

DSSD2

Rod type



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DSSD2 Series variation

Actuator model No.	Motor Size	Screw lead (mm)	Max. payload (kg)		Stroke (mm) and Max. speed (mm/s)				
			Horizontal	Vertical	20	25	50	75	100
DSSD2-20	□35	6	4.4	6.4	90	90			
		9	4.4	4.8	135	135			
DSSD2-32	□42	6	10	14		90			
		12	4	4.8		180			
DSSD2-50	□56	6	14.8	13.2		72			
		12	9.2	7.2		144			



Electric actuator Rod-type

DSSD2-20

☐35 Stepping motor



How to order

DSSD2

-

20

S

E

-

06

020

T3PH

R1

A

1

-

-

-

1Size

2020

2Applicable controller * 1

SESC4

3Motor mounting direction

EStraight mounting

4Screw lead

066 mm

099 mm

5Stroke

02020 mm

05050 mm

07575 mm

100100 mm

6Switch

NNNNNone

T3PHT-type straight

T3PVT-shaped L-type

7Relay cable * 2

N0None

R1Movable 1 m

R3Movable 3 m

R5Movable 5 m

RXMovable 10 m

8Controller included

NNone

ADIN rail mounting specifications

BPanel mounting specifications

9IO cable length

NNone

11 m

33 m

55 m

X10 m

10Option

BlankRod end female thread

NRod end male thread

11Mounting bracket

BlankWithout mounting bracket

FARod side flange

12Accessory *3 (when rod end male thread N is selected)

BlankWithout accessory

IRod eye

YRod clevis

* 1 For the controller, refer to CC-1635A.

* 2 Refer to page 104 for relay cable dimensions.

* 3 Rod eye: SSD2-I-20, Rod clevis: SSD2-Y-20. For dimensional diagrams, refer to Pneumatic Cylinders General Catalog (CB-029SA).

Specifications

Motor	☐ 35 Stepping motor	
Drive method	Sliding screw ø6	
Stroke	mm	20 to 100
Screw lead	mm	6 9
Max. payload kg	Horizontal	4.4 4.4
	Vertical	6.4 4.8
Operation speed range	mm/s	15 to 90 22 to 135
Max. acceleration/deceleration * 4	mm/s ²	1312 (setting: 9) 2938 (setting: 9)
Insulation resistance	10MΩ, 500 VDC	
Withstand voltage	500 VAC for 1 minute	
Operating ambient temperature, humidity	0 to 40 °C (no freezing) 35 to 80% RH (no condensation)	
Storage ambient temperature, humidity	-10 to 50 °C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere	No corrosive gas, explosive gas, or dust	
Degree of protection	IP40	

* 1 Payload varies depending on the speed. Refer to the speed and payload table for details.

* 2 Use an external guide when transporting.

* 3 The maximum speed may decrease depending on the conditions.

* 4 Refer to the speed and payload table for the acceleration/deceleration speed at other settings.

* 5 Pressing operation is not supported.

Speed and payload

[When installed horizontally]

Switch Setting	Screw lead					
	6 mm			9 mm		
	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)
0	15	0	4.4	22	0	4.4
1	23	53	4.4	35	119	4.4
2	31	129	4.4	47	290	4.0
3	40	229	4.4	60	513	3.6
4	48	351	3.6	72	787	4.0
5	56	497	3.6	85	1114	3.2
6	65	666	2.8	97	1492	2.8
7	73	858	2.8	110	1922	2.4
8	81	1074	2	122	2404	2.8
9	90	1312	2	135	2938	3.2

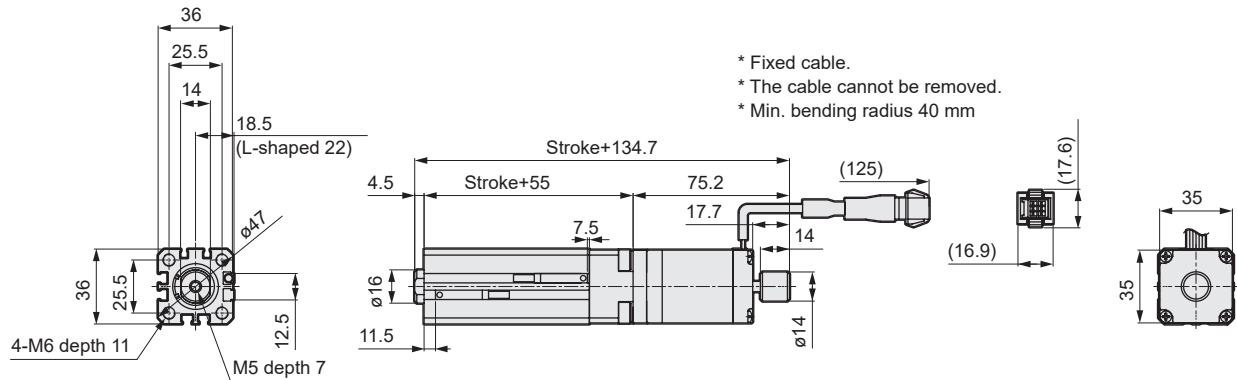
[When installed vertically]

