

# Precision Positioning Stage | PPS-60



The PPS-60 is high-precision, long travel linear stage. It is available with piezo motor, linear motor or stepper motor drive. Ball bearings assure high stiffness and guiding accuracy for loads up to 150 N. The PPS-60 is available with an optional linear encoder for increased resolution and repeatability. PPS-60 stages can be mounted in XY without any adapter, and a Z-axis can be added with the use of a standard mounting bracket.

## KEY FEATURES

- Travel ranges of up to 300 mm (longer travel available on request)
- 1.2 nm closed loop resolution
- Load capacity up to 15 kg
- Steel ball bearing
- Integrated mechanical limit switches
- Vacuum, non-magnetic & cryo versions available

## TECHNICAL DATA

Travel range [mm]	25	50	100	200	300							
Straightness / Flatness [ $\mu\text{m}$ ]	$\pm 2.5$	$\pm 4$	$\pm 6$	$\pm 8$	$\pm 10$							
Pitch [ $\mu\text{rad}$ ]	$\pm 50$	$\pm 75$	$\pm 100$	$\pm 125$	$\pm 150$							
Yaw [ $\mu\text{rad}$ ]	$\pm 50$	$\pm 75$	$\pm 100$	$\pm 125$	$\pm 150$							
Motor option	Piezo Motor				Stepper Motor				Linear Motor			
Speed, max [mm/s]	10 (MMC-110)				10 (*15)				100			
Encoder option	Open Loop	Analog (1 V <sub>pp</sub> )	Digital (RS-422)	Digital Low Cost	Open Loop	Analog (1 V <sub>pp</sub> )	Digital (RS-422)	Digital Low Cost	Analog (1 V <sub>pp</sub> )	Digital (RS-422)	Digital Low Cost	
Resolution, typical [ $\mu\text{m}$ ]	0.001	0.01	0.0012	0.5	0.1	0.1	0.05	0.5	0.01	0.002	0.5	
Repeatability, bi-directional [ $\mu\text{m}$ ]	-	$\pm 0.05$	$\pm 0.02$	$\pm 1$	$\pm 4$	$\pm 0.1$	$\pm 0.1$	$\pm 1$	$\pm 0.05$	$\pm 0.02$	$\pm 1$	
Repeatability, uni-directional [ $\mu\text{m}$ ]	-	0.05	0.02	1	0.2	0.1	0.1	1	0.05	0.02	1	
Accuracy [ $\mu\text{m}$ ]	-	$\pm 1$	$\pm 1$	$\pm 3$	$\pm 10$	$\pm 1$	$\pm 1$	$\pm 3$	$\pm 1$	$\pm 1$	$\pm 3$	
Materials	aluminum body, steel bearing (other materials i.e. stainless steel, titanium, etc. available upon request)											

\*with external stepper motor

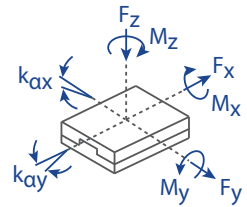
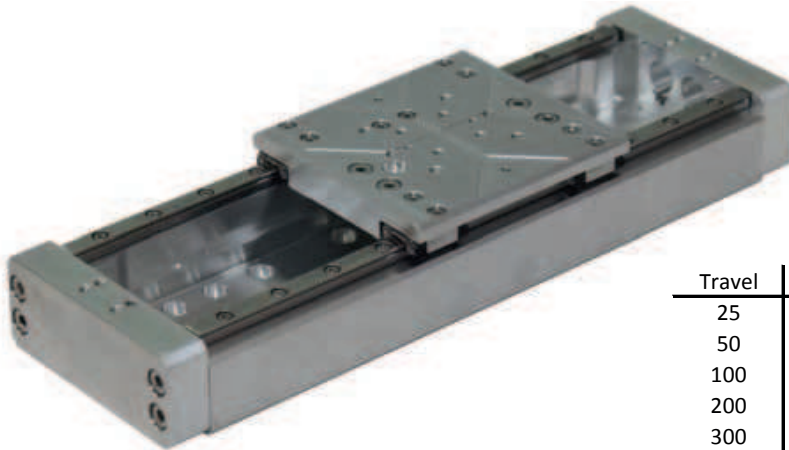
## ORDERING INFORMATION

