

**Replace Piston Cooling Oil Spray Nozzles (225/24)**

Model Line: **911 (911)**

Model Year: **As of 1965 up to 1977**

Concerns: **Piston cooling oil spray nozzles**

Cause: **Due to a supplier error, piston cooling oil spray nozzles were not installed on Porsche 911 (911) vehicles in accordance with specifications.**

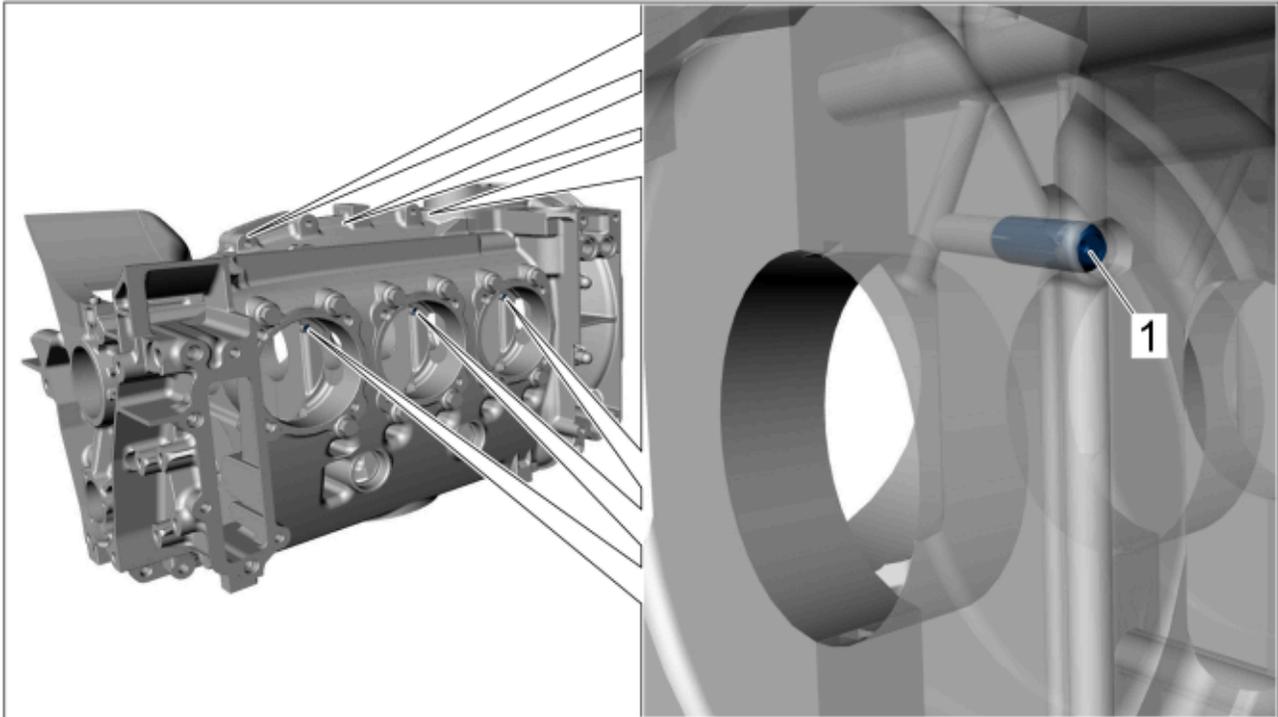
This can cause loosening of piston cooling oil spray nozzles from the crankcase, and thus, to insufficient lubrication and oil pressure dips.

**Crankcases with the following part numbers are affected:**

- 91110100145
- 90110100146
- 90110100147

Action: Replace piston cooling oil spray nozzles.

