AGFS14L/AGFS14LH

Advanced model | Single-axis robots | Long-stroke type

Ordering method

Model	Lead	Shape	Motor specification	OP.1	Stroke	Note 1 Cable length	Cable entry location	Robot positioner	Driver: Power capacity	Note 2 Regenerative unit	I/O	Battery Note 3
AGFS14L AGFS14LH	30: 30mm 20: 20mm 10: 10mm 5: 5mm	S: Straight R: Right attachment L: Left attachment	S: Standard/With no brake BK Standard/With brake BL: Battery-less absolute/ With no brake BKL: Battery-less absolute/With brake	No entry: Standard M: Centeraized lubrication	750 to 2000 (50mm pitch)	R3: 3m R5: 5m R10: 10m	R: From rear of motor F: From front of motor	EP-01	A10: 200W or less A30: 400W/750W	No entry: None R: With EP-RU	EP: EtherNet/IP™ PT: PROFINET ES: EtherCAT NS: NPN CC: CC-Link	B: With battery N: None

Note 1. The robot cable is flexible and resists bending.
Note 2. [For AGFS14L]
When the actuator is used vertically, lead 10 is selected, the regenerative unit is needed.
When the actuator is used horizontally, lead 20 is selected, and the stroke is 950mm or more, the regenerative unit is needed.
[For AGFS14LH]
When the actuator is used vertically, all lead and stroke, the regenerative unit is needed.
Note 3. When the motor specification is the standard (S, BK), whether to use the battery needs to be selected.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)

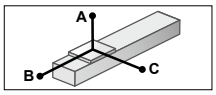
AGFS14L(200W)

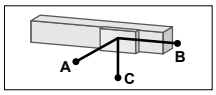
Specifications

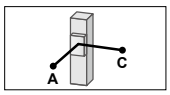
AC servo motor output		200 W			
Repeatability Note 1		±0.01 mm			
Deceleration mechanism		Rolled ball screw ϕ 15 (C7 class)			
Stroke		750 to 2000 (50 mm pitch)			
Maximum speed Note 2		1800 mm/sec	1200 mm/sec	600 mm/sec	300 mm/sec
Ball screw lead		30 mm	20 mm	10 mm	5 mm
Maximum payload	Horizontal	30 kg	45 kg	90 kg	120 kg
	Vertical	3 kg	6 kg	16 kg	30 kg
Rated Thrust		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 + 537.5 mm			
	Bending	ST + 507.5 mm			
Degree of cleanliness Note 3		Equivalent to ISO Class 3 (ISO 14644-1)			
Intake air Note 4		90 Nℓ/min to 100 Nℓmin			
Position detector		Absolute Encoder Batteryless Absolute Encoder			
Resolution		23 bits			
Using ambient temperature and humidity Note 5		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. 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 4. The required suction amount will vary according to the operating conditions and operating environment.
Note 5. When operating in low-temperature environments, a deviation error may occur when starting from a stopped state. In such cases, reduce the speed to 50% or less and run the unit for at least one full cycle before setting it to the desired operating speed.

Allowable overhang Note







AGFS14L-30

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

AGFS14L-20

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

AGFS14L-10

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

AGFS14L-5

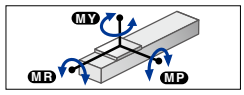
Horizontal installation (Unit: mm)	A	B	C
40kg	9198	681	988
80kg	5743	326	474
120kg	4484	208	302

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 1,000 mm stroke models.
Note. When using it suspended from the ceiling, the overhang will be the same as when used horizontally.

Static loading moment



(Unit: N·m)

MY	MP	MR
441	543	478

Controller

Controller	Operation method
EP-01	I/O point trace/ Remote command

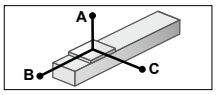
AGFS14LH (400W)

