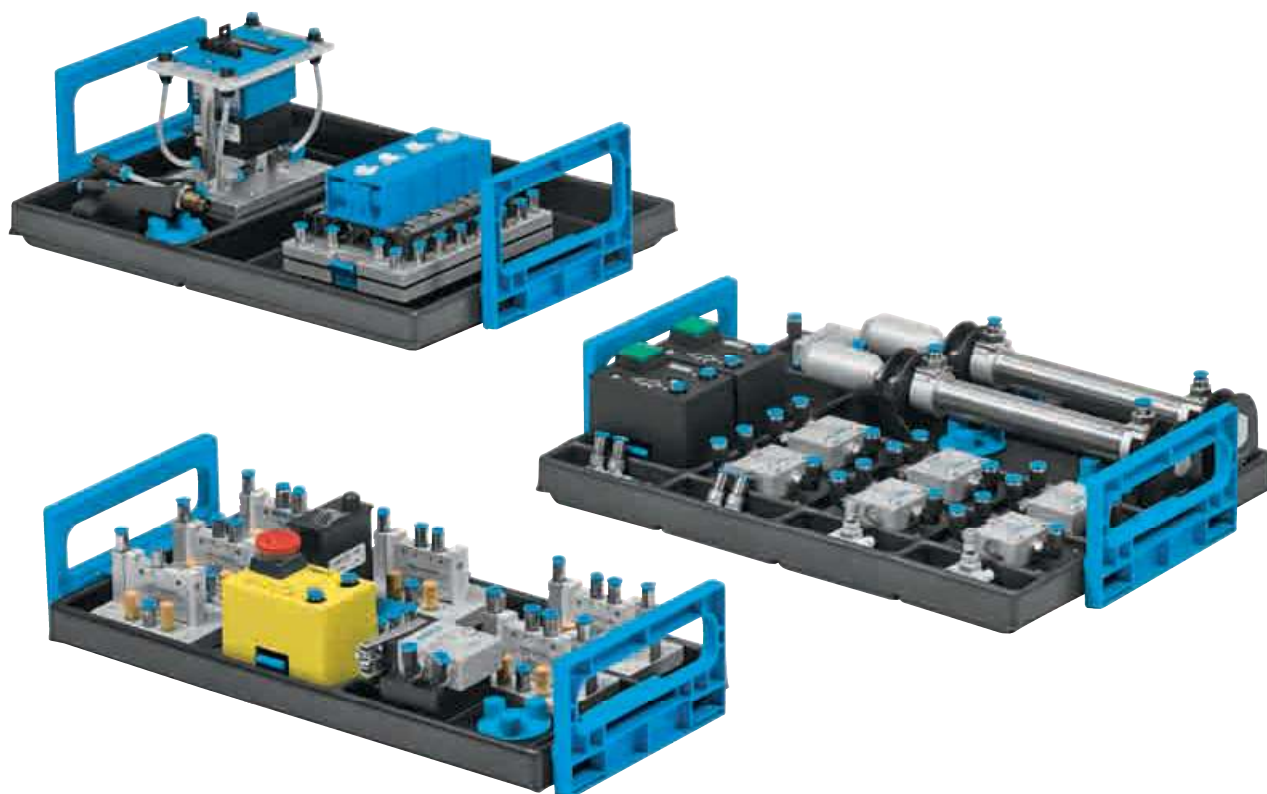


# Equipment set TP 102 – Advanced level

## Advanced pneumatics training



### Develop the training aims from TP 101 and consolidate your knowledge.

Fully revised: The new workbook contains a series of progressively complex project exercises based on actual industrial applications and an enhanced section on fundamentals. It also includes a multimedia CD-ROM. The foundation for competent training. Place your order now!

The number of components and the design are specially tailored to the projects contained in the workbook so that the main training aims can be achieved with little outlay. Delivered in practical, Systainer-compatible equipment trays.

Components from the equipment set TP 101 are required to carry out the projects.

### Training aims

- Binary reducing stages
- End positions without limit switches
- Latching circuits
- Converting 5/2-way valves
- Function of a back pressure end stop
- Basic stepper control (continuous cycle)
- Stepper control with operating modes or idle step
- Setting and coordinating time delays
- Variable step repetition using a predetermining counter
- Input circuit with self-latching loop and auxiliary functions
- Evaluating and using sensors for material sensing
- Realizing stepper control with protected pilot air and auxiliary functions
- Proximity sensors in the end positions and in the partial stroke range
- Combined use of quick exhaust valves and pressure regulators
- Inversion of a timer signal
- Varying end-position cushioning
- Using and adjusting different sensor types

### Performance through close proximity

For optimum performance, switches and valves should be mounted as close to the actuator as possible. With new components that can be plugged in directly, you can now apply the same principle when designing your circuits. This approach also provides you with an easy way of demonstrating the features of a one-way flow control valve. You can even record the measured values and analyze the results, for example, using the new TP 210!

### Lever valves

All of the lever valves contained in the training packages 101 and 102 are equipped with a pilot control, which means they require a low actuating force and deliver high reliability.

## Complete equipment set TP 102 in equipment tray

540711

The most important components at a glance :

1	2x 3/2-way valve with pushbutton actuator, normally closed	152860
2	1x 3/2-way valve with mushroom-head emergency switch, normally open	152864
3	1x 3/2-way roller lever valve with idle return, normally closed	152867
4	1x Back pressure valve	152868
5	4x 3/2-way valve, pneumatically actuated at one end	576302
6	2x 5/2-way double pilot valve, pneumatically actuated at both ends	576303
7	2x Plastic tubing, 4 x 0.75 silver 10 m	151496
8	4x Shuttle valve (OR)	539771
9	3x Dual-pressure valve (AND)	539770
10	1x Pneumatic timer, normally open	539759
11	1x Pneumatic preset counter	152877
12	1x Stepper module	152886
13	2x One-way flow control valve	193967
14	2x Non-return valve, delockable	540715
15	2x Double-acting cylinder	152888

Accessories, also order:

Aluminum profile plate → Page 39

Compressor → Page 136

Also order:

## Workbook



As a continuation of the basic level for pneumatics, the advanced level includes ten additional, challenging tasks which are suitable for the TP 102 equipment set. The documents are targeted at experienced pneumatics technicians. New features of this revised and updated edition include revised exercise sheets for practical use during instruction.

The workbook includes:

- Sample solutions
- Training notes
- Multimedia CD-ROM with graphics, photos of industrial applications, animations, and FluidSIM® circuit diagrams
- Exercise sheets for trainees

Campus license (→ Page 19):

de	540672
en	541089
es	542504
fr	542508

## Supplementary media

- Design and simulation using FluidSIM®
- WBT Pneumatics
- Textbook: Basic principles of pneumatics and electropneumatics
- Cutaway model case

