



# Uniaxial Electric Actuator Series LJ1



Slide screw for horizontal mounting and brake for vertical mounting  
have been added to the high rigidity linear guide /series LJ1H  
Dedicated teaching box newly released

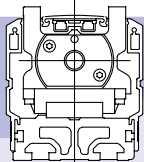


# Employs a guide with high High positioning accuracy is achieved

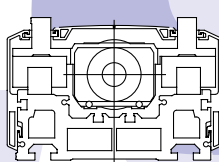
Linear and slider guides with 3 types of feed screws

## Linear guide Series LJ1H

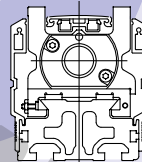
## Slider guide Series LJ1S



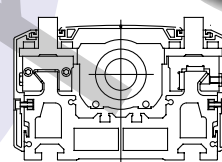
LJ1H10



LJ1H20, 30

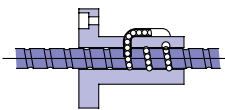


LJ1S10



LJ1S20, 30

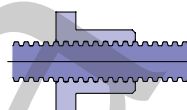
### Ball screw



### Positioning repeatability

$\pm 0.02\text{mm}$   
(ground ball screw)  
 $\pm 0.05\text{mm}$   
(rolled ball screw)

### Slide screw



### Positioning repeatability

$\pm 0.1\text{mm}$   
(slide screw)

## Abundant product variations

- Without motor, can be supplied with specified motor
- Stepping motor, also compatible with DC motor
- Full range of options such as

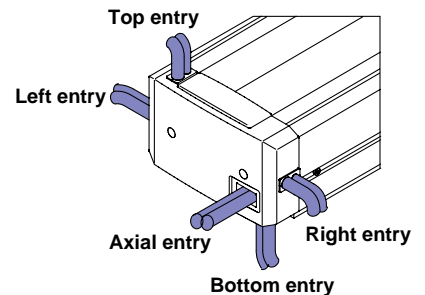
### TSUBAKICABLEVEYOR®

Note) TSUBAKICABLEVEYOR® is a registered trade mark of the TSUBAKIMOTO CHAIN CO.

## Completely flat top surface

Improves freedom in mounting of work pieces.

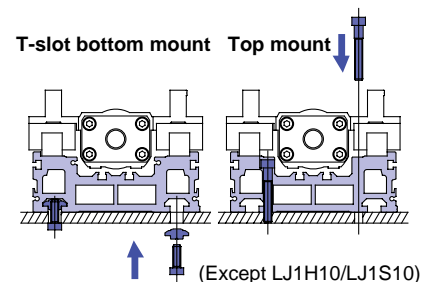
## Cable entry is possible from 5 directions



With the slider guide, slide screw type, low drive noise of 47dB or less is possible (LJ1S Series only)

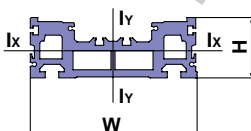
Model	Noise level (dB)
LJ1S□□□□S□	47 or less
LJ1H□□□□P□	60 or less
LJ1H□□□□N□	61 or less
LJ1H□□□□S□	50 or less

## 2 types of mounting are possible to improve mounting of the unit.



## Higher rigidity

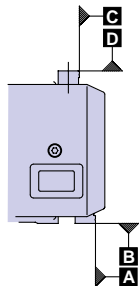
Higher rigidity has been realized by using an aluminum hollow box structure for the body.



Model	Moment of inertia of area		W	H	
	Ix	Iy			
Linear guide	LJ1H10□□	7	48	70	24.7
	LJ1H20□□	40	374	122	44.8
	LJ1H30□□	84	836	151	55
Slider guide	LJ1S10□□	15	52	70	36
	LJ1S20□□	60	402	122	56.3
	LJ1S30□□	177	1000	151	73.3

# *rigidity and high linear precision. eved with an AC servomotor and feed screw.*

## Table running accuracy



Model	Running accuracy	
	C plane to A plane	D plane to B plane
LJ1H10	0.07 or less	0.07 or less
LJ1H20	0.06 or less	0.03 or less
LJ1H30	0.03 or less	0.09 or less
LJ1S10	0.015 or less	0.12 or less
LJ1S20	0.1 or less	0.1 or less
LJ1S30	0.1 or less	0.1 or less

## Low cost

The high rigidity direct acting guide costs approximately 30% less than the ball screw type (P/A product comparison).

