfer of the bore and material from the chamfer has been ejected towards the plug so that the diameter of the bore at the staking marks is narrower ⇒ *Staking plug* **-bottom, arrows-**.

Limiting the penetration depth of the staking tool ensures that the plug is not pressed deeper into the bore. The gap between the staking marks and the edge of the plug is still **approx. 0.3 mm**.

Staking plug

7 Also seal the plug.

WARNING

Toxic substances

- **Danger of poisoning or suffocation**

⇒ **Ventilate the work area well.**

⇒ **Never ingest or inhale.**

⇒ **Read specific information on the Hazard Sheet.**

⇒ **Wear personal protective gear.**

Information

- Before applying sealing compound, allow the crankcase to cool down to **ambient temperature**.
- The surfaces must be **free of oil, dirt, moisture and oxide layers**.
- Surfaces must be **prepared** according to instructions. Then **clean all surfaces carefully**.
- Leave cleaned surfaces to **dry off** as instructed. Always **adhere to the specified drying time** in order to guarantee adequate adhesion of the sealing compound.
- Always wear **clean gloves** when touching cleaned surfaces to avoid transferring dirt and sweat from your hands onto the surfaces.

7.1 Clean the bore, including the chamfer and plug and the area around the bore on the crankcase using suitable cleaning agent (isopropanol, acetone, Interflon Metal Clean Aerosol or Loctite 7063).

7.2 Wipe off the cleaned surface of the crankcase and plug using a non-greasy, lint-free cloth. Then wipe the surfaces again using a clean part of the cloth to ensure that there are no residues left.

7.3 Roughen the bore, including the chamfer and plug and the area around the bore on the crankcase by sanding the areas in circular movements using fine sandpaper (120 grit).

7.4 Clean the sanded surfaces again using suitable cleaning agent.

7.5 Wipe off the cleaned surfaces using a non-greasy, lint-free cloth.
Then wipe the surfaces again using a clean part of the cloth to ensure that there are no residues left.

7.6 Leave cleaned areas to dry off for **approx. 5 minutes**.

Information

Use-by date and storage of the sealing compound

- A use-by date is shown on the crimp of the tube of sealing compound. Do not continue to use the sealing compound after its use-by date.
- Store unused cartridges that are still in date as follows: Leave the application nozzle on the cartridge and seal the open tip with adhesive tape. Store the cartridge in a dry place at a temperature of 46–70° F. (8–21° C.).
- When you want to use a previously used cartridge that is still in date for other vehicles at a later time, dispose of the old application nozzle with the partly hardened sealant and use a new application nozzle.
- Before applying sealing compound on the vehicle, first press the contents of the application nozzle out of the cartridge and dispose of it. Then apply a bead of sealing compound to a piece of cardboard as a test and only then should you apply sealing compound on the vehicle.
- If sealing compound that is still in date has already hardened in both the application nozzle and cartridge, dispose of the entire cartridge and use a new cartridge.

7.7 Prepare sealing compound, Part No. 000.043.204.35, for application.

7.7.1 Cut open the sealing membrane of the cartridge with a knife.

7.7.2 Make a cut around the middle of the application nozzle with a knife so that a generous amount of sealing compound can then be applied.

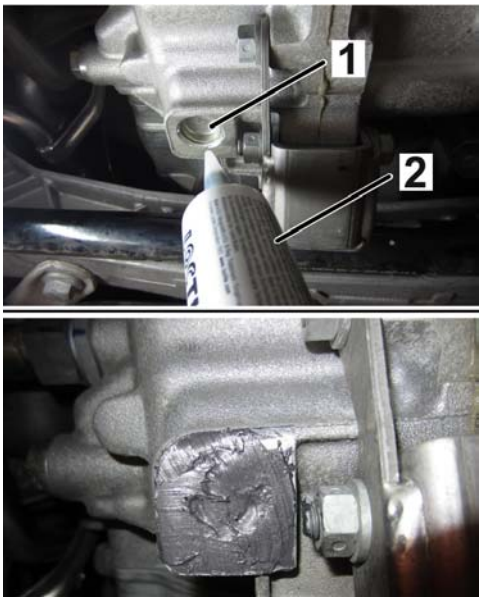
7.7.3 Insert the plunger into the cartridge and apply a bead of sealing compound approx. 100 mm long to a piece of cardboard as a test. This test bead can then be used to check how the sealing compound is hardening.

7.8 Apply sealing compound to the bore on the crankcase.

7.8.1 Fill the bore on the crankcase ⇒*Applying sealing compound* **-1-** completely with sealing compound ⇒*Applying sealing compound* **-2-**.

7.8.2 Then press the sealing compound into the bore using a spatula to fill the bore evenly with sealing compound.

7.8.3 Once the bore is completely filled with sealing compound, spread the sealing compound evenly on the surface of the crankcase ⇒*Applying sealing compound* **-bottom-**.



Applying sealing compound

7.8.4 Remove excess sealing compound if necessary.

Information

Once the sealing compound has been applied, observe and adhere to the following **specifications and hardening times**:

- The time period between applying sealing compound and handing the vehicle over to the customer (hardening time) must be **at least 12 hours** (leave the vehicle overnight).
- The **engine** in the vehicle must **not be started** during the **entire hardening time**.
- Allow the sealing compound to harden for **at least 12 hours** at **room temperature** 64–72° F. (18–22° C.). Higher temperatures (up to 104° F./40° C.) will not have a negative effect on the hardening process.
- Once the sealing compound has been applied, leave it to dry for **at least 45 minutes** initially until a skin forms on the surface of the sealing compound and the sealing compound starts to solidify and toughen. You can check this by touching the bead of sealant applied to the piece of cardboard using a spatula for example. **Do not move the vehicle and do not carry out any other work on the vehicle during this time** so as not to damage the joint by applying pressure too soon.
- Once the sealing compound has started to solidify, the vehicle can be removed from the lifting platform. Other work can be carried out on the vehicle if necessary or the vehicle can be moved to a suitable place in the workshop to allow the sealing compound to harden further.

8 Enter the workshop campaign in the Warranty and Maintenance booklet.

Attachment "B": **Claim Submission** - Workshop Campaign WC21
Warranty claims should be submitted via WWS/PQIS.

Open campaigns may be checked by using either the PIWIS Vehicle Information system or through PQIS Job Creation.
Labor, parts, and sublet will be automatically inserted when Technician is selected in WWS/PQIS. If necessary, the required part numbers will need to be manually entered into warranty system by the dealer administrator.

Working time:

Staking and sealing plug on crankcase — Labor time: **85 TU**

Materials required:

000.043.204.35	Sealing compound	1
WC210000001	Expendable items	1 *

* For warranty invoicing for Part No. WC210000001, the WWS Warranty system will automatically add into the “Miscellaneous item” section (sublet) of the claim after the claim has been submitted

Required tools:

000.043.207.87	Staking tool	1 **

** The staking tool must only be invoiced **once** for the first vehicle during **warranty processing** in each Porsche dealership.
Only the required **materials** must be invoiced in the campaign claim for the remaining vehicles on which work is carried out as part of this campaign in the Porsche dealership.

⇒ **Damage code WC21 066 000 1**

References: ⇒ *Workshop Manual ’4X00IN01 Lifting the vehicle’*

Dealership	Service Manager	_____	Shop Foreman	_____	Service Technician	_____	_____	_____	_____
Distribution									
Routing	Asst. Manager	_____	Warranty Admin.	_____	Service Technician	_____	_____	_____	_____