

Noise Symptom – Clicking Noises from the Area of the Front Axle: Observe Specified Procedure (SY 109/21)

Change overview

Version	Date	Change
0	12/15/2021	▪ First publication
1	04/03/2023	▪ Dimension in the section "Check rim, brake disc and wheel hub for geometric discrepancies" adapted from 0.05 mm to 0.1 mm
2	06/02/2026	▪ Remedial action revised (retrofitting friction plates)

Model Line: **911 (991)**

Model Year: **As of 2014**

Equipment: **Central wheel lock (M-no. 478)**

Concerns: **Front wheel mount**

Symptom: The customer complains about clicking noises from the front axle area when turning or turning at slow speeds.

Cause: Micro-movements between the contact surfaces of the wheel and brake disc may occur while driving. These micro-movements may occur due to the following main causes:

- Reduced preload on the central wheel lock
- Reduced coefficient of friction between the surfaces
- Geometric discrepancies



Information

The stick-slip effect is the jerky sliding of solid bodies moving against each other. This phenomenon occurs when a body is moved whose static friction is significantly greater than the sliding friction.

Remedial Action: Check the front wheel mount components as described below and retrofit friction plates on the front axle after successful inspection.

When checking the components, ensure that the sequence described below is followed:

- Check central wheel lock; for instructions, see: ⇒ *Technical Information 'Checking central wheel lock'*
- Clean contact surfaces of rim and brake disc and check for damage; for instructions, see: ⇒ *Technical Information 'Clean contact surfaces of rim and brake disc and check for damage'*
- If no damage is then found on the wheel assembly, retrofit friction plates on the left and right front axle; for instructions, see: ⇒ *Technical Information 'Retrofit friction plates between rim and wheel hub'*

**Information**

The wheel design with central locking was originally developed for racing circuit use. This allows the wheels to be changed quickly during a race. Today, however, wheel and hub designs with central locking on road vehicles differ significantly from those of pure racing vehicles. Therefore, the following guidelines and precautions must always be observed when removing or installing the wheels of a road vehicle with central locking.

- The vehicle must be on a lift and the wheels must hang freely (no contact with the ground) while the central locking nut is tightened. This ensures that the wheel is properly centered on the hub.
- The parking brake must not be used to hold the rear wheels against each other when tightening. The parking brake mechanism cannot withstand the high forces when tightening the central locking device and can be damaged. The damage may not be immediately visible. This applies, in particular, to the motor-operated electronic parking brake actuators.
- Impact tools must never be used to loosen, remove or tighten the central locking device. The nut and hub can be damaged and the damage may not be immediately apparent.
- Only calibrated, high-quality standard torque spanners with sufficient load-bearing capacity and leverage may be used to tighten the central locking device. The use of torque multipliers is not approved for use on Porsche vehicles.
- The specified final torque must be achieved while the torque spanner is in a smooth, continuous motion.
- The appropriate lubricant must be applied to the contact surfaces of the central wheel locking device and the rim as specified. See: ⇒ *Workshop Manual '440737 Disassembling and assembling central lock'*
- If the central wheel lock, wheel hub or rim is new, the central locking device must be tightened to the specified final torque, loosened and then loosened and retightened. As a result, geometrical discrepancies may be compensated.

Required parts and materials

Parts Info:

Required parts:

Part No.	Designation – Point of use	Number
992419619Y	⇒ Friction plate – Front axle left/right	2 piece(s)

Material:

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

Part No.	Designation	Quantity
00004330508	⇒ Mounting paste (3.52oz tube)	0.07oz

Required tools

- Tools:
- Microfiber cloth
 - – Brake cleaner
 - **9451 - Socket wrench**
 - **9794 - Assembly aid**
 - **9796 - Socket wrench**

Preparatory work

- Work Procedure: 1 Remove front wheels.
⇒ *Workshop Manual '440519 Removing and installing wheel with central bolt'*

