

ABAS12/ABAS12H

Basic model

Single-axis robots

Slider type

Slim type



Ordering method

Model	Lead	Shape	Motor specification	Stroke	Cable length	Cable entry location	Robot positioner	Driver: Power capacity	Regenerative unit	I/O	Battery
ABAS12: 200W	32: 32 mm	S: Straight	S: Standard/With no brake	50 to 1250 (50mm pitch)	R3: 3 m	R: From rear of motor	EP-01	A10: 200W or less	No entry: None	EP: EtherNet/IP™ PT: PROFINET ES: EtherCAT NS: NPN CC: CC-Link	B: With battery
ABAS12H: 400W	20: 20 mm 10: 10 mm 5: 5 mm	R: Right bending L: Left bending	BK: Standard/With brake BL: Battery-less absolute/With no brake BKBL: Battery-less absolute/With brake		R5: 5 m R10: 10 m	F: From front of motor		A30: 400W/750W	R: With EP-RU		N: None

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

Note 2. [For ABAS12]

When the actuator is used vertically and the stroke of lead 5, 10, or 20 is 150 mm or more or the stroke of lead 32 is 300 to 750 mm, the regenerative unit is needed.

When the actuator is used horizontally and the stroke of lead 10 or 20 is 250 to 750 mm or the stroke of lead 32 is 400 to 750 mm, the regenerative unit is needed.

[For ABAS12H]

When the actuator is used vertically and the stroke of lead 5, 10, or 20 is 300 mm or more or the stroke of lead 32 is 300 to 750 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.

ABAS12 (200W)

Specifications

AC servo motor output	200 W
Repeatability ^{Note 1}	+/-0.01 mm
Deceleration mechanism	Shifting position ball screw φ 16 (C7 class)
Stroke	50 mm to 1250 mm (50 mm pitch)
Maximum speed ^{Note 2}	1800 mm/sec 1200 mm/sec 600 mm/sec 300 mm/sec
Ball screw lead	32 mm 20 mm 10 mm 5 mm
Maximum payload	Horizontal: 20 kg, 40 kg, 80 kg, 100 kg Vertical: 3 kg, 8 kg, 20 kg, 30 kg
Rated thrust	105 N, 170 N, 341 N, 683 N
Maximum dimensions of cross section of main unit	W 120 mm × H 76 mm
Overall length	Straight: ST + 369 mm Bending: ST + 270.5 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 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. See P.111 for acceleration/deceleration.

Allowable overhang^{Note}

ABAS12-32	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
5kg	2079 1694 1224	1224 1694 2079	1kg 6201 6201
10kg	1135 834 627	627 834 1135	3kg 2057 2057
20kg	842 422 362	362 422 842	
ABAS12-20	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
15kg	946 548 445	445 548 946	3kg 1933 1933
25kg	591 321 266	266 321 591	5kg 1315 1315
40kg	441 205 182	182 205 441	8kg 833 833
ABAS12-10	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
30kg	729 299 278	278 299 729	5kg 1933 1933
50kg	786 207 223	223 207 786	10kg 977 977
80kg	1328 157 200	200 157 1328	20kg 503 503
ABAS12-5	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
30kg	2476 430 513	513 430 2476	10kg 1317 1317
50kg	1817 258 320	320 258 1817	20kg 670 670
80kg	1517 160 208	208 160 1517	30kg 455 455
100kg	1436 127 168	168 127 1436	

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 600mm stroke models.

Static loading moment

MY	MP	MR
573	606	606

Controller

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

ABAS12H (400W)

Specifications

AC servo motor output	400 W
Ball screw lead	32 mm, 20 mm, 10 mm, 5 mm
Maximum payload	Horizontal: 35 kg, 50 kg, 95 kg, 115 kg Vertical: 8 kg, 15 kg, 25 kg, 40 kg
Rated thrust	218 N, 339 N, 678 N, 1360 N
Overall length	Straight: ST + 385 mm Bending: ST + 270.5 mm

Note. See P.113 for acceleration/deceleration.

Note. The specifications and static loading moment, etc. not described here are common to ABAS12.

