

# AGFS14/AGFS14H

Advanced model

Single-axis robots

Long-stroke type

## Ordering method

Model	Lead	Shape	Motor specification	OP.1	Stroke	Note 1 Cable length	Cable entry location	EP-01 Robot positioner	Driver: Power capacity	Note 2 Regenerative unit	I/O	Battery Note 3
AGFS14	30: 30mm 20: 20mm	S: Straight R: Right attachment L: Left attachment	S: Standard/With no brake BK Standard/With brake BL: Battery-less absolute/With no brake BKL: Battery-less absolute/With brake	No entry: Standard M: Centerized lubrication	100 to 1050 (50mm pitch)	R3: 3m R5: 5m R10: 10m	R: From rear of motor F: From front of motor	EP-01	A10: 200W or less 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. [For AGFS14]

When the actuator is used vertically, ①lead 30 is selected, and the stroke is 250 mm or more, ②lead 20 is selected, and the stroke is 250mm or more, the regenerative unit is needed.

When the actuator is used horizontally, ①lead 30 is selected, and the stroke is 200 to 1000 mm, ②lead 20 is selected, and the stroke is 250 to 750 mm the regenerative unit is needed. [For AGFS14H]

When the actuator is used vertically, ①lead 30 is selected, and the stroke is 250 mm or more, ②lead 20 is selected, and the stroke is 200mm or more, ③lead 10 is selected, and the stroke is 550mm or more, the regenerative unit is needed.

When the actuator is used horizontally, ①lead 30 is selected, and the stroke is 450 to 850 mm, ②lead 20 is selected, and the stroke is 350 to 700 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.

Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)

## AGFS14(200W)

### Specifications

AC servo motor output	200 W		
Repeatability Note 1	±0.01 mm		
Deceleration mechanism	Rolled ball screw φ 15 (C7 class)		
Stroke	100 to 1050 (50 mm pitch)		
Maximum speed Note 2	1800 mm/sec	1200 mm/sec	600 mm/sec
Ball screw lead	30 mm	20 mm	10 mm
Maximum payload	Horizontal 30 kg	45 kg	90 kg
	Vertical 3 kg	6 kg	16 kg
Rated Thrust	113 N	170 N	341 N
			683 N
Maximum dimensions of cross section of main unit	W 140 mm × H 83 mm		
Overall length	Straight	ST + 469.5 mm	
	Bending	ST + 439.5 mm	
Degree of cleanliness Note 3	Equivalent to ISO Class 3 (ISO 14644-1)		
Intake air Note 4	90 Nℓ/min to 100 Nℓ/min		
Position detector	Absolute Encoder Batteryless Absolute Encoder		
Resolution	23 bits		
Using ambient temperature and humidity Note 5	0 to 40 °C, 35 to 80 %RH (no condensation)		

Note 1. Positioning repeatability in one direction.

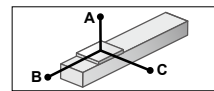
Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed. If the effective stroke exceeds 600 mm, the ball screw may resonate. (Critical speed) At this time, make the adjustment to decrease the speed while referring to the maximum speed shown 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.

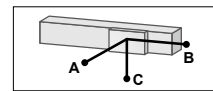
Note 5. When operating in low-temperature environments, a deviation error may occur when starting from a stopped state. In such cases, reduce the speed to 50% or less and run the unit for at least one full cycle before setting it to the desired operating speed.

