

ABFS04

Basic model Single-axis robots

Low-profile type

Ordering method

Model	Lead	Shape	Motor specification	Stroke	Cable length ^{Note 1}	Cable entry location	Robot positioner	Driver: Power capacity	I/O	Battery ^{Note 2}
ABFS04	12: 12mm 6: 6mm 2: 2mm	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	50 to 500 (50mm pitch)	R3: 3 m R5: 5 m R10: 10 m	R: From rear of motor F: From front of motor	EP-01	A10: 200W or less	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. 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.)

Specifications

AC servo motor output	50 W		
Repeatability ^{Note 1}	±0.005 mm		
Deceleration mechanism	Rolled ball screw φ 10 (C7 class)		
Stroke	50 mm to 500 mm (50 mm pitch)		
Maximum speed ^{Note 2}	720 mm/sec	360 mm/sec	120 mm/sec
Ball screw lead	12 mm	6 mm	2 mm
Maximum payload	Horizontal	12 kg	20 kg
	Vertical	3 kg	5 kg
Rated Thrust		71 N	141 N
			424 N
Dinamic loading moment (MY,MP,MR)	17.2 / 17.2 / 23.3		
Maximum dimensions of cross section of main unit	W 49.7 mm × H 40 mm		
Overall length	Straight	ST + 284 mm	
	Bending	ST + 204 mm	
Degree of Cleanliness ^{Note 3}	Equivalent to ISO Class 4 (ISO 14644-1)		
Intake air ^{Note 4}	80 Nℓ/min~		
Position detector	Absolute encoder Battery-less absolute encoder		
Resolution	23 bits		
Using ambient temperature and humidity	0 to 40 °C, 35 to 80 %RH (no condensation)		

Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed.

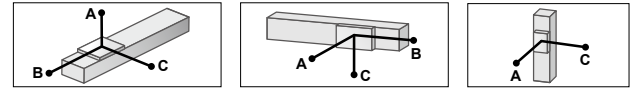
Note 3. When using in a clean environment, attach a suction air joint. The degree of cleanliness is the cleanliness level achieved when using at 1000 mm/sec or less.

Note 4. The required suction amount will vary according to the operating conditions and operating environment.

Controller

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

Allowable overhang ^{Note}



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	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	C		
4kg	896	228	259	4kg	256	228	864	1kg	913	913
8kg	596	107	125	8kg	130	107	691	3kg	316	316
12kg	465	67	78	12kg	84	67	619			

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	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	C		
5kg	1867	209	272	5kg	272	209	1867	3kg	369	369
10kg	1181	98	127	10kg	127	98	1181	5kg	222	222
20kg	748	42	55	20kg	55	42	748			

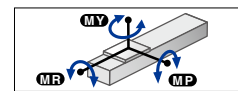
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	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	C		
10kg	4004	128	172	10kg	172	128	4004	4kg	354	354
18kg	2635	65	87	18kg	87	65	2635	8kg	177	177
25kg	2088	43	58	25kg	58	43	2088			

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 500 mm stroke models.

