fischertechnik

Science · Technology
STEM
Engineering · Math

Training & Simulation

ENGLISH

HIGH QUALITY
fischertechnik
MADE IN GERMANY

Training model and 3D printing

fischertechnik and simulation – an optimal and cost-effective combination enjoying growing popularity that already has many engineers, trainers, instructors, product developers, designers, and software specialists excited!

fischertechnik makes it possible to map complex industrial processes in a realistic manner. The focus is on training, simulation, and demonstration as well as displaying automation and digital, networked applications in a realistic production environment in an understandable manner. The most popular areas of application for fischertechnik training models are:

- Education and training in companies and vocational schools
- Universities and colleges
- Product and software development
- Logistics and production planning
- Automation and digitization

With the 3D printer building kit, fischertechnik also offers deep insight into a fascinating and forward-thinking technology. Users gain basic knowledge on 3D printing, can print their own objects or included objects, and develop a broad understanding of how this revolutionary technology works.

9V / 24V MODELS

fischertechnik training models are delivered assembled as compact functional models. All models are available in 9V standard voltage with a TXT controller and RoboPro control programmes. Also available in global 24V industrial standard for connection to any current PLC. The 24V models have a PCB with relay to reverse the motor's direction of travel for this purpose.
Inputs and outputs are designed for pin connectors (26-pin, 2.54mm grid) and terminal blocks with push-in connections.
Wiring plans and technical information are available at
www.fischertechnik.de/en/simulating

TUTORIALS / DOCUMENTATION

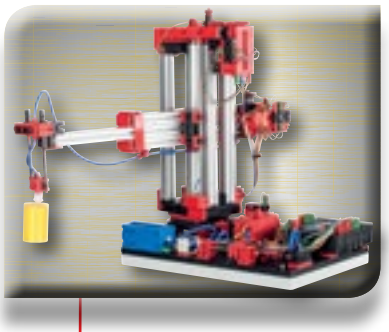
eLearning Portal
The portal provides technical documentation, wiring plans, data sheets, and additional didactic material for free download.
Innovative teaching materials by fischertechnik for teachers, instructors, and trainers supports the development of technical understanding among high school and university students and trainees and helps transmit knowledge.
It offers visual models and tasks for easily preparing lectures, and includes problems as well as solutions. Handouts and copying templates are also included.
www.fischertechnik-elearning.com

FACTORY SIMULATION

Combination of the models Sorting Line With Color Detection, Multi Processing Station With Oven, Automated High-Bay Warehouse and Vacuum Gripper Robot. Self-contained material cycle: workpieces are retrieved from the Automated High-Bay Warehouse, processed in the Multi Processing Station With Oven, then sorted by color in the Sorting Line With Color Detection and finally stored in the Automated High-Bay Warehouse again. The Factory Simulation is available in both 9V and 24V version:
Item No.: 536629 (9V⎓ / with 5x ROBOTICS TXT Controllers and controller software ROBO Pro) / **Item No.: 536634** (24V⎓ / without controllers)

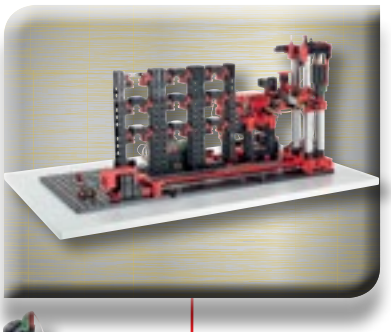
> **Required for 536629 (9V): 3x Power Supply**
Item No. 505287 (9V/220V) / 122952 (9V/120V)

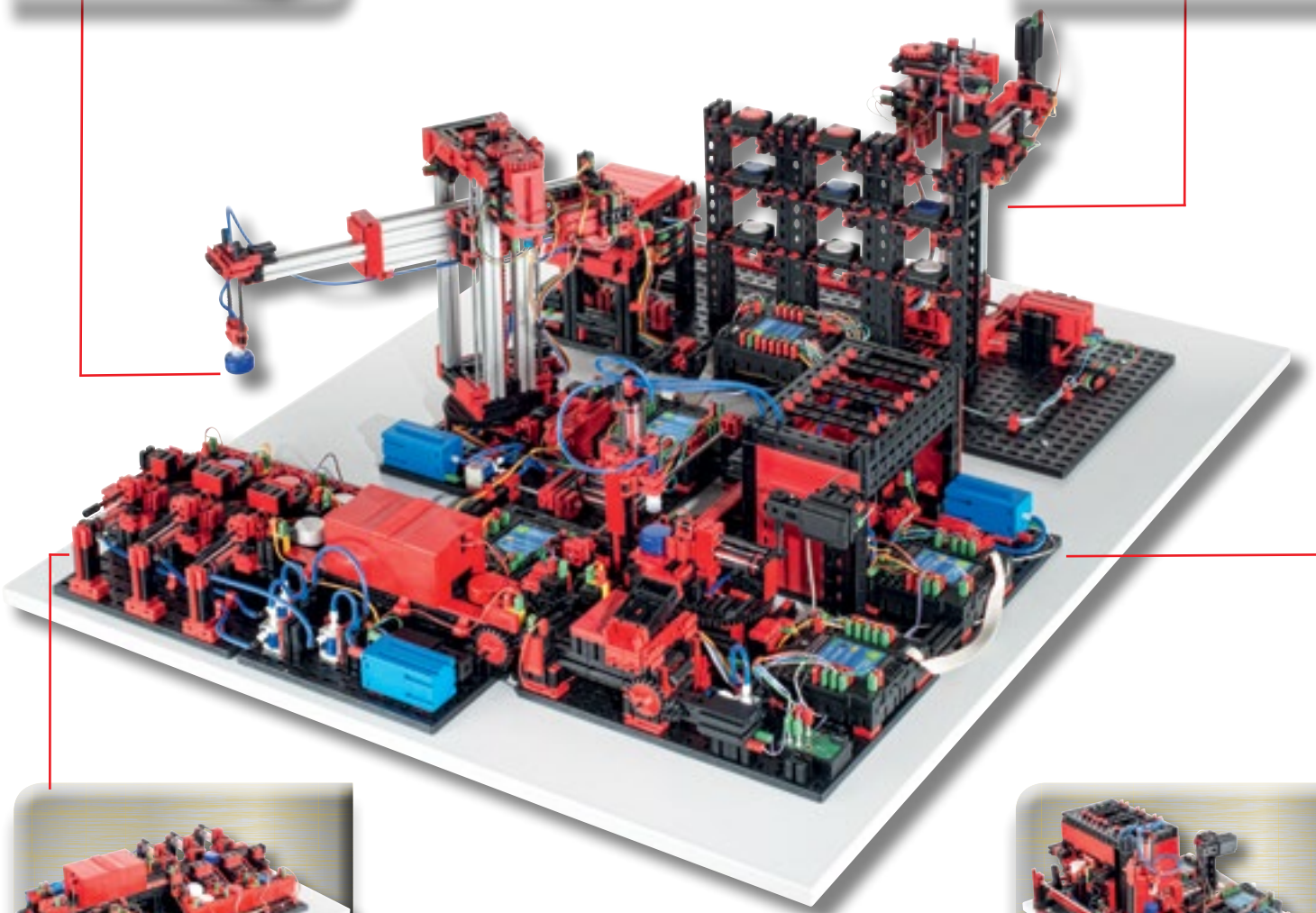
Item No.	536629 (9V⎓)	EAN	4048962250367
Item No.	536634 (24V⎓)	EAN	4048962250411
Dim. (mm)	972 x 772 x 402	Weight (kg)	20.6 (9V⎓), 19.5 (24V⎓)



VACUUM GRIPPER ROBOT

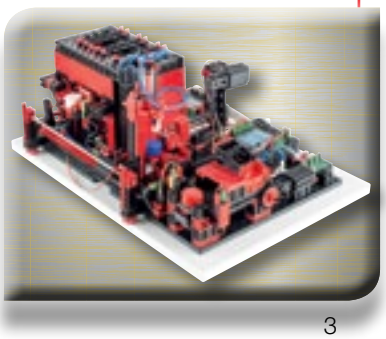
AUTOMATED HIGH-BAY WAREHOUSE





SORTING LINE WITH COLOR DETECTION

MULTI PROCESSING STATION WITH OVEN



VACUUM GRIPPER ROBOT

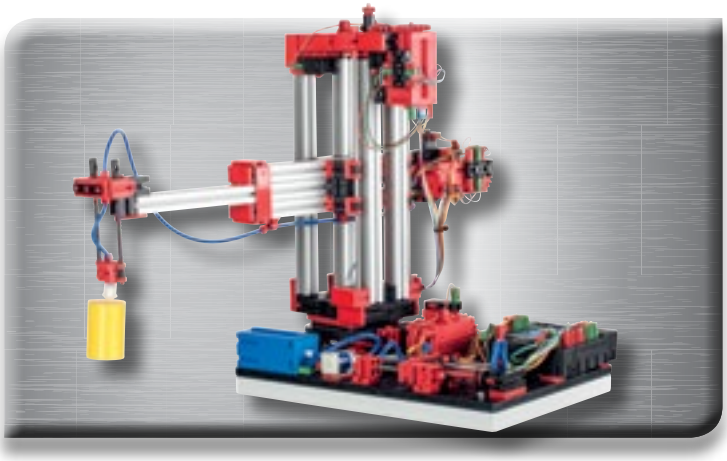
3-axis robot with vacuum gripper works quickly and precisely, positioning workpieces in three-dimensional space. Working range: x-axis 270°, y-axis (forwards/back) 140mm, z-axis (up/down)120mm

> Incl. 3x encoder motors, 3x push buttons (limit switch), vacuum suction device, compressor, solenoid valve
> Model packed in a robust box

Item No.: 536625 (9V⎓ / with ROBOTICS TXT Controller and controller software ROBO Pro)
Item No.: 536630 (24V⎓ / without controller)

> Required for 536625 (9V): 1x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	536625 (9V⎓)	EAN	4048962250329
Item No.	536630 (24V⎓)	EAN	4048962250374
Dim. (mm)	222 x 482 x 382	Weight (g)	3300 (9V⎓), 3120 (24V⎓)



SORTING LINE WITH COLOR DETECTION

Detects workpieces of different colors and sorts them via a conveyor belt into the provided storage unit.

> Incl. 2x mini motors, 5x phototransistors, 5x LED light barriers, 3x solenoid valves, compressor, optical color sensor
> Model packed in a robust box

Item No.: 536628 (9V⎓ / with ROBOTICS TXT Controller and controller software ROBO Pro)
Item No.: 536633 (24V⎓ / without controller)

> Required for 536628 (9V): 1x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	536628 (9V⎓)	EAN	4048962250350
Item No.	536633 (24V⎓)	EAN	4048962250404
Dim. (mm)	502 x 342 x 302	Weight (g)	4500 (9V⎓), 4290 (24V⎓)

AUTOMATED HIGH-BAY WAREHOUSE

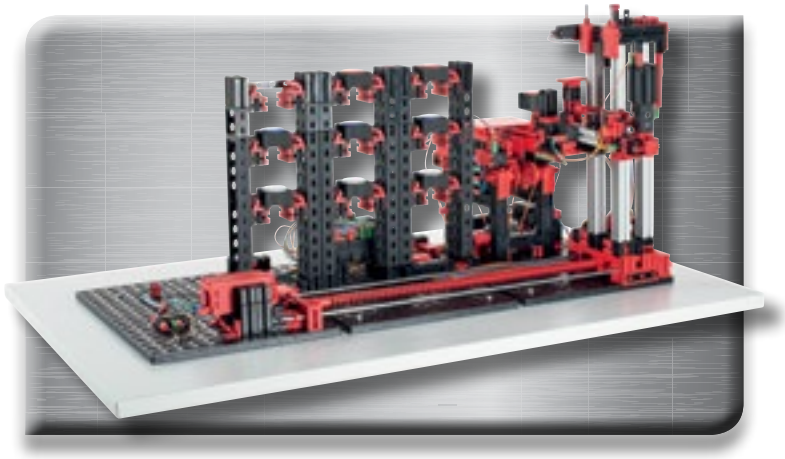
Transfer station with conveyor belt, shelf stacker for storing and retrieving special workpiece carriers, 9 storage slots.