Allowable overhang^{Note}

ABAS12H-32	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
10kg	1135 834 627	627 834 1135	3kg 2057 2057
20kg	842 422 362	362 422 842	5kg 1228 1228
35kg	925 286 294	294 286 925	8kg 762 833
ABAS12H-20	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
15kg	826 548 427	427 548 826	5kg 1315 1315
30kg	485 263 218	218 263 485	10kg 672 672
50kg	433 172 162	162 172 433	15kg 522 660
ABAS12H-10	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
30kg	528 270 230	230 270 528	5kg 1933 1933
60kg	665 171 185	185 171 665	15kg 660 660
95kg	1347 132 173	173 132 1347	25kg 409 541
ABAS12H-5	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
30kg	2476 430 513	513 430 2476	15kg 885 885
60kg	1672 215 270	270 215 1672	25kg 541 541
90kg	1474 141 186	186 141 1474	40kg 350 350
115kg	1378 109 146	146 109 1378	

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

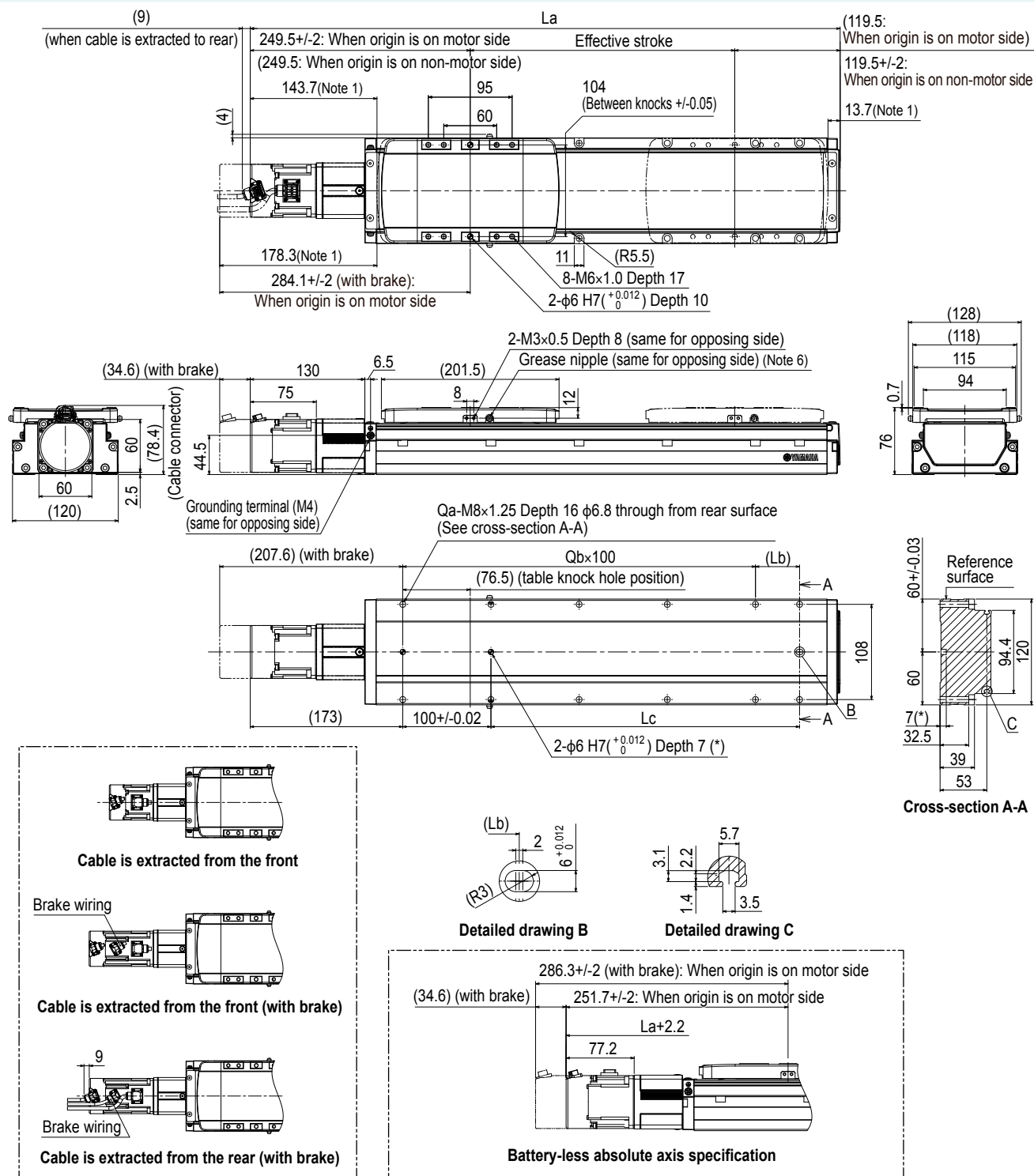
Note. Service life is calculated for 600mm stroke models.