Switch Setting	Screw lead					
	6 mm			9 mm		
	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)
0	15	0	6.4	22	0	4.8
1	23	53	6.4	35	119	4.8
2	31	129	6.4	47	290	4.8
3	40	229	6.4	60	513	4.8
4	48	351	6.4	72	787	4.4
5	56	497	6.4	85	1114	4.4
6	65	666	6.4	97	1492	4.0
7	73	858	4.8	110	1922	3.6
8	81	1074	4.8	122	2404	3.6
9	90	1312	4.8	135	2938	3.6

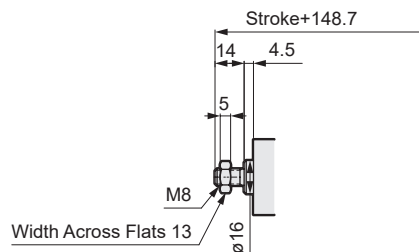
* The speed and acceleration/deceleration settings are merely guidelines. The actual values may differ due to switch adjustment, power supply voltage, individual motor differences, variations in mechanical efficiency and/or temperature.

Dimensions

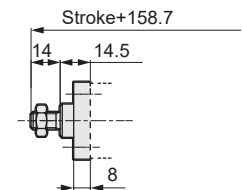
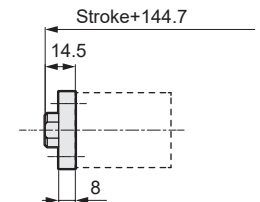
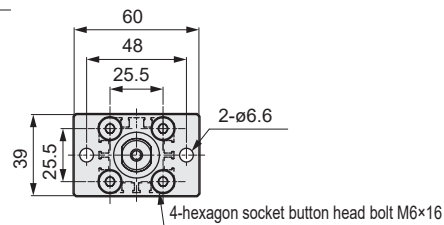
● DSSD2-20



● Rod end male thread



● Rod side flange (FA)



[Dimensions by stroke]

Stroke code	020	050	075	100
Stroke (mm)	20	50	75	100
Weight (kg)	0.6	0.7	0.8	0.9

DSSD2	D Series (Screw drive)	D Series (Spring drive)	ESC3 (Controller)	G Series	ECG-A (Controller)	ECG-B (Controller)	Safety Caution	Model selection Check sheet
DSTK	DSTG	DSTS	DSTL	DMSG	DLSH	CKW		



Electric actuator Rod-type

DSSD2-32

□42 Stepping motor



How to order

DSSD2

-

32

S

E

-

06

025

T3PH

R1

A

1

-

-

-

1

Size

32	32
----	----

2

Applicable controller * 1

S	ESC4
---	------

3

Motor mounting direction

E	Straight mounting
---	-------------------

4

Screw lead

06	6 mm
12	12 mm

5

Stroke

025	25 mm
050	50 mm
075	75 mm
100	100 mm

6

Switch

NNNN	None
T3PH	T-type straight
T3PV	T-shaped L-type

7

Relay cable * 2

N0	None
R1	Movable 1 m
R3	Movable 3 m
R5	Movable 5 m
RX	Movable 10 m

8

Controller included

N	None
A	DIN rail mounting specifications
B	Panel mounting specifications

9

O cable length

N	None
1	1 m
3	3 m
5	5 m
X	10 m

10

Option

Blank	Rod end female thread
N	Rod end male thread

11

Mounting bracket

Blank	Without mounting bracket
FA	Rod side flange

12

Accessory *3 (when rod end male thread N is selected)

Blank	Without accessory
I	Rod eye
Y	Rod clevis

* 1 For the controller, refer to CC-1635A.

* 2 Refer to page 104 for relay cable dimensions.

* 3 Rod eye: SSD2-I-32, Rod clevis: SSD2-Y-32. For dimensional diagrams, refer to Pneumatic Cylinders General Catalog (CB-029SA).

Specifications			
Motor		□42 Stepping motor	
Drive method		Sliding screw ø8	
Stroke		25 to 100	
Screw lead		6	12
Max. payload kg	Horizontal	10	4
	Vertical	14	4.8
Operation speed range		15 to 90	30 to 180
Max. acceleration/deceleration * 4		1312 (setting: 9)	5250 (Setting: 9)
Insulation resistance		10MΩ, 500 VDC	
Withstand voltage		500 VAC for 1 minute	
Operating ambient temperature, humidity		0 to 40 °C (no freezing) 35 to 80% RH (no condensation)	
Storage ambient temperature, humidity		-10 to 50 °C (no freezing) 35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Degree of protection		IP40	

*1 Payload varies depending on the speed. Refer to the speed and payload table for details.

*2 Use an external guide when transporting.

*3 The maximum speed may decrease depending on the conditions.

*4 Refer to the speed and payload table for the acceleration/deceleration speed at other settings.

*5 Pressing operation is not supported.

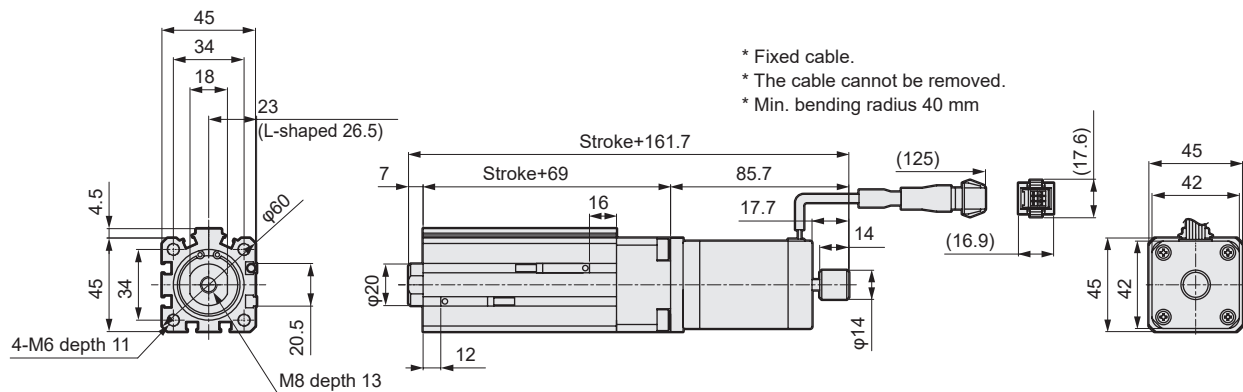
Speed and payload						
Switch Setting	Screw lead					
	6 mm			12 mm		
	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)
0	15	0	10	30	0	4.0
1	23	53	9.2	46	212	3.2
2	31	129	6	63	518	2.8
3	40	229	6.8	80	916	2.4
4	48	351	6.8	96	1407	2.4
5	56	497	6.8	113	1990	2.4
6	65	666	6.8	130	2666	2.4
7	73	858	6	146	3435	2.0
8	81	1074	4.4	163	4296	1.6
9	90	1312	5.2	180	5250	1.2

[When installed vertically]						
Switch Setting	Screw lead					
	6 mm			12 mm		
	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)
0	15		14	30	0	4.8
1	23	53	13.2	46	212	4
2	31	129	12.4	63	518	4
3	40	229	11.6	80	916	4
4	48	351	11.6	96	1407	3.6
5	56	497	11.6	113	1990	3.2
6	65	666	10.8	130	2666	2.8
7	73	858	10.8	146	3435	2.4
8	81	1074	10	163	4296	2
9	90	1312	9.2	180	5250	1.6

