

# AGXS05

Advanced model

Single-axis robots

Slider type



## Ordering method

<b>AGXS05</b>									<b>EP-01</b>			
<b>Model</b>	<b>Acceleration/deceleration specifications</b>	<b>Lead</b>	<b>Shape</b> <small>Note 1</small>	<b>Motor specification</b>	<b>Side cover</b>	<b>Stroke</b> <small>Note 2</small>	<b>Cable length</b> <small>Note 3</small>	<b>Cable entry location</b>	<b>Robot positioner</b>	<b>Driver: Power capacity</b>	<b>I/O</b>	<b>Battery</b> <small>Note 4</small>
	No entry: Standard H: High agility	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	No entry: Standard W: With T-groove (both sides) R: With T-groove (right side) L: With T-groove (left side)	50 to 800 (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. When the shape is bending (R, L), the high acceleration/deceleration specifications cannot be selected.

Note 2. For the high acceleration/deceleration specifications, the stroke is 50 to 550 mm (50 mm pitch).

Note 3. The robot cable is flexible and resists bending.

Note 4. 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> <small>Note 1</small>	+/-0.005 mm		
<b>Deceleration mechanism</b>	Ground ball screw φ 12 (C5 class)		
<b>Stroke</b>	50 mm to 800 mm (50 mm pitch)		
<b>Maximum speed</b> <small>Note 2</small>	1333 mm/sec	666 mm/sec	333 mm/sec
<b>Ball screw lead</b>	20 mm	10 mm	5 mm
<b>Maximum payload</b>	<b>Horizontal</b>	5 kg	8 kg
	<b>Vertical</b>	2 kg	4 kg
<b>Rated thrust</b>		41 N	69 N
<b>Maximum dimensions of cross section of main unit</b>	W 48 mm × H 65 mm		
<b>Overall length</b>	<b>Straight</b>	ST + 195 mm	
	<b>Bending</b>	ST + 161.5 mm	
<b>Degree of cleanliness</b> <small>Note 3</small>	ISO CLASS 3 (ISO14644-1) or equivalent		
<b>Intake air</b> <small>Note 4</small>	30 Nℓ/min to 100 Nℓ/min		
<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 600 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 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. See P.115 for acceleration/deceleration.

## Allowable overhang Note

<b>AGXS05-20</b>	<b>Horizontal installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)
	A B C	A B C	A C
2kg	898 269 350	323 234 809	452 452
5kg	583 112 159	119 76 427	217 217
<b>AGXS05-10</b>	<b>Horizontal installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)
	A B C	A B C	A C
2kg	2505 382 625	585 346 2386	732 732
5kg	1366 149 246	195 113 1164	351 351
8kg	1036 90 150	95 54 745	160 160
<b>AGXS05-5</b>	<b>Horizontal installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)
	A B C	A B C	A C
3kg	4604 281 497	439 245 4371	183 183
8kg	2197 101 179	117 65 1812	111 111
13kg	1593 59 105	42 24 1000	75 75

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 600 mm stroke models.

## When used with high acceleration or deceleration (High agility mode)

### Specifications

<b>Stroke</b>	50 mm to 550 mm (50 mm pitch)		
<b>Ball screw lead</b>	20 mm	10 mm	5 mm
<b>Maximum payload</b>	2 kg	3 kg	-
<b>Maximum acceleration</b>	Horizontal	11.77 m/s <sup>2</sup> (1.2 G)	11.77 m/s <sup>2</sup> (1.2 G)
	Vertical	1 kg	2 kg
<b>Maximum acceleration</b>	Horizontal	11.77 m/s <sup>2</sup> (1.2 G)	7.17 m/s <sup>2</sup> (0.7 G)

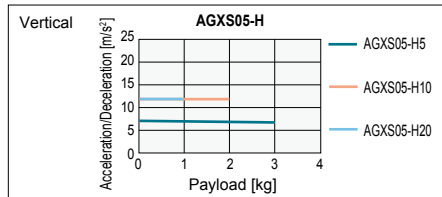
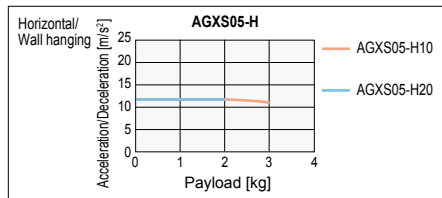
### Allowable overhang Note

<b>AGXS05-H20</b>	<b>Horizontal installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)
	A B C	A B C	A C
1kg	498 324 323	297 288 468	223 223
2kg	230 157 150	123 120 199	
<b>AGXS05-H10</b>	<b>Horizontal installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)
	A B C	A B C	A C
1kg	1159 460 645	606 424 1129	396 396
3kg	381 148 206	163 112 346	182 182
<b>AGXS05-H5</b>	<b>Vertical installation</b> (Unit: mm)		
	A C		
1kg	478 478		
3kg	138 138		

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 550 mm stroke models.

