



BIG IN SMALL THINGS



Car System

Streets are coming to life

 CAR SYSTEM  HO  N

Getting started with FALLER Car System

- Roadmaking with FALLER Laser-Street
- Products and tools
- Tips and tricks



english

FALLER Car System – Definitely more movement

The functionality is quite simple, yet ingenious. With FALLER Car System cars will move over the installed roadways as if controlled invisibly.

A starter set includes all the parts required for quick and easy entry into FALLER Car System. Learn about the various methods for designing roadways in this brochure, and installing a simple track will soon add maximum driving pleasure. It doesn't get simpler than this.

Motor and steering are the heart

Just as in real life the models have a motor, steering, and rechargeable batteries in place of a fuel tank. An on/off switch is located on the vehicle's underside. Once the motor voltage has been switched on the cars will move independently, without external power supply. The batteries are then recharged with the included charger. The flexible front axle has a forward pointing slider for targeted steering, the front of which features a tip with a small yet effective permanent magnet.

Special contact wire & Street filler

The permanent magnet at the steering slider allows the switched on vehicle to follow the track of the contact drive wire embedded in the roadway. After the wire has been installed in the roadway the included filler is used to create smooth surfaces on your roadways and close small gaps between the roadway sections or unused predrillings in the roadway elements. Painting the street and adding decorations will create realistic roadways.

Cars, lorries and busses

FALLER offers an extensive assortment of vehicles in track gauges HO and N, and new items are added every year. Of course experienced hobbyists also have the option to add and convert their own vehicles.

Wear and spare parts

Car System vehicles consist of various wear and tear parts that need to be replaced after a certain amount of usage like tires. Batteries also can only be recharged a limited number of times. Please visit our website www.faller.de for the full range of Car System spare parts including pictures and brief descriptions.

Custom traffic routing

A second microswitch on the vehicle, the so-called reed sensor, responds to magnets, allowing a variety of custom traffic routing. Stopping at traffic lights, railroad crossings and stations for example is implemented with the stop section, an electric magnet embedded in the roadway. When exposed to voltage it will generate an electromagnetic field which will switch off the vehicle's motor power with the built-in reed sensor. Turns, on the other hand, are implemented with a branch-off junction where an electric coil is temporarily powered.

Integration into existing designs

The flexibility in routing roadways allows FALLER Car System to be integrated in existing designs. Various options to match your basic layout will add traffic to your design.

The content of a Start-Set is as follows:



Storage battery charger/batteries



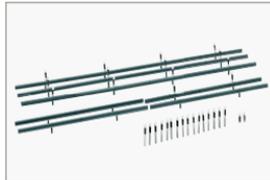
10 m Special contact wire



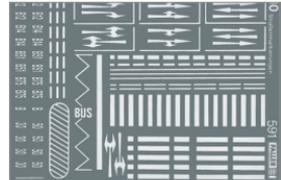
Street filler



Roadway paint



Guardrails, border posts, street markings



Making roadway design a certain success: Laser-Street

Roads are every city's nerve cords just as a design will only truly come alive with animated streets. The right basic knowledge and the extensive FALLER accessories make roadway designs a breeze. There are different techniques and accessories depending on what you wish to accomplish.

FALLER Laser-Street

FALLER Laser-Street features prefabricated street elements which simply connect together and already have a groove for the contact wire. Custom roadway routings and integrating curves, passing points, branches, bridges and slip roads can also be implemented just as easily. Roadways are particularly simple and accurate to design with FALLER Laser-Street, without foregoing the familiar variety in the design.

Customisation

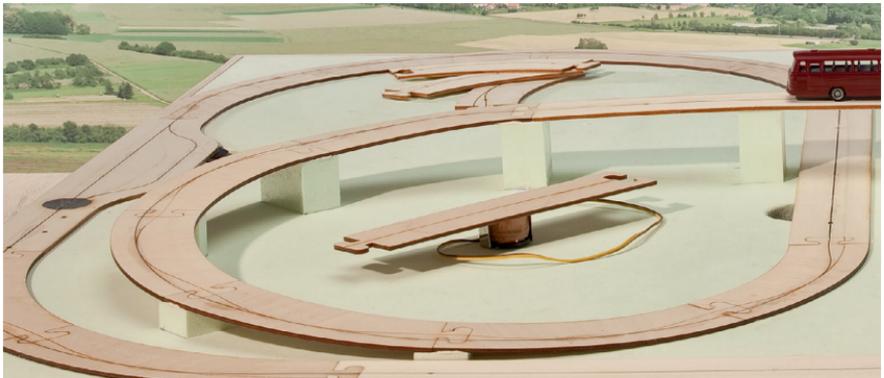
The groove cutter also allows roadway designs to be customised to your ideas. We merely recommend a minimal curve radius of 150 mm to ensure a smooth flow of oncoming traffic for all Car System vehicles. The unmatched routing allows you to include unique design features in detail. See page 6 for additional customisations.

