

# Assembly- Instruction Short

Set KS-1 bis KS-11

**!!! Please read through completely before starting work!!!**

You have already received detailed illustrated instructions by e-mail or you can find them at [www.ib-bb.de](http://www.ib-bb.de) under **DOWNLOAD**

## **Step 1: Preparation**

Please lay out the contents of the package on a pad so that you can easily pick up the parts. Avoid dropping the parts on the floor.

### **Still necessary and helpful:**

- A pad for the car, e.g. a locomotive bed or foam cushion
- A cordless screwdriver (e.g. Bosch IXO or a Phillips screwdriver)
- An open-end wrench with wrench size 4 (for M2)
- A slotted screwdriver and a Phillips screwdriver
- Small long flat-nose pliers
- A small oiler with sewing machine oil (or e.g. LGB® 50019)
- Reading glasses if necessary and sufficient light
- For sets 5, 6, 7, 8 holes with a 2mm diameter must be pre-drilled -> drill 2mm

### **It is best to do the following:**

#### **Schritt 2: Angle assembly**

Insert the angle as shown in the pictures with the U-shaped opening under the coupling eye (also called bottle opener), if necessary loosen the fastening screw of the coupling slightly.

Screw the two brackets to the existing hole in the bogie using the black self-tapping screws.

#### **Pay attention to the following:**

One angle must point downwards, the other opposite upwards.

It is up to you whether you dismantle the axles beforehand, but it makes assembly much easier. If there is already a current collector (e.g. LGB® 63193) using sliding contacts, you must remove it.

---

**Ingenieurbuero Betz**, Bernd Betz, Hauptstrasse 3, 93083 Obertraubling, Germany

Tel +49 9401 912999, Fax: +49 9401 2123, [info@ib-bb.de](mailto:info@ib-bb.de), [www.ib-bb.de](http://www.ib-bb.de)

**Suggestion:**

It is best to replace this with at least one ball bearing mounted pantograph axis (e.g. LGB® 67403).

**Important:**

**For sets 5, 6, 7, 8, holes with a diameter of 2 mm must be pre-drilled in the bogie at the appropriate point. Use the angle of attack as a template to mark the hole.**

**In Set 6, the newer models 40817 Xk 9005 (orange) have to be removed from the small nose on the pivot bracket, on this and subsequent wagons the drawbars have been removed by LGB by approx. 4 mm shortened! (Test: the pivot point of the fork head must be below the axle)**

**Step 3: Assembly of the rod**

Click one of the clevises into the right angle.

The pin in the clevis is firmly soldered to a wing. They attack this wing with the pliers.

The loose wing is held in place by the angle.

Check the approximate length by straightening the two bogies and then turning the other clevis so that the desired position is achieved.

Now click the left clevis into the left angle to check it.

**NOW THE MOST IMPORTANT THING:**

Now check the parallelism of the two axles while pulling the two bogies slightly apart on the coupling hook (as if another car was hanging on both ends).

Move a bogie to the respective end position and check the symmetry if, e.g. move the left bogie, the right one only has to perform the same movement in opposite directions.

If necessary, loosen the left clevis again (preferably with pliers or a flat-blade screwdriver) and correct the length of the coupling rod by turning the clevis.

Then loosen both lock nuts and bring the coupling rod into a central position (thread ends left and right the same).

Lock the two fork heads by pressing them together with a pair of pliers (you will usually hear a distinct click)

Counter the two nuts with an open-end wrench SW 4 or small pliers towards the fork head.

