



EWELLIX

EWELLIX Servo Lifting Column CPSM

Product Data Sheet

We pioneer motion

SCHAEFFLER

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1 EWELLIX CPSM servo lifting column

1 EWELLIX CPSM servo lifting column



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Features

- highly dynamic servo-motor or BLDC-motor for high speeds of up to 100 mm/s
- high-performance ball screw drive for high load capacity up to 5 kN
- extruded aluminum profiles for a highly robust design
- manually adjusted gliders for very high stiffness and high eccentric loads
- motor encoder system and high-quality gearbox enable high positioning accuracy and high repeatability (0.1 mm)

Benefits

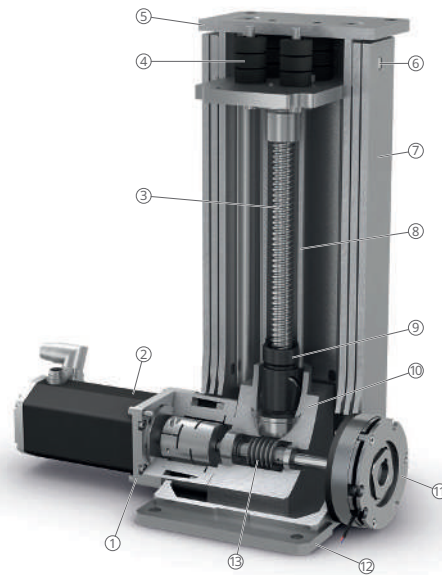
- high motor rated power enables a high duty cycle of the column
- customized motor adapter for maximum flexibility (max. motor diameter 90 mm)
- customized top and bottom plate to fit most applications
- customized aluminum profile color (anodized) for the design requirements of the application
- optional brake to release the motor when it is in position and to increase the duty cycle
- preloaded bearing arrangement also suitable for ceiling-mounted applications (only available without damping system)

Product description

The functional principle of the lifting column is based on the generation of a push force to move centric or off-centric loads.

A flange mounted motor drives a ball screw drive via a motor adapter and a worm gear. A BLDC-motor or a servo-motor is preferably used as the motor. The ball screw drive is supported in the gearbox housing by a tapered roller bearing. The entire drive unit is mounted on the lower base plate. A nut on the ball screw drive is attached to the push tube and moves up and down. The push tube is mounted on the upper base plate. Optionally, a damping system can be installed between the push tube and the upper base plate. The guide tubes extend or retract depending on the direction of rotation of the motor. In conjunction with the control unit, the motor accelerates or decelerates the movement or holds the position of the push tube at a standstill. The design of the lifting column allows an electromechanical brake to be mounted on the motor shaft.

2 Servo lifting column



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1	Motor adapter: standard or customer-specific	2	Motor
3	Ball screw drive	4	Damping system (optional)
5	Upper base plate	6	Play-free gliding elements
7	Guide tubes	8	Push tube
9	Nut on ball screw drive	10	Gearbox housing
11	Electromechanical brake (optional)	12	Lower base plate
13	Worm gear		

