Compact cylinder double acting/with position locking

SSD2-Q Series

● Bore size: ø20/ø25/ø32/ø40/ø50/ø63/ø80/ø100

JIS symbol 

RoHS CAD

Specifications

Item	SSD2-Q SSD2-QL (with switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting/position locking							
Working fluid	Compressed air							
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)							
Min. working pressure MPa	0.15 (≈22 psi, 1.5 bar)							
Proof pressure MPa	1.6 (≈230 psi, 16 bar)							
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)							
Port size	M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+2.5}_{0}$							
Working piston speed mm/s	50 to 500					50 to 300		
Cushion	Rubber cushion							
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)							
Position locking mechanism	Rod side or head side							
Holding force N	Max. thrust x 0.7							
Allowable absorbed energy J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø20	10/15/20/25/50/75/100	100	10
ø25			
ø32			
ø40			
ø50			
ø63			
ø80	25/50/75/100		25
ø100			

⚠ Be sure to read the Safety precautions for the position locking on pages 1058 to 1063 before use.

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	47.1	62.8	94.2	$1.26x10^2$	$1.57x10^2$	$1.88x10^2$	$2.20x10^2$	$2.51x10^2$	$2.83x10^2$	$3.14x10^2$
	Pull	35.3	47.1	70.7	94.2	$1.18x10^2$	$1.41x10^2$	$1.65x10^2$	$1.88x10^2$	$2.12x10^2$	$2.36x10^2$
ø25	Push	73.6	98.2	$1.47x10^2$	$1.96x10^2$	$2.45x10^2$	$2.95x10^2$	$3.44x10^2$	$3.93x10^2$	$4.42x10^2$	$4.91x10^2$
	Pull	56.7	75.6	$1.13x10^2$	$1.51x10^2$	$1.89x10^2$	$2.27x10^2$	$2.64x10^2$	$3.02x10^2$	$3.40x10^2$	$3.78x10^2$
ø32	Push	$1.21x10^2$	$1.61x10^2$	$2.41x10^2$	$3.22x10^2$	$4.02x10^2$	$4.83x10^2$	$5.63x10^2$	$6.43x10^2$	$7.24x10^2$	$8.04x10^2$
	Pull	90.5	$1.21x10^2$	$1.81x10^2$	$2.41x10^2$	$3.02x10^2$	$3.62x10^2$	$4.22x10^2$	$4.83x10^2$	$5.43x10^2$	$6.03x10^2$
ø40	Push	$1.88x10^2$	$2.51x10^2$	$3.77x10^2$	$5.03x10^2$	$6.28x10^2$	$7.54x10^2$	$8.80x10^2$	$1.01x10^3$	$1.13x10^3$	$1.26x10^3$
	Pull	$1.58x10^2$	$2.11x10^2$	$3.17x10^2$	$4.22x10^2$	$5.28x10^2$	$6.33x10^2$	$7.39x10^2$	$8.44x10^2$	$9.50x10^2$	$1.06x10^3$
ø50	Push	$2.95x10^2$	$3.93x10^2$	$5.89x10^2$	$7.85x10^2$	$9.82x10^2$	$1.18x10^3$	$1.37x10^3$	$1.57x10^3$	$1.77x10^3$	$1.96x10^3$
	Pull	$2.47x10^2$	$3.30x10^2$	$4.95x10^2$	$6.60x10^2$	$8.25x10^2$	$9.90x10^2$	$1.15x10^3$	$1.32x10^3$	$1.48x10^3$	$1.65x10^3$
ø63	Push	$4.68x10^2$	$6.23x10^2$	$9.35x10^2$	$1.25x10^3$	$1.56x10^3$	$1.87x10^3$	$2.18x10^3$	$2.49x10^3$	$2.81x10^3$	$3.12x10^3$
	Pull	$4.20x10^2$	$5.61x10^2$	$8.41x10^2$	$1.12x10^3$	$1.40x10^3$	$1.68x10^3$	$1.96x10^3$	$2.24x10^3$	$2.52x10^3$	$2.80x10^3$
ø80	Push	$7.54x10^2$	$1.01x10^3$	$1.51x10^3$	$2.01x10^3$	$2.51x10^3$	$3.02x10^3$	$3.52x10^3$	$4.02x10^3$	$4.52x10^3$	$5.03x10^3$
	Pull	$6.80x10^2$	$9.07x10^2$	$1.36x10^3$	$1.81x10^3$	$2.27x10^3$	$2.72x10^3$	$3.17x10^3$	$3.63x10^3$	$4.08x10^3$	$4.54x10^3$
ø100	Push	$1.18x10^3$	$1.57x10^3$	$2.36x10^3$	$3.14x10^3$	$3.93x10^3$	$4.71x10^3$	$5.50x10^3$	$6.28x10^3$	$7.07x10^3$	$7.85x10^3$
	Pull	$1.07x10^3$	$1.43x10^3$	$2.14x10^3$	$2.86x10^3$	$3.57x10^3$	$4.29x10^3$	$5.00x10^3$	$5.72x10^3$	$6.43x10^3$	$7.15x10^3$

Switch specifications (F-switch)

● 1-color/2-color LED

Item	2-wire proximity	3-wire proximity	2-wire proximity		3-wire proximity		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (made to order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less		
Indicator	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1 mA or less		10 μA or less		
Weight g	1 m:10 3 m:29						

Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed							2-wire proximity
	T1H/T1V	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T3WH/T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD(*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay			For programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Cylinder weight table (the weight of the switches is when there are 2 cylinder switches.)

● With rod side position locking (Unit: g)

Stroke (mm)	10		15		20		25		50		75		100	
Bore size (mm)	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch
ø20	201	242	213	254	226	267	238	279	330	370	392	433	455	495
ø25	274	315	290	331	306	347	322	363	439	480	519	560	599	640
ø32	430	474	451	495	473	517	494	538	602	646	709	753	817	861
ø40	632	681	658	708	685	734	711	761	844	893	976	1026	1109	1158
ø50	1096	1147	1138	1189	1180	1231	1222	1273	1432	1483	1642	1693	1852	1903
ø63	1609	1663	1664	1718	1719	1773	1774	1828	2049	2103	2324	2378	2599	2653
ø80	-	-	-	-	-	-	3822	3882	4255	4315	4904	4964	5336	5396
ø100	-	-	-	-	-	-	5769	5835	6339	6405	7194	7260	7764	7830

● With head side position locking (Unit: g)

Stroke (mm)	10		15		20		25		50		75		100	
Bore size (mm)	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch
ø20	217	258	230	270	242	283	255	295	330	370	392	433	455	495
ø25	295	336	311	352	327	368	343	384	439	480	519	560	599	640
ø32	462	506	484	528	505	549	527	571	634	678	742	786	849	893
ø40	688	737	714	763	741	790	767	816	900	949	1032	1081	1165	1214
ø50	1180	1231	1222	1273	1264	1315	1306	1357	1516	1567	1726	1777	1936	1987
ø63	1675	1729	1730	1784	1785	1839	1840	1894	2115	2169	2390	2444	2665	2719
ø80	-	-	-	-	-	-	3952	4012	4385	4445	4904	4964	5336	5396
ø100	-	-	-	-	-	-	5940	6006	6510	6576	7194	7260	7764	7830

How to order

● No switch (without magnet for switch)

SSD2-Q - 20 ○ - 10 - R ——— NM0 - LB - I

● With switch (built-in magnet for switch)

SSD2-QL - 20 ○ - 10 - R - T0H - R - NM0 - LB - I

Ⓐ Bore size
Ⓑ Port thread
Ⓒ Stroke
Ⓓ Position locking mechanism
Ⓔ Switch model No. *1 *6
Ⓕ Switch quantity
Ⓖ Option *2
Ⓗ Mounting bracket *3 *4
Ⓘ Accessory *5

Code	Description
Ⓐ Bore size (mm)	
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

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

Ⓒ Stroke (mm)
Refer to the stroke table on the following page.

Ⓓ Position locking mechanism	
R	With rod side position locking
H	With head side position locking

Ⓔ Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Indicator	Lead wire	Bore size 20	25	32	40	50	63	80	100
-	F2S*	Proximity		●	1-color LED	2-wire	●	●						
-	F3S*			●		3-wire	●	●						
F2H*	F2V*			●		2-wire	●	●						
F3H*	F3V*			●		3-wire	●	●						
F3PH*	F3PV*			●	1-color LED (PNP output) (custom)	3-wire	●	●						
F2YH*	F2YV*			●	2-color LED	2-wire	●	●						
F3YH*	F3YV*			●		3-wire	●	●						
T0H*	T0V*	Reed	●	●	1-color LED	2-wire	●	●	●	●	●	●	●	●
T5H*	T5V*		●	●	No indicator lamp		●	●	●	●	●	●	●	●
T8H*	T8V*		●	●	1-color LED		●	●	●	●	●	●	●	●
T1H*	T1V*	Proximity	●		1-color LED	2-wire	●	●	●	●	●	●	●	●
T2H*	T2V*			●			●	●	●	●	●	●	●	●
T3H*	T3V*			●		3-wire	●	●	●	●	●	●	●	●
T3PH*	T3PV*			●	1-color LED (PNP output)		●	●	●	●	●	●	●	●
T2WH*	T2WV*			●	2-color LED	2-wire	●	●	●	●	●	●	●	●
T2YH*	T2YV*			●			●	●	●	●	●	●	●	●
T3WH*	T3WV*			●		3-wire	●	●	●	●	●	●	●	●
T3YH*	T3YV*			●			●	●	●	●	●	●	●	●
T2YD*	-			●	2-color LED for AC magnetic field	2-wire	●	●	●	●	●	●	●	●
T2YDT*	-			●			●	●	●	●	●	●	●	●
T2JH*	T2JV*			●	1-color LED off-delay	2-wire	●	●	●	●	●	●	●	●

*** Lead wire length**		
Blank	1 m (standard)	
3	3 m (option)	
5	5 m (option)	*8

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

Ⓖ Option	
Blank	Rod end female thread
N	Rod end male thread
M0	Non-locking manual override (with release bolt)
M1	Locking manual override
P4	Specifications for rechargeable battery (made to order)
P40	

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

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

Precautions for model No. selection

*1 : The F-switch can only be mounted on the piping port surface of bore sizes ø20 and ø25.
*2 : Only non-locking manual override unless "M0" or "M1" of Ⓖ option is selected. A release bolt is not included.
*3 : The mounting bracket is included at shipment.
*4 : The projection dimension of piston rod WF when LB or FA is selected is different from that of the standard. Refer to the dimensions on pages 847, 848, 850 and 851. 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.
*5 : "I" and "Y" cannot be selected together.
*6 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
*7 : Refer to pages 750 and 751 for combinations of variations/options.
*8 : F-switch cannot be selected.

[Example of model No.]

SSD2-QL-20-10-R-T0H-R-N-LB-I

Model: Compact cylinder, position locking
Ⓐ Bore size : ø20 mm
Ⓑ Port thread : Rc thread
Ⓒ Stroke : 10mm
Ⓓ Position locking mechanism : With rod side position locking
Ⓔ Switch model No. : Reed switch T0H, lead wire 1 m
Ⓕ Switch quantity : 1 on rod side
Ⓖ Option : Rod end male thread
Ⓗ Mounting bracket : Axial foot
Ⓘ Accessory : Rod eye

How to order switch

SW - T0H

Switch model No. (Item Ⓔ above)

[Stroke table]

Stroke (mm)		Applicable bore size							
		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard stroke	10	●	●	●	●	●	●		
	15	●	●	●	●	●	●		
	20	●	●	●	●	●	●		
	25	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75	●	●	●	●	●	●	●	●
	100	●	●	●	●	●	●	●	●
Min. stroke (mm)		10						25	
Max. stroke (mm)		100							

How to order mounting bracket

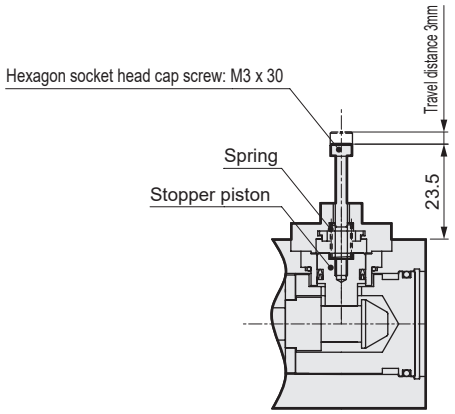
Bore size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80
Foot (LB)	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80
Flange (FA/FB)	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80
Clevis bracket (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80

Bore size (mm) / Mounting bracket	ø100
Foot (LB)	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-100
Clevis bracket (CB)	SSD2-CB-100

*1: The foot mounting bracket is provided as 2 pcs./set.