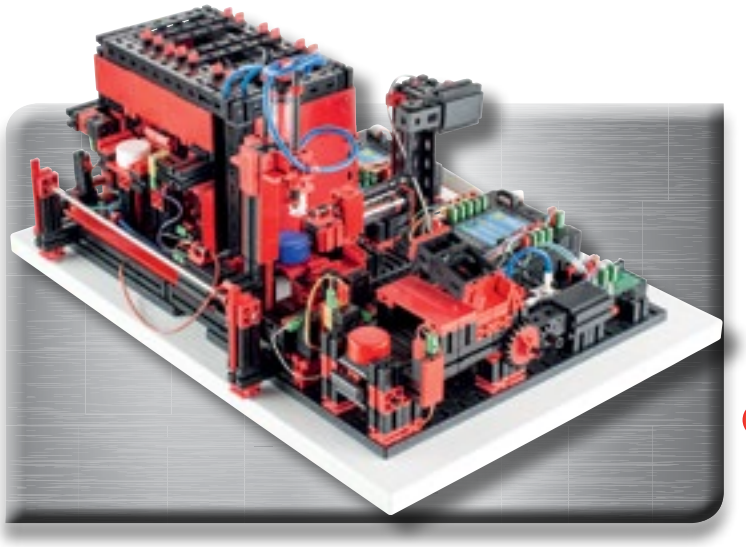
> Incl. 2x encoder motors, 2x mini motors, 4x push buttons (limit switch), 2x phototransistors, 2x LED light barriers, workpiece carriers, various colored workpieces (6 pcs.)
> Model packed in a robust box

Item No.: 536626 (9V⎓ / with ROBOTICS TXT Controller and controller software ROBO Pro)
Item No.: 536631 (24V⎓ / without controller)

> Required for 536626 (9V): 1x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	536626 (9V⎓)	EAN	4048962250336
Item No.	536631 (24V⎓)	EAN	4048962250381
Dim. (mm)	472 x 722 x 382	Weight (g)	8200 (9V⎓), 8000 (24V⎓)





MULTI PROCESSING STATION WITH OVEN

Furnace with pneumatic sliding door. Downstream processing station with pneumatic transfer unit including vacuum gripper, cutter with rotary table and conveyor belt.

> Incl. 4x mini motors, 6x push buttons (limit switch), 2x photo-transistors, 2x LED light barriers, 4x solenoid valves, compressor

> Model packed in a robust box

Item No.: 536627 (9V⎓ / with 2x ROBOTICS TXT Controller and controller software ROBO Pro)

Item No.: 536632 (24V⎓ / without controller)

> Required for 536627 (9V): 1x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	536627 (9V⎓)	EAN	4048962250343
Item No.	536632 (24V⎓)	EAN	4048962250398
Dim. (mm)	502 x 342 x 302	Weight (g)	4900 (9V⎓), 4680 (24V⎓)

INDEXED LINE WITH 2 MACHINING STATIONS

Conveyor line with a milling and drilling station with four conveyor belts in a U-shaped arrangement.

> Incl. 4x conveyor belt, 8x XS motors, 4x push buttons (limit switch), 5x phototransistors, 5x LED light barriers

