

# AGXS12

Advanced model

Single-axis robots

Slider type



## Ordering method

### AGXS12

Model	Acceleration/deceleration specifications	Lead	Shape	Motor specification	Stroke	Cable length	Cable entry location	Robot positioner	Driver: Power capacity	Regenerative unit	I/O	Battery
	No entry: Standard H: High agility	30: 30 mm 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	100 to 1250 (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. 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 100 to 650 mm (50 mm pitch).

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

Note 4. When the actuator is used vertically or horizontally and the stroke is 400 mm or more, the regenerative unit is needed.

Note 5. 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>	400 W
<b>Repeatability</b> Note 1	+/-0.005 mm
<b>Deceleration mechanism</b>	Ground ball screw φ 15 (C5 class)
<b>Stroke</b>	100 mm to 1250 mm(50 mm pitch)
<b>Maximum speed</b> Note 2	1800 mm/sec 1200 mm/sec 600 mm/sec 300 mm/sec
<b>Ball screw lead</b>	30 mm 20 mm 10 mm 5 mm
<b>Maximum payload</b>	Horizontal: 35 kg, 50 kg, 95 kg, 115 kg Vertical: 8 kg, 15 kg, 25 kg, 45 kg
<b>Rated thrust</b>	225 N, 339 N, 678 N, 1360 N
<b>Maximum dimensions of cross section of main unit</b>	W 125 mm × H 101 mm
<b>Overall length</b>	Straight: ST + 302.5 mm Bending: ST + 256.5 mm
<b>Degree of cleanliness</b> Note 3	ISO CLASS 3 (ISO14644-1) or equivalent
<b>Intake air</b> Note 4	30 Nℓ/min to 90 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 700 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.126 for acceleration/deceleration.

## Allowable overhang

AGXS12-30	AGXS12-20	AGXS12-10	AGXS12-5
<b>Horizontal installation</b> (Unit: mm)	<b>Horizontal installation</b> (Unit: mm)	<b>Horizontal installation</b> (Unit: mm)	<b>Horizontal installation</b> (Unit: mm)
A B C	A B C	A B C	A B C
10kg 1796 1074 637	15kg 2231 904 613	30kg 3109 607 456	30kg 11079 653 504
20kg 1300 531 332	30kg 1290 428 293	50kg 2421 345 260	50kg 7434 373 288
35kg 1341 334 227	50kg 882 237 164	80kg 2417 198 150	80kg 5458 215 166
		95kg 2559 159 121	115kg 4364 136 105
<b>Wall installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)
A B C	A B C	A B C	A B C
10kg 631 1009 1720	15kg 591 839 2141	30kg 413 542 2978	30kg 456 588 10692
20kg 316 466 1171	30kg 260 363 1167	50kg 215 280 2208	50kg 239 308 6935
35kg 197 269 1130	50kg 126 172 710	80kg 103 133 1927	80kg 117 150 4713
		95kg 73 95 1830	115kg 55 71 3221
<b>Vertical installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)
A C	A C	A C	A C
3kg 2642 2642	5kg 2424 2424	10kg 1862 1862	15kg 1332 1332
6kg 1289 1289	10kg 1207 1207	15kg 1221 1221	30kg 634 634
8kg 951 951	15kg 803 803	25kg 708 708	45kg 402 402

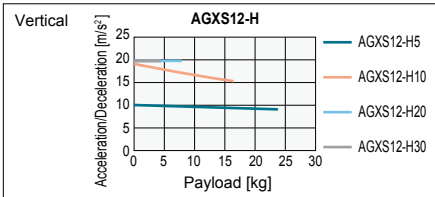
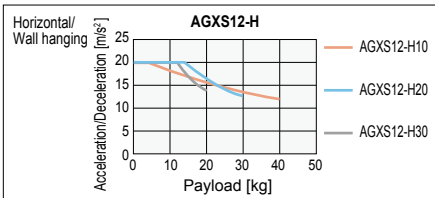
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.  
Note. Service life is calculated for 600 mm stroke models.

