Art-No.: **S-F16**

INSTRUCTIONS

H0-Model – Wire-guided

Contents CONSTRUCTION KIT / material:

1	motor	M708
1	screw	S83
1	gearwheel	Z303S
4	sockets 1 mm	70009
1	steering system	LTS
1	grinder	MM
1	set of tyres	B10
2	batteries 160 mAh	Ni160
1	switch	SUM
1	charging socket	LABUFA
1	stranded wire, 1 m	coloured
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2	diodes	1N5819
1	dry reed contact	70010

You will also need:

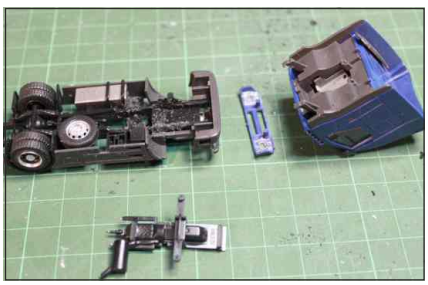
1 car model (two-axle truck 1:87) and 1 battery charger

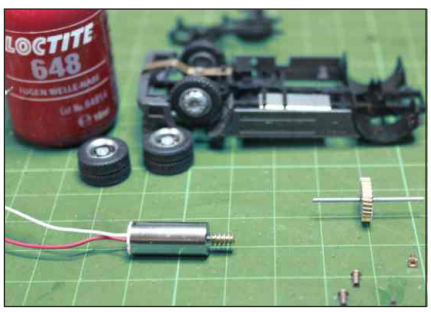
TOOLS required:

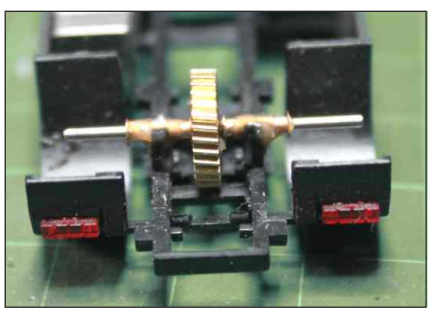
- Scalpel
- Wire cutter
- Tweezers
- Hand reamer 1 mm
- Miniature drill
- Milling cutter
- Cutting disc
- Soldering iron
- 0.5 mm solder
- Adhesive:
  - Loctite 648
  - Superglue
  - Stabilit-Express
- Paint / paintbrush

ASSEMBLY:

If you want vehicles to move off the track in your model railway, then wire-guided vehicles are the solution. An iron wire is laid in the track and a magnet in the steering system ensures that the model drives along the wire.
Using this construction kit, most two-axle truck models can be converted from stationary models to motorised versions! The construction kit contains all of the parts required for this. It is suitable for two-axle truck models. The main focus is on the front axle, which should fit under the reconstructed model.







1 Firstly, the front axle is assembled according to the instructions enclosed. Glue is not required for this. To guarantee smooth running, the bearing bores on the wheels should be deburred using a reamer until the axles can rotate easily with little effort. The same applies for all other bearings.

2 Now it is time to make space for the axle mounting. To do so, the model must be adapted around the area of the front axle using a cutter. The distance between the wheels and the wheel arches may be referred to in doing so. The model must be placed in a horizontal position after mounting the axle.
If the front axle fits and the wheels can also rotate freely while turning and while the axles are oscillating, then the axle mounting may then be fixed using superglue. After a second check, the axle is then finally mounted using plastic adhesive or Stabilit Express.

3 The original rear axle is disassembled and the new rear axle is cleaned and provided with a gearwheel. This is fixed in the centre using Loctite 648. The best way to do this is by applying the adhesive using a fine needle tip in the gap between the gearwheel and the shaft.

Capillary action then draws the adhesive into the splice. After leaving it to dry overnight, the rear axle is placed in the existing bearing, or the bearing, made up of the enclosed copper sleeves, is glued into the chassis - depending on the model. In doing so, the bearing should be constructed in such a way that the rear axle has as little lateral play as possible and may rotate freely.

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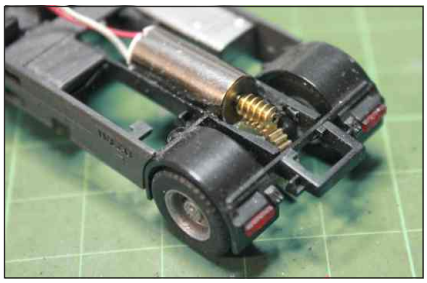
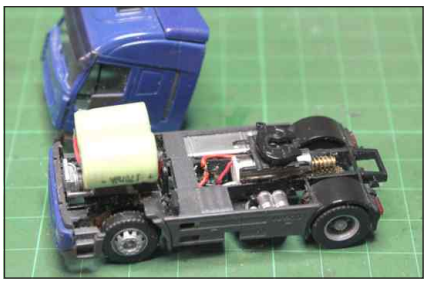
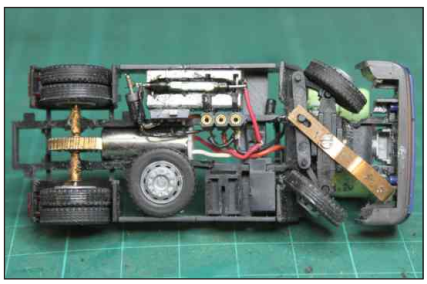


4 Now the chassis must be adapted in such a way that the motor, lying on the frame, has space and that the screw's is also guaranteed to engage with the gearwheel at the same time. Firstly, the worm gear is slid on as far as it will go on the motor axle and glued.
Then, the motor is fixed using superglue and a short test run is carried out at a low voltage i.e. using one of the two batteries. The operating noise should indicate if an improvement is potentially needed.
Ideally, you should only hear a light buzzing. If this is the case, the motor is also fixed using Stabilit Express.



5 Both batteries are subsequently provided with connection cables. For this purpose, the poles are cleaned using a fibre glass eraser. Alternatively, we recommend using fine sandpaper. Under no circumstances should soldering fluid be used, as the poles could quickly oxidise as a result! If the contact surface is clean, the respective pole is firstly tinned using a hot soldering iron in the shortest possible soldering time and then connected with a cable. The batteries may now be placed in the model. Ideally, both axles should be loaded evenly to on the one hand, have enough ground pressure for the drive, and on the other hand, to manoeuvre turns despite the rigid rear axle.

Depending on the model, the battery position should be determined through several trials.To optimize load distribution, some lead may be used.
The switch and charging socket are usually positioned hidden within the vehicle frame or on the undercarriage and wired according to the circuit diagram. So that it can also react to the stop point, the dry reed contact is mounted in the travel direction under the model.
Tanks or toolboxes are well-suited as camouflage. If the model still goes too fast during the subsequent test drive, the voltage may be reduced by 0.3V with one or two diodes. To do this, the diode is switched on in the conducting direction in series with the motor (see circuit diagram).



6 Finally, the model may be reassembled and improved with a few other details. For additional camouflage, the technical components may also be painted in the same paint as the frame so that the modification is not as noticeable.

Now your model is ready to go!

Circuit diagram: