



**fischertechnik**® 

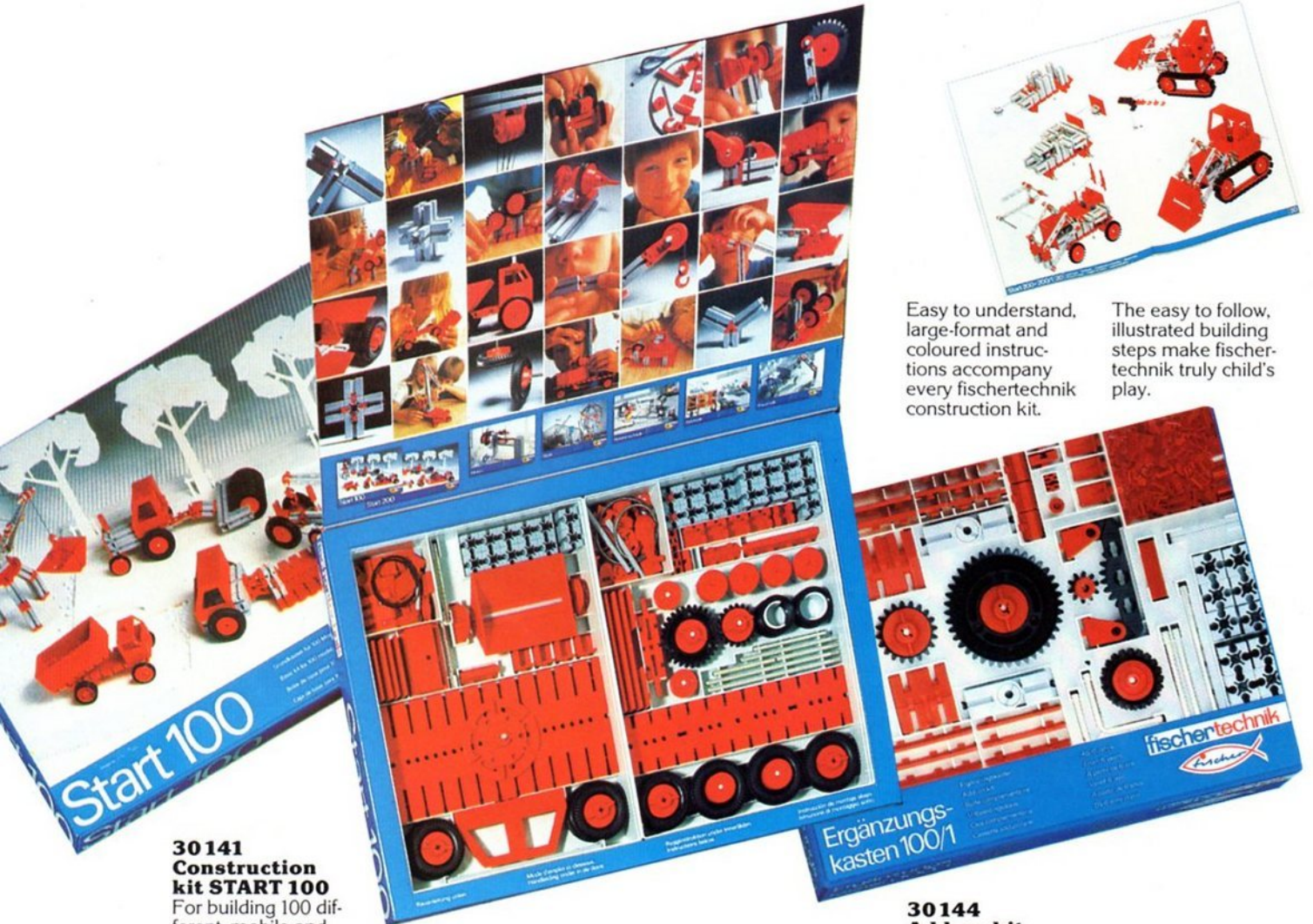
**Man and Machine**



**fischertechnik**®   
**COMPUTING**

# A construction kit to get things going.

If you want to get to know and understand the fascinating world of engineering in a way that combines learning and play, fischertechnik has created just what you need in its construction kits Start 100 and Start 200. Your start in engineering could not be simpler. The possibilities are virtually unlimited. With the Start 100 construction kit you can build more than 100 different models. And the bigger kit, Start 200, can be used in 200 different ways. Can be expanded by 100 or more models, with add-on kits 100/1 and 200/1.



Easy to understand, large-format and coloured instructions accompany every fischertechnik construction kit.

The easy to follow, illustrated building steps make fischertechnik truly child's play.

## 30141 Construction kit START 100

For building 100 different, mobile and partly motorizable fischertechnik models. With fully detailed and easy to understand and illustrated instructions.

## 30144 Add-on kit 100/1

Adds many interesting, extra parts to the construction kit START 100 and brings it up to the level of construction kit START 200.



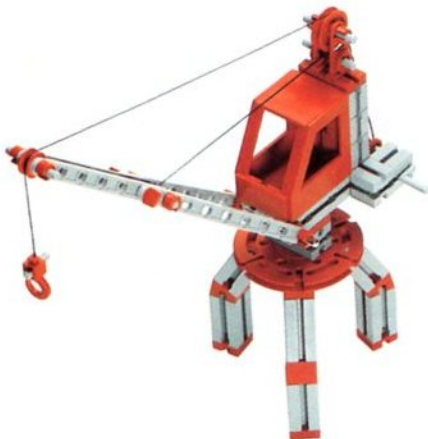
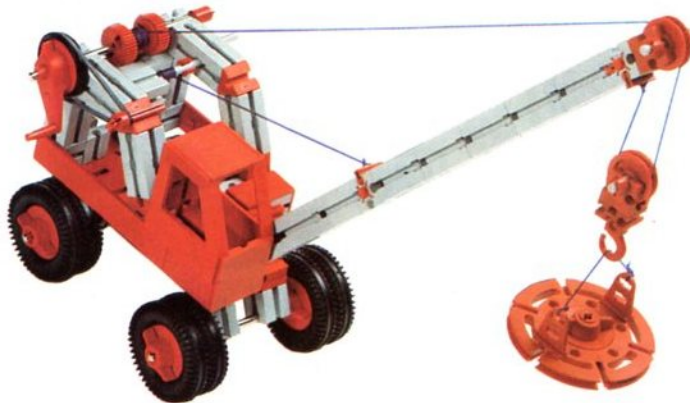
**30142  
Construction  
kit START 200**

The big fischer-technik starter kit for building 200 different, mobile and partly motorizable fischertechnik models. With fully detailed and easy to understand, illustrated instructions.



**30145  
Add-on kit  
200/1**

Expands construction kit START 200 with many new and exciting components for more interesting models.



All the fischer-technik models illustrated here were produced from construction kits START 100 and START 200.