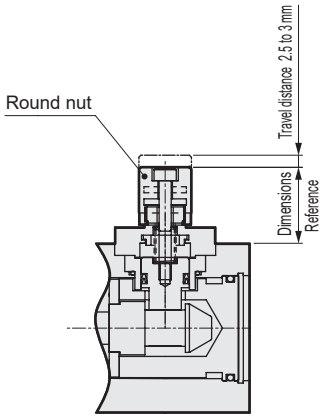
[Explanation of manual override]

● Non-locking manual override (option code: M0)



By screwing the hexagon socket head cap screw (M3 x 30) into the stopper piston and pulling the bolt with force of 20 N or more, the stopper piston moves and the lock is released. (Perform when horizontally installed with no load or when the opposite side port is pressurized)
When you release the bolt, the stopper piston is returned to the original position and engaged in the groove, and the piston is locked.

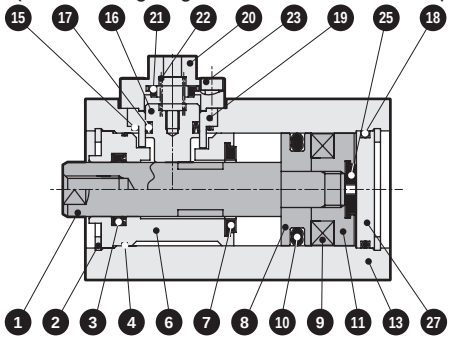
● Locking manual override (option code: M1)



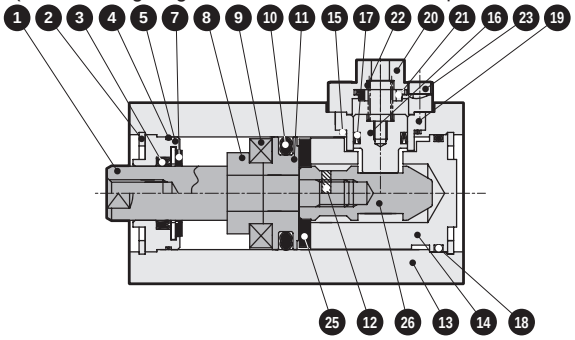
By rotating the round nut leftward (counterclockwise), the stopper piston moves and the lock is released. Locking the round nut by rotating it to the right (clockwise) causes the stopper piston to return. When it fits into the lock groove, the piston is locked. Screw in the round nut fully, since the cylinder may be damaged if the stopper piston is not securely locked in the groove.

Internal structure and parts list (ø20 to ø50)

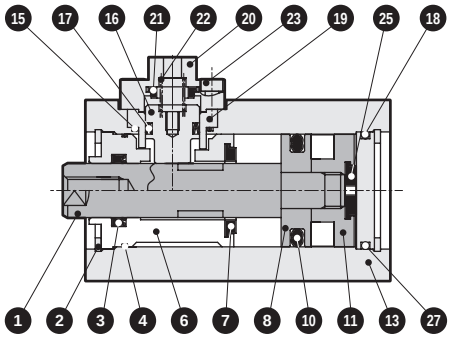
● SSD2-QL-20 to 50-R
(double acting/single rod/with switch/rod side position locking)



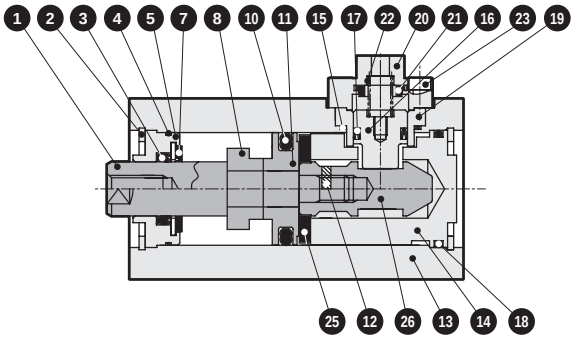
● SSD2-QL-20 to 50-H
(double acting/single rod/with switch/head side position locking)



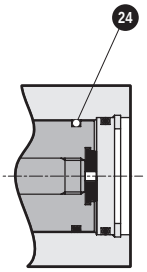
● SSD2-Q-20 to 50-R
(double acting/single rod/rod side position locking)



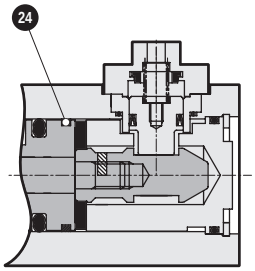
● SSD2-Q-20 to 50-H
(double acting/single rod/head side position locking)



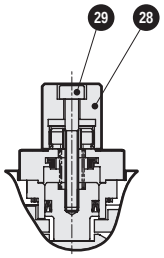
● ø20, ø25: 50 stroke and over



● ø20, ø25: 50 stroke and over



● Locking manual override



Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	ø20 to ø25: Stainless steel ø32 to ø50: Steel	Industrial chrome plating	16	Stopper piston	Steel	Nitriding
2	C-snap ring	Steel	Zinc phosphate	17	Stopper packing	Nitrile rubber	
3	Rod packing	Nitrile rubber		18	O-ring	Nitrile rubber	
4	Rod metal gasket	Nitrile rubber		19	Stopper housing	ø20 to ø30, ø50: Aluminum alloy	Alumite
5	Rod metal	Special aluminum	Alumite			ø40: Alloy steel	Chromate
6	Rod cover	Aluminum alloy	Alumite	20	Stopper cover	Aluminum alloy	Chromate
7	Cushion rubber (R)	Urethane rubber		21	Cushion rubber	Urethane rubber	
8	Spacer	Aluminum alloy	ø20 to ø32: Chromate	22	Coil spring	Piano wire	Electrodeposition
9	Magnet	Plastic		23	Hexagon socket head cap screw	Steel	
10	Piston packing	Nitrile rubber		24	Wear ring	Polyacetal resin (only for ø20 and ø25 with 50 mm stroke and over)	
11	Piston	Aluminum alloy	Chromate	25	Cushion rubber (H)	Urethane rubber	
12	Spring pin	Steel	Black finish	26	Sleeve	Steel	Nitriding
13	Body	Aluminum alloy	Hard alumite	27	Cover	Aluminum alloy	Chromate
14	Head cover	Aluminum alloy	Chromate	28	Round nut	Aluminum alloy	
15	O-ring	Nitrile rubber		29	Hexagon socket head cap screw	Steel	

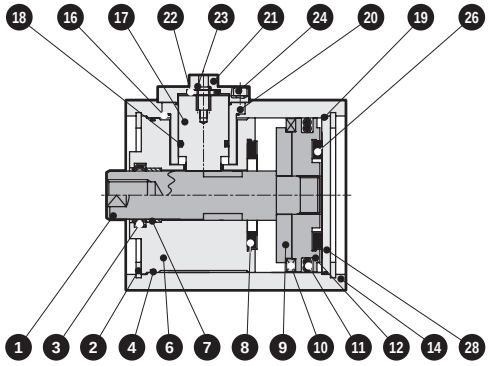
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø20	SSD2-Q-20K	③ ④ ⑦ ⑩ ⑮ ⑰ ⑱ ㉑ ㉔ ㉕
ø25	SSD2-Q-25K	
ø32	SSD2-Q-32K	
ø40	SSD2-Q-40K	
ø50	SSD2-Q-50K	

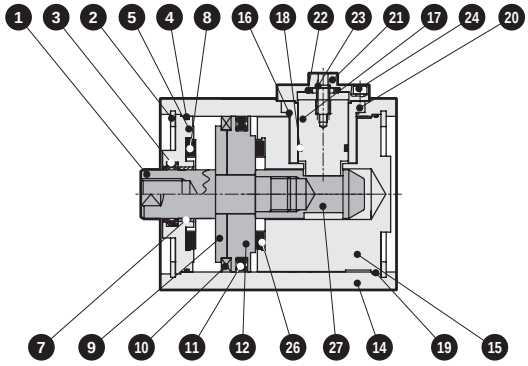
*1: ㉔ is included only with ø20 and ø25.

Internal structure and parts list (ø63 to ø100)

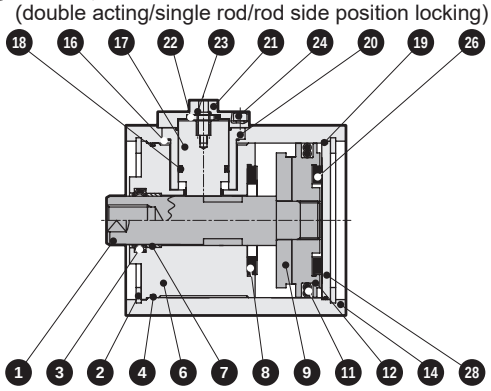
● SSD2-QL-63 to 100-R
(double acting/single rod/with switch/rod side position locking)



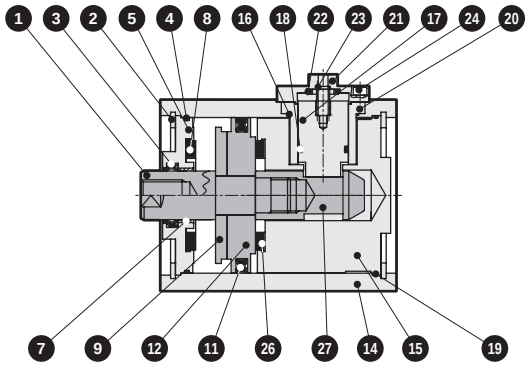
● SSD2-QL-63 to 100-H
(double acting/single rod/with switch/head side position locking)



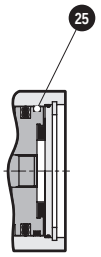
● SSD2-Q-63 to 100-R
(double acting/single rod/rod side position locking)



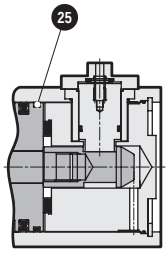
● SSD2-Q-63 to 100-H
(double acting/single rod/head side position locking)



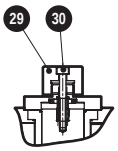
● ø80, ø100: 75 stroke and over



● ø80, ø100: 75 stroke and over



● Locking manual override



Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Steel	Industrial chrome plating	17	Stopper piston	Steel	Nitriding
2	C-snap ring	Steel	Zinc phosphate	18	Stopper packing	Nitrile rubber	
3	Rod packing	Nitrile rubber		19	O-ring	Nitrile rubber	
4	Rod metal gasket	Nitrile rubber		20	Stopper housing	ø80: Aluminum alloy	Alumite
5	Rod metal	Special aluminum	Alumite			ø63, ø100: Alloy steel	Chromate
6	Rod cover	Aluminum alloy	Alumite	21	Stopper cover	Aluminum alloy	Chromate
7	Bush	Oiles drymet		22	Cushion rubber	Urethane rubber	
8	Cushion rubber (R)	Urethane rubber		23	Coil spring	Piano wire	Electrodeposition
9	Spacer	Aluminum alloy		24	Hexagon socket head cap screw	Steel	
10	Magnet	Plastic		25	Wear ring	Polyacetal resin (only for ø80 and ø100 with 75 mm stroke and over)	
11	Piston packing	Nitrile rubber		26	Cushion rubber (H)	Urethane rubber	
12	Piston	Aluminum alloy	Chromate	27	Sleeve	Steel	Nitriding
13	Spring pin	Steel	Black finish	28	Cover	Aluminum alloy	Chromate
14	Body	Aluminum alloy	Hard alumite	29	Round nut	Aluminum alloy	
15	Head cover	Aluminum alloy	Chromate	30	Hexagon socket head cap screw	Steel	
16	O-ring	Nitrile rubber					

Repair parts list

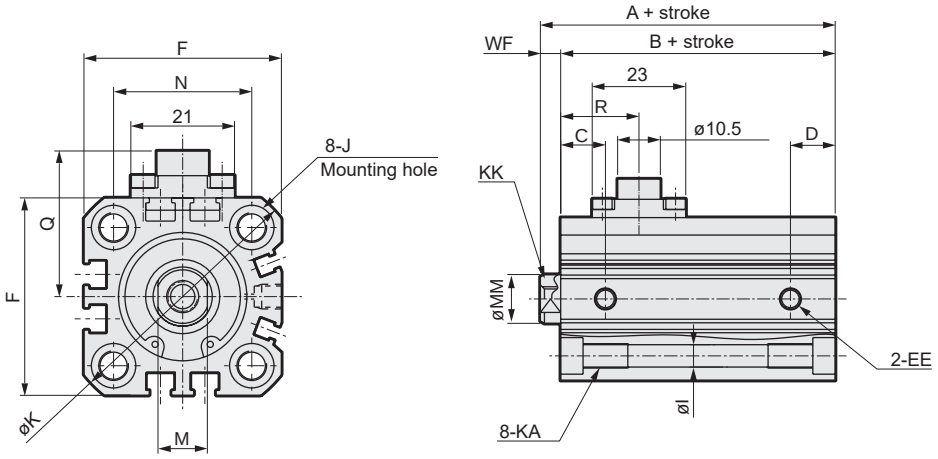
Bore size (mm)	Kit No.	Repair parts No.
ø63	SSD2-Q-63K	3 4 8 11 16 18 19 22 25 26
ø80	SSD2-Q-80K	
ø100	SSD2-Q-100K	

*1: 25 is included only with ø80 and ø100.