### Allowable overhang Note

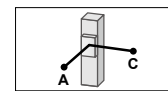


**AGFS14-30**

Horizontal installation (Unit: mm)	A	B	C
5kg	4905	3005	2651
15kg	2257	988	954
30kg	2045	558	627

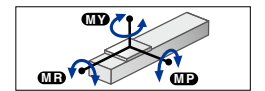


Wall installation (Unit: mm)	A	B	C
5kg	2683	2966	4862
15kg	971	949	2185
30kg	632	519	1930



Vertical installation (Unit: mm)	A	C
1kg	11158	11158
3kg	3983	3983

### Static loading moment



	MY	MP	MR
(Unit: N·m)	441	543	478

## AGFS14H (400W)

### Specifications

AC servo motor output	400 W		
Repeatability Note 1	±0.01 mm		
Deceleration mechanism	Rolled ball screw φ 15 (C7 class)		
Stroke	100 to 1050 (50 mm pitch)		
Maximum speed Note 2	1800 mm/sec	1200 mm/sec	600 mm/sec
Ball screw lead	30 mm	20 mm	10 mm
Maximum payload	Horizontal 50 kg	70 kg	110 kg
	Vertical 10 kg	15 kg	30 kg
Rated Thrust	225 N	339 N	678 N
			1360 N
Maximum dimensions of cross section of main unit	W 140 mm × H 83 mm		
Overall length	Straight	ST + 485.5 mm	
	Bending	ST + 439.5 mm	
Degree of cleanliness Note 3	Equivalent to ISO Class 3 (ISO 14644-1)		
Intake air Note 4	90 Nℓ/min to 100 Nℓ/min		
Position detector	Absolute Encoder Batteryless Absolute Encoder		
Resolution	23 bits		
Using ambient temperature and humidity Note 5	0 to 40 °C, 35 to 80 %RH (no condensation)		

Note 1. Positioning repeatability in one direction.

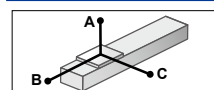
Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed. If the effective stroke exceeds 600 mm, the ball screw may resonate. (Critical speed) At this time, make the adjustment to decrease the speed while referring to the maximum speed shown 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.

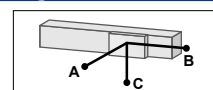
Note 5. When operating in low-temperature environments, a deviation error may occur when starting from a stopped state. In such cases, reduce the speed to 50% or less and run the unit for at least one full cycle before setting it to the desired operating speed.

### Allowable overhang Note

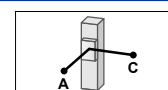


**AGFS14H-30**

Horizontal installation (Unit: mm)	A	B	C
15kg	1923	982	912
30kg	1614	527	562
50kg	1658	349	416



Wall installation (Unit: mm)	A	B	C
15kg	913	943	1866
30kg	562	488	1518
50kg	403	310	1509



Vertical installation (Unit: mm)	A	C
3kg	3663	3663
5kg	2243	2243
10kg	1160	1160

**AGFS14H-20**

Horizontal installation (Unit: mm)	A	B	C
15kg	2756	1258	1347
30kg	1780	614	696
70kg	1100	247	294

Wall installation (Unit: mm)	A	B	C
15kg	1336	1219	2711
30kg	680	575	1712
70kg	268	208	969

Vertical installation (Unit: mm)	A	C
5kg	3206	3206
10kg	1627	1627
15kg	1093	1093

**AGFS14H-10**

Horizontal installation (Unit: mm)	A	B	C
30kg	3732	855	1148
50kg	2742	502	683
110kg	1781	212	293

Wall installation (Unit: mm)	A	B	C
30kg	1112	816	3670
50kg	642	462	2655
110kg	247	173	1615

Vertical installation (Unit: mm)	A	C
10kg	2499	2499
15kg	1664	1664
30kg	823	823

**AGFS14H-5**

Horizontal installation (Unit: mm)	A	B	C
50kg	5089	539	775
100kg	3425	255	368
140kg	2863	174	252

Wall installation (Unit: mm)	A	B	C
50kg	724	500	4991
100kg	314	216	3257
140kg	197	135	2630

