

Low Profile Single Axis Electric Actuator

Series LG1H

High Rigidity Direct Acting Guide

Series	Motor type	Guide type	Mounting orientation	Motor/Screw connection	Model	Lead screw lead mm			Page		
						Ground ball screw	Rolled ball screw	Slide screw			
LG1H	Standard motor	High rigidity direct acting guide	Horizontal	Without coupling	LG1□H20	10	20	10	20	20	148
				With coupling	LG1□H21	10	20	10	20	20	158
	Non-standard motor			With coupling	LG1□H21	10	20	10	20	20	168

■ Options	Page 178
■ Construction	179
■ Mounting	181
■ Non-standard Motor Mounting	182
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LG1

LG1

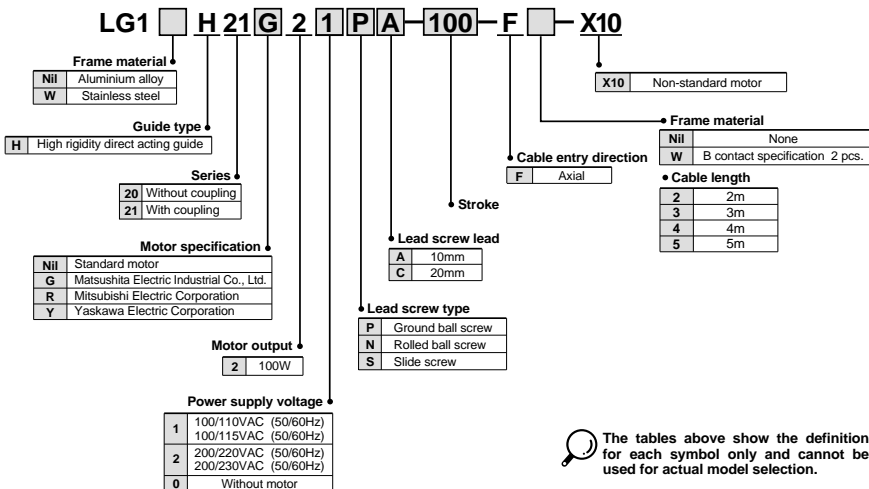
LC1

LX

LC6D/LC6C

Switches

Part Number Designations



The tables above show the definition for each symbol only and cannot be used for actual model selection.

How to Order

LG1 **H21** **G** **2** **1** **PA** — **Stroke** — **F** **W** — **X10**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• **Power supply voltage**

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• **Switch**

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

Standard stroke		mm	100	200	300	400
Performance	Body weight	Aluminum (without motor)	5.2	6.0	6.8	7.6
		Stainless steel (without motor)	8.4	9.7	10.9	12.2
	Operating temperature range	°C	5 to 40 (with no condensation)			
	Work load	kg	30			
	Maximum speed	mm/s	500			
	Positioning repeatability	mm	±0.02			
Main parts	Motor	AC servomotor (100W)				
	Encoder	Incremental system				
	Lead screw	Ground ball screw ø15mm, 10mm lead				
	Guide	High rigidity direct acting guide				
	Motor/Screw connection	With coupling				
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)				
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less				

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

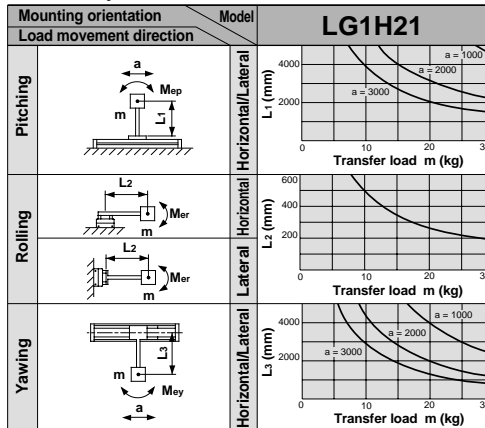
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

