

## Servo pillar CPSM



High load capability



High speed capability



Virtually maintenance free





## Customized solutions

Up to 65% weight saving  
Up to 100mm/s high speed  
pillars

# Servo pillar CPSM



## Features

- High dynamic servo or brushless DC motor for high speed up to 100 mm/s
- High performance ball screw for high load capacity up to 5 kN
- Extruded aluminum profiles for a very robust design
- Manually adjusted gliders for very high stiffness and high eccentric loads
- Encoder system of the motor and high quality gearbox enable high positioning accuracy and high repeatability (0,1 mm)

## Benefits

- High nominal power of the motor allows for high duty cycle of the pillar
- Customized motor adapter for highest flexibility (max. motor diameter 90 mm)
- Customized top and bottom plate to fit most of the applications
- Customized aluminum profile colour (anodized) to fit application design needs
- Optional brake to release the motor when it's in position and to increase the duty cycle
- Preloaded bearing arrangement also for ceiling mount applications (only available without damping system)

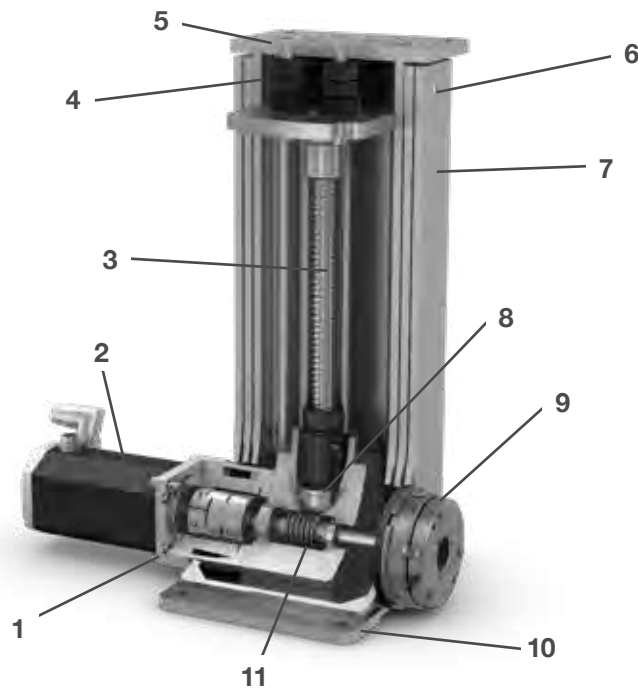
## Product description

Telescopic pillars CPSM are the ideal solution to combine strong guiding functions with linear movements.

The robust, manually adjusted and virtually backlash-free aluminum extrusions are able to carry high excentric loads in push and pull directions.

To provide enough power to lift and lower heavy weights with high speed, the pillars are equipped with brushless DC or servo motors. Of course, Ewellix also supports the usage of preferred motors with a customizable motor interface.

Optional brakes and damping elements are key features that allow an effective usage in heavy duty industrial applications.



1. Standard or customized motor interface
2. Motor (Brushless DC or servo AC)
3. High efficiency ball screw
4. Optional damping system
5. Customized top plate
6. Backlash-free long lasting guiding pads
7. 2 or 3 section extruded aluminum guiding tubes
8. Preloaded bearing arrangement
9. Optional electromechanical brake
10. Customized bottom plate
11. Low friction worm gear reduction

