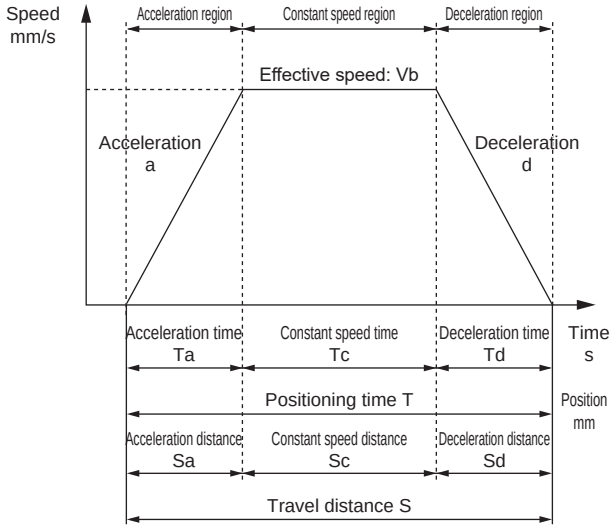
STEP 1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead, transport speed and acceleration/deceleration.
Refer to the Series Variation (pages 44 and 45), the specification table for each model and the Table of Load Capacity by Speed and Acceleration/Deceleration to select the size and screw lead.

STEP 2 Confirming positioning time

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

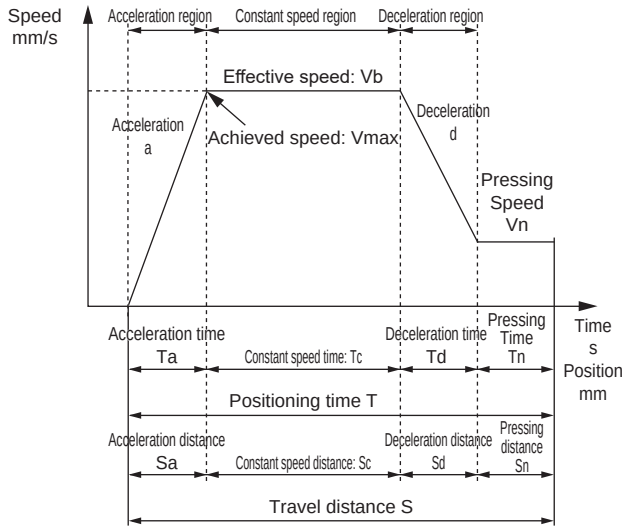
Positioning time for general transport operation



	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 trapezoidal 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.
* Acceleration and deceleration differ depending on the product and working conditions. Refer to pages 82 and 83 for details.
* Though the stabilization time depends on working conditions, it may take as long as 0.2s.
* 1G≈9.8m/s^2.

Positioning time for pressing operation



	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	
	Pressing speed	Vn	mm/s	
	Pressing distance	Sn	mm	
Calculated value	Achieved speed	Vmax	mm/s	$=\{2\times a\times d\times(S-Sn+Vn^2/2/d)/(a+d)\}^{1/2}$
	Effective speed	Vb	mm/s	The lesser value of V and Vmax
	Acceleration time	Ta	s	=Vb/a
	Deceleration time	Td	s	=(Vb-Vn)/d
	Constant speed time	Tc	s	=Sc/Vb
	Pressing time	Tn	s	=Sn/Vn
	Acceleration distance	Sa	mm	$=(a\times Ta^2)/2$
	Deceleration distance	Sd	mm	=((Vb+Vn)×Td)/2
	Constant speed distance	Sc	mm	=S-(Sa+Sd+Sn)
	Positioning time	T	s	=Ta+Tc+Td+Tn

* Do not use at speeds that exceed the specifications.
* Pressing speed differs depending on the product.
* Depending on acceleration/deceleration and stroke length, the trapezoidal 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.
* Acceleration and deceleration differ depending on the product and working conditions. Refer to pages 82 and 83 for details.
* Though the stabilization time depends on working conditions, it may take as long as 0.2s.
* 1G≈9.8m/s^2.

STEP 3 Confirming allowable load weight (Rod with built-in guide EBR Series)

Confirm that the load weight during operation is within the allowable range (pages 78 and 79). If the allowable load weight is exceeded, increase the size or use an external guide in conjunction.