

**WPH8 - Replacing Power-Steering Gear (Workshop Campaign)**

Important: **CRITICAL WARNING** -This campaign includes steps where control unit(s) in the vehicle will be programmed with the PIWIS Tester. The vehicle voltage must be maintained between 13.5 volts and 14.5 volts during this programming. Failure to maintain this voltage could result in damaged control unit(s). Damage caused by inadequate voltage during programming is not a warrantable defect. The technician must verify the actual vehicle voltage in the PIWIS Tester before starting the campaign and also document the actual voltage on the repair order.

Model Year: **As of 2022 up to 2023**

Model Line: **Panamera (971)**

Concerns: **Power steering gear**

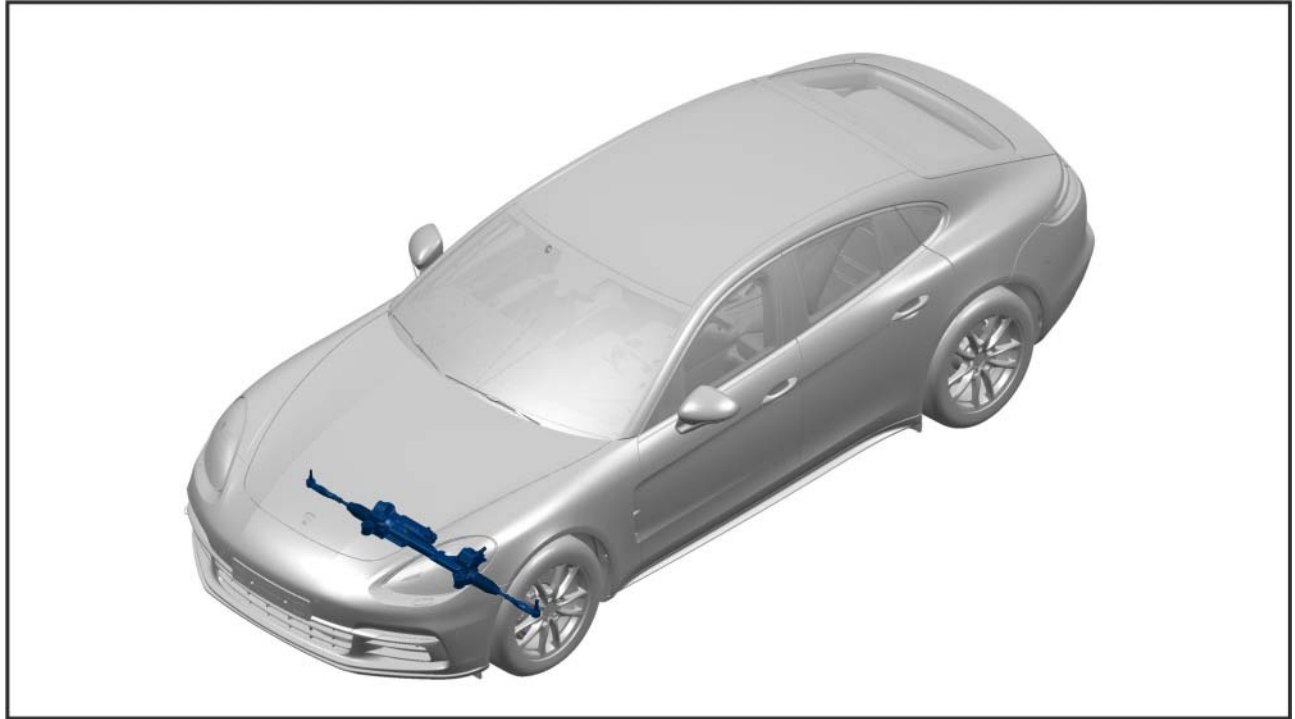
Cause: **There is a possibility that a power steering gear installed on the affected vehicles does not meet the required specifications.**

This can lead to noise and a change in the feel during steering.

Action: Replace power steering gear.

Affected Vehicles: Only vehicles assigned to the campaign (see also PCSS Vehicle Information).

Installation  
Position:



*Installation position for power steering gear*

### Required parts and materials

Parts Info:

Part No.	Designation – Location	Number
<b>Vehicles without rear axle steering (M no. 0N1)</b>		
971423051EM	⇒ Power-steering gear with tie rods	1 piece
<b>or</b>		
<b>Vehicles with rear axle steering incl. Power steering Plus (M no. 0N5):</b>		
971423051EN	⇒ Power-steering gear with tie rods	1 piece
<b>Additionally required parts:</b>		
9A700499500	⇒ Hexagon collar nut, M12 x 1.5 – Tie-rod ball	2 pieces