Static loading moment



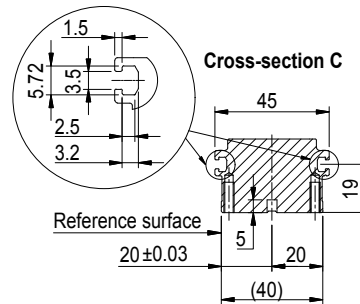
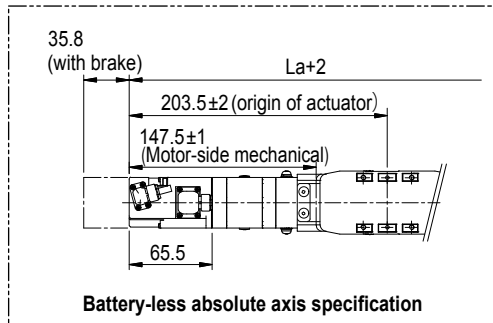
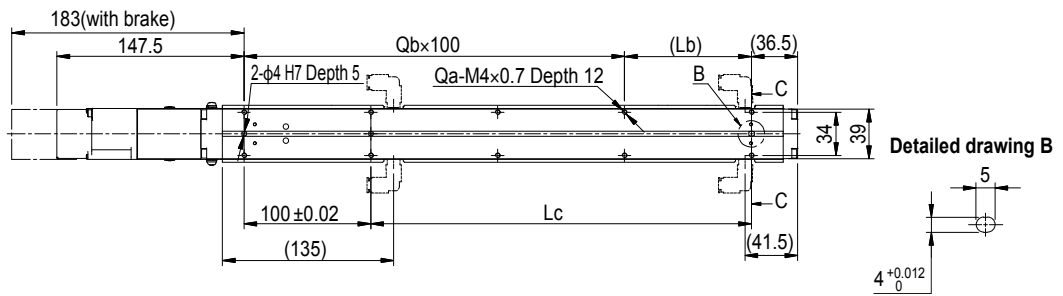
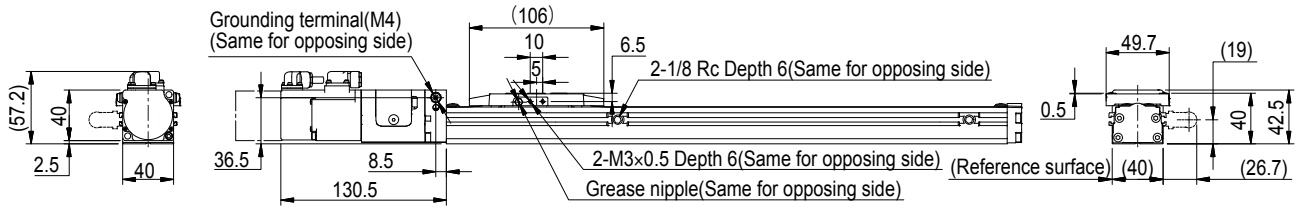
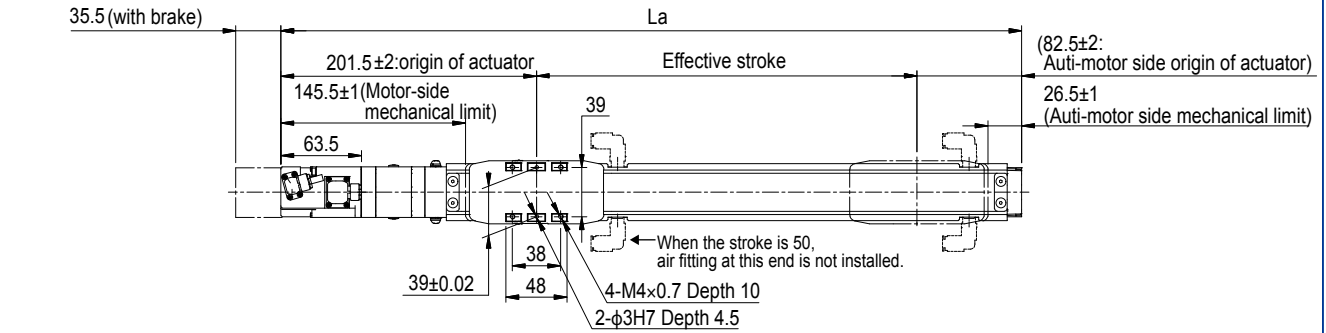
(Unit: N·m)		
MY	MP	MR
47	47	64



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

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LGXS
LBAR
LGFS
LGBS
ABFS
ABAS
AGXS
ABAR
AGBS
AGFS
Option

