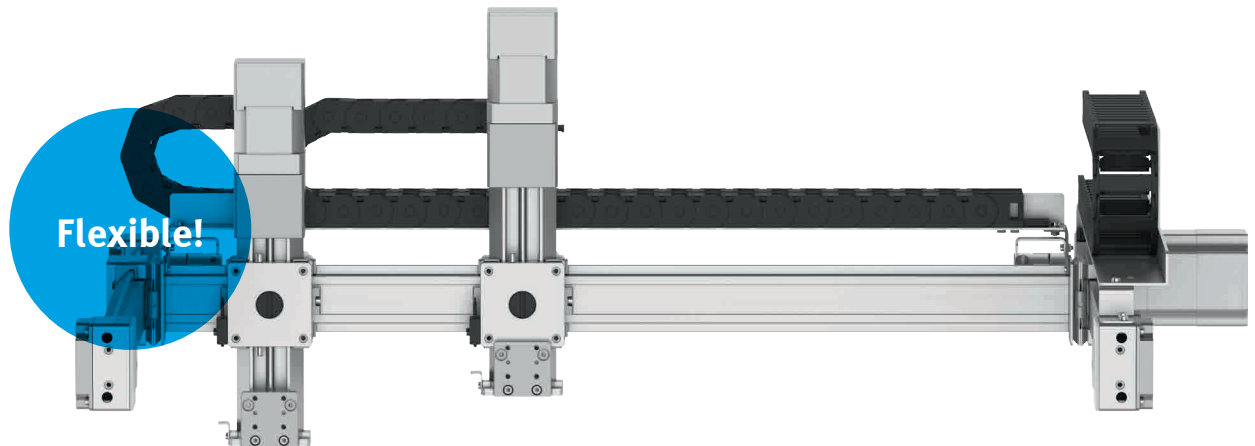


# Three-dimensional gantry EXCL

FESTO



## Optimised for life sciences

### Highlights

- Max. stroke:  
X/Y-axis: 1000 x 700 mm  
Z-axis: 50, 100, 150 or  
200 mm with 1 or 2 Z-axes
- Max. payload: 1.5 kg (with  
2 Z-axes together max.  
2 kg)
- Optional 6-axis motion  
controller
- Programmable via G-code

**Miniaturisation is an important trend in many laboratory applications. The multi-axis gantry EXCL developed by Festo has a small footprint and PCB-based motion controls precisely to save valuable space when designing systems and devices. The functionality of the system can be further extended with two independently traversable Z-axes.**

### Optimised for life sciences

The EXCL is ideal, for example, for analytical processes where sample vessels are to be opened and liquid samples pipetted in the same three-dimensional gantry. The optional second Z-axis enables two front units to move independently of each other, such as the rotary gripper module EHMD and the smart pipette DHOP.

### Ready to install for plug & play

The three-dimensional gantry with stepper motors and optional motion controller can be easily integrated in desktop systems. The maintenance-free system is tested and documented.

### Sized for minimum TCO

The compact size means that the EXCL is perfect for installation in places where oversized kinematics were previously used. You only pay for what is really needed.

### Customisable for your requirements

EXCL is a system solution that can be adapted to the requirements of systems and device manufacturers. The working area (X,Y) can be configured up to 1000 mm x 700 mm in 1-mm steps. The stroke of the Z-axes can be selected for 50, 100, 150 and 200 mm.

### Areas of application

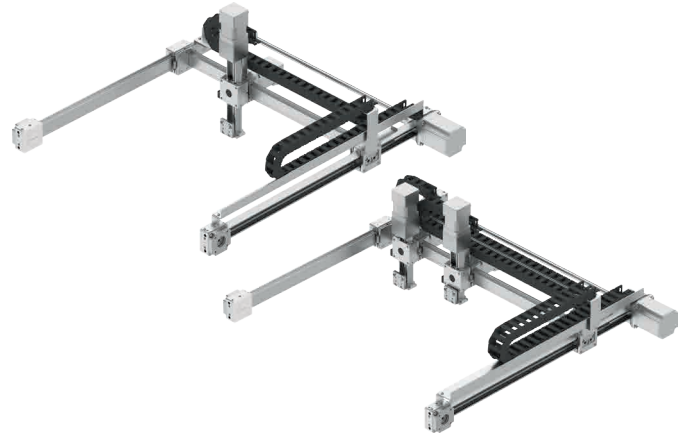
Life sciences and laboratory automation, desktop systems without a control cabinet and applications with low dynamic requirements, such as sample preparation or analysis with our liquid handling solutions for dispensing and pipetting.

# Three-dimensional gantry EXCL

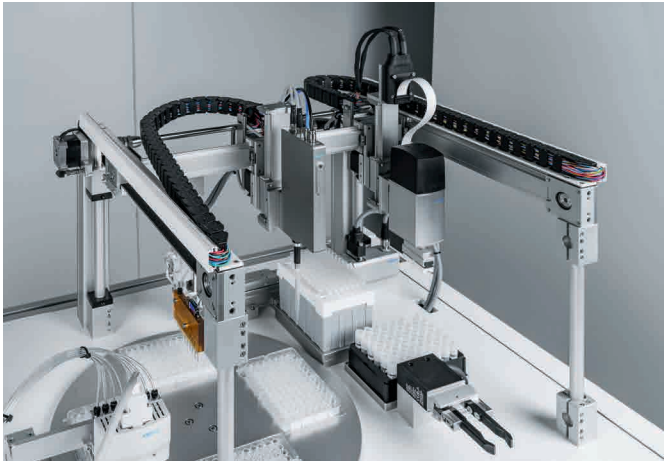
## Many variants for different tasks

### 2D area gantry or 3D gantry

- 2D: X, Y with 1 or 2 slides on the Y-axis
- 3D: 1 or 2 Z-axes
- Working area (X, Y) configurable in 1 mm steps
- Z-axis(axes) with 50, 100, 150 or 200 mm stroke
- X-motor left or right
- Optional levelling kit
- Optional 6-axis motion controller as PCB for direct integration into the device



## In operation: all functions in one compact handling device



### Sample preparation with EXCL and additional Festo components

- Picking up sample vessels from a rack and rotating them
  - with the rotary gripper module EHMD
- Taking a liquid sample and transferring it to a microwell plate for further analysis
  - with the smart pipette DHOP
- Dispensing reagents into the microwell plate
  - with the dispense head VTOE
- Implementing rinsing procedures in the ELISA process
  - with the dispense head VTOI

## Technical data

Functions	Values
Working area	X: 200 ... 1000 mm Y: 200 ... 700 mm Z: 50, 100, 150, 200 mm
Max. payload	max. 1.5 kg (with 2 Z-axes together max. 2 kg)
Motor controller	Multi-axis motion controller
Motor technology	Stepper motor NEMA 17/NEMA 23
Homing	Against integrated microswitch
Cabling	With energy chain
Dynamic response	Acceleration $a_{\max} = 1 \text{ m/s}^2$ Speed $v_{\max} = 0.4 \text{ m/s}$
Repetition accuracy	$\pm 0.1 \text{ mm}$