WHT004955A	⇒ Hex socket head screw – Steering column universal joint for at the power steering gear	1 piece
N 10784702	⇒ Hexagon flange bolt, M12 x 1.5 x 85 – Power steering gear on front axle carrier	2 pieces
PAF104029	⇒ Hexagon collar nut, M12 x 1.5 – Power steering gear on front axle carrier	2 pieces
N 91259801	⇒ Round head screw, M8 x 20 Mounting anti-roll bar to front axle carrier	2 pieces
N 10609207	⇒ Hexagon collar nut, M8 Mounting anti-roll bar to front axle carrier	2 pieces
N 91244301	⇒ Hexagon-head bolt with hexagon socket head (Duo) M12 x 1.5 x 90 – Mounting anti-roll bar to body	6 pieces
N 91260401	⇒ Hexagon-head bolt with hexagon socket head (Duo), M10 x 45 Mounting anti-roll bar to front axle carrier	8 pieces
PAF108648	⇒ Hexagonal fit bolt with flange M8 x 80 - Power steering gear on anti-roll bar mounting	1 piece
N 10435506	⇒ Hexagon collar nut, self-locking M8 - Power steering gear on anti-roll bar mounting	1 piece
N 10714101	⇒ Hexagon flange bolt, M10 x 25 – Strut on body	2 pieces
N 91006202	⇒ Hexagonal bolt (combination) M10 x 35 – Anti-roll bar on anti-roll bar mounting	4 pieces
N 0150818	⇒ Hexagon collar nut, M12 x 1.5 – Connecting link to anti-roll bar	2 pieces
N 10793603	⇒ Hexagon-head bolt, M12 x 1.5 x 60 – Connecting link to anti-roll bar	2 pieces

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

Part No.	Designation - Location	Quantity
00004330508	⇒ Optimoly TA (aluminium paste) - Wheel centring surfaces on the wheel hub	0.02 pieces

### Required tools

- Tools:
- Threaded bolts for installing wheel
  - Assembly wedge
  - Plastic-coated assembly lever
  - Torque wrench, 2–10 Nm (1.5–7.5 ftlb.), e.g. **V.A.G 1783 - torque wrench, 2–10 Nm (1.5–7.5 ftlb.)**
  - Torque wrench, 6–50 Nm (4.5–37 ftlb.), e.g. **V.A.G 1331A - torque wrench, 6–50 Nm (4.5–37 ftlb.)**
  - Torque wrench 40–200 Nm (30–148 ftlb.), e.g. **V.A.G 1332A - Torque wrench 40–200 Nm (30–148 ftlb.)**
  - Battery charger with a current rating of **at least 90 A**, e.g. **VAS 5908 - battery charger 90 A**
  - **P90999 - PIWIS Tester 4**
  - **P90009 - Puller**
  - **VAS 6883A - Insulated tool set**
  - **VAS 6931 - Transmission and gearbox jack**
  - **VAS 6918 - Quick-clamping unit**
  - **VAS 6826 - Steering wheel balance**
  - **VAS 6430/4 - Lane Keep Assist calibration board**
  - **VAS 6350A - Calibration unit**
  - **T40262 - Locking cap**
  - **VAS 6410 - Contact surface cleaning set**
  - **VAS 6558/9-6A - High-voltage test adapter**
  - **VAS 6558A - High-voltage testing module**
  - **9229/1 - Puller hook**
  - **T10188 - Insertion tool**
  - **T10187 - Press-out tool**
  - **WE 1383 - Hybrid warning signs**
  - **Wheel center mounting VAS 6350**

#### Additionally required tools for vehicles with Night View Assist (M no. 9R1)

- **VAS 6430/1A - Adjustment device with reflector**
- **VAS 6430/3 - Mirror for adjustment device**
- **VAS 6430/6 - Night View Assist calibration unit**

#### Additionally required tools for vehicles with adaptive cruise control ACC (M no. 3V1)

- **VAS 6430/1A - Adjustment device with reflector**
- **VAS 6430/3 - Mirror for adjustment device**

**Additionally required tools for vehicles with Park Assistance systems incl. Surround View (M no. 8A4)**

- **VAS 721 001 - Calibration System**

### Replacing power steering gear

- Work Procedure:
- 1 Remove power steering gear and install **new** power steering gear. ⇒ *Workshop Manual '489019 Removing and installing power steering gear'*
  - 2 Code **new** power steering gear using **P90999 - PIWIS Tester 4**. ⇒ *Workshop Manual '489055 Replacing power steering gear'*
  - 3 Teach **new** power steering gear. ⇒ *Workshop Manual '489025 Teaching power steering gear'*
  - 4 Enter the campaign in the Warranty and Maintenance logbook.

### Warranty processing



#### Information

The specified labor times were determined specifically for carrying out this campaign and include all necessary preliminary and subsequent rework. The labor times may differ from the Labor times published in the Labor Operation List in PCSS.

