

# Single Axis Actuator LX Stroke / Load Ratings / Allowable Moment

# Single Axis Actuator LX Total Mass / Moment of Inertia

Stroke			Rail Length L (mm)																	(mm)
Type	Lubrication Unit MX-equipped	Block	75	80	100	125	150	175	200	250	300	350 (340)*	400 (390)*	450 (440)*	500 (490)*	550 (540)*	600 (590)*			
LX15 P375	-	Long 1 pc.	26.9	-	51.9	76.9	101.9	126.9	151.9	-	-	-	-	-	-	-	-	-		
	MX	Long 1 pc.	-	-	43.9	68.9	93.9	118.9	143.9	-	-	-	-	-	-	-	-	-		
LX20 P377	-	Long 1 pc.	-	16.5	36.5	-	86.5	-	136.5	186.5	236.5	-	-	-	-	-	-	-		
	MX	Long 1 pc.	-	-	-	76.5	-	126.5	176.5	226.5	-	-	-	-	-	-	-	-		
LX26 P381	-	Long 2 pcs.	-	-	-	-	-	-	79.5	129.5	179.5	-	-	-	-	-	-	-		
	MX	Long 1 pc.	-	-	17	-	67	-	117	167	217	267	317	-	-	-	-	-		
LX30 P385	-	Long 1 pc.	-	-	-	-	-	-	105	155	205	255	305	-	-	-	-	-		
	MX	Long 1 pc.	-	-	-	29	54	-	104	154	204	254	304	354	404	454	504			
LX45 P389	-	Long 1 pc.	-	-	-	54.5	79.5	-	129.5	179.5	229.5	279.5	329.5	379.5	429.5	479.5	529.5			
	MX	Long 1 pc.	-	-	-	-	-	-	90	140	190	240	290	340	390	440	490			
LX1502	-	Long 1 pc.	-	-	-	-	-	-	210.4	260.4	310.4	360.4	410.4	460.4	-	-	-	-		
	MX	Long 1 pc.	-	-	-	-	-	-	247.9	297.9	347.9	397.9	447.9	497.9	-	-	-	-		
LX2001	-	Long 1 pc.	-	-	-	-	-	-	194.4	244.4	294.4	344.4	394.4	444.4	-	-	-	-		
	MX	Long 1 pc.	-	-	-	-	-	-	231.9	281.9	331.9	381.9	431.9	481.9	-	-	-	-		
LX2602	-	Long 2 pcs.	-	-	-	-	-	-	166	216	266	316	366	416	-	-	-	-		
	MX	Long 2 pcs.	-	-	-	-	-	-	116	166	216	266	316	366	416	-	-	-		
LX3005	-	Long 1 pc.	-	-	-	-	-	-	210.4	260.4	310.4	360.4	410.4	460.4	-	-	-	-		
	MX	Long 1 pc.	-	-	-	-	-	-	247.9	297.9	347.9	397.9	447.9	497.9	-	-	-	-		
LX4520	-	Long 2 pcs.	-	-	-	-	-	-	194.4	244.4	294.4	344.4	394.4	444.4	-	-	-	-		
	MX	Long 2 pcs.	-	-	-	-	-	-	231.9	281.9	331.9	381.9	431.9	481.9	-	-	-	-		
LX4520	-	Short 2 pcs.	-	-	-	-	-	-	67	117	167	217	267	317	367	417	467			
	MX	Short 2 pcs.	-	-	-	-	-	-	17	67	117	167	217	267	317	367	417	467		
LX4520	-	Long 1 pc.	-	-	-	-	-	-	210.4	260.4	310.4	360.4	410.4	460.4	-	-	-	-		
	MX	Long 1 pc.	-	-	-	-	-	-	247.9	297.9	347.9	397.9	447.9	497.9	-	-	-	-		
LX4520	-	Short 1 pc.	-	-	-	-	-	-	194.4	244.4	294.4	344.4	394.4	444.4	-	-	-	-		
	MX	Short 1 pc.	-	-	-	-	-	-	231.9	281.9	331.9	381.9	431.9	481.9	-	-	-	-		
LX4520	-	Long 2 pcs.	-	-	-	-	-	-	166	216	266	316	366	416	-	-	-	-		
	MX	Long 2 pcs.	-	-	-	-	-	-	116	166	216	266	316	366	416	-	-	-		
LX4520	-	Short 2 pcs.	-	-	-	-	-	-	67	117	167	217	267	317	367	417	467			
	MX	Short 2 pcs.	-	-	-	-	-	-	17	67	117	167	217	267	317	367	417	467		

\*Effective stroke is indicated in dimensions with a margin of 2.5 mm each from the ends.  
 \*Value in ( ) is the stroke for LX45.