Galleries

Our galleries will guide you without a lot of words, illustrating key process steps. You will then know how roadways are installed and how to plan the installation of various components. FALLER Laser-Street roadway elements can be used temporarily or as a complete roadway system. »Finishing and decorating« will provide you with everything you need to know about decorating your new roadway.

Materials

We recommend using rigid foam sheets and a wooden frame for creating model designs. Your design will be lighter and easier to work with. For streets we recommend using 3 mm thick three-layered poplar plywood, which is also what we use for FALLER Laser-Street elements.



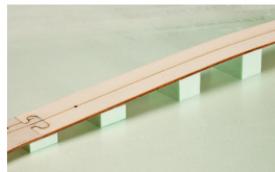
Laser-Street – Step by Step



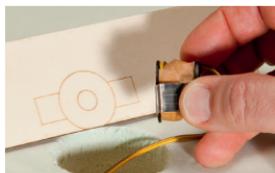
Routing streets: First determine the street layout by simply positioning the street sections. Connecting the sections makes this a breeze. All roadway sections have a laser cut groove which will later hold the contact wire. Attention: Glue the sections fully to the background.



Curves: Vehicles swing out, just as in real traffic, i.e. if traffic enters a curve the wire is routed outward. The curve sections can be used from both sides so that the same section can be used for right and left curves.



Terrain transitions: The street sections are made from 3 mm thick three-layered plywood and are flexible yet very sturdy. Use small rigid foam blocks to create uneven pavements and terrain transitions.



Installation aids: All roadway sections are primed for installing functional elements. Regardless if it's a Branch-off junction (161677), Stop section (161675), Parking space (161674) or a Sensor (161773). We have provided installation aids for every element.



Drill holes: The break-out and the offset for branches are prefabricated in the contact wire routing so that it only needs to be inserted and secured. Holes are predrilled in any wise location along the contact wire routing for inserting sensors.



Installation: Thanks to the various installation aids adding a bus stop for example takes mere minutes. The general system of the functional components can also be seen on these parts, making implementing custom ideas significantly easier.



Variable routing: The flexible Laser-Street track makes route variations very easy. This street section is variable and allows the respective routing in the tightest of spaces. Customise your street route with minimal effort.



Combined method: To customise your design even further use 3 mm plywood to build your own route sections. Simply disconnect the street element joints and shorten them to the desired length. Then integrate a piece of plywood.



Groove cutter: Now preferably mark the desired driving path and cut the groove for the contact wire with a Groove Cutter (161669). Implementing your ideas doesn't get any easier and quicker. This allows you to build any design you would like yet benefit from FALLER Laser-Street.

Custom roadway design

To integrate FALLER Car System into your existing design the so-called sunken method may be right for you. Use the Groove Cutter (161669) to customise the routing of the contact wire and adapt the flow of traffic to local factors.

Preparation

Our recommendation: Use rigid foam sheets with a wooden frame for the base frame and use 3 mm thick poplar plywood for streets and other constructions. This is the maximum distance a stopping section coil may be from the top of the roadway. All functional elements can now be installed directly below the roadway. This will also reduce the overall weight of your design.

Make the surface of the roadway as smooth as possible and consider the turning radius of the vehicle to be used in the width. Longer vehicles require a wider road, especially for curves, than cars. The minimum curve radius should therefore not be less than 150 mm.

Please refer to the following chart for minimum roadway widths:

Roadway widths (single-/two-lane)

	HO	N
Straight areas	50 mm/100 mm	30 mm/60 mm
Curves at least	70 mm/140 mm	45 mm/90 mm

Upward and downward hills

When constructing upward or downward hills or crests it's important to round the roadway at the respective transitions for vehicle control. Upward hills should not be steeper than 12 % (120 mm over 1000 mm roadway).

Once you know how the roadways should be routed you can start.



Planning: Mark the roadway by outlining it on the plywood and perform a test run to ensure the roadway is uniform. To do so lay out the wire, affix it with an adhesive strip and test the route with a vehicle.



Cutting: The Groove Cutter (161669) is ideal for installing the special contact wire. This small machine features a slitting cutter which is guided along the marked path. Cutting the right groove height and width allows for optimal contact wire installation.



Installing contact wire: Press the contact wire into the groove with a flat head screwdriver or joiner, ensuring it is correctly seated in the groove.

Finishing and decorating

Add a final touch to your street before traffic starts moving permanently.

