



Linear Servomotor SGLFW2 (Model with F-type Iron Core)

SERVOPACK Model SGD7S/SGD7W

*World's Highest
Force Density**



Peak Force **40% Higher**

Cogging Force **50% Less**

Motor Size **20%^{MAX} Smaller**

* : In-house comparison

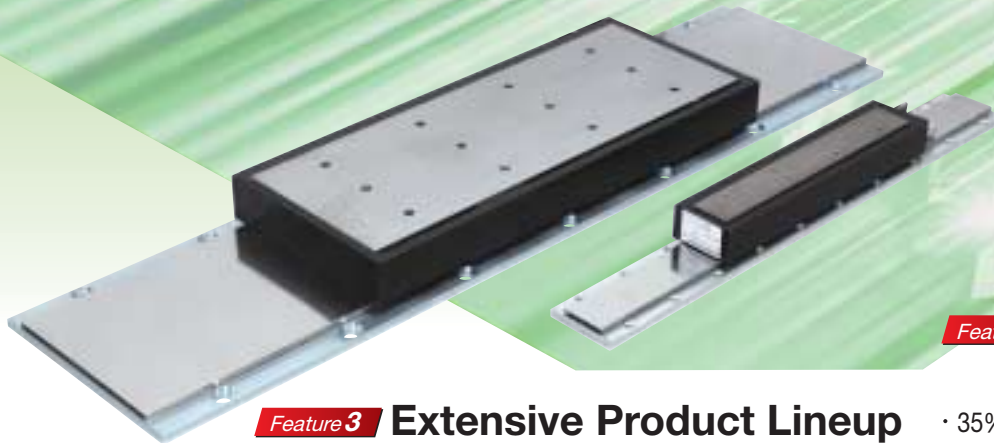
Certified for
ISO9001 and
ISO14001



JQA-0422 JQA-EM0202

Reduce takt times and improve performance!

Yaskawa has committed itself to achieving higher speeds for Linear Servomotors since the release of the first Linear Servomotor in the Linear Σ series in 2000. The SGLFW2 debuts after a long and in-depth study on optimal forms of iron cores, coil space factor (coil density), and other factors that can affect performance. Improve the performance of your manufacturing devices with Yaskawa's newest Linear Servomotor, the SGLFW2.



Feature 1 Compact Size & High Performance

- Motor size: 20% smaller*¹ (max)
- Peak force: 40% higher*¹
- Cogging force: 50% less*¹

Long-awaited compact linear servomotor with significantly improved performance

Feature 2 Energy Savings & Improved Safety

- 35% less energy loss
- Improved safety with the thermal protection function*² that uses a thermostat

The ultimate linear servomotor delivering energy savings and safety assurance

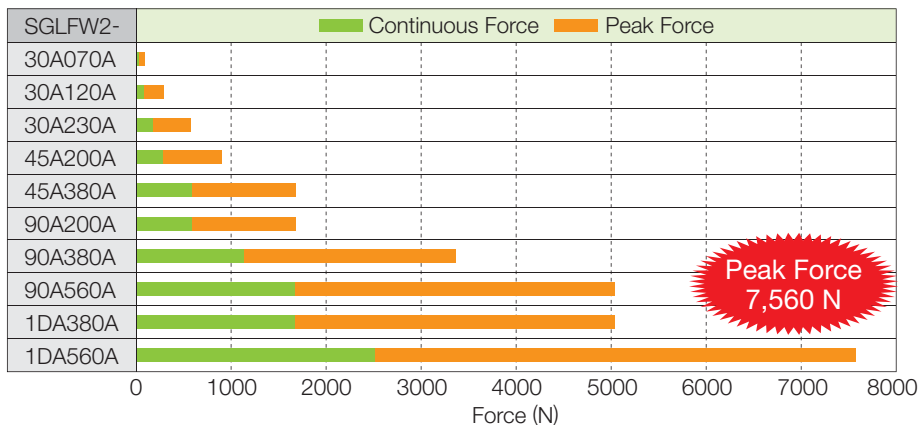
Feature 3 Extensive Product Lineup

- Ten models available (Peak force: 135 N to 7,560 N)
- 10,000 N or more force possible with serial connections*³
- Water-cooled option*³ available

The optimal linear servomotor can be found in our wide range of product models.

- *1: In comparison with Yaskawa's earlier models
- *2: Yaskawa's serial converters
- *3: Contact your Yaskawa representative for details.

Linear Servomotor Product Lineup



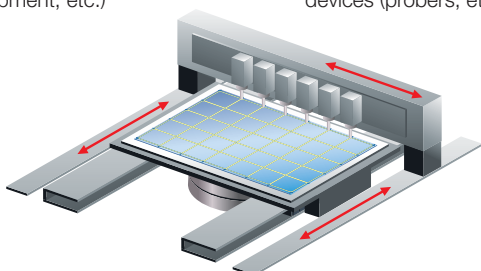
Combination with SERVOPACKs

Servomotor Model	SERVOPACK Model	
SGLFW2-	SGD7S-□□□□	SGD7W-□□□□
30A070A	1R6A	
30A120A	1R6A	
30A230A	2R8A, 3R8A	2R8A
45A200A	5R5A	
45A380A	180A, 120A	—
90A200A	120A	—
90A380A	200A	—
90A560A	330A	—
1DA380A	200A	—
1DA560A	330A	—

Application example: Ideal for applications that require high-speed, high-precision positioning.