#### Scope 1: **Replacing power steering gear**

Relevant for **Panamera (971)** with the following equipment:

- Adaptive air suspension (**M no. 1BK**)
- without Adaptive cruise control ACC (**M no. 3V1**)

#### Labor time:

Includes:	Removing and installing power steering gear Removing and installing mounting anti-roll bar Performing suspension alignment of the vehicle Connecting and disconnecting battery charger Connecting and disconnecting PIWIS Tester Coding and teaching power steering gear Reading out and erasing fault memories	Labor time: <b>526 TU</b>
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#### Required parts:

**Vehicles without rear axle steering (M no. 0N1)**

971423051EM	Power-steering gear with tie rods	1 piece
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or

**Vehicles with rear axle steering (M no. 0N5)**

971423051EN Power-steering gear with tie rods 1 piece

**Additionally required parts:**

9A700499500 Hexagon collar nut, M12 x 1.5 2 pieces

WHT004955A Hex socket head screw 1 piece

N 10784702 Hexagon flange bolt, M12 x 1.5 x 85 2 pieces

PAF104029 Hexagon collar nut, M12 x 1.5 2 pieces

N 91259801 Round head screw, M8 x 20 2 pieces

N 10609207 Hexagon collar nut, M8 2 pieces

N 91244301 Hexagon-head bolt with hexagon socket head (Duo) M12 x 1.5 x 90 6 pieces

N 91260401 Hexagon-head bolt with hexagon socket head (Duo), M10 x 45 8 pieces

PAF108648 Hexagonal fit bolt with flange M8 x 80 1 piece

N 10435506 Hexagon collar nut, self-locking M8 1 piece

N 10714101 Hexagon flange bolt, M10 x 25 2 pieces

N 91006202 Hexagonal bolt (combination), M10 x 35 4 pieces

N 0150818 Hexagon collar nut, M12 x 1.5 2 pieces

N 10793603 Hexagon-head bolt, M12 x 1.5 x 60 2 pieces

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

00004330508 Optimoly TA (aluminium paste) 0.02 pieces

⇒ **Damage number WPH8 0000 2**

Scope 2:

**Replacing power steering gear**

Relevant for **Panamera (971)** with the following equipment:

- Adaptive air suspension (**M no. 1BK**)
- Adaptive cruise control (**M-no. 3V1**)

**Labor time:**

Includes: Removing and installing power steering gear  
 Removing and installing mounting anti-roll bar  
 Performing suspension alignment of the vehicle  
 Connecting and disconnecting battery charger  
 Connecting and disconnecting PIWIS Tester  
 Adjusting distance measuring sensor control unit  
 Coding and teaching power steering gear  
 Reading out and erasing fault memories

Labor time: **582 TU**

**Required parts:**

**Vehicles without rear axle steering (M no. 0N1)**

971423051EM Power-steering gear with tie rods 1 piece

or

**Vehicles with rear axle steering (M no. 0N5)**

971423051EN Power-steering gear with tie rods 1 piece

**Additionally required parts:**

9A700499500	Hexagon collar nut, M12 x 1.5	2 pieces
WHT004955A	Hex socket head screw	1 piece
N 10784702	Hexagon flange bolt, M12 x 1.5 x 85	2 pieces
PAF104029	Hexagon collar nut, M12 x 1.5	2 pieces
N 91259801	Round head screw, M8 x 20	2 pieces
N 10609207	Hexagon collar nut, M8	2 pieces
N 91244301	Hexagon-head bolt with hexagon socket head (Duo) M12 x 1.5 x 90	6 pieces
N 91260401	Hexagon-head bolt with hexagon socket head (Duo), M10 x 45	8 pieces
PAF108648	Hexagonal fit bolt with flange M8 x 80	1 piece
N 10435506	Hexagon collar nut, self-locking M8	1 piece
N 10714101	Hexagon flange bolt, M10 x 25	2 pieces
N 91006202	Hexagonal bolt (combination), M10 x 35	4 pieces
N 0150818	Hexagon collar nut, M12 x 1.5	2 pieces
N 10793603	Hexagon-head bolt, M12 x 1.5 x 60	2 pieces

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

00004330508 Optimoly TA (aluminium paste) 0.02 pieces

⇒ Damage number WPH8 0000 2

**Important Notice:** Technical Bulletins issued by Porsche Cars North America, Inc. are intended only for use by professional automotive technicians who have attended Porsche service training courses. They are written to inform those technicians of conditions that may occur on some Porsche vehicles, or to provide information that could assist in the proper servicing of a vehicle. Porsche special tools may be necessary in order to perform certain operations identified in these bulletins. Use of tools and procedures other than those Porsche recommends in these bulletins may be detrimental to the safe operation of your vehicle, and may endanger the people working on it. Properly trained Porsche technicians have the equipment, tools, safety instructions, and know-how to do the job properly and safely. Part numbers listed in these bulletins are for reference only. The work procedures updated electronically in the Porsche PIWIS diagnostic and testing device take precedence and, in the event of a discrepancy, the work procedures in the PIWIS Tester are the ones that must be followed.

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