### Payload - Acceleration / Deceleration Graph (Estimate)



### Effective stroke and maximum speed during high acceleration or deceleration

<b>Effective stroke</b>	50	100	150	200	250	300	350	400	450	500	550
<b>Maximum speed</b> (mm/sec)	Lead 20										
	Lead 10										
	Lead 5										

Note. The bending unit cannot be used for the high agility mode.

Note. The high agility mode is used in an effective stroke range of 50 to 550 (50 mm pitch).

Note. There is no critical speed setting. The maximum speed can be set for a selectable stroke.

The speed may not reach the maximum speed if the movement distance is short or depending on the operating conditions.

Note. When the actuator is used with the high acceleration/deceleration specifications, the operation duty and motor load factor need to be considered. (See P.93.)

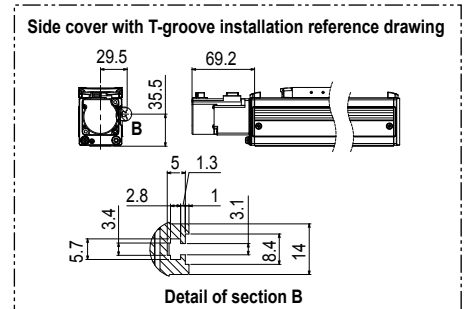
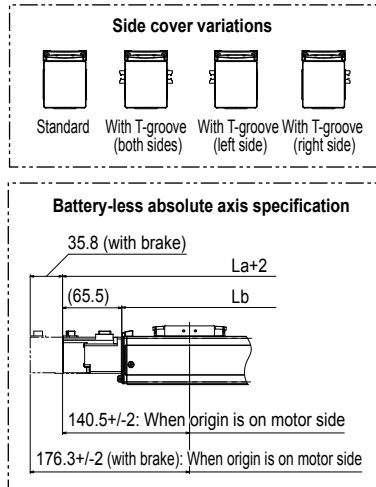
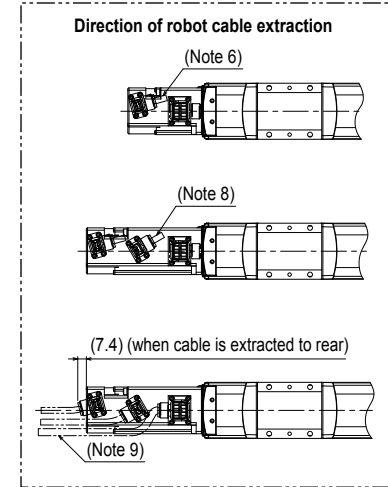
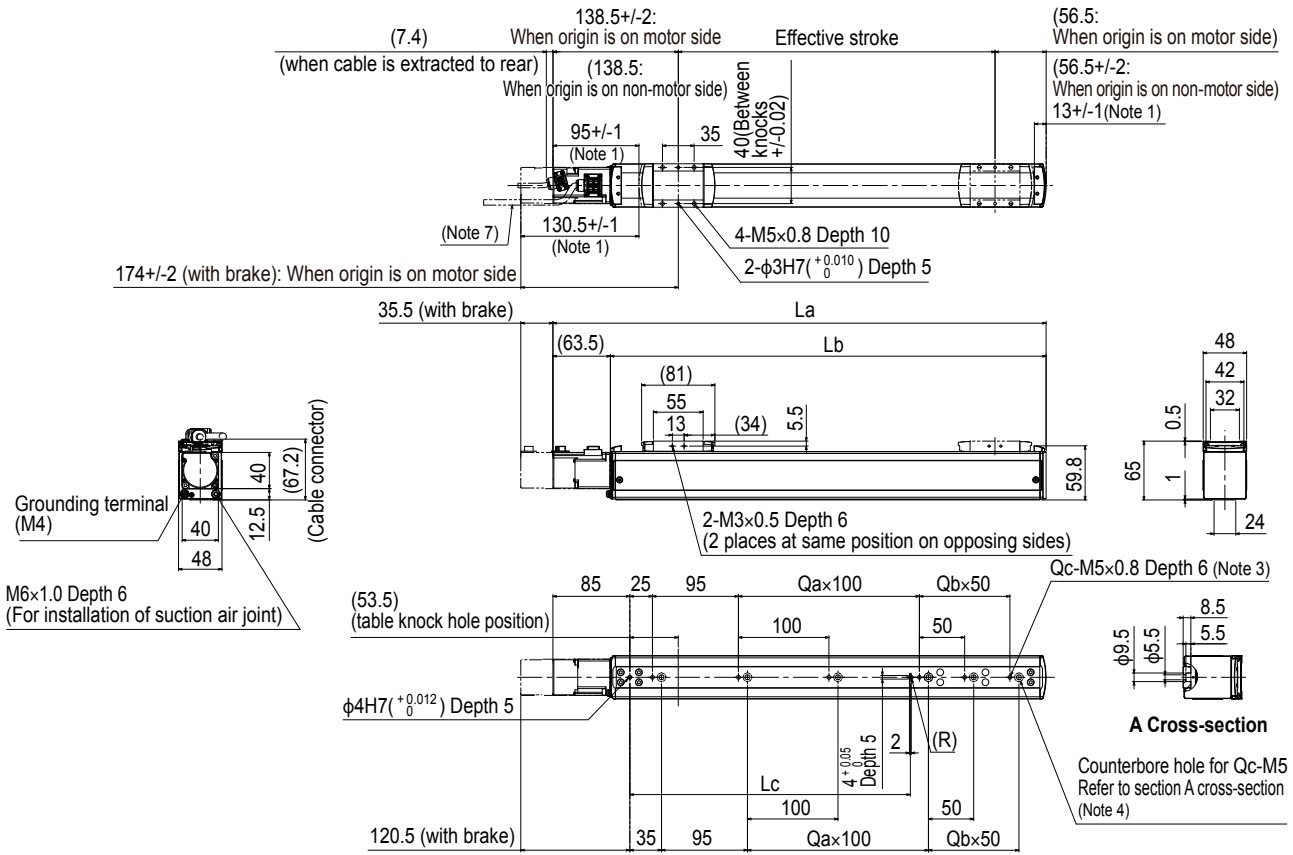
Note. See P.116 for acceleration/deceleration.