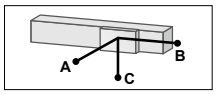
Specifications

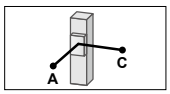
AC servo motor output		400 W			
Repeatability Note 1		±0.01 mm			
Deceleration mechanism		Rolled ball screw ϕ 15 (C7 class)			
Stroke		750 to 2000 (50 mm pitch)			
Maximum speed Note 2		1800 mm/sec	1200 mm/sec	600 mm/sec	300 mm/sec
Ball screw lead		30 mm	20 mm	10 mm	5 mm
Maximum payload	Horizontal	50 kg	70 kg	110 kg	140 kg
	Vertical	10 kg	15 kg	30 kg	45 kg
Rated Thrust		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 + 553.5 mm			
	Bending	ST + 507.5 mm			
Degree of cleanliness Note 3		Equivalent to ISO Class 3 (ISO 14644-1)			
Intake air Note 4		90 Nℓ/min to 100 Nℓmin			
Position detector		Absolute Encoder Batteryless Absolute Encoder			
Resolution		23 bits			
Using ambient temperature and humidity Note 5		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. 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 4. The required suction amount will vary according to the operating conditions and operating environment.
Note 5. When operating in low-temperature environments, a deviation error may occur when starting from a stopped state. In such cases, reduce the speed to 50% or less and run the unit for at least one full cycle before setting it to the desired operating speed.

Allowable overhang Note







AGFS14LH-30

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

AGFS14LH-20

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

AGFS14LH-10

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

AGFS14LH-5

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 1,000 mm stroke models.
Note. When using it suspended from the ceiling, the overhang will be the same as when used horizontally.

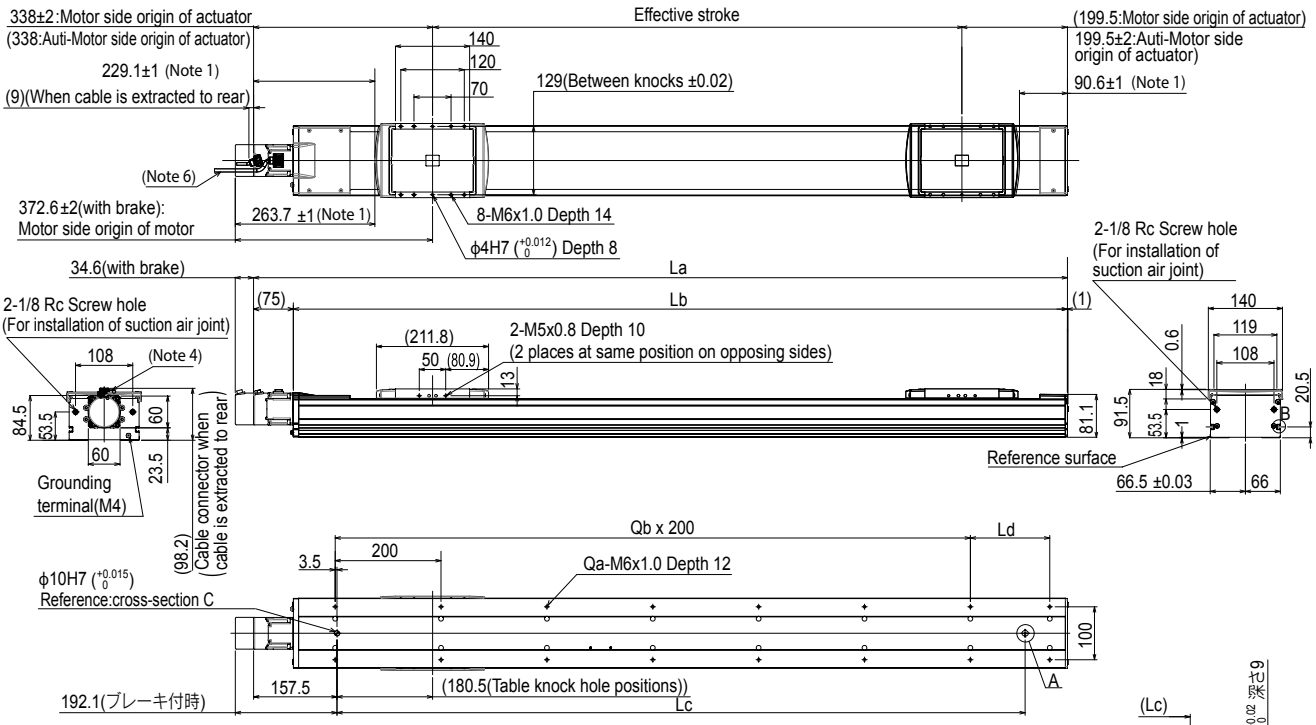
YAMAHA

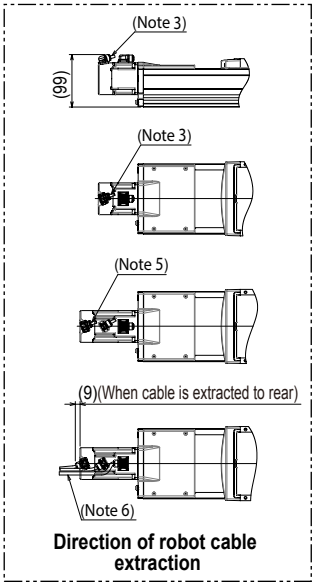
▶ The cycle time simulation and service life calculation can be performed easily from our member site.