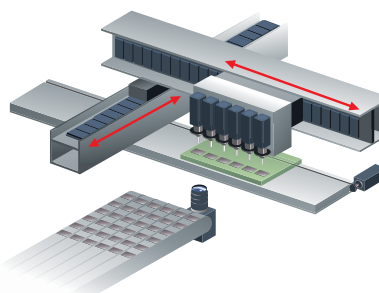
• Multiple heads

Devices used in LCD and OLED manufacturing (dispensers, inspection equipment, repair equipment, etc.)



• Linear stages (X, Y, θ)

Devices used in LCD and OLED manufacturing (for G5.5 or larger glass substrates and for long strokes) and semiconductor manufacturing devices (probers, etc.)



• Gantries

Devices for electronic parts manufacturing (high-speed chip mounters, etc.)

Specifications

Linear Servomotor Model SGLFW2-		30A				45A		
		070A□	120A□	230A□		200A□	380A□	
Rated Speed*1,*2	m/s	4.0	4.0	4.0		4.0	4.0	
Peak Speed*1	m/s	5.0	5.0	5.0		4.5	4.5	
Rated Force*1,*3	N	45	90	180	170	280	560	
Peak Force*1	N	135	270	540	500	840	1680	1500
Rated Current*1	Arms	1.4	1.5	2.9	2.8	4.4	8.7	
Peak Current*1	Arms	5.3	5.2	10.5	9.3	16.4	32.7	27.5
Moving Coil Mass	kg	0.50	0.90	1.7		2.9	5.5	
Force Constant	N/Arms	33.3	64.5	64.5		67.5	67.5	
BEMF Constant	Vrms/ (m/s) /Phase	11.1	21.5	21.5		22.5	22.5	
Motor Constant	N/√W	11.3	17.3	24.4		36.9	52.2	
Electrical Time Constant	ms	7.6	7.3	7.3		19	19	
Mechanical Time Constant	ms	3.9	3.0	2.9		2.1	2.0	
Magnetic Attraction	N	200	630	1260		2120	4240	
Heat Sink Size	mm	150×100×10	254×254×25	254×254×25		400×500×10	400×500×10	
Magnetic Way: Model SGLFM2-		30□□□A	30□□□A	30□□□A		45□□□A	45□□□A	
Serial Converter Unit: Model JZDP-□□□□-		628	629	630		631	632	
Applicable SERVOPACKs	SGD7S-	1R6A	1R6A	3R8A	2R8A	5R5A	180A	120A
	SGD7W-	1R6A	1R6A	-	2R8A	5R5A	-	-

Linear Servomotor Model SGLFW2-		90A			1DA	
		200A□	380A□	560A□	380A□	560A□
Rated Speed*1,*2	m/s	4.0	4.0	4.0	2.0	2.0
Peak Speed*1	m/s	4.0	4.0	4.0	2.5	2.5
Rated Force*1,*3	N	560	1120	1680	1680	2520
Peak Force*1	N	1680	3360	5040	5040	7560
Rated Current*1	Arms	7.2	14.4	21.6	14.4	21.6
Peak Current*1	Arms	26.9	53.9	80.8	53.9	80.8
Moving Coil Mass	kg	5.3	10.1	14.9	14.6	21.5
Force Constant	N/Arms	82.0	82.0	82.0	123	123
BEMF Constant	Vrms/ (m/s) /Phase	27.3	27.3	27.3	41.0	41.0
Motor Constant	N/√W	58.1	82.2	101	105	129
Electrical Time Constant	ms	24	23	24	25	25
Mechanical Time Constant	ms	1.6	1.5	1.5	1.3	1.3
Magnetic Attraction	N	4240	8480	12700	12700	19100
Heat Sink Size	mm	400×500×10	609×762×10	900×762×10	900×762×10	1200×762×10
Magnetic Way: Model SGLFM2-		90□□□A	90□□□A	90□□□A	1D□□□A	1D□□□A
Serial Converter Unit: Model JZDP-□□□□-		633	634	648	649	650
Applicable SERVOPACKs	SGD7S-	120A	200A	330A	200A	330A
	SGD7W-	-	-	-	-	-

Specifications for all models

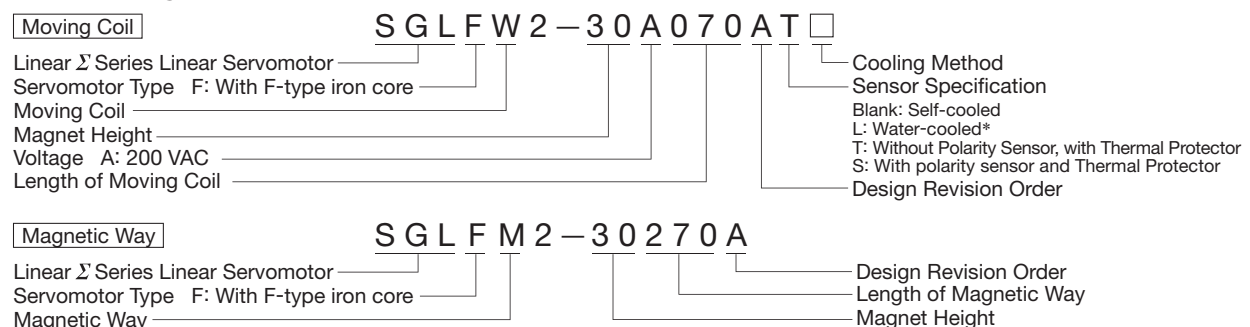
- Time Rating: Continuous
- Withstand Voltage: 1500 VAC/min
- Insulation Resistance: 500 VDC, 10 MΩ min.
- Enclosure: Self-cooled or water-cooled
- Ambient Operating Temperature: 0°C to 40°C
- Ambient Operating Humidity: 20% to 80% relative humidity (with no condensation)
- Excitation: Permanent magnet
- Thermal Class: B

*1. These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 100°C. The values for other items are at 20°C. These are typical values.

