

## FAN CLUB News 02/2001

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Hi Fans,

A hearty welcome to FAN CLUB News 2/2001! There are now more than 24,000 members in the club worldwide. We would like to take this opportunity of welcoming the new members in particular.

On Page 2 we have a report for you on the robot competition at the University of Applied Science in Dortmund and the Solar Day at the Europa-Park in Rust. We have now stopped printing the Market Place as it has been completely transferred to our Internet site.

Bucket-wheel excavators - the giants amongst the machines. We have compiled some information on the monsters on Page 3. The background is that a fischertechnik fan has succeeded in reproducing the bucket-wheel excavator from the Garzweiler 2 opencast coal mine with fischertechnik and even motorizing it. We absolutely had to tell you about that one.

Pages 4 and 5 are devoted to your models, as usual, which we are presenting there in the "Letterbox", but right now we would like to thank all those members who have sent us photographs of their creative model developments. We always have great difficulty in making our selection, and we are only sorry that we cannot show all the models on these pages. To help solve this problem we will be adding the appropriate area to our home page in which all the pictures we have been sent can be published.

We are giving some of the background information to the new computing box "Bionic Robots" on Page 6, where we have a computing tip for you which will show you an intelligent way of doubling the number of inputs and outputs on the Intelligent Interface.

As usual you will find the FAN CLUB Model on Pages 7 and 8, but this time we have decided for organizational reasons produce "classical" instructions with photographs of the main stages in construction. No. 19 is a fabulous mobile construction-site crane with many functions. It is made from the parts contained in "Cars & Trucks" and "Harbour Cranes".

So now -lots of fun reading FAN CLUB NEWS!

### Page 2

#### MARKET PLACE /INFORMATION CORNER

As we have for some time now been receiving ads for the Market Place only on-line, we have decided to drop this heading from the News. Please in future submit your ads directly via our homepage at [www.fischertechnik.de](http://www.fischertechnik.de) under FAN CLUB / MARKETPLACE. You will also find a discussion forum and a chat-room there, and you can start making full use of them right now.

## **THE EURO-MOUSE JOINS IN with fischertechnik ...**

On the Solar Day in the Europa-Park, in a town by the Rhine called Rust, fischertechnik presented models and kits from the Solar series. And when Ferris wheels and racing cars ran without a sound, driven only by the energy from the sun, then even the Euro-Mouse was amazed.

And not only the Euro-Mouse and Charlie were wildly excited. Some 20,000 visitors were fascinated to see the possibilities offered by the fischertechnik kits. "This was a good opportunity for addressing our target group directly," says Volker Simon from the PR department, which organized the event in collaboration with fischertechnik.

The children and young people were particularly enthusiastic over the interactive "Solar Race"; the sun's rays had to be directed with the aid of a pocket mirror onto the solar cells of the cars in order to propel them. But the solar-driven Ferris wheel from the "Fun Park" kit also attracted a great deal of attention.

6,000 flyers were distributed to advertise a competition in which visitors could win fischertechnik kits. The winning tickers for the "Profi-Solar" kit and the "Mini-Kits" were drawn by the well-known television meteorologist Jorg Kachelmann.

## **ROBOT COMPETITION AT DORTMUND UNIVERSITY**

A robot competition was held at the University of Applied Science in Dortmund in May under the direction of Professor Bernd Aschendorf.

47 schools and colleges from all over the State of North Rhine Westphalia took part, and had been given the task of building a robot on the basis of a "Mobile Robots" kit and other fischertechnik parts which would put the others out of action. The young participants had to program their robots, controlled via the "Intelligent Interface", with our LLWin 3.0 software.

The competitors had huge fun both designing and programming their robots, but of course the high point was the actual "battle of the giants", which was finally won by the TSH Vocational College of Menden. Hearty congratulations!

Incidentally: the background to this competition (which will most probably take place again next year) is the aim of arousing schoolchildren's and students' interest in technical matters and engineering. This can be done, as can be seen from the positive response amongst the youngsters and the adults involved in this competition.

## **Page 3**

### **BUCKET-WHEEL EXCAVATORS ...**

... are the biggest pieces of machinery in the world. They are used everywhere where coal and other raw materials have to be extracted by a process known as open-cut mining. This means that no mineshafts have to be sunk - the material is simply dug off from the surface.

These giants are used all over the world, and in Germany they are most often to be found in the Ruhr industrial area. The biggest bucket-wheel excavator in the world is to be found here, at a mining site called Hambach, hauling off 240,000 cubic metres (!) of earth every day from which the coal can then be extracted.

To give you a better idea of these gigantic dimensions we have prepared a diagram for comparison. In the middle of a cube representing the 240,000 cubic metres of earth we are showing a car, about the size of a VW Golf (about 12 cubic metres). The excavator as such, including the connecting bridge that transports the earth along a conveyor belt for further processing, is about 200 metres long. The diameter of the wheel around which the buckets travel is almost 22 metres.

The fischertechnik bucket-wheel excavator worked out slightly smaller than this, but apart from models used in industry it is the biggest model built by fans that we have ever heard of.

Mr Albert Kohl from Essen developed and built this fully working model of the Garzweiler 2 bucket-wheel excavator, working 5 to 8 hours a day for about 3 weeks. The only technical information he had to work on was a television report and a picture on the Internet.

