

Model selection

STEP 1 Confirming load capacity

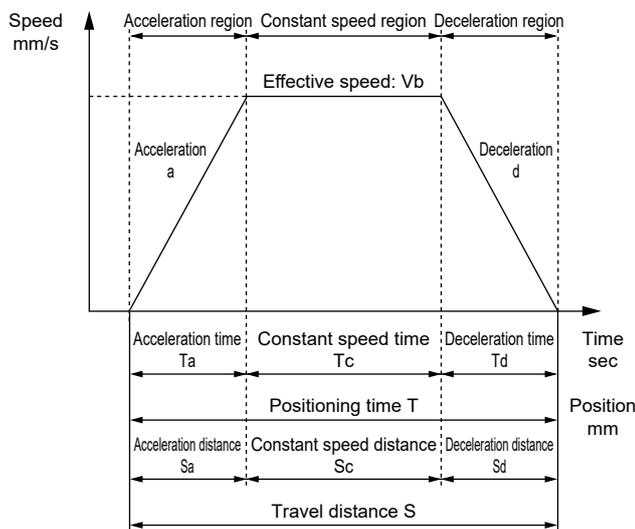
Load capacity varies with mounting orientation and screw lead.

Refer to the Series Variation (page 46) and the specification table for each model to select the size and screw lead.

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 acceleration/deceleration and stroke length, the trapezoid speed waveform may not be formed (the set speed may not be achieved). 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.

STEP 3 Confirming allowable load weight

Confirm that the load weight during operation is within the allowable range (pages 76 to 77).

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