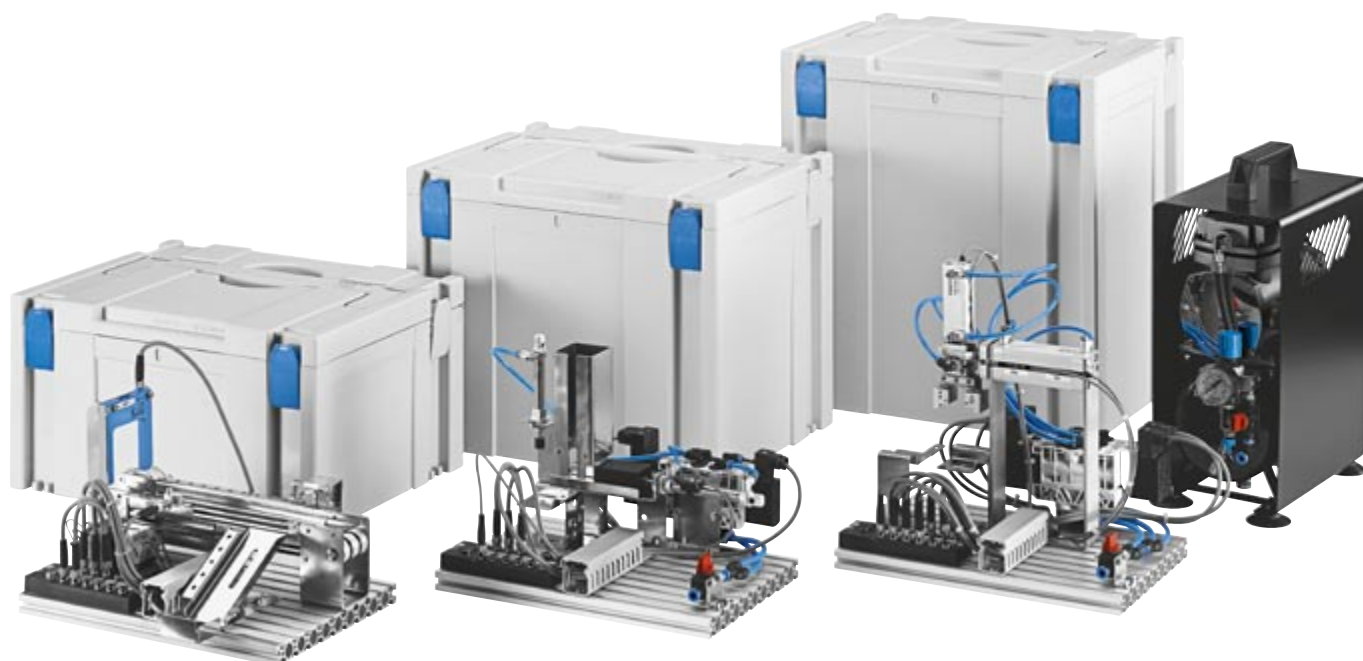


MecLab®

The complete package



The hardware

MecLab® is delivered in practical, stackable systainers, which function as storage units as well as transport packaging.

MecLab® is delivered fully assembled and ready for immediate use.

MecLab® is sturdy and fully capable of withstanding the rigors of a school environment.

The individual stations have different functions:

- The Stacking Magazine station contains a workpiece storage container and a feed separator.
- The Conveyor station can transport and sort workpieces.
- The Handling station can grip the workpieces and deposit them at defined points.

The accompanying documents on CD-ROM

The complete package includes a CD-ROM with:

- Workbook: Teaching with MecLab®
- Technical book: Fundamentals of automation technology
- Book of exercises with 5 – 7 exercises per station and prepared worksheets in *.doc format with solutions; these can be easily adapted to meet your particular requirements.
- Prepared PowerPoint presentations with extensive visual materials for use in class
- Videos
- Technical data for all components

Control with FluidSIM® software

The stations are controlled with FluidSIM® software and the EasyPort interface.

FluidSIM® is the application for creating and simulating pneumatic and electrical circuits and programmable logic controllers. With its universal PC interface, FluidSIM® can control the MecLab® stations directly. As a result, the pupils can follow a continuous functional chain from the circuit diagram to simulation to control.

Since FluidSIM® is supplied as a classroom licence, the number of pupils who can work with FluidSIM® at one time is limited only by the number of computers. They can use it to try out their solutions in simulation before testing them on the real station. Moreover, FluidSIM® provides information at the click of a mouse button about all components, and many informative animated sequences.

