Compact planar surface gantry EXCM

FESTO

Compact!

Ideal for desktop applications

Wherever every millimetre counts: the compact gantry EXCM. It combines high functionality with an extremely compact design for maximised working space coverage. The parallel kinematic drive concept ensures low moving masses, and the drive and controller package is pre-parameterised for easy commissioning.

Highlights

- Flat and compact for optimised use of space
- High payload
- Festo plug and work
- Including preconfigured parameters
- Perfectly matched drive and controller package
- Configurable length and width
- Three sizes

The operating principle
The EXCM can approach any position within its working space. The recirculating toothed belt, driven by fixed motors, moves the slide within a two-dimensional area.

Drive and controller package
The functional drive and controller package with IP20 protection for Festo plug and work is supplied as standard. The encoder allows closed-loop servo operation.

Maximum communication
Extremely flexible: I/O for simple control of up to 31 positioning records, or CANopen and Ethernet for maximum freedom of motion!

EXCM-40
High performing thanks to 48 V supply voltage. For loads of up to 4 kg with extensive working space coverage.

EXCM-30
For desktop applications in the area of small parts assembly and handling, or for automated laboratory processes. The recirculating ball bearing guide is able to handle heavy loads. Optional: the drive and controller package, and the Z-axis.

EXCM-10
Extremely well suited for automated laboratory processes. The plain-bearing guide makes the EXCM-10 very cost effective.

High level of functionality in a very small space

Laboratory processes
The EXCM is ideal for applications in pre- and post-analytical laboratory processes:

- Specimen preparation: transporting and identifying specimens with a barcode scanner, as well as opening and closing containers

- Specimen distribution: distributing specimens to test systems such as Microtiter® plates
- Post-analytical processes such as incubation, dispensing and archiving
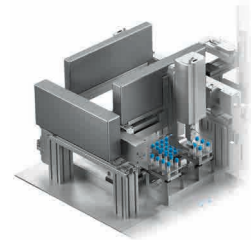
Transporting specimens for identification with a barcode scanner

Small parts assembly and electronics manufacturing
The EXCM-30 is ideal for small parts assembly and electronics manufacturing, for example wherever handling ever smaller components is necessary, or when increasingly compact manufacturing systems are required.

Possible applications
- Feeding and screwing in small components
- Applying adhesive points
- Electronic tests: advancing to contact points, resistance tests

- Flexible positioning of workpieces and components
- Palletising/depalletising
- Desktop production/assembly
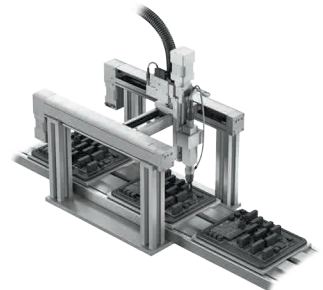
Screwing in electronic components

The EXCM-30 and the EXCM-40 have scalable strokes along the X- and Y-axes, and are compatible with cleanroom applications. The maximised working space coverage ensures a high level of functionality within a very small space.
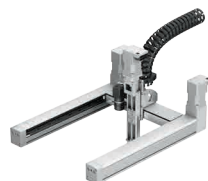
EXCM-40
Larger working space and heavier loads. Improved dynamics thanks to 48 V supply voltage, for loads of up to 4 kg with maximum dynamic response.
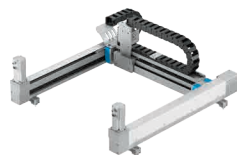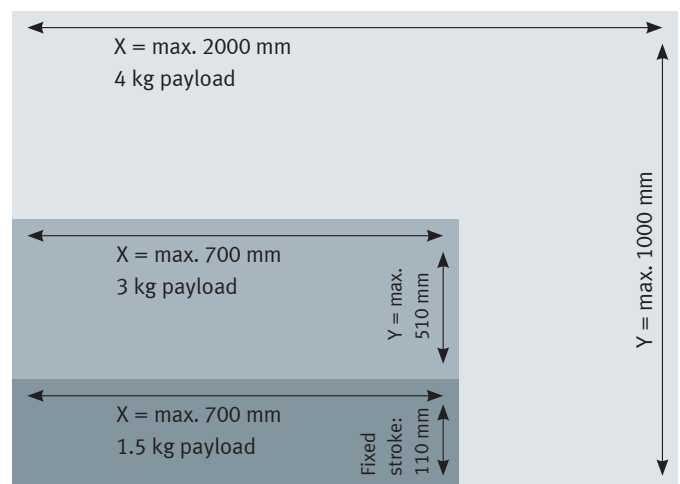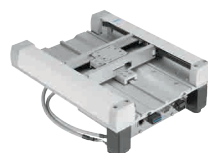

EXCM-30
With motor mounted on top, or optionally underneath. The recirculating ball bearing guide is able to handle heavy loads.