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.

ABAS12 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. For the installation through hole, the length under head << 45 mm or more >> is recommended for the hex socket head bolts <M6 × 1.0>. In the installation tap hole, the length under head << thickness of stand +16 mm or less >> is recommended for the hex socket head bolts <M8 × 1.25> used to install the main unit.

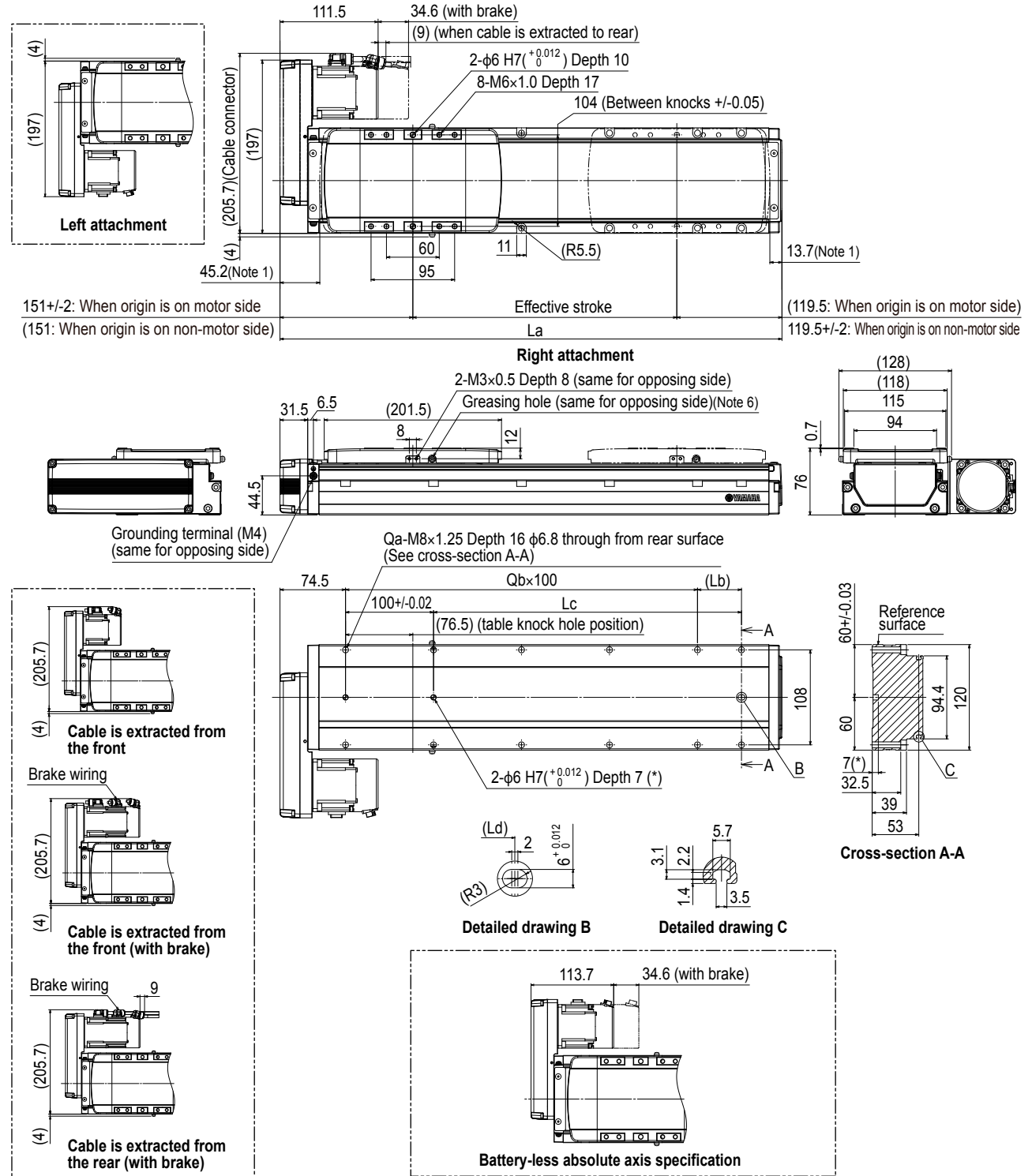
Note 4. The weight with the brake is 0.4 kg heavier than the value in the weight column.