Controller EP-01 ▶ 582

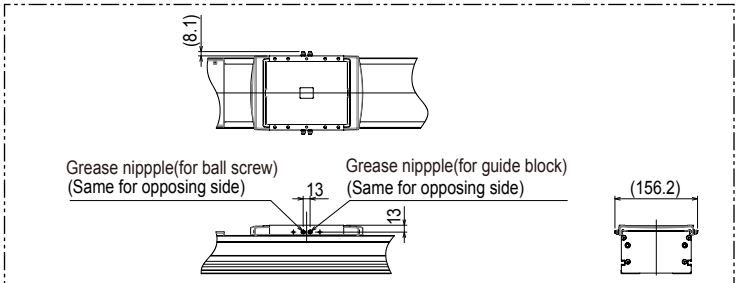
AGFS14L

AGFS14L Straight type (S)

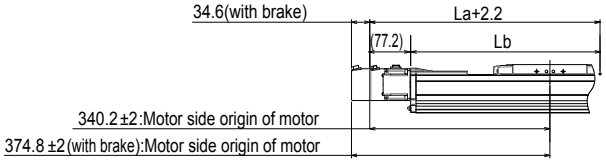




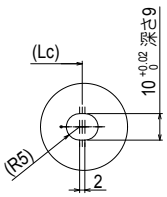
Direction of robot cable extraction



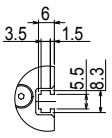
Centralized refueling specification



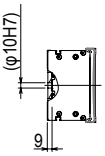
Battery-less absolute axis specification