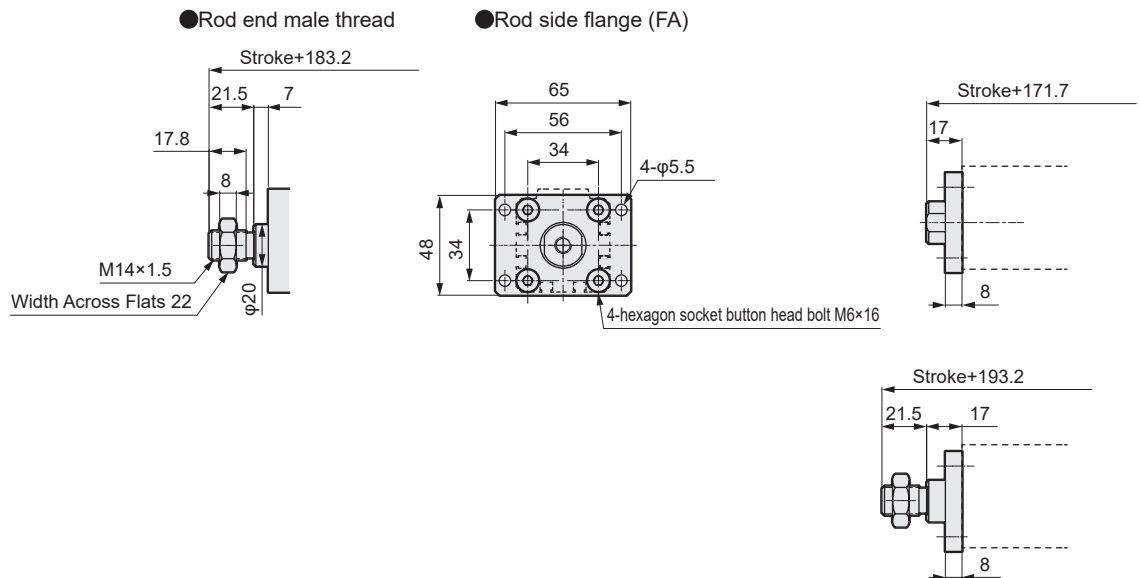
* The speed and acceleration/deceleration setting are guidelines. The actual values may differ due to switch adjustment, power supply voltage, individual motor differences, variations in mechanical efficiency and/or temperature.

Dimensions

● DSSD2-32



- * Fixed cable.
- * The cable cannot be removed.
- * Min. bending radius 40 mm



[Dimensions by stroke]

Stroke code	025	050	075	100
Stroke (mm)	25	50	75	100
Weight (kg)	1.1	1.2	1.3	1.4



Electric actuator Rod-type

DSSD2-50

☐56 Stepping motor



How to order

DSSD2

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50

S

E

-

06

025

T3PH

R1

A

1

-

-

-

1Size

5050

2Applicable controller * 1

SESC4

3Motor mounting direction

EStraight mounting

4Screw lead

066 mm

1212 mm

5Stroke

02525 mm

05050 mm

07575 mm

100100 mm

6Switch

NNNNNone

T3PHT-type straight

T3PVT-shaped L-type

7Relay cable * 2

N0None

R1Movable 1 m

R3Movable 3 m

R5Movable 5 m

RXMovable 10 m

8Controller included

NNone

ADIN rail mounting specifications

BPanel mounting specifications

9O cable length

NNone

11 m

33 m

55 m

X10 m

10Option

BlankRod end female thread

NRod end male thread

11Mounting bracket

BlankWithout mounting bracket

FARod side flange

12Accessory *3 (when rod end male thread N is selected)

BlankWithout accessory

IRod eye

YRod clevis

* 1 For the controller, refer to CC-1635A.

* 2 Refer to page 104 for relay cable dimensions.

* 3 Rod eye: SSD2-I-50, Rod clevis: SSD2-Y-50. For dimensional diagrams, refer to Pneumatic Cylinders General Catalog (CB-029SA).

Specifications

Motor	☐ 56 Stepping motor	
Drive method	Sliding screw ø12	
Stroke	mm	25 to 100
Screw lead	mm	6 12
Max. payload kg *1, *2	Horizontal	14.8
	Vertical	13.2
Operation speed range *3	mm/s	15 to 72 30 to 144
Max. acceleration/deceleration * 4	mm/s ²	826 (setting: 9) 3306 (setting: 9)
Insulation resistance	10MΩ, 500 VDC	
Withstand voltage	500 VAC for 1 minute	
Operating ambient temperature, humidity	0 to 40 °C (no freezing)	
	35 to 80% RH (no condensation)	
Storage ambient temperature, humidity	-10 to 50 °C (no freezing)	
	35 to 80% RH (no condensation)	
Atmosphere	No corrosive gas, explosive gas, or dust	
Degree of protection	IP40	

*1 Payload varies depending on the speed. Refer to the speed and payload table for details.

*2 Use an external guide when transporting.

*3 The maximum speed may decrease depending on the conditions.

*4 Refer to the speed and payload table for the acceleration/deceleration speed at other settings.

*5 Pressing operation is not supported.