**Continuing step 3:**

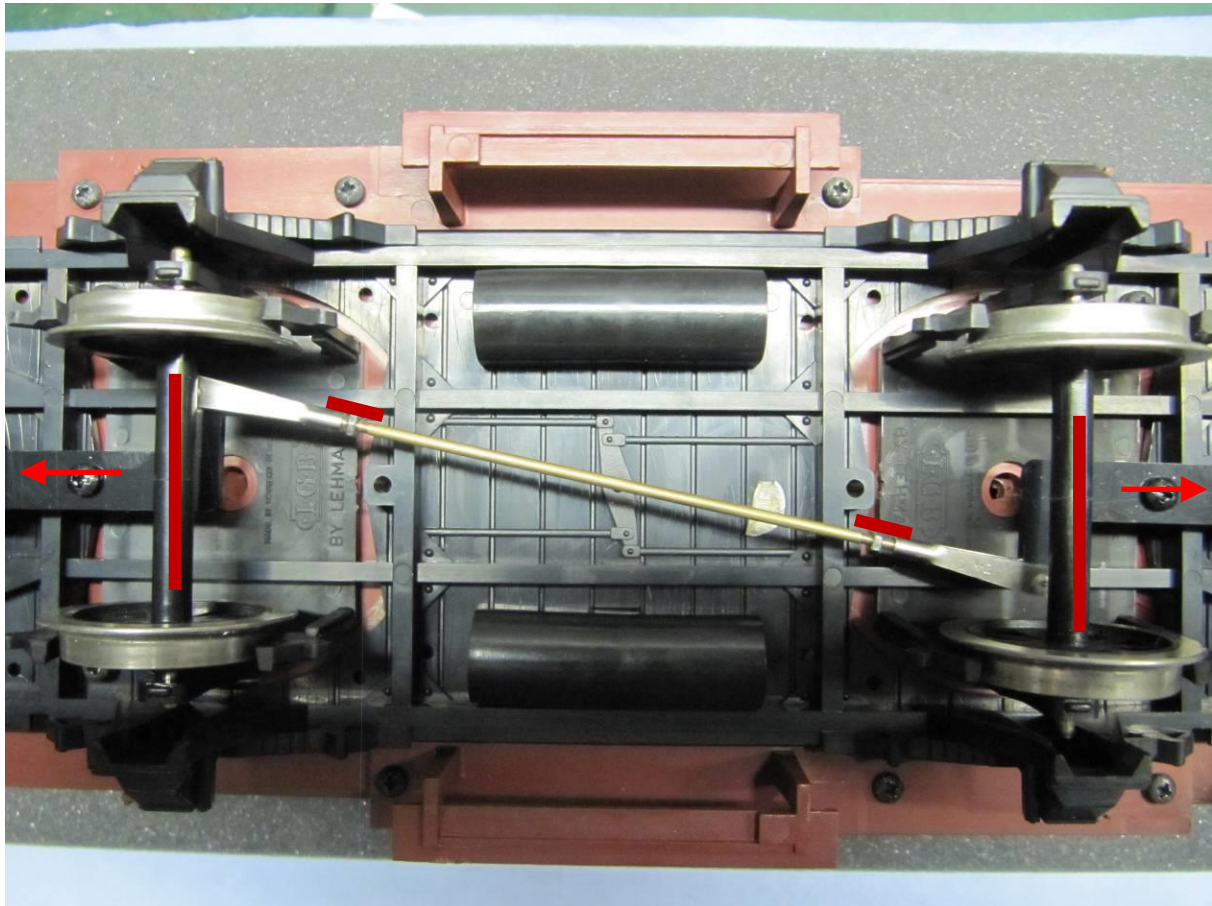


Image : Check the parallelism of the axes, center the coupling rod with the lock nuts open.