Note 5. The minimum bending radius of the robot cable is R30 on the fixed side or R50 on the movable side. The cable extraction direction may vary depending on the specifications.

Note 6. 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	850	900	950	1000	1050	1100	1150	1200	1250
La	419	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269	1319	1369	1419	1469	1519	1569	1619
Lb	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
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
Qa	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
Qb	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
Weight (kg) Note 4	5.3	5.7	6.1	6.5	6.9	7.3	7.7	8.1	8.5	8.9	9.4	9.8	10.2	10.7	11.1	11.5	12	12.4	12.9	13.3	13.7	14.2	14.6	15.1	15.5
Lead 32	1800												1620	1440	1260	1080	990	810	720	630	630	540	450	360	360
Maximum speed (mm/sec)	1200												1080	960	840	720	660	540	480	420	360	300	240	240	240
Lead 10	600												540	480	420	360	330	270	240	210	180	150	120	120	120
Lead 5	300												270	240	210	180	165	135	120	105	90	75	60	60	60
Speed setting	-												90%	80%	70%	60%	55%	45%	40%	35%	35%	30%	25%	20%	20%

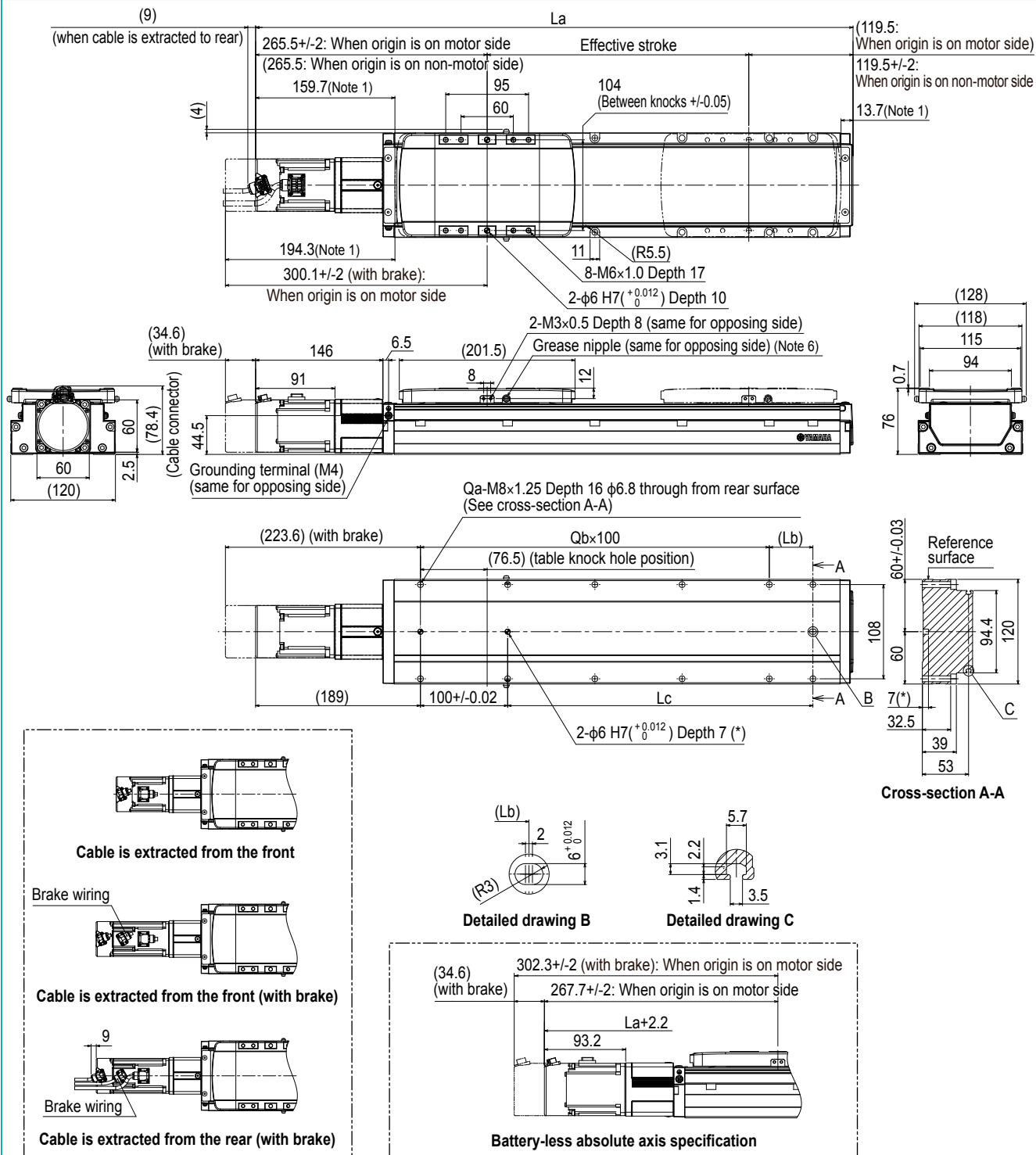
ABAS12 Bending type (R/L)



