

Electric Actuator with
Motor Specification

DSSD2

Rod Type



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DSSD2 System Table

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



For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

1

2

3

4

5

6

7

8

9

10

11

12

1Size

2020

2Connected Controller *1

SESC4

3Motor Mounting Direction

EInline Mount

4Screw Lead

066 mm

099 mm

5Stroke

02020 mm

05050 mm

07575 mm

100100 mm

6Switch

NNNNNone

T3PHT-type straight type

T3PVT-type L-shape type

7Relay Cable *2

N0None

R1Flexible 1 m

R3Flexible 3 m

R5Flexible 5 m

RXFlexible 10 m

8Controller Included

NNone

ADIN rail mounting specification

BPanel mounting specification

9IO Cable Length

NNone

11 m

33 m

55 m

X10 m

12Accessory *3

(when rod end male thread N is selected)

BlankNo accessories

ISingle Knuckle

YDouble-knuckle

11Mounting bracket

BlankWithout mounting bracket

FARod Side Flange

10Option

BlankRod end female thread

NRod end male thread

D Series

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.
*3 Single-knuckle: SSD2-I-20, Double-knuckle: SSD2-Y-20. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller	ESC4	
Motor	□35 Stepping Motor	
Drive Method	Sliding screw ø6	
Stroke	20 to 100	
Screw lead	mm	69
Max. Payload	Horizontal	4.4
kg *1 *2	Vertical	4.8
Operating Speed Range *3	mm/s	15 to 9022 to 135
Max. Acceleration/Deceleration *4	mm/s ²	1312 (Setting: 9)2938 (Setting: 9)
Insulation Resistance	10 MΩ, 500 VDC	
Withstanding 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	
Protection Structure	IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*5 Does not support pushing operation.

Speed and Payload

[Horizontal Installation]

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

[Vertical Installation]

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 for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

DSSD2-20 Series

External Dimension Drawing

External Dimension Drawing

● DSSD2-20

● Rod end male thread part

● Rod Side Flange (FA)

[Dimension Table by Stroke]

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

418

CKD

Ending

CKD

419



Electric Actuator Rod Type

DSSD2-32

□42 Stepping Motor



For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

1

Size

32

32

2

Connected Controller *1

S

ESC4

3

Motor Mounting Direction

E

Inline Mount

4

Screw Lead

06

6 mm

12

12 mm

5

Stroke

025

25 mm

050

50 mm

075

75 mm

100

100 mm

6

Relay Cable *2

N0

None

R1

Flexible 1 m

R3

Flexible 3 m

R5

Flexible 5 m

RX

Flexible 10 m

7

Controller Included

N

None

A

DIN rail mounting specification

B

Panel mounting specification

8

Switch

NNNN

None

T3PH

T-type straight type

T3PV

T-type L-shape type

9

IO 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

No accessories

I

Single Knuckle

Y

Double-knuckle

DSSD2 - 32 S E - 06 025 T3PH R1 A 1 - - - - -

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.
*3 Single-knuckle: SSD2-I-32, Double-knuckle: SSD2-Y-32. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller		ESC4	
Motor		□42 Stepping Motor	
Drive Method		Sliding screw ø8	
Stroke		25 to 100	
Screw lead		6	12
Max. Payload	Horizontal	10	4
	Vertical	14	4.8
Operating Speed Range		15 to 90	30 to 180
*3		mm/s	
Max. Acceleration/Deceleration *4		1312 (Setting: 9)	5250 (Setting: 9)
mm/s ²			
Insulation Resistance		10 MΩ, 500 VDC	
Withstanding Voltage		500 VAC for 1 minute	
Operating Ambient		0 to 40°C (no freezing)	
Temperature, Humidity		35 to 80% RH (no condensation)	
Storage Ambient		-10 to 50°C (no freezing)	
Temperature, Humidity		35 to 80% RH (no condensation)	
Atmosphere		No corrosive gas, explosive gas, or dust	
Protection Structure		IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*5 Does not support pushing operation.

Speed and Payload

[Horizontal Installation]

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

[Vertical Installation]

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	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 settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

DSSD2-32 Series

External Dimension Drawing

External Dimension Drawing

● DSSD2-32

*This is a fixed cable.
*The cable cannot be removed.
*Minimum bending radius 40 mm

● Rod end male thread part ● Rod Side Flange (FA)

[Dimension Table by Stroke]

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

420

CKD

Ending

CKD

421



Electric Actuator Rod Type

DSSD2-50

□56 Stepping Motor



For compatible detailed model Nos., please visit the CKD website.