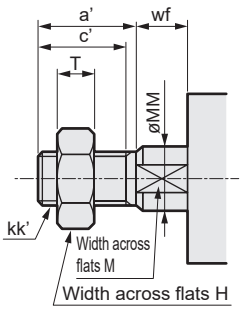
Dimensions (ø20, ø25) CAD

● SSD2-Q(L)-20 to 25-R

* The dimensions are common for types with and without switches.

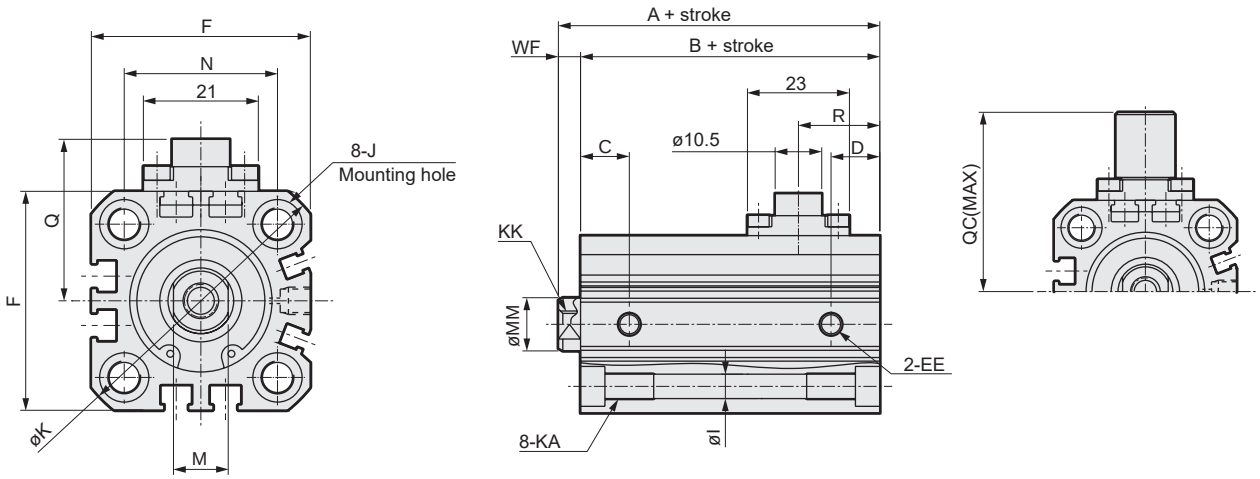


● Rod end male thread



● SSD2-Q(L)-20 to 25-H

* The dimensions are common for types with and without switches.



● Precautions regarding the switch mounting groove

*1: Only F-switch is available for the ø20 or ø25 piping port surface.

Code	Common dimensions												
Bore size (mm)	EE	F	I	J	K	KA	KK	M	MM	N	WF *1	Q	QC
ø20	M5	36	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5(14.5)	28.5	40
ø25	M5	40	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5(15)	29.5	41

Code	With rod side position locking mechanism					With head side position locking mechanism				
Bore size (mm)	A *1	B *1	C	D	R	A *1	B *1	C	D	R
ø20	59(80.5)	54.5(66)	9.5	8	18.6	65.5(80.5)	61(66)	9.5	8	17.3
ø25	62.5(84)	57.5(69)	12	8.5	19.3	69(84)	64(69)	12	8.5	18.4

● Rod end male thread

Code / Bore size (mm)	a'	c'	H	kk'	M	MM	T	wf *1
ø20	14	12	13	M8	8	10	5	4.5(14.5)
ø25	17.5	15	17	M10x1.25	10	12	6	5(15)

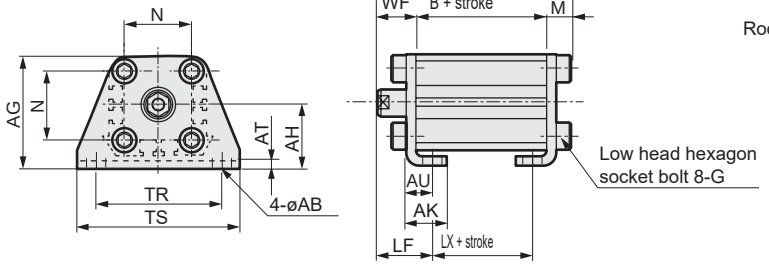
*1 : Dimensions in ( ) are for strokes of more than 25 mm.

*2 : Refer to pages 852 and 853 for switch mounting position.

*3 : For dimensions of individual accessories, refer to pages 1046 to 1049.

Dimensions with mounting bracket

● Axial foot (LB)
SSD2-Q(L)-20, 25 -LB



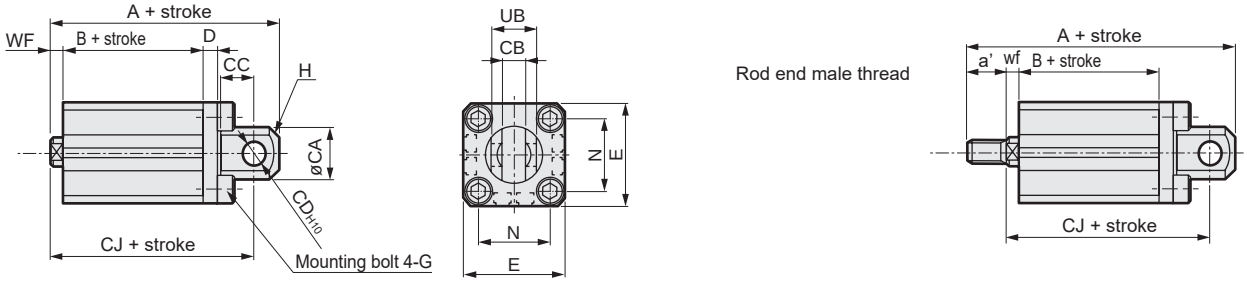
Code	Common dimensions						Female thread					SSD2-Q-R (female thread)				
Bore size (mm)	AB	AG	AH	AK	AT	AU	G	N	TR	TS	M	WF	LF	Without/with switch A	Without/with switch B	Without/with switch LX
ø20	7	42	24	15	3.2	9.2	M6x16	25.5	48	62	7.2	14.5	20.5	76.2(87.7)	54.5(66)	42.5(54)
ø25	7	46	26	16.5	3.2	10.7	M6x16	28	52	66	7.2	15	22.5	79.7(91.2)	57.5(69)	42.5(54)

Code	SSD2-Q-R (male thread)						SSD2-Q-H (female thread)				
Bore size (mm)	a'	wf	LF	Without/with switch A	Without/with switch B	Without/with switch LX	WF	LF	Without/with switch A	Without/with switch B	Without/with switch LX
ø20	14	14.5	20.5	90.2(101.7)	54.5(66)	42.5(54)	14.5	20.5	82.7(87.7)	61(66)	49(54)
ø25	17.5	15	22.5	97.2(108.7)	57.5(69)	42.5(54)	15	22.5	86.2(91.2)	64(69)	49(54)

Code	SSD2-Q-H (male thread)					
Bore size (mm)	a'	wf	LF	Without/with switch A	Without/with switch B	Without/with switch LX
ø20	14	14.5	20.5	96.7(101.7)	61(66)	49(54)
ø25	17.5	15	22.5	103.7(108.7)	64(69)	49(54)

* Dimensions in ( ) are for ø20 and ø25 with more than 25 mm stroke and ø80 and ø100 with more than 50 mm stroke.

● Clevis bracket (CB)
SSD2-Q(L)-20, 25 -CB



Code	Common dimensions										SSD2-Q-R (female thread)			
Bore size (mm)	CA	CB	CC	CD	D	E	G	H	N	UB	WF	A	B	CJ
ø20	20	8.2 +0.2 0	12	8	5	36	M6x16	C4	25.5	16 -0.1 -0.3	4.5(14.5)	86(107.5)	54.5(66)	77(98.5)
ø25	24	10.2 +0.2 0	14	10	5	40	M6x16	C5	28	20 -0.1 -0.3	5(15)	92.5(114)	57.5(69)	82.5(104)

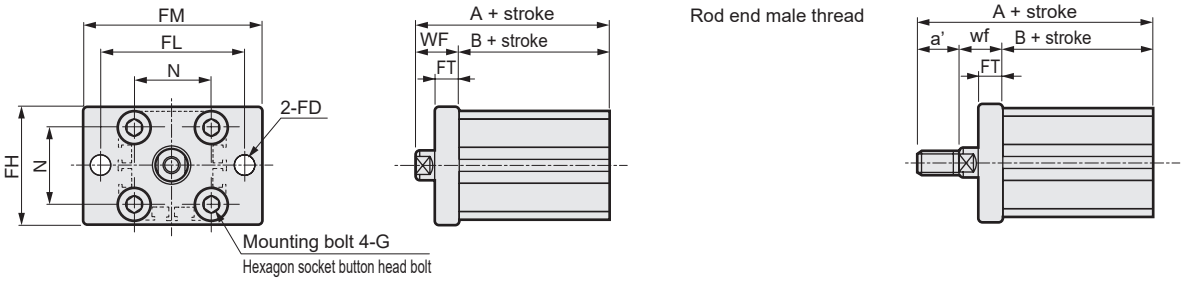
Code	SSD2-Q-R (male thread)					SSD2-Q-H (female thread)			
Bore size (mm)	a'	wf	A	B	CJ	WF	A	B	CJ
ø20	14	4.5(14.5)	100(121.5)	54.5(66)	77(98.5)	4.5(14.5)	92.5(107.5)	61(66)	83.5(98.5)
ø25	17.5	5(15)	110(131.5)	57.5(69)	82.5(104)	5(15)	99(114)	64(69)	89(104)

Code	SSD2-Q-H (male thread)				
Bore size (mm)	a'	wf	A	B	CJ
ø20	14	4.5(14.5)	106.5(121.5)	61(66)	83.5(98.5)
ø25	17.5	5(15)	116.5(131.5)	64(69)	89(104)

*1: Dimensions in ( ) are for more than 25 mm stroke.

Dimensions with mounting bracket CAD

● Rod side flange (FA)
SSD2-Q(L)-20, 25 -FA

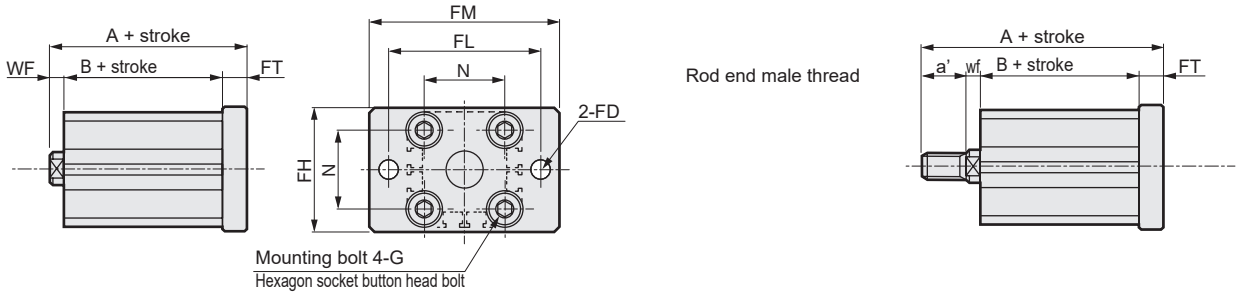


Code	Common dimensions							SSD2-Q-R (female thread)			SSD2-Q-R (male thread)			
Bore size (mm)	FD	FH	FL	FM	FT	N	G	WF	Without/with switch		a'	wf	Without/with switch	
									A	B			A	B
ø20	6.6	39	48	60	8	25.5	M6x16	14.5	69(80.5)	54.5(66)	14	14.5	83(94.5)	54.5(66)
ø25	6.6	42	52	64	8	28	M6x16	15	72.5(84)	57.5(69)	17.5	15	90(101.5)	57.5(69)

Code	SSD2-Q-H (female thread)			SSD2-Q-H (male thread)			
Bore size (mm)	WF	Without/with switch		a'	wf	Without/with switch	
		A	B			A	B
ø20	14.5	75.5(80.5)	61(66)	14	14.5	89.5(94.5)	61(66)
ø25	15	79(84)	64(69)	17.5	15	96.5(101.5)	64(69)

* Dimensions in ( ) are for ø20 and ø25 with more than 25 mm stroke and ø80 and ø100 with more than 50 mm stroke.