*2. Reference Speed during Speed Control

*3. The rated forces are the continuous allowable force values at a surrounding air temperature of 40°C with an aluminum heat sink of the dimensions given in the table.

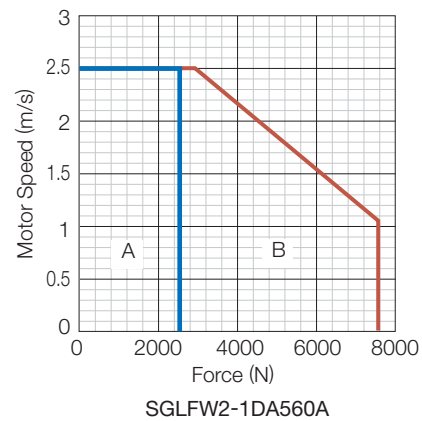
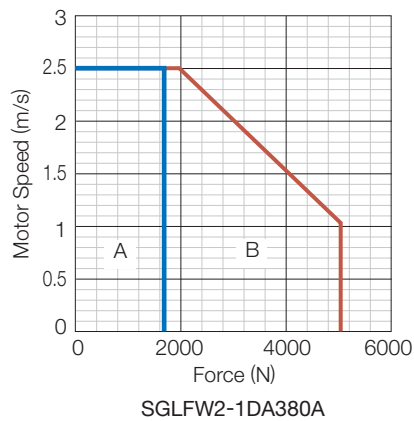
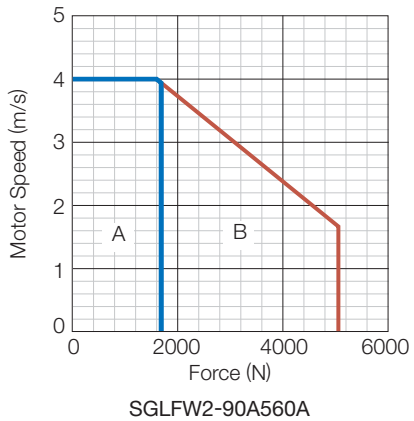
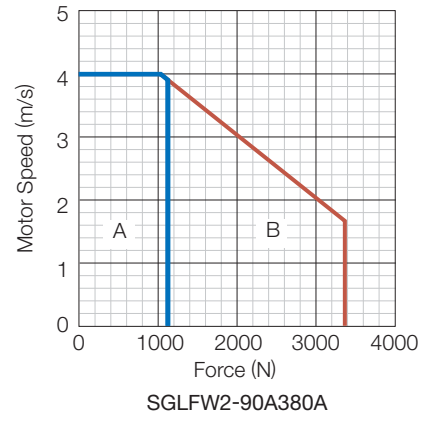
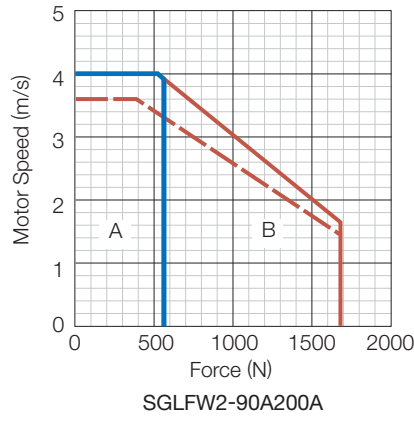
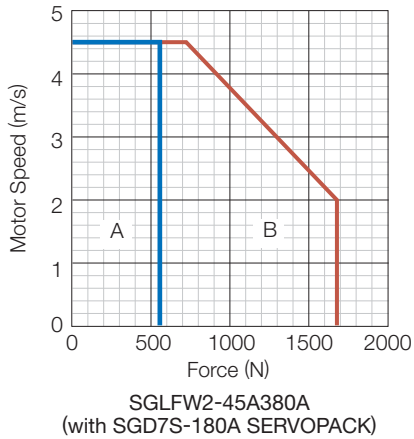
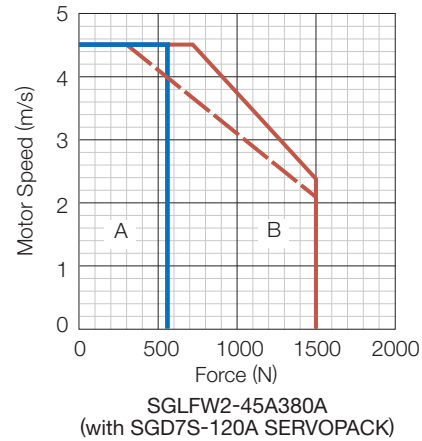
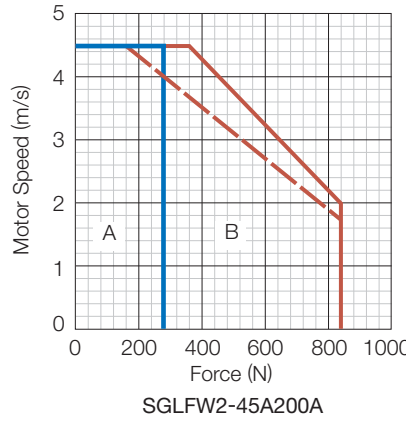
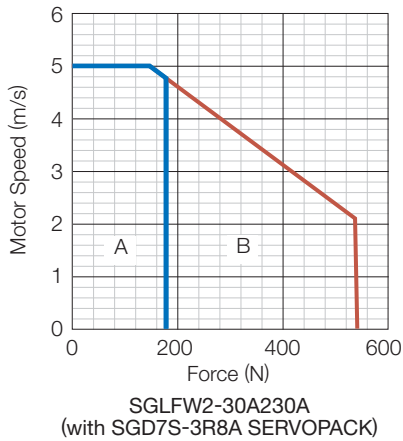
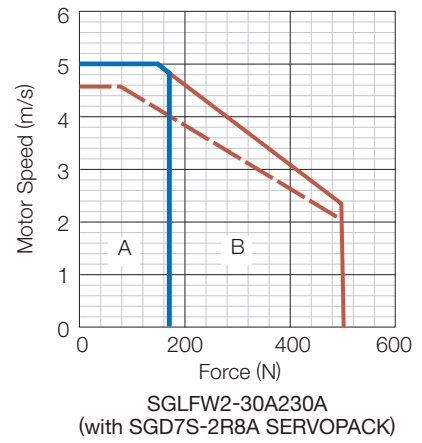
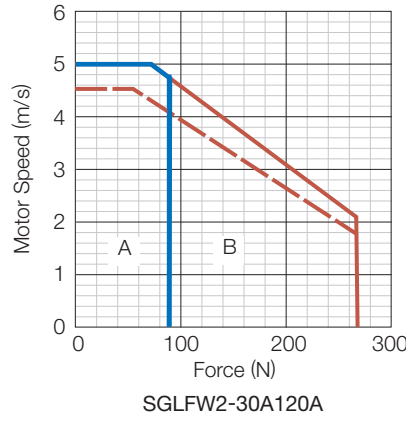
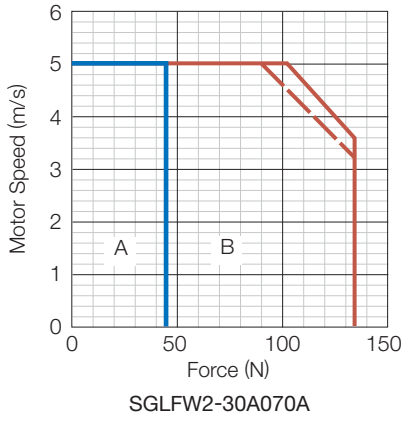
Model Designations