Installation  
Position:



*Installation position of piston cooling oil spray nozzles*

1 – Piston cooling oil spray nozzle

### Required parts

Parts Info:

Part No.	Designation	Quantity
91110101101	⇒ Piston cooling oil spray nozzle	6 piece(s)
<b>Additional required parts for vehicles for which the engine must be dismantled and assembled:</b>		
91110217100	⇒ Cheese head bolt	6 piece(s)
91410317101	⇒ Connecting rod bolt	12 piece(s)
90110317302	⇒ Nut	12 piece(s)
91410314102	⇒ Connecting rod bearing shell	12 piece(s)
90110113100	⇒ Bearing shell I	2 piece(s)
91110113302	⇒ Bearing shell	12 piece(s)
91110090705	⇒ Sealing kit for engine 1	1 piece(s)
91110090503	⇒ Sealing kit for engine cylinder/cylinder head	1 piece(s)

Material: **Required materials** (usually already available in the Porsche Center):

Part No.	Designation – Location of use	Quantity
92810192100	⇒ Loctite 270 – Bonding of piston cooling oil spray nozzle in magnesium crankcase	As required
....	⇒ Acetone solvent – Cleaning of the drill holes and crankcase	As required



#### Information

Only acetone is permitted as a solvent. No other solvents may be used.

#### Required tools

- Tools:
- Power drill with bit stop, commercially available
  - Metal drill 4 mm, commercially available
  - Threaded cutter M5 (finish cutter no. 3)
  - Threaded cutter M6 (pre-cutter no. 1)

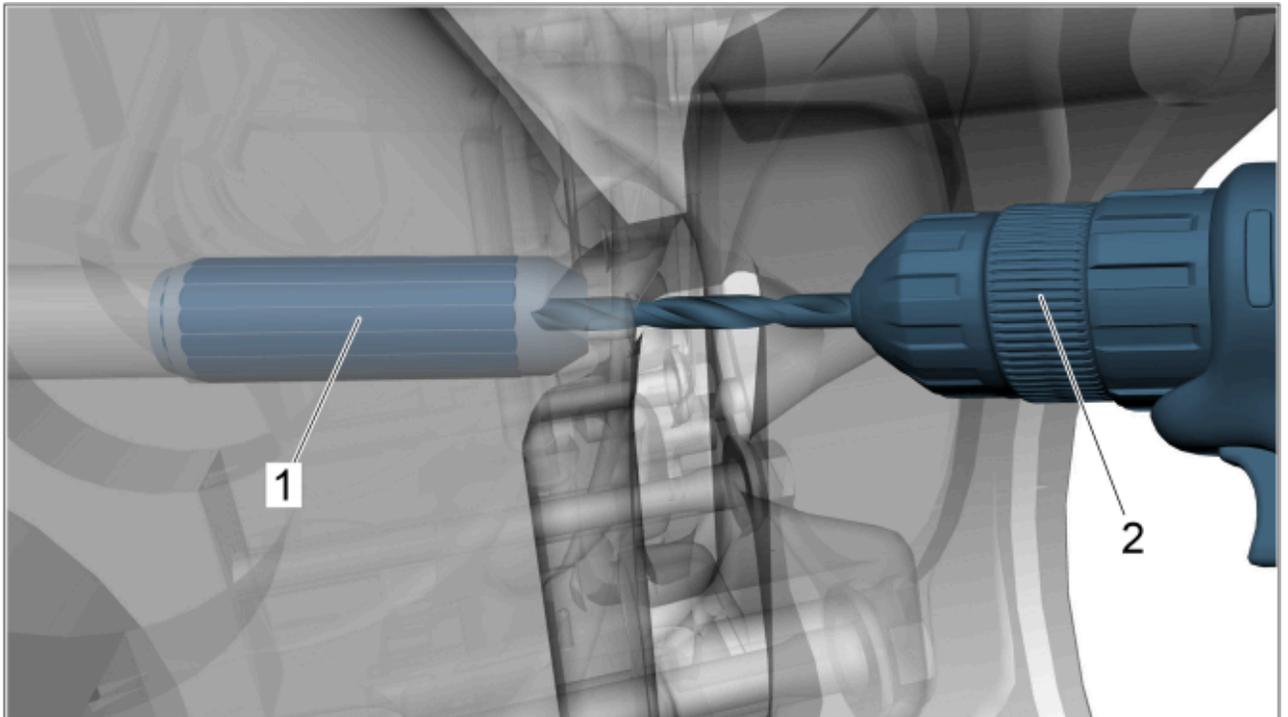
#### Preparatory work

- Work Procedure: 1 **If necessary:** Remove and disassemble engine.
- 2 Disassemble crankcase.