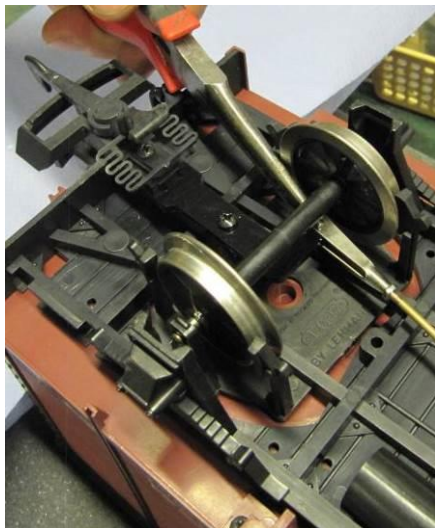


Image : lock clevis

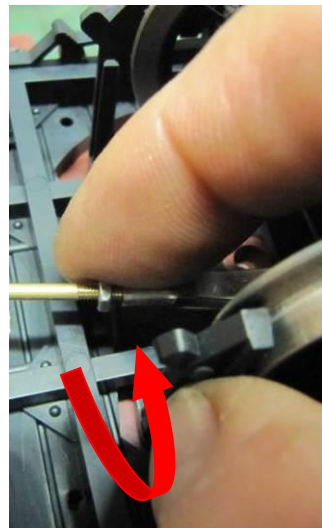


Image : Loosen the lock nut



Image: counter the mother

**Pay attention to the following:**

- that the bogies or axes are parallel when pulled apart slightly.
- that the fork heads are locked and countered.

#### **Step 4: Oiling**

Now oil the fork heads at the connection point to the angle of attack with a drop of LGB® 50019 or something similar (e.g. resin-free sewing machine oil).

You should also oil the swivel bearing of the bogie and the shaft ends of the axles in the bogie. (One drop is enough here to avoid corrosion of the shaft ends)

Personally, however, I use a thin or normal fat for the axles.

#### **Pay attention to the following:**

- Check that the bogies move freely and that the axles run with little friction.

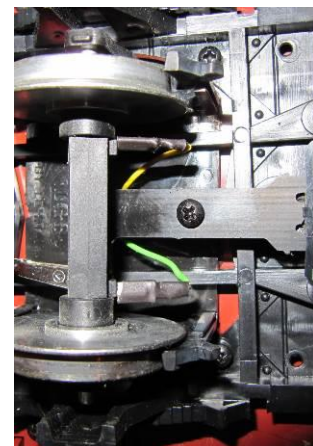
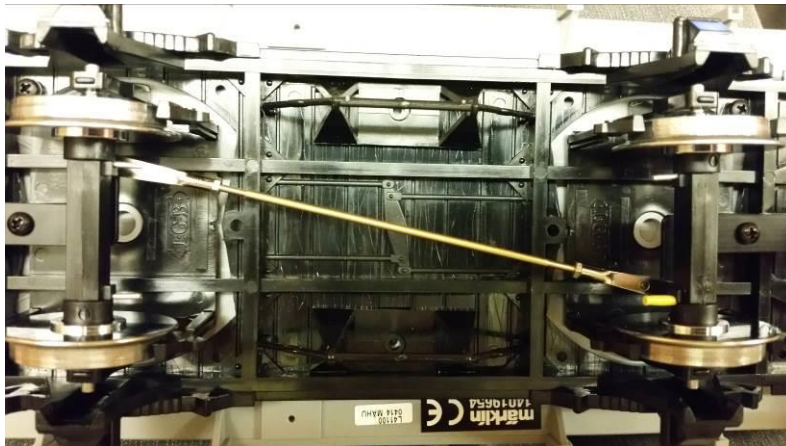
#### **Important instructions:**

##### **Installation suggestions when using ball bearing axles:**

When using ball-bearing wheel sets with power take-off, at least one contact pin must be insulated when the interior lighting is not connected (strip off a piece of the insulation from a 0.75 mm<sup>2</sup> cable and push the PVC piece of the line over the contact pin. Length about 1mm longer than contact pin, alternatively shrink tubing with a corresponding diameter ).

This avoids a short circuit via the coupling rod through the contact pin on the opposite side. See photo yellow insulation for better visibility

When using the ball bearing axis with power take-off, the contacts must be insulated. (preferably with shrink tubing)



#### **Safety instructions, disclaimer:**

This is not a toy, not suitable for children under 12 years of age.

Parts only for use as described above.

Do not swallow small parts.

Carry out the described procedures at your own risk and without guarantee!

Detailed illustrated instructions in the download area at [www.ib-bb.de](http://www.ib-bb.de)