SON
NABENDYNAMO

made in Germany

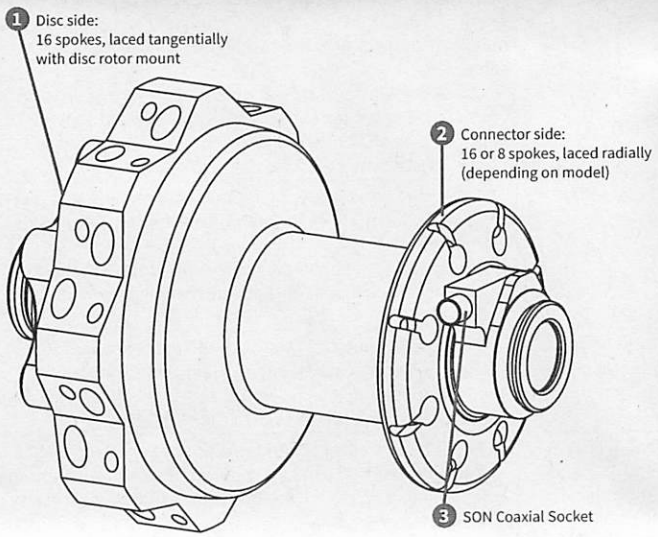
SON 29 S

disc 6-bolt
disc center lock

16:8 spokes TR (tangential/radial)
16:16 spokes TR (tangential/radial)

EN

USER MANUAL



Please read the following user manual thoroughly before assembling and using the product and follow its instructions. If you have any questions or concerns regarding assembly, please consult your specialist dealer. To prevent health risks and product damage, instructions are marked with symbols indicating the degree of danger or damage:

⚠ **CAUTION** Ignoring instructions can lead to injury or damage.

⚠ **WARNING** Ignoring instructions can lead to serious injury or death.

APPROVAL & GENERAL INFORMATION

The SON 29 S is a hub dynamo approved under the German StVZO regulation (∿∿ K 2466) for use on bicycles. It is:

- approved for wheel sizes with outer diameters from 462 mm to 752 mm (20" to 29").
- approved as a 6 V / 3 W system and designed for use with one headlight and one rear light. The SON 29 S supplies alternating current AC and must only be operated with a headlight rated for AC operation and with integrated overvoltage protection U.
- designed for road and light off-road use (Class 2 according to DIN EN 17406:2021).

Wireless bike computers may experience interference when used in combination with the SON 29 S.

PRODUCT FEATURES & TECHNICAL SPECIFICATIONS

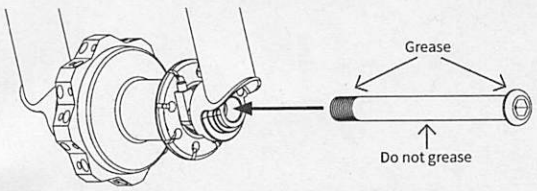
- slim and minimal housing
- Stronger generator compared to SON 28, delivering higher output at lower speeds
- Reduced flickering at low speeds
- Integrated SON Coaxial Socket

Axle system	12 x 100 mm Steckachse
Brake system	Disc brake, 6-bolt or center lock (depending on model)
Axle width	100 mm
Nominal Voltage / Nominal Power	6 V / 3 W
Current type	alternating current AC
Number of poles	40
Weight	390 g

INSTALLING THE FRONT WHEEL

⚠ **WARNING**

- Always follow the fork manufacturer's specifications regarding axle type and dimensions.
- The thru-axle must firmly clamp the hub into the fork (the connectors must not rotate). Check the secure fit regularly to prevent accidents or damage (see section „Operation, Maintenance & Care").



1. Lightly grease the thread and head of the thru-axle. **Do not grease** the axle shaft to avoid clogging the pressure compensation system.
2. Insert the wheel with the SON 29 S into the fork.
3. Insert the thru-axle through the hub and tighten it (according to the axle manufacturer's torque specification). Align the SON Coaxial Socket 3 to the desired position.
4. Check the secure fit of the thru axle and hub dynamo. Make a test ride with the lights on. The connectors (SON Coaxial Socket 3) to the desired position.

