

# ABAS04

Basic model

Single-axis robots

Slider type



## Ordering method

<b>ABAS04</b>							<b>EP-01</b>			
<b>Model</b>	<b>Lead</b>	<b>Shape</b>	<b>Motor specification</b>	<b>Stroke</b>	<b>Cable length</b>	<b>Cable entry location</b>	<b>Robot positioner</b>	<b>Driver: Power capacity</b>	<b>I/O</b>	<b>Battery</b>
	12: 12 mm 6: 6 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	EP: EtherNet/IP™ PT: PROFINET ES: EtherCAT NS: NPN CC: CC-Link	Note 2 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.

## Specifications

<b>AC servo motor output</b>	50 W	
<b>Repeatability</b> <sup>Note 1</sup>	+/-0.01 mm	
<b>Deceleration mechanism</b>	Shifting position ball screw φ 10 (C7 class)	
<b>Stroke</b>	50 mm to 800 mm (50mm pitch)	
<b>Maximum speed</b> <sup>Note 2</sup>	800 mm/sec	400 mm/sec
<b>Ball screw lead</b>	12 mm / 6 mm	
<b>Maximum payload</b>	<b>Horizontal</b>	12 kg / 20 kg
	<b>Vertical</b>	2 kg / 5 kg
<b>Rated thrust</b>	71 N	141 N
<b>Maximum dimensions of cross section of main unit</b>	W 44 mm × H 52 mm	
<b>Overall length</b>	<b>Straight</b>	ST + 277.5 mm
	<b>Bending</b>	ST + 196 mm
<b>Position detector</b>	Absolute encoder Battery-less absolute encoder	
<b>Resolution</b>	23 bits	
<b>Using ambient temperature and humidity</b>	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 500 mm, the ball screw may resonate. (Critical speed)

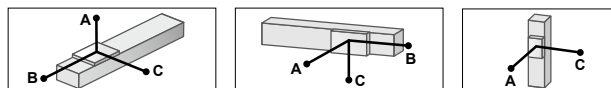
At this time, make the adjustment to decrease the speed while referring to the maximum speed shown in the table.

Note. See P.106 for acceleration/deceleration.

## Controller

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

## Allowable overhang <sup>Note</sup>



### ABAS04-12

	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	C		
2kg	1187	271	325	2kg	325	271	1187	1kg	534	534
8kg	473	62	77	8kg	77	62	473	2kg	265	265
12kg	431	41	53	12kg	53	41	431			

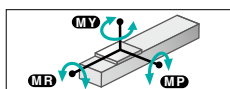
### ABAS04-6

	Horizontal installation (Unit: mm)			Wall installation (Unit: mm)			Vertical installation (Unit: mm)			
	A	B	C	A	B	C	A	C		
4kg	1808	155	217	4kg	217	155	1808	1kg	639	639
12kg	801	47	65	12kg	65	47	801	3kg	208	208
20kg	546	25	35	20kg	35	25	546	5kg	122	122