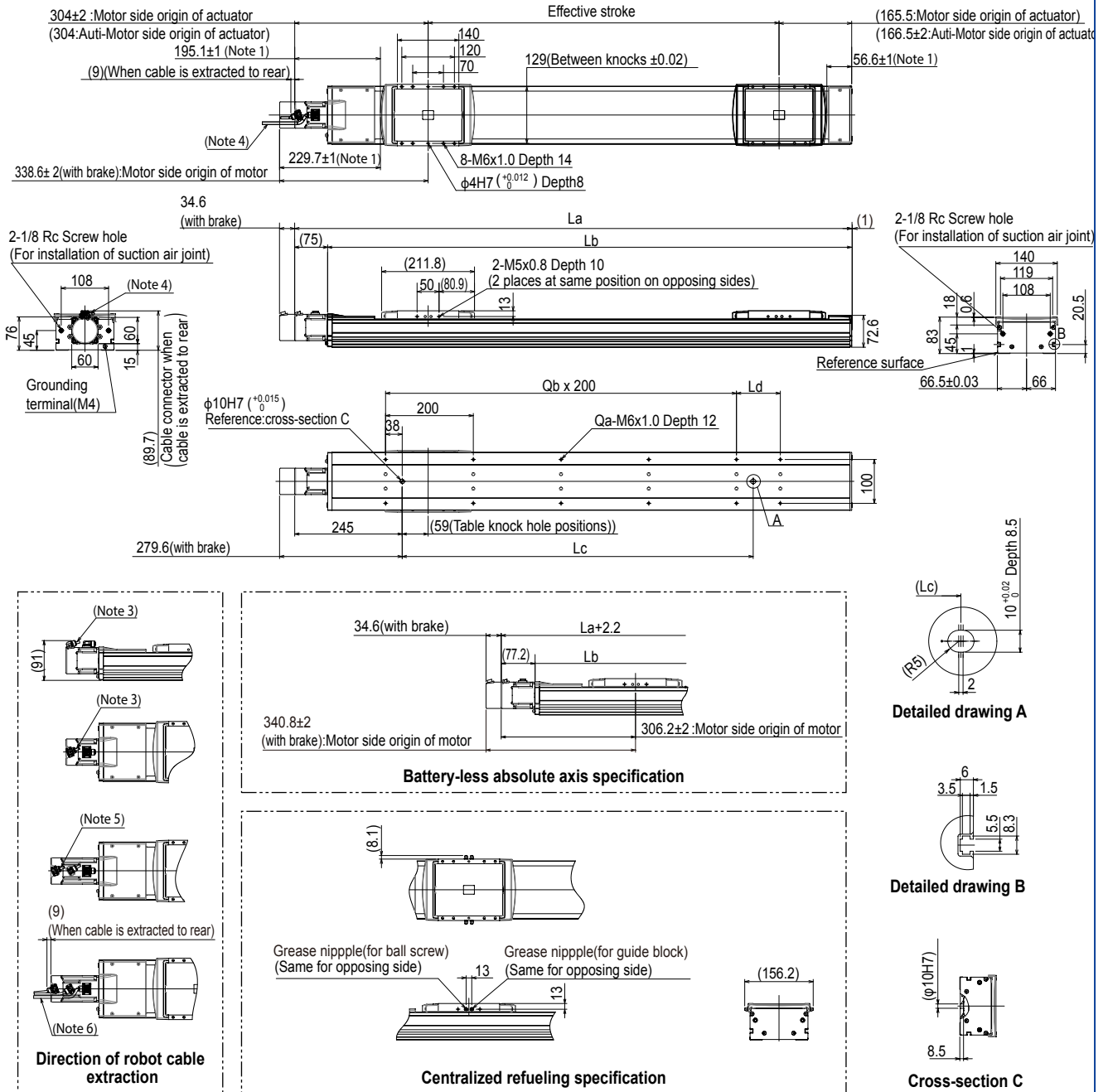
Vertical installation (Unit: mm)	A	C
15kg	1833	1833
30kg	900	900
45kg	589	589

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. Note. When using it suspended from the ceiling, the overhang will be the same as when used horizontally.



► The cycle time simulation and service life calculation can be performed easily from our member site.