EXCM-10
With integrated drive and controller package

X = max. 2000 mm
4 kg payload

X = max. 700 mm
3 kg payload

Y = max. 510 mm

X = max. 700 mm
1.5 kg payload

Fixed stroke: 110 mm

Y = max. 1000 mm

EXCM-30 and EXCM-40
More extras, more power

Y stroke extension
To 410, 460 and 510 mm

3D energy chain
- Flexible, simple energy chain concept
- Two sizes as accessories
- The energy chain can be ordered in 500 mm sections

Adjusting kit:
Adjustable height, rotatable and tiltable with ball joint, also with a different design for EXCM-40. The gantry is thus always upright and well balanced!

Clean Look:
- Y-axis cover
- Clean and elegant
- Basic protection against the ingress and discharge of material/particles
- Especially helpful for upside-down assembly

Universal flange adapter
- Z module connection for numerous drives using a universal flange
- A single adapter for all speci-fied EXCM front end units
- Adapter for 3D energy chain

The optional control package for the EXCM-30/40 includes motor and controller CMXH, and provides additional safety thanks to STO in accordance with EN 61800-5-2. The controller also enables a high-power supply voltage of 24 to 48 V. The I/O interface with PNP configuration provides universal communication.

Ready for trigger on the fly!
Trigger on the fly is interesting for both laboratory processes and small parts assembly. For example, pipetting and bonding can be carried out during operation without bringing the gantry to a standstill. The front end unit is activated while the gantry is in motion.
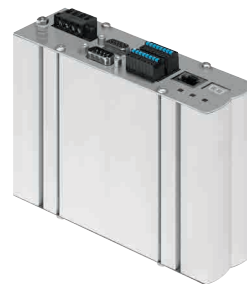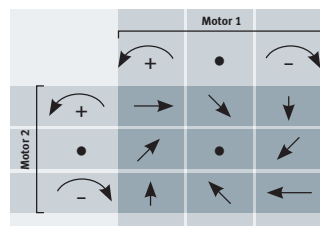
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The EXCM can travel to any position within its working space. The recirculating toothed belt, driven by fixed motors, moves the slide within a two-dimensional area. The parallel kinematic concept ensures low moving masses and a very small installation space.
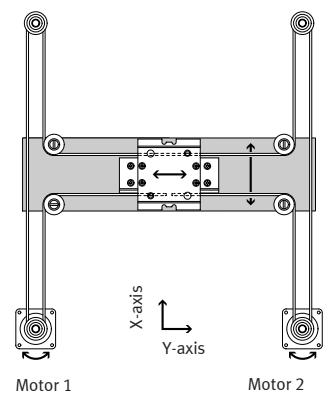
The kinematics in detail:
- By synchronising the two motors the front panel can be moved along the Y- and Z-axes
- Both motors together ensure maximum acceleration and speed for moving the front panel along the X- or Y-axis.

The kinematic chain:
- Two stationary stepper motors M1 and M2
- One recirculating toothed belt ZR
- Two very rigid X-axes, one very rigid Y-axis

Technical data – compact planar surface gantry EXCM

		EXCM-10	EXCM-30	EXCM-40
Guide		Plain-bearing guide	Recirculating ball bearing guide	Recirculating ball bearing guide
X-axis stroke [mm]	Fixed stroke	150, 260, 300, 360, 460, 700	100, 150, 200, 300, 400, 500	–
	Variable stroke	–	90 … 700	200 … 2000
Y-axis stroke [mm]	Fixed stroke	110	110, 160, 210, 260, 310, 360, 410, 460, 510	–
	Variable stroke	–	110 … 510	200 … 1000
Rated load for max. dynamic response [kg]		0.5	3	4
Max. speed [m/s] *		0.3	1.0	1.0
Max. acceleration [m/s²] *		3.0	20.0	5.0
Repetition accuracy [mm]		± 0.1	± 0.05	± 0.1

* Maximum dynamic response values depend on the product variant, supply voltage and rated load