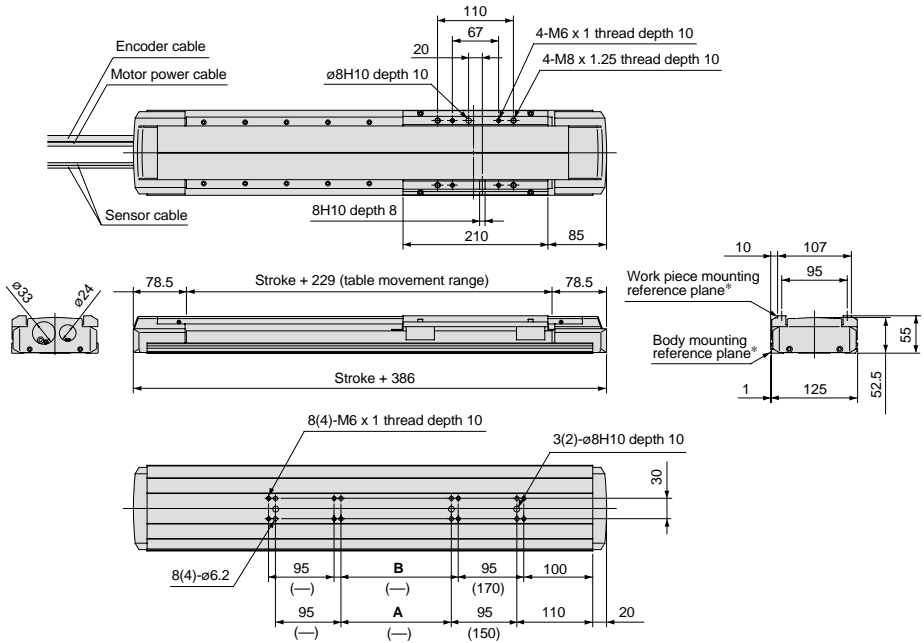
Allowable dynamic moment



Refer to page 183 for deflection data.

Non-standard Motor/Horizontal Mount Specification **Series LG1□H21**

Dimensions/LG1□H21□2□PA (X10)



Model	Stroke	A	B
LG1□H21□2□PA-100-F□-X10	100	—	—
LG1□H21□2□PA-200-F□-X10	200	60	80
LG1□H21□2□PA-300-F□-X10	300	160	180
LG1□H21□2□PA-400-F□-X10	400	260	280

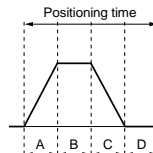
* Dimensions inside () are for a 100 mm stroke.

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment.
Refer to pages starting with 181 for mounting.

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	200	400
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)*
Maximum acceleration: 3000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

How to Order

LG1 **H21** **G** **2** **1** **PC** — **Stroke** — **F** **W** — **X10**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• **Power supply voltage**

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• **Switch**

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

Standard stroke		mm	500	600	700	800	900	1000	
Performance	Body weight	Aluminum (without motor)	kg	8.4	9.2	10.0	10.8	11.6	12.4
		Stainless steel (without motor)	kg	13.4	14.7	15.9	17.2	18.4	19.7
	Operating temperature range	°C	5 to 40 (with no condensation)						
	Work load	kg	30						
	Maximum speed <small>Note</small>	mm/s	1000	1000	930	740	600	500	
	Positioning repeatability	mm	±0.02						
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Ground ball screw ∅15mm, 20mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)							
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less							

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

Note) When the work load exceeds 15kg, the speed may be limited. Contact SMC in this case.

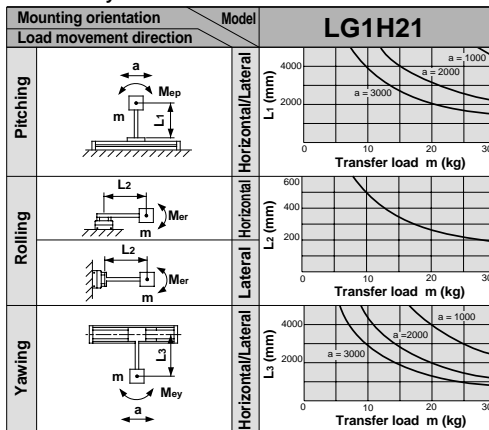
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

