

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

# Single Axis Actuator LX Total Mass / Moment of Inertia

## Stroke

Type	Lubrication Unit MX-equipped	Block	Rail Length L (mm)																
			75	80	100	125	150	175	200	250	300	350(340)*	400(390)*	450(440)*	500(490)*	550(540)*	600(590)*		
LX15 P375	MX	Long 1 pc.	26.9	-	51.9	76.9	101.9	126.9	151.9	-	-	-	-	-	-	-	-		
		Long 1 pc.	-	16.5	36.5	61.5	86.5	111.5	136.5	161.5	186.5	211.5	236.5	-	-	-	-	-	
LX20 P377	MX	Long 1 pc.	-	-	-	76.5	-	126.5	176.5	226.5	-	-	-	-	-	-	-		
		Long 2 pcs.	-	-	-	-	-	79.5	129.5	179.5	-	-	-	-	-	-	-	-	
LX26 P381	MX	Long 1 pc.	-	-	17	-	67	-	117	167	217	267	317	-	-	-	-		
		Long 1 pc.	-	-	-	-	-	105	155	205	255	305	-	-	-	-	-	-	
LX30 P385	MX	Long 1 pc.	-	-	-	29	54	-	104	154	204	254	304	354	404	454	504		
		Short 1 pc.	-	-	-	54.5	79.5	-	129.5	179.5	229.5	279.5	329.5	379.5	429.5	479.5	529.5	-	
LX45 P389	MX	Long 1 pc.	-	-	-	-	-	90	140	190	240	290	340	390	440	490	-		
		Short 1 pc.	-	-	-	-	-	65.5	115.5	165.5	215.5	265.5	315.5	365.5	415.5	465.5	515.5	-	
LX45 P389	MX	Long 2 pcs.	-	-	-	-	-	116	166	216	266	316	366	416	-	-	-	-	
		Short 2 pcs.	-	-	-	-	-	67	117	167	217	267	317	367	417	467	-	-	
LX45 P389	MX	Long 1 pc.	-	-	-	-	-	-	210.4	260.4	310.4	360.4	410.4	460.4	-	-	-	-	
		Short 1 pc.	-	-	-	-	-	-	-	247.9	297.9	347.9	397.9	447.9	497.9	-	-	-	-
LX45 P389	MX	Long 1 pc.	-	-	-	-	-	-	194.4	244.4	294.4	344.4	394.4	444.4	-	-	-	-	
		Short 1 pc.	-	-	-	-	-	-	-	231.9	281.9	331.9	381.9	431.9	481.9	-	-	-	-
LX45 P389	MX	Long 2 pcs.	-	-	-	-	-	-	-	88.8	138.8	188.8	238.8	288.8	338.8	-	-	-	-
		Short 2 pcs.	-	-	-	-	-	-	-	-	163.8	213.8	263.8	313.8	363.8	413.8	-	-	-

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

## Load Rating

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
LX2605					1712	2251		2	6.4	8.3		
LX3005	Long	9732	17218	-4~0	1600	2097	10	5	6.46	8.3	2702	2197
LX3010					782	961		10	6.46	8.3		
LX3005	Short	6305	9271	-4~0	1831	2389	10	5	8.2	10.3	2702	2197
LX3010					1129	1386		10	8.2	10.3		
LX4510	Long	18450	32441	-6~0	1831	2389	15	5	8.2	10.3	4355	4106
LX4520					1129	1386		10	8.2	10.3		
LX4510	Short	11826	17175	-6~0	4167	5945	15	10	11.7	15.5	4355	4106
LX4520					2499	3381		20	11.7	15.5		
LX4510	Short	11826	17175	-6~0	4167	5945	15	10	11.7	15.5	4355	4106
LX4520					2499	3381		20	11.7	15.5		

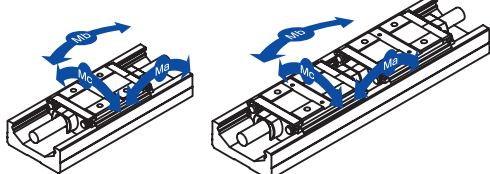
\* Load ratings shown in Rail columns are for one block.  
 \* For actual life calculations, please use our Technical Calculation Software.

