Hegewald & Peschke
Meß- und Prüftechnik GmbH

Product Information

Swivel test rigs for seating furniture

e. g. acc. to EN 1335-3, EN 1728, BIFMA X5.1, **Calmar one**

zertifiziert nach DIN EN ISO 9001
TÜV CERT
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Hegewald & Peschke Meß- und Prüftechnik GmbH
Am Gründchen 1, 01683 Nossen, Germany
Telephone: +49 35242 445-0, Telefax: +49 35242 445-111
E-Mail: info@Hegewald-Peschke.de
http://www.Hegewald-Peschke.com

Single test rig for performing various swivel and roller tests on swivel chairs, e.g. according to EN 1335-3, EN 1728, BIFMA X5.1

The seat load is either applied

- statically by means of weight plates (to be ordered separately) which act on the seat compression piece (ø200 mm) via a guide rod *(item no. 40-930-060)*, or
- with a force controlled pneumatic axis Fmax 2500 N. *(item no. 40-930-061)* The force is applied vertically downwards. The load can thus be applied alternately every x cycles for y cycles.

The PLC with analogue value processing is directly mounted to the test rig. The touch panel allows the parameterization of tests and depicts the real time status of the connected test axis. The parameterization can be done individually and saved as a template or based on a prevalent standard conform template. For example parameters such as the amount of cycles, time intervals, maximum and minimum values can be set.

During the test run the user can view the test status. The cycle number, failure messages and a graphical visualization of the test run can be observed. At test end the control saves automatically all for the documentation necessary parameter and allows the export of the data to a computer for test reporting.

Consisting of:

- 1 test frame based on a floor panel 1200 x 1200 mm
  - 12 mm thick
  - galvanised steel
  - with aluminium profile frame screwed underneath for stiffening,
  - bore grid with threaded holes M10;
  - vibration-damped, height-adjustable feet to compensate for uneven floors
- 1 swivel test unit, electromotively position controlled; diameter of rotation plate 950 mm
- 1 portal with fixation for specimen including lock against rotation
- 1 PLC control unit integrated into the control cabinet
- centralized pressurized air connection (NW7,2) with air conditioning unit consisting of filtering systems, pressurized air distributor and switch-on-valve
- guiding for the seat load with manual lifting device for the weights. Thereby it is possible to unload the seat while change of specimen. For the weight fixation a bolt with ø 30 mm is included - the weights must have a suitable drilling. The unity is approx. 100 mm adjustably for eccentric load. *(40-930-060)*
- alternative: 1 pneumatic test axis for seat load, force controlled, piston diameter 80 mm, stroke 500 mm, test load up to 2500 N, load cell 5 kN. The unit can be moved approx. 100mm for eccentric load. *(40-930-061)*

Enclosed accessories:

- 1 5-foot clamp/carrier
- 1 case with accessories kit, e.g. 2 eyebolts and 2 straps for specimen fixation (*40-001-059*)

Other accessories, e.g., for other test objects, can be offered when required separately.

Optional accessories:

- weight set 155 kg (7x20 kg, 1x10 kg, 1x5 kg), with calibration certificate (*41-011-190*)
    - 1 load pad 200 mm diameter acc. to DIN EN 1335 with clamping connection *(41-006-101)*

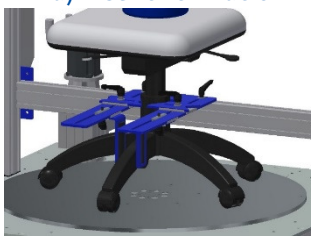
Technical data:

power connection	400 VAC, 50 Hz
angular positioning	±10° or better
angle range	±360° (adjustable)
maximum loading	150 kg
rotation speed	15 U/min (adjustable)
delay time	configurable, minimum 0.1 s at each change of rotation direction

Application examples according to the standards DIN EN 1335 or DIN EN 1728

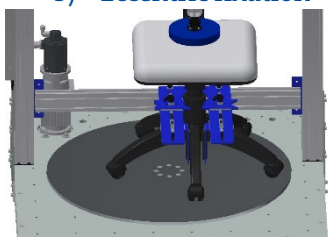
Roller testing

a) Centric fixation



The chair is fixed both in the backrest area and centrally above the floor panel at the star base. This is thereby prevented from turning. The turntable causes the rollers to rotate and swivel when changing direction. The rollers, including their bearings and fastening, are thus tested.

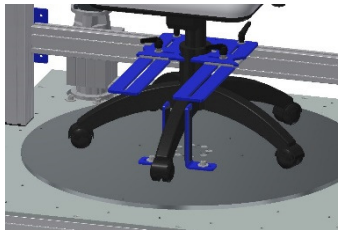
b) Eccentric fixation



In this case, the gas spring of the chair is located a few centimetres from the rotation axis of the plate during the test. If the direction of rotation is alternating, the swivel behaviour of the rollers is examined.

Gas spring testing / swivel testing

The chair is secured against rotation on the backrest or on the side of the seat. The base is attached to the turntable with two angles and thus rotated during the test. In this case, the rollers stand still and it is checked how well the gas spring tolerates a rotation of the seat. This causes the piston rod of the gas spring to rotate relative to the housing.



Hint:

Simultaneous loading of points A and C according to EN 1335 and EN 1728 is achieved by loading a point in between, which leads to the same bending moment as permitted by the above standards.

Overview of selected standards for turning tests:

	BIFMA X5.1 (2017)	EN 1335 (2009)	EN 1335 (2009)	NEN 1812	DIN EN 1728 (2014)	DIN EN 1728 (2014)
Seat load	static 51..64 mm eccentric	static	static	static 50mm eccentric at the back	static	static
Load	122 kg	A: M1=60 kg C: M2=35 kg alternative: 95 kg on 0,37*dist. A-C	A: M1=110 kg	95 kg	not defined	not defined
Cycles	60000 +60000	120000	36000	60000	not defined	not defined
Frequency [rev./min]	5..15	10±5	6	not defined	10±5	6
Breaks	non		recommended after every half revolution	not defined		recommended after every half revolution
Load pad		41-006-101 or 41-006-220	41-006-101		41-006-101 or 41-006-220	41-006-101 or 41-006-220
Angle	360° alternating or continuously	360° alternating	180° alternating	360° alternating	360° alternating	180° alternating
Notes		Swivel test point 7.3.3 load **point A and C**	Roller testing point 7.3.5 load point A alternatively linear		Swivel test point 7.11 load **point A and C**	Roller testing point 7.13 load point A alternatively linear