The complete package

Contains everything you need for working with MecLab®:

- 1 Stacking Magazine station
- 1 Conveyor station
- 1 Handling station
- 1 compressor 230 V with connector for DE, FR, NO, SE, FI, PT, ES, AT, NL, BE, GR, TR, IT, DK, IR, ID or 1 compressor 110 V with connector for US, CA, Central America, BR, CO, YU, EC, KR, TW, TH, PH, JP
- 3 x EasyPort to connect the stations to the computer
- 3 x power supply unit with connector for DE, FR, NO, SE, FI, PT, ES, AT, NL, BE, GR, TR, IT, DK, IR, ID or 3 x power supply unit with connector for US, CA, Central America, BR, CO, YU, EC, KR, TW, TH, PH, JP
- FluidSIM®
- Documents on CD-ROM
- Workpieces
- Tools
- Screw set
- Systainers

Complete package

230 V	549786
110 V	556276

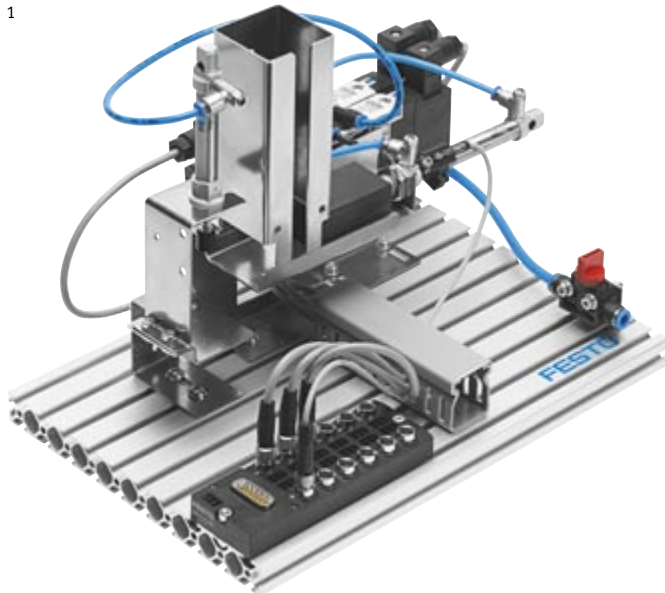
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Email: sales@genetron.com.sg Web: www.genetron.com.sg

MecLab®

The Stacking Magazine and Conveyor stations

1



1 Stacking Magazine station

Functions

In any automated production line, workpieces must be stored and fed into the production process in an orderly way. In MecLab® that is the job of the Stacking Magazine station. It can store both workpieces (lid and can) in the arrangement desired, and can separate them out for feeding. The workpieces stored in the tower magazine are pushed out by the horizontally positioned cylinder. The vertically positioned cylinder can then replicate a press-fit process (e.g. pressing a lid onto a can). All processes are controlled electro-pneumatically. A magnetic limit switch can be used to record the position of a cylinder.

Technical learning objectives

- Fundamentals of pneumatics
- Single-acting cylinders
- Double-acting cylinders
- Solenoid valves
- Sensor technology – magnetic limit switches
- Connecting tubing and wiring
- Relay control systems

Scope of delivery

- Stacking magazine module
- Press-fit unit module
- Multi-pin plug distributor
- 2 solenoid valves
- 2 cylinders
- 1 magnetic limit switch
- Aluminium slotted assembly board
- Tool set
- Workpieces
- Systainer
- Equipment trays
- CD with FluidSIM® and documents

2 Conveyor station

Functions

Transporting workpieces from one manufacturing station to the next is an important task in production. In the real world, driverless transport systems, forklift trucks and above all conveyor belts are used for this purpose. The conveyor in MecLab® allows realistic simulation of an industrial workpiece transport system. The drive motor can run forwards and backwards; workpieces can be detected with the sensors and distinguished from one another. The solenoid allows workpieces to be separated or rejected onto the slide.

