

ABAS05

Basic model

Single-axis robots

Slider type



Ordering method

ABAS05							EP-01				
Model	Lead	Shape	Motor specification	Stroke	Cable length	Cable entry location	Robot positioner	Driver: Power capacity	Regenerative unit	I/O	Battery
	20: 20 mm 10: 10 mm 5: 5 mm	S: Straight R: Right bending L: Left bending	S: Standard/With no brake BK: Standard/With brake BL: Battery-less absolute/With no brake BKBL: Battery-less absolute/With brake	50 to 800 (50mm pitch)	Note 1 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	Note 2 No entry: None R: With EP-RU	EP: EtherNet/IP™ PT: PROFINET ES: EtherCAT NS: NPN CC: CC-Link	Note 3 B: With battery N: None

Note 1. The robot cable is flexible and resists bending.

Note 2. When the actuator is used vertically, lead 5 or 10 is selected, and the stroke is 650 mm or more, 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.

Specifications

AC servo motor output	100 W		
Repeatability ^{Note 1}	+/-0.01 mm		
Deceleration mechanism	Shifting position ball screw φ 12 (C7 class)		
Stroke	50 mm to 800 mm (50 mm pitch)		
Maximum speed ^{Note 2}	1333 mm/sec	666 mm/sec	333 mm/sec
Ball screw lead	20 mm	10 mm	5 mm
Maximum payload	Horizontal	12 kg	24 kg
	Vertical	3 kg	6 kg
Rated thrust	84 N	169 N	339 N
Maximum dimensions of cross section of main unit	W 54 mm × H 60 mm		
Overall length	Straight	ST + 295 mm	
	Bending	ST + 200 mm	
Position detector	Absolute encoder Battery-less absolute encoder		
Resolution	23 bits		
Using ambient temperature and humidity	0 to 40 °C, 35 to 80 %RH (non-condensing)		

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.

If the effective stroke exceeds 550 mm, the ball screw may resonate. (Critical speed)

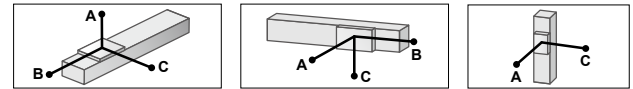
At this time, make the adjustment to decrease the speed while referring to the maximum speed shown in the table.

Note. See P.107 for acceleration/deceleration.

Controller

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

Allowable overhang ^{Note}



ABAS05-20	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	C	
2kg	549	324	272	2kg	272	324	549	1kg	544
8kg	155	73	65	8kg	65	73	155	2kg	276
12kg	117	46	42	12kg	42	46	117	3kg	195

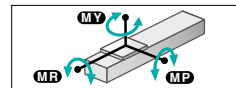
ABAS05-10	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	C	
5kg	769	178	213	5kg	213	178	769	2kg	443
15kg	314	53	64	15kg	64	53	314	4kg	218
24kg	216	29	36	24kg	36	29	216	6kg	142

ABAS05-5	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)		
	A	B	C	A	B	C	A	C	
10kg	921	97	131	10kg	131	97	921	3kg	345
25kg	459	33	45	25kg	45	33	459	8kg	124
40kg	436	17	23	40kg	23	17	436	12kg	79

Note. Distance from center of slider upper surface to carrier center-of-gravity at a guide service life of 10,000 km.

Note. Service life is calculated for 500mm stroke models.