Speed and payload

[When installed horizontally]

Switch Setting	Screw lead					
	6 mm			12 mm		
	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)
0	15	0	14.8	30	0	4.4
1	21	38	11.6	42	153	6
2	27	90	10	55	360	9.2
3	34	155	10	68	620	9.2
4	40	233	8.4	80	934	8.8
5	46	325	8.4	93	1301	8.8
6	53	430	8.4	106	1722	8.4
7	59	549	6.8	118	2196	7.6
8	65	681	6.8	131	2724	6
9	72	826	6.8	144	3306	4.4

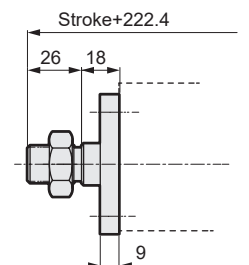
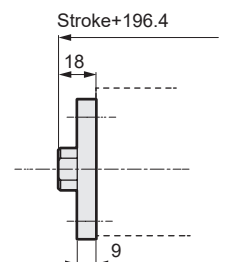
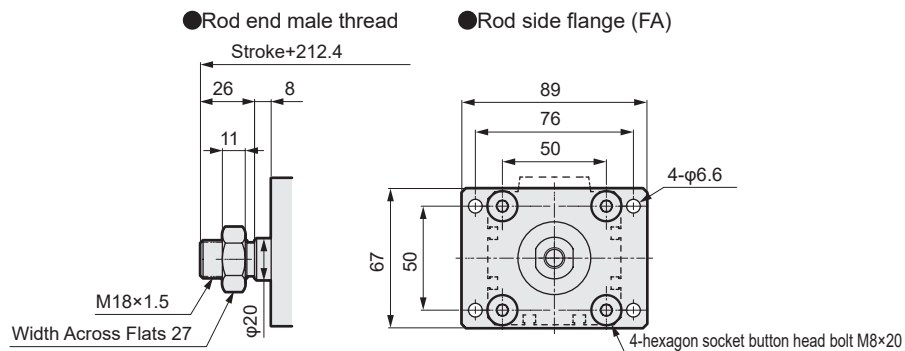
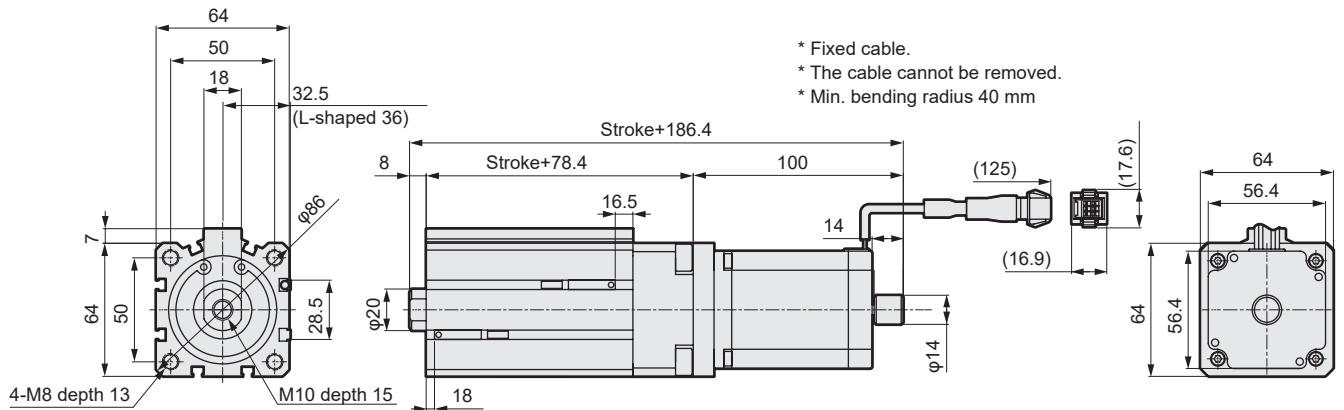
[When installed vertically]

Switch Setting	Screw lead					
	6 mm			12 mm		
	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)	Speed (mm/s)	Acceleration/Deceleration (mm/s ²)	Payload (kg)
0	15	0	13.2	30	0	6.4
1	21	38	13.2	42	153	6.4
2	27	90	13.2	55	360	6.8
3	34	155	13.2	68	620	6.8
4	40	233	12.8	80	934	7.2
5	46	325	12.4	93	1301	6.8
6	53	430	12	106	1722	6.4
7	59	549	9.6	118	2196	6
8	65	681	7.6	131	2724	4.4
9	72	826	0	144	3306	2.4

* The speed and acceleration/deceleration setting are guidelines. The actual values may differ due to switch adjustment, power supply voltage, individual motor differences, variations in mechanical efficiency and/or temperature.

