



Pneumatic Cylinders I
Catalog No. CB-029S

Compact cylinder

SSD2-FP1 Series

● Bore size: $\phi 12/\phi 16/\phi 20/\phi 25/\phi 32/\phi 40/\phi 50/\phi 63/\phi 80/\phi 100$



Specifications

Item		SSD2									
Bore size mm		$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting									
Working fluid		Compressed air									
Max. working pressure MPa		1.0									
Min. working pressure MPa		0.1					0.05				
Proof pressure MPa		1.6									
Ambient temperature $^{\circ}\text{C}$		10 to 60 (no freezing)									
Port size		M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	With rubber cushion	$+2.0$ 0									
	Without cushion	$+1.0$ 0									
Working piston speed mm/s		50 to 500					50 to 300				
Cushion		With or without cushion can be selected									
Lubrication		Not required									
Allowable absorbed	With rubber cushion	0.03	0.05	0.10	0.16	0.16	0.44	0.75	0.78	2.51	3.92
	Without cushion	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: The 5 mm stroke length of the $\phi 32$ without switch has a port size of M5.

*2: The specifications above are for double acting/single rod.

Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

● Variation: blank, L, K, KL

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 12$	5/10/15/20	30	1
$\phi 16$	25/30		
$\phi 20$	5/10/15/20/25	50	
$\phi 25$	30/35/40/45/50		
$\phi 32$	5/10/15/20/25/30/	100	
$\phi 40$	35/40/45/50/75/100		
$\phi 50$	10/15/20/25		
$\phi 63$	30/35/40/45/50		
$\phi 80$	75/100		
$\phi 100$			

*1: When using the type with a switch, refer to the table of the min. stroke length with switch in Pneumatic Cylinders I (CB-029SA).

*2: When max. stroke length is exceeded, refer to the Long stroke length in Pneumatic Cylinders I (CB-029SA).

● Variation: X, XL, Y, YL

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 12$	5, 10	10	5
$\phi 16$			
$\phi 20$			
$\phi 25$			
$\phi 32$			
$\phi 40$			
$\phi 50$	10, 20	20	10

*: When using the type with switch, refer to the table on the right.

● Variation: G, GL, G5, G5L

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 20$	5/10/15/20/25	50	1
$\phi 25$	30/35/40/45/50		
$\phi 32$	5/10/15/20/25/30/	100	
$\phi 40$	35/40/45/50/75/100		
$\phi 50$	10/15/20/25		
$\phi 63$	30/35/40/45/50		
$\phi 80$	75/100		
$\phi 100$			

*1: When using the type with a switch, refer to the table of the min. stroke length with switch in Pneumatic Cylinders I (CB-029SA).

● Variation: D, DL

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 12$	5/10/15/20	30	5
$\phi 16$	25/30		
$\phi 20$	5/10/15/20/25	50	
$\phi 25$	30/35/40/45/50		
$\phi 32$	5/10/15/20/25/30/	100	
$\phi 40$	35/40/45/50/75/100		
$\phi 50$	10/15/20/25		
$\phi 63$	30/35/40/45/50		
$\phi 80$	75/100		
$\phi 100$			

● Variation: M, ML

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 12$	5/10/15/20	30	1
$\phi 16$	25/30		
$\phi 20$	5/10/15/20/25	50	
$\phi 25$	30/35/40/45/50		
$\phi 32$	5/10/15/20/25/30/	100	
$\phi 40$	35/40/45/50/75/100		
$\phi 50$	5/10/15/20/25/30/		
$\phi 63$	35/40/45/50/75/100		

*1: When using the type with a switch, refer to the table of the min. stroke length with switch in Pneumatic Cylinders I (CB-029SA).