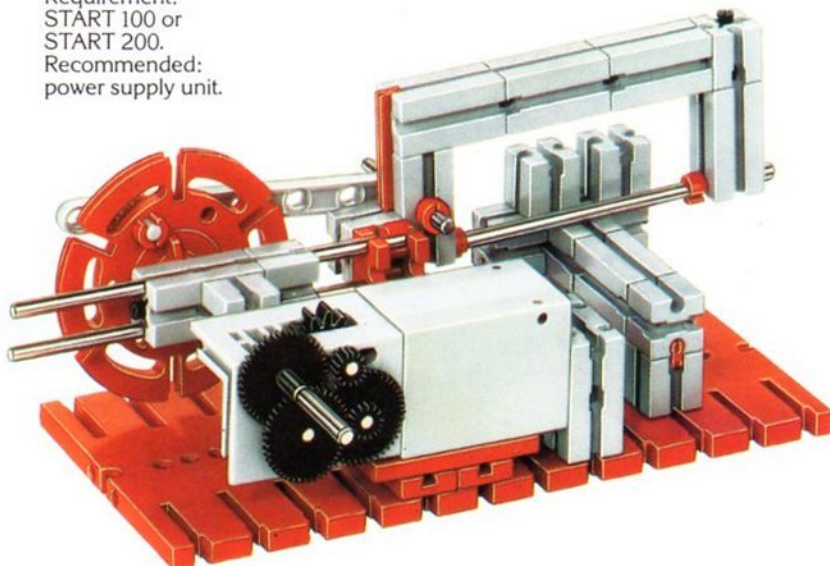
# Step by step into the world of engineering.

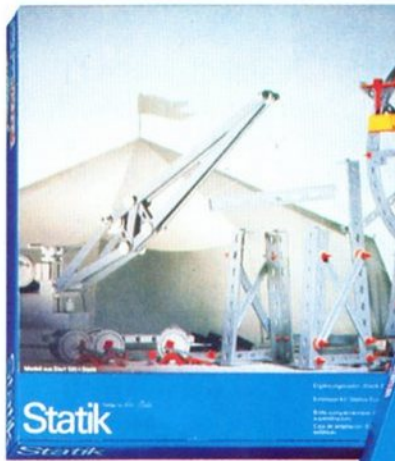
The entry with construction kits START 100 and START 200 was the first step. Technical understanding has developed. And the fascination of things technical has also grown. If you want to go a step further, fischertechnik has created construction kits for just about every area of technology. From motor + gears and electromechanics through electronics to pneumatics. So you can go on inventing, building and modifying. And you continue to learn. How to understand construction procedures and experiment with them.



## 30140 Construction kit Motor + Gears

An ideal addition to the Start kits. Motorize your fischertechnik models. Kit includes motor, multiple gears, change-pole controller and holder for 4 x 1.5 V baby batteries (not suitable for rechargeable batteries). Requirement: START 100 or START 200. Recommended: power supply unit.





Statik

**30 149  
Construction  
kit Statics**

Build big cranes, towers and super-structures. The kit contains struts, angled beams and arches.  
Requirement: START 100 or START 200.



Elektromechanik

**30 226  
Construction  
kit Electromechanics**

Add many interesting components for controlling electro-mechanical processes: switches,

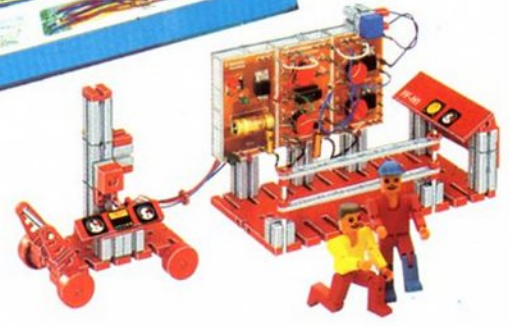
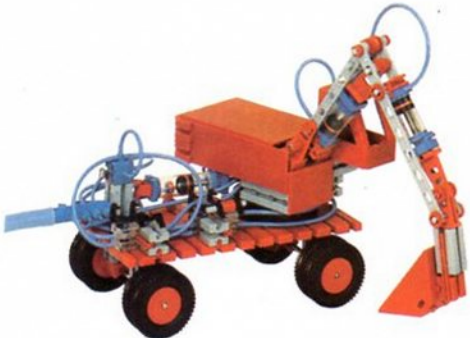
buttons, electro-magnets, reed contacts, bimetals and six socket lamps. With easy to understand, clear instructions.  
Requirement: START 100 or START 200.  
Recommended: motor + gears and power supply unit.



**30 253  
Construction  
kit Electronics**

Learn electronic control and regulation with fischertechnik. For building alarm systems, timing switches, timing generators, sirens, etc. Contains an IC voltage supply, threshold switch, power stage, loudspeaker, photo-

resistor, capacitors, diodes and resistors.  
Requirement: START 100 or START 200.  
Recommended: motor + gears, electromechanics and power supply unit.



**30 863  
Construction  
kit Pneumatics**

fischertechnik pneumatics is a professional application of pneumatic control in the fischertechnik system. The kit contains many interesting components, like cylinders and valves.  
Requirement: START 100 or START 200 with the fischertechnik compressor.



# Expand any construction kit

The possibilities of fischertechnik construction kits seem unlimited. You can still go a step further. Build models that are even more realistic. Add and expand. With the fischertechnik service and accessory kits. You can illuminate all the models you have built! Or you can add a powerful cable winch for vehicles and crane constructions. And much more.



**30186 Add-on kit Mini-Motor + Gears**  
With mini-motor and many gears for special drives for cable winches, ring gears, hoisting gear, roller control, etc.

**30282 Service-Set Red building blocks**

**30283 Service-Set Base plates and cab**

**30285 Service-Set Wheels and suspension**

**30381 Large construction panel 1000-0**  
Base plate 390 mm x 270 mm

**30173 Transformer**  
6.8V/0.5A and regulable.

**30865 Hand-pump**  
Compressed-air source for all pneumatic models.

**30864 Mini-compressor**  
220-V compressor for all pneumatic models and running times of any duration.



**30280 Service-Set Grey building blocks**  
An add-on assortment of different fischertechnik basic modules.

**30185 Service-Set Motor**  
Motor with gearing and connecting cable.

**30289 Service-Set Winch and stepped drive**  
For building your own powerful cable winch for vehicles and crane constructions. Can be motorized.

**30187 Service-Set Mini-Motor**  
Mini-motor with gears and connecting cable. For special motor applications.

**30288 Service-Set Lamps and cabling**  
Illuminates all self-built fischertechnik models.



**30291 Service-Set Hydraulic cylinder**  
Two hydraulic cylinders for using genuine hydraulic functions in fischertechnik models.