Dimensions

● DSSD2-50



[Dimensions by stroke]

Stroke code	025	050	075	100
Stroke (mm)	25	50	75	100
Weight (kg)	2.3	2.5	2.7	2.9

DSSD2	D Series (Screw drive)	D Series (Spring drive)	ESC3 (Controller)	G Series	ECG-A (Controller)	ECG-B (Controller)	Safety Caution	Model selection Check sheet
DSTK	DSTG	DSTS	DSTL	DMSG	DLSH	DCKW		

Model selection

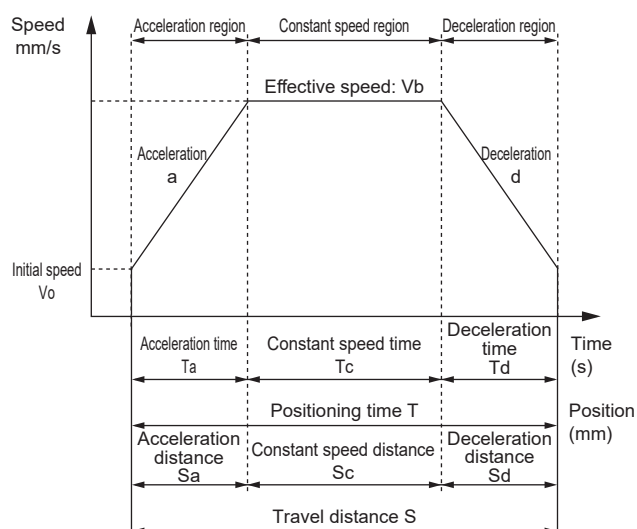
STEP 1 Confirming payload

Payload varies with mounting orientation, screw lead and transport speed. Refer to the Series Variation (page 3), the specification table for each model and the Table of Payload by Speed setting 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	Formula
Set value	Initial speed	V0	mm/s	According to the table below (= value of switch setting 0)
	Speed setting	V	mm/s	Refer to the table below
	Acceleration	a	mm/s ²	According to the table below (fixed value)
	Deceleration	d	mm/s ²	According to the table below (fixed value)
Calculated value	Travel distance	S	mm	*
	Achieved speed	Vmax	mm/s	$=(S \times a + V_0^2)^{1/2}$
	Effective speed	Vb	mm/s	The lesser value of V and Vmax
	Acceleration time	Ta	s	$=(Vb - V_0) / a$
	Deceleration time	Td	s	$=Sc / Vb$
	Constant speed time	Tc	s	$=Sc / Vb$
	Acceleration distance	Sa	mm	$=V_0 \times Ta + (a \times Ta^2) / 2$
	Deceleration distance	Sd	mm	$=S - 2 \times Sa$
	Constant speed distance	Sc	mm	$=S - 2 \times Sa$
	Positioning time	T	s	$=2 \times Ta + Tc$

* Depending on the speed setting and stroke, the trapezoid speed waveform may not be formed (the set speed may not be achieved). In this case, select the execution speed (Vb) from the set speed (V) and the achieved speed (Vmax), whichever is smaller.

* Acceleration/Deceleration depends on the speed setting.

* Speed is determined by the settings of rotary switches 1 and 2.

* The stabilization time differs depending on the working conditions, but it may take approximately 0.2s.

[Speed setting] (mm/s)

Switch setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	15	22	15	30	15	30
1	23	35	23	46	21	42
2	31	47	31	63	27	55
3	40	60	40	80	34	68
4	48	72	48	96	40	80
5	56	85	56	113	46	93
6	65	97	65	130	53	106
7	73	110	73	146	59	118
8	81	122	81	163	65	131
9	90	135	90	180	72	144

[Acceleration, deceleration] (mm/s²)

Switch setting	Size 20		Size 32		Size 50	
	L6	L9	L6	L12	L6	L12
0	0	0	0	0	0	0
1	53	119	53	212	38	153
2	129	290	129	518	90	360
3	229	513	229	916	155	620
4	351	787	351	1407	234	934
5	497	1114	497	1990	325	1301
6	666	1492	666	2666	431	1722
7	858	1922	858	3435	549	2196
8	1074	2404	1074	4296	681	2724
9	1312	2938	1312	5250	827	3306