# CPSM

## Servo pillar



### Technical data

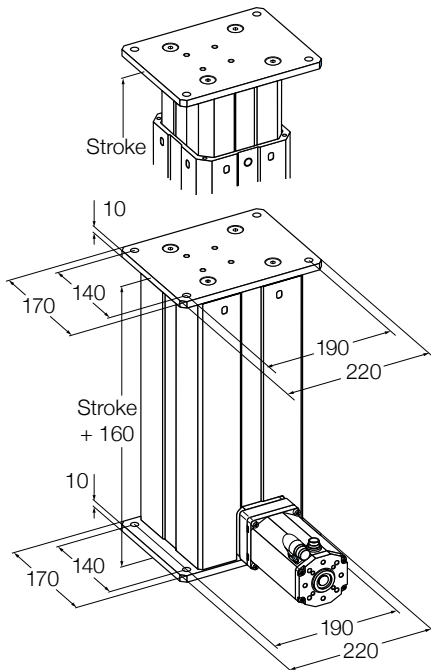
| Designation                           | Symbol         | Unit             | w/o motor  | BG75         | 1FK7034    |
|---------------------------------------|----------------|------------------|------------|--------------|------------|
| <b>Performance Data</b>               |                |                  |            |              |            |
| Continuous force @ zero speed         | $F_{c0}$       | kN               | 5          | 4,013        | 5          |
| Continuous force @ max. speed         | $F_c$          | kN               | 5          | 4,013        | 4,013      |
| Peak force @ zero speed               | $F_{p0}$       | kN               | 5          | 5            | 5          |
| Peak force @ max. speed               | $F_p$          | kN               | 5          | 5            | 5          |
| Dynamic load capacity                 | C              | kN               | 21         | 21           | 21         |
| Holding force (motorbrake option)     | $F_{Hold-MB}$  | kN               | N/A        | 5            | 5          |
| Holding force (external brake option) | $F_{Hold-EB}$  | kN               | 5          | 5            | 5          |
| Max. linear speed                     | $v_{max}$      | mm/s             | –          | 62           | 100        |
| Max. acceleration                     | $a_{max}$      | m/s <sup>2</sup> | 6          | 6            | 6          |
| Duty cycle                            | D              | %                | 100        | 100          | 100        |
| <b>Mechanical Data</b>                |                |                  |            |              |            |
| Screw type                            | –              | –                | Ball screw | Ball screw   | Ball screw |
| Screw diameter                        | $d_{screw}$    | mm               | 20         | 20           | 20         |
| Screw lead                            | $p_{screw}$    | mm               | 10         | 10           | 10         |
| Lead accuracy                         | –              | –                | G7         | G7           | G7         |
| Stroke <sup>1)</sup>                  | s              | mm               | 100...700  | 100...700    | 100...700  |
| Internal overstroke each side         | $s_0$          | mm               | 1          | 1            | 1          |
| Backlash                              | $s_{backlash}$ | mm               | 0,07       | 0,07         | 0,07       |
| Gear reduction                        | i              | –                | 10         | 10           | 10         |
| Efficiency                            | $\eta$         | %                | 58         | 52           | 51         |
| <b>Electrical Data</b>                |                |                  |            |              |            |
| Motor type                            | –              | –                | N/A        | Brushless DC | Servo      |
| Nominal voltage                       | U              | V DC             | N/A        | 40           | N/A        |
| Nominal current                       | I              | A                | N/A        | 12,7         | 1,3        |
| Peak current                          | $I_{peak}$     | A                | N/A        | 10,8         | 1,9        |
| Nominal power                         | P              | kW               | N/A        | 0,45         | 0,6        |
| <b>Environment</b>                    |                |                  |            |              |            |
| Ambient temperature                   | $T_{ambient}$  | °C               | 0...+50    | 0...+50      | 0...+50    |
| Max. humidity                         | $\phi$         | %                | 95         | 95           | 95         |

<sup>1)</sup> By 100 mm steps

### Ordering key

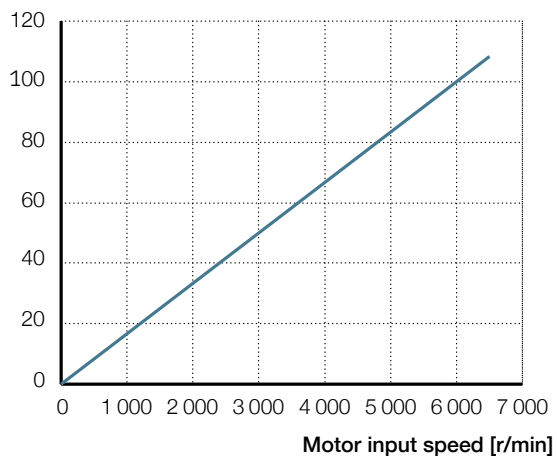
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### Dimensional drawing