**30284 Service-Set Chain elements**  
An add-on assortment for building caterpillar tracks and conveyor belts.

**30287 Service-Set Flatt support, bow and struts**  
Expands the possibilities of construction with the statics kit.

**30290 Service-Set Slewing ring**  
The basis for rotating cranes and towers. Can be motorized with mini-motor + gears and service-set mini-motor.

**30286 Service-Set Battery container**  
A battery holder for 4 x 1.5V batteries with cables and change-pole controller (not suitable for rechargeable batteries).

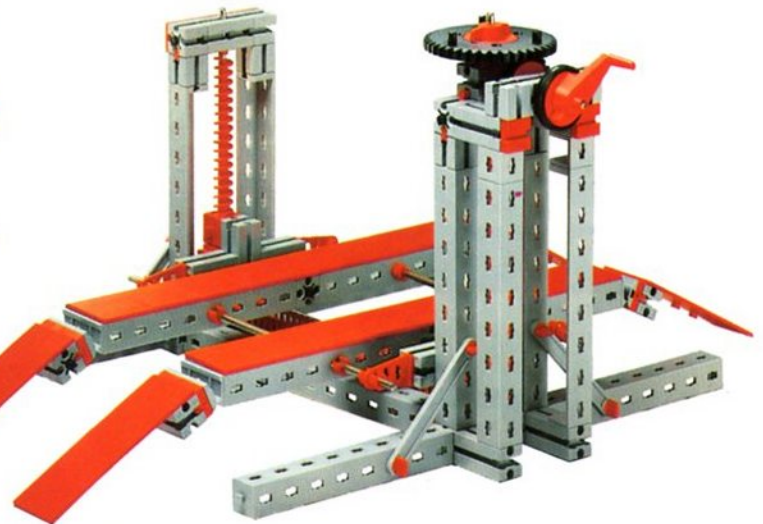
# Classics from fischertechnik.

Model kits with which you can create original hydraulic cranes through compressors to a race car, and in true detail. And they are more than mere models to look at. Because they work just like the originals. The same parts can be moved just like their big brothers on the road. You can alter them as often as you wish, reconstruct them and combine them with other fischertechnik components.



### 30 464 Building kit Helicopter

A vivid model with a motorized main rotor blade and headlight on the front. The motor is already contained in the package. The tail rotor can be motorized with the mini-motor service set.



### 30 456 Building kit Vehicle lift

This technically perfected model has drive-on tracks that can be altered in width. Any vehicle will fit on it. The model can be motorized with the mini-motor service set.

### 30 463 Building kit Rough rider

An attractive play model with super suspension and wide rubber tires. Slight hand pressure will steer it across the most difficult terrain.



### 30 481 Building kit Multi purpose vehicle

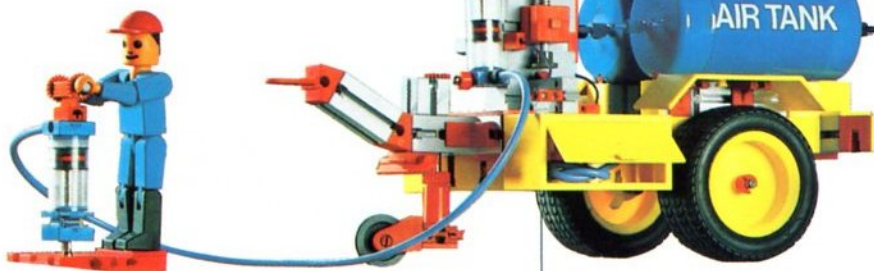
A fischertechnik model from which you can build the most imaginative trucks by conversion or expansion in combination with other fischertechnik kits, such as the hydraulic crane or START/statics. From a heavy-duty crane through to a container truck. Drive for cable winch with the mini-motor service set.





**30 441  
Building kit  
Hydraulic crane**

An easily built model with many interesting functions and real fischer-technik hydraulics. Can be motorized with mini-motor + gears or mini-motor service set. Use with the fischer-technik multi-purpose vehicle.



**30 458  
Building kit  
Portable air  
compressor**

The mobile compressed-air source for the fischer-technik pneumatics kit (not suitable for all models). Also an ideal match for the general-purpose vehicle. Complete with site worker and road blocks. Can be powered by the fischertechnik power supply unit.

**30 467  
Building kit  
Tipper truck**

A powerful tipper for big building sites. Steerable and with suspension. Pushing the hydraulic cylinder raises the platform. Can be motorized with motor + gears or remote-control set. Raising and lowering of the tipper with mini-motor + gears.



**30 480  
Building kit  
Construction  
crane**

The giant among fischer-technik models. With a height of 80 cm this model is a real star on any building site. Several functions can be motorized with motor + gears and motor service set.



# Remote controlled fischertechnik (not available in the U.S.)

When two big names get together, the result is usually something quite special. And now the fischertechnik models you build can be combined with Robbe remote controls. Thus the world of fischertechnik takes on a fascinating new dimension: remotely controlled movement.

With the remote-control set fischertechnik models have three forward and reverse gears and they can also be steered.

With the fischertechnik motor controller you take a decisive step forward. Together with a Robbe remote control you can control your fischertechnik models without any wires and at a range up to 1 Kilometer.



## 30375 Remote-control set

This serves for motorizing fischer-technik models, especially the fischertechnik general-purpose vehicle (30481). You will find everything you need in one kit: wheel drive, servo, differential and cable steering with control panel.



## Wheel drive

Just like in a real vehicle, the motor comes with a perfected three-gear transmission. There is space in the wheel drive for four batteries. With an integrated charging socket.

## Servo

With this unit you can steer your vehicle. With a second servo (31495 or 30275) you can do even more: go through the three-gear transmission of the wheel drive.