Static loading moment



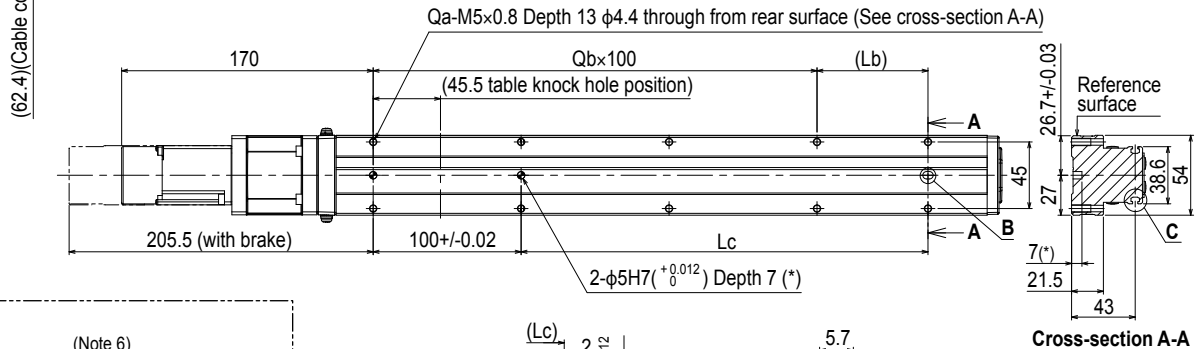
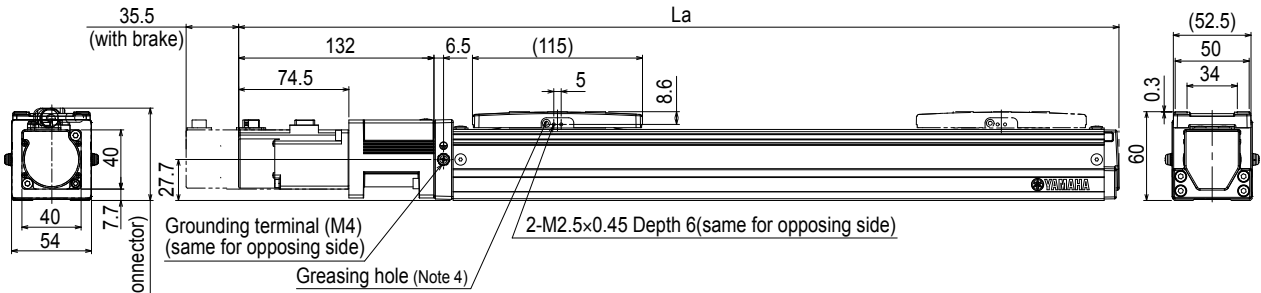
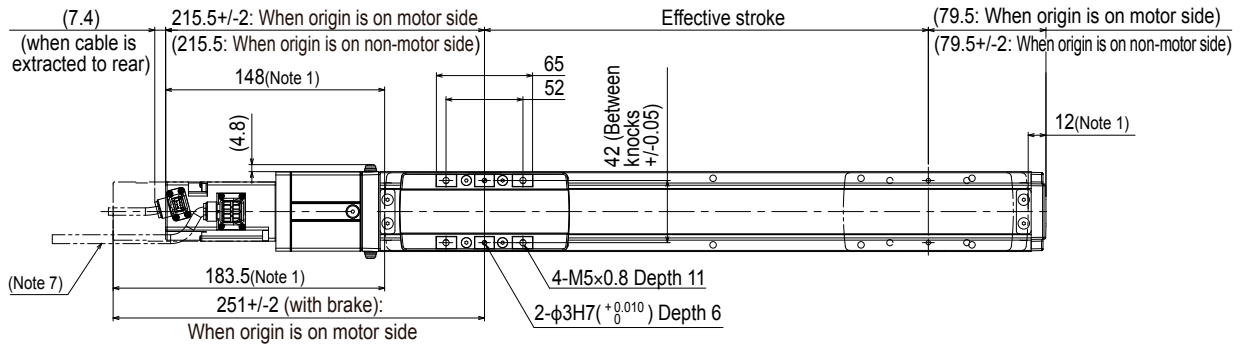
(Unit: N·m)		
MY	MP	MR
59	63	103

Access the website below.

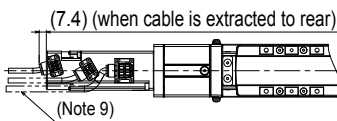
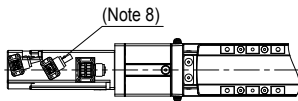
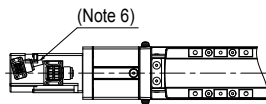


▶ The cycle time simulation and service life calculation can be performed easily from our member site. For details, see P.12.

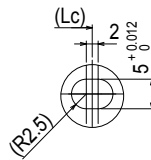
ABAS05 Straight type (S)