MOUNTING THE DISC ROTOR

⚠ **WARNING**

- Follow the disc brake manufacturer's specifications, especially regarding torque (bolts or lockring).
- Ensure that brake caliper and spokes never touch, even during riding.

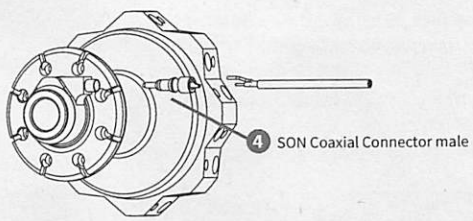
CONNECTING THE HEADLIGHT

⚠ **CAUTION**

- Only use 6 V / 2.4 W LED headlights rated for alternating current AC operation with integrated overvoltage protection U.

⚠ **WARNING**

- Ensure complete and careful insulation of live components.
- Secure the cables firmly (e.g. with cable ties).
- Maintain adequate distance between cables and rotating parts.
- When routing cable within the frame or fork, ensure burr-free holes.
- Only use SON Coaxial Cable or cables with at least 2x 0.4mm² copper cross-section.



The SON 29 S features an integrated SON coaxial connector. Headlights can only be connected using a SON Coaxial Connector male 4.

A If the headlight cable already has a SON Coaxial Connector, connection is very simple: Route the cable along the fork leg to the hub and simply plug it in.

B If no SON coaxial plug is installed on the headlight cable, it must be added. This requires soldering skills.

Alternatively, use a pre-assembled cable with Coaxial Connector (Part No. 72606) and add it to your headlight cable.

Consult your specialist dealer if unsure.

CONNECTING THE REAR LIGHT

The rear light is always connected to the headlight and is switched on and off via the headlight switch.

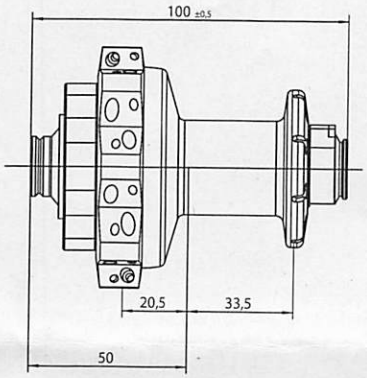
⚠ **CAUTION**

- **Never connect** the rear light **directly** to the hub dynamo. Any configuration in which the rear light illuminates independently is not permitted. This may damage the rear light.

WHEEL BUILDING

⚠ WARNING

- Wheel building with the SON 29 S should only be done by experienced wheel builders. Please consult your specialist dealer.

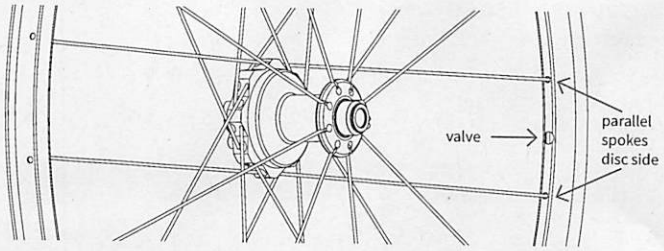


Version 16:8 spokes

Use rims with non-offset or only slightly offset spoke holes for the SON 29 S 16:8 version. Begin lacing on the disc side. Two parallel spokes must be placed directly to the right and left of the valve hole.

Version 16:16 spokes

No special requirements.



SPOKE LENGTH CALCULATION

The SON 29 S is optimized for use with straight double-butted spokes, 2.0 / 1.8 mm or 2.0 / 1.5 mm.

Use the spoke length calculator at:
www.nabendynamo.de/en/service/spoke-calculator

To calculate accurate lengths, the **nipple seat diameter** of the rim is required (this may differ from the ERD provided by the rim manufacturer). Use the SON Nipple Seat Gauge or follow the guidelines provided in the calculator.