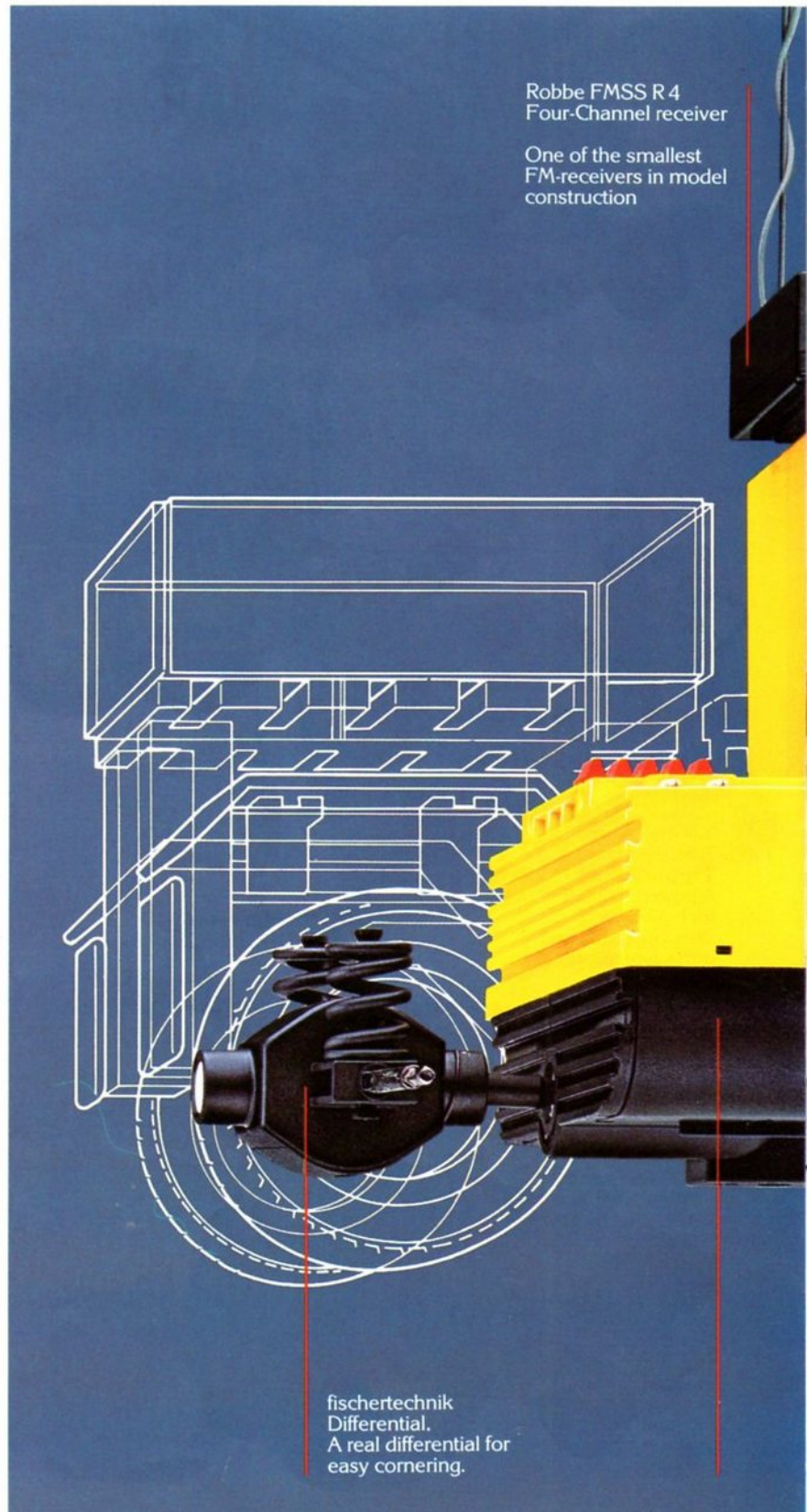
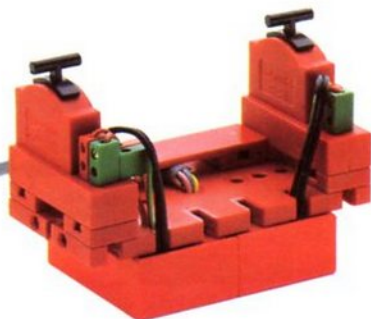
## Differential

With a real differential fischertechnik models behave just like their big brothers when cornering.



## Control panel

(not available in the U.S.). This manual control enables travel functions to be transmitted to a self-built fischer-technik model by a remote-control cable. In a second stage of expansion the cable remote control can be replaced with a combination of the fischertechnik motor controller and a Robbe remote control.



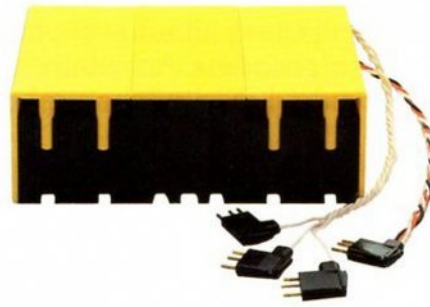
Robbe FMSS R4  
Four-Channel receiver

One of the smallest  
FM-receivers in model  
construction

fischertechnik  
Differential.  
A real differential for  
easy cornering.



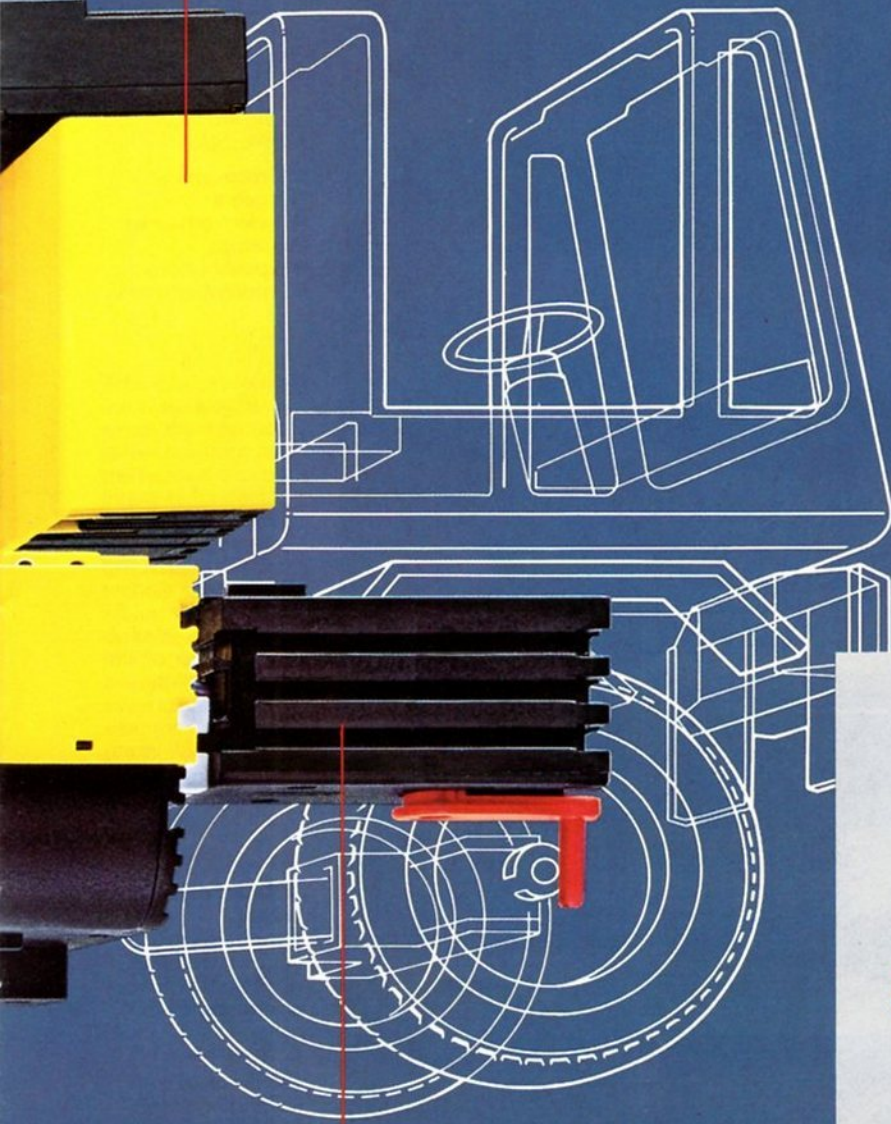
**30277 Motor controller set** (not available in the U.S.). The fischertechnik motor controller set makes fischertechnik compatible with Robbe remote controls.