Line the kerbside with guide posts and secure curves with crash barriers. The kerbside can easily be created with a little filler and some spreading material. Set up traffic signs and design ad-

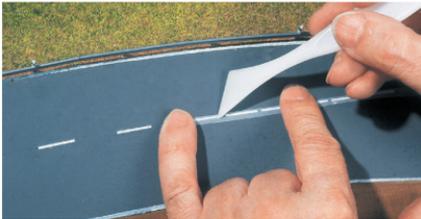
ditional, non-functional streets and areas using various self-adhesive films from our design line. Create the perfect illusion of mobility.



Filling and sanding: Create a smooth roadway and fill any gaps and uneven areas with Filler (180500). The street sections form a perfect joint for the filling paste. Once cured grind the surface with fine grit sandpaper or a scraper so the contact wire still shows through in all areas.



Pavement: The asphalt can be added quickly and evenly with the Roadway Paint (180506) and a narrow paint roller or a brush. Once dried the non-slip surface texture provides a perfect grip for the tyres on your Car System vehicles.



Street markings: The outside street boundaries can be painted on with a white touch-up pen and, depending on the street route, a straight ruler or curve template. The centre line is available as a rub-on with the item »Street markings«. First mark the centre line using a ruler and pencil, cut strips from the sheet, affix them on the centre line marking using two fingers, and use the included stylus to rub them onto the street.



Shoulder and signs: Use an awl to pierce the required holes for inserting the guide posts and crash barriers, then secure the parts with adhesive. The set of traffic signs includes the matching signs by era. Secure in the same manner as the safety equipment.

Vehicle and maintenance

Occasional vehicle maintenance means there's no stopping your driving pleasure.

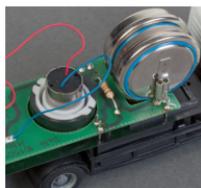
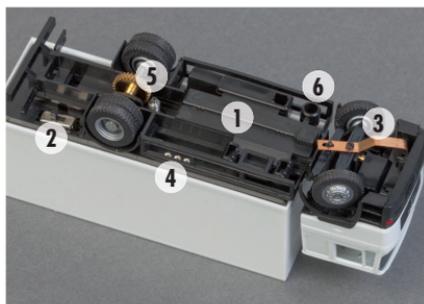
Some superglue, a pair of tweezers, a precision screwdriver and FALLER's special oiler (170489) are perfect for your Car System tool kit. Wear items may be ordered through FALLER's customer service.

Familiarise yourself with your vehicle:

- 1** Powerful skew wound motor with a life of more than 2.000 hours of continuous operation.
- 2** Sliding on/off switch for starting and stopping the vehicle.
- 3** Extra strong permanent magnet on three-point mounted front axle – will even trace in the tightest of curves.
- 4** The charging socket will recharge drained batteries.
- 5** Drive units on the rear axle (axle shaft, worm gear and driving worm).
- 6** A reed sensor will halt vehicles at stop sections (e.g. bus stops, traffic lights, railway crossings).

Charging batteries

Use the included charger to recharge the batteries on the FALLER Car System vehicle. **Run the vehicle out of the carton until the battery is completely drained and fully recharge the battery.** Depending on the vehicle and battery the charging time will be approx. 8 – 10 hours. To charge the vehicle simply plug the three-prong charger plug into the charging socket at the vehicle's underside. The plug is designed to prevent faulty polarisation.



Cleaning

The vehicles' axle bearing, drive- and steering elements must occasionally be cleaned to remove any dust and lint. The model streets should also be kept free from dust and tyre wear particles.

Lubrication

Just as the real-life models, rotating parts on vehicles (drive shaft, front wheel axles) and all moving steering components (steering pins) must be lubricated. Using the FALLER Teflon lubricant (170488) or the FALLER Special oiler (170489) is recommended. The lubrication points are indicated in red in figure 1.



Figure 1

Adjusting the steering slider

FALLER Car System vehicles can only be steered optimally if the slider is adjusted correctly. The slider is adjusted correctly at the factory. However, deviations may occur during vehicle operation. It will then need to be readjusted. The magnetic slider should always glide parallel to the road surface. Please refer to figure 2 for the ideal setting. On small vehicles with folded slider tip the magnetic force can be adjusted by bending it with the tip of a knife. This may be required to optimise the steering thrust, for example if the steering stops due to the magnet being positioned too high or the slider »sticking« to the road due to the magnet being too close.



Figure 2

Please note:

- The magnet must rest on the road.
- The screw connection on the slider must show some play.

Changing tyres

Even model cars require maintenance. Routine tyre changes are required based on the mileage. Insufficient tread results in a loss of traction and steering issues. This will be noticeable in curves and on hills. Routinely checking tyres is therefore advisable.

By the way: changing tyres is even easier and faster than in real life.

You may purchase spare tyres and all other spare parts through FALLER's customer service. Be sure to also include the vehicle's item number when ordering.

