LGFS14L

Advanced model | **Motor-less Single Axis Actuator** | **Long-stroke type**

Ordering method

LGFS14L – [ ] – [ ] – [ ] – [ ]

Model	Lead	Motor specification	OP.1	Stroke
	30: 30 mm 20: 20 mm 10: 10 mm 5: 5 mm	Y: Y specification (see below) P: P specification (see below) K: K specification (see below)	No entry: Standard M: Centeraized lubrication	750 to 2000 (50 mm pitch)

[Caution]
This system is provided as mechanical actuator unit and not including any adopters or electric components. Motor, driver and other components required for installation are the user's responsibility.
Refer to user's manual for installation details. Refer to your motor manual for tuning or adjustment. Vibration or resonance from actuator will affect service life of actuator.
The product performance may not be satisfied depending on the compatible motor.
For special parts for motor installation, install and adjust on your side.

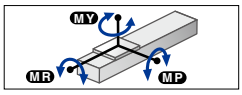
LGFS14L (200W)

Specifications

Applicable motor		200 W			
Repeatability Note 1		±0.01 mm			
Deceleration mechanism		Rolled ball screw ϕ 15 (C7 class)			
Stroke		750 mm to 2000 mm (50 mm pitch)			
Maximum speed Note 2		1800 mm/sec	1200 mm/sec	600 mm/sec	300 mm/sec
Ball screw lead		30 mm	20 mm	10 mm	5 mm
Maximum payload Note 3	Horizontal	30 kg	45 kg	90 kg	120 kg
	Vertical	3 kg	6 kg	16 kg	30 kg
Rated Thrust Note 3		113 N	170 N	341 N	683 N
Maximum dimensions of cross section of main unit		W 140 mm × H 91.5 mm			
Overall length Straight		ST + 462.5 mm			
Degree of Cleanliness Note 4		Equivalent to ISO Class 3 (ISO 14644-1)			
Intake air Note 5		90 Nℓ/min to 100 Nℓ/min			
Using ambient temperature and humidity		0 to 40 °C, 35 to 80 %RH (no condensation)			

Note 1. Positioning repeatability in one direction.
Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed.
Note 3. The rated thrust and maximum transferable weight are values assuming the attached motor outputs the rated torque.
Note 4. When using in a clean environment, attach a suction air joint. The degree of cleanliness is the cleanliness level achieved when using at 1000 mm/sec or less.
Note 5. The required suction amount will vary according to the operating conditions and operating environment.

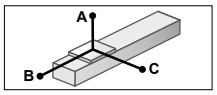
Static loading moment

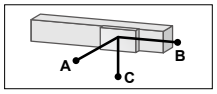


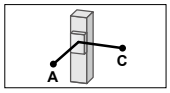
(Unit: N·m)

MY	MP	MR
441	543	478

Allowable overhang Note







LGFS14L-30(200W)

Horizontal installation (Unit: mm)

	A	B	C
5kg	5829	3006	3007
15kg	2669	983	1061
30kg	1764	477	538

Wall installation (Unit: mm)

	A	B	C
5kg	3034	2966	5786
15kg	1069	943	2597
30kg	536	438	1649

Vertical installation (Unit: mm)

	A	C
1kg	12226	12226
3kg	4291	4291

LGFS14L-20(200W)

Horizontal installation (Unit: mm)

	A	B	C
15kg	3873	1258	1526
30kg	2484	615	770
45kg	1964	400	509

Wall installation (Unit: mm)

	A	B	C
15kg	1514	1219	3816
30kg	750	575	2398
45kg	483	361	1848

Vertical installation (Unit: mm)

	A	C
2kg	8582	8582
4kg	4381	4381
6kg	2980	2980

LGFS14L-10(200W)

Horizontal installation (Unit: mm)

	A	B	C
30kg	4980	855	1193
60kg	3127	413	581
90kg	2446	266	375

Wall installation (Unit: mm)

	A	B	C
30kg	1151	816	4906
60kg	534	374	3018
90kg	326	227	2300

Vertical installation (Unit: mm)

	A	C
5kg	5126	5126
10kg	2555	2555
16kg	1590	1590

LGFS14L-5(200W)

Horizontal installation (Unit: mm)

	A	B	C
40kg	9198	681	988
80kg	5743	326	474
120kg	4484	208	302

Wall installation (Unit: mm)

	A	B	C
40kg	936	641	9069
80kg	419	287	5550
120kg	247	169	4216

Vertical installation (Unit: mm)

	A	C
10kg	2788	2788
20kg	1377	1377
30kg	906	906

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 1000 mm stroke models.
Note. When using it suspended from the ceiling, the overhang will be the same as when used horizontally.