● Head side flange (FB)
SSD2-Q(L)-20, 25 -FB



Code	Common dimensions							SSD2-Q-R (female thread)			SSD2-Q-R (male thread)			
Bore size (mm)	FD	FH	FL	FM	FT	N	G	WF	A	B	a'	wf	A	B
ø20	6.6	39	48	60	8	25.5	M6x16	4.5(14.5)	67(88.5)	54.5(66)	46	19.5(14.5)	71(92.5)	54.5(66)
ø25	6.6	42	52	64	8	28	M6x16	5(15)	70.5(92)	57.5(69)	53	22.5(15)	88(109.5)	57.5(69)

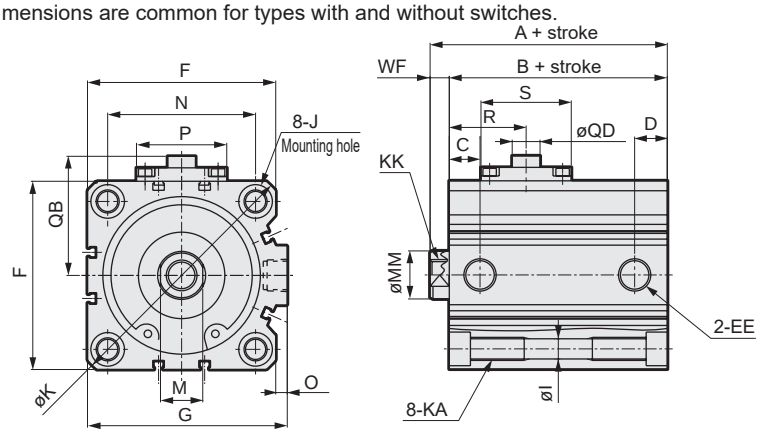
Code	SSD2-Q-H (female thread)			SSD2-Q-H (male thread)			
Bore size (mm)	WF	A	B	a'	wf	A	B
ø20	4.5(14.5)	73.5(88.5)	61(66)	46	19.5(14.5)	77.5(92.5)	61(66)
ø25	5(15)	77(92)	64(69)	53	22.5(15)	94.5(109.5)	64(69)

*1: Dimensions in ( ) are for more than 25 mm stroke.

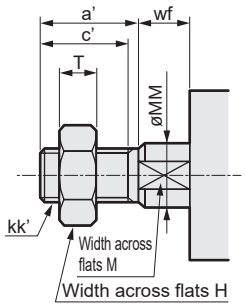
Dimensions (ø32 to ø100) CAD

● SSD2-Q(L)-32 to 100-R

* The dimensions are common for types with and without switches.

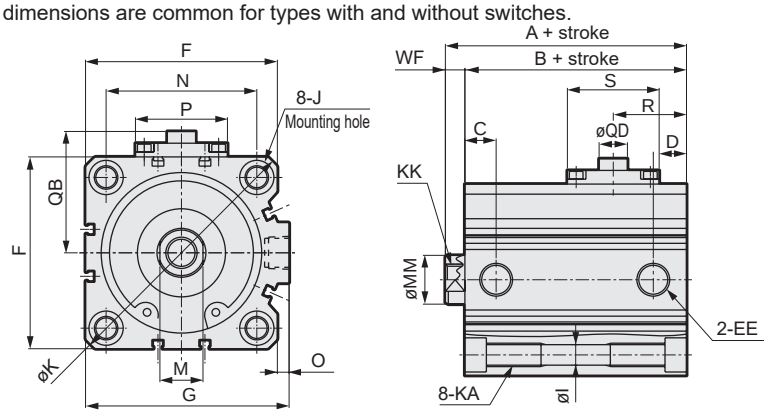


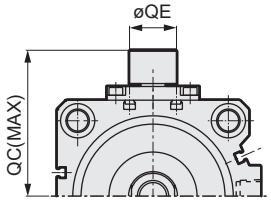
● Rod end male thread



● SSD2-Q(L)-32 to 100-H

* The dimensions are common for types with and without switches.





Code	Common dimensions										
Bore size (mm)	EE	F	G	I	J	K	KA	KK	M	MM	N
ø32	Rc1/8	45	49.5	5.5	9 spot face depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34
ø40	Rc1/8	52	57	5.5	9 spot face depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40
ø50	Rc1/4	64	71	6.9	11 spot face depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50
ø63	Rc1/4	77	84	8.7	14 spot face depth 9	103	M10 depth 25	M10 depth 15	17	20	60
ø80	Rc3/8	98	104	10.5	17.5 spot face depth 11	132	M12 depth 28	M16 depth 21	22	25	77
ø100	Rc3/8	117	123.5	10.5	17.5 spot face depth 11	156	M12 depth 28	M20 depth 27	27	30	94

Code	Common dimensions							
Bore size (mm)	O	P	S	QB	QC	QD	QE	WF *1
ø32	4.5	22	30.5	33.5	46.3	10.5	13	7
ø40	5	22	30.5	37	49.8	10.5	13	7
ø50	7	40.5	23	44	56.3	10.5	13	8
ø63	7	40.5	23	50.5	62.8	10.5	13	8
ø80	6	47	47	62	77.5	14.5	24	10(20)
ø100	6.5	47	47	71.5	87	14.5	24	12(22)

Code	With rod side position locking mechanism					With head side position locking mechanism				
Bore size (mm)	A *1	B *1	C	D	R	A *1	B *1	C	D	R
ø32	65	58	11	9	19.2	72.5	65.5	11	9	20.9
ø40	71.5	64.5	14	11	21.7	82	75	14	14	23.9
ø50	73.5	65.5	15	12.5	24.7	83.5	75.5	15	12.5	29.8
ø63	79	71	19	16	26.2	85	77	15	16	25.5
ø80	113.5(136)	103.5(116)	18	17	40	121(136)	111(116)	18	17	37.5
ø100	125(147.5)	113(125.5)	23	21	44.5	132.5(147.5)	120.5(125.5)	23	21	40

● Rod end male thread

Code	a'	c'	H	kk'	M	MM	T	wf *1
Bore size (mm)								
ø32	23.5	20.5	22	M14x1.5	14	16	8	5
ø40	23.5	20.5	22	M14x1.5	14	16	8	5
ø50	28.5	26	27	M18x1.5	17	20	11	5
ø63	28.5	26	27	M18x1.5	17	20	11	5
ø80	35.5	32.5	32	M22x1.5	22	25	13	8(18)
ø100	35.5	32.5	41	M26x1.5	27	30	16	8(18)

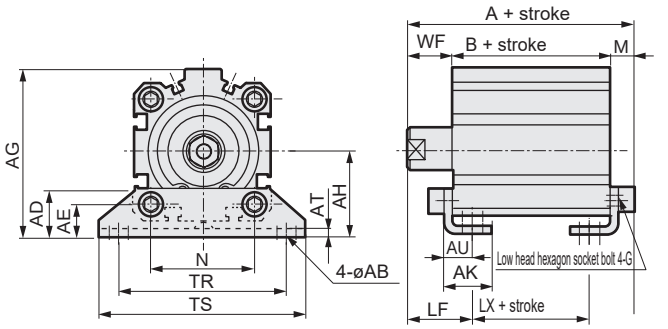
*1 : Dimensions in ( ) are for strokes of more than 50 mm.

*2 : Refer to pages 852 and 853 for switch mounting position.

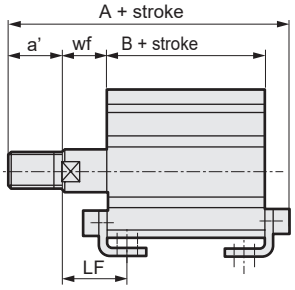
*3 : For dimensions of individual accessories, refer to pages 1046 to 1049.

Dimensions with mounting bracket CAD

● Axial foot (LB)
SSD2-Q(L)-32 to 100 -LB



Rod end male thread

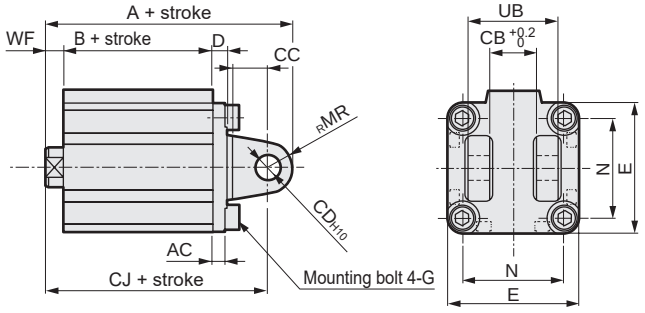


Code	Common dimensions						Female thread							SSD2-Q-R (female thread)				
Bore size (mm)	AB	AD	AE	AG	AH	AK	AT	AU	G	N	TR	TS	M	WF	LF	Without/with switch A	Without/with switch B	Without/with switch LX
ø32	7	18.5	13	57	30	17	3.2	11.2	M6x16	34	57	71	7.2	17	25	82.2	58	42
ø40	7	18	13	64	33	18.2	3.2	11.2	M6x16	40	64	78	7.2	17	25	88.7	64.5	48.5
ø50	9	22	14	78	39	22.7	3.2	14.7	M8x20	50	79	95	8.2	18	29.5	91.7	65.5	42.5
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10x25	60	95	113	9.2	18	31	98.2	71	45
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12x40	77	118	140	11.5	20	35	135(147.5)	103.5(116)	73.5(86)
ø100	13	35	24	136	71	35.5	6	23	M12x40	94	137	162	13	22	39	148(160.5)	113(125.5)	79(91.5)

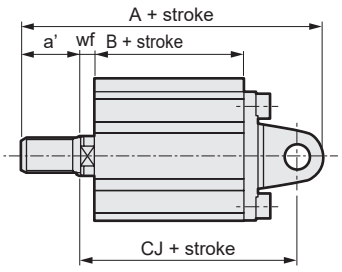
Code	SSD2-Q-R (male thread)						SSD2-Q-H (female thread)					SSD2-Q-H (male thread)					
Bore size (mm)	a'	wf	LF	Without/with switch A	Without/with switch B	Without/with switch LX	WF	LF	Without/with switch A	Without/with switch B	Without/with switch LX	a'	wf	LF	Without/with switch A	Without/with switch B	Without/with switch LX
ø32	23.5	15	23	103.7	58	42	17	25	89.7	65.5	49.5	23.5	15	23	111.2	65.5	49.5
ø40	23.5	15	23	110.2	64.5	48.5	17	25	99.2	75	59	23.5	15	23	120.7	75	59
ø50	28.5	15	26.5	117.2	65.5	42.5	18	29.5	101.7	75.5	52.5	28.5	15	26.5	127.2	75.5	52.5
ø63	28.5	15	28	123.7	71	45	18	31	104.2	77	51	28.5	15	28	129.7	77	51
ø80	35.5	18	33	168.5(181)	103.5(116)	73.5(86)	20	35	142.5(147.5)	111(116)	81(86)	35.5	18	33	176(181)	111(116)	81(86)
ø100	35.5	18	35	179.5(192)	113(125.5)	79(91.5)	22	39	155.5(160.5)	120.5(125.5)	86.5(91.5)	35.5	18	35	187(192)	120.5(125.5)	86.5(91.5)

* Dimensions in ( ) are for ø20 and ø25 with more than 25 mm stroke and ø80 and ø100 with more than 50 mm stroke.