● Variation: G2, G2L, G3, G3L

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 16$	5/10/15/20/25/30	30	1 (10) The value in () is for types with one or two switches.
$\phi 20$	5/10/15/20/25		
$\phi 25$	30/35/40/45/50	50	
$\phi 32$	5/10/15/20/25/30/		
$\phi 40$	35/40/45/50/75/100	100	
$\phi 50$	10/15/20/25		
$\phi 63$	30/35/40/45/50		
$\phi 80$	75/100		
$\phi 100$			

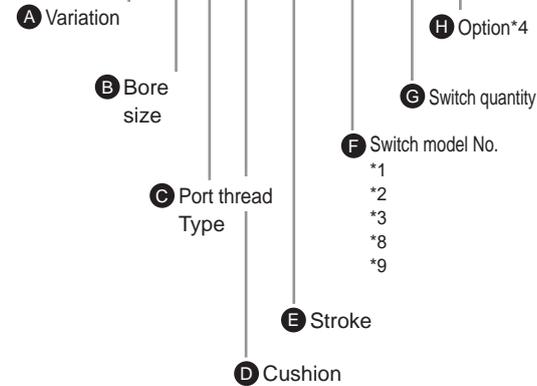
How to order

Without switch

SSD2 - K - 12 - 5 - N FP1 - LB - I

With switch

SSD2 - KL - 12 - 10 - T0H - R - N FP1 - LB - I



⚠ Precautions for model No. selection

- *1: ø12, T2YD* switches cannot be built-in on ø16.
- *2: T8* switch cannot be built-in with ø12 to ø32.
- *3: The F type switch can be used only on the piping port surface of built-in bore size ø20, 25.
- *4: Piston rod of ø12 to ø25 is stainless steel as standard. C-snap ring will be stainless steel, not steel. The rod end male thread nut is stainless steel.
- *5: The mounting bracket is attached at shipment.
- *6: The projection dimension of piston rod WF when LB or FA is selected is different from that of the standard. Dimensions Pneumatic Cylinders I (CB-029SA). The number of the specified protruding dimension will be added at the end of the model No. printed on the metal plate on the body.
- *7: "I" and "Y" cannot be selected together.
- *8: The F switch with L lead wire on ø20 models cannot be selected on stroke lengths of 15 mm or under.
- *9: Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
- *10: Refer to Pneumatic Cylinders I (CB- 029SA) for combinations of variations and options.

[Example of model No.]

SSD2-KL-12-10-T0H-R-NFP1-LB-I

Model: Compact cylinder
Food-grade (NSF H1) lubricants are used.

- A** Variation : Double acting/high load/with switch
- B** Bore size : ø12 mm
- C** Port thread : Rc thread
- D** Cushion : No cushion
- E** Stroke : 10 mm
- F** Switch model No. : Reed switch T0H, lead wire length 1 m
- G** Switch qty. : 1 on rod side
- H** Option : Rod end male thread
- I** Mounting bracket : Axial foot
- J** Accessory : Rod eye

Code	Description	Bore size									
		12	16	20	25	32	40	50	63	80	100
A Variation											
Blank	Double acting/single rod	●	●	●	●	●	●	●	●	●	●
L	Double acting/single rod/with switch	●	●	●	●	●	●	●	●	●	●
K	Double acting/high load	●	●	●	●	●	●	●	●	●	●
KL	Double acting/high load/with switch	●	●	●	●	●	●	●	●	●	●
X	Double acting/push	●	●	●	●	●	●	●	●	●	●
XL	Double acting/push/with switch	●	●	●	●	●	●	●	●	●	●
Y	Double acting/pull	●	●	●	●	●	●	●	●	●	●
YL	Double acting/pull/with switch	●	●	●	●	●	●	●	●	●	●
D	Double acting/double rod	●	●	●	●	●	●	●	●	●	●
DL	Double acting/double rod/with switch	●	●	●	●	●	●	●	●	●	●
M	Double acting/rotation-stop	●	●	●	●	●	●	●	●	●	●
ML	Double acting/rotation-stop/with switch	●	●	●	●	●	●	●	●	●	●
G	Double acting/heavy duty scraper	●	●	●	●	●	●	●	●	●	●
GL	Double acting/heavy duty scraper/with switch	●	●	●	●	●	●	●	●	●	●
G2	Double acting/coolant proof scraper (packing NBR)	●	●	●	●	●	●	●	●	●	●
G2L	Double acting/coolant proof scraper (packing NBR)/with switch	●	●	●	●	●	●	●	●	●	●
G3	Double acting/coolant proof scraper (packing FKM)	●	●	●	●	●	●	●	●	●	●
G3L	Double acting/coolant proof scraper (packing FKM)/with switch	●	●	●	●	●	●	●	●	●	●
G5	Double acting/environmentally-resistant scraper	●	●	●	●	●	●	●	●	●	●
G5L	Double acting/environmentally-resistant scraper/with switch	●	●	●	●	●	●	●	●	●	●

B Bore size (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

C Port thread	
Blank	Rc thread
NN	NPT thread (ø32 and over) (made to order)
GN	G thread (ø32 and over) (made to order)

D Cushion	
Blank	Without cushion
D	With rubber cushion

E Stroke length (mm)	
Refer to the stroke length table on page 57.	