## Allowable Moment

Moment loads can be applied in all three directions.

### Single Block

### Double Block



Ma: Pitch Moment

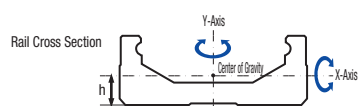
Mb: Yaw Moment  
 Mc: Roll Moment

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
LX45	1	Long	3945	3945	1944
	2	Long	145	145	515
LX45	1	Short	1444	1444	1029
	2	Short			

\* 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 low 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		
LX15	1.0×10 <sup>3</sup>	1.7×10 <sup>4</sup>	3.4	0.13
LX20	3.2×10 <sup>3</sup>	5.2×10 <sup>4</sup>	4.4	0.22
LX26	1.0×10 <sup>4</sup>	1.4×10 <sup>5</sup>	6.1	0.37
LX30	2.5×10 <sup>4</sup>	3.1×10 <sup>5</sup>	7.8	0.60
LX45	8.8×10 <sup>4</sup>	10.4×10 <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

## Material

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	EN AC-46100 Equiv.	EN AW-5052 Equiv.	EN AW-6063 Equiv.	NBR	EN 1.7242 Equiv.
Surface Treatment	LTBC Plating		LTBC Plating	Black Baked Paint	Black Anodize	Black Anodize	-	-
Hardness	-	Induction Hardened HRC58~64	HRC58~62	-	-	-	-	HRC58~62

## Total Mass

Type	Block	Rail Length L (mm)														Block 1 pc. (kg)		
		75	80	100	125	150	175	200	250	300	350(340)*	400(390)*	450(440)*	500(490)*	550(540)*		600(590)*	
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. / 2 pcs.	-	0.40	0.45	-	0.58	-	0.70/0.79	0.83/0.92	0.96/1.05	-	-	-	-	-	-	-	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.	-	-	-	-	-	-	-	-	5.77/6.69	6.37/7.29	6.98/7.90	7.58/8.50	8.18/9.10	8.78/9.70	9.38/10.30	0.92	
	Short 1 pc. / 2 pcs.	-	-	-	-	-	-	-	-	5.38/5.91	5.98/6.51	6.58/7.11	7.18/7.71	7.78/8.31	8.38/8.92	8.98/9.51	0.53	
LX45C	Long 1 pc. / 2 pcs.	-	-	-	-	-	-	-	-	6.59/8.09	7.23/8.73	7.86/9.36	8.49/9.99	9.13/10.63	9.76/11.26	10.39/11.89	1.5	
	Short 1 pc. / 2 pcs.	-	-	-	-	-	-	-	-	5.94/6.78	6.57/7.41	7.20/8.04	7.84/8.68	8.47/9.31	9.10/9.94	9.73/10.57	0.84	

\* ( ) is the length of LX45 rail.

## 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

Type	Lead Cover or No Cover (c)	Block	Rail Length L (mm)															
			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.	23/23	-	24/24	25/25	26/26	27/27	28/28	-	-	-	-	-	-	-	-	-
		Long 1 pc.	-	47/47	49/49	-	53/53	-	58/58	-	-	-	-	-	-	-	-	-
LX20	01/01C	Long 2 pcs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Long 2 pcs.	-	-	54/59	-	59/63	-	63/68	68/73	73/77	-	-	-	-	-	-	-
LX26	02/02C	Long 1 pc.	-	-	140/141	-	155/156	-	169/170	184/185	198/199	-	-	-	-	-	-	-
		Long 2 pcs.	-	-	-	-	-	-	-	186/188	200/202	-	-	-	-	-	-	-
LX30	05/05C	Long 1 pc.	-	-	-	-	166/173	-	180/188	194/202	209/216	223/231	238/245	-	-	-	-	-
		Long 2 pcs.	-	-	-	-	-	-	-	-	207/222	222/237	236/251	251/266	-	-	-	-
LX45	10/10C	Long 1 pc.	-	-	-	-	204/234	-	219/249	233/263	248/278	262/292	277/307	-	-	-	-	-
		Long 2 pcs.	-	-	-	-	-	-	-	528/544	565/581	602/618	638/655	675/692	712/729	749/765	786/802	
LX30																		