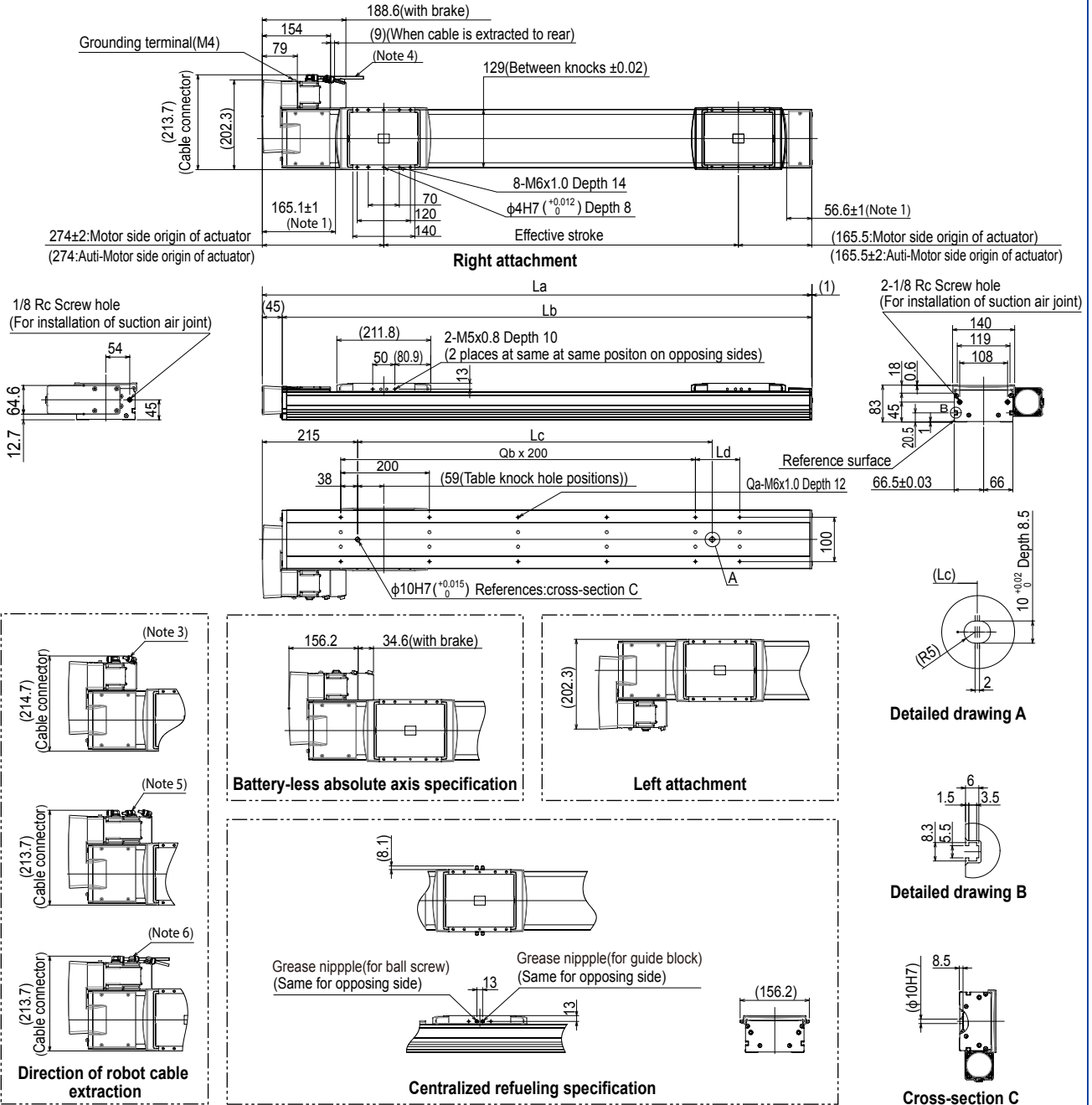
AGFS14 Straight type (S)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
 Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.  
 Note 3. The robot cable is extracted from the front.  
 Note 4. The robot cable is extracted from the rear.  
 Note 5. The robot cable (with brake) is extracted from the front.  
 Note 6. The robot cable (with brake) is extracted from the rear.  
 Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)  
 Note. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.  
 Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