PPS-60-

<b>DRIVE</b>	Piezo Motor, PM-003 .....	1					
	Internal Stepper Motor, SM-001 .....	2					
	Linear Motor, LM-002 .....	3					
	External Stepper Motor, SM-004 .....	4					
<b>TRAVEL</b>	25 mm .....	1					
	50 mm .....	2					
	100 mm .....	3					
	200 mm .....	4					
	300 mm .....	5					
<b>ENCODER</b>	None .....	0					
	Analog (1 V <sub>pp</sub> ) .....	2					
	Digital (RS-422) .....	3					
	Digital low cost, 0.5 $\mu\text{m}$ .....	4					
<b>LIMIT SWITCH</b>	None .....	0					
	Mechanical .....	1					
	Optical .....	2					
<b>ENVIRONMENT</b>	Atmospheric .....	0					
	High Vacuum, 10 <sup>-6</sup> mbar .....	6					
	† Ultra High Vacuum, 10 <sup>-9</sup> mbar .....	9					

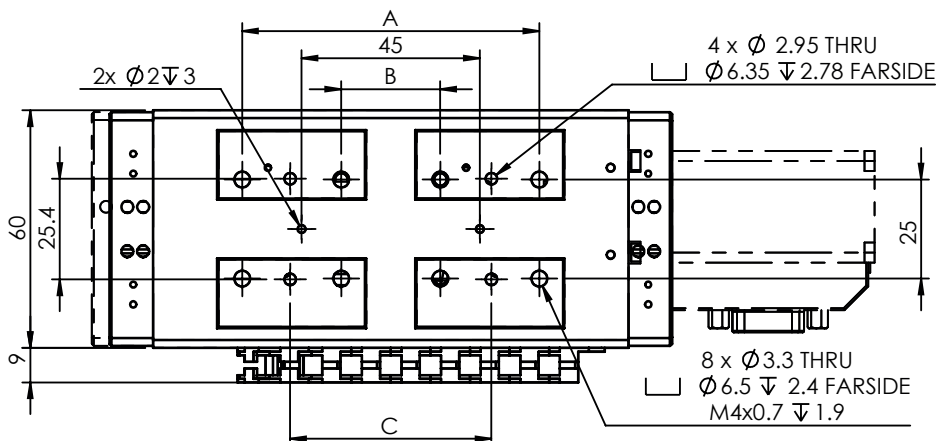
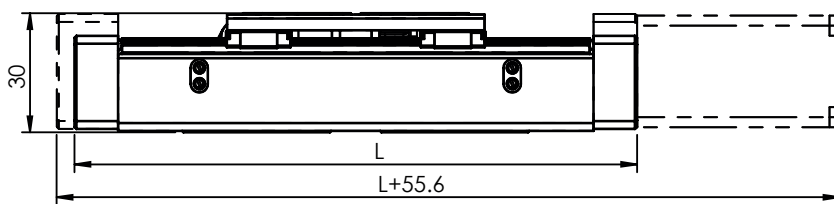
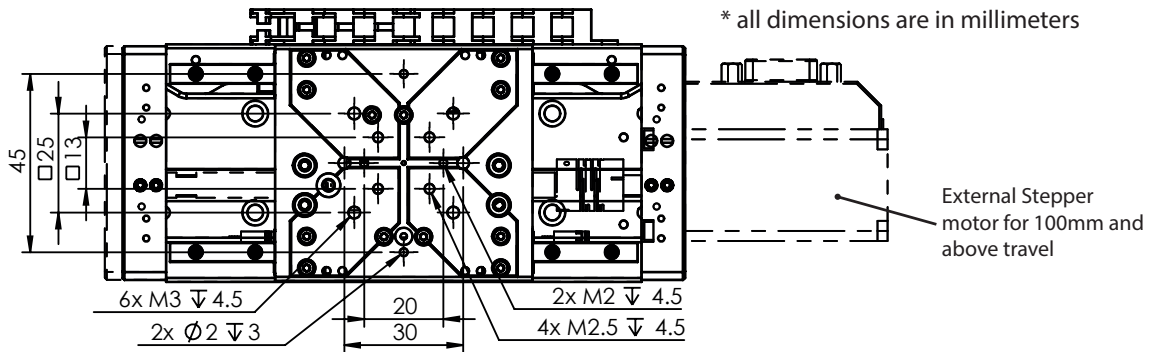
† only available with Piezo Motor option or externally mounted UHV stepper Motor

Load, max	$F_x$ [N]	$F_y$ [N]	$F_z$ [N]	$M_x$ [N-m]	$M_y$ [N-m]	$M_z$ [N-m]	$k_{ax}$ [ $\mu$ rad/N-m]	$k_{ay}$ [ $\mu$ rad/N-m]
PM-003	10	100	150	10	10	10	100	100
SM-001	10	100	150	10	10	10	100	100
LM-002	10	100	150	10	10	10	100	100
SM-004	10	100	150	10	10	10	100	100



Travel	L	A	B	C
25	117	75	25	50.8
50	142	75	25	50.8
100	192	125	75	101.6
200	292	225	175	203.2
300	392	392	325	304.8

\*50 mm travel version shown  
 \* all dimensions are in millimeters



Specifications are subject to change without notice.