#### Replace piston cooling oil spray nozzles

- Work Procedure: 1 Remove previous piston cooling oil spray nozzle ⇒ *Drill piston cooling oil spray nozzle -1-*.
- 1.1 Equip suitable drill ⇒ *Drill piston cooling oil spray nozzle -2-* with a **4 mm metal drill** and set depth stop to a 2 mm drilling depth.
  - 1.2 Position drill in ⇒ *Drill piston cooling oil spray nozzle -2-* the center of the piston cooling oil spray nozzle ⇒ *Drill piston cooling oil spray nozzle -1-* and drill a 2 mm deep hole into the piston cooling oil spray nozzle.  
**Make sure that the crankcase is not damaged during drilling.**
  - 1.3 Remove cover, spring and ball from the piston cooling oil spray nozzle ⇒ *Drill piston cooling oil spray nozzle -1-*.
  - 1.4 Screw in **thread cutter M5 (pre-cutter no. 3)** until it ⇒ *Drill piston cooling oil spray nozzle -1-* engages firmly in the piston cooling oil spray nozzle.  
If **thread cutter M5 (pre-cutter no. 3)** is not adequate, use **thread cutter M6 (pre-cutter no. 1)** as an alternative for better attachment.

- 1.5 Pull piston cooling oil spray nozzle ⇒ *Drill piston cooling oil spray nozzle -1-* out of the crankcase bore hole using the fixed thread cutter.
- 1.6 Repeat campaign steps 1.1 to 1.5. for all piston cooling oil spray nozzles still installed ⇒ *Drill piston cooling oil spray nozzle -1-*.
- 1.7 Remove piston cooling oil spray nozzle ⇒ *Drill piston cooling oil spray nozzle -1-*, which have already come loose from the drill holes in the crankcase.



*Drill piston cooling oil spray nozzle*

- 2 Remove chips created from crankcase and clean crankcase.



#### Information

Only perform cleaning in well-ventilated rooms.

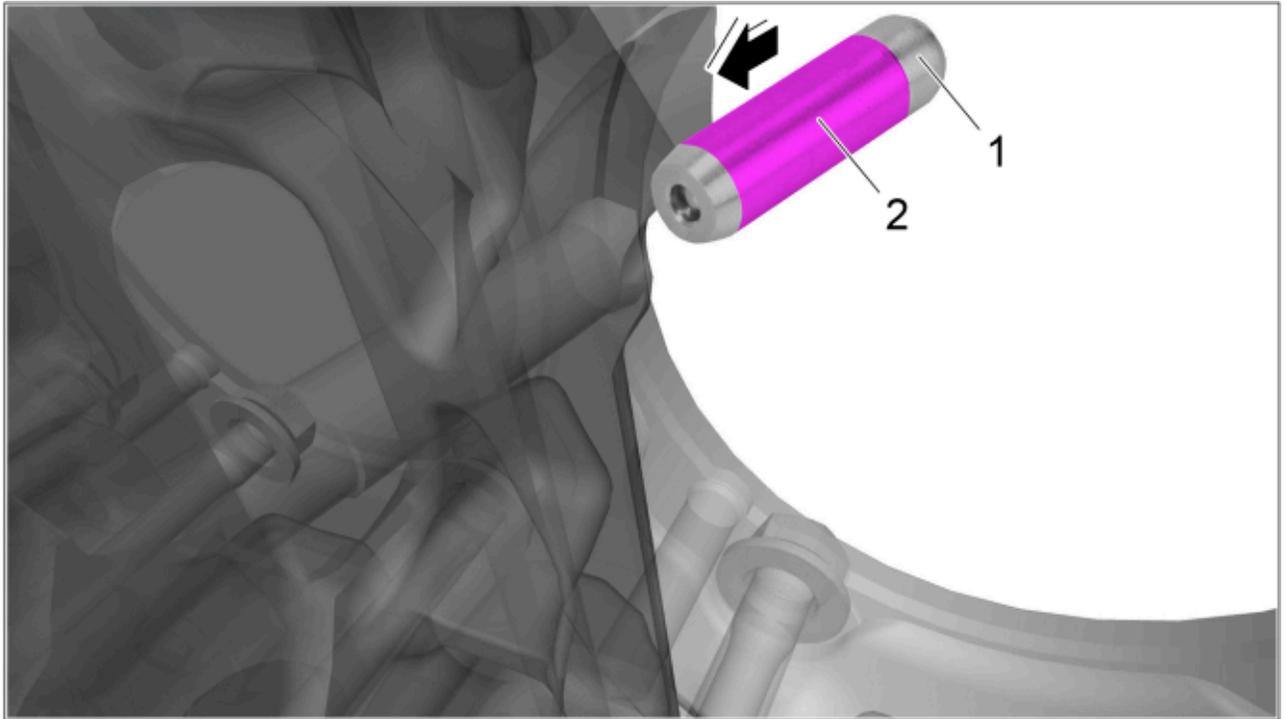
- 3 Clean drill holes.
  - 3.1 Put on protective goggles and clean drill holes from inside to outside with compressed air.  
**The compressed air must not be oiled.**
  - 3.2 Clean drill holes using acetone solvent and screwdrivers protected with lint-free cloths.