* : Contact your Yaskawa representative.

Force and Speed Characteristics

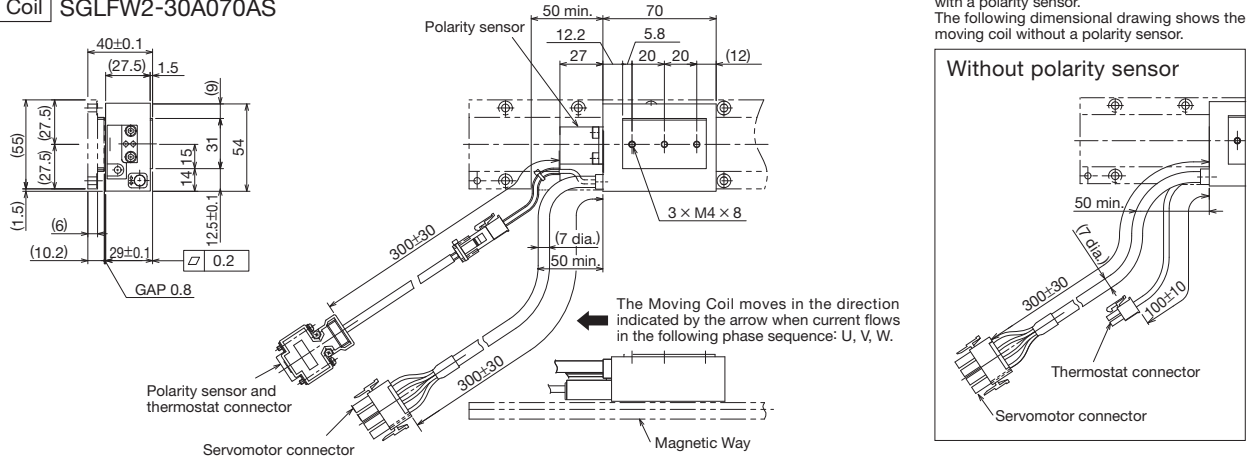
— A : Continuous Duty Zone Solid Lines: With three-phase 200-V input
 - - - B : Intermittent Duty Zone Dotted Lines: With single-phase 200-V input



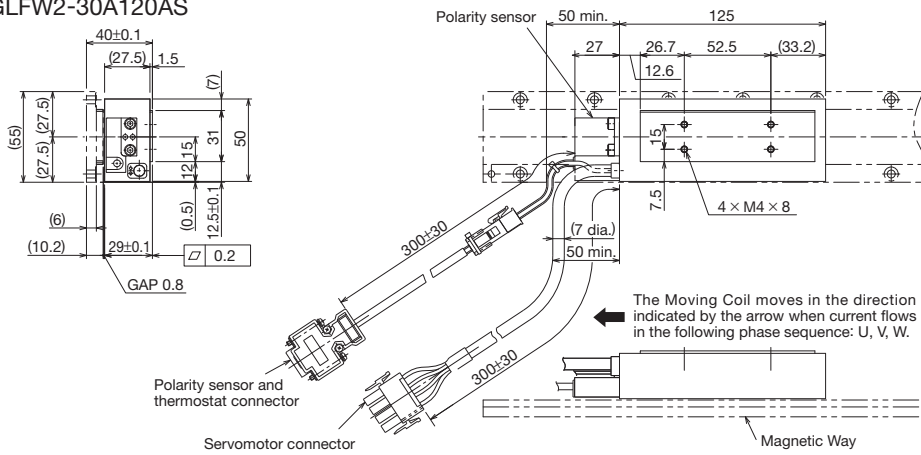
- Notes: 1. These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 100°C. These are typical values.
 2. The characteristics in the intermittent duty zone depend on the power supply voltage.
 3. If the effective force is within the allowable range for the rated force, the Servomotor can be used within the intermittent duty zone.
 4. If you use a Servomotor Main Circuit Cable that exceeds 20 m, the intermittent duty zone in the torque-motor speed characteristics will become smaller because the voltage drop increases.