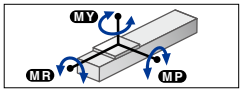
LGFS14L (400W)

Specifications

Applicable motor		400 W			
Repeatability Note 1		±0.01 mm			
Deceleration mechanism		Rolled ball screw ϕ 15 (C7 class)			
Stroke		750 mm to 2000 mm (50 mm pitch)			
Maximum speed Note 2		1800 mm/sec	1200 mm/sec	600 mm/sec	300 mm/sec
Ball screw lead		30 mm	20 mm	10 mm	5 mm
Maximum payload Note 3	Horizontal	50 kg	70 kg	110 kg	140 kg
	Vertical	10 kg	15 kg	30 kg	45 kg
Rated Thrust Note 3		225 N	339 N	678 N	1360 N
Maximum dimensions of cross section of main unit		W 140 mm × H 91.5 mm			
Overall length Straight		ST + 462.5 mm			
Degree of Cleanliness Note 4		Equivalent to ISO Class 3 (ISO 14644-1)			
Intake air Note 5		90 Nℓ/min to 100 Nℓ/min			
Using ambient temperature and humidity		0 to 40 °C, 35 to 80 %RH (no condensation)			

Note 1. Positioning repeatability in one direction.
Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed.
Note 3. The rated thrust and maximum transferable weight are values assuming the attached motor outputs the rated torque.
Note 4. When using in a clean environment, attach a suction air joint. The degree of cleanliness is the cleanliness level achieved when using at 1000 mm/sec or less.
Note 5. The required suction amount will vary according to the operating conditions and operating environment.

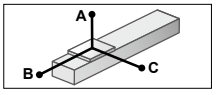
Static loading moment

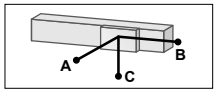


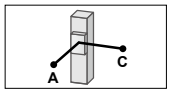
(Unit: N·m)

MY	MP	MR
441	543	478

Allowable overhang Note







LGFS14L-30(400W)

Horizontal installation (Unit: mm)

	A	B	C
15kg	2295	982	1028
30kg	1570	477	529
50kg	1409	297	353

Wall installation (Unit: mm)

	A	B	C
15kg	1024	943	2238
30kg	522	438	1473
50kg	335	258	1260

Vertical installation (Unit: mm)

	A	C
3kg	4023	4023
5kg	2450	2450
10kg	1255	1255

LGFS14L-20(400W)

Horizontal installation (Unit: mm)

	A	B	C
15kg	3281	1258	1481
30kg	2126	615	756
70kg	1328	247	316

Wall installation (Unit: mm)

	A	B	C
15kg	1461	1219	3236
30kg	731	575	2058
70kg	281	208	1195

Vertical installation (Unit: mm)

	A	C
5kg	3404	3404
10kg	1715	1715
15kg	1146	1146

LGFS14L-10(400W)

Horizontal installation (Unit: mm)

	A	B	C
30kg	4441	855	1186
50kg	3270	502	702
110kg	2140	212	300

Wall installation (Unit: mm)

	A	B	C
30kg	1143	816	4379
50kg	656	462	3182
110kg	250	173	1971

Vertical installation (Unit: mm)

	A	C
10kg	2542	2542
15kg	1689	1689
30kg	832	832

LGFS14L-5(400W)

Horizontal installation (Unit: mm)

	A	B	C
50kg	6053	539	781
100kg	4089	255	371
140kg	3429	174	253

Wall installation (Unit: mm)

	A	B	C
50kg	727	500	5955
100kg	315	216	3918
140kg	197	135	3188

Vertical installation (Unit: mm)

	A	C
15kg	1841	1841
30kg	903	903
45kg	590	590

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 1000 mm stroke models.
Note. When using it suspended from the ceiling, the overhang will be the same as when used horizontally.

YAMAHA
▶ The cycle time simulation and service life calculation can be performed easily from our member site.

Applicable motor

• Applicable servo motor

Motor specification	Flange size	Wattage	Manufacturer	Model
Y	□60	200W	Tamagawa Seiki	TSM4252N □□00E200
			Yaskawa Electric Corp.	SGM7J-02
				SGMXJ-02
			Keyence Corp.	SV-□020
				SV2-□020
				SV3-□020
			Mitsubishi Electric Corp.	HG-KR23[Note1]
				HK-KT23[Note1]
				HK-MT23[Note1]
		400W	Tamagawa Seiki	TSM4254N □□00E200
			Yaskawa Electric Corp.	SGM7J-04
				SGMXJ-04
			Keyence Corp.	SV-□040
				SV2-□040
				SV3-□040
			Mitsubishi Electric Corp.	HG-KR43[Note1]
				HK-KT43[Note1]
				HK-MT43[Note1]
		500W	Fanuc Corp.	βiS1/6000-B[Note1]
P	□60	200W	Omron Electronics	R88M-K20030
				R88M-1M20030
			Panasonic Corp.	MSMF022
				MHMF022
				MHMG022
K	□60	400W	Omron Electronics	R88M-K40030
				R88M-1M40030
			Panasonic Corp.	MSMF042
				MHMF042
				MHMG042

