Single Axis Actuator LX Stroke / Load Rating / Allowable Moment

Stroke

(mm)

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 P.375	-	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 P.377	-	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	-	-	-	-	-	-
	-	Long 2 pcs.	-	-	-	-	-	-	79.5	129.5	179.5	-	-	-	-	-	-
LX26 P.381	-	Long 1 pc.	-	-	17	-	67	-	117	167	217	267	317	-	-	-	-
	MX	Long 1 pc.	-	-	-	-	-	-	105	155	205	255	305	-	-	-	-
	-	Long 2 pcs.	-	-	-	-	-	-	-	91	141	191	241	-	-	-	-
LX30 P.385	-	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
	MX	Long 1 pc.	-	-	-	-	-	-	90	140	190	240	290	340	390	440	490
	MX	Short 1 pc.	-	-	-	-	65.5	-	115.5	165.5	215.5	265.5	315.5	365.5	415.5	465.5	515.5
	-	Long 2 pcs.	-	-	-	-	-	-	-	-	116	166	216	266	316	366	416
	-	Short 2 pcs.	-	-	-	-	17	-	67	117	167	217	267	317	367	417	467
LX45 P.389	-	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
	MX	Long 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
	-	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

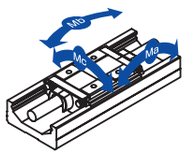
Type	Block	Rail			Ball Screw						Bearing (fixed side) Axial Direction	
		Basic Dynamic Load Rating C (N)	Basic Static Load Rating C0 (N)	Radial Clearance (μm)	Basic Dynamic Load Rating Ca (N)	Basic Static Load Rating C0a (N)	Shaft Dia. (mm)	Lead (mm)	Root Dia. (mm)	Ball Center Dia. (mm)	Basic Dynamic 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
LX2005					822	1026		5	4.918	6.3		
LX2602	Long	6522	11871	-4~0	1712	2251	8	2	6.4	8.3	1637	1205
LX2605					1600	2097		5	6.46	8.3		
LX2610					782	961		10	6.46	8.3		
LX3005	Long	9732	17218	-4~0	1831	2389	10	5	8.2	10.3	2702	2197
LX3010					1129	1386		10	8.2	10.3		
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	4167	5945	15	10	11.7	15.5	4355	4106
LX4520					2499	3381		20	11.7	15.75		
LX4510	Short	11826	17175	-6~0	4167	5945	15	10	11.7	15.5	4355	4106
LX4520					2499	3381		20	11.7	15.75		

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

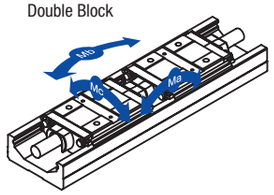
Allowable Moment

Moment loads can be applied in all three directions.

Single Block



Double Block



Ma: Pitch Moment

Mb: Yaw Moment
Mc: Roll Moment

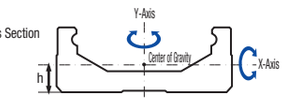
Type	Block Qty.	Block Qty.	Allowable Static Moment (N · m)		
			Ma	Mb	Mc
LX15	1	Long	13	13	41
LX20	1	Long	27	27	93
	2		353	353	186
LX26	1	Long	70	70	225
	2		902	902	450
LX30	1	Long	126	126	387
	2		1515	1515	774
	1	Short	63	63	208
	2		579	579	417
LX45	1	Long	291	291	972
	2		3945	3945	1944
	1	Short	145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

* 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.

Rail Cross Section



Type	Cross Sectional Moment of Inertia (mm⁴)		Center of Gravity (mm)	Mass (kg/100mm)
	Ix	Iy	h	W
LX15	1.0×10^3	1.7×10^4	3.4	0.13
LX20	3.2×10^3	5.2×10^4	4.4	0.22
LX26	1.0×10^4	1.4×10^5	6.1	0.37
LX30	2.5×10^4	3.1×10^5	7.8	0.60
LX45	8.8×10^4	10.4×10^5	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						
M Material	Stainless Steel	Carbon Steel	SCM Material	ADC12	A5052	A6063	NBR	SCM415
S Surface Treatment	Low Temperature Black Chrome Plating		Low Temperature Black Chrome Plating	Black Baked Paint	Black Anodize	Black Anodize	-	-
H Hardness	-	Induction Hardened HRC58 ~ 64	HRC58~62	-	-	-	-	HRC58~62

Single Axis Actuator LX Total Mass / Moment of Inertia

Total Mass

(kg)

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	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	8.39/8.92	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	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	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

(10-4kg · cm²)