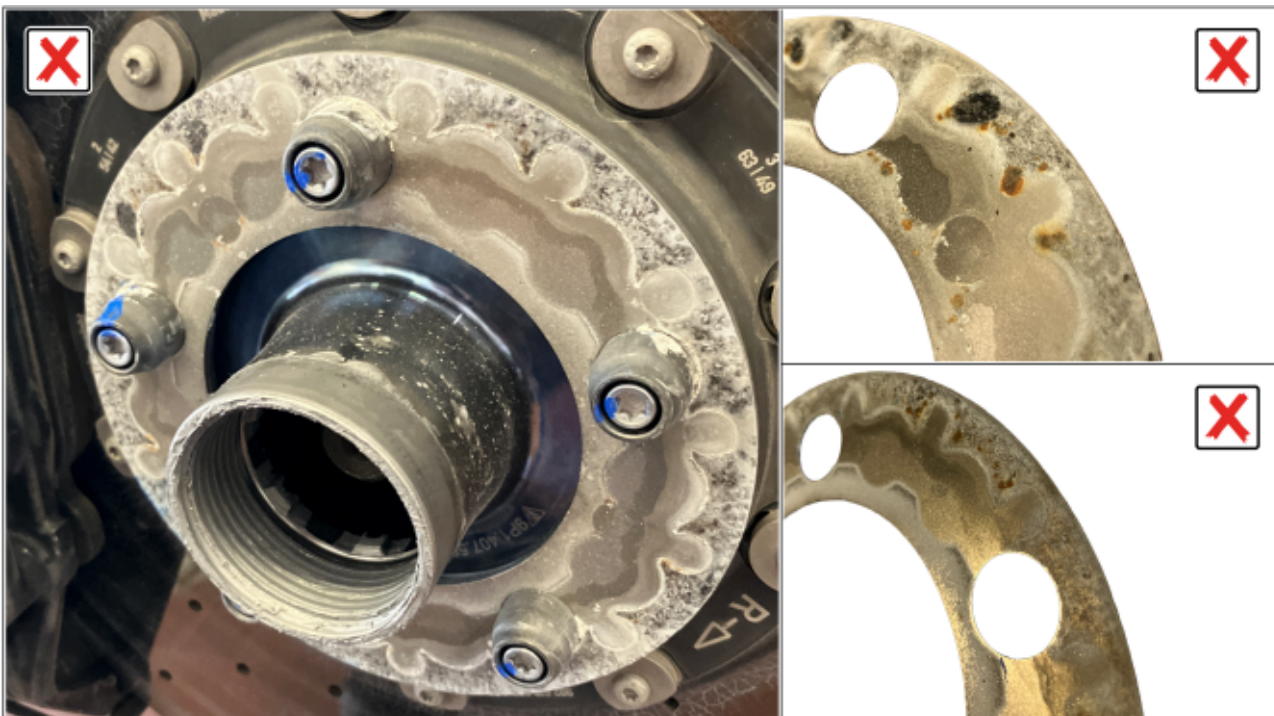


Information

Only for vehicles on which friction plates have already been installed.

Assessment of used wheel assembly with friction plate during wheel removal:

- Superficial abrasion and traces of corrosion on the contact surfaces of the rim and brake disc: This is to be assessed as non-critical, as increased surface abrasion occurs due to the use of the friction plate.
- **Exceeding the limit sample illustrations** ⇒ *Limit sample illustrations for abrasion and corrosion of the friction plate* of abrasion and corrosion: Clean the contact surfaces of the rim and brake disc and replace the friction plate. Replacement of the rim and brake disc is not required.