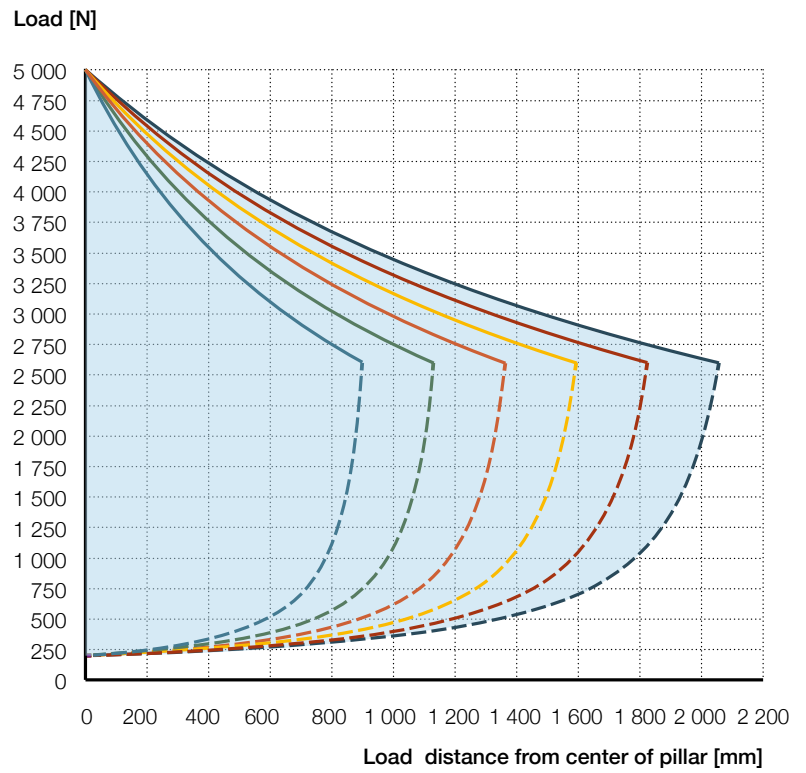
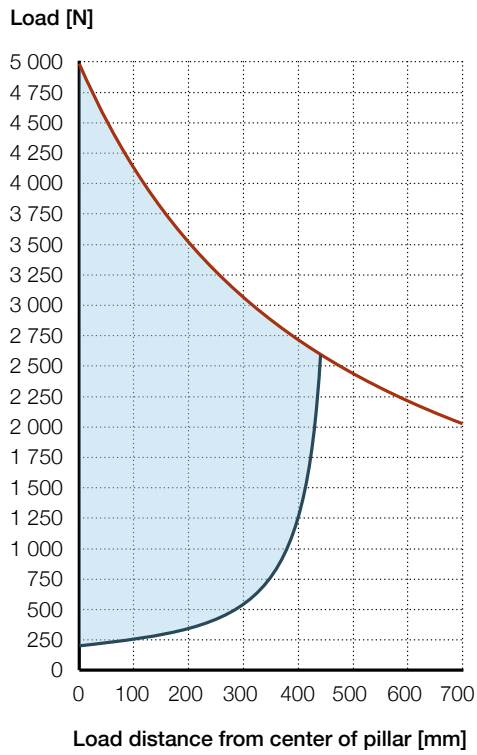


### Performance diagram

Pillar output speed [mm/s]



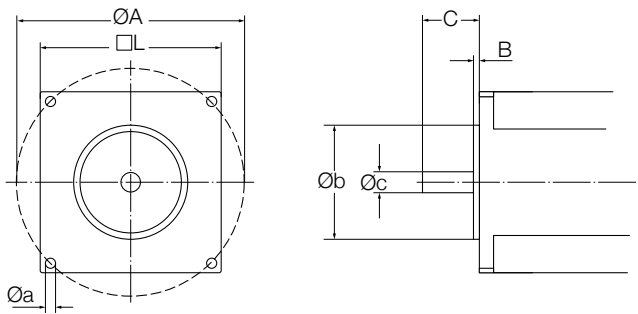
### Performance diagrams



- |                                 |                                 |                                 |
|---------------------------------|---------------------------------|---------------------------------|
| — Over load limit stroke 200    | — Over load limit stroke 400    | — Over load limit stroke 600    |
| - - Under load limit stroke 200 | - - Under load limit stroke 400 | - - Under load limit stroke 600 |
| — Over load limit stroke 300    | — Over load limit stroke 500    | — Over load limit stroke 700    |
| - - Under load limit stroke 300 | - - Under load limit stroke 500 | - - Under load limit stroke 700 |

# Adapter for third-party motors

In order to attach your preferred motor to the pillar, Ewellix offers tailormadesolutions within the specifications below. For motor speciications which are not covered by those below, please contact Ewellix.