(LJ1S Series only)

### Actuator control

- **Absolute and incremental movement commands are provided.** Speed and acceleration settings also are unrestricted.
- **Home position return direction is selectable.**

### Operation from the teaching box

- **Programming and parameters:** can be operated like a PC. (Can perform operation, monitoring, alarm reset, etc.)

### Programming from a PC

- **Programming and start-up:** easy programming is possible by means of the PC software's matrix editor.
- **Program test function:** program testing can be done safely by applying limits to the program. (single step, I/O cancel, override)
- **Forced output function (test):** forced output operation can be performed without relying on the program. Valid for confirmation of connections and operation.

### Program capacity

- **127 steps x 8 programs:** ensures sufficient program capacity. Linking is possible with jumps and subroutine calls, etc.

### Controller with built-in driver

- **Space saving:** size reduction achieved by improved mounting efficiency. Having all top mounting connectors also saves space.
- **Light weight 2.2kg:** weight reduction achieved by omitting transformer.

## Dedicated Controller Series LC1

### General-purpose input/output control

- **6 each general-purpose input/output ports:** control of valves and auto switches, etc. is possible with 6 points + 6 points of general-purpose input/output ports.

### Operation from external input

- **Can be operated from external input by using a 24V power supply:** execution of program batches and step units (movement commands only) can be combined.

### Operation from a PLC

- **Control input/output terminals are provided.** Operation can be controlled from a PLC.
- **2 execute configurations:** execution of program batches and step units (movement commands only) can be combined.





TSUBAKICABLEVEYOR® is a registered trade mark of the TSUBAKIMOTO CHAIN CO.

# Table of Contents

Individual models	Applicable controller model	Options *2)		
		Cover with switch grooves	CABLE-VEYOR®	Dust seal
LJ1H101□PB- <input type="checkbox"/>	LC1-1B1H□			
LJ1H101□NB- <input type="checkbox"/>				
LJ1H101□SC- <input type="checkbox"/>	LC1-1B1M□			
LJ1H102□PH- <input type="checkbox"/> K	LC1-1B1V□	●	●	
LJ1H102□NH- <input type="checkbox"/> K				
LJ1H102□PB- <input type="checkbox"/> K				
LJ1H102□NB- <input type="checkbox"/> K				
LJ1H202□PA- <input type="checkbox"/>	LC1-1B2H□			
LJ1H202□NA- <input type="checkbox"/>				
LJ1H202□PC- <input type="checkbox"/>				
LJ1H202□NC- <input type="checkbox"/>				
LJ1H202□SC- <input type="checkbox"/>	LC1-1B2M□	●	●	●
LJ1H202□PF- <input type="checkbox"/> K	LC1-1B2V□			
LJ1H202□NF- <input type="checkbox"/> K				
LJ1H202□PA- <input type="checkbox"/> K				
LJ1H202□NA- <input type="checkbox"/> K				
LJ1H303□PD- <input type="checkbox"/>	LC1-1B3H□			
LJ1H303□ND- <input type="checkbox"/>				
LJ1H303□SE- <input type="checkbox"/>	LC1-1B3M□	●	●	●
LJ1H303□PA- <input type="checkbox"/> K	LC1-1B3V□			
LJ1H303□NA- <input type="checkbox"/> K				
LJ1S101□SC- <input type="checkbox"/>	LC1-1B1S□	●	●	
LJ1S202□SC- <input type="checkbox"/>	LC1-1B2S□	●	●	●
LJ1S303□SC- <input type="checkbox"/>	LC1-1B3S□	●	●	●

Selection Procedure.....Feature 5  
 Basic Configuration Examples .....Feature 6  
 Allowable Dynamic Moment .....Feature 7, 8  
 Safety Instructions.....P.65  
 Actuator Precautions.....P.66, 67  
 Auto Switch Common Precautions.....P.68, 69  
 Specific Product Precautions.....P.70