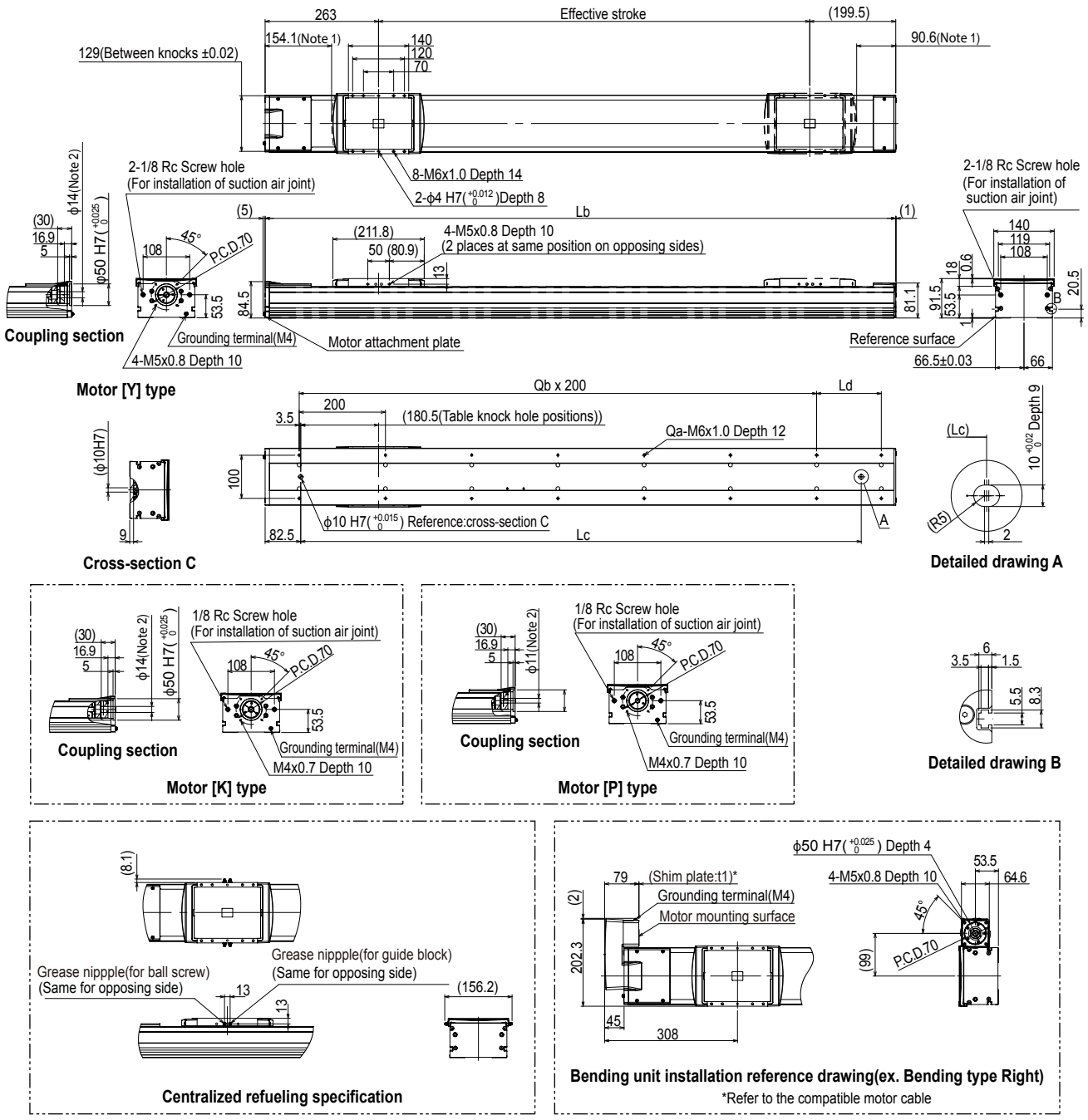
Note 1. A special shim plate is required when combining with the bending unit.

Part number of shim plate
KEV-M2295-00

Note 2. The bending unit can only be installed on the Y specification.

Part number of bending unit
KEV-M221M-01[Note 2]

LGFS14L



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. The recommended dimensional tolerances for the applicable shaft diameter are h6 and h7.
Note. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Effective stroke		750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000
Lb		1212.5	1262.5	1312.5	1362.5	1412.5	1462.5	1512.5	1562.5	1612.5	1662.5	1712.5	1762.5	1812.5	1862.5	1912.5	1962.5	2012.5	2062.5	2112.5	2162.5	2212.5	2262.5	2312.5	2362.5	2412.5	2462.5
Lc		1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300
Ld		100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
Qa		14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26
Qb		5	5	5	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11
Weight (kg)		18.6	19.2	19.8	20.3	20.9	21.5	22.1	22.6	23.2	23.8	24.3	24.9	25.5	26.1	26.6	27.2	27.8	28.4	28.9	29.5	30.1	30.6	31.2	31.8	32.4	32.9
Maximum speed (mm/sec)	Lead 30	1800																									
	Lead 20	1200																									
	Lead 10	600																									
	Lead 5	300																									
	Speed setting	-																									
Stroke restriction	Horizontal・Vertical	No stroke restrictions																									
	Wall hanging	To 1800st																									
	Ceiling-mounted	To 1200st																									