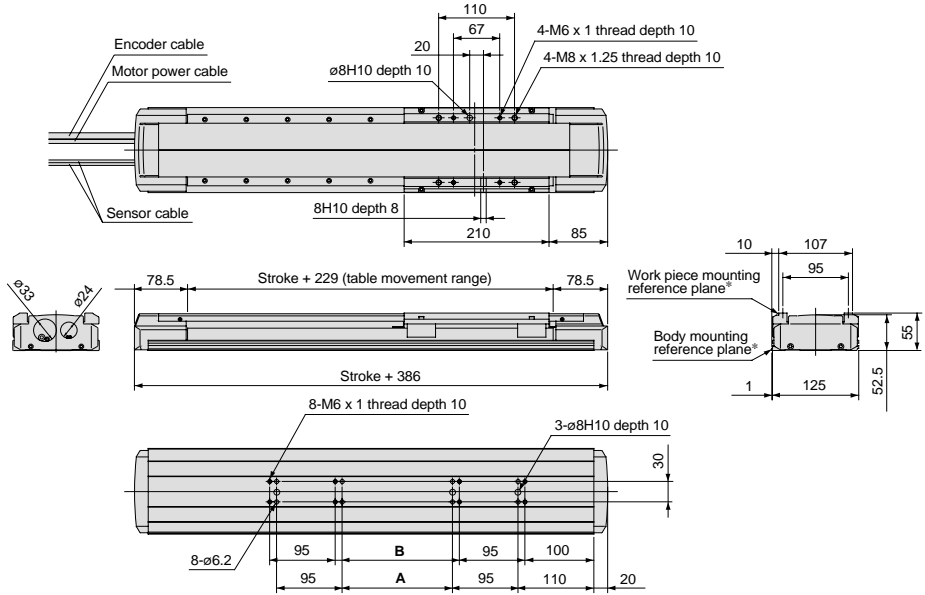
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H21□2□PC (X10)



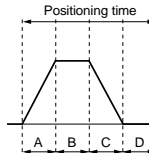
Model	Stroke	A	B
LG1□H21□2□PC-500-F□-X10	500	360	380
LG1□H21□2□PC-600-F□-X10	600	460	480
LG1□H21□2□PC-700-F□-X10	700	560	580
LG1□H21□2□PC-800-F□-X10	800	660	680
LG1□H21□2□PC-900-F□-X10	900	760	780
LG1□H21□2□PC-1000-F□-X10	1000	860	880

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment.
Refer to pages starting with 181 for mounting.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	500	1000	
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)*
Maximum acceleration: 2000mm/s²
* The value is a guide when SMC's series LC1 controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.
* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

Non-standard Motor

Series LG1 H21

Horizontal Mount

With Coupling

Motor Output

100W

High Rigidity

Direct Acting Guide

Rolled Ball Screw

∅15mm/10mm lead

How to Order

LG1 H21 G 2 1 NA Stroke F W X10

• Frame material

Nil	Aluminum alloy
T	Stainless steel

• Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

Standard stroke		mm	100	200	300	400
Performance	Body weight	Aluminum (without motor)	5.2	6.0	6.8	7.6
		Stainless steel (without motor)	8.4	9.7	10.9	12.2
	Operating temperature range	°C	5 to 40 (with no condensation)			
	Work load	kg	30			
	Maximum speed	mm/s	500			
	Positioning repeatability	mm	±0.05			
Main parts	Motor	AC servomotor (100W)				
	Encoder	Incremental system				
	Lead screw	Rolled ball screw ∅15mm, 10mm lead				
	Guide	High rigidity direct acting guide				
	Motor/Screw connection	With coupling				
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)				
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less				

