

Model selection

STEP 1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead and motor performance.

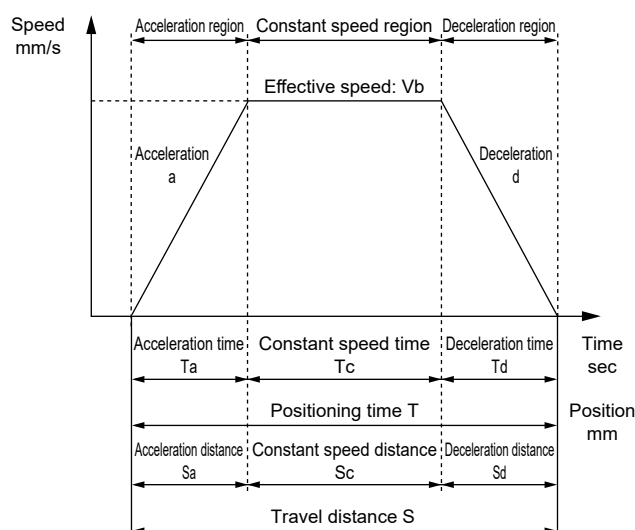
Refer to the Series Variation (page 552) and the specification table for each model to select the size and screw lead.

For motor performance, contact the motor manufacturer. For motor selection, use the actuator information (mechanical efficiency, etc.) in the specifications.

STEP 2 Confirming positioning time

Calculate the positioning time of the selected product according to the following example and confirm that the required tact is achievable.

Select the speed and acceleration/deceleration from the specification table for each model and the motor selected by the customer.



	Description	Code	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s ²	
	Set deceleration	d	mm/s ²	
	Travel distance	S	mm	
Calculated value	Achieved speed	Vmax	mm/s	$= \{2 \times a \times d \times S / (a + d)\}^{1/2}$
	Effective speed	Vb	mm/s	Smaller of V and Vmax
	Acceleration time	Ta	s	$= Vb/a$
	Deceleration time	Td	s	$= Vb/d$
	Constant speed time	Tc	s	$= Sc/Vb$
	Acceleration distance	Sa	mm	$= (a \times Ta^2)/2$
	Deceleration distance	Sd	mm	$= (d \times Td^2)/2$
	Constant speed distance	Sc	mm	$= S - (Sa + Sd)$
	Positioning time	T	s	$= Ta + Tc + Td$

*Do not use at speeds that exceed the specifications.

*Depending on the acceleration/deceleration and stroke, the trapezoidal velocity waveform may not form (the set speed may not be reached). In this case, select the effective speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.

*Use at acceleration and deceleration of 1 G or less for horizontal use and 0.5 G or less for vertical use.

*While settling time depends on working conditions, it may take 0.2 seconds or so.

*1 G \approx 9.8 m/s².

*Set the speed and acceleration by the motor selected by the customer. For motor selection and calculation of speed and acceleration, use the actuator information (mechanical efficiency, etc.) in the specifications.

STEP 3 Confirming allowable load weight

Confirm that the load weight during operation is within the allowable range (pages 574 to 575).

If the allowable load weight is exceeded, increase the size or use an external guide in conjunction.