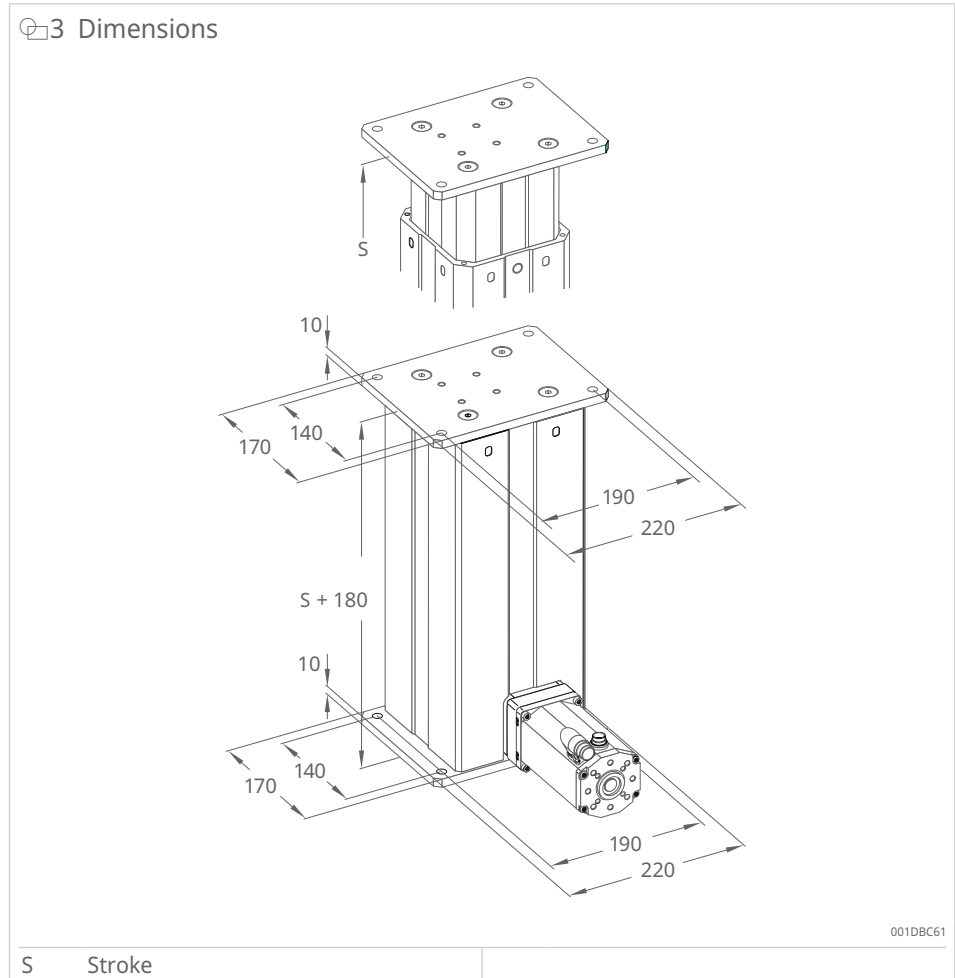
1 Technical data

Feature		Unit	CPSM..-BN	CPSM..-BF
Dynamic load carrying capacity	C	kN	24.1	22.8
Holding torque (for optional external brake)	M_h	Nm	12	12
max. linear speed	v_{max}	mm/s	100	200
max. acceleration	a_{max}	m/s^2	6	6
Duty cycle	D	%	100	100
Screw drive type	-	-	Ball screw drive	Ball screw drive
Screw drive diameter	d_{screw}	mm	25	25
Screw lead	p_{screw}	mm	10	20

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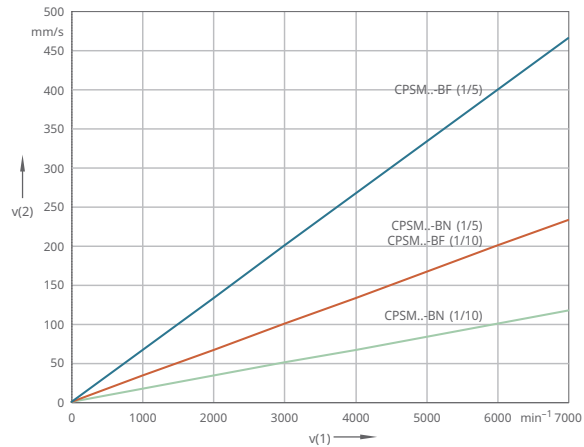
Feature		Unit	CPSM..-BN	CPSM..-BF
Lead accuracy	-	-	G7	G7
Stroke (in increments of 100 mm)	S	mm	100 to 700	100 to 700
Internal overstroke each side	S ₀	mm	1	1
Gear reduction	i	-	5 or 10	5 or 10
Ambient temperature	T _{amb}	°C	0 to +50	0 to +50
max. humidity	φ	%	95	95