The model is 1.90 metres long, 1.05 metres high, and stands on a chassis measuring 75 x 60 cm. The model is controlled by more than 14 motors, some with an IR Control Set with additional receivers. It is made up of well over 2,000 parts.

This model goes to show once again that everything is possible with fischertechnik and a good idea.

Incidentally: anyone who would like to have a bucket-wheel excavator to do a bit of landscape gardening at the back of the house will have to layout about DM 250 million (€ 125 million), which is certainly worth considering - its fischertechnik "baby brother" is not available for all the money in the world.

We would like to thank the firm of Krupp Fordertechnik GmbH of Essen for their friendly support. Picture material: © Krupp Fordertechnik. Website - [www.krupp-foerdertechnik.com](http://www.krupp-foerdertechnik.com)

## Page 4/5

### LETTERBOX

Andreas Stabinger has developed this electro-pneumatic chess robot out of an old training robot together with pneumatic components and other parts. It even includes the software, with basic drives from the programmer Ulrich Muller. According to Andreas, the robot plays quite intelligently and can keep up well against human amateur chess players. In addition to the software, the complicated gripping arm is the core of this design. (For more information: [www.stabinger.de](http://www.stabinger.de))

Imke Reinecke from South Africa has sent us a picture of her fischertechnik lawnmower. The model is driven by motors and can even be remote-controlled. Perhaps one of the manufacturers of real lawn mowers would like to pick up this ideas ... it is after all much more convenient to control the machine from the veranda than always having to run along with it!

Daniel Huger has developed this lorry terminal in which the lorry is led on a chain to the loading station instead of being driven by a driver. This saves fuel and time, because the lorry does not have to be secured against rolling away while it is being loaded or unloaded.

This off-road motorbike comes from Kevin Knoppke. It has movable handlebars and even rear suspension.

Marius Kauling built this helicopter. The rotor is driven by pinions, shafts, and a chain.

Michael Werner has done it again, and we simply had to show you his models. They include three ships: a Viking vessel, the pirate ship, and the gigantic aircraft carrier (with more than 2,300 parts). He has also designed a Space Shuttle.

## Page 6

### NEWS - COMPUTING BIONIC

This term refers to the technical application possibilities open to biological "systems". Examples are the dragonfly as the prototype for a helicopter, bridges based on the principle of the skeleton, insects' eyes as the design model for high-precision electron microscopes, and butterflies with scales on their wings similar to the pattern of tiles on a roof ... the list of examples could go on for ever.

With the new Bionic Robots kit you can build a walking machine like the ones developed in university research laboratories. The prototypes on which they can be based include cats (for the four-legged ones), beetles (for the six-legged), and a skier moving along with the aid of his ski-sticks.

Bionic robots can be used for work that would be too dangerous or time-consuming for human beings. According to the way they are fitted out they can extract soil samples, take measurements, survey planets, or trigger off the controlled explosion of unexploded bombs (but they can only do that once, and don't try it with Bionic Robots - even fischertechnik reaches its limits at some stage).

Bionic Robots check your environment with sensors, and can thus for instance steer around obstacles. However, we are sure that you will find plenty of other highly interesting applications ... after all, you don't have to run to the machine every time you want a cup. Perhaps you might like to send us your programs with a full description for us to publish on our homepage at [www.fischertechnik.de](http://www.fischertechnik.de)?

Like Industry Robots or Pneumatic Robots, the Bionic Robots kit contains a CD-ROM with the LLWin 3.0 sample programs for the relevant models, although it does not include the Intelligent Interface, the LLWin 3.0 software, or the ACCU Set flexible power supply.

If you want big, powerful steps you need two Power Motors at once of the kind you already know from the Power Motor Set and which are included in addition to the 480 other parts in the kit. And don't forget: this kit also contains a full accompanying brochure for teachers and students with information and data on all aspects of the subject of bionics.

### **COMPUTING Tips & Tricks**

This time we would like to show you a little trick with which you can connect two lamps at once to one motor output on the Intelligent Interface. You need two Type 1 N 4001 diodes (the little electronic parts that only allow the current through in one direction); these are available in an electronics shop, for instance.

You have to connect the diodes to fischertechnik plugs (see picture) in order to connect the whole thing to the interface.

The function "motor left" one lights up one lamp, "motor right" lights up the other one.

With the interface versions 2.14 and higher (look at the sticker on the base of the housing) you can connect two lamps to one motor output even without diodes by connecting one pole of the lamp to one of the two M1 sockets (+) and the second one to earth (⊥).

### **Page 7/8 - FAN CLUB model: Mobile building-site crane**

This time we have combined the Cars & Trucks kit with the Harbour Crane kit for you, and with the huge number of parts we have developed a building-site crane that is transported by a Cars & Trucks towing vehicle. In addition to the parts contained in the kits you will also need the parts contained in the parts list: 4 x 32913, 4 x 32883 (or 32627, if you prefer yellow), 3 x 35973, 3 x 35977, 3 x 36132 and 3 x 35945. The mobile crane can carry out a large number of functions.

When you arrive at the construction site, you first have to steady the crane on its supports and uncouple it from the towing vehicle. Once this has been done, you can set the crane up yourselves by means of a sophisticated system of cables. Then you fill the yellow box with whatever ballast is necessary to act as a counterweight - the crane is not supposed to tip over, after all. That completes the preparations, and now you can start work with your crane. Enjoy yourselves!

Incidentally: with a little imagination you can convert the model into a long truck for carrying tree-trunks.