F Switch model No.	
Refer to the switch model numbers on the following page.	

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2

H Option		Bore size (mm)									
		12	16	20	25	32	40	50	63	80	100
Blank	Rod end female thread	●	●	●	●	●	●	●	●	●	●
N	Rod end male thread	●	●	●	●	●	●	●	●	●	●
M *4	Piston rod material (stainless steel)	●	●	●	●	●	●	●	●	●	●
S	Dedicated unit for custom stroke length	●	●	●	●	●	●	●	●	●	●

I Mounting bracket	
Blank	Without mounting bracket
LB	Axial foot
CB	Clevis bracket (pin and snap ring attached)
FA	Rod side flange
FB	Head side flange

J Accessory (available when rod end male thread "N" is selected)	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)

I Mounting bracket *5
*6

J Accessory *7

FP1

Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	FRL/Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/bacteria-removing filter	Vacuum components	Fluid control valves
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FP2

SSD2-FP1 Series

Switch model No.

● Variation:L, KL, XL, YL, DL, ML, GL, G5L

Switch model No.																						
Lead wire Straight	Lead wire L-shaped	Contact	Voltage		Display	Lead wire	Bore size															
			AC	DC			12	16	20	25	32	40	50	63	80	100						
F2S*		Proximity		●	1-color display	2-wire			●	●												
F3S*				●			3-wire			●	●											
F2H*	F2V*			●			2-wire			●	●											
F3H*	F3V*			●			3-wire			●	●											
F3PH*	F3PV*	Proximity		●	1-color display (PNP output) (made to order)	3-wire			●	●												
F2YH*	F2YV*			●			2-wire			●	●											
F3YH*	F3YV*		●		2-color display	3-wire			●	●												
T0H*	T0V*	Reed	●	●	1-color display	2-wire	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
T5H*	T5V*		●	●	Without indicator lamp		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
T8H*	T8V*		●	●	1-color display							●	●	●	●	●	●	●	●	●	●	
T1H*	T1V*	Proximity	●		1-color display	2-wire			●	●	●	●	●	●	●	●	●	●	●	●		
T2H*	T2V*			●							●	●	●	●	●	●	●	●	●	●	●	●
T3H*	T3V*			●		3-wire			●	●	●	●	●	●	●	●	●	●	●	●		
T3PH*	T3PV*			●	1-color display (PNP output) (made to order)					●	●	●	●	●	●	●	●	●	●	●	●	
T2WH*	T2WV*			●	2-color display	2-wire			●	●	●	●	●	●	●	●	●	●	●	●	●	
T2YH*	T2YV*			●							●	●	●	●	●	●	●	●	●	●	●	●
T3WH*	T3WV*			●			3-wire			●	●	●	●	●	●	●	●	●	●	●	●	●
T3YH*	T3YV*			●							●	●	●	●	●	●	●	●	●	●	●	●
T2YD*	-			●		2-color display	2-wire			●	●	●	●	●	●	●	●	●	●	●	●	
T2YDT*	-			●		AC magnetic field				●	●	●	●	●	●	●	●	●	●	●	●	●
T2JH*	T2JV*		●		1-color display off-delay	2-wire			●	●	●	●	●	●	●	●	●	●	●	●		

*** Lead wire length**

Blank	1m (standard)
3	3 m (option)
5	5 m (option)

Note: 5 m lead wire for the F switch is made to order..

● Variation: G2L, G3L

Switch model No.					
Lead wire Straight	Lead wire L-shaped	Contact	Voltage	Display	Lead wire
T2YLH*	T2YLV*				
T3YLH*	T3YLV*	3-wire			

*** Lead wire length**

Blank	1m (standard)
3	3 m (option)
5	5 m (option)

For dimensions, refer to the SSD2 Series in "Pneumatic Cylinders I (CB-029SA)".