● Clevis bracket (CB)
SSD2-Q(L)-32 to 100 -CB



Rod end male thread



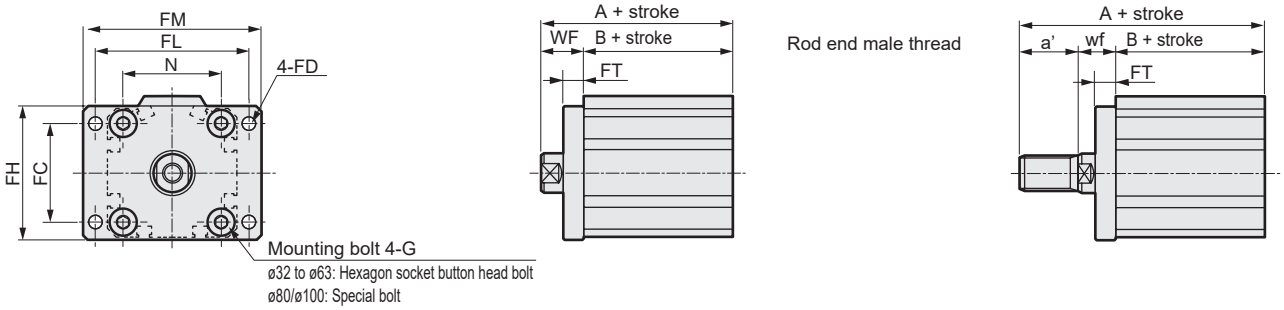
Code	Common dimensions										SSD2-Q-R (female thread)			
Bore size (mm)	AC	CB	CC	CD	D	E	G	MR	N	UB	WF	A	B	CJ
ø32	4.5	18.2	14	10	5	45	M6x16	10	34	36	7	95	58	85
ø40	5	18.2	14	10	6	52	M6x16	10	40	36	7	103.5	64.5	93.5
ø50	6	22.2	20	14	7	64	M8x20	14	50	44	8	115.5	65.5	101.5
ø63	7	22.2	20	14	8	77	M10x25	14	60	44	8	123	71	109
ø80	9	28.2	27	18	10	98	M12x40	18	77	56	10(20)	169.5(192)	103.5(116)	151.5(174)
ø100	12	32.2	31	22	13	117	M12x40	22	94	64	12(22)	192(214.5)	113(125.5)	170(192.5)

Code	SSD2-Q-R (male thread)					SSD2-Q-H (female thread)				SSD2-Q-H (male thread)				
Bore size (mm)	a'	wf	A	B	CJ	WF	A	B	CJ	a'	wf	A	B	CJ
ø32	23.5	5	116.5	58	83	7	102.5	65.5	92.5	23.5	5	124	65.5	90.5
ø40	23.5	5	125	64.5	91.5	7	114	75	104	23.5	5	135.5	74.5	102
ø50	28.5	5	141	65.5	98.5	8	125.5	75.5	111.5	28.5	5	151	71.5	108.5
ø63	28.5	5	148.5	71	106	8	129	77	115	28.5	5	154.5	77	112
ø80	35.5	8(18)	203(225.5)	103.5(116)	149.5(172)	10(20)	177(192)	111(116)	159(174)	35.5	8(18)	210.5(225.5)	111(116)	157(172)
ø100	35.5	8(18)	223.5(246)	113(125.5)	166(188.5)	12(22)	199.5(214.5)	120.5(125.5)	177.5(192.5)	35.5	8(18)	231(246)	120.5(125.5)	173.5(188.5)

*1: Dimensions in ( ) of ø80 and ø100 are for more than 50 mm stroke.

Dimensions with mounting bracket

● Rod side flange (FA)
SSD2-Q(L)-32 to 100 -FA

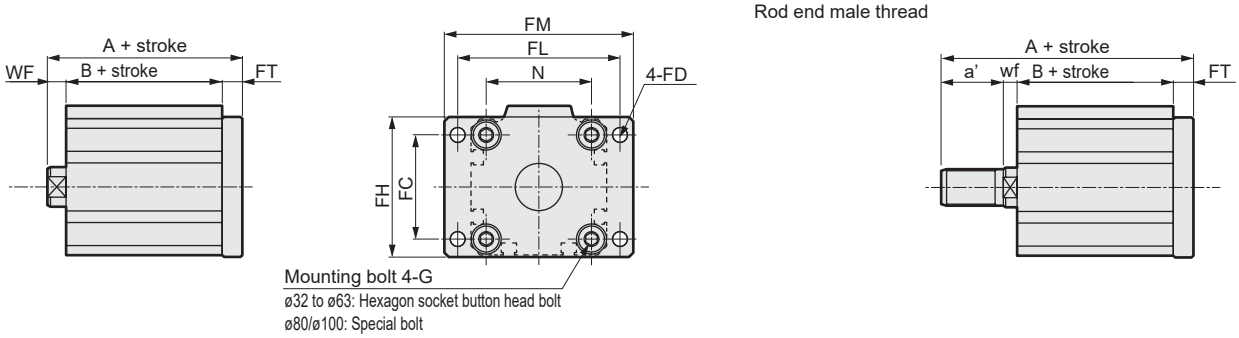


Code	Common dimensions								SSD2-Q-R (female thread)			SSD2-Q-R (male thread)			
Bore size (mm)	FC	FD	FH	FL	FM	FT	N	G	WF	Without/with switch A	Without/with switch B	a'	wf	Without/with switch A	Without/with switch B
ø32	34	5.5	48	56	65	8	34	M6x16	17	75	58	23.5	15	96.5	58
ø40	40	5.5	54	62	72	8	40	M6x16	17	81.5	64.5	23.5	15	103	64.5
ø50	50	6.6	67	76	89	9	50	M8x20	18	83.5	65.5	28.5	15	109	65.5
ø63	60	9	80	92	108	9	60	M10x25	18	89	71	28.5	15	114.5	71
ø80	77	11	99	116	134	11	77	M12x40	20	123.5(136)	103.5(116)	35.5	18	157(169.5)	103.5(116)
ø100	94	11	117	136	154	11	94	M12x40	22	135(147.5)	113(125.5)	35.5	18	166.5(179)	113(125.5)

Code	SSD2-Q-H (female thread)			SSD2-Q-H (male thread)			
Bore size (mm)	WF	Without/with switch A	Without/with switch B	a'	wf	Without/with switch A	Without/with switch B
ø32	17	82.5	65.5	23.5	15	104	65.5
ø40	17	92	75	23.5	15	113.5	75
ø50	18	93.5	75.5	28.5	15	119	75.5
ø63	18	95	77	28.5	15	120.5	77
ø80	20	131(136)	111(116)	35.5	18	164.5(169.5)	111(116)
ø100	22	142.5(147.5)	120.5(125.5)	35.5	18	174(179)	120.5(125.5)

* Dimensions in ( ) are for ø20 and ø25 with more than 25 mm stroke and ø80 and ø100 with more than 50 mm stroke.

● Head side flange (FB)
SSD2-Q(L)-32 to 100 -FB



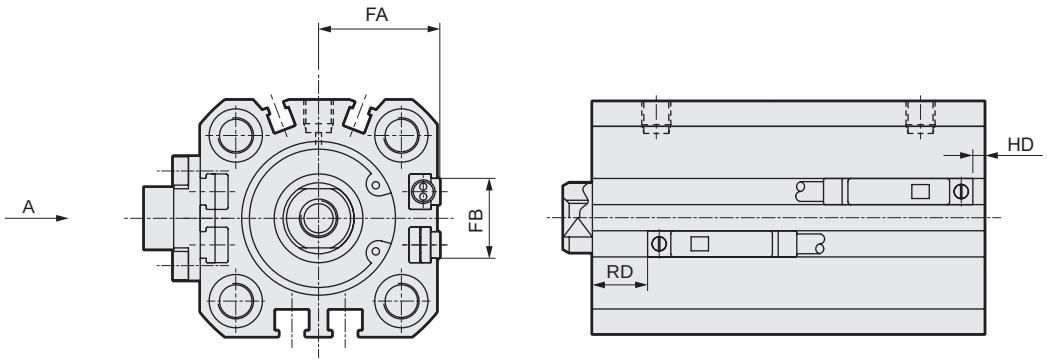
Code	Common dimensions								SSD2-Q-R (female thread)			SSD2-Q-R (male thread)			
Bore size (mm)	FC	FD	FH	FL	FM	FT	N	G	WF	A	B	a'	wf	A	B
ø32	34	5.5	48	56	65	8	34	M6x16	7	73	58	59.5	23	94.5	58
ø40	40	5.5	54	62	72	8	40	M6x16	7	79.5	64.5	66	29.5	101	64.5
ø50	50	6.6	67	76	89	9	50	M8x20	8	82.5	65.5	73	30.5	108	65.5
ø63	60	9	80	92	108	9	60	M10x25	8	88	71	78.5	36	113.5	71
ø80	77	11	99	116	134	11	77	M12x40	10(20)	124.5(147)	103.5(116)	98	43.5(18)	158(180.5)	103.5(116)
ø100	94	11	117	136	154	11	94	M12x40	12(22)	136(158.5)	113(125.5)	107.5	53(18)	167.5(190)	113(125.5)

Code	SSD2-Q-H (female thread)			SSD2-Q-H (male thread)			
Bore size (mm)	WF	A	B	a'	wf	A	B
ø32	7	80.5	65.5	59.5	23	102	65.5
ø40	7	90	75	66	29.5	111.5	74.5
ø50	8	92.5	75.5	73	30.5	118	71.5
ø63	8	94	77	78.5	36	119.5	77
ø80	10(20)	132(147)	111(116)	98	43.5(18)	165.5(180.5)	111(116)
ø100	12(22)	143.5(158.5)	120.5(125.5)	107.5	53(18)	175(190)	120.5(125.5)

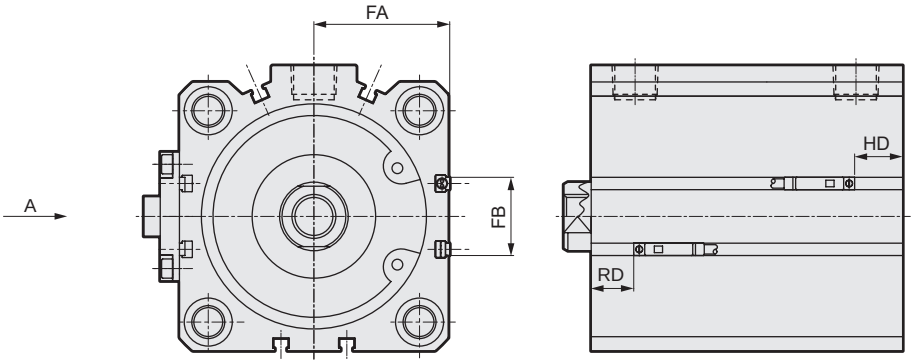
*1: Dimensions in ( ) of ø80 and ø100 are for more than 50 mm stroke.

Dimensions (with the 1-color LED, 2-color LED, off-delay, strong magnetic field proof, T1* or T8* switch)

● SSD2-QL-20 to 25-R (with switch/rod side position locking)



● SSD2-QL-32 to 100-R (with switch/rod side position locking)



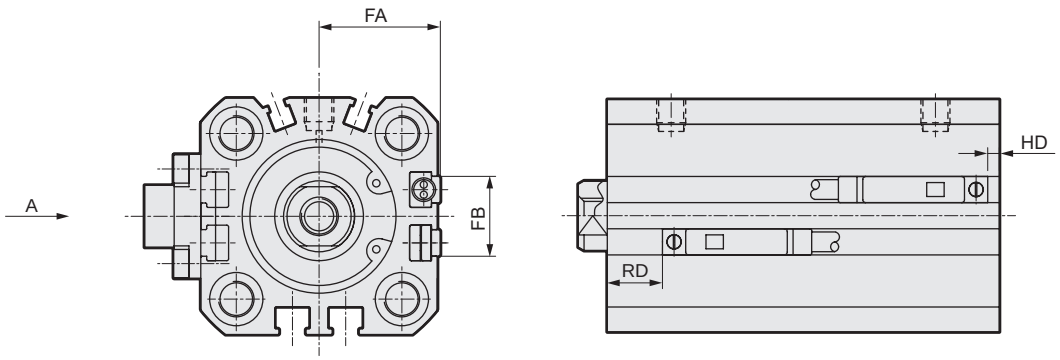
Code	Common dimensions		T0H/T0V, T5H/T5V			T2H/T2V, T3H/T3V			T2WH/T2WV, T3WH/T3WV			F2H/F2V, F3H/F3V, F2YH/F2YV, F3YH/F3YV			F2S/F3S		
Bore size (mm)	FA	FB	HD	RD		HD	RD		HD	RD		HD	RD		HD	RD	
ø20	18.5	12.5	4	32	37	4	32	37	6	33.5	38.5	8.5	36	41	7.5	35	40
ø25	20.5	13.5	6.5	33.5	38.5	6.5	33.5	38.5	8.5	35	40	11	37.5	42.5	10	36.5	41.5
ø32	23	20.5	5.5	34		5.5	34		7.5	36							
ø40	26.5	27.5	8	38		8	38		10	39.5							
ø50	32.5	28.5	6.5	41		6.5	41		8.5	42.5							
ø63	39	28.5	10.5	42		10.5	42		12.5	44							
ø80	49.5	28.5	19 24	66	73.5	19 24	66	73.5	21 26	68	75.5						
ø100	59	28.5	24.5 29.5	70	77.5	24.5 29.5	70	77.5	26.5 31.5	72	79.5						