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

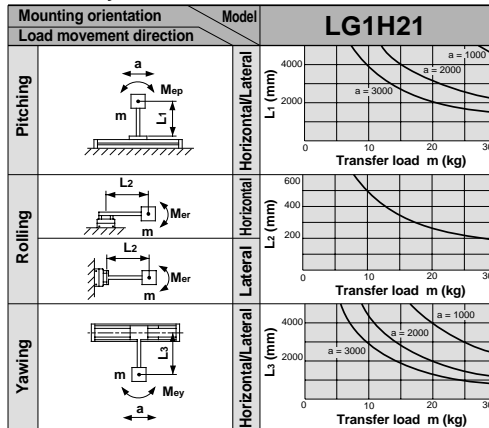
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

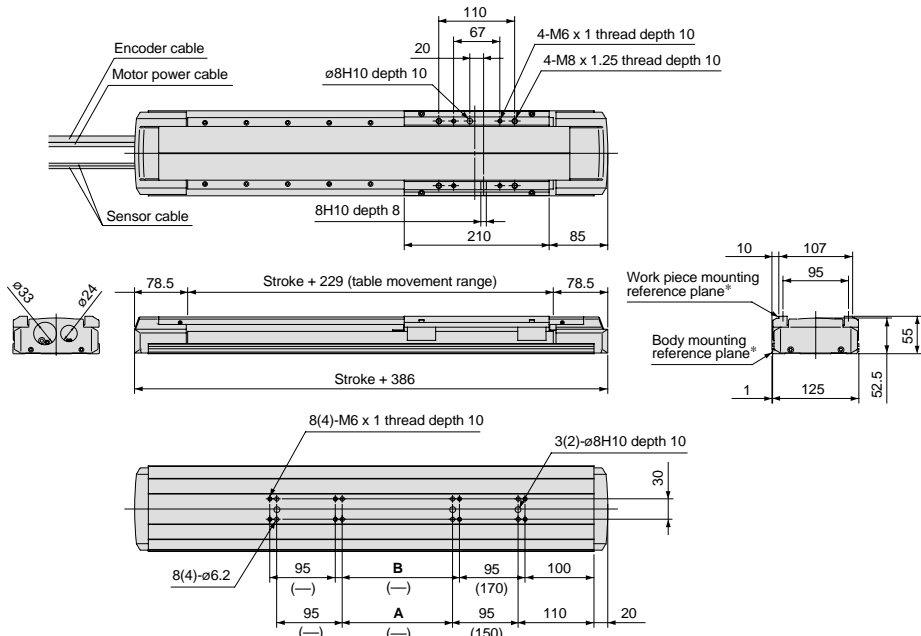
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H21□2□NA (X10)



Model	Stroke	A	B
LG1□H21□2□NA-100-F□-X10*	100	—	—
LG1□H21□2□NA-200-F□-X10	200	60	80
LG1□H21□2□NA-300-F□-X10	300	160	180
LG1□H21□2□NA-400-F□-X10	400	260	280

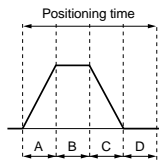
* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment. Refer to pages starting with 181 for mounting.

* Dimensions inside () are for a 100 mm stroke.

Positioning Time Guide

Positioning distance (mm)	Positioning time (sec.)					
	1	10	100	200	400	
Speed (mm/s)	10	0.5	1.4	10.4	20.4	40.4
	100	0.5	0.6	1.5	2.5	4.5
	250	0.5	0.6	0.9	1.3	2.1
	500	0.5	0.6	0.8	1.0	1.4

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)*
Maximum acceleration: 3000mm/s²
* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.
* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.
* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

LJ1
 LG1
 LC1
 LX
 LC6D/LC6C Switches

How to Order

LG1 **H21** **G** **2** **1** **NC** — **Stroke** — **F** **W** — **X10**

• **Frame material**

Nil	Aluminum alloy
T	Stainless steel

• **Motor specification**

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

• **Power supply voltage**

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

• **Switch**

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

		Standard stroke	mm	500	600	700	800	900	1000
Performance	Body weight	Aluminum (without motor)	kg	8.4	9.2	10.0	10.8	11.6	12.4
		Stainless steel (without motor)	kg	13.4	14.7	15.9	17.2	18.4	19.7
	Operating temperature range	°C 5 to 40 (with no condensation)							
	Work load	kg 30							
	Maximum speed ^{Note)}	mm/s 1000 1000 930 740 600 500							
	Positioning repeatability	mm ±0.05							
Main parts	Motor	AC servomotor (100W)							
	Encoder	Incremental system							
	Lead screw	Rolled ball screw ø15mm, 20mm lead							
	Guide	High rigidity direct acting guide							
	Motor/Screw connection	With coupling							
Switch	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)							
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less							

Intermediate strokes

Strokes other than the standard strokes on the left are available by special order. Consult SMC.