Limit sample illustrations for abrasion and corrosion of the friction plate

Checking central wheel lock



Information

Reduced preload on the central wheel lock may be due to:

- Reduced amount of grease on the cone of the central wheel lock or on the thread and external diameter of the wheel hub
- A damaged central wheel lock bolt
- A damaged cone on the rim



Information

If one or more of the central bolts is damaged, it must be replaced. Make sure that the central bolt is sufficiently greased. For instructions, see: ⇒ *Workshop Manual '440737 Disassembling and assembling central wheel lock'*

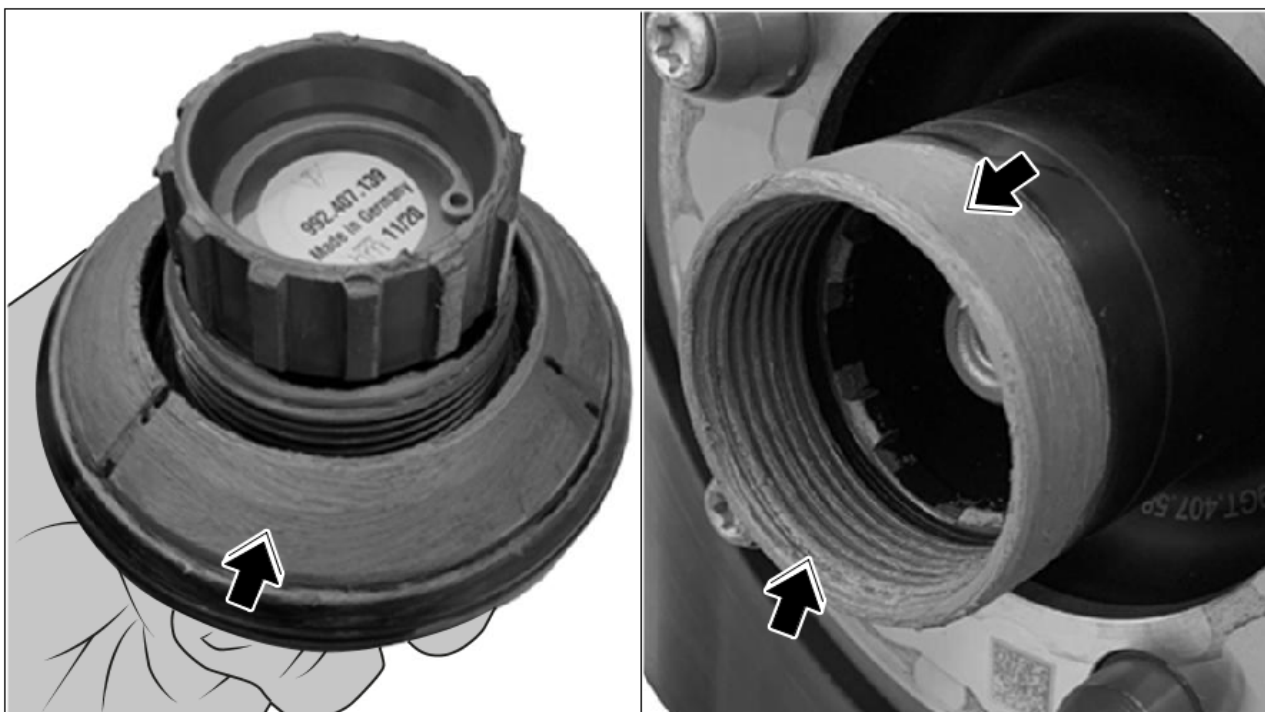
Work Procedure: 1 Disassemble central wheel lock.

For instructions, see:

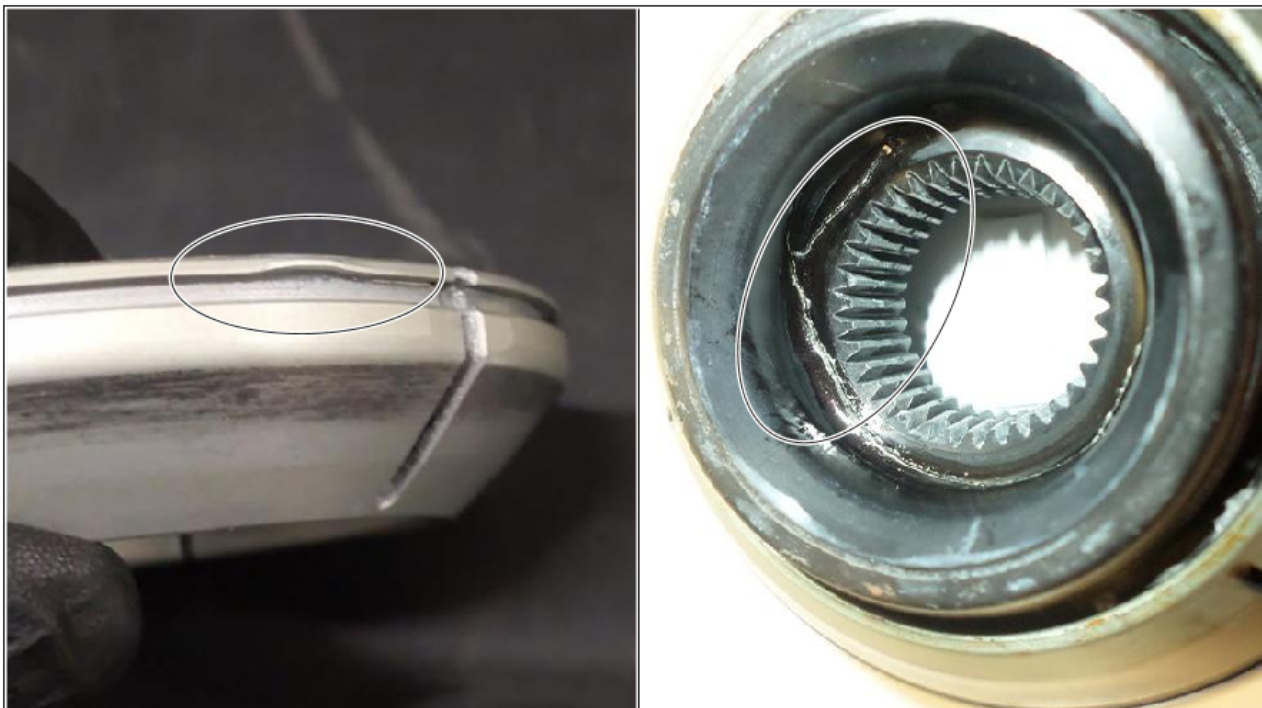
⇒ *Workshop Manual '440737 Disassembling and assembling central wheel lock'*

2 Check central wheel lock for sufficient lubricating film ⇒ *Lubricating film on central wheel lock*, cracks, deformation ⇒ *Example of damage* and other damage. Damage can occur at the following points:

- Wheel hub thread
- Central wheel lock thread
- Cone on rim
- Cone on central wheel lock



Lubricating film on central wheel lock



Example of damage

**Information**

If new parts are used, it is necessary to perform the wheel tightening procedure during wheel assembly as described in the Workshop Manual ⇒ *Workshop Manual '440519 Removing and installing wheel with central bolt'*.

Parts Info:

Required parts if necessary for one side of the vehicle:

Part No.	Designation – Point of use	Number
99136108190	⇒ Wheel bolt – Central wheel lock	1 piece
or		
99970766340	⇒ O-ring – Central wheel lock	1 piece
or		
99136118900	⇒ Washer – Central wheel lock	1 piece
or		
99736118700	⇒ Circlip – Central wheel lock	1 piece

Clean contact surfaces of rim and brake disc and check for damage**Information**

The use of abrasive aids (sandpaper, etc.) is not permitted.

Likewise, wetting the contact surfaces with a lubricant (oils, greases, etc.) is not permitted.

Work Procedure: 1 Clean the contact surfaces between rim and brake disc
⇒ *Contact surfaces between rim / brake disc -1 and 2-* using a microfiber cloth and brake cleaner (**do not use a brass brush**).