Detailed drawing A



Detailed drawing B

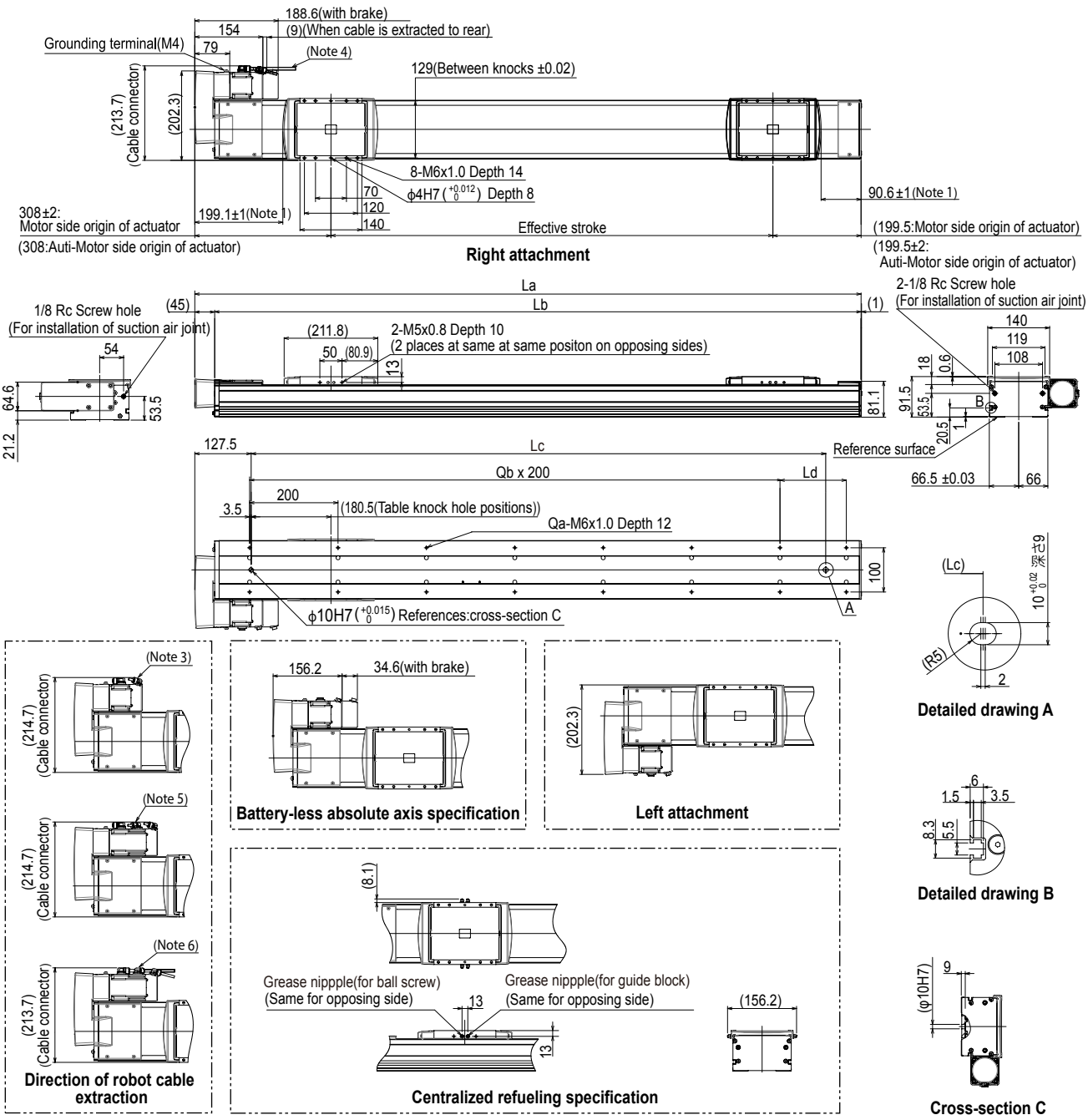


Cross-section C

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.
Note 3. The robot cable is extracted from the front.
Note 4. The robot cable is extracted from the rear.
Note 5. The robot cable (with brake) is extracted from the front.
Note 6. The robot cable (with brake) is extracted from the rear.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)
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.
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

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
La		1287.5	1337.5	1387.5	1437.5	1487.5	1537.5	1587.5	1637.5	1687.5	1737.5	1787.5	1837.5	1887.5	1937.5	1987.5	2037.5	2087.5	2137.5	2187.5	2237.5	2287.5	2337.5	2387.5	2437.5	2487.5	2537.5
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) Note 2		19.4	20	20.6	21.1	21.7	22.3	22.9	23.4	24	24.6	25.1	25.7	26.3	26.9	27.4	28	28.6	29.2	29.7	30.3	30.9	31.4	32	32.6	33.2	33.7
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																									

AGFS14L Bending type (R/L)