Note) The speed is limited by the transfer load. Contact each motor manufacturer regarding the maximum speeds for each transfer load.

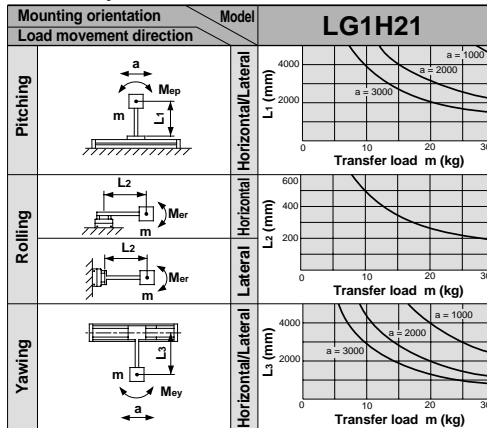
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

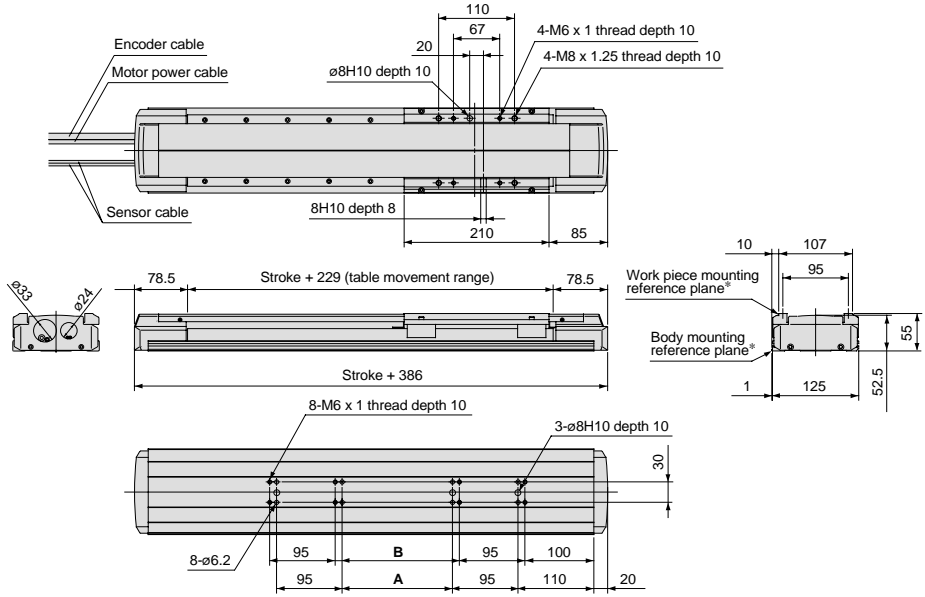
m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me: Dynamic moment
L : Overhang to work piece center of gravity (mm)

Allowable dynamic moment



Refer to page 183 for deflection data.

Dimensions/LG1□H21□2□NC (X10)



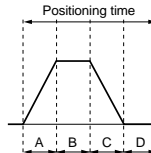
Model	Stroke	A	B
LG1□H21□2□NC-500-F□-X10	500	360	380
LG1□H21□2□NC-600-F□-X10	600	460	480
LG1□H21□2□NC-700-F□-X10	700	560	580
LG1□H21□2□NC-800-F□-X10	800	660	680
LG1□H21□2□NC-900-F□-X10	900	760	780
LG1□H21□2□NC-1000-F□-X10	1000	860	880

* The body mounting reference plane and work piece mounting reference plane should be used as standards when mounting onto equipment.
Refer to pages starting with 181 for mounting.