Type	Block	Rail			Ball Screw						Bearing (fixed side) Axial Direction	
		Basic Dynamic Load Rating C (N)	Basic Static Load Rating C0 (N)	Radial Clearance (µm)	Basic Dynamic Load Rating Ca (N)	Basic Static Load Rating C0a (N)	Shaft Dia. (mm)	Lead (mm)	Root Dia. (mm)	Ball Center Dia. (mm)	Basic Dynamic Load Rating Ca (N)	Allowable Static Load P0a (N)
LX1502	Long	2072	3701	-3~0	208	265	5	2	4.534	5.15	678	415
LX2001	Long	3277	6199	-3~0	482	642	6	1	5.3	6.15	730	461
LX2602	Long	6522	11871	-4~0	822	1026	8	5	4.918	6.3	1637	1205
LX3005					1712	2251		2	6.4	8.3		
LX3010	Long	9732	17218	-4~0	1600	2097	10	5	6.46	8.3	2702	2197
LX3005	782	961	10	6.46	8.3							
LX3010	Short	6305	9271	-4~0	1831	2389	10	5	8.2	10.3	2702	2197
LX4510	1129	1386	10	8.2	10.3							
LX4520	Long	18450	32441	-6~0	4167	5945	15	10	11.7	15.5	4355	4106
LX4510	2499	3381	20	11.7	15.5							
LX4520	Short	11826	17175	-6~0	4167	5945	15	10	11.7	15.5	4355	4106
LX4520	2499	3381	20	11.7	15.5							

\*Rail load ratings are indicated per block.  
 \*For actual life calculations, please use our Technical Calculation Software.

### Allowable Moment

Moment loads can be applied in all three directions.

Single Block

Double Block

Ma: Pitch Moment  
Mb: Yaw Moment  
Mc: Roll Moment

Type	Block Qty.	Block Qty.	Allowable Static Moment (N·m)		
			Ma	Mb	Mc
LX15	1	Long	13	13	41
	2	Long	27	27	93
LX20	1	Long	353	353	186
	2	Long	70	70	225
LX26	1	Long	902	902	450
	2	Long	126	126	387
LX30	1	Long	1515	1515	774
	2	Long	63	63	208
LX45	1	Short	579	579	417
	2	Short	291	291	972
LX1502	1	Long	3945	3945	1944
	2	Long	145	145	515
LX2001	1	Long	1444	1444	1029
	2	Long	-	-	-

\*Double Block Type values are those when two blocks contact with each other.  
 The table above lists reference values in static state.  
 For actual life calculations, please use our Technical Calculation Software.

### Rail Rigidity

Rails with Lower Center of Gravity and High Rigidity

Type	Cross Sectional Moment of Inertia (mm <sup>4</sup> )		Center of Gravity (mm)	Mass (kg/100mm)
	Ix	Iy	h	W
LX15	1.0x10 <sup>3</sup>	1.7x10 <sup>4</sup>	3.4	0.13
LX20	3.2x10 <sup>3</sup>	5.2x10 <sup>4</sup>	4.4	0.22
LX26	1.0x10 <sup>4</sup>	1.4x10 <sup>5</sup>	6.1	0.37
LX30	2.5x10 <sup>4</sup>	3.1x10 <sup>5</sup>	7.8	0.60
LX45	8.8x10 <sup>4</sup>	10.4x10 <sup>5</sup>	11.0	1.10

Ix: Cross Sectional Moment of Inertia around X-axis / Iy: Cross Sectional Moment of Inertia around Y-axis