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



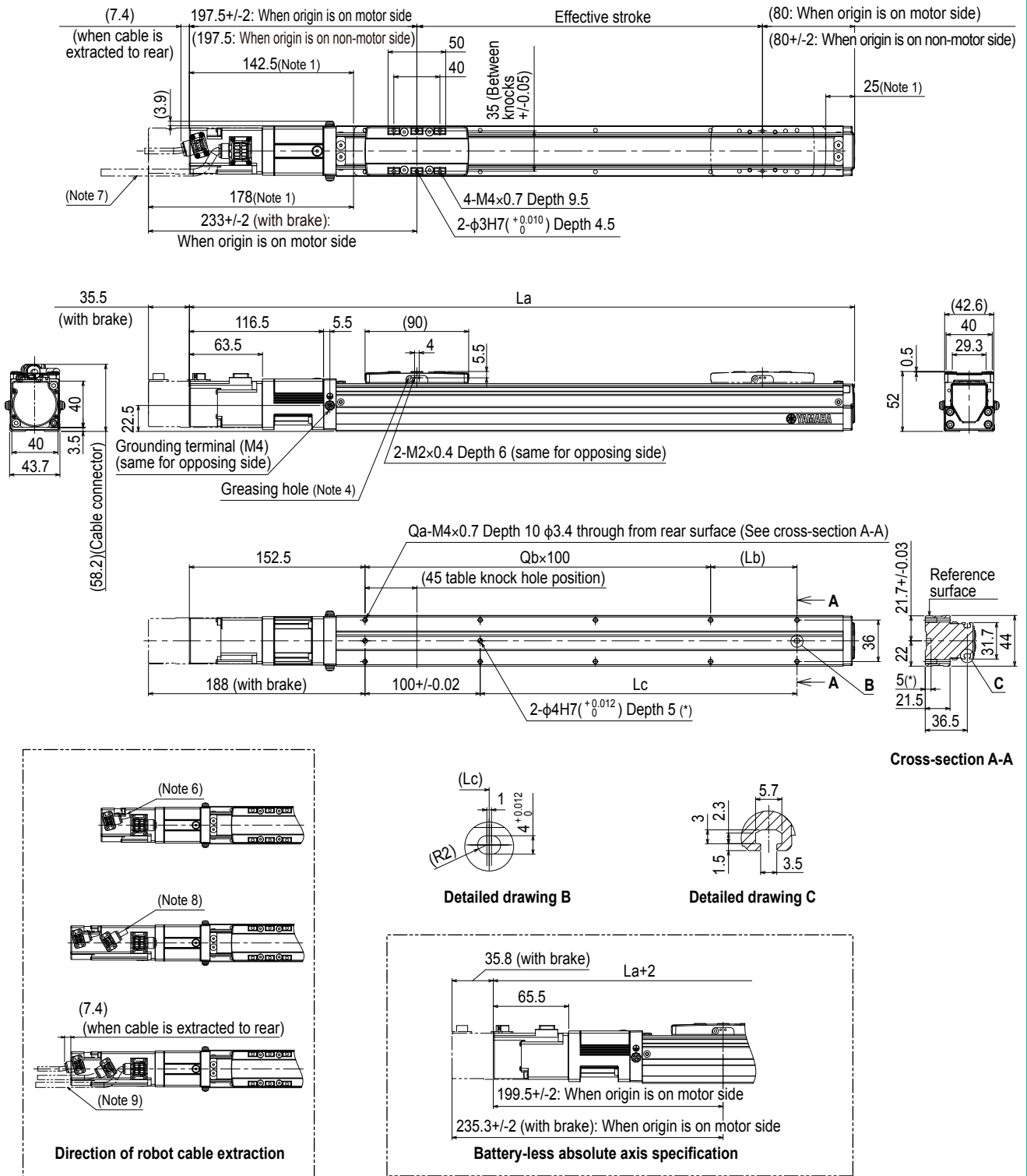
(Unit: N·m)		
MY	MP	MR
54	54	75

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.

ABAS04 Straight type (S)