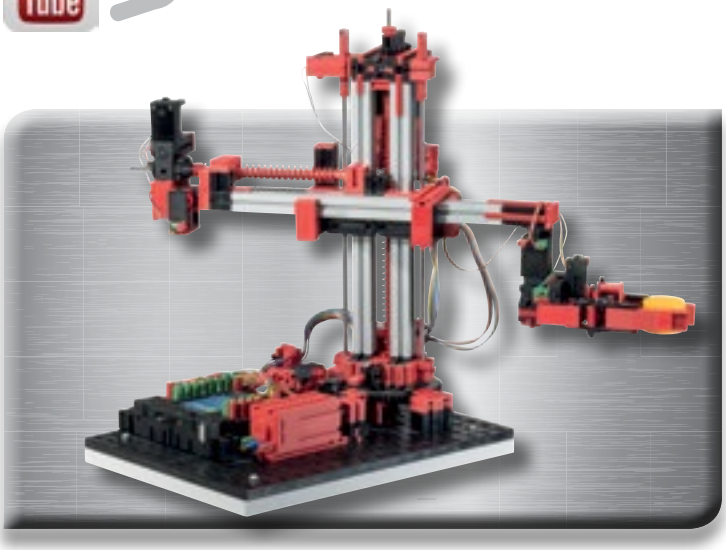
> Model packed in a robust box

Item No.: 51664 (9V⎓ / with 2x ROBOTICS TXT Controller and controller software ROBO Pro)

Item No.: 96790 (24V⎓ / without Controller)

> Required for 51664 (9V): 2x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	51664 (9V⎓)	EAN	4006209516645
Item No.	96790 (24V⎓)	EAN	4006209967904
Dim. (mm)	475 x 450 x 270	Weight (g)	5100 (9V⎓), 3547 (24V⎓)



3D-ROBOT

The 3-axis robot with gripping forceps quickly and precisely positions workpieces in three-dimensional space.
Degrees of freedom: Axis 1: turn 180°, axis 2: forward/back 90 mm, axis 3: raise/lower 150 mm.

> Incl. 2x XS motors, 2x encoder motors, 4x push buttons (limit switch)
> Model packed in a robust box

Item No.: 511937 (9V⎓ / with ROBOTICS TXT Controller and controller software ROBO Pro)
Item No.: 511938 (24V⎓ / without controller)

> Required for 511937 (9V): 1x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	511937 (9V⎓)	EAN	4048962111705
Item No.	511938 (24V⎓)	EAN	4048962111316
Dim. (mm)	480 x 400 x 220	Weight (g)	3100 (9V⎓), 2700 (24V⎓)

CONVEYOR BELT

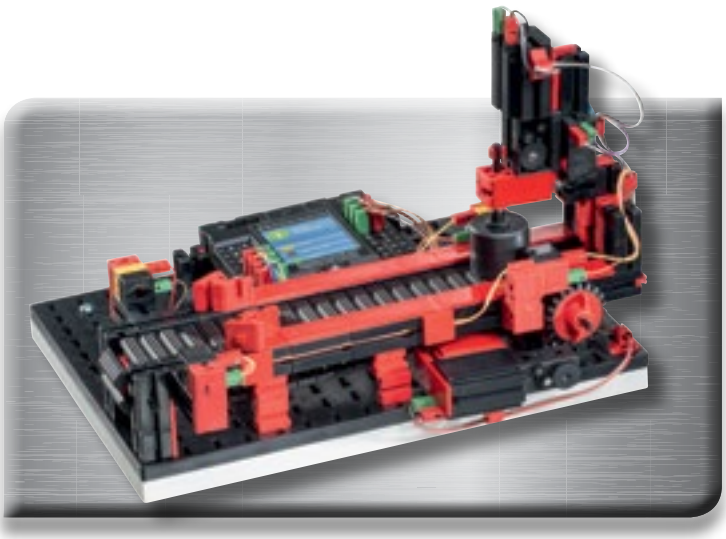
Transport belt with a length of 275 mm transports workpieces with a diameter of up to 29 mm. Several conveyor belts can be connected to each other to form an endless conveyor belt.

> Incl. XS motor, push button (limit switch), 2x phototransistors, 2x LED light barriers
> Model packed in a robust box

Item No.: 50463 (9V⎓ / with ROBOTICS TXT Controller and controller software ROBO Pro)
Item No.: 50464 (24V⎓ / without controller)

> Required for 50463 (9V): 1x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	50463 (9V⎓)	EAN	4006209504635
Item No.	50464 (24V⎓)	EAN	4006209504642
Dim. (mm)	345 x 240 x 100	Weight (g)	860 (9V⎓), 670 (24V⎓)



PUNCHING MACHINE WITH CONVEYOR BELT

The punching machine with conveyor belt simulates conveying and punching of workpieces.

