AGXS20

Advanced model **Single-axis robots**

Slider type

Ordering method

AGXS20 -				-			- EP-01 -				-
Model	Lead	Shape	Motor specification	Stroke	Cable length Note 1	Cable entry location	Robot positioner	Driver: Power capacity	Regenerative unit Note 2	I/O	Battery Note 3
	40: 40 mm 20: 20 mm 10: 10 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	100 to 1450 (50mm pitch)	R3: 3 m R5: 5 m R10: 10 m	R: From rear of motor F: From front of motor	EP-01	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

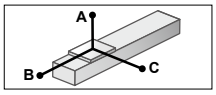
Note 1. The robot cable is flexible and resists bending.
Note 2. When the actuator is used vertically, the regenerative unit is needed.
When the actuator is used horizontally and the stroke of lead 20 is 400 to 850 mm or the stroke of lead 40 is 600 to 950 mm, the regenerative unit is needed.
Note 3. When the motor specification is the standard (S, BK), whether to use the battery needs to be selected.

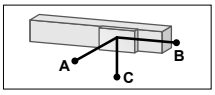
Specifications

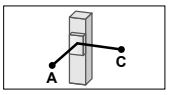
AC servo motor output		750 W		
Repeatability Note 1		+/-0.005 mm		
Deceleration mechanism		Ground ball screw ϕ 20 (C5 class)		
Stroke		100 mm to 1450 mm(50 mm pitch)		
Maximum speed Note 2		2400 mm/sec	1200 mm/sec	600 mm/sec
Ball screw lead		40 mm	20 mm	10 mm
Maximum payload	Horizontal	65 kg	130 kg	160 kg
	Vertical	15 kg	35 kg	65 kg
Rated thrust		320 N	640 N	1280 N
Maximum dimensions of cross section of main unit		W 200 mm × H 140 mm		
Overall length	Straight	ST + 390.8 mm		
	Bending	ST + 340.5 mm		
Degree of cleanliness Note 3		ISO CLASS 3 (ISO14644-1) or equivalent		
Intake air Note 4		30 Nℓ/min to 90 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 (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 800 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.133 for acceleration/deceleration.

Allowable overhang Note







AGXS20-40

Horizontal installation (Unit: mm)

	A	B	C
20kg	5318	2821	2096
40kg	4836	1609	1369
65kg	4824	1088	1001

Wall installation (Unit: mm)

	A	B	C
20kg	2171	2751	5211
40kg	1417	1539	4667
65kg	1013	1018	4575

Vertical installation (Unit: mm)

	A	C
5kg	8187	8187
10kg	5203	5203
15kg	4810	4810

AGXS20-20

Horizontal installation (Unit: mm)

	A	B	C
50kg	5436	1493	1377
80kg	4417	911	854
100kg	4592	756	727
130kg	4338	596	584

Wall installation (Unit: mm)

	A	B	C
50kg	1390	1423	5265
80kg	849	841	4153
100kg	708	686	4253
130kg	550	526	3933

Vertical installation (Unit: mm)

	A	C
20kg	3436	3436
30kg	2600	2600
35kg	3073	3073

AGXS20-10

Horizontal installation (Unit: mm)

	A	B	C
40kg	22519	2607	2713
80kg	16716	1274	1331
120kg	14066	830	868
160kg	12284	608	637

Wall installation (Unit: mm)

	A	B	C
40kg	2704	2537	22210
80kg	1293	1204	16141
120kg	818	760	13223
160kg	580	538	11190

Vertical installation (Unit: mm)

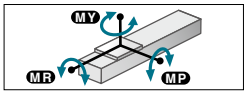
	A	C
20kg	5157	5157
40kg	2553	2553
65kg	1600	1600

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.