The four-channel motor controller has two analog channels (speed/direction controller) and two digital channels (relays).

The functions are designed as follows:  
 - channel 1/2 = analog channels for motors and servos  
 - channel 3/4 = digital channels for on/off, lamps, electromagnets and motors

fischertechnik Motor-cibtrikker Four-channel-speed/direction controller, compatible with Robbe remote controls



fischertechnik wheel drive. Motor with perfected three-gear transmission. With integrated charging socket.

fischertechnik Servo Steering unit for vehicle. An addition servo enables moving through the three-gear transmission

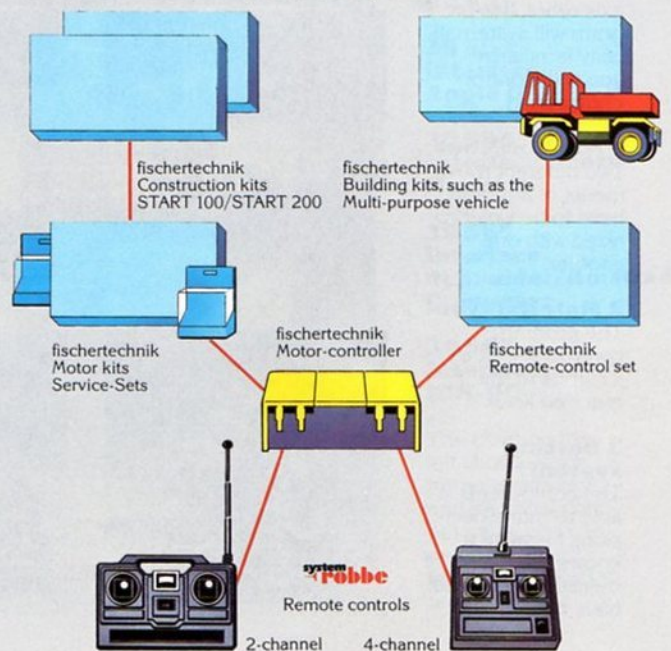
With the fischertechnik motor controller fischertechnik can be combined with all Robbe remote controls. We recommend:



Robbe Compact 40 MHz two-channel radio remote control range up to 1 km two remotely controllable functions: eg drive and steer

Robbe Starion 40 MHz four-channel radio remote control range up to 1 km four remotely controllable functions: drive, steer and two more

**Functional schematic of remotely controlled fischertechnik**



# Computer controlled fischertechnik.

The fischertechnik computing kit adds life to your computer. In it are components for constructing ten different working models. An rotator antenna. A machine tool. A sorting system. Or a dual-axis teach-in robot.



Matching interfaces provide you with the link to the Apple, Commodore and IBM personal computers. With the programs on the accompanying diskette you can control any model and create new programs of your own. You can convert, expand and modify. Give your computer this building kit and you and your computer will soon be on the way to many new, interesting and creative ideas.

The technical accessories in the fischertechnik computing kit, Art. No. 30 554:

- 2 mini-motors
- 2 gears
- 1 electromagnet
- 3 lamps
- 8 pushbuttons
- 2 potentiometers

## 30554 Computing kit

If you want to get into robotics and automation, it's best to proceed step by step. From simple traffic lights through to a dual-axis robot, this program will systematically familiarize you with control engineering.

### 1 Machine tool

Two different movements of a motor have to be synchronized with one another.

### 2 Materials lift

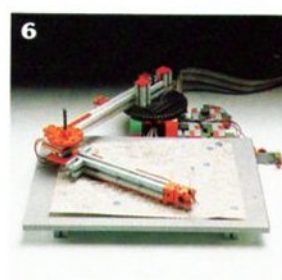
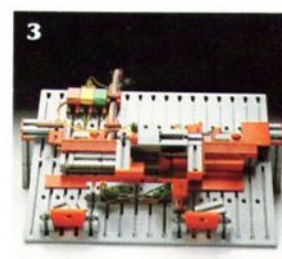
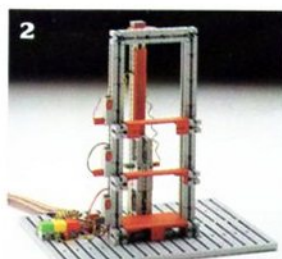
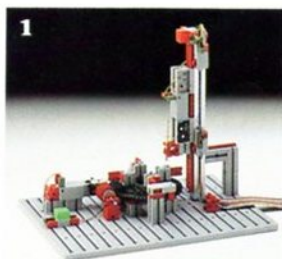
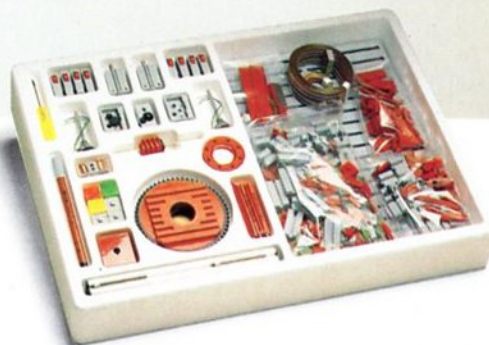
The program controls the lift as it climbs to the required level.

### 3 Sorting system

The computer is able to make decisions because it knows the results of measurements that have been made.

### 4 Tower of Hanoi

This robot can be controlled in the rotation of the body and the vertical movement of the effector.



### 5 Teach-in robot

A dual-axis robot controlled by a general-purpose programming system.