> Incl. 2x XS motors, 2x push buttons (limit switch), 2x phototransistors, 2x LED light barriers
> Model packed in a robust box

Item No.: 51663 (9V⎓ / with ROBOTICS TXT Controller and controller software ROBO Pro)
Item No.: 96785 (24V⎓ / without controller)

> Required for 51663 (9V): 1x Power Supply
Item No. 505287 (9V/220V) / 122952 (9V/120V)

Item No.	51663 (9V⎓)	EAN	4006209516638
Item No.	96785 (24V⎓)	EAN	4006209967850
Dim. (mm)	375 x 290 x 190	Weight (g)	1650 (9V⎓), 1450 (24V⎓)

3D PRINTER

Build, Plug & Print! This build-it-yourself kit gives users a fascinating insight into the groundbreaking technology of 3D printing. Print your own parts yourself at any time - so distinct, so easy, so flexible - for use! Use either the supplied printing examples, different examples on our eLearning portal (fischertechnik-elearning.com) or your very own print data. The robust 3D Printer is easy to build and can be used for 3D printing of different parts. Users acquire basic knowledge about 3D printing and an insight into this revolutionary technology that promises a high degree of future potential. Includes PC software for controlling the printer via the USB interface.
The eLearning portal offers exciting, instructional activity information and videos.

> Incl. 3D Controller with Atmel microcontroller, USB interface for PC (Micro B USB port, incl. interface cable), 4 step motor drivers (for x-, y- and z-axes and extruder), one power output (MOS-FET) for the extruder nozzle (hot end), connections for 3 limit switches and a temperature sensor, DC port for voltage supply 19V, 6.3A
> Incl. 3D Print Control software, with slicer and printer control, specially adapted to fischertechnik 3D Printers (Windows 7, 8, 10). Numerous finished printing examples included as G-codes and STL files. Also works with Mac OS X and Linux with the software RepetierHost: www.fischertechnik.de/3DPrinter-FAQ
> Incl. 4 high-torque step motors (x-, y- and z-axes, extruder), 3 mini push-buttons (as limit switches for x-, y- and z-axes), heated nozzle (for 1.75mm diameter filament) with temperature monitoring, printing bed with removable printing plate
> Incl. power unit (AC input 100-240V, DC output 19V, 6.3A, 50-60Hz)
> Incl. high quality filament (50g roll, PLA, 1.75mm diameter, green). Premium filament in eight special fischertechnik colors (50g roll or 500g coil) can be ordered separately.

Technical data:
- Printing range: 115 x 100 x 65mm
- Layer thickness: min. 0.2mm
- Filament diameter: 1.75mm
- Nozzle diameter: 0.5mm
- Material: PLA (polylactide)

Item No.	536624	EAN	4048962250312
Models	1	Components	890
Dim. (mm)	465 x 160 x 390	Weight (g)	6320

