



Product information

Electromotive linear axes

for the testing of rotary doors, sliding doors, roller doors, filing cabinets and drawers
e.g. according to EN 14749, EN 14074, EN 1335-3, ES 1058 und BIFMA X5.1





Application:

- static, cyclic and dynamic loads
- endurance tests, functional tests, fatigue tests
- e.g. testing of hinged doors, sliding doors, roller doors, filing cabinets, drawers and hinges according to EN 14749 and EN 14074
- e.g. rolling test according to the standards BIFMA/ANSI X5.1, EN 1335-3 and ES 1038 with and without thresholds on seating furniture, containers and rolling tables
- use in development and quality control of series production

Due to their precise control and high speed, electromotive linear axes (linear modules) are also suitable for functional testing. Both tip-on mechanisms and soft-close functions can be tested. By accelerating the test specimen to the end position, extreme loads on hinges and fittings, e.g. when opening and closing a cabinet door or drawer, can be simulated.

Thus, these axes can be used in combination with corresponding coupling elements for controlled and non-controlled test sequences. In controlled processes, the test specimen is permanently connected to the axis. In uncontrolled sequences, the test specimen is first accelerated and then decoupled. The linear modules have been developed for different applications in two different constructive versions (with push rod or with toothed belt guide).

Various equipment options are available for all models of the linear modules:

- protective device (safety switch already included in the scope of delivery)
- height adjustment system (manual or electric)
- set-up in inching mode with safe monitoring

The test axes can either be integrated into a test frame or operated as a stand-alone test rig.

Table 1: Models of electromotive linear axes

(1) Linear module with push rod	(2) Linear module with toothed belt guide
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Advantages	<ul style="list-style-type: none"> • any specimen width for drawers • can be equipped with gripper • high speeds possible 	<ul style="list-style-type: none"> • variable stroke lengths • can be equipped with gripper • high speeds possible • vertical installation possible • several specimens can be coupled to 1 axis at the same time
Limits	<ul style="list-style-type: none"> • stroke length limited (1000 mm) 	<ul style="list-style-type: none"> • specimen depth limited (depending on load approx. 600 mm)
especially suitable for	<ul style="list-style-type: none"> • drawer test • threshold test / roller test 	<ul style="list-style-type: none"> • drawer testing • sliding doors • threshold test / roller test



Software

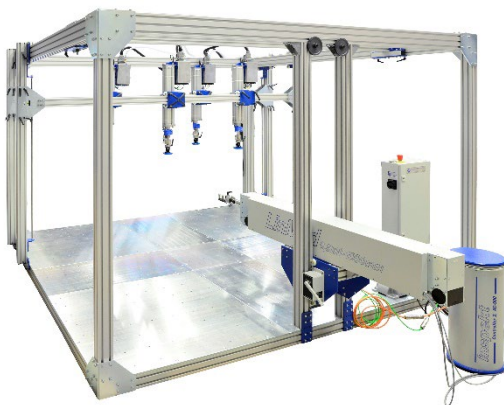
With the help of the testing software, it is possible to define motion sequences as freely as possible. This also includes switching between different speeds during the movement and reacting to events, such as reaching defined positions or forces, time marks, etc. The test data can be evaluated internally, logged or exported. In addition, test sequences and test results are securely stored and managed in the SQL database. A comfortable search function allows quick finding and compiling as well as statistical evaluation of different tests. This makes it easy to process statistics and complaints.

Further advantages of the coupling to testing Software:

- integration of external sensors as measurement or control variables (temperature or noise level sensors, light barriers, etc.)
- connection to Outlook, e.g. as monitoring of the test sequence with e-mail in case of test abort

Application examples:

Universal linear module for installation in the test frame (41-019-316)



- can be variably integrated into universal test rigs (horizontal)
- height adjustment possible via manually operated spindles (attachment to 2 vertical profiles, synchronized)

Universal linear module with electrically height-adjustable lifting system (41-019-317)

The linear module is installed in a special frame, which contains an electromotive height adjustment. This can be moved on rollers and can thus be used flexibly at several test specimen positions.

- **Roller test on seating furniture with and without thresholds according to standards**



BIF-MA/ANSI X5.1, EN 1335-3 and ES 1038

- **Drawer testing according to the standards EN 14749 and EN 14074**





Drawer test stand for a maximum of 3 drawers
(41-019-313)



- Compact and space saving
- Easy adaptation to different drawer widths
- Individual gripping and releasing of each individual specimen possible

Linear module with toothed belt guide

This version of the linear axes is suitable, among other things, for performing endurance tests on hinged and sliding doors as well as horizontally moving rolling and folding doors on cabinets. But also test of drawer tests in furniture, roller tests on office chairs and rollers of various pieces of furniture can be carried out.

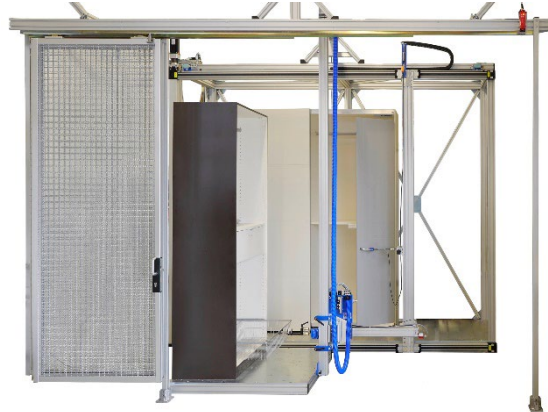
- **Test rig for rollers (also suitable for cabinet doors, drawers, fittings, etc.) (41-019-328)**



Optionally, the test rig can be equipped with a protective enclosure:



- **Test rig for cabinet doors and drawers (41-019-325)**



The linear unit in this test rig consists of two toothed belt linear axes. Both are connected to a shaft and are driven together by a servo motor. The carriages of both axes are connected to a vertical aluminum profile to which the specimens are coupled. This arrangement results in a high rigidity of the test system in the direction of movement and at the same time avoids the occurrence of bending moments at the carriages of the toothed belt axes, which increases their service life. Furthermore, the test specimen can be adapted to the linear axes over the entire height.

Optional accessories (on request):

- Accessories for testing according to ES1058, BIFMA X5.1: Threshold test and EN1335-3:2009: Determination of rolling resistance (41-020-002)
- Accessories for testing according to ES1058, BIFMA X5.1: Threshold test and EN1335-3:2009: Determination of rolling resistance (41-020-003)
- Weight for threshold test according to ES1058, BIFMA X5.1 (41-011-190)
- Load connection for drawer tests (41-006-810)
- Load connection for doors/drawer compartments (41-006-810)
- Load connection for centre columns for rolling resistance measurement (41-006-828)
- Actuator (pneumatic) for drawer tests (41-019-323-BG12)
- Load connection for drawer tests: pneumatic gripper (41-019-323-BG8)
- Installation kit for test frame (40-005-080-BG92)
- Option setup mode (41-019-317-BG55)