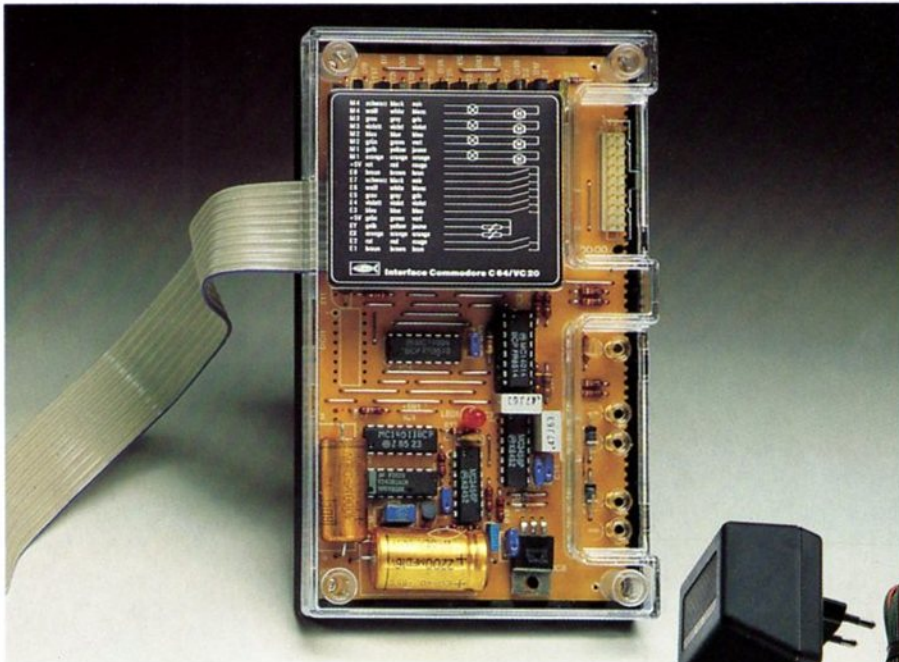
### 6 Graphics panel

Diagrams and pictures can be transferred into the image memory of the computer.

Six of ten possible models from the fischertechnik computing kit.

# Ready? Run!

The interface creates the link between the computer and the fischertechnik model. With the help of fischertechnik interfaces, the connection of automats, sensors and robots is quite straightforward. In fact as simple as printing out data or making entries on the keyboard.



The power supply for fischertechnik computing models:

### 30 579 Power supply computing

The ideal power source for all fischertechnik computing kits.



### Interfaces with most popular computers.

fischertechnik interface and software packages are available for the Apple, Commodore and IBM personal computers. You can connect four motors, eight probes and two potentiometers for instance. Each interface includes a program diskette for the ten models of the computing kit.

### 30 562 Interface Commodore C64/VC20

### 30 561 Interface Commodore 4 XXX/8 XXX

### 30 563 Interface Apple II

### 30 564 Interface Acorn Model B

### 30 565 Interface Schneider/Amstrad Computer

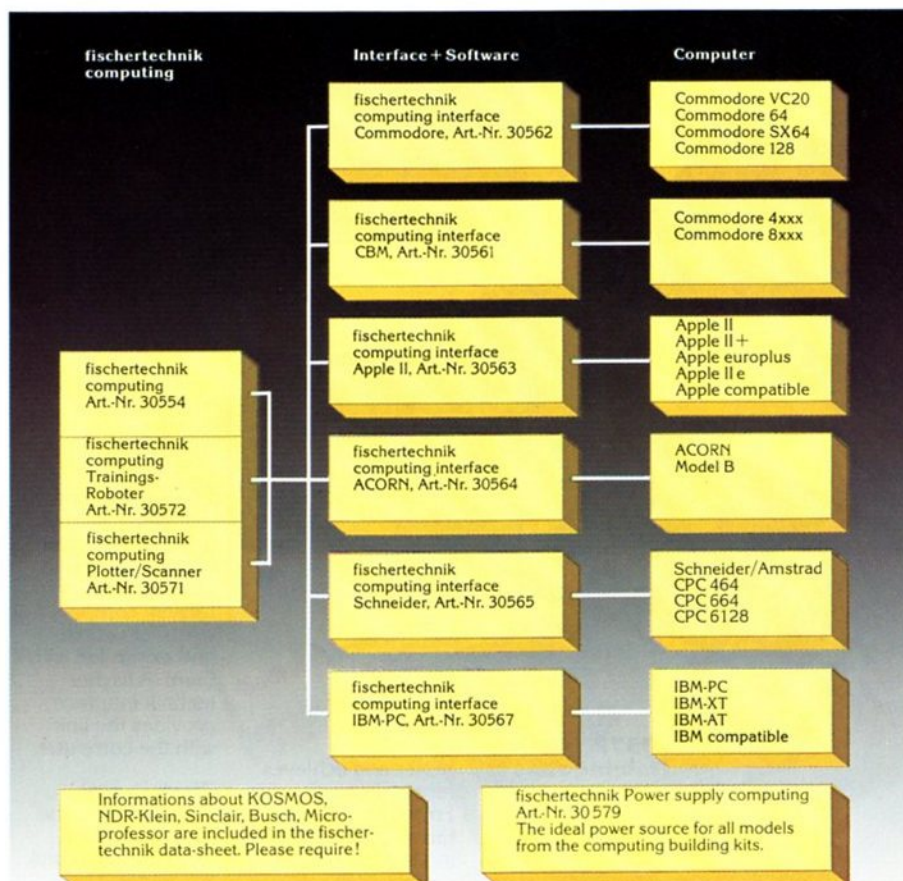
### 30 567 Interface IBM-PC

The chart on the left shows which home computers and personal computers can be connected to which fischertechnik interfaces.

This is because of the close way in which the interface driver program and the hardware of the interface interact. The driver program and all sample programs of the fischertechnik computing kit are supplied on diskette with the interface. And everything is made even easier by a diagnostics program. With this you can check the cabling and proper functioning of the model.