## High Rigidity Direct Acting Guide LJ1H Series.....P.1

LJ1H10 Series..... P.2~7  
 LJ1H20 Series..... P.8~13  
 LJ1H30 Series..... P.14~19

## Slider Guide LJ1S Series.....P.21

LJ1S10 Series..... P.22~27  
 LJ1S20 Series..... P.28~33  
 LJ1S30 Series..... P.34~39  
 Option Specifications..... P.40, 41  
 Motor Reference Data, Nonstandard Motors .....P.42~46  
 Order Made Specifications..... P.47

## Dedicated Controller LC1 Series.....P.49

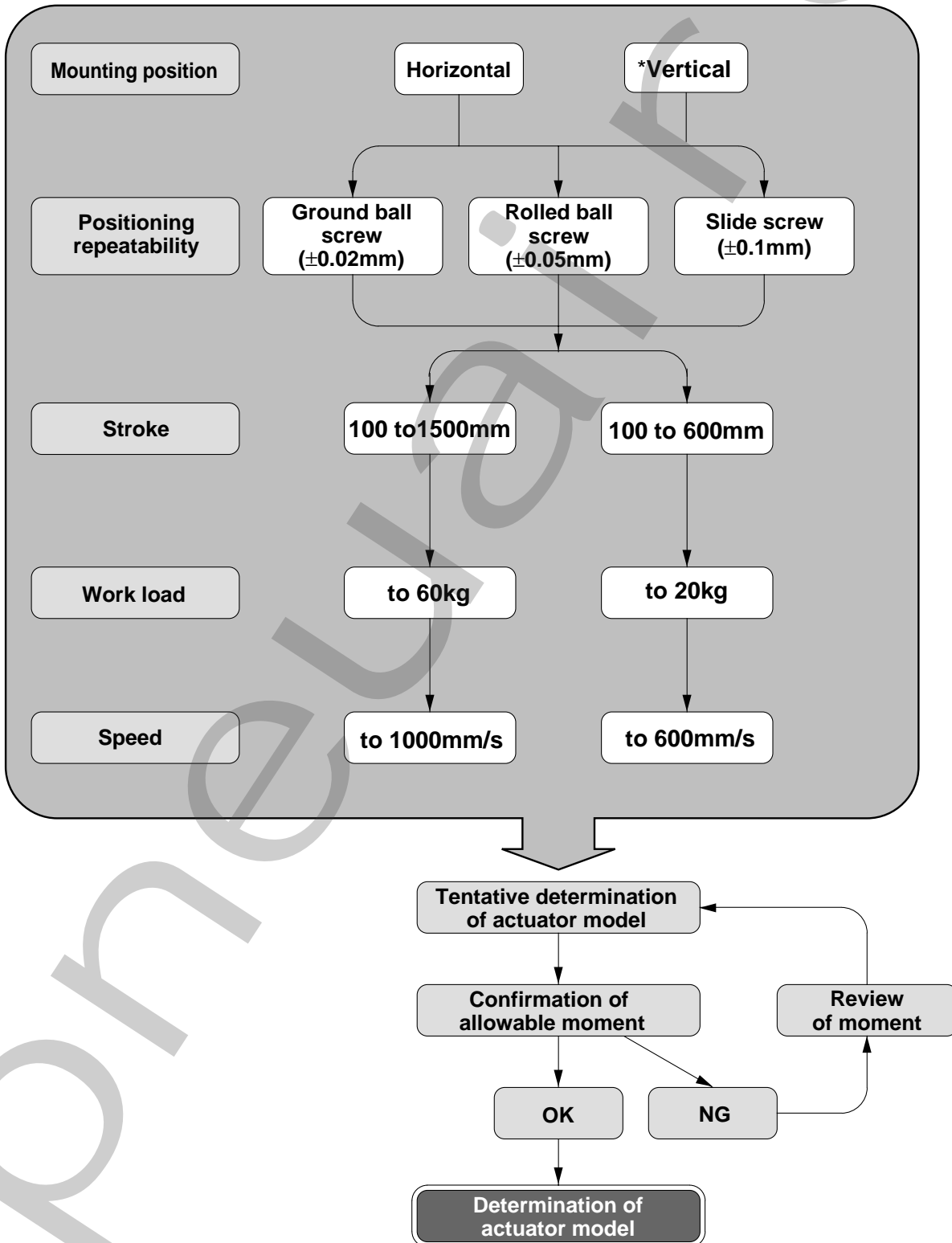
Typical Equipment Configurations .....P.50, 51  
 LC1 Series.....P.52~60