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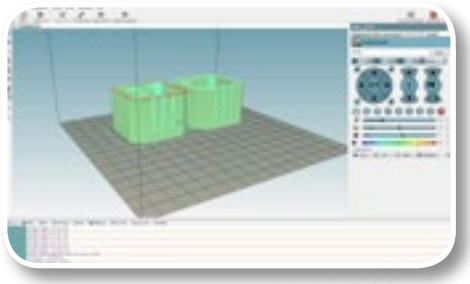
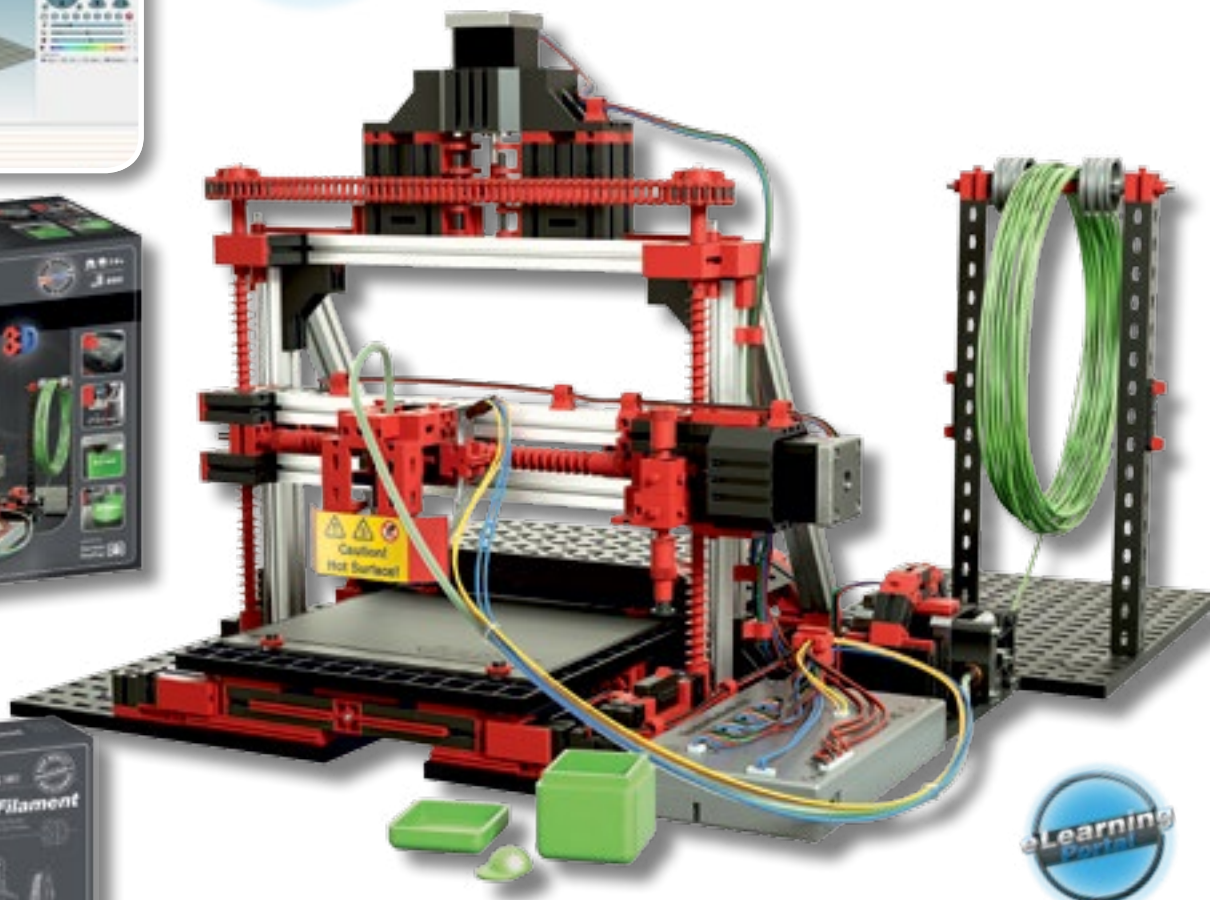
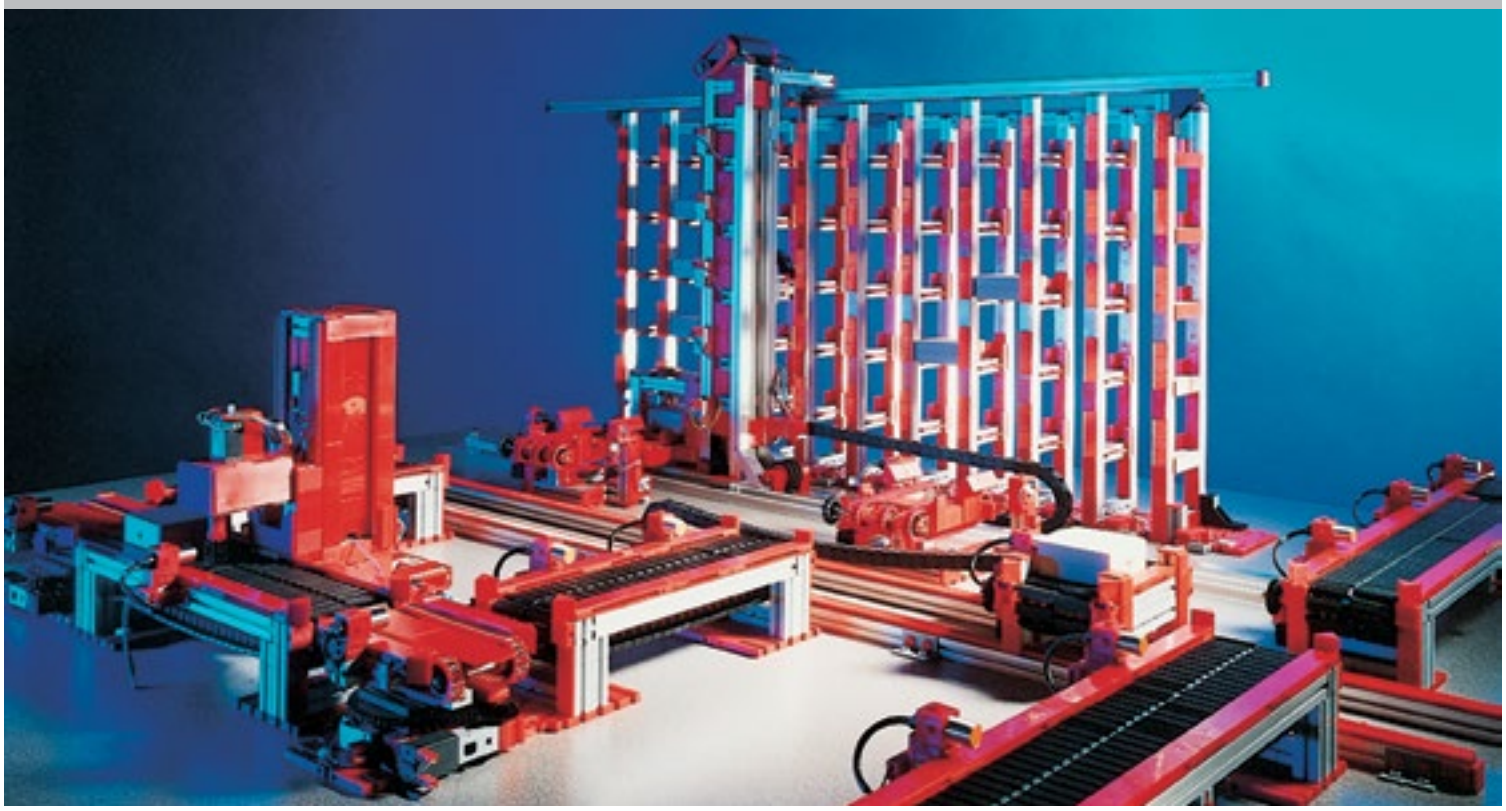




TRAINING & SIMULATION

fischertechnik is widely used in industry for vocational training, as well as simulation purposes for realistic representation and simulation of complex systems. The function models are a proven and inexpensive means to plan and to develop industrial applications. They are employed worldwide in the areas of training, development and presentation. The flexibility and the modularity of the fischertechnik system in connection with the industrially adapted sensors and actuators as well as PLC´s from leading manufacturers open up almost unlimited possibilities for hardware simulation. Complicated technical systems are presented realistically and thus perfectly simulated so that they are understandable for everyone. This makes investment decisions easier and reduces the costs for the correction of planning mistakes.



INDUSTRY 4.0 INTERNET OF THINGS

fischertechnik factory simulations are already prepared for Industry 4.0 today. Core topics in digitally networked production can be visualized physically and demonstrated in an easy to understand way, enriched with sensors and combined with a cloud. These include preventative maintenance, production quality predictions, human-machine interactions, remote control, data exchange via dashboard. The SAP UCC has developed a teaching scenario with case studies that helps both teachers and students alike to understand the opportunities offered by Industry 4.0. Further information available at: **www.fischertechnik.de/en/simulating/industry-4-0**

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04/18 • Printed in Germany • 159924