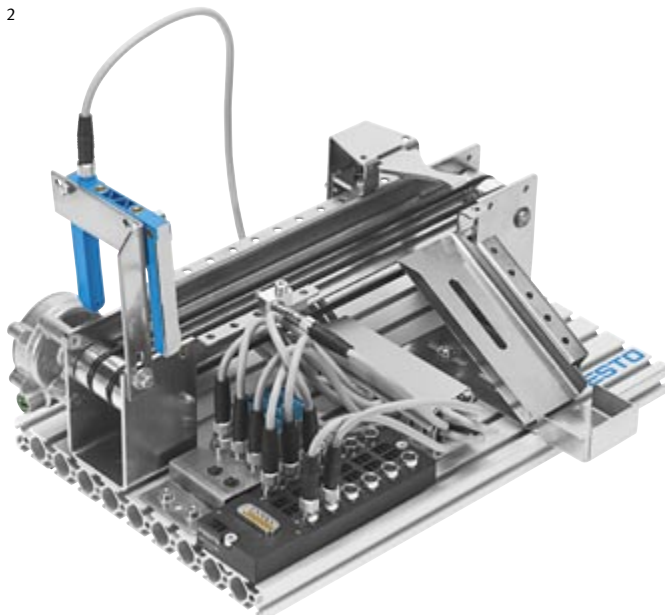
Technical learning objectives

- Activation of direct current motors
- Inductive sensors
- Opto sensors
- Relay circuits
- Polarity reversal circuits
- PLC programming
- Control using logic operations
- Construction and wiring

Scope of delivery

- Conveyor belt module with
- DC motor
- Solenoid as stopper/deflector
- Multi-pin plug distributor
- Inductive sensor
- Opto sensor (light barrier)
- Aluminium slotted assembly board
- Tool set
- Workpieces
- Systainer
- Equipment trays
- CD with FluidSIM® and documents

2



1 Stacking Magazine station	548704
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Necessary accessories

Control package	549787
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Compressor → Page 7

2 Conveyor station	548705
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Necessary accessories

Control package	549787
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MecLab®

Handling station und Expansion set

3 Handling station

Functions

No matter whether it's a simple depositing operation or highly complex assembly work – handling systems are always involved. Handling devices range from simple, two-axis handlers up to highly complex industrial robots with six axes. The handler in MecLab® consists of pneumatic cylinders with plain-bearing guides and has two axes. The workpiece is held by a gripper which is likewise pneumatically driven. The handler can transport the workpiece from one station to another or can join two workpiece halves together.

Technical learning objectives

- Fundamentals of pneumatics
- Double-acting cylinders
- Gripper
- Solenoid valves
- Sensor technology – magnetic limit switches
- Connecting tubing and wiring
- Relay control systems
- Control with logic
- PLC controllers
- Sequencing

Scope of delivery

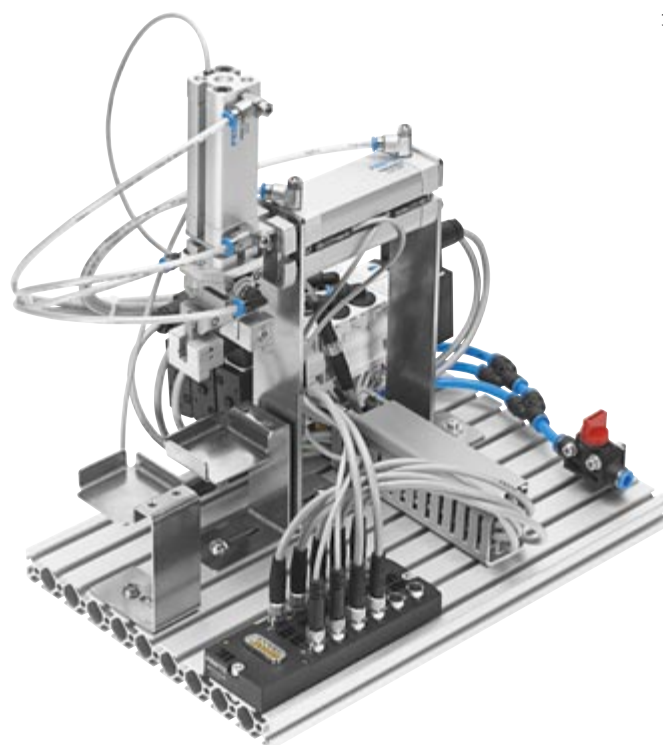
- Handling module
- 3 solenoid valves
- 4 magnetic limit switches
- 2 pneumatic cylinders with plain-bearing guide
- 1 pneumatic gripper
- Multi-pin plug distributor
- Aluminium slotted assembly board
- Tool set
- Workpieces
- Systainer
- Equipment trays
- CD with FluidSIM® and documents

4 MecLab® Expansion set

This expansion set contains a range of components for realising your own project ideas. All in a practical Systainer, of course.

Content

- Two double-acting cylinders with one-way flow control valves
- 2 solenoid valves
- 1 diffuse sensor
- 2 magnetic limit switches
- 1 profile kit
- 1 profile plate
- 1 electrical button
- 1 electrical switch
- 1 indicator light



3



4

3 Handling station	548706
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Necessary accessories

Control package	549787
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Compressor → Page 7

4 MecLab Expansion set	556245
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