Customer Service

If you're ever stuck or you're missing a part, in addition to skilled advice at your local retail store you may also contact our customer service. We will help you quickly and find an unbureaucratic solution for virtually any case. Your direct line to our customer service: **+ 49 (0) 7723 651-106** or e-mail us at **kundendienst@faller.de**



Technical accessories – A variety of options

We offer various electronic and electromechanical components for implementing your custom traffic plan, allowing for countless routing functions. Vehicles stopping at red lights and driving on green, left yields right rules, bus stops, car parks and much more. Let your creative mind run free.

Basic set »Components«

The Car System Basic set »Components« (161622) includes all important traffic routing and road making parts for building Car System designs.

Traffic-Control

Just connect the Traffic-Control and you will be able to actuate all Car System components such as branch-off junctions, stop sections, parking spaces, and sensors. To ensure the timely operation of these functional elements the Traffic-Control is fitted with 15 different programs that can easily be selected via a microswitch. Depending on the program selected you can make use of preset activation times for the various switching procedures, or independently set them by means of a particular potentiometer.

Stop sections

Stop sections (161675) are electric coils generating a magnetic field for a period set by you. When activated these suspend the battery power

via a reed sensor in the vehicle. Use them for example to stop your vehicle, at traffic lights or railroad crossings, and they can also be used to prevent consecutive vehicles from crashing, integrate left yields right rules, or passing places, and many other traffic solutions.

Branch-off junctions

The Branch-off junction (161677) is also an electric coil which will draw the steering magnet on the vehicle to a different wire when activated. This allows the vehicle to make various turns, for example turning at an intersection, or removing it from flowing traffic and, in conjunction with a stop section, merging into it again after a specific period, for example when stopping at a bus stop or a filling station.

Instructions and installation templates for all FALLER functional elements are available under the corresponding product at www.faller.de, and may also be downloaded.

161622



Car System Basic set »Components«

Package contains:

- 1 Traffic Control (161651)
- 3 Sensors (1 x 161773)
- 2 Stop sections (161675)
- 1 Branch-off junction (161677)
- 2 additional magnets



For your safety

Explosion hazard

Using the product in explosive environments or with unsuitable rechargeable batteries may trigger explosions and cause severe injuries and property damage.

- ▶ Do not use the vehicle in explosive environments.
- ▶ Use only original rechargeable batteries that are part of FALLER Car System.

Fire hazard

Using the charging unit with faulty or old rechargeable batteries may trigger a fire or generate smoke.

- ▶ Do not use the charging unit without monitoring the process.
- ▶ Immediately disconnect the product from the mains supply if smoke is generated.

Corrosion hazard

Using the product in moist rooms or any contact with water may cause property damage.

- ▶ Use only in dry rooms.
- ▶ Avoid any contact with water.

Risk of physical injury and property damage

Improper use of the product may cause physical injury and property damage.

- ▶ Do not open the vehicle.
- ▶ If the product does not operate correctly or does not operate at all: Consult FALLER's customer service department.

Environmentally friendly disposal (WEEE)



Information pertaining to the German Electrical and Electronic Equipment Act (ElektroG)

Products that are labelled with the symbol of a crossed dustbin may not, at the end of their life span, be disposed of with common household waste, but must be handed over to a collecting point that recycles electrical and electronic equipment. The symbol on the product, in the instruction manual or on the packaging calls the user's attention to such obligation. All materials used are recyclable according to their marking. When allowing recycling, the reutilization of materials, or any other form of recycling used equipment,

you will make a valuable contribution to the protection of our environment. Please enquire from your local authorities which disposal companies are relevant in your vicinity.

Information according to the German Battery Act (BattG)

It is prohibited to dispose of batteries and rechargeable batteries with household waste; you are legally obliged to return used and rechargeable batteries to a local collection point or retail shop. Used batteries can contain toxic substances, which can cause damage to the environment or your health if not stored or disposed of properly. However, batteries also contain important raw materials such as iron, zinc, manganese or nickel for instance, which can be made use of. After using the batteries, you can either return them to us or return them in your immediate vicinity (e.g. at a retail shop or a local collection point) free of charge. For final users, the return of said batteries to retail shops is limited to standard amounts as well as for used batteries, which the distributor has or had in his or her product range as new batteries. The symbol with the crossed out waste bin indicates that batteries and rechargeable batteries are not permitted to be disposed of with household waste. You can find the following additional symbols underneath the waste bin symbol, which have the following meaning: Pb: battery contains lead / Cd: battery contains cadmium / Hg: battery contains mercury.

Comply with the local regulations applying to waste disposal.

- ▶ Please observe the WEEE Directive in the version currently applicable.
- ▶ Dispose of rechargeable batteries via the qualified collecting points authorized by your government.

CE conformity label RoHS/EMC