Dimensional drawings



Performance diagrams

4 Output speed in relation to input speed, motor

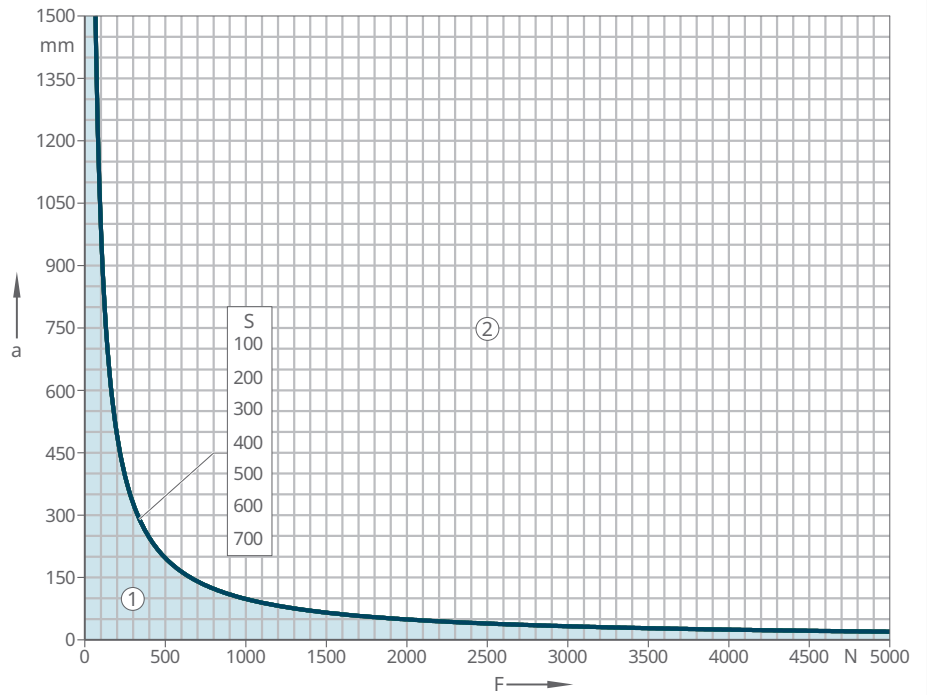


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v(1) Input speed

v(2) Output speed

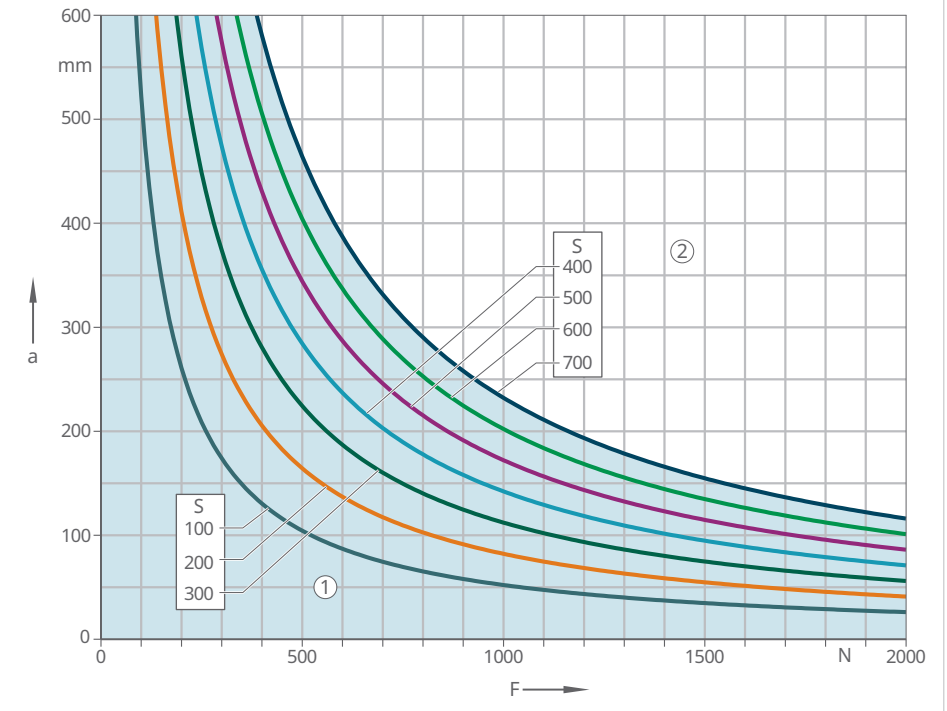
5 Offset load diagram, 2-section guide tube unit, static load



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a	Load distance from center of column	F	Load
S	Stroke in mm	1	Ideal load range
2	Overload range		

