

# Precision Linear Stage

500 MM TRAVEL WITH HIGH GUIDING ACCURACY



## M-417

- + High lifetime and velocity to 100 mm/ s
- + Low crosstalk with  $\pm 100 \mu\text{rad}$  over the entire travel range
- + Efficient ActiveDrive DC servo motor
- + Direction- sensing reference switch
- + Design resolution 0.5  $\mu\text{m}$
- + Min. incremental motion to 0.5  $\mu\text{m}$
- + Noncontact limit switches

### Precision- class linear drive

Recirculating ball bearings for high travel accuracy and load capacity. Precision ball screw with 2 mm pitch. Stress- relieved aluminum base for highest stability

### Drive types and position measurement

ActiveDrive DC motor for high velocity: Control via pulse- width- modulated (PWM) signals, the operating voltage is obtained via an amplifier integrated in the motor case.

Noncontact limit switches. Noncontact, direction- sensing reference point switches in the middle of the travel range. Rotary encoder integrated on motor shaft

### Fields of application

Precision positioning for science and industry, high duty cycles.

## Specifications

Preliminary data	M-417.2PD	Unit
<b>Motion and positioning</b>		
Travel range	500	mm
Integrated sensor	Rotary encoder	
Sensor resolution	4000	cts./ rev.
Design resolution	0.5	$\mu\text{m}$
Min. incremental motion	0.5	$\mu\text{m}$
Unidirectional repeatability	0.5	$\mu\text{m}$
Backlash	2	$\mu\text{m}$
Crosstalk, angular error	$\pm 100$	$\mu\text{rad}$
Max. velocity	100	mm/ s
<b>Mechanical properties</b>		
Thread pitch	2	mm
Gear ratio	–	
Max. load	500	N
Max. push / pull force	200	N
Max. lateral force	200	N
<b>Drive properties</b>		
Motor type	DC motor with PWM control	
Operating voltage	24 (PWM)	V
Motor power	70	W
Reference point and limit switches	Hall effect	
<b>Miscellaneous</b>		

Operating temperature range	-20 to 65	°C
Material	Aluminum, steel	
Mass	10.5	kg
Connector	Sub- D 15- pin, 3 m cable incl.	
Recommended controller / driver	C-863 (single- axis), C-884 (up to 4 axes)	

Ask about custom designs!

## Order Information

### M-417.2PD

Linear Translation Stage with Recirculating Ballscrew, Travel Range 500 mm, ActiveDrive DC Motor (Includes 24 V Power Supply)

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## Controllers / Drivers / Amplifiers

[C-863 Mercury Servo Controller](#)

[C-884 Four Axis Motion Controller](#)

## Related Products

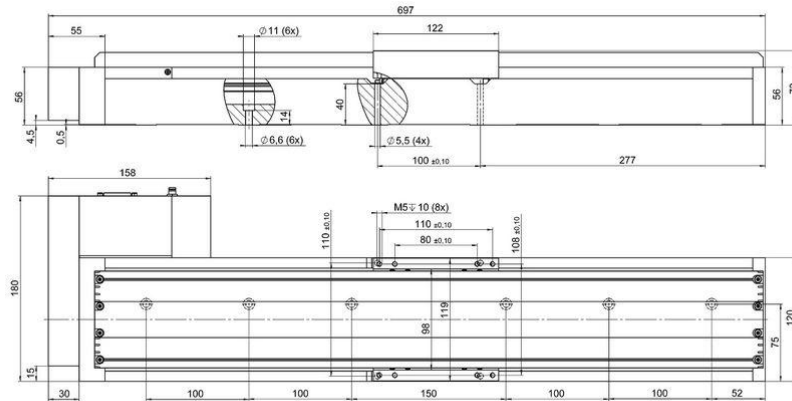
[M-413 High- Load Precision Stage](#)

[M-414 High- Load Precision Stage](#)

[M-511 • M-521 • M-531 High- Precision Linear Translation Stage](#)

## Drawings / Images

M-417, dimensions in mm



Mounting platform for M-417, removable

