

PL Series

LINEAR ACTUATOR TECHNOLOGY

PLA BALL SCREW DRIVEN LINEAR ACTUATOR



Hardened Steel V-Raceway

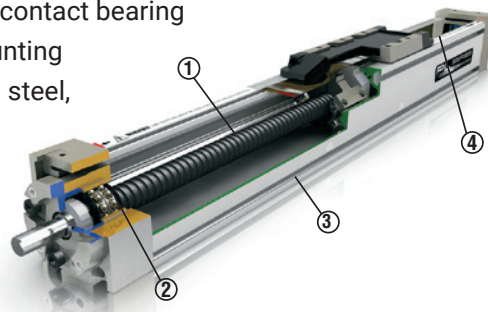


FEATURES & BENEFITS

- **High Speed Cam Roller Design** - Pre-loaded ball bearing cam rollers are guided by the patent pending Integral V™ hardened steel raceways. Creates smooth precision guidance
- **Ball, Acme or Lead Screw Driven** - high positioning accuracy and high load/torque load requirements
- **SIMO®** - (Simultaneous Integral Milling Operation) patent pending machining process for precision machined surfaces on all housing sides
- **Accessories:** couplings, mounting clamps, motor mounts, limit switches, gear reducers, shaft extensions etc.

KEY FEATURES



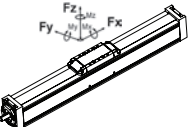
- (1) Positioning accuracy assured by ball or lead screw drive
- (2) Double row angular contact bearing
- (3) T-slots for easy mounting
- (4) Seal strip - stainless steel, magnetically sealed



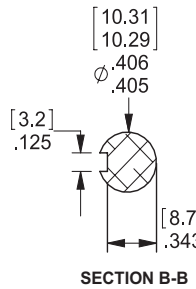
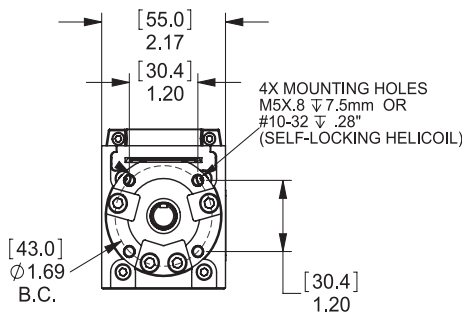
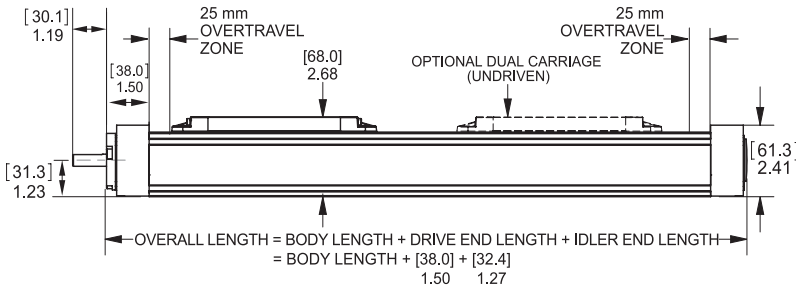
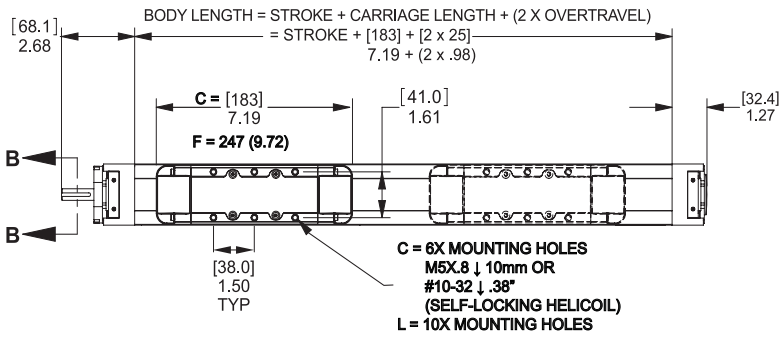
NOTE:

1. Moment arms for calculating moments should be measured from the centerline of the driveshaft.
 2. Limit switches must be used in order to prevent the carriage from contacting the actuator end blocks, resulting in damage.
 3. 25mm of over-travel has been added to the body length in each direction to allow for carriage over-travel. 25mm is the recommended over-travel; although a minimum of 10mm may be specified for special applications.
 4. Fx applies to ball and acme screws only. Contact manufacturer for lead screw values.
- *Max length and speed are limited by critical speed of screw. Max load is limited by column strength of screw. Values listed are theoretical max.