### Information

To bond the new piston cooling oil spray nozzle, the drill holes and piston cooling oil spray nozzle must be free of oil and grease.

- 4 Install **new** piston cooling oil spray nozzle ⇒ *Bond piston cooling oil spray nozzle -1-*.
  - 4.1 Clean piston cooling oil spray nozzle ⇒ *Bond piston cooling oil spray nozzle -1-* in the adhesive area ⇒ *Bond piston cooling oil spray nozzle -2-* with the acetone solvent.  
**Do not touch the adhesive area after cleaning.**
  - 4.2 Coat piston cooling oil spray nozzle ⇒ *Bond piston cooling oil spray nozzle -1-* in the adhesive area ⇒ *Bond piston cooling oil spray nozzle -2-* flat and all around **with Loctite 270**.
  - 4.3 Press piston cooling oil spray nozzle ⇒ *Bond piston cooling oil spray nozzle -1-* manually into the drill hole up to the anchor stop.  
**Check the following while doing this:**
    - Observe assembly direction ⇒ *Bond piston cooling oil spray nozzle -Arrow-*! The ball must point towards the bearing block.
    - The piston cooling oil spray nozzle ⇒ *Bond piston cooling oil spray nozzle -1-* does **not need** caulking.
  - 4.4 If necessary, remove any excess **Loctite 270** with a clean and lint-free cloth.
  - 4.5 Repeat campaign steps 4.1 to 4.4. for the remaining piston cooling oil spray nozzles ⇒ *Bond piston cooling oil spray nozzle -1-*.
  - 4.6 After 12 hours of drying, check oil spray nozzles, check piston cooling ⇒ *Bond piston cooling oil spray nozzle -1-* with compressed air for passage.



*Bond piston cooling oil spray nozzle*

### Follow-up actions

- Work Procedure: 1 **If necessary:** Replace crankshaft and connecting rod bearings (only when squirters have become dislodged during operation).
- 2 Assemble the crankcase.
-  **Information**  
Please ensure that all squirters are accounted for and removed.
- 3 **If necessary:** Assemble and install engine.

### Warranty



#### Information

Claims must be manually entered in the WWS Claim Cockpit via the '**Create claim**' option. The PC then selects '**Customer in workshop without vehicle**' and enters in the relevant information.

The labor positions provided below are not published in PCSS and must be used as point of reference. The labor performed must be claimed via **SUBLET**. An invoice must be attached to the WWS claim to support work performed. The TUs invoiced must not exceed the published time below.

For inquiries pertaining to warranty claiming, please direct via PRMS: **Warranty Support** —> **Warranty** —> **Parts Warranty** —> **PCNA Warranty Support** —> **Jonathon Kuser**

LP	Labour position	Time units (TU)
100119	Remove and install engine	300
100137	Disassemble and assemble engine	3500
132756	Replace piston cooling oil spray nozzles (engine previously disassembled) Includes: Clean the crankcase Replace crankshaft and connecting rod bearings	500
132756	Replace piston cooling oil spray nozzles (new crankcase) Includes: Clean the crankcase	250

WWS encoding:

<b>Part ID (FES5)</b>	1327	Oil Spray nozzle for piston cooling
<b>Damage code (SA4)</b>	97 FA	Fault types

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