Effective stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050			
La	569.5	619.5	669.5	719.5	769.5	819.5	869.5	919.5	969.5	1019.5	1069.5	1119.5	1169.5	1219.5	1269.5	1319.5	1369.5	1419.5	1469.5	1519.5			
Lb	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5	994.5	1044.5	1094.5	1144.5	1194.5	1244.5	1294.5	1344.5	1394.5	1444.5			
Lc	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050			
Ld	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150			
Qa	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14			
Qb	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5			
Weight (kg) Note 2	8.7	9.3	9.8	10.3	10.9	11.4	11.9	12.4	13.0	13.5	14.0	14.6	15.1	15.6	16.2	16.7	17.2	17.7	18.3	18.8			
Maximum speed (mm/sec)	Lead 30	1800													1710	1530	1170	990	810	720			
	Speed setting	-													95%	85%	65%	55%	50%	45%	40%		
	Lead 20	1200													1140	1020	900	780	660	600	540	480	420
	Speed setting	-													95%	85%	75%	65%	55%	50%	45%	40%	35%
	Lead 10	600													570	480	420	360	330	300	270	240	210
	Speed setting	-													95%	80%	70%	60%	55%	50%	45%	40%	35%
Stroke restriction	Lead 5	300													270	240	210	180	165	150	135	120	105
	Speed setting	-													90%	80%	70%	60%	55%	50%	45%	40%	35%
Stroke restriction	Horizontal - Vertical	No stroke restrictions																					
	Wall hanging	No stroke restrictions																					
	Ceiling-mounted	No stroke restrictions																					

## AGFS14 Bending type (R/L)



Note 1. Stop positions are determined by the mechanical stoppers at both ends.  
 Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.  
 Note 3. The robot cable is extracted from the front.  
 Note 4. The robot cable is extracted from the rear.  
 Note 5. The robot cable (with brake) is extracted from the front.  
 Note 6. The robot cable (with brake) is extracted from the rear.  
 Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)  
 Note. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M6x1.0> used to install the main unit.  
 Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

Effective stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050			
La	539.5	589.5	639.5	689.5	739.5	789.5	839.5	889.5	939.5	989.5	1039.5	1089.5	1139.5	1189.5	1239.5	1289.5	1339.5	1389.5	1439.5	1489.5			
Lb	494.5	544.5	594.5	644.5	694.5	744.5	794.5	844.5	894.5	944.5	994.5	1044.5	1094.5	1144.5	1194.5	1244.5	1294.5	1344.5	1394.5	1444.5			
Lc	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050			
Ld	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150			
Qa	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14			
Qb	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5			
Weight (kg) Note 2	9.9	10.5	11.0	11.5	12.1	12.6	13.1	13.6	14.2	14.7	15.2	15.8	16.3	16.8	17.4	17.9	18.4	18.9	19.5	20.0			
Maximum speed (mm/sec)	Lead 30	1800												1710	1530	1170	990	900	810	720			
	Speed setting	-												95%	85%	65%	55%	50%	45%	40%			
	Lead 20	1200												1140	1020	900	780	660	600	540	480	420	
	Speed setting	-												95%	85%	75%	65%	55%	50%	45%	40%	35%	
	Lead 10	600												570	480	420	360	330	300	270	240	210	
	Speed setting	-												95%	80%	70%	60%	55%	50%	45%	40%	35%	
Stroke restriction	Lead 5	300												270	240	210	180	165	150	135	120	105	
	Speed setting	-												90%	80%	70%	60%	55%	50%	45%	40%	35%	
Horizontal - Vertical	Wall hanging	No stroke restrictions																					
	Ceiling-mounted	No stroke restrictions																					
		No stroke restrictions																					