External Dimensions for SGLFW2-30 (Unit: mm)

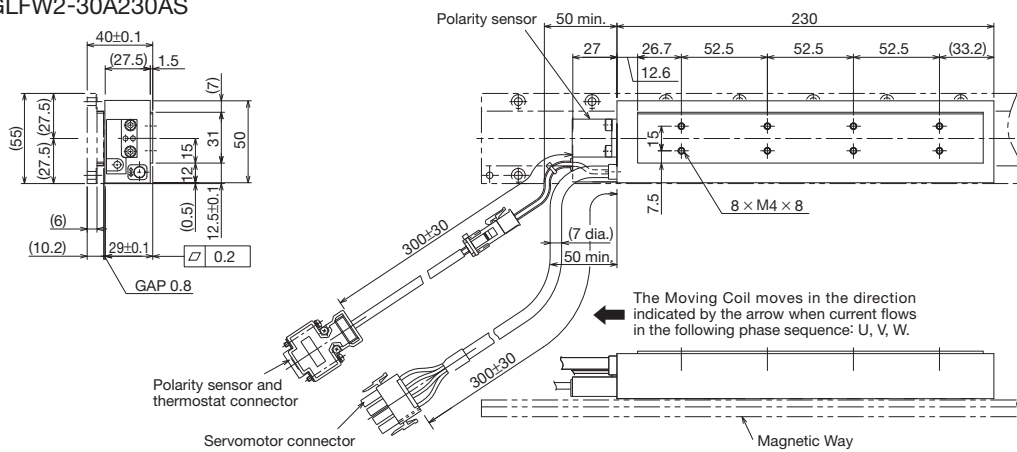
Moving Coil SGLFW2-30A070AS



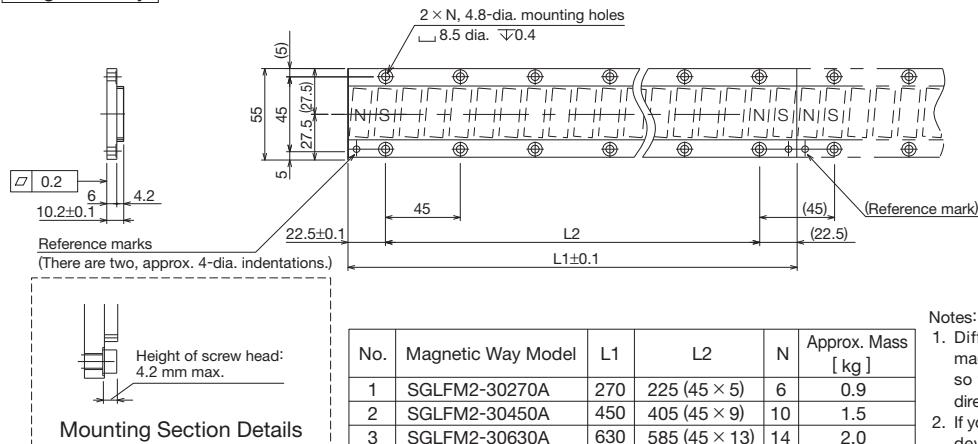
Moving Coil SGLFW2-30A120AS



Moving Coil SGLFW2-30A230AS



Magnetic Way SGLFM2-30□□□A

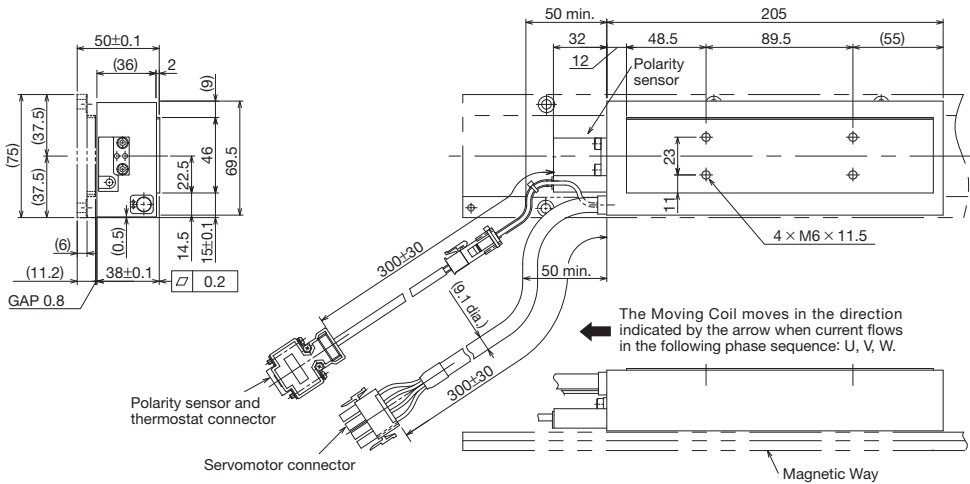


Notes:

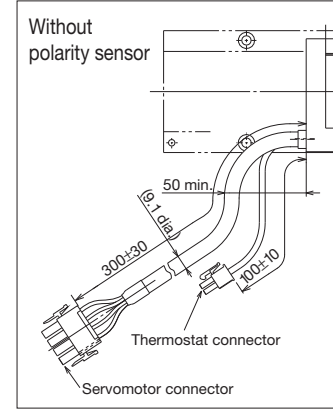
- Different lengths (No. 1, 2, and 3) of SGLFM2 magnetic ways can be connected. Connect them so that the reference marks line up in the same direction as shown in the figure.
- If you have a pacemaker or other electronic medical device, do not go near the magnetic way of the linear servomotor.