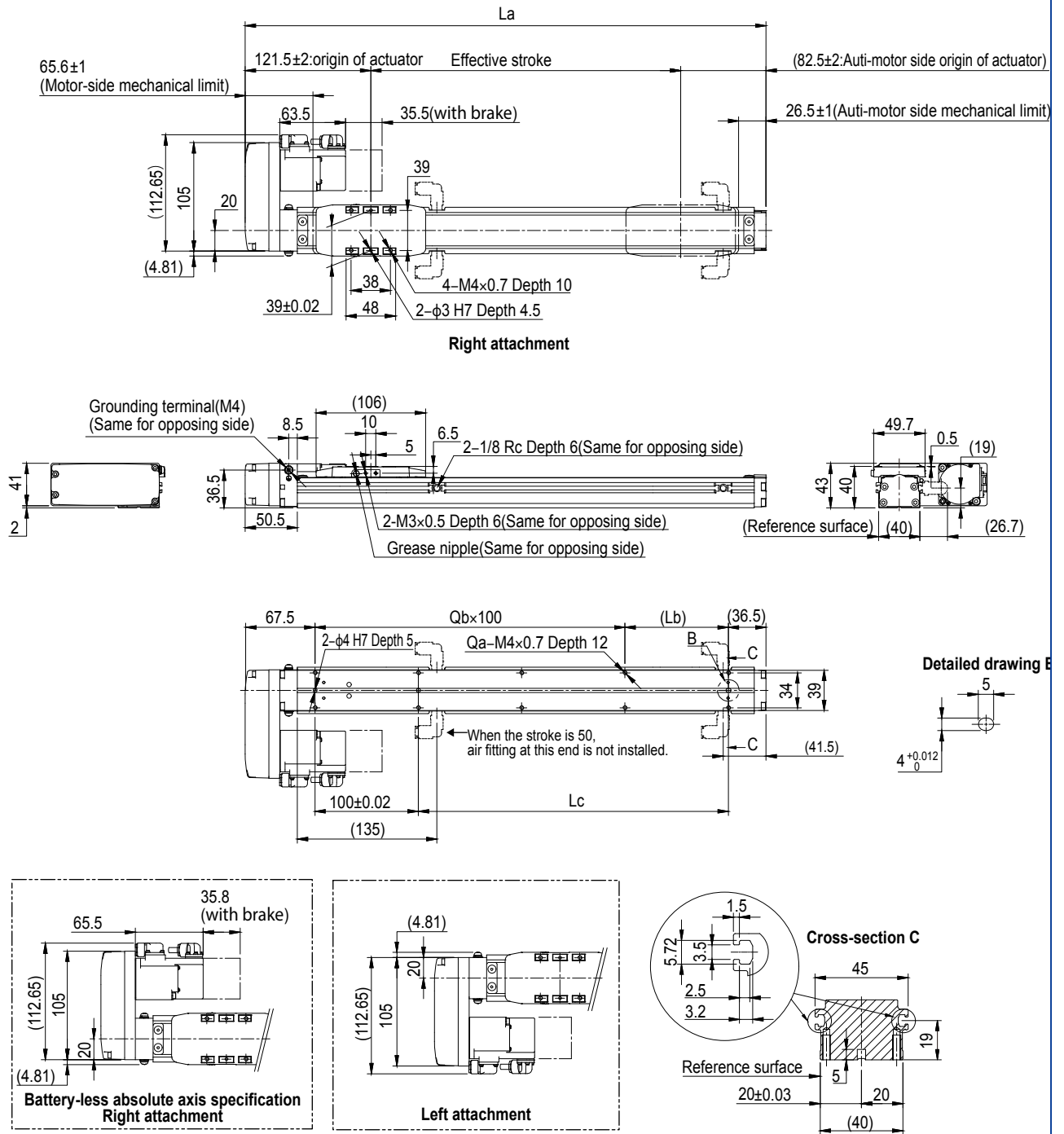
ABFS04 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.
 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 +12mm or less>> is recommended for the hex socket head bolts <M4×0.7> used to install the main unit.
 Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00
 Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

Effective stroke	50	100	150	200	250	300	350	400	450	500
La	334	384	434	484	534	584	634	684	734	784
Lb	50	100	50	100	50	100	50	100	50	100
Lc	50	100	150	200	250	300	350	400	450	500
Qa	6	6	8	8	10	10	12	12	14	14
Qb	1	1	2	2	3	3	4	4	5	5
Weight (kg) ^{Note 1}	1.29	1.4	1.52	1.64	1.76	1.89	1.99	2.11	2.23	2.35
Maximum speed (mm/sec)	Lead 12	720								
	Speed setting	-								
	Lead 6	360								
	Speed setting	-								
	Lead 2	120								
Speed setting	-									

ABFS04 Bending type (R/L)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.
 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 +12mm or less>> is recommended for the hex socket head bolts <M4×0.7> used to install the main unit.
 Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00
 Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

Effective stroke	50	100	150	200	250	300	350	400	450	500
La	254	304	354	404	454	504	554	604	654	704
Lb	50	100	50	100	50	100	50	100	50	100
Lc	50	100	150	200	250	300	350	400	450	500
Qa	6	6	8	8	10	10	12	12	14	14
Qb	1	1	2	2	3	3	4	4	5	5
Weight (kg) ^{Note 1}	1.42	1.53	1.64	1.75	1.86	1.97	2.08	2.19	2.3	2.42
Maximum speed (mm/sec)	Lead 12	720								
	Speed setting	-								
	Lead 6	360								
	Speed setting	-								
Lead 2	120									
	Speed setting	-								