2 Check all wheel driving pins for damage.

If there are visible signs of damage, replace pins and screws and clean the thread and contact surfaces to remove any remaining screw-locking material.

**Information**

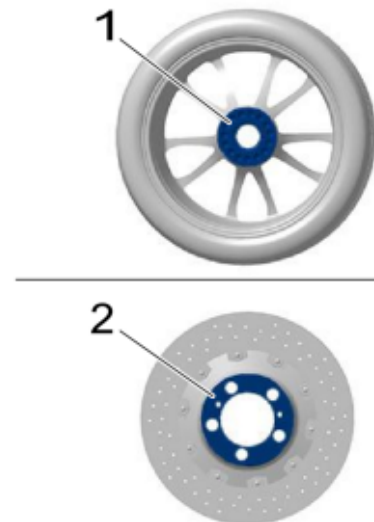
If new parts are used, it is necessary to perform the wheel tightening procedure during wheel assembly as described in the Workshop Manual ⇒ *Workshop Manual '440519 Removing and installing wheel with central bolt'*.

3 Check brake discs, wheel hub and rim for damage, e.g. *Contact surfaces between rim / brake disc notches or "dents" due to incorrect assembly. ⇒ Example of damage*

If damage is detected, replace the damaged component.

**Information**

If new parts are used, it is necessary to perform the wheel tightening procedure during wheel assembly as described in the Workshop Manual ⇒ *Workshop Manual '440519 Removing and installing wheel with central bolt'*.



- 4 If all required test steps have been performed and no damage is detected on the wheel assembly, retrofit friction plates between rim and brake disc.
Continue with: ⇒ *Technical Information '440519 Retrofit friction plates between rim and wheel hub'*



Example of damage

Retrofitting friction plates between rim and brake disc



Information

Before retrofitting the friction plates, make sure that the wheel assembly is in an undamaged original condition (central wheel lock).

Work Procedure: 1 Clean the contact surfaces of the rim and brake disc ⇒
Contact surfaces between rim / brake disc -1 and 2-
again with brake cleaner and a grease-free cloth.

2 Fit new friction plates onto the driving pins of the left
and right wheel hubs until they are in contact with the
brake disc.

3 Install front wheels.
⇒ *Workshop Manual '440519 Removing and installing
wheel with central bolt'*

**Information**

**The tightening torque of the central locking screw
remains unchanged.**

During wheel assembly, the **three tightening stages**
must always be observed as described in the Workshop
Manual ⇒ *Workshop Manual '440519 Removing
and installing wheel with central bolt'* and using the
following special tools:

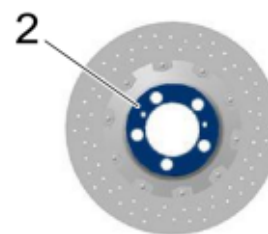
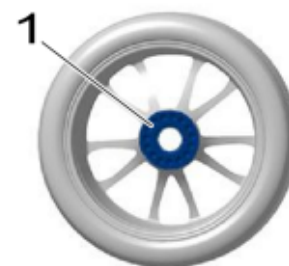
- **9451 - Socket wrench**
- **9794 - Assembly aid**
- **9796 - Socket wrench**

The central bolt must be tightened in **continuous movement** to ensure that the specified tightening
torque is achieved.

**Information**

Inform the customer that surface changes and superficial corrosion may occur as a result of the use of
the friction plate on the contact surfaces of the rim and brake disc.

These phenomena have **no negative effect on the function**.



Contact surfaces between rim / brake disc

Working position and PCSS encryption**Information**

Retrofitting of the friction plates can be invoiced under the new vehicle warranty.

Labor position:

APOS	Labor operation	I No.
44072340	Install wheel mount (friction plate)	

PCSS encryption:

Location (FES5)	4407A	Wheel mount central bolt
Damage type (SA4)	9735	Repair according to PAG instructions

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