External Dimensions for SGLFW2-45 (Unit: mm)

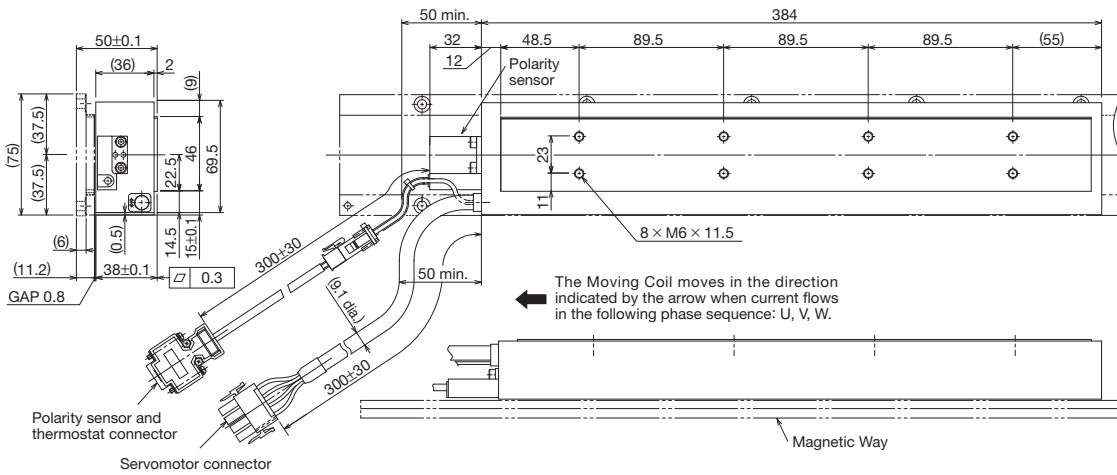
Moving Coil SGLFW2-45A200AS



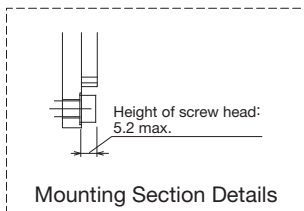
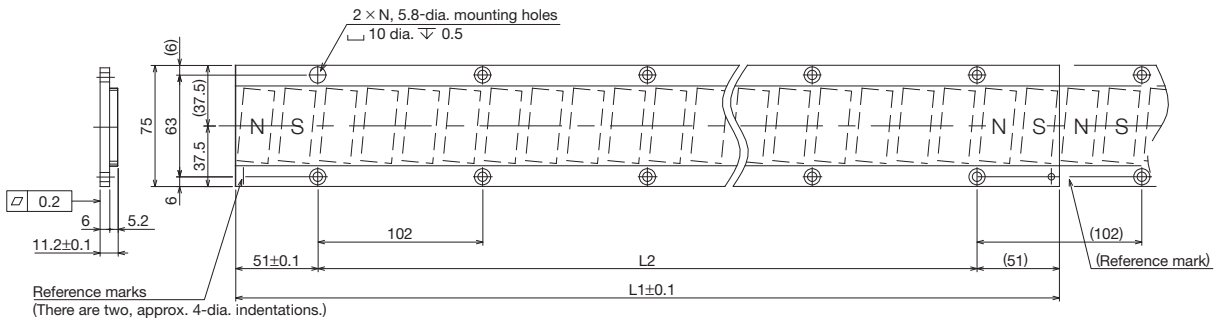
The drawing on the left shows a moving coil with a polarity sensor. The following dimensional drawing shows the moving coil without a polarity sensor.



Moving Coil SGLFW2-45A380AS



Magnetic Way SGLFM2-45□□□A



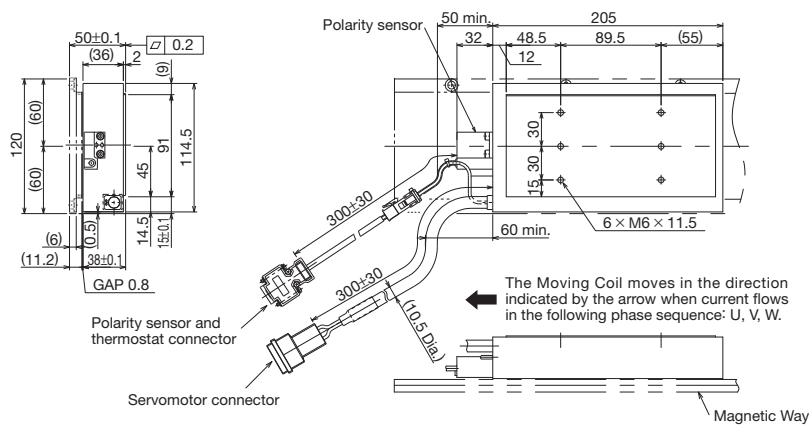
No.	Magnetic Way Model	L1	L2	N	Approx. Mass [kg]
1	SGLFM2-45306A	306	204 (102 × 2)	3	1.5
2	SGLFM2-45510A	510	408 (102 × 4)	5	2.5
3	SGLFM2-45714A	714	612 (102 × 6)	7	3.4