Controller

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

Static loading moment



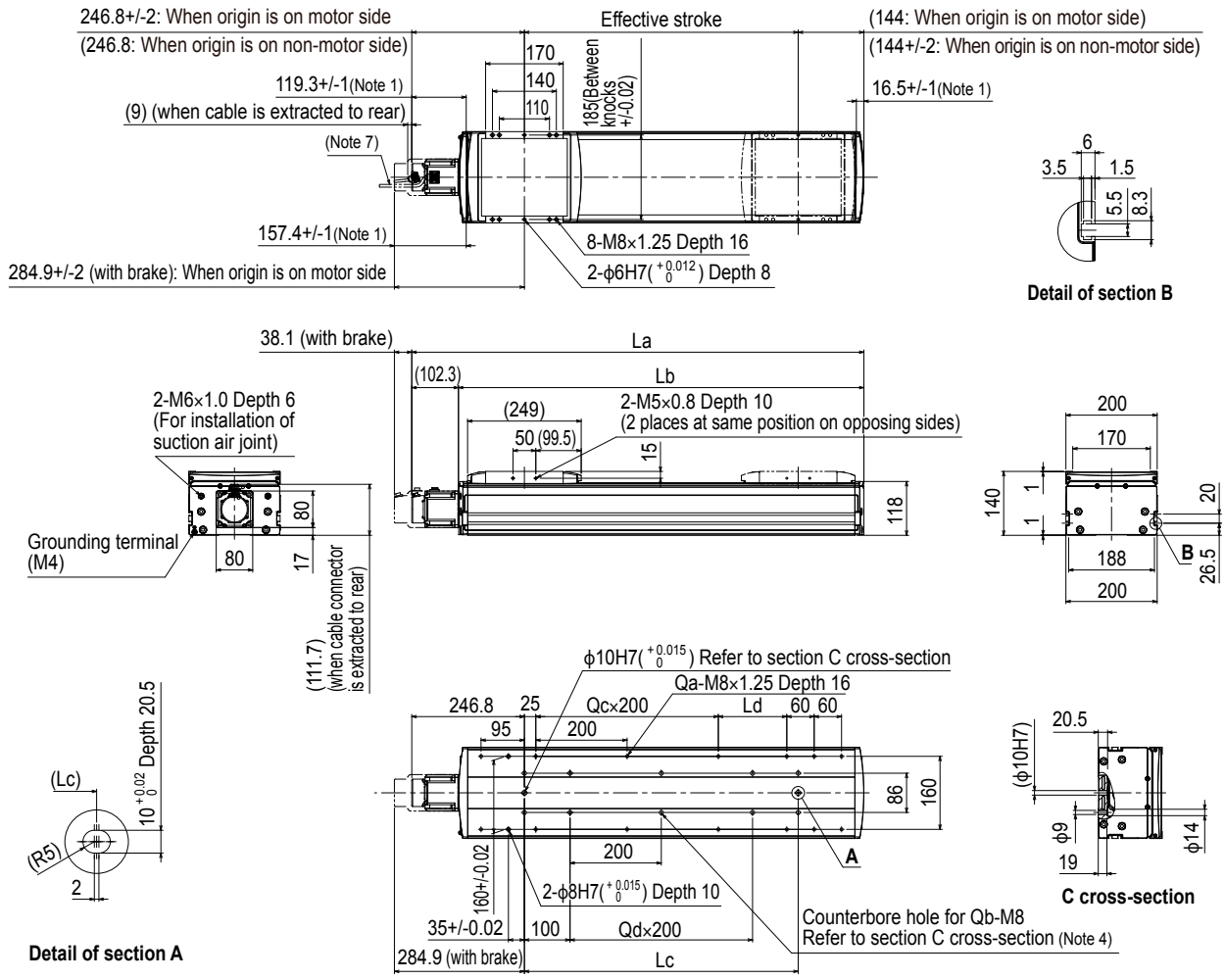
(Unit: N·m)