## Dedicated Teaching Box LC1 Series.....P.61

LC1 Series..... P.61, 62  
 LC1 Series Options.....P.63  
 Catalog Terminology..... P.64  
 LJ1, LC1 Inquiry Sheet..... P.71, 72

# Series LJ1 Electric Actuator Selection Procedure

Various operating conditions must be considered in order to select an electric actuator. The selection procedure is shown below.

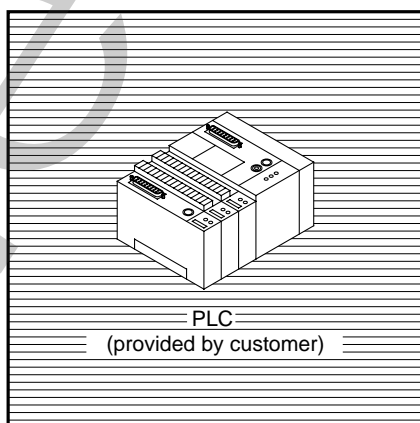
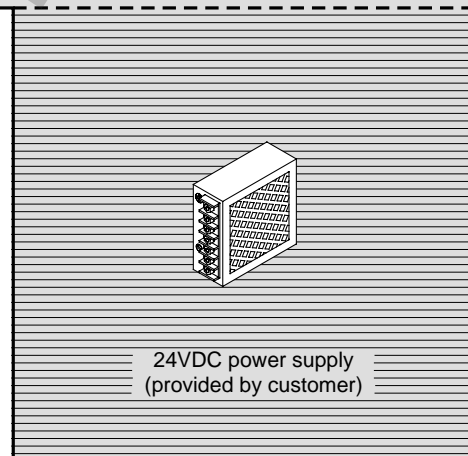
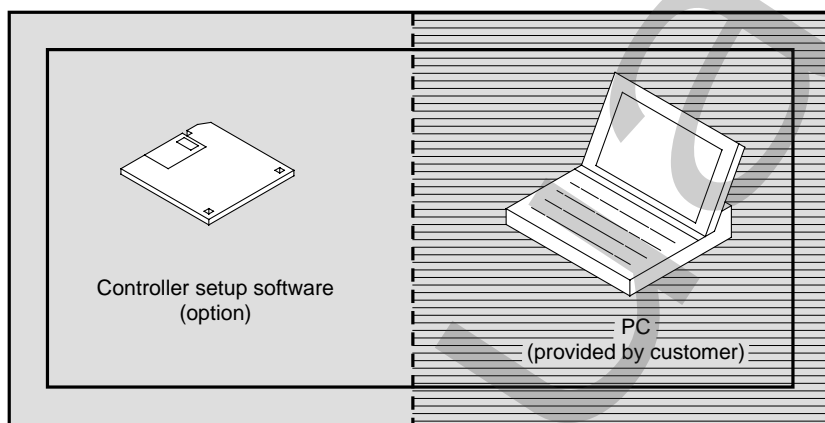
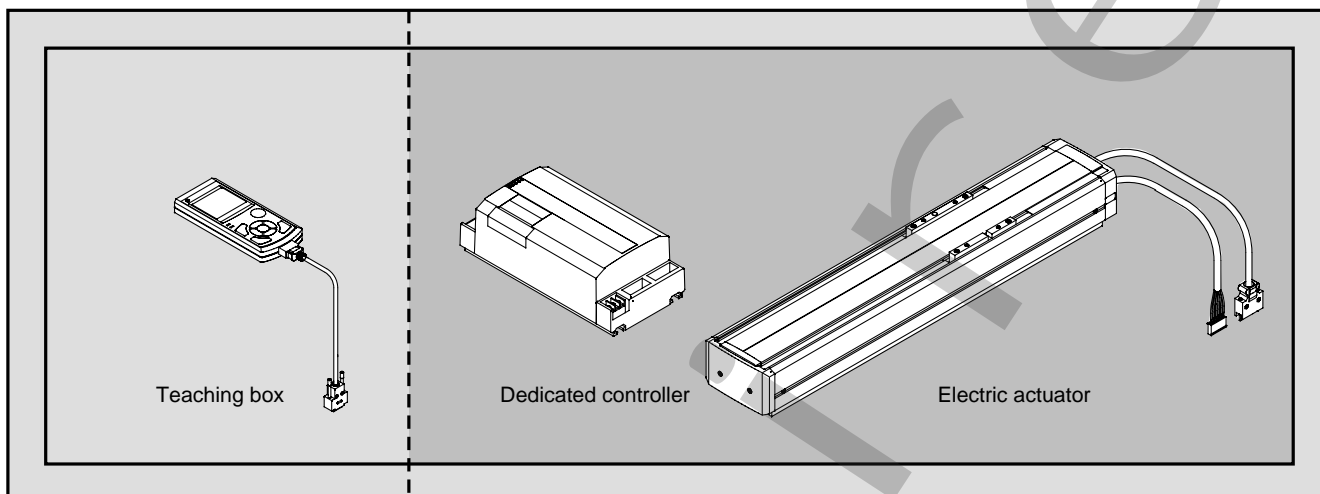