Positioning Time Guide

		Positioning time (sec.)				
		1	10	100	500	1000
Speed (mm/s)	10	0.5	1.5	10.5	50.5	100.5
	100	0.5	0.6	1.5	5.5	10.5
	500	0.5	0.6	0.9	1.7	2.7
	1000	0.5	0.6	0.9	1.4	1.9

* Values will vary slightly depending on the operating conditions.



A: Acceleration time
B: Constant velocity time
C: Deceleration time
D: Resting time (0.4sec.)*
Maximum acceleration: 2000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.

How to Order

LG1 **H21** **G** **2** **1** **SC** — **Stroke** — **F** **W** — **X10**

Frame material

Nil	Aluminum alloy
T	Stainless steel

Motor specification

G	Matsushita Electric Industrial Co., Ltd.
R	Mitsubishi Electric Corporation
Y	Yaskawa Electric Corporation

Power supply voltage

1	100/115VAC (50/60Hz)
2	200/230VAC (50/60Hz)
0	Without motor

Switch

Nil	None
W	N.C. (B contact) 2 pcs.

Specifications

		Standard stroke	mm	100	200	300	400	500	600	700	800	900	1000	1200
Performance	Body weight	Aluminum (without motor)	kg	5.8	6.7	7.5	8.4	9.3	10.2	11.1	11.9	12.8	13.7	15.9
		Stainless steel (without motor)	kg	9.3	10.7	12.0	13.5	14.8	16.2	17.5	19.0	20.3	21.7	25.2
	Operating temperature range	°C 5 to 40 (with no condensation)												
	Work load	kg 15												
	Maximum speed	mm/s 500												
Main parts	Positioning repeatability	mm ±0.1												
	Motor	AC servomotor (100W)												
	Encoder	Incremental system												
	Lead screw	Slide screw ∅20mm, 20mm lead												
	Guide	High rigidity direct acting guide												
Switch	Motor/Screw connection	With coupling												
	Model	Photo micro sensor EE-SX674 (Refer to page 319 for details.)												
	Specifications	5 to 24VDC Load current (1C): 100mA, Internal voltage drop: 0.8V or less Load current (1C): 40mA, Internal voltage drop: 0.4V or less												

Intermediate strokes

Strokes other than the standard strokes above are available by special order. Consult SMC.

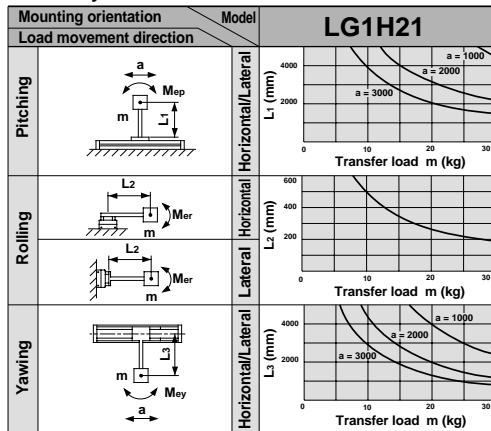
Allowable Moment (N·m)

Allowable static moment

Pitching	142
Rolling	79
Yawing	150

m : Transfer load (kg)
a : Work piece acceleration (mm/s²)
Me : Dynamic moment
L : Overhang to work piece center of gravity (mm)