MY	MP	MR
1423	1423	1251

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.**

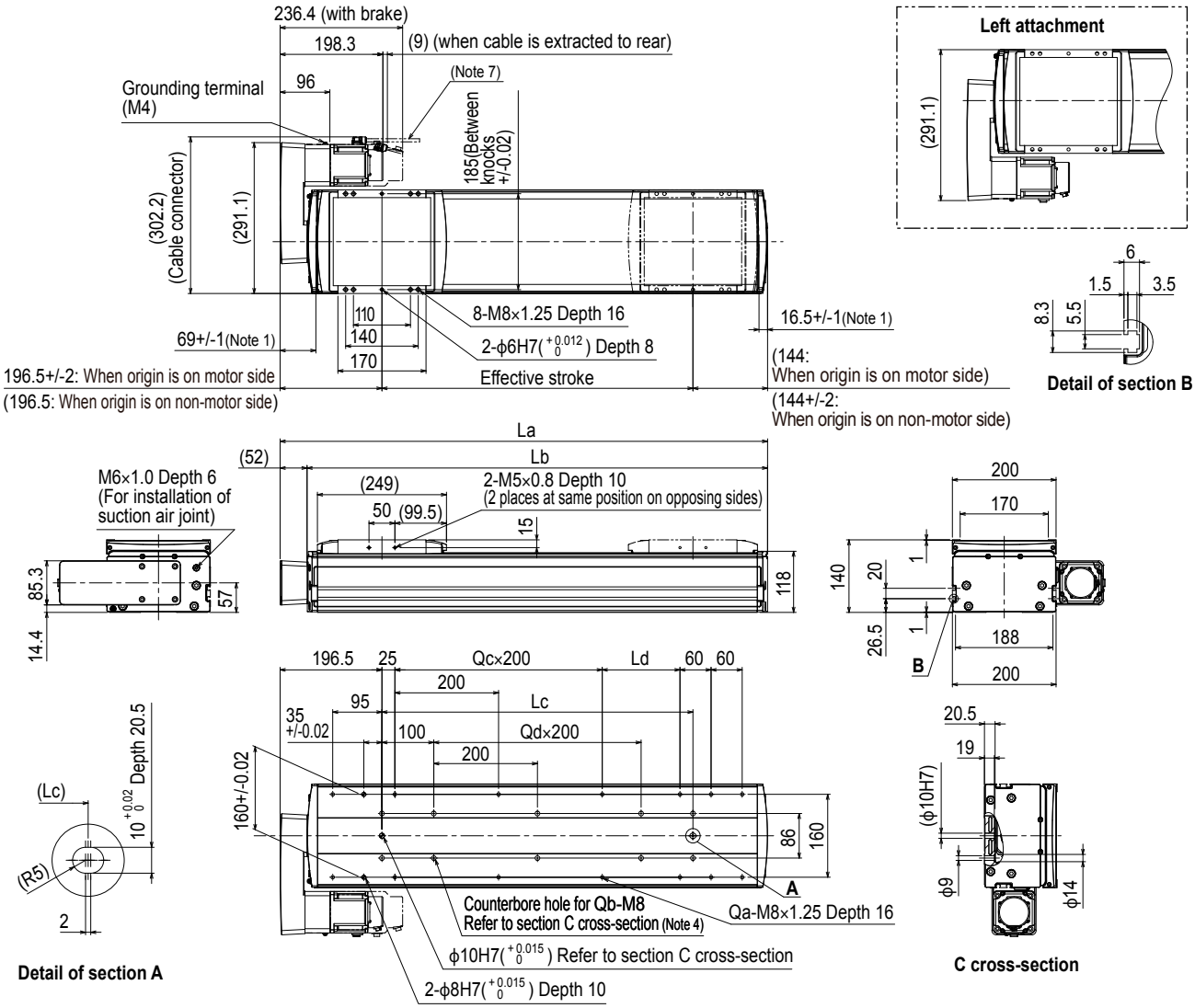
AGXS20 Straight type (S)

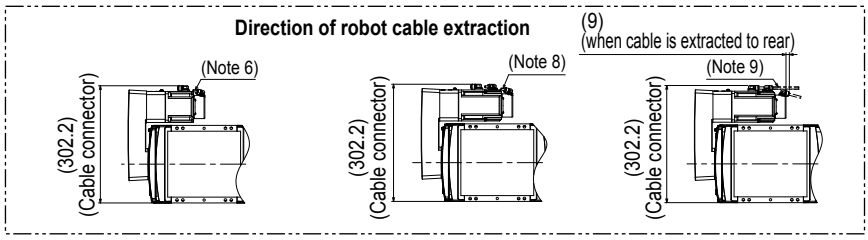


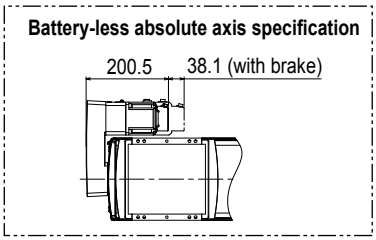
Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. When changing the return-to-origin direction, the parameter needs to be changed. (The standard is that the origin is located on the motor side.)
Note 3. The length under head of the hex socket head bolts <M8 × 1.25> used to mount the body with the mounting counterbore holes (section C cross-section) must be <<25 mm or more>>. The recommended length under head of the hex socket head bolts <M8 × 1.25> used to mount the body with the mounting tap hole specifications is <<frame thickness + 15 mm or less>>.
Note 4. When using the mounting counterbore holes (section C cross-section) to mount the body, remove the seal, and then fix.
Note 5. Weight without brake. The weight with the brake is 1.1 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. Grease gun nozzle (recommended) (see P.143 for detail)

Effective stroke		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
La		490.8	540.8	590.8	640.8	690.8	740.8	790.8	840.8	890.8	940.8	990.8	1040.8	1090.8	1140.8	1190.8	1240.8	1290.8	1340.8	1390.8	1440.8	1490.8	1540.8	1590.8	1640.8	1690.8	1740.8	1790.8	1840.8
Lb		388.5	438.5	488.5	538.5	588.5	638.5	688.5	738.5	788.5	838.5	888.5	938.5	988.5	1038.5	1088.5	1138.5	1188.5	1238.5	1288.5	1338.5	1388.5	1438.5	1488.5	1538.5	1588.5	1638.5	1688.5	1738.5
Lc		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
Ld		50	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	200
Qa		10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22
Qb		4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18
Qc		0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
Qd		0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6
Weight (kg) Note 5		19.1	20.4	21.7	23.0	24.3	25.6	26.9	28.2	29.5	30.7	32.0	33.3	34.6	35.9	37.2	38.5	39.8	41.1	42.3	43.6	44.9	46.2	47.5	48.8	50.1	51.4	52.7	53.9
Maximum speed (mm/sec)	Lead 40	2400															2160	1920	1680	1440	1320	1200	1080	960		840	720		600
	Lead 20	1200															1080	960	840	720	660	600	540	480		420	360		300
	Lead 10	600															540	480	420	360	330	300	270	240		210	180		150
	Speed setting	–															90%	80%	70%	60%	55%	50%	45%	40%		35%	30%		25%