Notes:

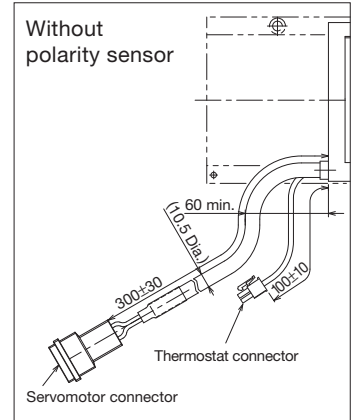
1. Different lengths (No. 1, 2, and 3) of SGLFM2 magnetic ways can be connected. Connect them so that the reference marks line up in the same direction as shown in the figure.
2. If you have a pacemaker or other electronic medical device, do not go near the magnetic way of the linear servomotor.

External Dimensions for SGLFW2-90 (Unit: mm)

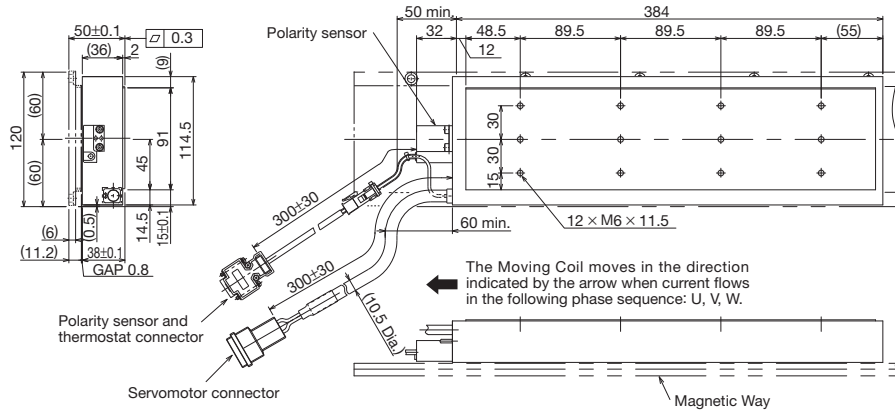
Moving Coil SGLFW2-90A200AS



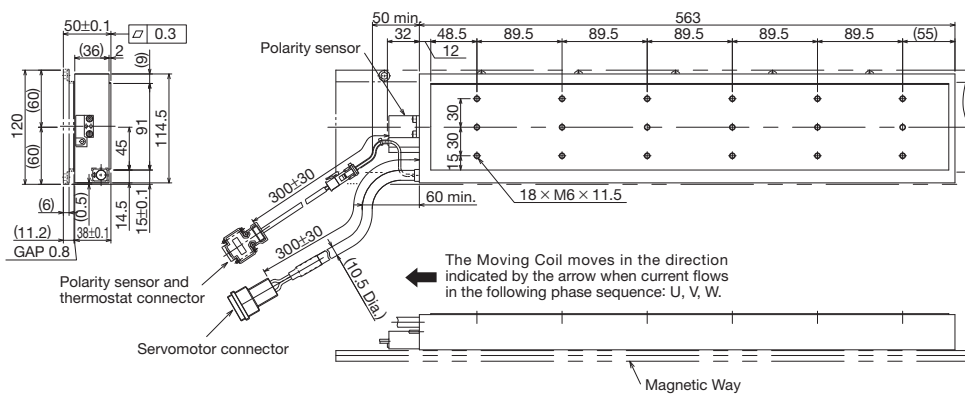
The drawing on the left shows a moving coil with a polarity sensor. The following dimensional drawing shows the moving coil without a polarity sensor.



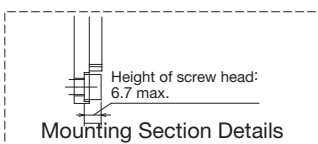
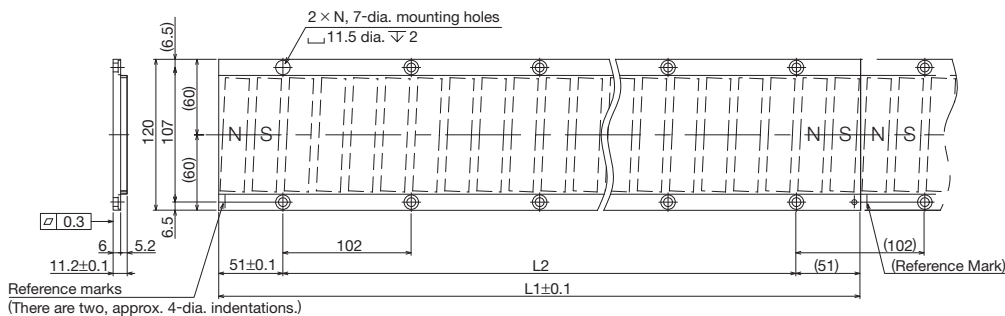
Moving Coil SGLFW2-90A380AS



Moving Coil SGLFW2-90A560AS



Magnetic Way SGLFM2-90□□□A



No.	Magnetic Way Model	L1	L2	N	Approx. Mass [kg]
1	SGLFM2-90306A	306	204 (102 × 2)	3	2.6
2	SGLFM2-90510A	510	408 (102 × 4)	5	4.2
3	SGLFM2-90714A	714	612 (102 × 6)	7	5.9