Code	T2YH/T2YV, T3YH/T3YV, T2JH/T2JV					T2YD, T2YDT, T1H/T1V					T8H/T8V *1				
Bore size (mm)	FA	FB	HD	RD		FA	FB	HD	RD		FA	FB	HD	RD	
ø20	24.3	16	3	30	35	29.3	16	3	30	35	24.3	16	0	25.5	30.5
ø25	26.3	17	5.5	32	37	31.3	17	5.5	32	37	26.3	17	0.5	27	32
ø32	28.8	24	4	32.5		33.8	24	4	32.5		28.8	24	0	28	
ø40	32.3	31	7	36.5		37.3	31	7	36.5		32.3	31	2	31.5	
ø50	38.3	32	5.5	39.5		43.3	32	5.5	39.5		38.3	32	0.5	34.5	
ø63	44.8	32	9	40.5		49.8	32	9	40.5		44.8	32	4	35.5	
ø80	55.3	32	17.5 22.5	64.5	72	60.3	32	17.5 22.5	64.5	72	55.3	32	12.5 17.5	60	67.5
ø100	64.8	32	23 28	68.5	76	69.8	32	23 28	68.5	76	64.8	32	18 23	64	71.5

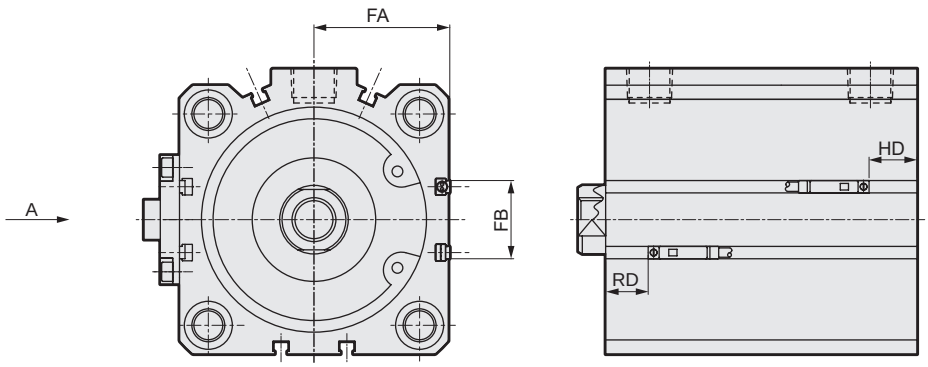
*1: T8 switch cannot be mounted on side A (the side with position locking mechanism).
*2: Only F-switch is available for the ø20 or ø25 piping port surface.
*3: In fields with two values, the left value is for 25 mm stroke or less and the right for more than 25 mm stroke in ø20 and ø25, and the left for 50 mm stroke or less and the right for more than 50 mm stroke in ø80 and ø100.

Dimensions (with the 1-color LED, 2-color LED, off-delay, AC magnetic field proof, T1* or T8* switch)

● SSD2-QL-20 to 25-H (with switch/head side position locking)



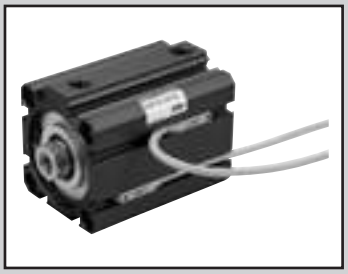
● SSD2-QL-32 to 100-H (with switch/head side position locking)



Code	Common dimensions		T0H/T0V, T5H/T5V			T2H/T2V, T3H/T3V			T2WH/T2WV, T3WH/T3WV			F2H/F2V, F3H/F3V, F2YH/F2YV, F3YH/F3YV			F2S/F3S		
Bore size (mm)	FA	FB	HD	RD		HD	RD		HD	RD		HD	RD		HD	RD	
ø20	18.5	12.5	34	8.5	13.5	34	8.5	13.5	35.5	10.5	15.5	38	13	18	37	12	17
ø25	20.5	13.5	35.5	10	15	35.5	10	15	37.5	12	17	40	14	19	39	13	18
ø32	23	20.5	38	9		38	9		40	11							
ø40	26.5	27.5	46	10.5		46	10.5		48	12							
ø50	32.5	28.5	46	11		46	11		48	12.5							
ø63	39	28.5	46.5	12		46.5	12		48.5	14							
ø80	49.5	28.5	78	14.5	19.5	78	14.5	19.5	80	16	21						
ø100	59	28.5	84.5	28	33	84.5	28	33	86.5	29.5	34.5						

Code	T2YH/T2YV, T3YH/T3YV, T2JH/T2JV					T2YD, T2YDT, T1H/T1V					T8H/T8V *1				
Bore size (mm)	FA	FB	HD	RD		FA	FB	HD	RD		FA	FB	HD	RD	
ø20	24.3	16	32.5	7.5	12.5	29.3	16	32.5	7.5	12.5	24.3	16	27.5	2.5	7.5
ø25	26.3	17	34	8.5	13.5	31.3	17	34	8.5	13.5	26.3	17	29.5	3.5	8.5
ø32	28.8	24	36.5	7.5		33.8	24	36.5	7.5		28.8	24	32	2.5	
ø40	32.3	31	44.5	9		37.3	31	44.5	9		32.3	31	40	4	
ø50	38.3	32	45	9		43.3	32	45	9		38.3	32	40	4.5	
ø63	44.8	32	45	10.5		49.8	32	45	10.5		44.8	32	40	5.5	
ø80	55.3	32	76.5	13	18	60.3	32	76.5	13	18	55.3	32	72	8	13
ø100	64.8	32	83	26	31	69.8	32	83	26	31	64.8	32	78	21	26

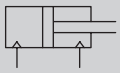
*1: T8 switch cannot be mounted on side A (the side with position locking mechanism).
*2: Only F-switch is available for the ø20 or ø25 piping port surface.
*3: In fields with two values, the left value is for 25 mm stroke or less and the right for more than 25 mm stroke in ø20 and ø25, and the left for 50 mm stroke or less and the right for more than 50 mm stroke in ø80 and ø100.



Compact cylinder double acting/fine speed

SSD2-F/SSD2-KF Series

● Bore size: ø12/ø16/ø20/ø25/ø32/ø40/ø50/ø63/ø80/ø100

JIS symbol 

RoHS CAD

Specifications

1 MPa = 10 bar

Item	SSD2-F SSD2-LF (with switch)										SSD2-KF SSD2-KLF (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting																			
Working fluid	Compressed air																			
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)																			
Min. working pressure MPa	0.1 (≈15 psi, 1 bar)							0.05 (≈7.3 psi)			0.1 (≈15 psi, 1 bar)							0.05 (≈7.3 psi)		
Proof pressure MPa	1.6 (≈230 psi, 16 bar)																			
Ambient temperature °C	5 (41°F) to 60 (140°F)																			
Port size	M5				Rc1/8 *1		Rc1/4		Rc3/8		M5				Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$										$^{+2.0}_{0}$									
Working piston speed mm/s	1 to 200																			
Cushion	None										Rubber cushion									
Lubrication	Not available																			
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56	0.04	0.09	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92

*1: The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12	5/10/15/20 25/30	30	1
ø16			
ø20	5/10/15/20/25 30/35/40/45/50	50	
ø25			
ø32	5/10/15/20/25/30/ 35/40/45/50/75/100	100	
ø40			
ø50	10/15/20/25 30/35/40/45/50 75/100		
ø63			
ø80			
ø100			

*1 : When using the type with switch, refer to the table of the min. stroke with switch.
*2: Refer to pages 763 and 765 (F and LF) or page 789 (KF) for the min. stroke with mounting bracket LB.

Min. stroke with switch (2 switches)

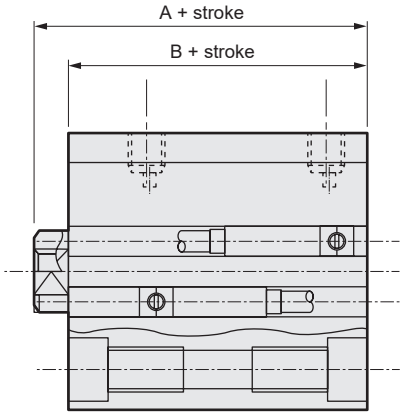
Bore size (mm)	T0H/V / T5H/V	T2H/V / T3H/V
ø12	10(5)	5
ø16		
ø20	5	
ø25		
ø32		
ø40		
ø50		
ø63		
ø80		
ø100		

1: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch is not available.
*2: Values in ( ) are for the type with 1 on rod side.

Custom stroke

● SSD2-F Series

Item	Standard products	
	Standard stroke body with spacer	
Model No.	Refer to How to order.	
Description	A spacer is added to the standard stroke body to adjust the stroke in 1 mm increments.	
Stroke range	Bore size	Stroke range
	12/16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Example of model No.	Model No.: SSD2-F-32-38 A +2 mm spacer is added to the SSD2-F-32-40 standard cylinder to create 38 mm stroke. B + stroke is 63 mm.	



Switch specifications (F-switch)

● 1-color/2-color LED

Item	2-wire proximity	3-wire proximity	2-wire proximity		3-wire proximity		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (made to order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less		
Indicator	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1 mA or less		10 μA or less		
Weight g	1 m:10 3 m:29						

Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed							2-wire proximity
	T1H/T1V	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T3WH/T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD(*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay			For programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	$1.02x10^2$	$1.13x10^2$
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	$1.01x10^2$	$1.21x10^2$	$1.41x10^2$	$1.61x10^2$	$1.81x10^2$	$2.01x10^2$
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	$1.06x10^2$	$1.21x10^2$	$1.36x10^2$	$1.51x10^2$
ø20	Push	-	31.4	47.1	62.8	94.2	$1.26x10^2$	$1.57x10^2$	$1.88x10^2$	$2.20x10^2$	$2.51x10^2$	$2.83x10^2$	$3.14x10^2$
	Pull	-	23.6	35.3	47.1	70.7	94.2	$1.18x10^2$	$1.41x10^2$	$1.65x10^2$	$1.88x10^2$	$2.12x10^2$	$2.36x10^2$
ø25	Push	-	49.1	73.6	98.2	$1.47x10^2$	$1.96x10^2$	$2.45x10^2$	$2.95x10^2$	$3.44x10^2$	$3.93x10^2$	$4.42x10^2$	$4.91x10^2$
	Pull	-	37.8	56.7	75.6	$1.13x10^2$	$1.51x10^2$	$1.89x10^2$	$2.27x10^2$	$2.64x10^2$	$3.02x10^2$	$3.40x10^2$	$3.78x10^2$
ø32	Push	-	80.4	$1.21x10^2$	$1.61x10^2$	$2.41x10^2$	$3.22x10^2$	$4.02x10^2$	$4.83x10^2$	$5.63x10^2$	$6.43x10^2$	$7.24x10^2$	$8.04x10^2$
	Pull	-	60.3	90.5	$1.21x10^2$	$1.81x10^2$	$2.41x10^2$	$3.02x10^2$	$3.62x10^2$	$4.22x10^2$	$4.83x10^2$	$5.43x10^2$	$6.03x10^2$
ø40	Push	-	$1.26x10^2$	$1.88x10^2$	$2.51x10^2$	$3.77x10^2$	$5.03x10^2$	$6.28x10^2$	$7.54x10^2$	$8.80x10^2$	$1.01x10^3$	$1.13x10^3$	$1.26x10^3$
	Pull	-	$1.06x10^2$	$1.58x10^2$	$2.11x10^2$	$3.17x10^2$	$4.22x10^2$	$5.28x10^2$	$6.33x10^2$	$7.39x10^2$	$8.44x10^2$	$9.50x10^2$	$1.06x10^3$
ø50	Push	-	$1.96x10^2$	$2.95x10^2$	$3.93x10^2$	$5.89x10^2$	$7.85x10^2$	$9.82x10^2$	$1.18x10^3$	$1.37x10^3$	$1.57x10^3$	$1.77x10^3$	$1.96x10^3$
	Pull	-	$1.65x10^2$	$2.47x10^2$	$3.30x10^2$	$4.95x10^2$	$6.60x10^2$	$8.25x10^2$	$9.90x10^2$	$1.15x10^3$	$1.32x10^3$	$1.48x10^3$	$1.65x10^3$
ø63	Push	$1.56x10^2$	$3.12x10^2$	$4.68x10^2$	$6.23x10^2$	$9.35x10^2$	$1.25x10^3$	$1.56x10^3$	$1.87x10^3$	$2.18x10^3$	$2.49x10^3$	$2.81x10^3$	$3.12x10^3$
	Pull	$1.40x10^2$	$2.80x10^2$	$4.20x10^2$	$5.61x10^2$	$8.41x10^2$	$1.12x10^3$	$1.40x10^3$	$1.68x10^3$	$1.96x10^3$	$2.24x10^3$	$2.52x10^3$	$2.80x10^3$
ø80	Push	$2.51x10^2$	$5.03x10^2$	$7.54x10^2$	$1.01x10^3$	$1.51x10^3$	$2.01x10^3$	$2.51x10^3$	$3.02x10^3$	$3.52x10^3$	$4.02x10^3$	$4.52x10^3$	$5.03x10^3$
	Pull	$2.27x10^2$	$4.54x10^2$	$6.80x10^2$	$9.07x10^2$	$1.36x10^3$	$1.81x10^3$	$2.27x10^3$	$2.72x10^3$	$3.17x10^3$	$3.63x10^3$	$4.08x10^3$	$4.54x10^3$
ø100	Push	$3.93x10^2$	$7.85x10^2$	$1.18x10^3$	$1.57x10^3$	$2.36x10^3$	$3.14x10^3$	$3.93x10^3$	$4.71x10^3$	$5.50x10^3$	$6.28x10^3$	$7.07x10^3$	$7.85x10^3$
	Pull	$3.57x10^2$	$7.15x10^2$	$1.07x10^3$	$1.43x10^3$	$2.14x10^3$	$2.86x10^3$	$3.57x10^3$	$4.29x10^3$	$5.00x10^3$	$5.72x10^3$	$6.43x10^3$	$7.15x10^3$

Dimensions

Same as SSD2 Series (double acting/single rod) and SSD2-K Series (double acting/high load).
Refer to pages 760 to 766 and 782 to 790.