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

### Specifications

<b>Stroke</b>	100 mm to 650 mm (50 mm pitch)			
<b>Ball screw lead</b>	30 mm	20 mm	10 mm	5 mm
<b>Maximum payload</b>	20 kg	30 kg	40 kg	-
<b>Maximum acceleration</b>	Horizontal: 19.62 m/s <sup>2</sup> (2 G)	19.62 m/s <sup>2</sup> (2 G)	19.62 m/s <sup>2</sup> (2 G)	-
<b>Maximum payload</b>	4 kg	8 kg	16 kg	24 kg
<b>Maximum acceleration</b>	Vertical: 19.62 m/s <sup>2</sup> (2 G)	19.62 m/s <sup>2</sup> (2 G)	19.62 m/s <sup>2</sup> (2 G)	9.85 m/s <sup>2</sup> (1 G)

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



### Allowable overhang

AGXS12-H30	AGXS12-H20	AGXS12-H10	AGXS12-H5
<b>Horizontal installation</b> (Unit: mm)	<b>Horizontal installation</b> (Unit: mm)	<b>Horizontal installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)
A B C	A B C	A B C	A C
5kg 1216 1297 669	10kg 999 807 489	15kg 1668 737 535	8kg 1487 1487
12kg 461 506 252	20kg 521 378 231	25kg 1060 423 308	16kg 712 712
20kg 316 280 147	30kg 382 234 146	40kg 709 246 180	24kg 454 454
<b>Wall installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	<b>Wall installation</b> (Unit: mm)	
A B C	A B C	A B C	
5kg 648 1224 1183	10kg 458 740 966	15kg 491 672 1628	
12kg 226 436 427	20kg 196 311 479	25kg 263 358 1012	
20kg 117 213 266	30kg 109 168 325	40kg 134 181 644	
<b>Vertical installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)	<b>Vertical installation</b> (Unit: mm)	
A C	A C	A C	
2kg 1984 1984	3kg 2031 2031	5kg 2071 2071	
4kg 960 960	5kg 1193 1193	10kg 1011 1011	
	8kg 722 722	16kg 612 612	

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.

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

Effective stroke	100	150	200	250	300	350	400	450	500	550	600	650
<b>Maximum speed (mm/sec)</b>	Lead 30	1800										
	Lead 20	1200										
	Lead 10	600										
	Lead 5	300										

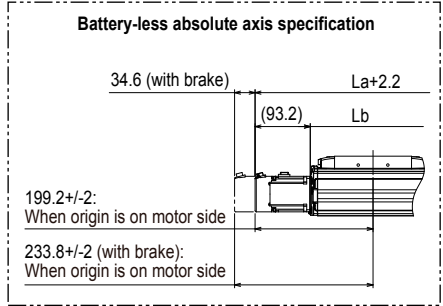
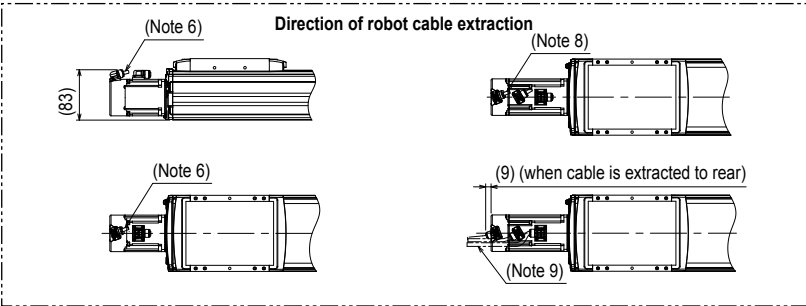
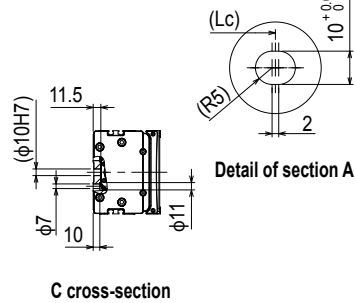
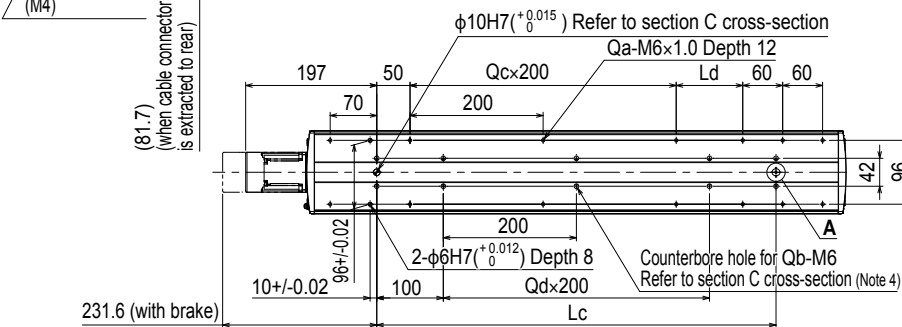
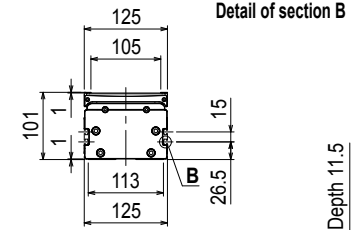
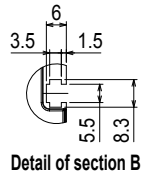
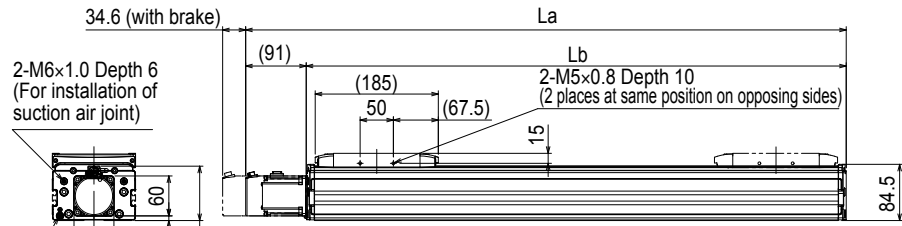
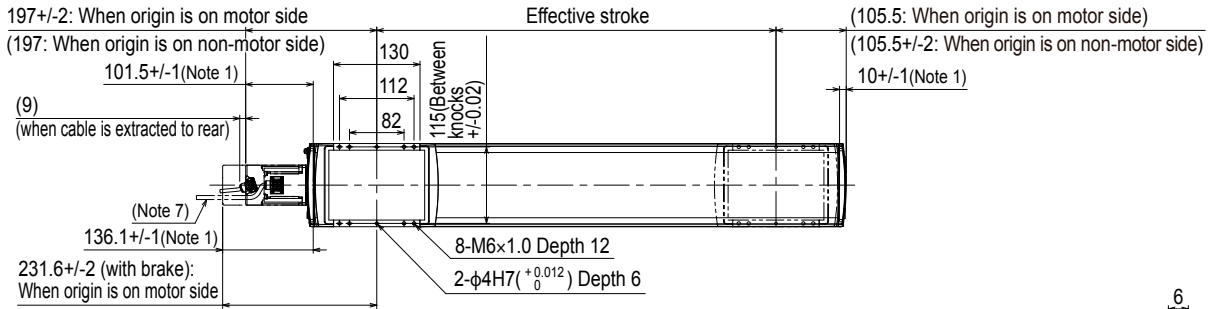
Note. The bending unit cannot be used for the high agility mode.  
Note. The high agility mode is used in an effective stroke range of 100 to 650 (50 mm pitch).  
Note. There is no critical speed setting. The maximum speed can be set for a selectable stroke.  
The speed may not reach the maximum speed 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.128 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.