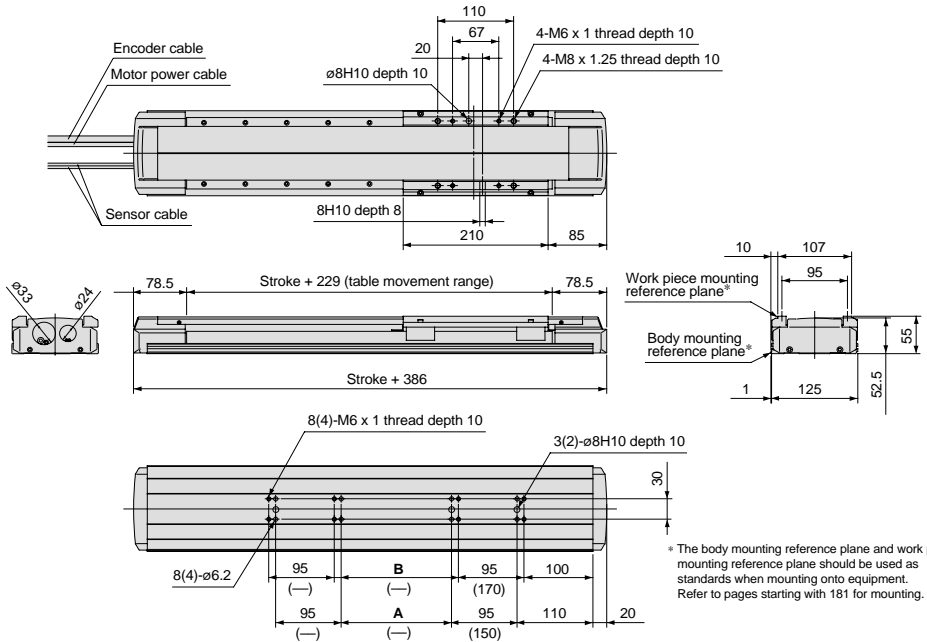
Allowable dynamic moment



Refer to page 183 for deflection data.

Non-standard Motor/Horizontal Mount Specification **Series LG1□H21**

Dimensions/LG1□H21□2□SC (X10)



Model	Stroke	A	B
LG1□H21□2□SC- 100-F□-X10*	100	—	—
LG1□H21□2□SC- 200-F□-X10	200	60	80
LG1□H21□2□SC- 300-F□-X10	300	160	180
LG1□H21□2□SC- 400-F□-X10	400	260	280
LG1□H21□2□SC- 500-F□-X10	500	360	380
LG1□H21□2□SC- 600-F□-X10	600	460	480

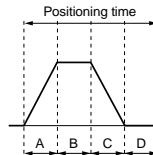
* Dimensions inside () are for a 100 mm stroke.

Model	Stroke	A	B
LG1□H21□2□SC-700-F□-X10	700	560	580
LG1□H21□2□SC-800-F□-X10	800	660	680
LG1□H21□2□SC-900-F□-X10	900	760	780
LG1□H21□2□SC-1000-F□-X10	1000	860	880
LG1□H21□2□SC-1200-F□-X10	1200	1060	1080

Positioning Time Guide

Positioning distance (mm)		Positioning time (sec.)				
		1	10	100	600	1200
Speed (mm/s)	10	0.5	1.5	10.5	60.5	120.5
	100	0.5	0.6	1.5	6.5	12.5
	250	0.5	0.6	1.0	3.0	5.4
	500	0.5	0.6	0.9	1.9	3.1

* Values will vary slightly depending on the operating conditions.



- A: Acceleration time
 - B: Constant velocity time
 - C: Deceleration time
 - D: Resting time (0.4sec.)*
- Maximum acceleration: 2000mm/s²

* The value is a guide when SMC's series LCI controller is used and may vary depending on the driver capacity.

Non-standard Motors: The following motors will be mounted when a motor mounted type is specified.

	Motor output (W)	Power supply voltage (VAC)	Motor model	Compatible driver model
Matsushita Electric Industrial Co., Ltd.	100	100/115	MSM011P1A	MSD011P1E
		200/230	MSM012P1A	MSD013P1E
Mitsubishi Electric Corporation	100	100/115	HC-PQ13	MR-C10A1
		200/230		MR-C10A
Yaskawa Electric Corporation	100	100/115	SGME-01BF12	SGDE-01BP
		200/230	SGME-01AF12	SGDE-01AP

* For motor mounting dimensions, refer to the dimensions on page 182 as a reference for mounting and design.

* Refer to pages starting with 205 for driver dimensions, etc. Furthermore, for detailed specifications, etc., contact each motor manufacturer.

* For a non-standard motor specification, when the motor is mounted before shipping, the driver is included but the cable that connects the motor and driver is optional. Refer to page 178 for part numbers.