How to order

No switch (without magnet for switch)

SSD2-F - 12 ○ - 5 ——— N - LB - I

With switch (built-in magnet for switch)

SSD2-LF - 12 ○ - 10 - T0H - R - N - LB - I

Ⓐ Model No.
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Stroke
Ⓔ Switch model No. *1 *2 *3 *8 *10
Ⓕ Switch quantity
Ⓖ Option *4
Ⓗ Mounting bracket *5 *6
Ⓘ Accessory *7

Precautions for model No. selection

1 : The T2YD switch cannot be mounted on the ø12 and ø16 bore sizes.
2 : The T8 switch cannot be mounted on the ø12 to ø32 bore sizes.
*3 : The F-switch can only be mounted on the piping port surface of bore sizes ø20 and ø25.
*4 : Piston rod of ø12 to ø25 is stainless steel as standard. C-snap ring is stainless steel instead of steel. The rod end male thread nut is stainless steel.
*5 : The mounting bracket is included at shipment.
*6 : The projection dimension of piston rod WF when LB or FA is selected is different from that of the standard. Refer to the dimensions on pages 761, 763, 765 and 766. 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 strokes of 15 mm or under.
*9 : Refer to pages 750 and 751 for combinations of variations/options.
*10 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
*11 : F-switch cannot be selected.

[Example of model No.]

SSD2-LF-12-10-T0H-R-N-LB-I

Model: Compact cylinder, fine speed

Ⓑ Bore size : ø12 mm
Ⓒ Port thread : Rc thread
Ⓓ Stroke : 10mm
Ⓔ Switch model No. : Reed switch T0H, lead wire length 1 m
Ⓕ Switch quantity : 1 on rod side
Ⓖ Option : Rod end male thread
Ⓗ Mounting bracket : Axial foot
Ⓘ Accessory : Rod eye

Code	Description
Ⓐ Model No.	
SSD2-F	Double acting/single rod
SSD2-LF	Double acting/single rod/with switch
SSD2-KF	Double acting/high load
SSD2-KLF	Double acting/high load/with switch
Ⓑ Bore size (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
Ⓒ Port thread	
Blank	Rc thread
NN	NPT thread (ø32 and over) (made-to-order product)
GN	G thread (ø32 and over) (made-to-order product)
Ⓓ Stroke (mm)	
Refer to the stroke table on the following page.	

Ⓔ Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Indicator	Lead wire	Bore size 12	16	20	25	32	40	50	63	80	100
-	F2S*	Proximity		●	1-color LED	2-wire			●	●						
-	F3S*	Proximity		●	1-color LED	3-wire			●	●						
F2H*	F2V*	Proximity		●	1-color LED	2-wire			●	●						
F3H*	F3V*	Proximity		●	1-color LED	3-wire			●	●						
F3PH*	F3PV*	Proximity		●	1-color LED (PNP output) (custom)	3-wire			●	●						
F2YH*	F2YV*	Proximity		●	2-color LED	2-wire			●	●						
F3YH*	F3YV*	Proximity		●	2-color LED	3-wire			●	●						
T0H*	T0V*	Reed	●	●	1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T5H*	T5V*	Reed	●	●	No indicator lamp	2-wire	●	●	●	●	●	●	●	●	●	●
T8H*	T8V*	Reed	●	●	1-color LED	2-wire						●	●	●	●	●
T1H*	T1V*	Proximity	●		1-color LED	2-wire			●	●	●	●	●	●	●	●
T2H*	T2V*	Proximity		●	1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T3H*	T3V*	Proximity		●	1-color LED	3-wire	●	●	●	●	●	●	●	●	●	●
T3PH*	T3PV*	Proximity		●	1-color LED (PNP output)	3-wire	●	●	●	●	●	●	●	●	●	●
T2WH*	T2WV*	Proximity		●	2-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T2YH*	T2YV*	Proximity		●	2-color LED	2-wire			●	●	●	●	●	●	●	●
T3WH*	T3WV*	Proximity		●	2-color LED	3-wire	●	●	●	●	●	●	●	●	●	●
T3YH*	T3YV*	Proximity		●	2-color LED	3-wire			●	●	●	●	●	●	●	●
T2YD*	-	Proximity		●	2-color LED for AC magnetic field	2-wire			●	●	●	●	●	●	●	●
T2YDT*	-	Proximity		●	2-color LED for AC magnetic field	2-wire			●	●	●	●	●	●	●	●
T2JH*	T2JV*	Proximity		●	1-color LED off-delay	2-wire			●	●	●	●	●	●	●	●

*** Lead wire length**	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option) *11
Ⓕ Switch quantity	
R	1 on rod side
H	1 on head side
D	2
Ⓖ Option	
Blank	Rod end female thread
N	Rod end male thread
M *4	Piston rod material (stainless steel)
Ⓗ Mounting bracket	
Blank	Without mounting bracket
LB	Axial foot
CB	Clevis bracket (pin and snap ring included)
FA	Rod side flange
FB	Head side flange
Ⓘ Accessory (available when rod end male thread "N" is selected)	
I	Rod eye
Y	Rod clevis (pin and snap ring included)

[Stroke table]

● SSD2-F/SSD2-KF

Stroke (mm)		Applicable bore size									
		12	16	20	25	32	40	50	63	80	100
Standard stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Min. stroke (mm) *1		1									
Max. stroke (mm)		30		50		100					
Custom stroke *2		In 1 mm increments									

1: Less than 5 mm for 1-color LED switch and less than 10 mm for the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch are not available.
Refer to page 854 for the min. stroke with switch.
*2: The total length when using a custom stroke is the same as that when using the next longer standard stroke.
*3: Refer to pages 763 and 765 (F and LF) or page 789 (KF) for the min. stroke with mounting bracket LB.

How to order switch

SW - T0H

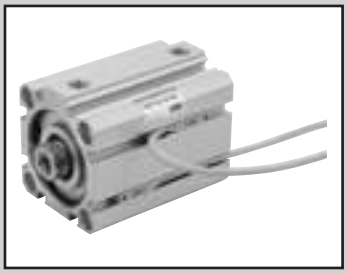
Switch model No.
(Item Ⓔ on page 856)

How to order mounting bracket

Bore size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50
Clevis bracket (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50

Bore size (mm) / Mounting bracket	ø63	ø80	ø100
Foot (LB)	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Clevis bracket (CB)	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

*1: The foot mounting bracket is provided as 2 pcs./set.

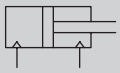


Compact cylinder double acting/low speed

SSD2-O Series

● Bore size: ø12/ø16/ø20/ø25/ø32/ø40/ø50/ø63/ø80/ø100

JIS symbol



RoHS CAD

Specifications

Item	SSD2-O SSD2-OL (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting									
Working fluid	Compressed air									
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)									
Min. working pressure MPa	0.1 (≈15 psi, 1 bar)							0.05 (≈7.3 psi, 0.5 bar)		
Proof pressure MPa	1.6 (≈230 psi, 16 bar)									
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)									
Port size	M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	$^{+1.0}_{0}$									
Working piston speed mm/s	10 to 200									
Cushion	None									
Lubrication	Not available									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12	5/10/15/20	30	1
ø16	25/30		
ø20	5/10/15/20/25	50	
ø25	30/35/40/45/50		
ø32	5/10/15/20/25/30/	100	
ø40	35/40/45/50/75/100		
ø50	10/15/20/25		
ø63	30/35/40/45/50		
ø80	75/100		
ø100			

*1 : When using the type with switch, refer to the table of the min. stroke with switch.
*2: Refer to pages 763 and 765 for the min. stroke with mounting bracket LB.

Min. stroke with switch (2 switches)

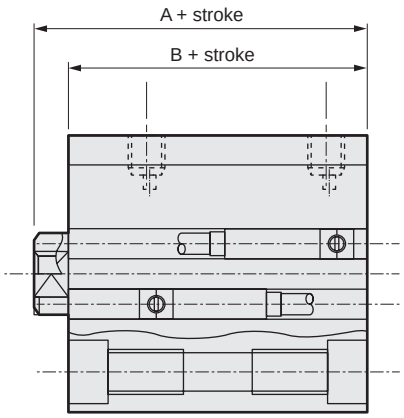
Bore size (mm)	T0H/V / T5H/V	T2H/V / T3H/V
ø12	10(5)	5
ø16		
ø20	5	
ø25		
ø32		
ø40		
ø50		
ø63		
ø80		
ø100		

1: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch is not available.
*2: Values in ( ) are for the type with 1 on rod side.

Custom stroke

● SSD2-O Series

Item	Standard products	
	Standard stroke body with spacer	
Model No.	Refer to How to order.	
Description	A spacer is added to the standard stroke body to adjust the stroke in 1 mm increments.	
Stroke range	Bore size	Stroke range
	12/16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Example of model No.	Model No.: SSD2-O-32-38 A +2 mm spacer is added to the SSD2-O-32-40 standard cylinder to create 38 mm stroke. B + stroke is 63mm.	



Switch specifications (F-switch)

● 1-color/2-color LED

Item	2-wire proximity	3-wire proximity	2-wire proximity		3-wire proximity		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (made to order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less		
Indicator	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1 mA or less		10 μA or less		
Weight g	1 m:10 3 m:29						

Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed							2-wire proximity
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V		T8H/T8V				T2YD (*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay	For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay				For programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	No indicator lamp		LED (Lit when ON)				Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80			1 m:33 3 m:87 5 m:142				1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Cylinder weight table (the weight of the switches is when there are 2 cylinder switches.)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-	-	-	-	-	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-	-	-	-	-	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	139	214	152	227	165	240	203	278	-	-	-	-
ø25	87	178	102	193	118	209	134	225	150	241	165	256	181	272	197	288	213	304	228	319	-	-	-	-
ø32	122	236	144	258	166	280	188	302	209	323	231	345	253	367	275	389	297	411	318	432	494	542	604	652
ø40	183	326	210	353	236	379	263	406	290	433	316	459	342	485	369	512	395	538	472	565	646	695	776	825
ø50	-	-	341	535	383	577	425	619	467	661	510	704	552	746	594	788	636	830	678	872	1025	1082	1235	1292
ø63	-	-	507	786	562	841	617	896	672	951	727	1006	782	1061	838	1117	893	1172	948	1227	1438	1502	1713	1777
ø80	-	-	928	1341	1015	1428	1101	1514	1188	1601	1274	1687	1361	1774	1448	1861	1535	1948	1621	2034	2401	2467	2833	2899
ø100	-	-	1433	2000	1547	2114	1660	2227	1774	2341	1888	2455	2002	2569	2115	2682	2229	2796	2343	2910	3406	3478	3973	4045