Alternatively, calculate using the following formulas (round down if in doubt):

Version 16:8 spokes TR (tangential/radial)
Disc side: L = 0.5 x nipple seat diameter – 4 mm
Connector side: L = 0.5 x nipple seat diameter – 18 mm

Version 16:16 spokes TT (tangential/tangential)
Disc side: L = 0.5 x nipple seat diameter – 2 mm
Connector side: L = 0.5 x nipple seat diameter – 18 mm

OPERATION, MAINTENANCE & CARE

⚠ CAUTION

- Do not clean the hub dynamo with a pressure washer or submerge it in water. Water may enter and cause damage.
- Never disassemble the hub dynamo or attempt to twist the axle. The bearings are non-adjustable.

⚠ WARNING

- Do not touch the contacts of the dynamo or headlight while riding. A hub dynamo can generate high voltages that can be uncomfortable or even dangerous if touched.
- Before starting your ride, ensure that the lighting system works correctly. Do not cover your lighting and reflective devices.
- Pay attention to noises from the hub dynamo and stop riding if unusual sounds are detected. Follow the instructions in the „Troubleshooting“ section.

SON hub dynamos require minimal maintenance. The generator inside the hub is optimally protected and completely maintenance-free, as it operates without gears and with no contact. The hub's sealed ball bearings are permanently lubricated and maintenance-free under normal daily use. They **cannot be adjusted or re-lubricated**. Slight axial play is normal and not a defect.

Maintain and care for the outer surfaces of your hub dynamo as follows:

monthly	• Visual inspection of cable insulation for cracks, abrasions, corrosion, brittleness, and other defects. • Check the secure fit of thru-axle and hub dynamo (connectors must not rotate, follow torque specification provided by the thru-axle manufacturer).
annually	• Clean with a damp cloth after the winter season. • Visual inspection of the housing for cracks, corrosion and deformations.

If you notice any irregularities during inspection, consult your specialist dealer and explain the issue.

TROUBLESHOOTING

⚠ WARNING

- Diagnosing and fixing issues requires technical know-how. If you are unsure, or if the issue persists after diagnosis and troubleshooting, please consult your specialist dealer. Follow these steps for troubleshooting:

Lighting Not Working	If both headlight and rear light are off, the problem is usually not the hub dynamo but the headlight or wiring. To troubleshoot, connect only the headlight and disconnect all other cables. • Check the wiring (unplug and replug connectors, inspect for damaged or broken cables, check for corroded contacts). • Check if the dynamo is functional (e.g., short-circuit test – see FAQs at nabendynamo.de).
Dynamo Making Noise	• Ensure the noise is coming from the front wheel (spin the wheel by hand, check for rubbing brakes, the mudguards and fork). • Check the secure tightening of the thru-axle. A loose axle can cause clunking or rattling due to hub movement in the dropouts.
Front wheel vibrates at high speeds	• A high power output of the SON 29 S at high speeds (e.g. with the Ladelux headlight), can cause slight vibration effects (depending on the setup and application). This does not impair the function of the SON 29 S.
Dynamo has play	• The hub's sealed ball bearings cannot be adjusted. Slight axial play is normal and not a defect. Check axle is properly tightened. If excessive play occurs, consult your specialist dealer.
dynamo has noticeable resistance	• The notchy feel when turning the axle by hand is normal and caused by the generator poles. When turning the wheel, this is no longer noticeable. If a resistance ist noticeable when turning the wheel: • Check axle is properly tightened • Check for rubbing (brake, mudguard, fork)

REPAIR & DISPOSAL

If your product is defective, we can almost always repair it – even after the warranty period. Please contact your specialist dealer.

If your product is beyond repair, we as the manufacturer can ensure proper recycling. You can return such parts to us directly or through your dealer.

Please note that the product must not be disposed of in household waste. According to Directive 2012/19/EU, it is classified as a small electronic device and must be disposed of separately. WEEE-Reg.-No. DE 58367571

GUARANTEE

The SON 29 S comes with a 5-year manufacturer's guarantee. For service, please contact your dealer or importer.

MANUFACTURER

Wilfried Schmidt Maschinenbau
In der Braike 4 | 72127 Kusterdingen | Germany
www.nabendynamo.de

SON NABENDYNAMO

CE

2014/30/EU
2011/65/EU
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