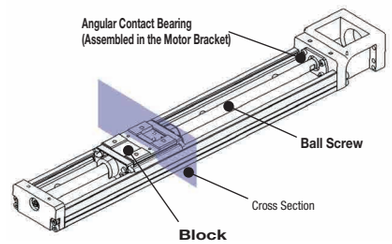
Type	Lead Cover or No Cover (c)	Block	Rail Length L (mm)															
			75	80	100	125	150	175	200	250	300	350(340)*	400(390)*	450(440)*	500(490)*	550(540)*	600(590)*
LX15	02/02C	Long 1 pc.	23/23	-	24/24	25/25	26/26	27/27	28/28	-	-	-	-	-	-	-	-
LX20	01/01C	Long 1 pc.	-	47/47	49/49	-	53/53	-	58/58	-	-	-	-	-	-	-	-
	01/01C	Long 2 pcs.	-	-	-	-	-	-	58/58	-	-	-	-	-	-	-	-
	05/05C	Long 1 pc.	-	-	54/59	-	59/63	-	63/68	68/73	73/77	-	-	-	-	-	-
	05/05C	Long 2 pcs.	-	-	-	-	-	-	69/78	74/83	78/88	-	-	-	-	-	-
LX26	02/02C	Long 1 pc.	-	-	140/141	-	155/156	-	169/170	184/185	198/199	-	-	-	-	-	-
	02/02C	Long 2 pcs.	-	-	-	-	-	-	-	186/188	200/202	-	-	-	-	-	-
	05/05C	Long 1 pc.	-	-	-	-	166/173	-	180/188	194/202	209/216	223/231	238/245	-	-	-	-
	05/05C	Long 2 pcs.	-	-	-	-	-	-	-	207/222	222/237	236/251	251/266	-	-	-	-
	10/10C	Long 1 pc.	-	-	-	-	204/234	-	219/249	233/263	248/278	262/292	277/307	-	-	-	-
LX30	05/05C	Long 1 pc.	-	-	-	436/452	454/471	-	491/507	528/544	565/581	602/618	638/655	675/692	712/729	749/765	786/802
	05/05C	Long 2 pcs.	-	-	-	-	-	-	-	-	584/617	621/654	658/691	695/728	732/764	768/801	805/838
	05/05C	Short 1 pc.	-	-	-	428/436	446/455	-	483/492	520/528	557/565	594/602	630/639	667/676	704/713	741/750	778/787
	05/05C	Short 2 pcs.	-	-	-	-	474/475	-	494/512	531/548	568/585	605/622	642/659	679/696	716/733	753/770	789/807
	10/10C	Long 1 pc.	-	-	-	-	513/579	-	550/616	587/653	624/690	661/727	698/764	735/800	772/837	808/874	845/911
	10/10C	Long 2 pcs.	-	-	-	-	-	-	-	-	702/833	739/870	776/907	812/944	849/981	886/1018	923/1054
	10/10C	Short 1 pc.	-	-	-	-	482/516	-	518/553	555/590	592/626	629/663	666/700	703/737	740/774	777/811	813/848
	10/10C	Short 2 pcs.	-	-	-	-	591/596	-	564/633	601/670	638/707	675/743	712/780	749/817	785/854	822/891	859/928
LX45	10/10C	Long 1 pc.	-	-	-	-	-	-	-	-	-	2528/2674	2723/2869	2918/3064	3113/3259	3308/3454	3503/3649
	10/10C	Long 2 pcs.	-	-	-	-	-	-	-	-	-	2762/3053	2957/3249	3152/3444	3347/3639	3543/3834	3738/4029
	10/10C	Short 1 pc.	-	-	-	-	-	-	-	-	-	2429/2507	2624/2702	2820/2897	3015/3092	3210/3287	3405/3482
	10/10C	Short 2 pcs.	-	-	-	-	-	-	-	-	-	2565/2720	2760/2915	2955/3110	3150/3305	3345/3500	3540/3695
	20/20C	Long 1 pc.	-	-	-	-	-	-	-	-	-	3242/3825	3437/4020	3632/4215	3827/4410	4022/4605	4217/4800
	20/20C	Long 2 pcs.	-	-	-	-	-	-	-	-	-	4179/5344	4374/5539	4569/5734	4764/5929	4959/6124	5154/6319
	20/20C	Short 1 pc.	-	-	-	-	-	-	-	-	-	2847/3157	3042/3352	3237/3547	3432/3742	3627/3937	3823/4132
	20/20C	Short 2 pcs.	-	-	-	-	-	-	-	-	-	3389/4008	3584/4203	3779/4399	3974/4594	4169/4789	4364/4984

* ( ) is the length of LX45 rail.

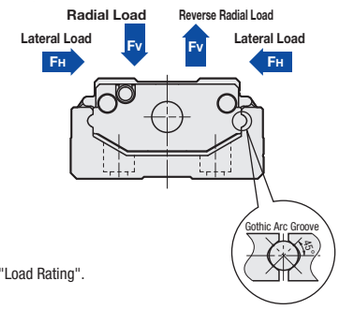
Load Directions

The Rails employ Double Row Gothic Arch Grooves, and are compact and low-profile.

Outline View



Enlarged Sectional View: Double Row Gothic Arch Grooves



• Rail
Equal basic load rating in all four directions: radial, reverse radial and lateral directions. For values, see "Load Rating".

• Ball Screw
Preload is applied to precision (ground) ball screw. Integrating structure of the block and ball screw nut allows axial loads to be applied.
For Basic Load Rating in axial directions, see "Load Rating".

• Bearing (Fixed Side)
Angular contact bearings are integrated in the motor bracket, allowing loads in the axial direction to be applied. For Basic Load Rating in axial directions, see "Load Rating".