Model No. Notation Method

DSSD2

50

S

E

06

025

T3PH

R1

A

1

①Size

50 50

②Connected Controller *1

S ESC4

③Motor Mounting Direction

E Inline Mount

④Screw Lead

06 6 mm

12 12 mm

⑤Stroke

025 25 mm

050 50 mm

075 75 mm

100 100 mm

⑦Relay Cable *2

N0 None

R1 Flexible 1 m

R3 Flexible 3 m

R5 Flexible 5 m

RX Flexible 10 m

⑧Controller Included

N None

A DIN rail mounting specification

B Panel mounting specification

⑥Switch

NNNN None

T3PH T-type straight type

T3PV T-type L-shape type

⑨IO Cable Length

N None

1 1 m

3 3 m

5 5 m

X 10 m

⑩Accessory *3
(when rod end male thread N is selected)

Blank No accessories

I Single Knuckle

Y Double-knuckle

⑪Mounting bracket

Blank Without mounting bracket

FA Rod Side Flange

⑫Option

Blank Rod end female thread

N Rod end male thread

*1 For controllers, please refer to P. 611.
*2 For the external dimension drawing of the relay cable, please refer to P. 618.
*3 Single-knuckle: SSD2-I-50, Double-knuckle: SSD2-Y-50. For the external dimension drawing, please refer to "Pneumatic Cylinder ② (RJ-003AA)".

Specifications

Connected Controller	ESC4	
Motor	□56 Stepping Motor	
Drive Method	Sliding screw ø12	
Stroke	25 to 100	
Screw lead	mm	6 12
Max. Payload	Horizontal	14.8 9.2
kg *1 *2	Vertical	13.2 7.2
Operating Speed Range *3	15 to 72 30 to 144	
mm/s		
Max. Acceleration/Deceleration *4	826 (Setting: 9) 3306 (Setting: 9)	
mm/s ²		
Insulation Resistance	10 MΩ, 500 VDC	
Withstanding 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	
Protection Structure	IP40	

*1 Payload varies depending on speed. For details, please refer to the speed and payload table.
*2 When transporting, please use an external guide in combination.
*3 Maximum speed may decrease depending on conditions.
*4 For acceleration/deceleration at other settings, please refer to the speed and payload table.
*5 Does not support pushing operation.

Speed and Payload

[Horizontal Installation]

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

[Vertical Installation]

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

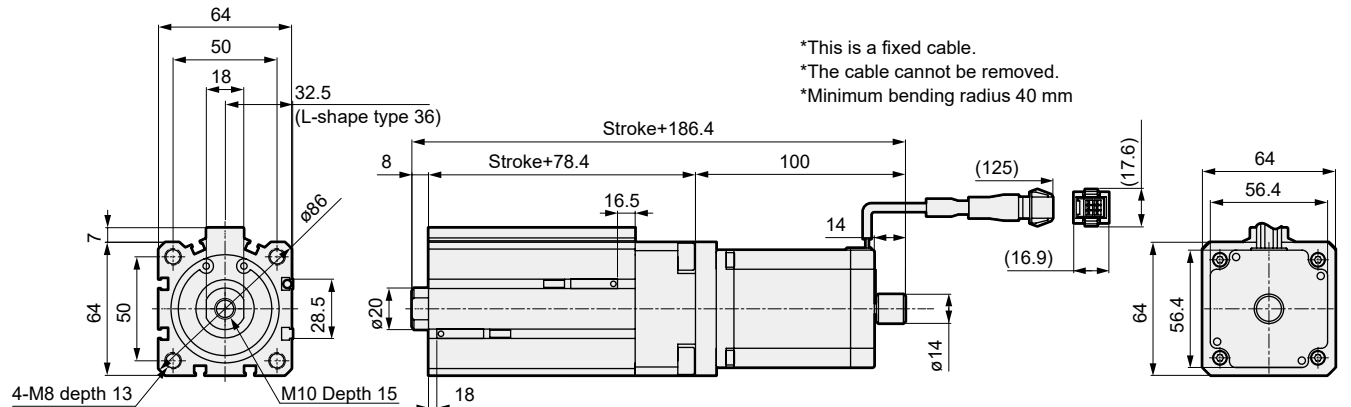
*The speed and acceleration/deceleration settings are for reference only. A discrepancy from the actual values may occur due to switch adjustment, power supply voltage, individual differences among motors, variations in mechanical efficiency, and temperature.

DSSD2-50 Series

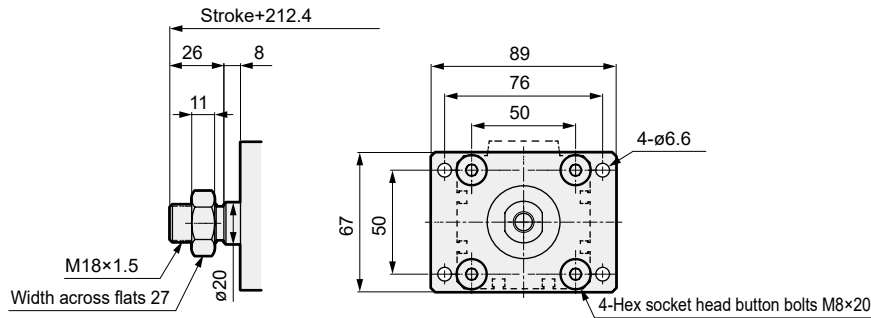
External Dimension Drawing

External Dimension Drawing

● DSSD2-50



● Rod end male thread part ● Rod Side Flange (FA)



