

## Ratings and Specifications

### Specifications

Linear Servomotor Moving Coil Model SGLTW-	Standard Models							High-efficiency Models			
	20A			35A			40A	35A		50A	
	170A	320A	460A	170A	320A	460A	400B	170H	320H	170H	320H
Time Rating	Continuous										
Thermal Class	B										
Insulation Resistance	500 VDC, 10 MΩ min.										
Withstand Voltage	1,500 VAC for 1 minute										
Excitation	Permanent magnet										
Cooling Method	Self-cooled										
Protective Structure	IP00										
Envi- ron- men- tal Condi- tions	Surrounding Air Tempera- ture	0°C to 40°C (with no freezing)									
	Surrounding Air Humidity	20% to 80% relative humidity (with no condensation)									
	Installation Site	<ul style="list-style-type: none"> <li>Must be indoors and free of corrosive and explosive gases.</li> <li>Must be well-ventilated and free of dust and moisture.</li> <li>Must facilitate inspection and cleaning.</li> <li>Must have an altitude of 1,000 m or less.</li> <li>Must be free of strong magnetic fields.</li> </ul>									
Shock Resis- tance	Impact Accelera- tion Rate	196 m/s <sup>2</sup>									
	Number of Impacts	2 times									
Vibra- tion Resis- tance	Vibration Accelera- tion Rate	49 m/s <sup>2</sup> (the vibration resistance in three directions, vertical, side-to-side, and front-to-back)									

## Linear Servomotors

SGLT (Models with T-type Iron Cores)

## Ratings

Linear Servomotor Moving Coil Model SGLTW-		Standard Models						High-efficiency Models				
		20A			35A			40A	35A		50A	
		170A	320A	460A	170A	320A	460A	400B	170H	320H	170H	320H
Rated Motor Speed (Reference Speed during Speed Control)* <sup>1</sup>		3.0	3.0	3.0	2.5	2.5	2.5	1.5	2.5	2.0	2.0	2.0
Maximum Speed* <sup>1</sup>	m/s	5.0	5.0	5.0	5.0	5.0	5.0	3.1	4.8	4.8	3.2	3.1
Rated Force* <sup>1, *2</sup>	N	130	250	380	220	440	670	670	300	600	450	900
Maximum Force* <sup>1</sup>	N	380	760	1140	660	1320	2000	2600	600	1200	900	1800
Rated Current* <sup>1</sup>	Arms	2.3	4.4	6.7	3.5	7.0	10.7	7.3	5.1	10.1	5.1	10.2
Maximum Current* <sup>1</sup>	Arms	7.7	15.4	23.2	12.1	24.2	36.7	39.4	11.9	23.9	11.8	23.6
Moving Coil Mass	kg	2.5	4.6	6.7	3.7	6.8	10	15	4.9	8.8	6.0	11
Force Constant	N/Arms	61.0	61.0	61.0	67.5	67.5	67.5	99.1	64.0	64.0	95.2	95.2
BEMF Constant	Vrms/ (m/s)/ phase	20.3	20.3	20.3	22.5	22.5	22.5	33.0	21.3	21.3	31.7	31.7
Motor Constant	N/ $\sqrt{W}$	18.7	26.5	32.3	26.7	37.5	46.4	61.4	37.4	52.9	48.6	68.7
Electrical Time Constant	ms	5.9	5.9	5.9	6.9	6.8	6.9	15	15	16	16	17
Mechanical Time Constant	ms	7.1	6.6	6.4	5.2	4.8	4.6	4.0	3.5	3.1	2.5	2.4
Thermal Resistance (with Heat Sink)	K/W	1.01	0.49	0.38	0.76	0.44	0.32	0.24	0.76	0.40	0.61	0.30
Thermal Resistance (without Heat Sink)	K/W	1.82	1.11	0.74	1.26	0.95	0.61	0.57	1.26	0.83	0.97	0.80
Magnetic Attraction* <sup>3</sup>	N	0	0	0	0	0	0	0	0	0	0	0
Magnetic Attraction on One Side* <sup>4</sup>	N	800	1590	2380	1400	2780	4170	3950	1400	2780	2000	3980
Combined Magnetic Way, SGLTM-		20□□□A□			35□□□A□			40□□ □A□	35□□□H□		50□□□H□	
Combined Serial Converter Unit, JZDP-□□□□-		011	012	013	014	015	016	185	105	106	108	109
Applicable SERVOPACKs	SGD7S-	3R8A	7R6A	120A	5R5A	120A	180A	180A	5R5A	120A	5R5A	120A
	SGD7W-	5R5A	7R6A	-	5R5A	-	-	-	5R5A	-	5R5A	-

\*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. The rated forces are the continuous allowable force values at 40°C with an aluminum heat sink of the dimensions given below.

- Heat Sink Dimensions

- 254 mm × 254 mm × 25 mm: SGLTW-20A170A and -35A170A

- 400 mm × 500 mm × 40 mm: SGLTW-20A320A, -20A460A, -35A170H, -35A320A, -35A320H, -35A460A, and -50A170H