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.

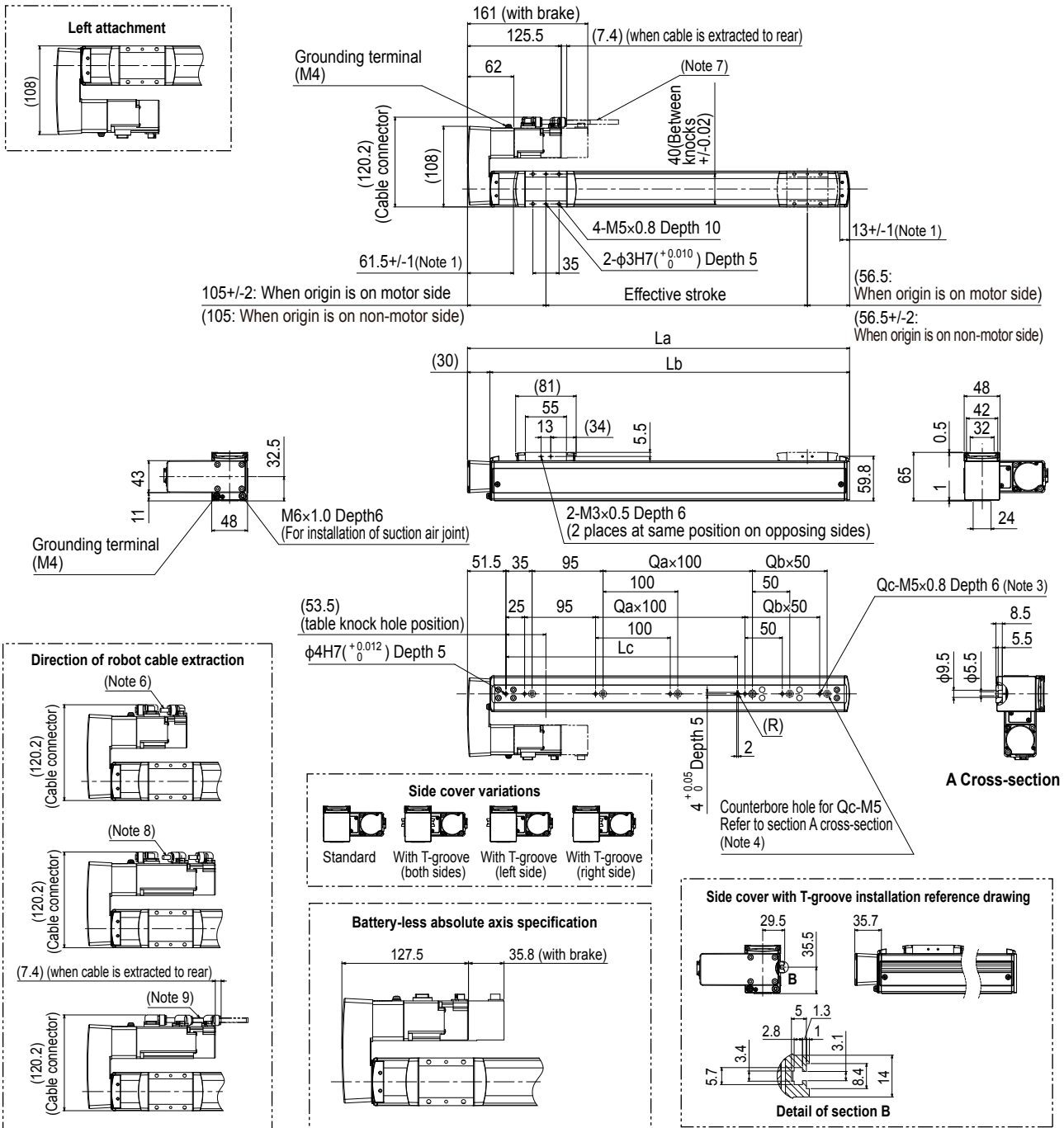
AGXS05 Straight type (S)