AGXS20 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. The length under head of the hex socket head bolts <M8 × 1.25> used to mount the body with the mounting counterbore holes (section C cross-section) must be <<25 mm or more>>. The recommended length under head of the hex socket head bolts <M8 × 1.25> used to mount the body with the mounting tap hole specifications is <<frame thickness + 15 mm or less>>.
Note 4. When using the mounting counterbore holes (section C cross-section) to mount the body, remove the seal, and then fix.
Note 5. Weight without brake. The weight with the brake is 1.1 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. Grease gun nozzle (recommended) (see P.143 for detail)

Effective stroke		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
La		440.5	490.5	540.5	590.5	640.5	690.5	740.5	790.5	840.5	890.5	940.5	990.5	1040.5	1090.5	1140.5	1190.5	1240.5	1290.5	1340.5	1390.5	1440.5	1490.5	1540.5	1590.5	1640.5	1690.5	1740.5	1790.5
Lb		388.5	438.5	488.5	538.5	588.5	638.5	688.5	738.5	788.5	838.5	888.5	938.5	988.5	1038.5	1088.5	1138.5	1188.5	1238.5	1288.5	1338.5	1388.5	1438.5	1488.5	1538.5	1588.5	1638.5	1688.5	1738.5
Lc		100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
Ld		50	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	200
Qa		10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22
Qb		4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18
Qc		0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
Qd		0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6
Weight (kg) Note 5		21.8	23.1	24.4	25.7	27.0	28.3	29.6	30.9	32.2	33.4	34.7	36.0	37.3	38.6	39.9	41.2	42.5	43.8	45.0	46.3	47.6	48.9	50.2	51.5	52.8	54.1	55.4	56.6
Maximum speed (mm/sec)	Lead 40	2400															2160	1920	1680	1440	1320	1200	1080	960		840	720		600
	Lead 20	1200															1080	960	840	720	660	600	540	480		420	360		300
	Lead 10	600															540	480	420	360	330	300	270	240		210	180		150
	Speed setting	–															90%	80%	70%	60%	55%	50%	45%	40%		35%	30%		25%

Controller EP-01 ▶ 146

Operating duty and motor load factor

For high agility mode specifications

As the usable operating duty may vary depending on the payload or acceleration operating conditions, use the operating duty after checking the conditions.
Use the graph of the relationship between the operating duty ratio and continuous operable time as a reference.
For models not described in the graph, investigate an operating duty of 50% or less in the same manner as the standard model.

The actual operation may vary.
Adjust the operating conditions while checking the motor load factor of the controller.
When the operating duty of the robot is high, an error such as “overload” may occur.
In this case, decrease the acceleration/deceleration or increase the stop time to lower the motor load factor.

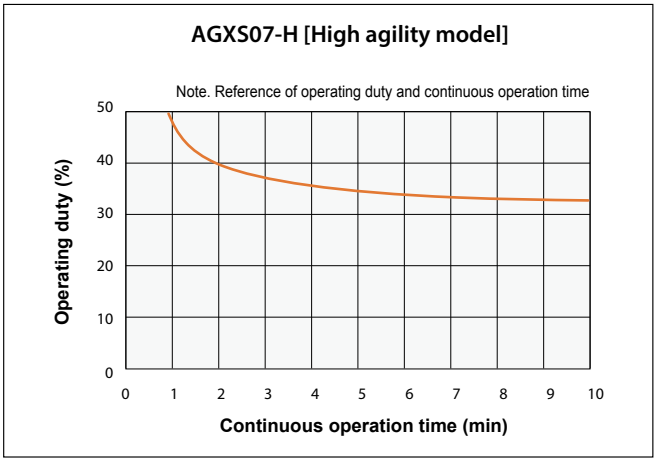
For details about how to check the motor load factor, see the controller manual.
In addition, use the information monitor screen of EP-Manager.

Note. Operating duty

Operating duty = {Sigle-axis operation time / (Single-axis operation time + Single-axis stop time)} * 100 [%]

Operating duty and continuous operation time (reference)

AGXS07-H [High agility model]



AGXS16-H [High agility model]