E6 Halogen Headlight

Installation Instructions

The E6 is especially designed for use with gearless hub dynamos. The provided or already assembled plugs fit the Schmidts Original Nabendynamo (SON), but the light's use with other hub dynamos is also possible.

The most important characteristic of the E6 is the outstanding light technology, which achieves a wide and even illumination of the road. The reflector was developed by DT Swiss and later used by BISY. Solid mechanical design, reliable electrical contacts and good sealing ensure problem-free operation in daily use, regardless of weather. An efficient electronic control protects the halogen bulb and tail light from excess voltage.

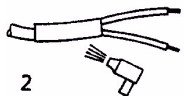
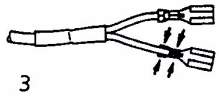
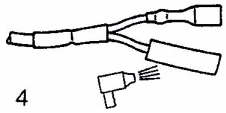
Assembly on the bicycle

The E6 is installed with normal headlight brackets (such as those made by Busch&Müller for their Lumotec headlights). Tighten the screw connections firmly so that the headlight cannot move by itself. However it should still be possible to correct the beam angle by hand. Align the light cone in such a way that the front edge of the illuminated area reaches the roadway 15-20 m in front of the bicycle.

Attachment to the fork crown of a suspension fork results in a high swinging load for the bracket and filament. Therefore mounting on the handlebar or stem is preferable on bicycles with front suspension.

Wiring

The headlight is usually supplied with a 50 cm long coaxial cable for connection to the SON. The cable should be routed along the inside of the fork blade to the SON (contacts arbitrarily interchangeable). Zip ties fasten the cable in such a way that removing the plugs is easily possible when removing the wheel. If the headlight is to be installed further away from the hub, a 120 cm cable is available. The plugs are enclosed separately and should be connected to the cable, which has to be cut to a suitable length, according to the following pictures.

 1	• Remove about 4 cm of outer insulation • Twist the underlying wires together and slide a piece of thin shrink-sleeve over them
 2	• Heat with a hot air gun or flame (carefully) to shrink this sleeve, then do the same with a piece of fatter shrink-sleeve overlapping the junction. • Trim the sleeve and inner insulation to expose about 5 mm of each cable
 3	• Fit the plugs, using a crimp tool or pliers to secure both the insulation and the cables. The first pair of claws must grip the insulation.
 4	• Slide and shrink a piece of shrink sleeve over each plug

For connection to other hub dynamos see their instruction manual. If one contact of the dynamo is electrically connected to the frame (e.g. all models of Shimano), the wires are no longer interchangeable: the outer conductor of the coaxial cable (not insulated or covered with black shrink sleeve) must be connected to the ground, the transparent insulated interior wire must be connected to the phase contact of the dynamo.

Connection of a rear lamp

The switch of the E6 will also control the operation of the rear lamp. A single wire connection from the spade terminal in the base of the E6 to the rear lamp will usually be sufficient (the system is earthed at the mounting hole of the lamp). The included 2.8 mm plug for the rear light cable should be mounted according to pictures 3 and 4 of the table above. The plug must be covered with shrink sleeve otherwise a short-circuit to the aluminum housing will occur.

Some bicycle frames (and fork bearings) don't conduct electrical current properly. A definite neutral/earth connection to the tail light can be made (i.e. double wiring) by adding a 6 mm crimp eyelet between the lamp and its bracket.

Switch

The switching contact is placed, optimally protected, inside the headlight base. It is controlled by a magnet in the black switching ring. When the nose of this ring points upwards the light is switched off; in the position to the left the light is switched on.

▶ If the switching ring is removed from the headlight base, care must be taken to place it in the correct orientation when reassembling: the nose must be able to move to the left. If the switching ring is mounted backwards, the headlight cannot be switched on.

▶ The E6 should not be used with a battery as the power source. The high initial surge of current can damage the switching contact.

Light bulb replacement

To replace the halogen bulb the reflector has to be removed by turning it counterclockwise and pulling it out of the headlight base.
Put the new bulb into the reflector taking note of the slot in the collar of the bulb base. When replacing the reflector make sure that the angular and round tabs fit into the appropriate cutouts in the bayonet disk of the base. Turn the reflector clockwise until it stops.

Overvoltage protection

Normally a 6 V - 2,4 W halogen bulb (HS3) in the headlight is combined with a 6 V - 0,6 W tail light. The current-limiting characteristic of most hub dynamos ensures a voltage level compatible with all components. If the halogen bulb changes its electrical properties with duration of use, or if the tail light fails, the voltage regulator in the E6 limits the effective voltage to 6.8 V. In addition, the tail light is protected if the halogen bulb fails.

Permanent operation with just a 6V-2.4W halogen bulb and no attached tail light (illegal within the range of the German StVZO) is possible thanks to the voltage regulator. However it is more efficient to use a 6 V - 3 W halogen bulb in this case.

In case of defect

We give a 5 year warranty on the perfect functioning of the E6 (excluding the light bulb). If you find a defect please contact your dealer or the manufacturer. If you send in the headlight for repair enclose a copy of the purchase receipt and a detailed description of the problem. Reflector and switching ring are available as spare parts.

Manufacturer

Wilfried Schmidt Maschinenbau
Aixer Strasse 44
D-72072 Tübingen
Germany

Tel. (+49) 7071 38870
Fax (+49) 7071 38876
Email: info@nabendynamo.de
WWW: http://www.nabendynamo.de

V2.1e – 02/05