- 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. When using the tap holes to mount the body, remove the set screws first.  
 Note 4. When using the counterbore holes (section A cross section) to mount the body, remove the cap from the inner side and then fix. The length under head of the hex socket head bolts (M5 × 0.8) used must be 15 mm or less.  
 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.  
 Note 11. Side cover with T-groove is used to install the sensor.  
 Note 12. Grease gun nozzle (recommended) (see P.143 for detail)

Effective stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
<b>La</b>	245	295	345	395	445	495	545	595	645	695	745	795	845	895	945	995
<b>Lb</b>	181.5	231.5	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5
<b>Lc</b>	110	110	110	110	310	310	310	310	310	310	610	610	610	610	610	610
<b>Qa</b>	0	0	0	0	2	2	2	2	2	2	5	5	5	5	5	5
<b>Qb</b>	0	1	2	3	0	1	2	3	4	5	0	1	2	3	4	5
<b>Qc</b>	2	3	4	5	4	5	6	7	8	9	7	8	9	10	11	12
<b>Weight (kg) Note 5</b>	1.5	1.7	1.8	2.0	2.1	2.3	2.5	2.6	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8
<b>Maximum speed (mm/sec)</b>	<b>Lead 20</b>	1333														
	<b>Lead 10</b>	666														
	<b>Lead 5</b>	333														
	<b>Speed setting</b>	-														
<b>Acceleration/Deceleration (mm/sec²)</b>	<b>Lead 20</b>	1066														
	<b>Lead 10</b>	933														
	<b>Lead 5</b>	532														
	<b>Speed setting</b>	266														
<b>Inertia Moment (kg·m²)</b>	<b>Lead 20</b>	400														
	<b>Lead 10</b>	333														
	<b>Lead 5</b>	200														
	<b>Speed setting</b>	166														
<b>Option</b>	<b>Lead 20</b>	80%														
	<b>Lead 10</b>	70%														
	<b>Lead 5</b>	60%														
	<b>Speed setting</b>	50%														

AGXS05 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. When using the tap holes to mount the body, remove the set screws first.  
 Note 4. When using the counterbore holes (section A cross section) to mount the body, remove the cap from the inner side and then fix. The length under head of the hex socket head bolts (M5 × 0.8) used must be 15 mm or less.  
 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.  
 Note 11. Side cover with T-groove is used to install the sensor.  
 Note 12. When the shape is bending (R, L), the high acceleration/deceleration specifications cannot be selected.  
 Note 13. Grease gun nozzle (recommended) (see P.143 for detail)

Effective stroke	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
La	211.5	261.5	311.5	361.5	411.5	461.5	511.5	561.5	611.5	661.5	711.5	761.5	811.5	861.5	911.5	961.5	
Lb	181.5	231.5	281.5	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5	
Lc	110	110	110	110	310	310	310	310	310	310	610	610	610	610	610	610	
Qa	0	0	0	0	2	2	2	2	2	2	5	5	5	5	5	5	
Qb	0	1	2	3	0	1	2	3	4	5	0	1	2	3	4	5	
Qc	2	3	4	5	4	5	6	7	8	9	7	8	9	10	11	12	
Weight (kg) Note 5	1.9	2.1	2.2	2.4	2.5	2.7	2.9	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	
Maximum speed (mm/sec)	Lead 20	1333															
	Lead 10	666															
	Lead 5	333															
	Speed setting	-															
														80%	70%	60%	50%