[Dimension Table by Stroke]

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

Model Selection

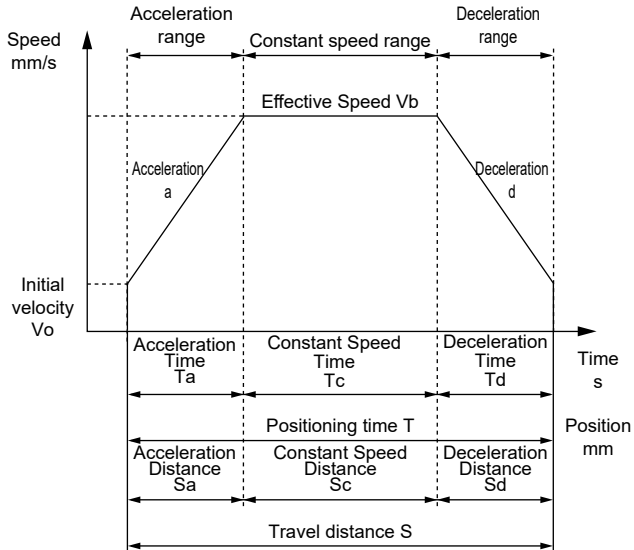
STEP1 Confirmation of Payload

Payload changes depending on mounting orientation, screw lead, and transport speed. Select the size and screw lead by referring to the system table (P. 417), the specification table for each model, and the payload table by speed setting.

STEP2 Confirmation of Positioning Time

Calculate the positioning time for the selected product according to the example below and check if it meets the required tact time.

Positioning time for general transfer operations



	Content	Code	Unit	Formula
Setting Value	Initial velocity	V0	mm/s	According to the table below (= value of switch setting 0)
	Speed Setting	V	mm/s	According to the table below
	Acceleration	a	mm/s ²	According to the table below (fixed value)
	Deceleration			
Calculated Value	Travel Distance	S	mm	*
	Reached Speed	Vmax	mm/s	$= (S \times a + V0^2)^{1/2}$
	Effective Speed	Vb	mm/s	The smaller of V and Vmax
	Acceleration Time	Ta	s	$= (Vb - V0) / a$
	Deceleration Time			
	Constant Speed Time	Tc	s	$= Sc / Vb$
	Acceleration Distance	Sa	mm	$= V0 \times Ta + (a \times Ta^2) / 2$
	Deceleration Distance			
	Constant Speed Distance	Sc	mm	$= S - 2 \times Sa$
	Positioning Time	T	s	$= 2 \times Ta + Tc$

* Depending on the speed setting and stroke, a trapezoidal velocity waveform may not be formed (the set speed may not be reached). In that case, select the smaller of the set speed (V) and the reached speed (Vmax) as the effective speed (Vb).
* Acceleration/deceleration is determined by the speed setting.
* The speed is determined by the settings of rotary switches 1 and 2.
* Settling time varies depending on the usage conditions, but it may take about 0.2 s.

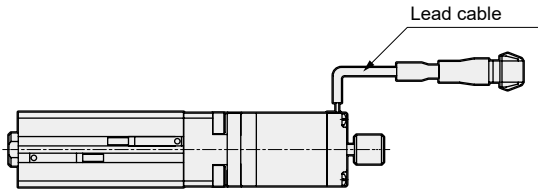
[Speed Setting]		(mm/s)					
Switch Setting	Size 20		Size 32		Size 50		
	L6	L9	L6	L12	L6	L12	
0	15	22	15	30	15	30	
1	23	35	23	46	21	42	
2	31	47	31	63	27	55	
3	40	60	40	80	34	68	
4	48	72	48	96	40	80	
5	56	85	56	113	46	93	
6	65	97	65	130	53	106	
7	73	110	73	146	59	118	
8	81	122	81	163	65	131	
9	90	135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

[Acceleration, Deceleration]		(mm/s ²)					
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	

Special Order Product*

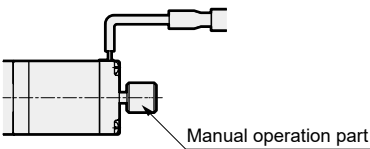
● Change of cable outlet direction

It is possible to change the outlet direction of the lead cable coming out of the motor.



● Add cover to manual operation part

A rubber cover can be included to the manual operation part at the rear of the motor.



*For details on special order products, please contact our sales office.

D Series

DSSD2

DSTK

DSTG

DSTS

DSTL

DMSDG

DLSH

DCKW

Ending

D Series

DSSD2

DSTK

DSTG

DSTS

DSTL

DMSDG

DLSH

DCKW

Ending