TECHNICAL DATA

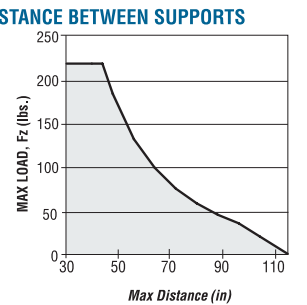
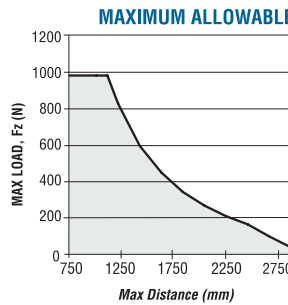
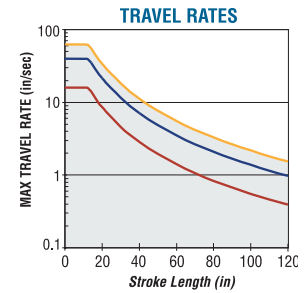
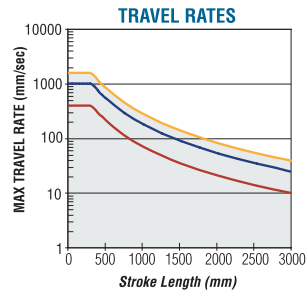
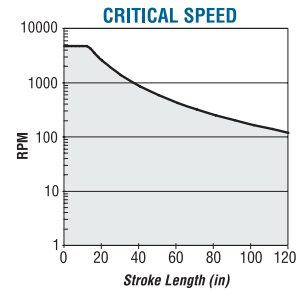
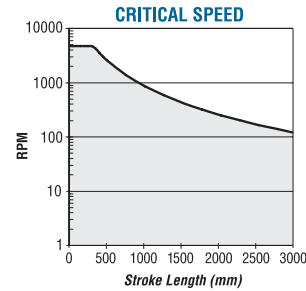
					
Size	mm	55 x 55	in	2.17 x 2.17	
Max. Speed - 1" Lead	m/s	2	in/s	79	
Max. Stroke Length*	mm	2710	in	107	
Min. Stroke Length	mm	50	in	1.97	
Max RPM*	4755				
Base Weight	Kg	1.636	lbf	3.61	
Add for 100 mm of Stroke	Kg	0.379	lbf	0.84	
Max. Load	Fx ⁴	N	1958	lbf	440
	Fy	N	285	lbf	64
	Fz	N	980	lbf	220
Max. Moments	Mx	Nm	12	lbf-in	106
	My	Nm	52	lbf-in	460
	Mz	Nm	52	lbf-in	460
Moment of Inertia	Ix	cm ⁴	29	in ₄	0.70
	Iy	cm ⁴	32	in ⁴	0.77
Max. Radial Load on Input Shaft	N	200	lbf	45	
No Load Torque	Nm	0.015	lbf-in	0.13	
	For combined loads, the combined loading cannot exceed the following formula.				
	$\frac{Fy_A}{Fy} + \frac{Fz_A}{Fz} + \frac{Mx_A}{Mx} + \frac{My_A}{My} + \frac{Mz_A}{Mz} \leq 1$				

DIMENSIONAL INFORMATION



LOAD RANGE (Ball & Acme Screws)

The recommended operating range is below and to the left of the shown curves. Speeds indicated by the curves are based upon 80% of the critical speed of the ball screw. Higher recommended speed ranges can be achieved by selecting a larger lead ball screw.



■ .200/5.08 mm lead
 ■ .500/12.7 mm lead
 ■ 1.00/25.4 mm lead
 ■ All equal the same
 Measured with 0.631" diameter ball screw

ORDERING INFORMATION

EXAMPLE: PLA055S-01JX-XXXX-1CD2M

PLA	055	X	XX	XX	X	XXXX	X	X	X	X	X
Series	Size (mm) (Base x Height)	Drive	Journal Configuration	Leads	Accuracy	Body Length	#Carriages	Carriage Style	Bearing Quantity	Bearing Type	Mounting Holes
PLA Screw Driven	55mm x 55mm		SEE CHART BELOW.				1 = Driven (S) 2 = (1) Driven & Undriven	C = Standard Length-183 mm L = Extended Length*- 247 mm	D = Double - 16 Rollers (S)	2 = Sealed Steel (S)	I = in. (#10-32) M = mm (S) (M5 x 0.8)

Drive	Journal Config.	Leads		Accuracy
		Metric (mm/rev)	Imperial (in/rev)	
N = No motor-undriven P = Ball screw w/ pre-loaded nut S = Ball screw w/ ball nut (S) C = Acme screw w/ bronze nut D = Acme screw w/ polymer nut L = Lead screw w/ polymer nut K = Lead screw w/ polymer anti-backlash nut	00 = Undriven 01 = 1 Drive Shaft (S) 02 = 2 Drive Shafts (Both Ends)	For L & K Drive Option Lead Screw	AH = 1 AJ = 10 AG = 2 AF = 16 AX = 5 AW = 25	N/A
		For S Drive Option Ball Screw	AX = 5 AJ = 10	AA = 0.200
		For P Drive Option Pre-Load Ball Screw	AX = 5 AJ = 10	AA = 0.200
		For C & D Drive Option Acme Screw	N/A	AM = 0.100 AA = 0.200 AN = 0.125 AC = 0.500

(S) = Standard

*Extended length carriage only available and required for P (Imperial) lead option.

Please Note: To ensure quick delivery, PBC reserves the right at its sole discretion to upgrade accuracy class or bearing quantity (free of charge), with or without notice, if the requested option is unavailable.



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