Components	Base (Rail)		Block	Motor Bracket	Support Side Bearing with Housing	Cover	Stopper	Precision Ball Screw (Ground)
	LX15	LX20 / 26 / 30 / 45						
Material	Stainless Steel	Carbon Steel	SCM Material	Aluminum Casting Alloy 383.0	5052 Aluminum Alloy	6063 Aluminum Alloy	NBR Nitrile Rubber	SCM415 Alloy Steel (JIS)
Surface Treatment	Low Temperature Black Chrome Plating	Low Temperature Black Chrome Plating	Black Baked Paint Finish	Black Anodize	Black Anodize	-	-	-
Hardness	-	Induction Hardened HRC58-64	HRC58-62	-	-	-	-	HRC58-62

Total Mass			Rail Length L (mm)																	(kg)
Type	Block	75	80	100	125	150	175	200	250	300	350 (340)*	400 (390)*	450 (440)*	500 (490)*	550 (540)*	600 (590)*	Block 1 pc. (kg)			
LX15	Long 1 pc.	0.13	-	0.17	0.22	0.29	0.35	0.38	-	-	-	-	-	-	-	-	-	0.035		
LX15C	Long 1 pc.	0.18	-	0.22	0.28	0.35	0.41	0.45	-	-	-	-	-	-	-	-	-	0.075		
LX20	Long 1 pc.	-	0.40	0.45	-	0.58	-	0.70/0.79	0.83/0.92	0.94/1.10	1.07/1.23	-	-	-	-	-	-	0.09		
LX20C	Long 1 pc. / 2 pcs.	-	0.51	0.56	-	0.69	-	0.81/0.97	0.94/1.10	1.07/1.23	-	-	-	-	-	-	-	0.16		
LX26	Long 1 pc. / 2 pcs.	-	-	0.87	-	0.95	-	1.16	1.37/1.57	1.58/1.78	1.79/1.99	2.00/2.20	-	-	-	-	-	0.2		
LX26C	Long 1 pc. / 2 pcs.	-	-	1.07	-	1.15	-	1.36	1.57/1.89	1.78/2.10	1.99/2.31	2.20/2.52	-	-	-	-	-	0.32		
LX30	Long 1 pc. / 2 pcs.	-	-	-	1.30	1.47	-	1.81	2.14	2.48/2.79	2.81/3.12	3.15/3.46	3.48/3.79	3.82/4.13	4.16/4.47	4.49/4.80	0.31			
	Short 1 pc. / 2 pcs.	-	-	-	1.18	1.35/1.53	-	1.68/1.86	2.02/2.20	2.35/2.53	2.69/2.87	3.03/3.21	3.36/3.54	3.70/3.88	4.03/4.21	4.37/4.55	0.18			
LX30C	Long 1 pc. / 2 pcs.	-	-	-	1.75	1.92	-	2.25	2.59	2.92/3.49	3.26/3.83	3.59/4.16	3.93/4.50	4.26/4.83	4.60/5.17	4.94/5.51	0.57			
	Short 1 pc. / 2 pcs.	-	-	-	1.50	1.66/1.98	-	2.00/2.32	2.34/2.66	2.67/2.99	3.01/3.33	3.34/3.66	3.68/4.00	4.01/4.33	4.35/4.67	4.69/5.01	0.32			
LX45	Long 1 pc. / 2 pcs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.92		
	Short 1 pc. / 2 pcs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.53		
LX45C	Long 1 pc. / 2 pcs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5		
	Short 1 pc. / 2 pcs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.84		

\*Value in ( ) is the stroke for LX45.

### Additional Mass of Lubrication Unit MX-equipped Type

Type	Additional Mass (kg)
LX15(C)	0.002
LX20(C)	0.004
LX26(C)	0.007
LX30(C)	0.011
LX45(C)	0.024

Moment of Inertia			Rail Length L (mm)																	(10 <sup>-4</sup> kg·cm <sup>2</sup> )
Type	W/ or w/o Lead & Cover	Block	75	80	100	125	150	175	200	250	300	350 (340)*	400 (390)*	450 (440)*	500 (490)*	550 (540)*	600 (590)*			
LX15	02/02C	Long 1 pc.	23/																	