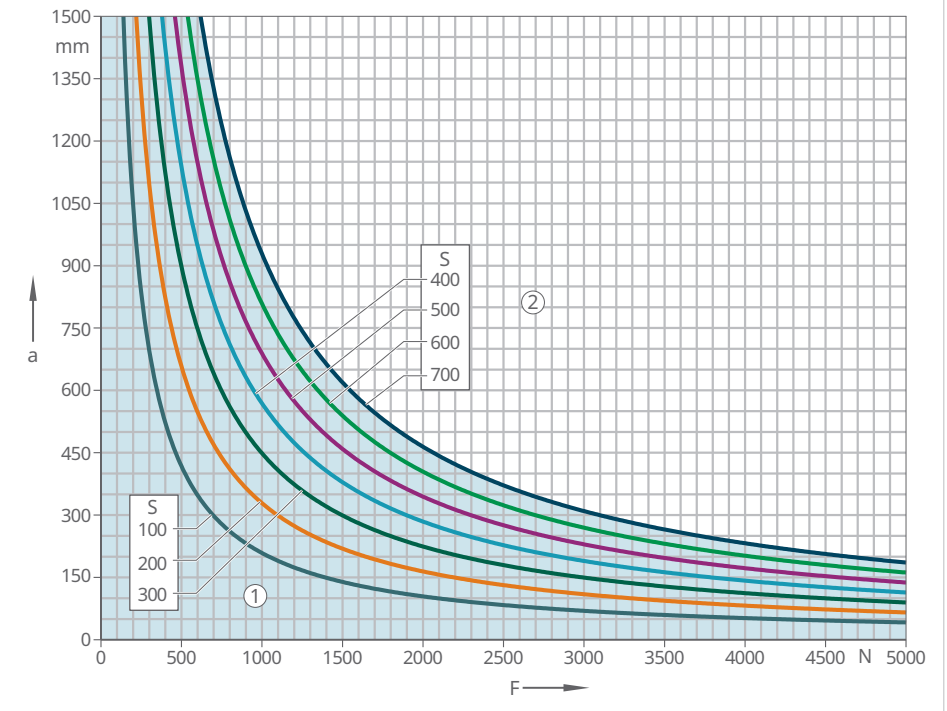
6 Offset load diagram, 3-section guide tube unit, dynamic load



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a	Load distance from center of column	F	Load
S	Stroke in mm	1	Ideal load range
2	Overload range		

7 Offset load diagram, 3-section guide tube unit, static load



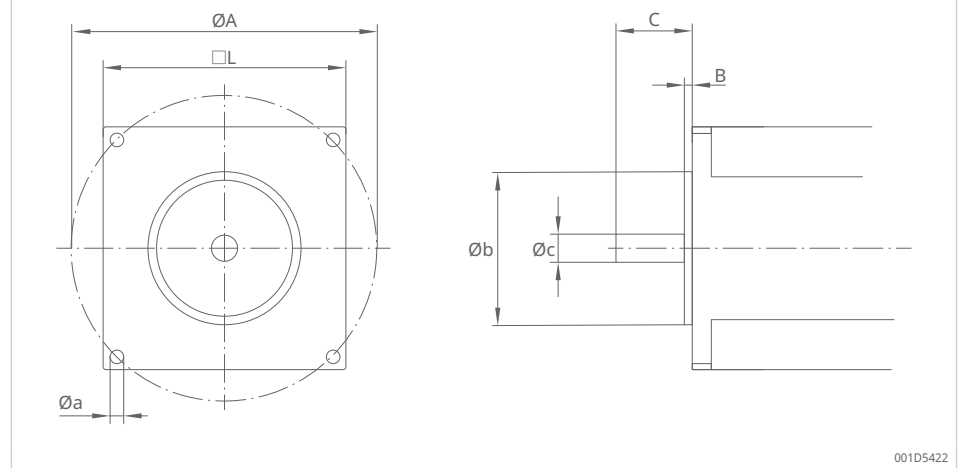
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a	Load distance from center of column	F	Load
S	Stroke in mm	1	Ideal load range
2	Overload range		

Adapter for third party motors

In order to attach your preferred motor to the column, Schaeffler offers tailor-made solutions according to the specifications listed below. For motor specifications not covered by the specifications listed below, please contact Schaeffler.

8 CPSM adapter for third party motors



2 Adapter for third party motors

Designation	Symbol	Unit	Min.	Max.
Fixing diameter	A	mm	52	103
Centering height	B	mm	1	5
Shaft length	C	mm	15	48
Motor housing	L	mm	60	95
Motor centering	b	mm	47	95
Shaft diameter	c	mm	11	19

Ordering designation

See ordering designation for CPSM servo lifting columns ►10 | 1.1.

1.1 Ordering designation

1

9 Structure of the order designation for servo lifting columns CPSM

CPSM 10 - BN - 10 - D 0300 - 0 00 - AM - 000

Type

Tube size

10 L-size pipe (3 sections: 163 mm/2 sections: 146 mm)

Screw type

BN Ball screw 25 × 10
 BF Ball screw 25 × 20

Worm gear

10 Worm gear ratio 1:10
 05 Worm gear ratio 1:5

Hose set

A 2 sections
 D 3 sections

Stroke

100 mm
 200 mm
 300 mm
 400 mm
 500 mm
 600 mm
 700 mm
 -- Other, on request

Dampening element

0 Without dampening element (retracted length = stroke + 180 mm)
 W With dampening element (retracted length = stroke + 232 mm)

External brake

0 Without electromechanical brake
 24 With electromechanical holding brake, 24 VDC
 -- Customized brake on request

Motor and Adapter

AA Motor, adapter available separately
 AM Motor, adapter mounted

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