Model selection

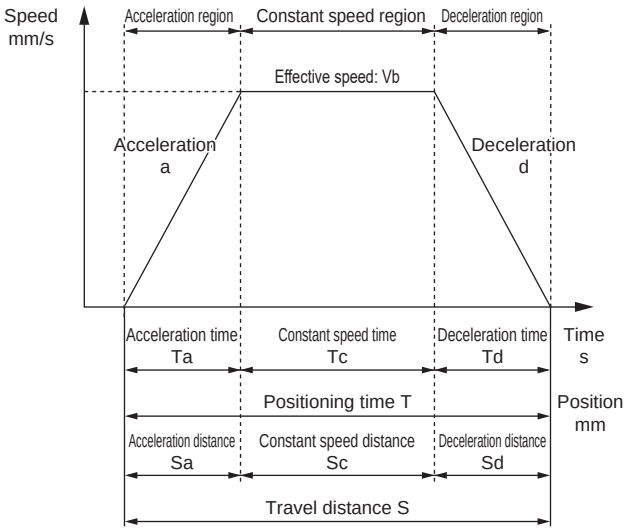
STEP 1 Confirming load capacity

Load capacity varies with mounting orientation, screw lead, transport speed and acceleration/deceleration. Refer to the Series Variation (pages 2 and 3), 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.

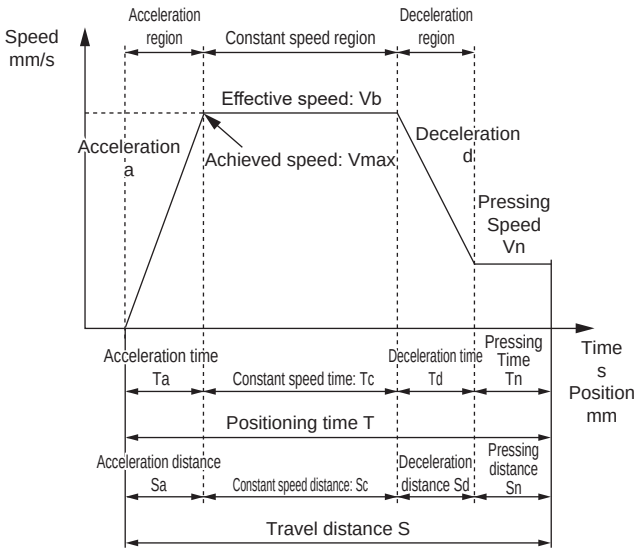
Positioning time for general transport operation



	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 40 and 41 for details.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 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 40 and 41 for details.
* While settling time depends on working conditions, it may take 0.2 seconds or so.
* 1G≈9.8m/s^2.

STEP 3 Confirming static allowable load and moment

Calculate the load and moment that are generated when the table is stopped. Resultant moment (M) according to the formula below$_T$) must be:

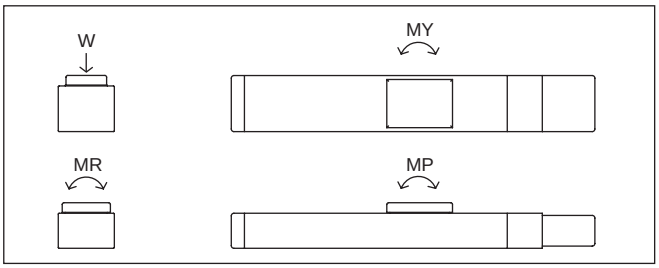
$$M_T=\frac{W}{W\ max}+\frac{MP}{MP\ max}+\frac{MR}{MR\ max}+\frac{MY}{MY\ max}<1$$

Static allowable load and moment

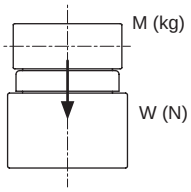
Model No.	Vertical load W max(N)	Pitching moment MP max(N·m)	Yawing moment MY max(N·m)	Rolling moment MR max(N·m)
EBS-04	1030	62	62	92
EBS-05	1168	103	103	144
EBS-08	2781	203	203	336

Calculating static allowable load and moment

How moment is applied

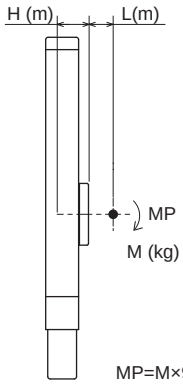


● Vertical load W (N)



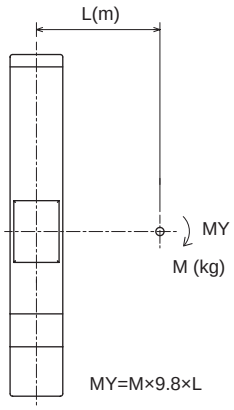
M: Workpiece weight (kg)
W=M×9.8

● Pitching moment MP (N·m)



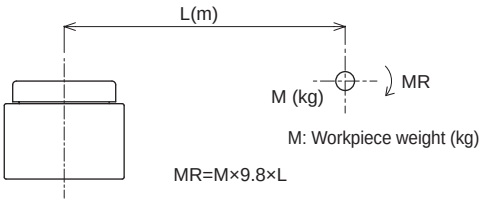
MP=M×9.8×(L+H)

● Yawing moment MY (N·m)

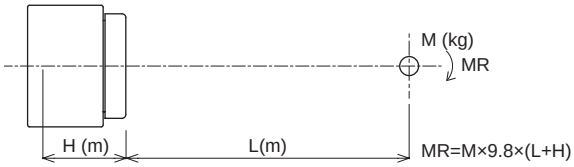


MY=M×9.8×L

● Rolling moment MR (N·m)



M: Workpiece weight (kg)
MR=M×9.8×L



MR=M×9.8×(L+H)

Model No.	H(m)
EBS-04	0.040
EBS-05	0.048
EBS-08	0.052

STEP 4 Checking allowable overhang length

Make sure that the load overhang length during operation is within the allowable range (pages 36 to 38).