- 609 mm × 762 mm × 50 mm: SGLTW-40A400B and -50A320H

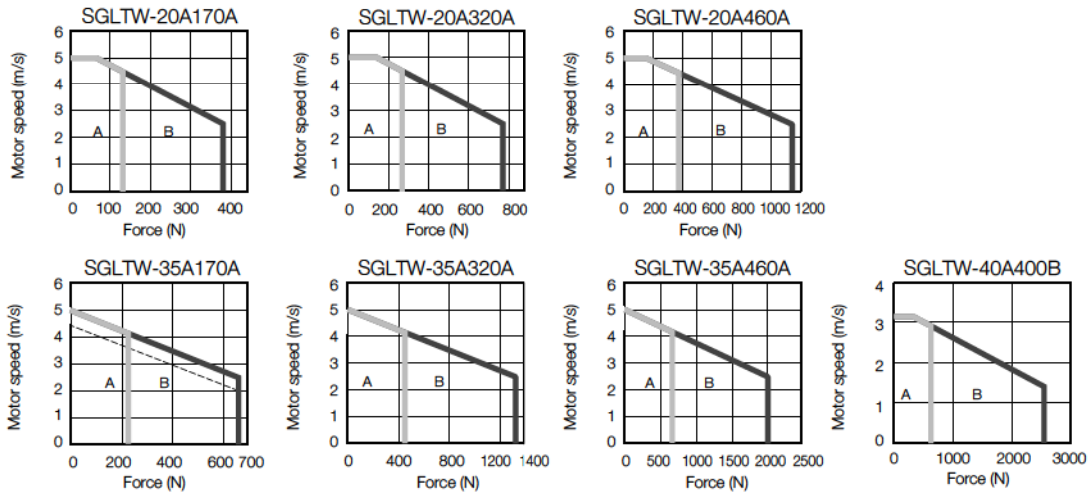
\*3. The unbalanced magnetic gap that results from the Moving Coil installation condition causes a magnetic attraction on the Moving Coil.

\*4. The value that is given is the magnetic attraction that is generated on one side of the Magnetic Way.

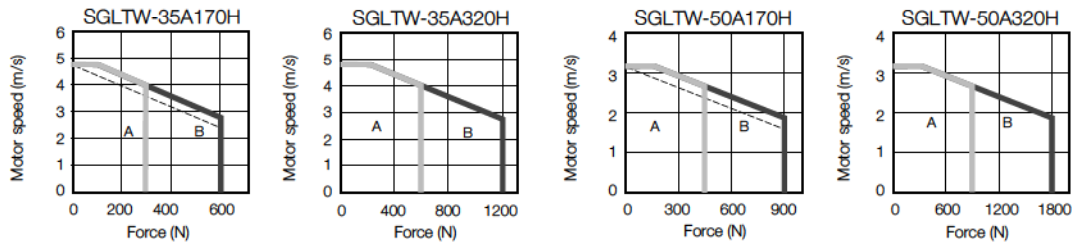
## Force-Motor Speed Characteristics

**A** : Continuous duty zone ——— (solid lines): With three-phase 200-V input  
**B** : Intermittent duty zone - - - - - (dotted lines): With single-phase 200-V input

### Standard Models



### High-efficiency Models

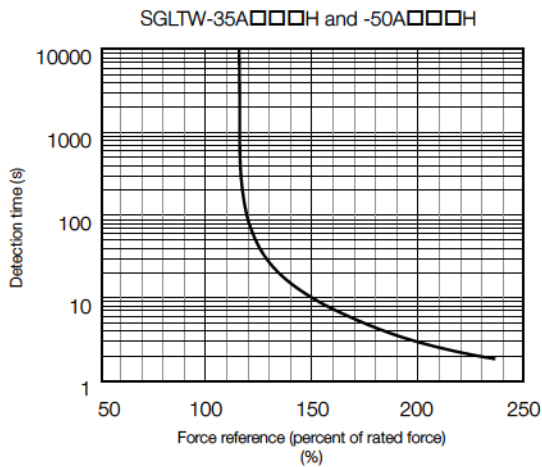
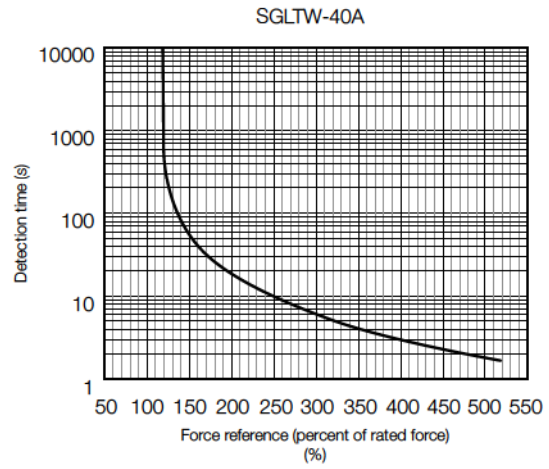
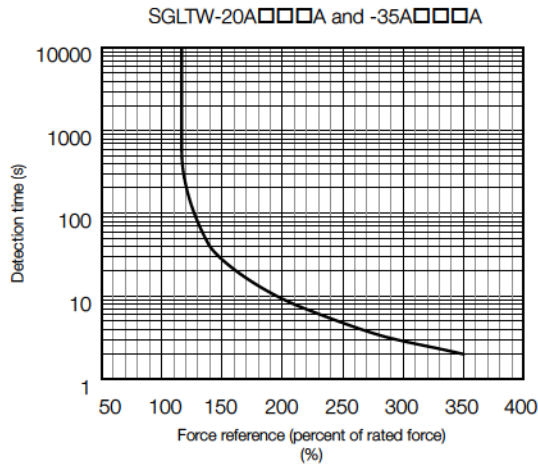


Note: 1. These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 100°C. These are typical values.

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 the length of the Servomotor Main Circuit Cable exceeds 20 m, the intermittent duty zone in the force-motor speed characteristics will become smaller as the voltage drop increases.

## Servomotor Overload Protection Characteristics

The overload detection level is set for hot start conditions with a Servomotor ambient temperature of 40°C.



Note: The above overload protection characteristics do mean that you can perform continuous duty operation with an output of 100% or higher. Use the Servomotor so that the effective force remains within the continuous duty zone given in *Force-Motor Speed Characteristics* on page 159.