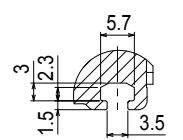
Cross-section A-A



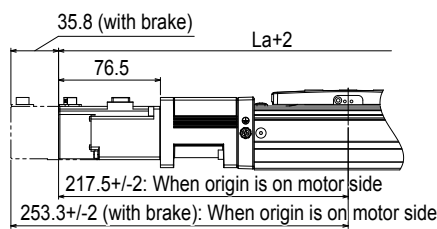
Direction of robot cable extraction



Detailed drawing B



Detailed drawing C



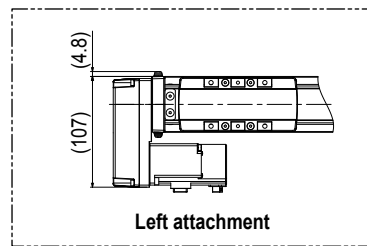
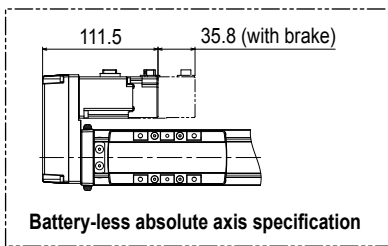
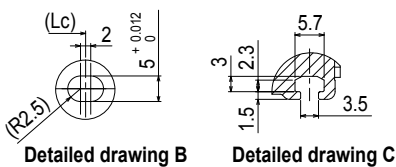
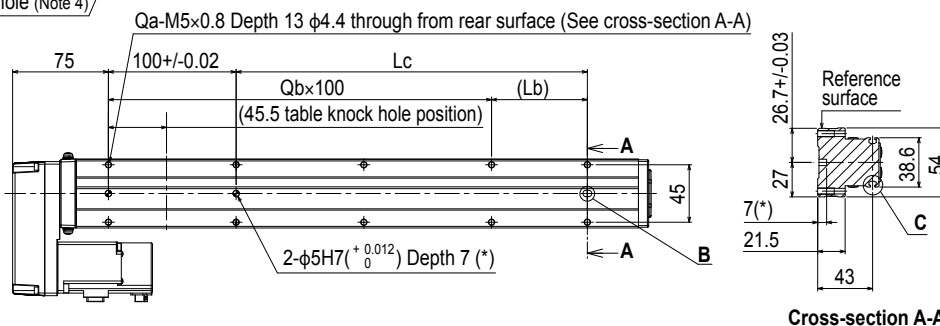
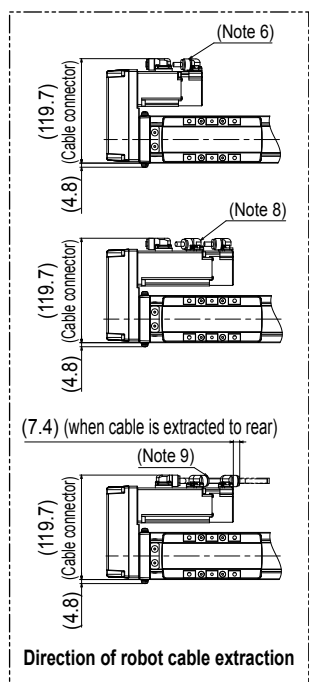
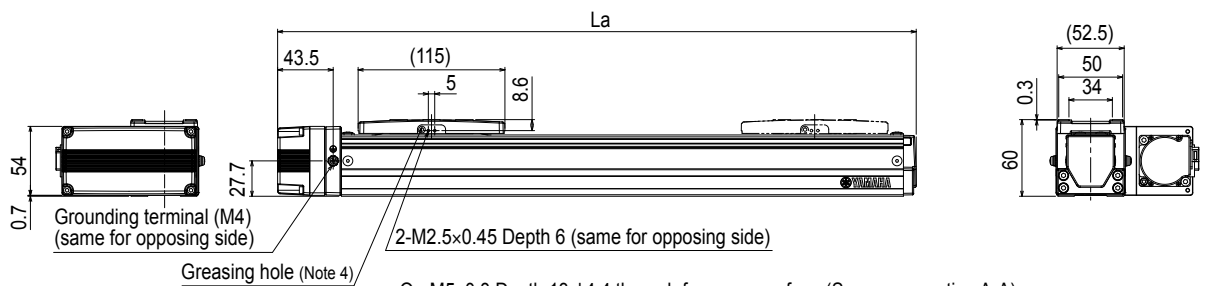
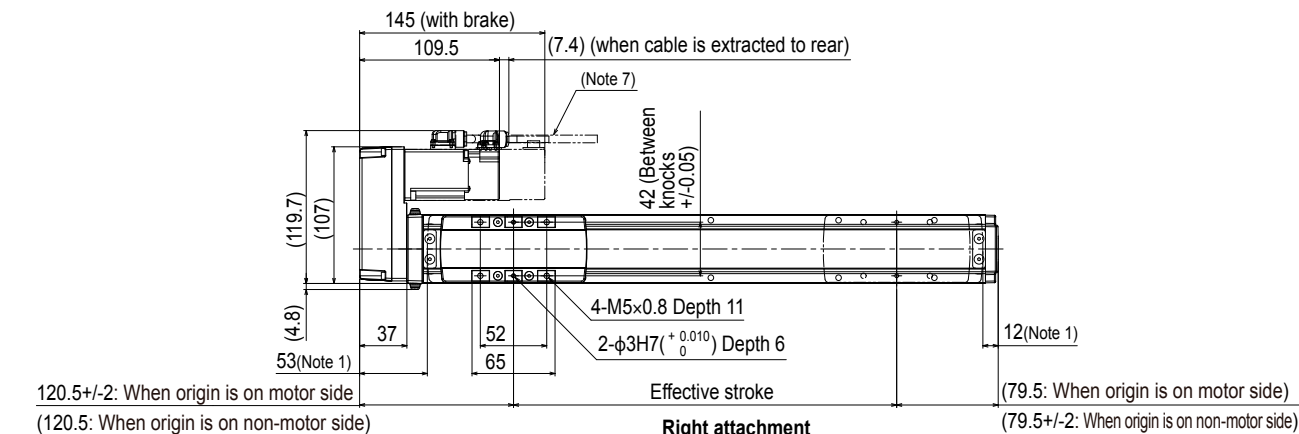
Battery-less absolute axis specification