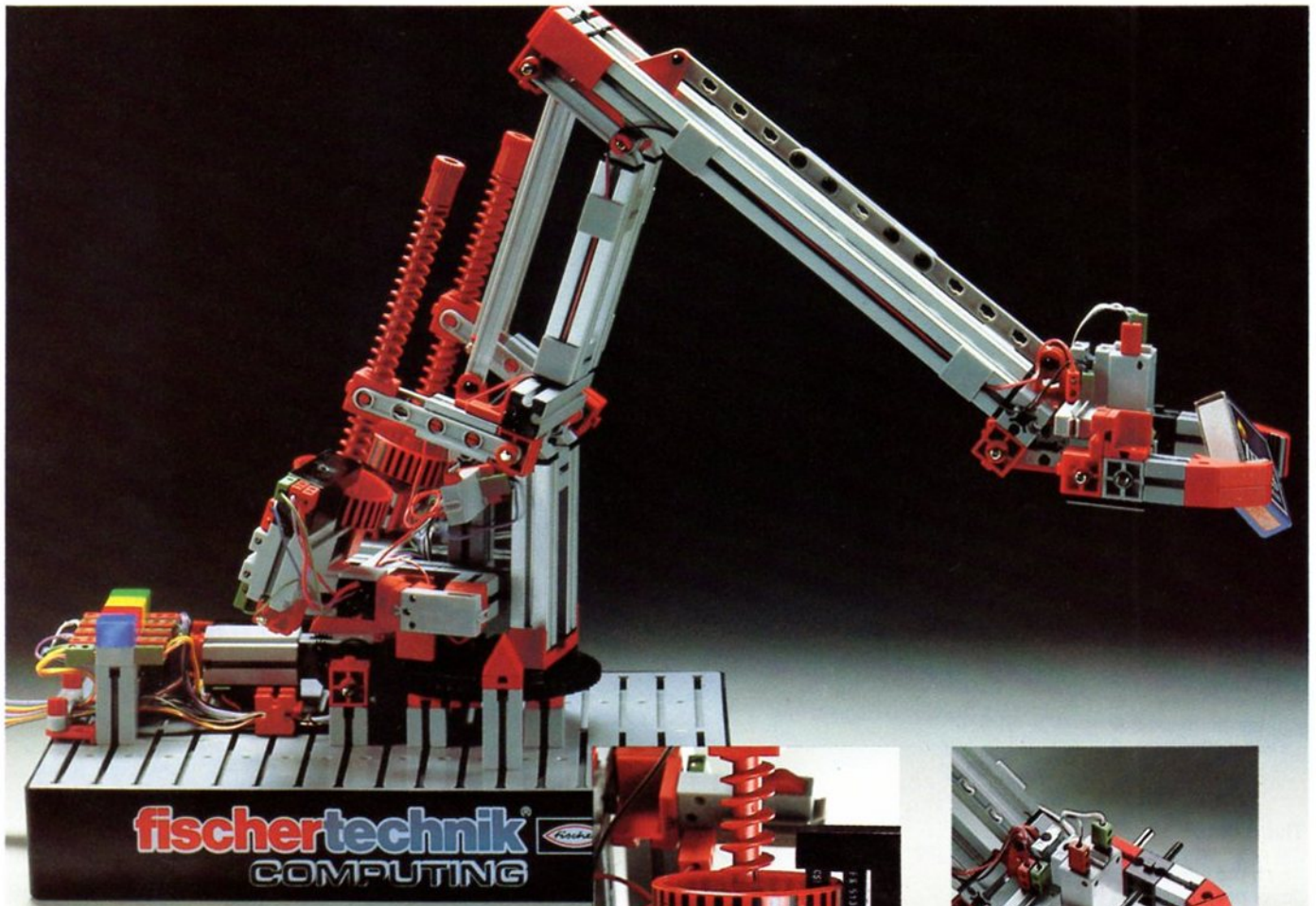
The technical data of fischertechnik interfaces:

- 4 outputs for the connection of motors, lamps, electromagnets
- 8 digital inputs for the connection of probes, switches, relays
- 2 analog inputs for connecting potentiometers, photoresistors



# Put your computer to work.

The fischertechnik training robot. With its three axis of movement can reach any point within its work envelope.



The near-professional kit with this three-axis arm will handle any payload up to 100 g. Its positioning system works with three infrared photo inter-

## 30572 Training robot

rupter and achieves repeatability of 1 mm. The kit contains detailed building instructions and professional software on a diskette.

The components of the fischertechnik training robot can be combined with all other fischertechnik components, of course, and expanded with them. A fischertechnik interface provides the link with the computer.

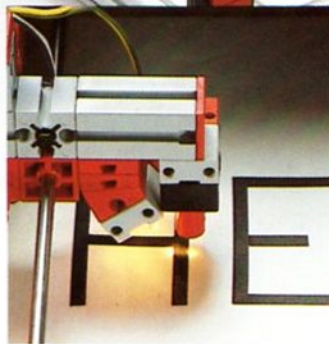
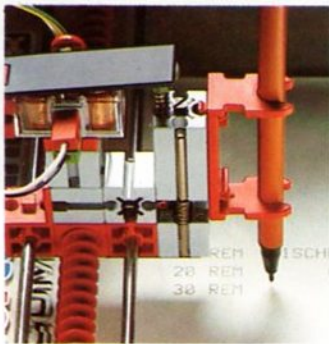
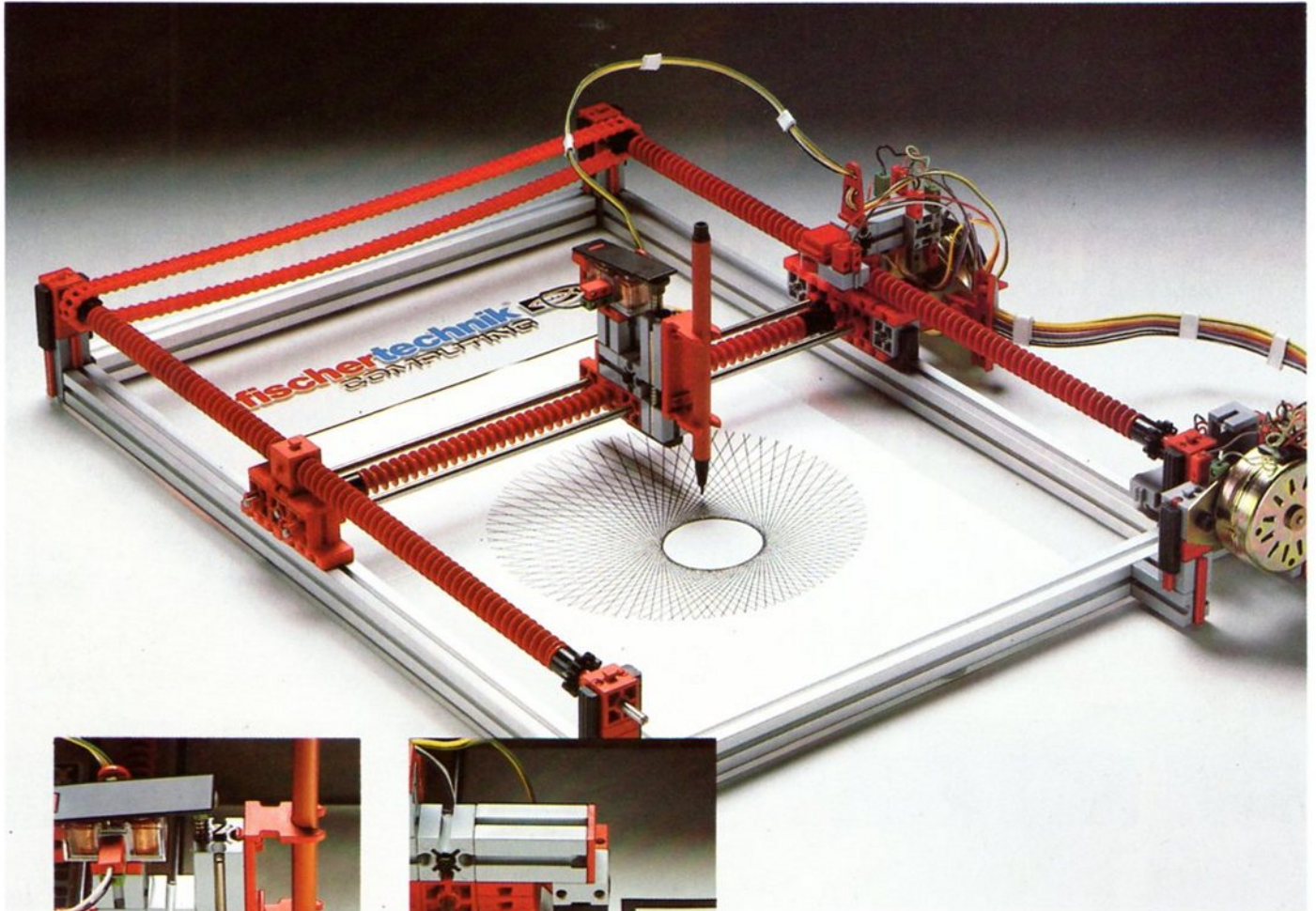
The technical accessories of the "Training robot" from fischertechnik computig, Art.-Nr. 30572:

- 3 S motors 6,8 Vdc for moving the robot axes
- 1 mini-motor 6,8 Vdc for driving the gripper
- 3 infrared photo interrupter for positioning the three robot axes
- 4 pushbuttons for defining the home position
- 4 lamps for optical display of operating status
- 1 emergency-off button

# Your computer really should be able to read and write.

The plotter/scanner from fischertechnik will soon show it how.

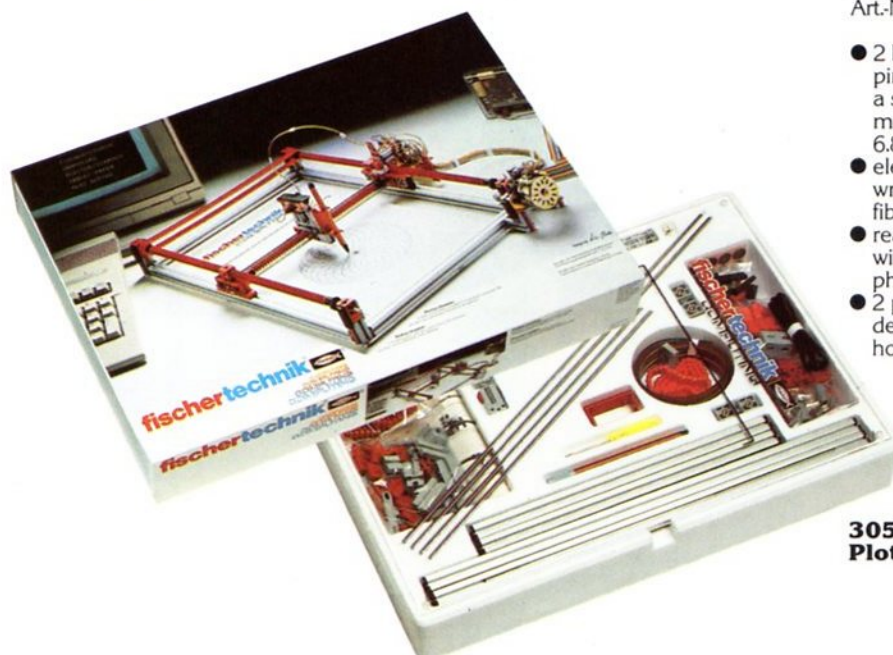
This professional fischertechnik computing kit combines the possibilities of two graphics units in one model. And the results are truly impressive.



The technical accessories of the fischertechnik computing "Plotter/Scanner", Art.-Nr. 30571:

- 2 bipolar stepping motors with a stepping increment of  $7.5^\circ$ , 6.8 Vdc
- electromagnetic writing head with fiber refill
- reading head with lamp and photocell
- 2 pushbuttons for detecting the home position

The plotter commits graphics to paper. Right up to A4 format. Two bipolar stepping motors give it positioning accuracy of better than 0.5 mm. The scanner is for digital scanning of graphics copy. With the software you get on the accompanying diskette even false-colour presentation is possible.



**30571**  
**Plotter/Scanner**

# fischertechnik at a glance

One of the big bonuses of fischertechnik is the variety of what is offered and the practically unlimited possibilities for combination and expansion. Any component can be combined with every other one. A range without limits.

## fischertechnik

Construction kit

<b>30 141</b> Construction kit START 100	<b>30 142</b> Construction kit START 200	<b>30 140</b> Construction kit Motor + Gears	<b>30 145</b> Construction kit Statics	<b>30 226</b> Construction kit Electromechanics	<b>30 253</b> Construction kit Electronics	<b>30 867</b> Construction kit Pneumatics
<b>30 144</b> Add-on kit 100/1	<b>30 145</b> Add-on kit 200/1	<b>30 180</b> Add-on kit Mini Motor + Gears				<b>30 458</b> Building kit Portable air compressor
	<b>30381</b> Base plate 1000-0	<b>30173</b> Transformer			<b>30 864</b> Mini-compressor	<b>30 865</b> Hand-pump

<b>30 185</b> Service-Set Motor	<b>30 187</b> Service-Set Mini Motor	<b>30 280</b> Service-Set Grey building blocks	<b>30 282</b> Service-Set Red building blocks	<b>30 283</b> Service-Set Base plates and cab	<b>30 284</b> Service-Set Chain elements	<b>30 285</b> Service-Set Wheels and suspension	<b>30 286</b> Service-Set Battery container	<b>30 287</b> Service-Set Flatt support, bow and struts	<b>30 288</b> Service-Set Lamps and cabling	<b>30 289</b> Service-Set Winch	<b>30 290</b> Service-Set Slewing ring
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## fischertechnik

Building kit

<b>30 441</b> Building kit Hydraulic crane	<b>30 456</b> Building kit Vehicle lift	<b>30 458</b> Building kit Portable air compressor	<b>30 463</b> Building kit Rough rider	<b>30 464</b> Building kit Helicopter	<b>30 467</b> Building kit Tipper truck	<b>30 480</b> Building kit Construction crane	<b>30 481</b> Building kit Multi purpose vehicle
			<b>30 375</b> Remote steering and driving unit	<b>30 277</b> Motor controller Four-channel speed/ direction controller			

## fischertechnik

COMPUTING

	<b>30 554</b> Building kit computing	<b>30 571</b> Building kit Plotter/Scanner	<b>30 572</b> Building kit Training robot
<b>30 561</b> Interface CBM	<b>30 562</b> Interface Commodore	<b>30 563</b> Interface Apple	<b>30 564</b> Interface ACORN
	<b>30 565</b> Interface Schneider/Amstrad	<b>30 567</b> Interface IBM	<b>30 579</b> Transformer computing

# fischertechnik

## Technology. Of the future.

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