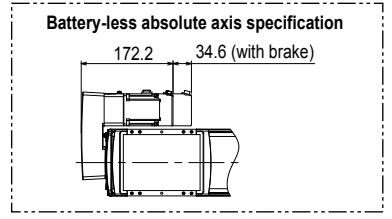
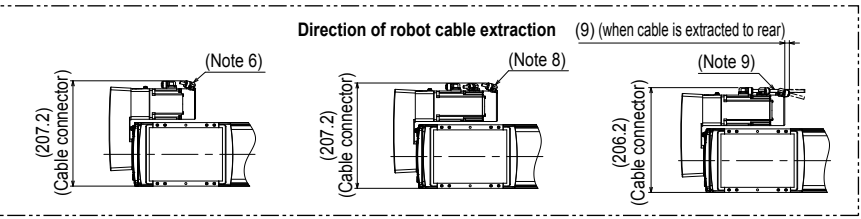
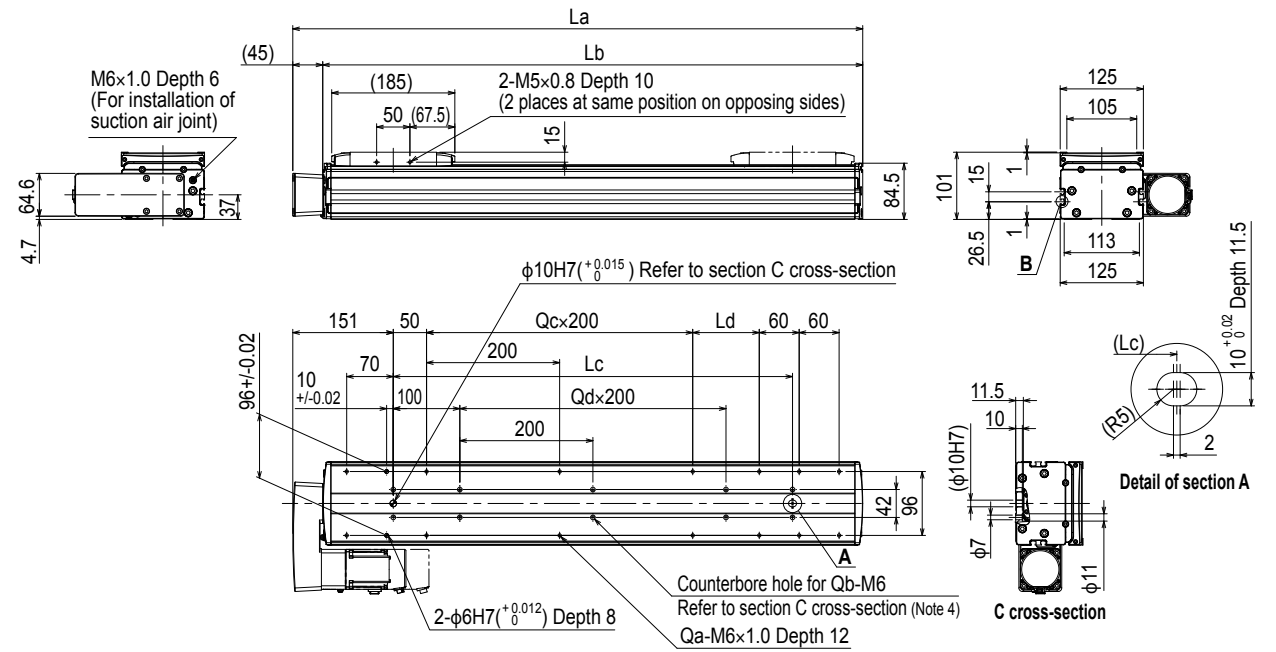
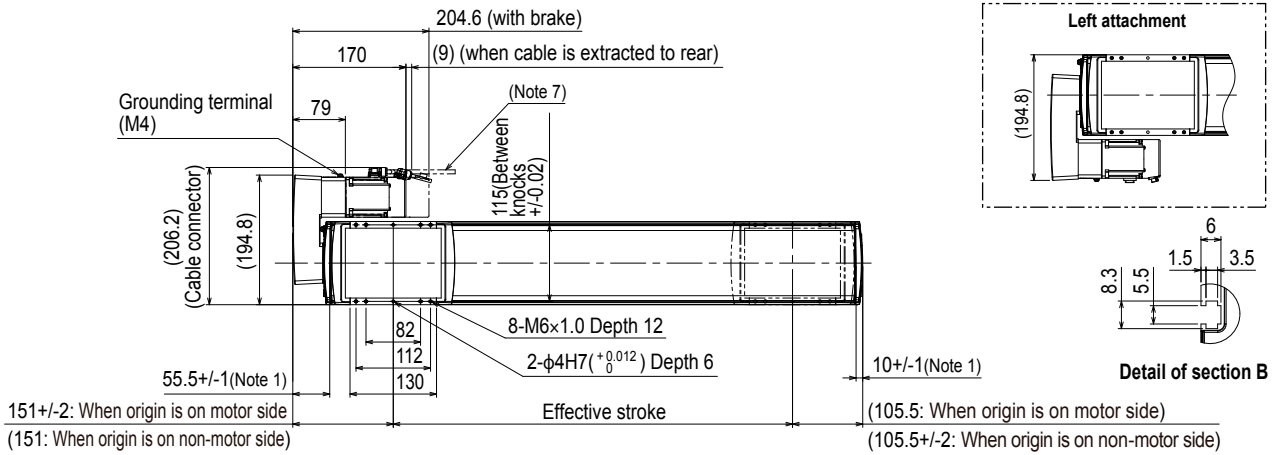
AGXS12 Straight type (S)