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 << 45 mm or more >> is recommended for the hex socket head bolts <M6 × 1.0>. In the installation tap hole, the length under head << thickness of stand + 16 mm or less >> is recommended for the hex socket head bolts <M8 × 1.25> used to install the main unit.
 Note 4. The weight with the brake is 0.4 kg heavier than the value in the weight column.
 Note 5. The minimum bending radius of the robot cable is R30 on the fixed side or R50 on the movable side. The cable extraction direction may vary depending on the specifications.
 Note 6. 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	850	900	950	1000	1050	1100	1150	1200	1250
La	320.5	370.5	420.5	470.5	520.5	570.5	620.5	670.5	720.5	770.5	820.5	870.5	920.5	970.5	1020.5	1070.5	1120.5	1170.5	1220.5	1270.5	1320.5	1370.5	1420.5	1470.5	1520.5
Lb	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
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
Qa	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
Qb	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
Weight (kg) Note 4	5.3	5.7	6.1	6.5	6.9	7.3	7.7	8.1	8.5	9	9.4	9.9	10.3	10.7	11.2	11.6	12	12.5	12.9	13.4	13.8	14.2	14.7	15.1	15.6
Lead 32	1800										1620														
Lead 20	1200										1080														
Lead 10	600										540														
Lead 5	300										270														
Speed setting	-										90%														

ABAS12H Straight type (S)