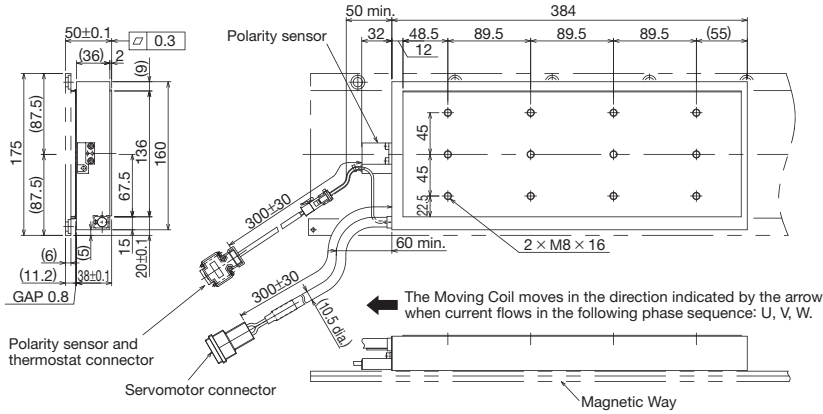
Notes:

1. Different lengths (No. 1, 2, and 3) of SGLFM2 magnetic ways can be connected. Connect them so that the reference marks line up in the same direction as shown in the figure.
2. If you have a pacemaker or other electronic medical device, do not go near the magnetic way of the linear servomotor.

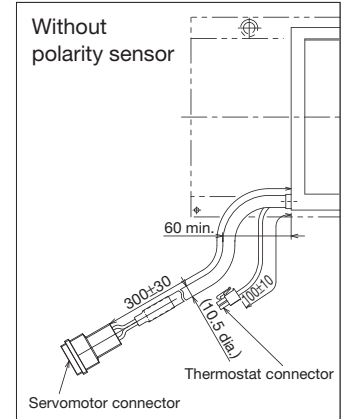
Linear Servomotor SGLFW2 (Model with F-type Iron Core)

External Dimensions for SGLFW2-1D (Unit: mm)

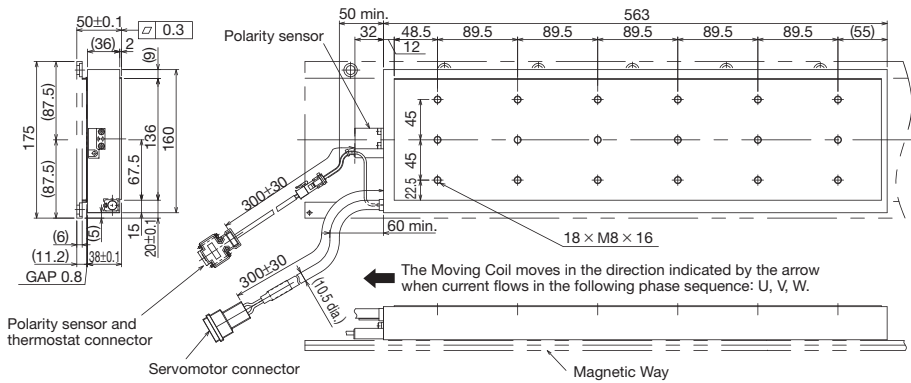
Moving Coil SGLFW2-1DA380AS



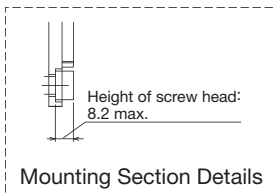
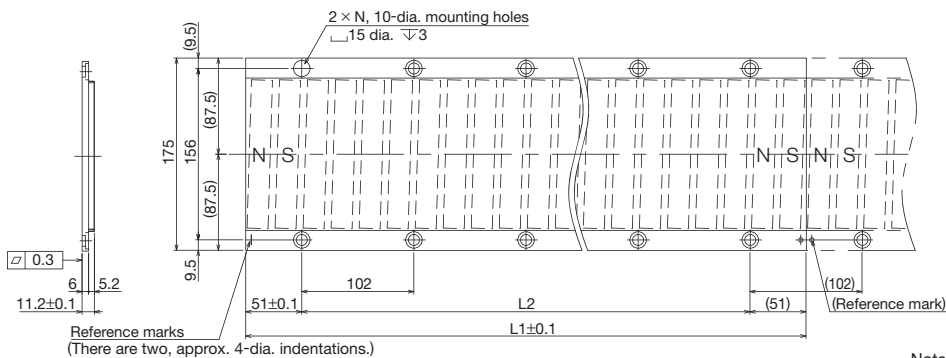
The drawing on the left shows a moving coil with a polarity sensor. The following dimensional drawing shows the moving coil without a polarity sensor.



Moving Coil SGLFW2-1DA560AS



Magnetic Way SGLFM2-1D□□□A



No.	Magnetic Way Model	L1	L2	N	Approx. Mass [kg]
1	SGLFM2-1D306A	306	204 (102 × 2)	3	3.7
2	SGLFM2-1D510A	510	408 (102 × 4)	5	6.2
3	SGLFM2-1D714A	714	612 (102 × 6)	7	8.6

Notes:

- Different lengths (No. 1, No. 2, and No. 3) of SGLFM2 magnetic ways can be connected. Connect them so that the reference marks line up in the same direction as shown in the figure.
- If you have a pacemaker or other electronic medical device, do not go near the magnetic way of the linear servomotor.



YASKAWA ELECTRIC CORPORATION

<http://www.yaskawa.co.jp/en/>

In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

Specifications are subject to change without notice for ongoing product modifications and improvements.

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