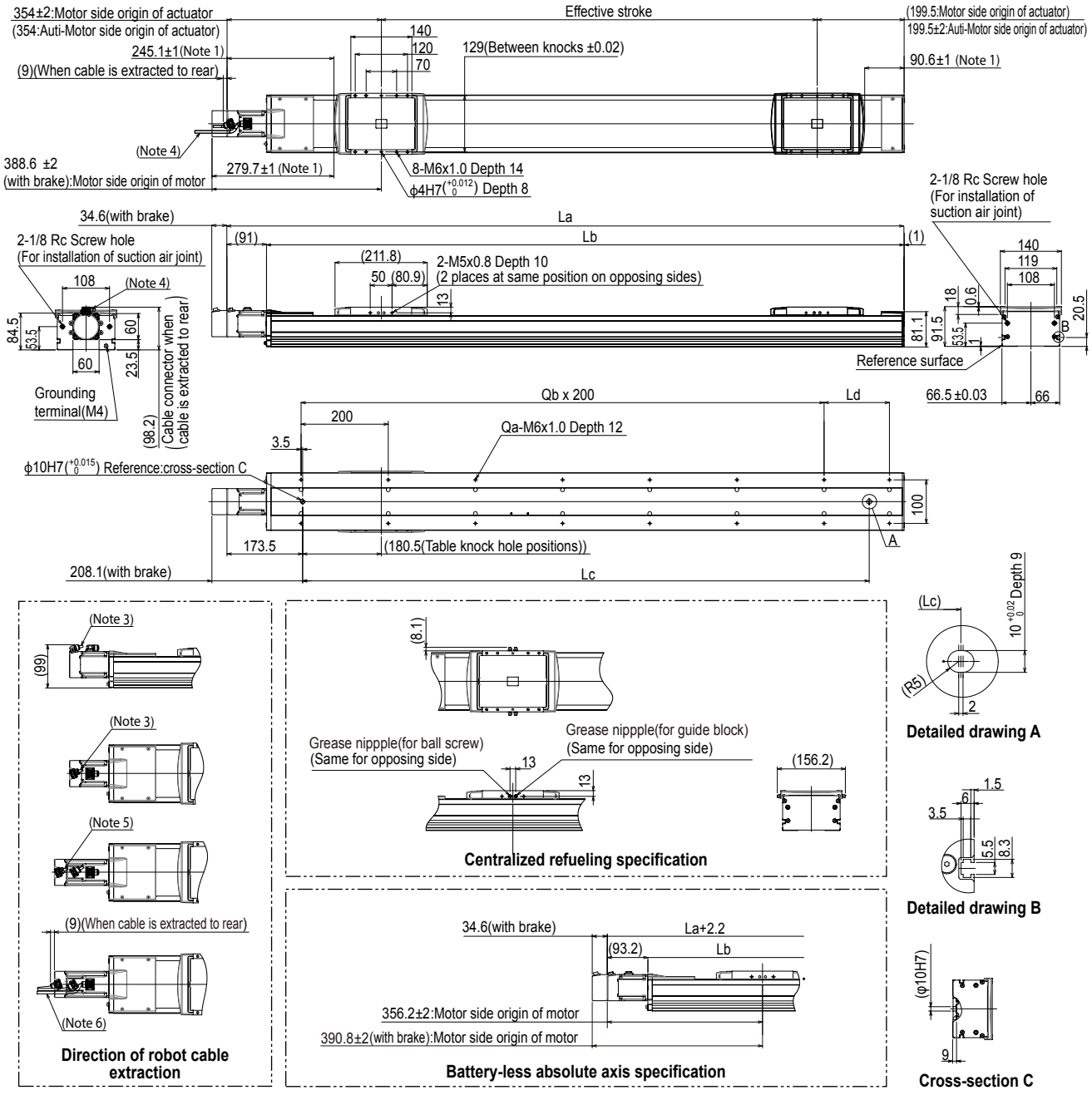


Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.
Note 3. The robot cable is extracted from the front.
Note 4. The robot cable is extracted from the rear.
Note 5. The robot cable (with brake) is extracted from the front.
Note 6. The robot cable (with brake) is extracted from the rear.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)
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.
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

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
La		1257.5	1307.5	1357.5	1407.5	1457.5	1507.5	1557.5	1607.5	1657.5	1707.5	1757.5	1807.5	1857.5	1907.5	1957.5	2007.5	2057.5	2107.5	2157.5	2207.5	2257.5	2307.5	2357.5	2407.5	2457.5	2507.5
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) Note 2		20.6	21.2	21.8	22.3	22.9	23.5	24.1	24.6	25.2	25.8	26.3	26.9	27.5	28.1	28.6	29.2	29.8	30.4	30.9	31.5	32.1	32.6	33.2	33.8	34.4	34.9
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																									