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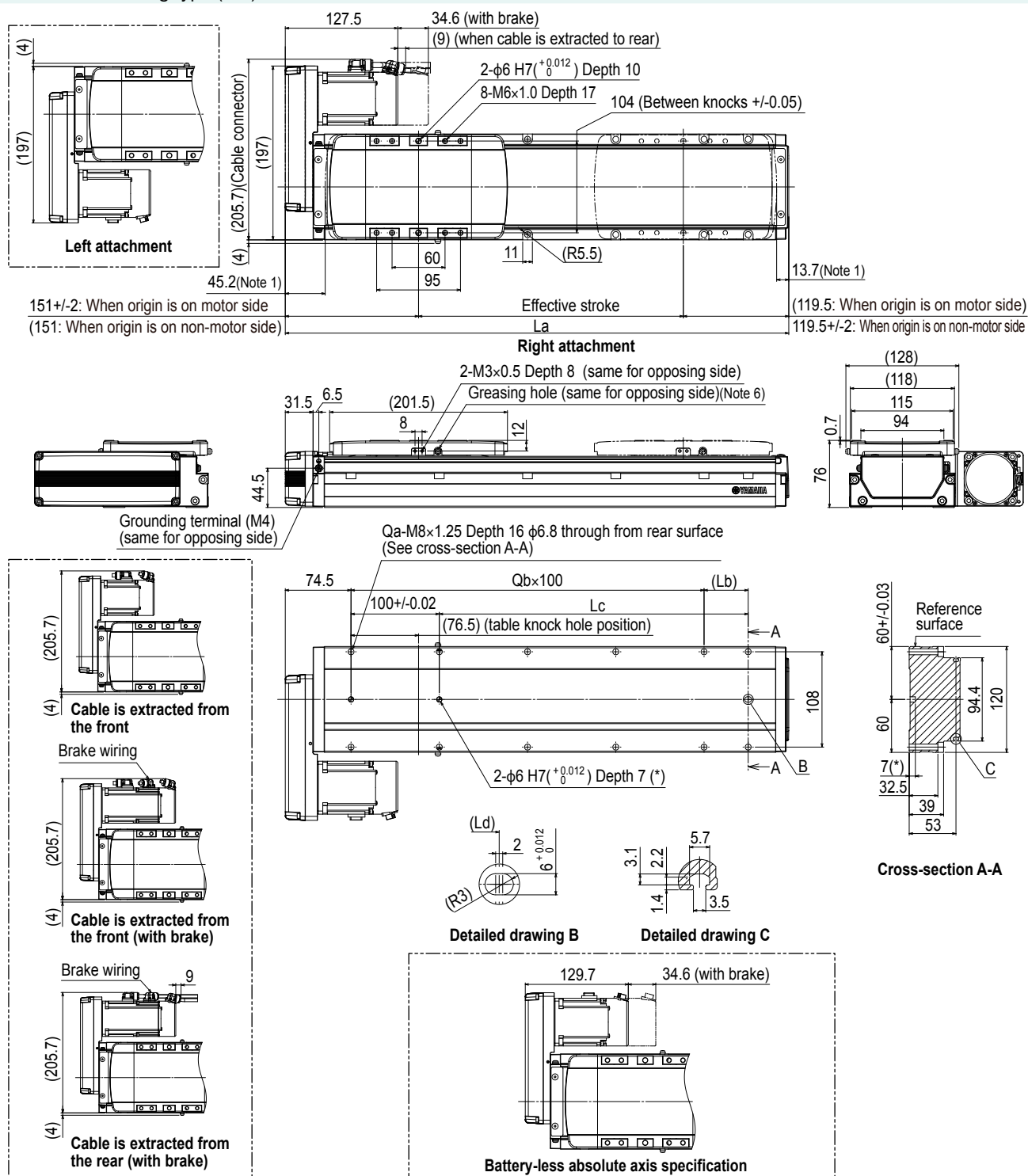
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Note 5. The minimum bending radius of the robot cable is R30 on the fixed side or R50 on the movable side. The cable extraction direction may vary depending on the specifications.

Note 6. 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	850	900	950	1000	1050	1100	1150	1200	1250
La	435	485	535	585	635	685	735	785	835	885	935	985	1035	1085	1135	1185	1235	1285	1335	1385	1435	1485	1535	1585	1635
Lb	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
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
Qa	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
Qb	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
Weight (kg) Note 4	5.6	6	6.4	6.8	7.2	7.6	8	8.4	8.8	9.2	9.7	10.1	10.5	11	11.4	11.8	12.3	12.7	13.2	13.6	14	14.5	14.9	15.4	15.8
Maximum speed (mm/sec)	Lead 32	1800										1620 1440 1260 1080 990 810 720 630 630 540 450 360 360													
	Lead 20	1200										1080 960 840 720 660 540 480 420 360 300 240 240 240													
	Lead 10	600										540 480 420 360 330 270 240 210 210 180 150 120 120													
	Lead 5	300										270 240 210 180 165 135 120 105 105 90 75 60 60													
	Speed setting	-										90% 80% 70% 60% 55% 45% 40% 35% 35% 30% 25% 20% 20%													

ABAS12H Bending type (R/L)



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Lb	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100	50	100
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
Qa	6	8	8	10	10	12	12	14	14	16	16	18	18	20	20	22	22	24	24	26	26	28	28	30	30
Qb	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	12	13	13
Weight (kg) Note 4	5.6	6	6.4	6.8	7.2	7.6	8	8.4	8.8	9.3	9.7	10.2	10.6	11	11.5	11.9	12.3	12.8	13.2	13.7	14.1	14.5	15	15.4	15.9
Maximum speed (mm/sec)	1800												1620	1440	1260	1080	990	810	720	630	630	540	450	360	360
	1200												1080	960	840	720	660	540	480	420	420	360	300	240	240
	600												540	480	420	360	330	270	240	210	210	180	150	120	120
	300												270	240	210	180	165	135	120	105	105	90	75	60	60
	-												90%	80%	70%	60%	55%	45%	40%	35%	35%	30%	25%	20%	20%
Speed setting	-												90%	80%	70%	60%	55%	45%	40%	35%	35%	30%	25%	20%	20%