FP 1						FP 2					
Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	F.R.L./Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/ bacteria-removing filter	Vacuum components	Fluid control valves



Pneumatic Cylinders I
Catalog No. CB-029SA

Compact cylinder (large bore size)

SSD2-FP1 Series

● Bore size: $\varnothing 125/\varnothing 140/\varnothing 160/\varnothing 180/\varnothing 200$



Specifications

Item	SSD2 (large bore size)				
	$\varnothing 125$	$\varnothing 140$	$\varnothing 160$	$\varnothing 180$	$\varnothing 200$
Bore size mm	$\varnothing 125$	$\varnothing 140$	$\varnothing 160$	$\varnothing 180$	$\varnothing 200$
Actuation	Double acting				
Working fluid	Compressed air				
Max. working pressure MPa	1.0			0.7	
Min. working pressure MPa	0.05				
Proof pressure MPa	1.6			1.05	
Ambient temperature °C	10 to 60 (no freezing)				
Port size	Rc3/8			Rc1/2	
Stroke tolerance mm	$^{+2.0}_0$				
Working piston speed mm/s	50 to 300			20 to 300	
Cushion	With rubber cushion (standard)				
Lubrication	Not required				
Allowable absorbed Energy J	With rubber cushion 6.52	6.52	7.78	12.4	
	Without cushion	-			

*1: The specifications above are for double acting/single rod. Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\varnothing 125$	10, 20, 30, 40, 50 75, 100, 125, 150 175, 200, 250, 300	300	1
$\varnothing 140$			
$\varnothing 160$			
$\varnothing 180$			
$\varnothing 200$			

*1: For the type with switch, refer to the table of switch mounting quantity and minimum stroke length.

How to order

Without switch

SSD2 - ○ - 200 - ○ - ○ - 100 - ○ - N FP1

With switch

SSD2 - L - 200 - ○ - ○ - 100 - T0H - R - N FP1

A Variation

B Bore size

C Port thread

D Stroke

E Switch model No.
*1

F Switch quantity

G Option

⚠ Precautions for model No. selection

*1: Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

2: Less than 5 mm for 1-color display and less than 10mm for the 2-color display, off-delay, AC magnetic field proof, T1, T8* switches are not available. Refer to Pneumatic Cylinders I (CB-029SA) for the switch quantity and the min. stroke length.

*3: Total length dimension with custom stroke length is handled as the custom stroke dedicated length.

[Example of model No.]

SSD2-L-200-100-T0H-R-NFP1

Model: Compact cylinder (large bore size)

Food-grade grease specifications

- A Variation : Double acting/single rod/with switch
- B Bore size : 200 mm
- C Port thread : Rc thread
- D Stroke length : 100 mm
- E Switch model No. : Reed T0H switch
· Lead wire length 1 m
- F Switch quantity : 1 on rod side
- G Option : Rod end male thread

Code	Description					
A Variation						
Blank	Double acting/single rod					
L	Double acting/single rod/with switch					
D	Double acting/double rod					
DL	Double acting/double rod/with switch					
B Bore size (mm)						
125	ø125					
140	ø140					
160	ø160					
180	ø180					
200	ø200					
C Port thread						
Blank	Rc thread					
NN	NPT thread (ø125 to ø160) (made to order)					
GN	G thread (ø125 to ø160) (made to order)					
D Stroke length (mm)						
Refer to the stroke length table on page 61.						
E Switch model No.						
Lead wire	Lead wire	Contact	Voltage		Display	Lead Line
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*		●	●	1-color display	
T2H*	T2V*	Proximity	●	●	1-color display	2-wire
T3H*	T3V*		●	●	1-color display (made to order)	3-wire
T3PH*	T3PV*		●	●	2-color display	2-wire
T2WH*	T2WV*		●	●		
T2YH*	T2YV*		●	●	2-color display	3-wire
T3WH*	T3WV*		●	●		
T3YH*	T3YV*		●	●	1-color display off-delay	2-wire
T2JH*	T2JV*		●	●		
T2YD*	-		●	●	2-color display	2-wire
T2YDT*	-		●	●	AC magnetic field	
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
F Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
G Option						
Blank	Rod end female thread					
N	Rod end male thread					

Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	FRL/Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/bacteria-removing filter	Vacuum components	Fluid control valves
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For dimensions, refer to the SSD2 Series in "Pneumatic Cylinders I (CB-029SA)".