\* When mounted in a vertical position, selection is limited to ground ball screw and rolled ball screw.

**⚠ Caution**

Vertical type is equipped with brake. Since a regenerative absorption unit may be necessary depending on the operating conditions, a separate inquiry should be made.

# Series LJ1 Electric Actuator Basic Configuration Examples



Basic configuration ① Can be operated with the electric actuator, dedicated controller, teaching box and 24VDC<sup>Note 1)</sup> power supply.

Basic configuration ② Can be operated with the electric actuator, dedicated controller, controller setup software with PC and 24VDC power supply.  
Can also be operated from a PLC<sup>Note 2)</sup> or PC for external control.

Note 1) Because the controller uses the emergency stop terminal corresponding to the B contact, 24VDC must be applied between the control terminals STOP and COM or operation will not be possible. See the instruction manual for further details.

Note 2) When operating from a PC, the controller setup software (option) is required.

# Series LJ1 Electric Actuator Allowable Dynamic Moment

The table is subjected to moment in various directions, depending on the work piece load point. Design should be such that the amount of work piece overhang stays within the ranges shown in the graphs below.

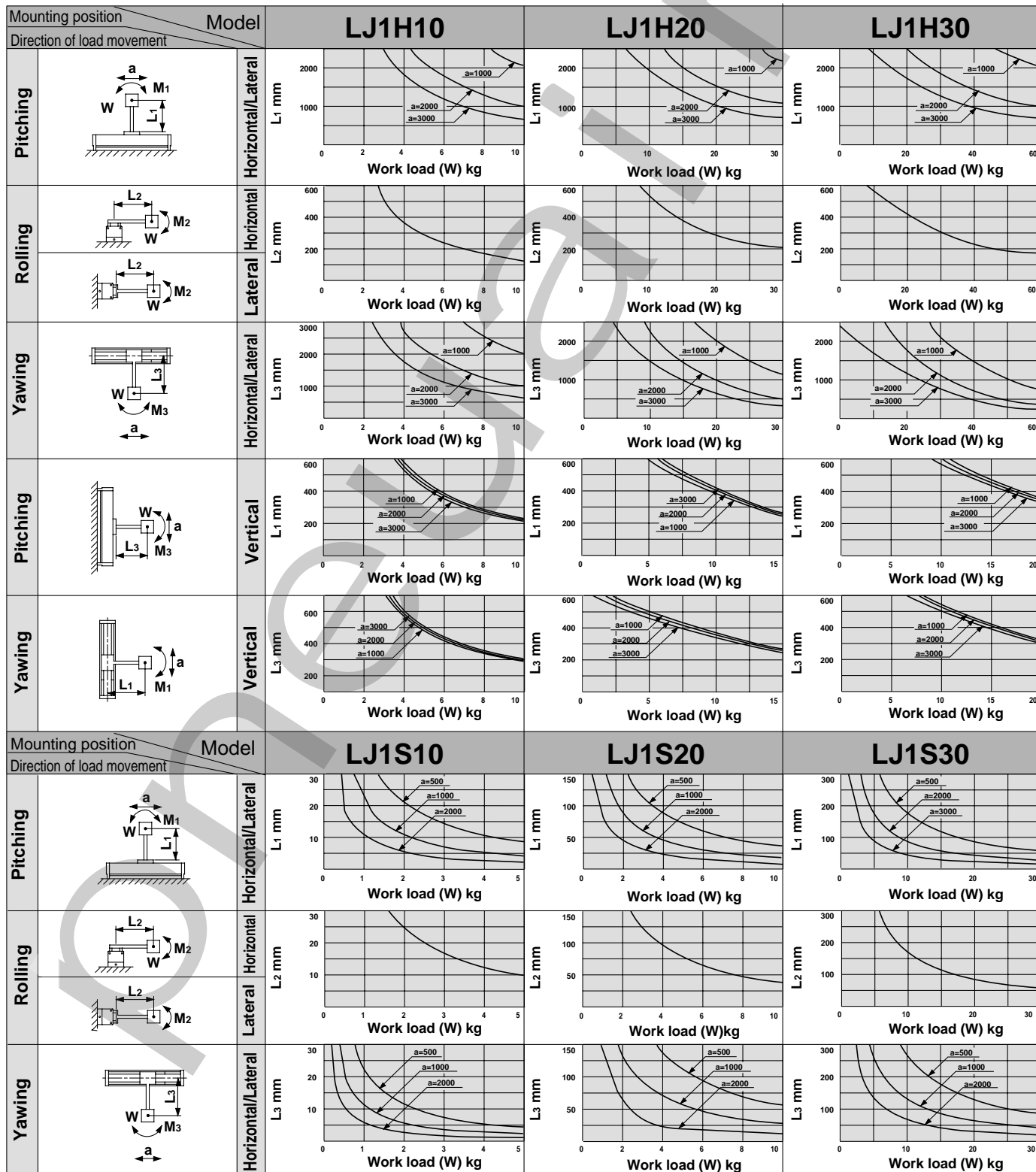
W: Work load (N)

L<sub>1</sub>, L<sub>2</sub>, L<sub>3</sub>: Amount of overhang to work piece center of gravity (mm)

a: Table acceleration (mm/s<sup>2</sup>)

### Use of graphs

- 1) Determine the model.
- 2) Determine the mounting position.  
Confirm whether mounting is horizontal, lateral or vertical (LJ1H only).
- 3) Confirm the amount of overhang.  
Operating conditions should be such that the work load and amount of overhang for each component of moment (pitching, yawing, rolling) fall within the ranges shown in the graphs.





## Deflection Data

The load and the amount of deflection at load point  $W$  are shown in the graphs below for each series.