AGFS14LH

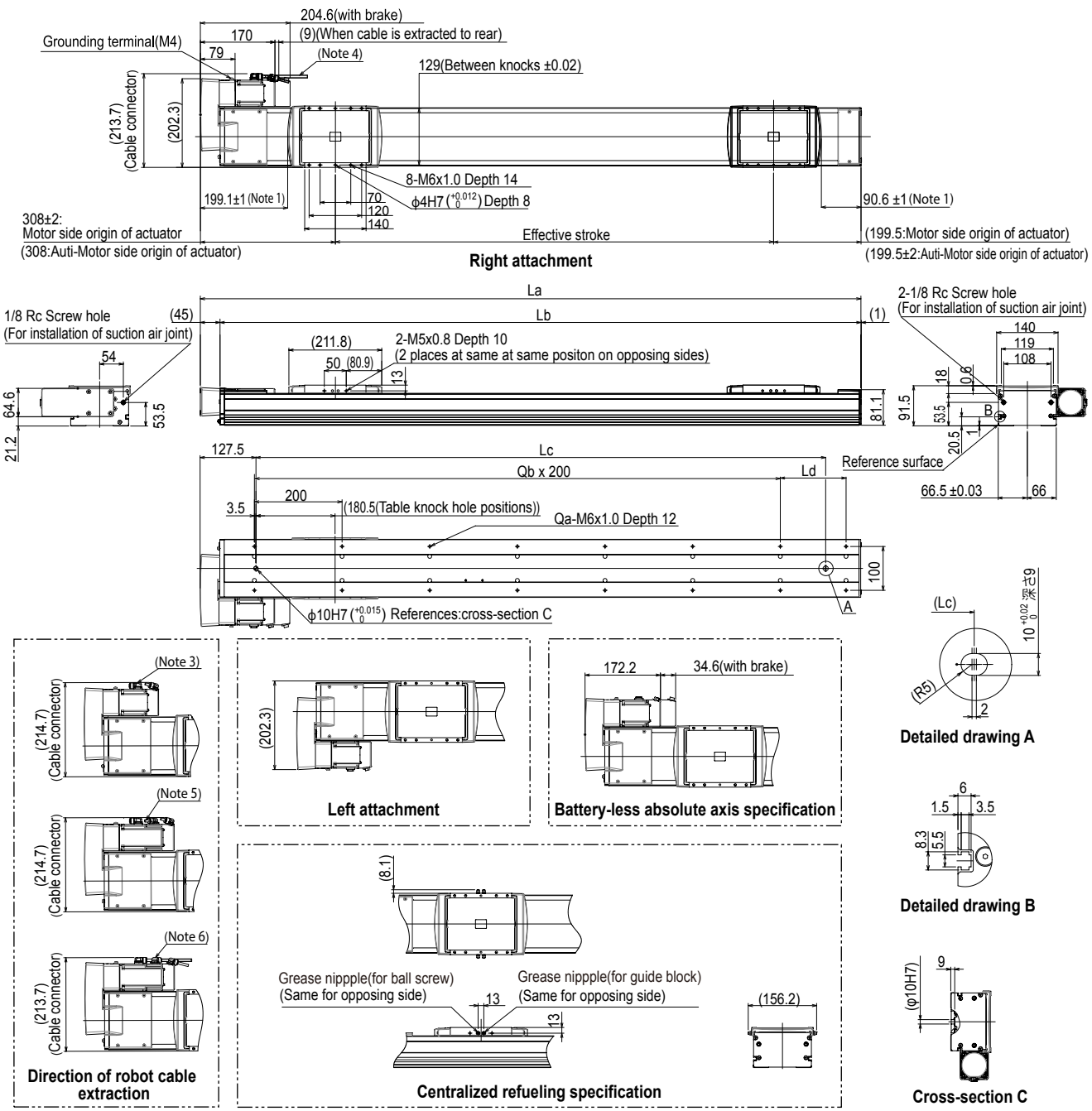
AGFS14LH Straight type (S)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.
Note 3. The robot cable is extracted from the front.
Note 4. The robot cable is extracted from the rear.
Note 5. The robot cable (with brake) is extracted from the front.
Note 6. The robot cable (with brake) is extracted from the rear.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)
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.
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

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
La		1303.5	1353.5	1403.5	1453.5	1503.5	1553.5	1603.5	1653.5	1703.5	1753.5	1803.5	1853.5	1903.5	1953.5	2003.5	2053.5	2103.5	2153.5	2203.5	2253.5	2303.5	2353.5	2403.5	2453.5	2503.5	2553.5
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) Note 2		19.7	20.3	20.9	21.4	22	22.6	23.2	23.7	24.3	24.9	25.4	26	26.6	27.2	27.7	28.3	28.9	29.5	30	30.6	31.2	31.7	32.3	32.9	33.5	34
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																									

AGFS14LH Bending type (R/L)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.
Note 3. The robot cable is extracted from the front.
Note 4. The robot cable is extracted from the rear.
Note 5. The robot cable (with brake) is extracted from the front.
Note 6. The robot cable (with brake) is extracted from the rear.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)
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.
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

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
La		1257.5	1307.5	1357.5	1407.5	1457.5	1507.5	1557.5	1607.5	1657.5	1707.5	1757.5	1807.5	1857.5	1907.5	1957.5	2007.5	2057.5	2107.5	2157.5	2207.5	2257.5	2307.5	2357.5	2407.5	2457.5	2507.5
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) Note 2		20.9	21.5	22.1	22.6	23.2	23.8	24.4	24.9	25.5	26.1	26.6	27.2	27.8	28.4	28.9	29.5	30.1	30.7	31.2	31.8	32.4	32.9	33.5	34.1	34.7	35.2
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																									