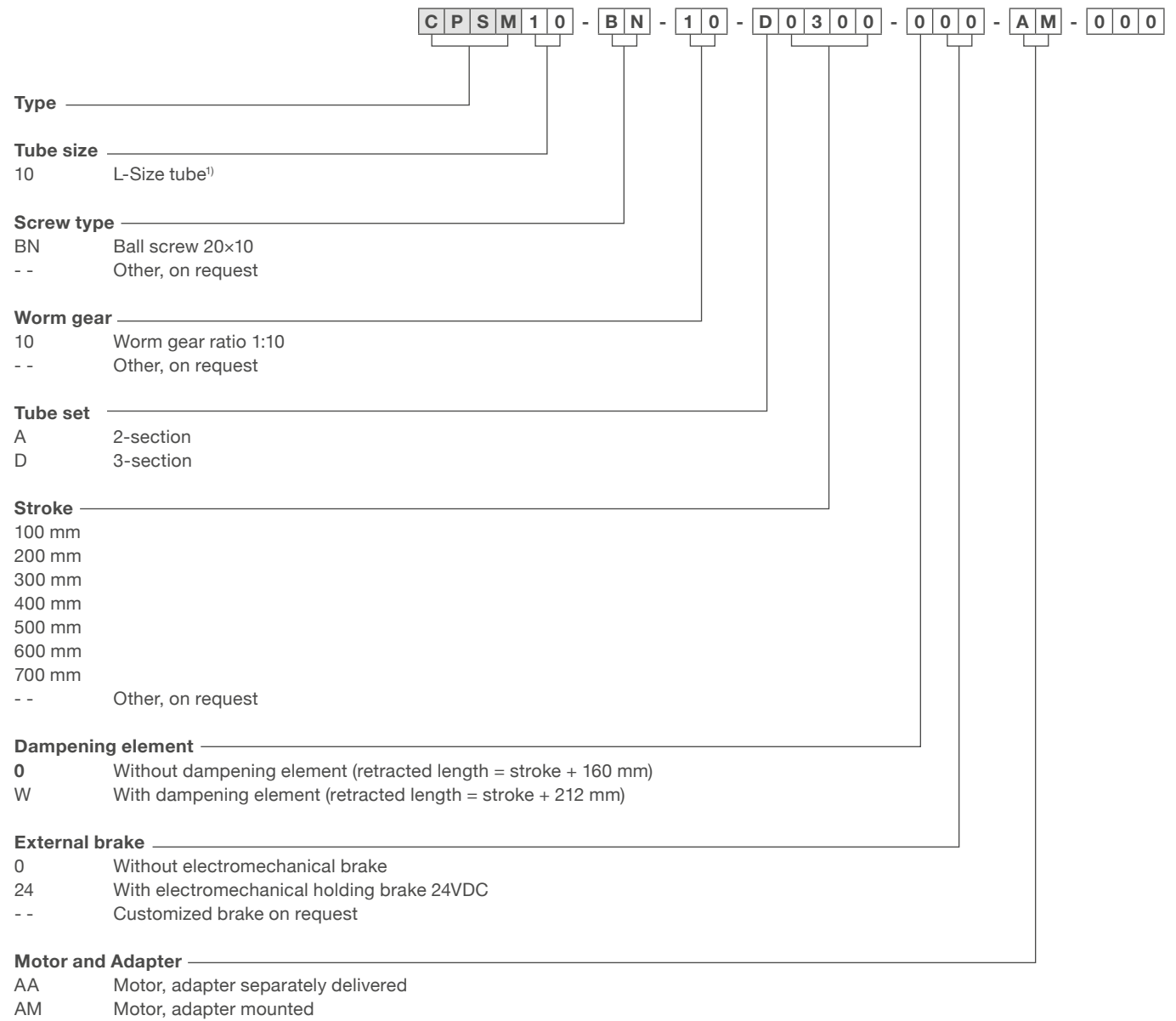


| Designation      | Symbol          | Unit | Min. | Max. |
|------------------|-----------------|------|------|------|
| Motor housing    | $\square L$     | mm   | 60   | 95   |
| Motor centering  | $\varnothing b$ | mm   | 47   | 95   |
| Centering height | B               | mm   | 1    | 5    |
|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



## Ordering key

### Linear units



<sup>1)</sup>3- sections: □ 163 mm / 2-sections: □ 146 m



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