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 <M6 × 1.0> used to mount the body with the mounting counterbore holes (section C cross-section) must be <<20 mm or more>>. The recommended length under head of the hex socket head bolts <M6 × 1.0> used to mount the body with the mounting tap hole specifications is <<frame thickness + 10 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 0.4 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		
La	402.5	452.5	502.5	552.5	602.5	652.5	702.5	752.5	802.5	852.5	902.5	952.5	1002.5	1052.5	1102.5	1152.5	1202.5	1252.5	1302.5	1352.5	1402.5	1452.5	1502.5	1552.5		
Lb	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	1011.5	1061.5	1111.5	1161.5	1211.5	1261.5	1311.5	1361.5	1411.5	1461.5		
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		
Ld	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150		
Qa	8	10	10	10	10	12	12	12	12	14	14	14	14	14	16	16	16	16	18	18	18	20	20	20		
Qb	4	6	6	6	6	8	8	8	8	10	10	10	10	10	12	12	12	12	14	14	14	16	16	16		
Qc	0	0	0	0	0	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	5	5	5		
Qd	0	0	0	0	0	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	5	5	5		
Weight (kg) Note 5	7.6	8.2	8.9	9.6	10.2	10.9	11.6	12.3	12.9	13.6	14.3	15.0	15.6	16.3	17.0	17.6	18.3	19.0	19.7	20.3	21.0	21.7	22.4	23.0		
Maximum speed (mm/sec)	Lead 30											1530	1350	1170	990	900	810	720	630	540	450					
	Lead 20											1020	900	780	660	600	540	480	420	360	300					
	Lead 10											510	450	390	330	300	270	240	210	180	150					
	Lead 5											255	225	195	165	150	135	120	105	90	75					
Speed setting											85%	75%	65%	55%	50%	45%	40%	35%	30%	25%						

AGXS12 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 <M6 × 1.0> used to mount the body with the mounting counterbore holes (section C cross-section) must be <<20 mm or more>>. The recommended length under head of the hex socket head bolts <M6 × 1.0> used to mount the body with the mounting tap hole specifications is <<frame thickness + 10 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 0.4 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. When the shape is bending (R, L), the high acceleration/deceleration specifications cannot be selected.
- Note 12. 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
La	356.5	406.5	456.5	506.5	556.5	605.5	656.5	706.5	756.5	806.5	856.5	906.5	956.5	1006.5	1056.5	1106.5	1156.5	1206.5	1256.5	1306.5	1356.5	1406.5	1456.5	1506.5
Lb	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	1011.5	1061.5	1111.5	1161.5	1211.5	1261.5	1311.5	1361.5	1411.5	1461.5
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
Ld	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150
Qa	8	10	10	10	10	12	12	12	12	14	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Qb	4	6	6	6	6	8	8	8	8	10	10	10	10	10	12	12	12	12	14	14	14	14	16	16
Qc	0	0	0	0	0	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	4	5	5
Qd	0	0	0	0	0	1	1	1	1	2	2	2	2	2	3	3	3	3	4	4	4	4	5	5
Weight (kg) Note 5	8.8	9.4	10.1	10.8	11.4	12.1	12.8	13.5	14.1	14.8	15.5	16.2	16.8	17.5	18.2	18.8	19.5	20.2	20.9	21.5	22.2	22.9	23.6	24.2
Maximum speed (mm/sec)	Lead 30	1530	1350	1170	990	900	810	720	630	540	450	360	270	180	150	120	90	75	60	45	30	15	10	7.5
	Lead 20	1020	900	780	660	600	540	480	420	360	300	240	180	150	120	90	75	60	45	30	15	10	7.5	5
	Lead 10	510	450	390	330	300	270	240	210	180	150	120	90	75	60	45	30	25	20	15	10	7.5	5	3.75
	Lead 5	255	225	195	165	150	135	120	105	90	75	60	45	30	25	20	15	10	7.5	6	4.5	3	2.25	1.5
Speed setting										85%	75%	65%	55%	50%	45%	40%	35%	30%	25%					