Cross-section A-A

Detailed drawing B

Detailed drawing C

Direction of robot cable extraction

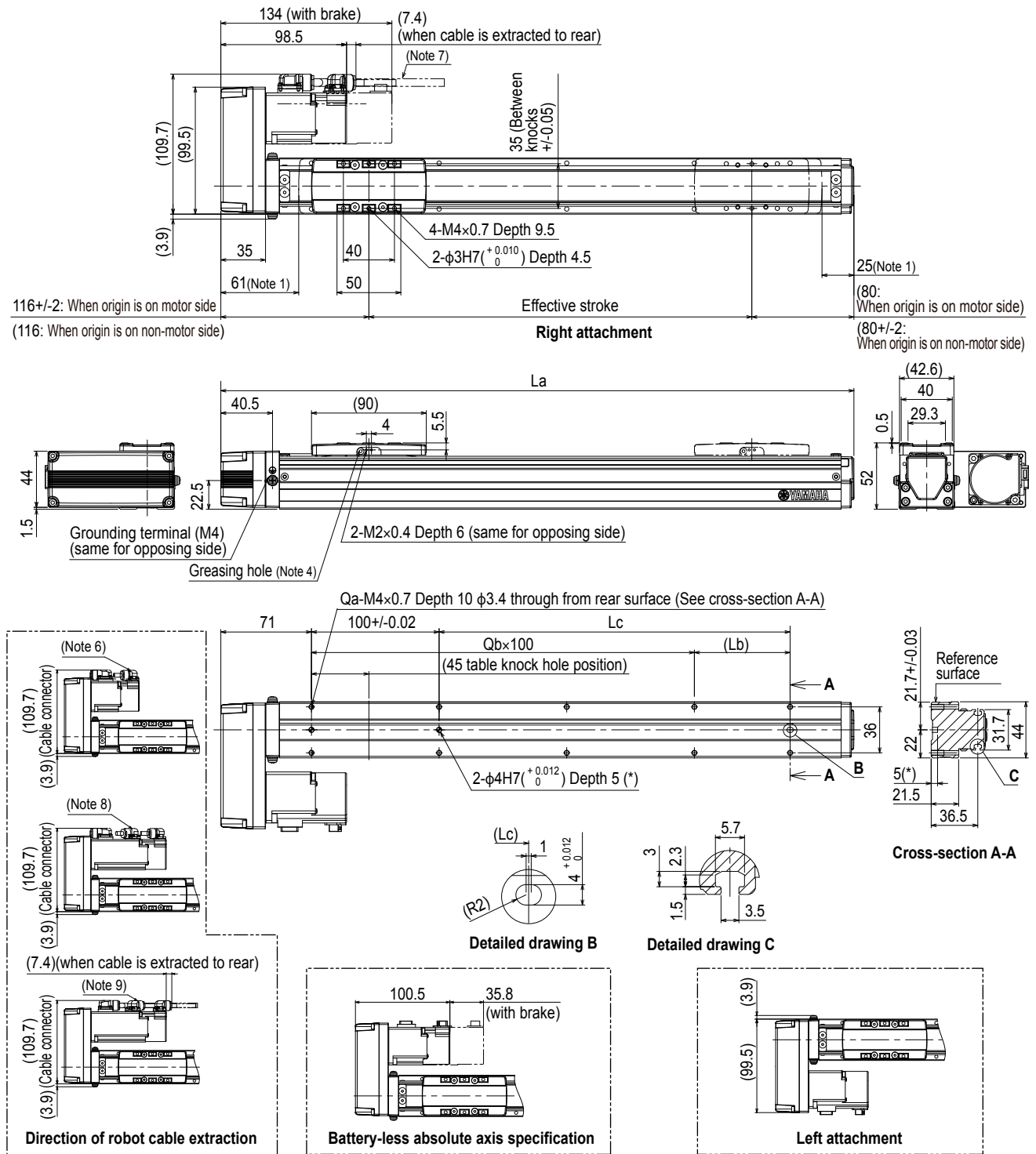
Battery-less absolute axis specification

- 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 <M3 × 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 × 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	327.5	377.5	427.5	477.5	527.5	577.5	627.5	677.5	727.5	777.5	827.5	877.5	927.5	977.5	1027.5	1077.5
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) <sup>Note 5</sup>	1.2	1.4	1.6	1.8	1.9	2.1	2.3	2.5	2.7	2.8	3	3.2	3.4	3.6	3.7	3.9
Maximum speed (mm/sec)	Lead 12															
	Lead 6															
	Speed setting															
											720	600	480	400	360	320
											360	300	240	200	180	160
											90%	75%	60%	50%	45%	40%

ABAS04 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 × 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 × 0.7> used to install the main unit.  
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 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	246	296	346	396	446	496	546	596	646	696	746	796	846	896	946	996	
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	1.4	1.5	1.7	1.9	2.1	2.2	2.4	2.6	2.8	3	3.1	3.3	3.5	3.7	3.9	4	
Maximum speed (mm/sec)	Lead 12	800															
	Lead 6	400															
	Speed setting	-															
												90%	75%	60%	50%	45%	40%