With single end support and table moved to the end of the stroke

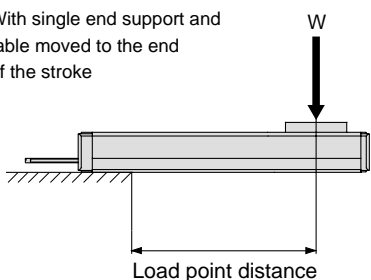


Figure 1. Horizontal

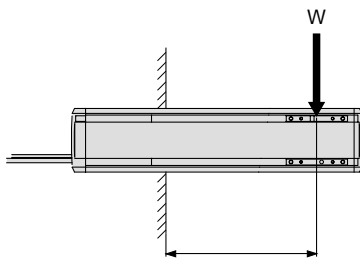
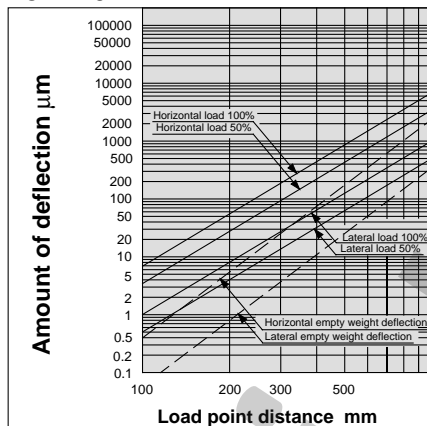
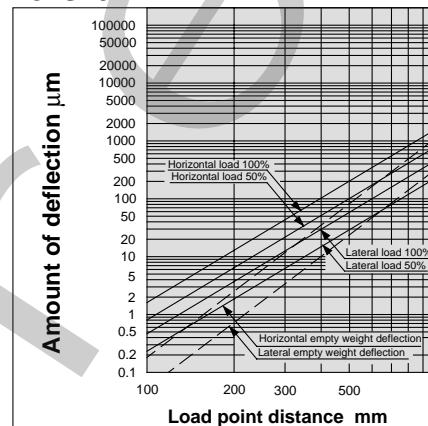


Figure 2. Lateral

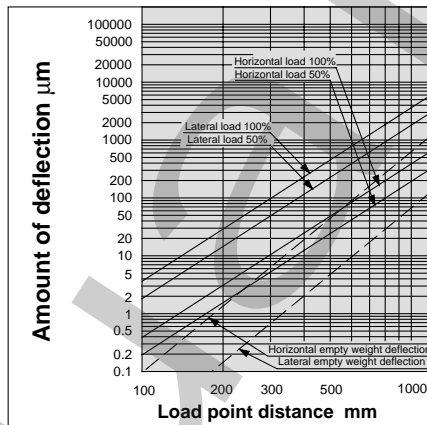
**LJ1H10**



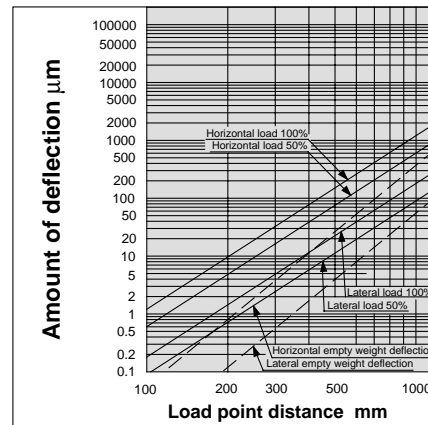
**LJ1S10**



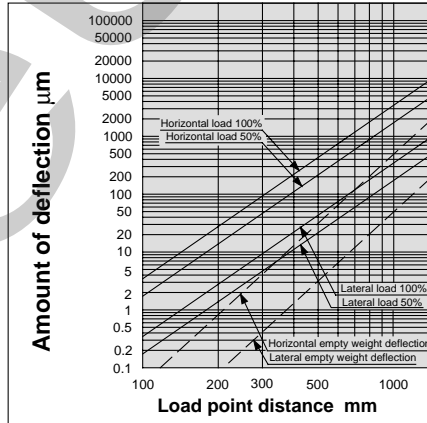
**LJ1H20**



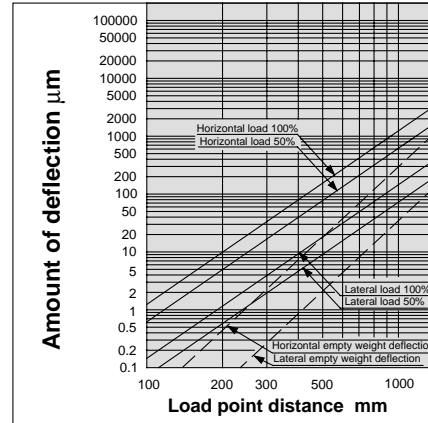
**LJ1S20**



**LJ1H30**



**LJ1S30**



POWER AIRE