- Note 1. Stop positions are determined by the mechanical stoppers at both ends.
- Note 2. When changing the return-to-origin direction, the parameter needs to be changed. (The standard is that the origin is located on the motor side.)
- Note 3. For the installation through hole, the length under head << 30 mm or more>> is recommended for the hex socket head bolts <M4 x 0.7>. In the installation tap hole, the length under head <<thickness of stand +10 mm or less>> is recommended for the hex socket head bolts <M5 x 0.8> used to install the main unit.
- Note 4. Grease gun nozzle (recommended) (see P.143 for detail)
Part number: KFU-M3861-00

- Note 5. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.
- Note 6. The robot cable is extracted from the front.
- Note 7. The robot cable is extracted from the rear.
- Note 8. The robot cable (with brake) is extracted from the front.
- Note 9. The robot cable (with brake) is extracted from the rear.
- Note 10. The fixed minimum bending radius of the robot cable is R30.
When using the robot cable as a flexible cable, use it with a minimum bending radius of R50 or more.

Effective stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
La	345	395	445	495	545	595	645	695	745	795	845	895	945	995	1045	1095
Lb	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75
Lc	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775
Qa	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20
Qb	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
Weight (kg) Note 5	2	2.2	2.3	2.5	2.8	2.9	2.9	3.1	3.2	3.3	3.5	3.7	3.8	4	4.1	4.5
Maximum speed (mm/sec)	Lead 20	1333														
	Lead 10	666														
	Lead 5	333														
Speed setting	-															
												85%	70%	60%	50%	45%

ABAS05 Bending type (R/L)



- Note 1. Stop positions are determined by the mechanical stoppers at both ends.
 Note 2. When changing the return-to-origin direction, the parameter needs to be changed. (The standard is that the origin is located on the motor side.)
 Note 3. For the installation through hole, the length under head << 30 mm or more >> is recommended for the hex socket head bolts <M3 x 0.5>. In the installation tap hole, the length under head << thickness of stand + 10 mm or less >> is recommended for the hex socket head bolts <M4 x 0.7> used to install the main unit.
 Note 4. Grease gun nozzle (recommended) (see P.143 for detail)
 Part number: KFU-M3861-00
 Note 5. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.
 Note 6. The robot cable is extracted from the front.
 Note 7. The robot cable is extracted from the rear.
 Note 8. The robot cable (with brake) is extracted from the front.
 Note 9. The robot cable (with brake) is extracted from the rear.
 Note 10. The fixed minimum bending radius of the robot cable is R30.
 When using the robot cable as a flexible cable, use it with a minimum bending radius of R50 or more.

Effective stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
La	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	
Lb	25	75	25	75	25	75	25	75	25	75	25	75	25	75	25	75	
Lc	25	75	125	175	225	275	325	375	425	475	525	575	625	675	725	775	
Qa	6	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	
Qb	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	
Weight (kg) Note 5	2.1	2.2	2.4	2.6	2.8	3	3	3.2	3.3	3.4	3.6	3.7	3.9	4	4.2	4.5	
Maximum speed (mm/sec)	Lead 20											1333					
	Lead 10											666					
	Lead 5											333					
	Speed setting											-					
												1133	933	799	666	599	
												566	466	399	333	299	
												283	233	199	166	149	
												85%	70%	60%	50%	45%	