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	$1.02x10^2$	$1.13x10^2$
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	$1.01x10^2$	$1.21x10^2$	$1.41x10^2$	$1.61x10^2$	$1.81x10^2$	$2.01x10^2$
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	$1.06x10^2$	$1.21x10^2$	$1.36x10^2$	$1.51x10^2$
ø20	Push	-	31.4	47.1	62.8	94.2	$1.26x10^2$	$1.57x10^2$	$1.88x10^2$	$2.20x10^2$	$2.51x10^2$	$2.83x10^2$	$3.14x10^2$
	Pull	-	23.6	35.3	47.1	70.7	94.2	$1.18x10^2$	$1.41x10^2$	$1.65x10^2$	$1.88x10^2$	$2.12x10^2$	$2.36x10^2$
ø25	Push	-	49.1	73.6	98.2	$1.47x10^2$	$1.96x10^2$	$2.45x10^2$	$2.95x10^2$	$3.44x10^2$	$3.93x10^2$	$4.42x10^2$	$4.91x10^2$
	Pull	-	37.8	56.7	75.6	$1.13x10^2$	$1.51x10^2$	$1.89x10^2$	$2.27x10^2$	$2.64x10^2$	$3.02x10^2$	$3.40x10^2$	$3.78x10^2$
ø32	Push	-	80.4	$1.21x10^2$	$1.61x10^2$	$2.41x10^2$	$3.22x10^2$	$4.02x10^2$	$4.83x10^2$	$5.63x10^2$	$6.43x10^2$	$7.24x10^2$	$8.04x10^2$
	Pull	-	60.3	90.5	$1.21x10^2$	$1.81x10^2$	$2.41x10^2$	$3.02x10^2$	$3.62x10^2$	$4.22x10^2$	$4.83x10^2$	$5.43x10^2$	$6.03x10^2$
ø40	Push	-	$1.26x10^2$	$1.88x10^2$	$2.51x10^2$	$3.77x10^2$	$5.03x10^2$	$6.28x10^2$	$7.54x10^2$	$8.80x10^2$	$1.01x10^3$	$1.13x10^3$	$1.26x10^3$
	Pull	-	$1.06x10^2$	$1.58x10^2$	$2.11x10^2$	$3.17x10^2$	$4.22x10^2$	$5.28x10^2$	$6.33x10^2$	$7.39x10^2$	$8.44x10^2$	$9.50x10^2$	$1.06x10^3$
ø50	Push	-	$1.96x10^2$	$2.95x10^2$	$3.93x10^2$	$5.89x10^2$	$7.85x10^2$	$9.82x10^2$	$1.18x10^3$	$1.37x10^3$	$1.57x10^3$	$1.77x10^3$	$1.96x10^3$
	Pull	-	$1.65x10^2$	$2.47x10^2$	$3.30x10^2$	$4.95x10^2$	$6.60x10^2$	$8.25x10^2$	$9.90x10^2$	$1.15x10^3$	$1.32x10^3$	$1.48x10^3$	$1.65x10^3$
ø63	Push	$1.56x10^2$	$3.12x10^2$	$4.68x10^2$	$6.23x10^2$	$9.35x10^2$	$1.25x10^3$	$1.56x10^3$	$1.87x10^3$	$2.18x10^3$	$2.49x10^3$	$2.81x10^3$	$3.12x10^3$
	Pull	$1.40x10^2$	$2.80x10^2$	$4.20x10^2$	$5.61x10^2$	$8.41x10^2$	$1.12x10^3$	$1.40x10^3$	$1.68x10^3$	$1.96x10^3$	$2.24x10^3$	$2.52x10^3$	$2.80x10^3$
ø80	Push	$2.51x10^2$	$5.03x10^2$	$7.54x10^2$	$1.01x10^3$	$1.51x10^3$	$2.01x10^3$	$2.51x10^3$	$3.02x10^3$	$3.52x10^3$	$4.02x10^3$	$4.52x10^3$	$5.03x10^3$
	Pull	$2.27x10^2$	$4.54x10^2$	$6.80x10^2$	$9.07x10^2$	$1.36x10^3$	$1.81x10^3$	$2.27x10^3$	$2.72x10^3$	$3.17x10^3$	$3.63x10^3$	$4.08x10^3$	$4.54x10^3$
ø100	Push	$3.93x10^2$	$7.85x10^2$	$1.18x10^3$	$1.57x10^3$	$2.36x10^3$	$3.14x10^3$	$3.93x10^3$	$4.71x10^3$	$5.50x10^3$	$6.28x10^3$	$7.07x10^3$	$7.85x10^3$
	Pull	$3.57x10^2$	$7.15x10^2$	$1.07x10^3$	$1.43x10^3$	$2.14x10^3$	$2.86x10^3$	$3.57x10^3$	$4.29x10^3$	$5.00x10^3$	$5.72x10^3$	$6.43x10^3$	$7.15x10^3$

How to order

No switch (without magnet for switch)

SSD2-O - 12 ○ - 5 ——— N - LB - I

With switch (built-in magnet for switch)

SSD2-OL - 12 ○ - 10 - T0H - R - N - LB - I

Ⓐ Model No.
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Stroke
Ⓔ Switch model No. *1 *2 *3 *8 *10
Ⓕ Switch quantity
Ⓖ Option *4
Ⓗ Mounting bracket *5 *6
Ⓘ Accessory *7

Precautions for model No. selection

1 : The T2YD switch cannot be mounted on the ø12 and ø16 bore sizes.
2 : The T8 switch cannot be mounted on the ø12 to ø32 bore sizes.
*3 : The F-switch can only be mounted on the piping port surface of bore sizes ø20 and ø25.
*4 : Piston rod of ø12 to ø25 is stainless steel as standard. C-snap ring is stainless steel instead of steel.
The rod end male thread nut is stainless steel.
*5 : The mounting bracket is included at shipment.
*6 : The projection dimension of piston rod WF when LB or FA is selected is different from that of the standard.
Refer to the dimensions on pages 761, 763, 765 and 766. 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 strokes of 15 mm or under.
*9 : Refer to pages 750 and 751 for combinations of variations/options.
*10 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
*11 : F-switch cannot be selected.

[Example of model No.]

SSD2-OL-12-10-T0H-R-N-LB-I

Model: Compact cylinder double acting/low speed

Ⓑ Bore size : ø12 mm
Ⓒ Port thread : Rc thread
Ⓓ Stroke : 10mm
Ⓔ Switch model No. : Reed switch T0H, lead wire length 1 m
Ⓕ Switch quantity : 1 on rod side
Ⓖ Option : Rod end male thread
Ⓗ Mounting bracket : Axial foot
Ⓘ Accessory : Rod eye

Code	Description
Ⓐ Model No.	
SSD2-O	Double acting/single rod
SSD2-OL	Double acting/single rod/with switch

Ⓑ Bore size (mm)

12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

Ⓒ Port thread

Blank	Rc thread
NN	NPT thread (ø32 and over) (made-to-order product)
GN	G thread (ø32 and over) (made-to-order product)

Ⓓ Stroke (mm)

Refer to the stroke table on the following page.

Ⓔ Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Indicator	Lead wire	Bore size 12	16	20	25	32	40	50	63	80	100
-	**F2S***	Proximity		●	1-color LED	2-wire			●	●						
-	**F3S***			●		3-wire			●	●						
F2H*	**F2V***			●		2-wire			●	●						
F3H*	**F3V***			●		3-wire			●	●						
F3PH*	**F3PV***			●	1-color LED (PNP output) (custom)	3-wire			●	●						
F2YH*	**F2YV***			●	2-color LED	2-wire			●	●						
F3YH*	**F3YV***			●		3-wire			●	●						
T0H*	**T0V***	Reed	●	●	1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T5H*	**T5V***		●	●	No indicator lamp		●	●	●	●	●	●	●	●	●	●
T8H*	**T8V***		●	●	1-color LED							●	●	●	●	●
T1H*	**T1V***	Proximity	●		1-color LED	2-wire			●	●	●	●	●	●	●	●
T2H*	**T2V***			●			●	●	●	●	●	●	●	●	●	●
T3H*	**T3V***			●		3-wire	●	●	●	●	●	●	●	●	●	●
T3PH*	**T3PV***			●	1-color LED (PNP output)		●	●	●	●	●	●	●	●	●	●
T2WH*	**T2WV***			●	2-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T2YH*	**T2YV***			●					●	●	●	●	●	●	●	●
T3WH*	**T3WV***			●		3-wire	●	●	●	●	●	●	●	●	●	●
T3YH*	**T3YV***			●					●	●	●	●	●	●	●	●
T2YD*	**-**			●	2-color LED for AC magnetic field	2-wire			●	●	●	●	●	●	●	●
T2YDT*	**-**			●					●	●	●	●	●	●	●	●
T2JH*	**T2JV***			●	1-color LED off-delay	2-wire			●	●	●	●	●	●	●	●

*** Lead wire length**

Blank	1 m (standard)
3	3 m (option)
5	5 m (option) *11

Ⓕ Switch quantity

R	1 on rod side
H	1 on head side
D	2

Ⓖ Option

Blank	Rod end female thread
N	Rod end male thread
M *4	Piston rod material (stainless steel)

Ⓗ Mounting bracket

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

Ⓘ Accessory (available when rod end male thread "N" is selected)

I	Rod eye
Y	Rod clevis (pin and snap ring included)

[Stroke table]

Stroke (mm)		Applicable bore size									
		12	16	20	25	32	40	50	63	80	100
Standard stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Min. stroke (mm) *1		1									
Max. stroke (mm)		30		50		100					
Custom stroke *2		In 1 mm increments									

1: Less than 5 mm for 1-color LED switch and less than 10 mm for the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch are not available.
Refer to page 858 for the min. stroke with switch.
*2: The total length when using a custom stroke is the same as that when using the next longer standard stroke.
*3: Refer to pages 763 and 765 for the min. stroke with mounting bracket LB.

How to order switch

SW - T0H

Switch model No.
(Item Ⓔ on page 860)

How to order mounting bracket

Bore size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA/FB)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50
Clevis bracket (CB)	SSD2-CB-12	SSD2-CB-16	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50

Bore size (mm) / Mounting bracket	ø63	ø80	ø100
Foot (LB)	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Clevis bracket (CB)	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

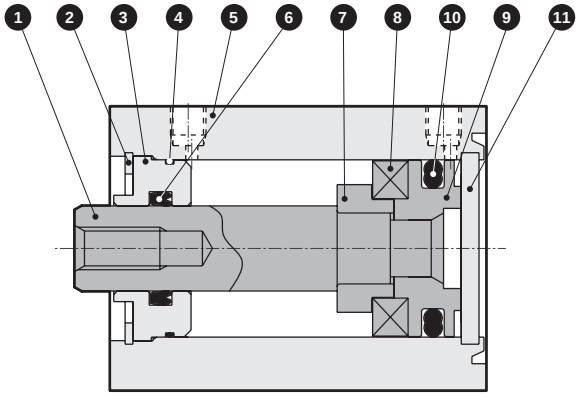
*1: The foot mounting bracket is provided as 2 pcs./set.

Dimensions

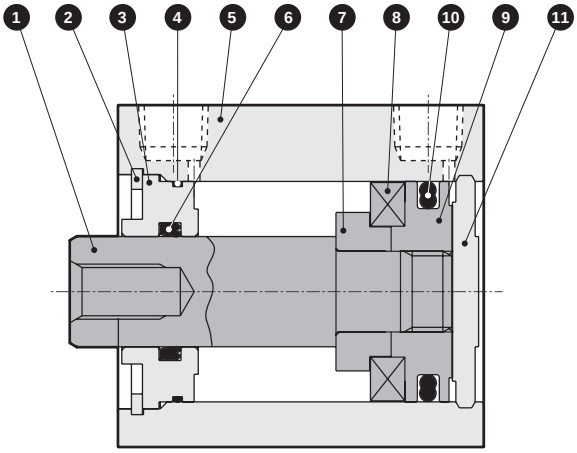
Same as SSD2 Series (double acting/single rod). Refer to pages 760 to 766.

Internal structure and parts list (ø12 to 50)

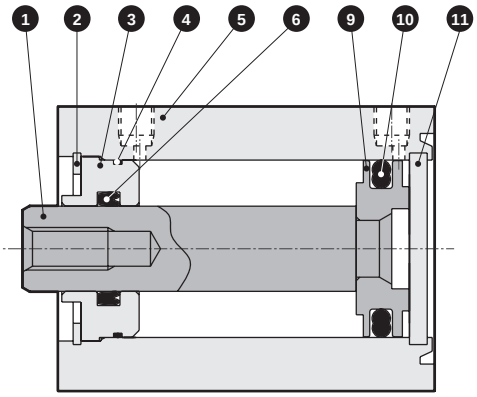
● SSD2-O-L-12 to 25 (double acting/with switch)



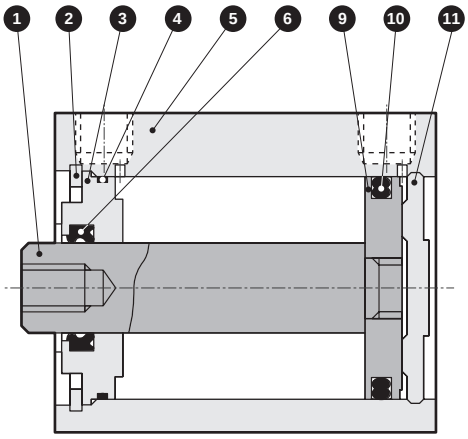
● SSD2-O-L-32 to 50 (double acting/with switch)



● SSD2-O-12 to 25 (double acting)



● SSD2-O-32 to 50 (double acting)



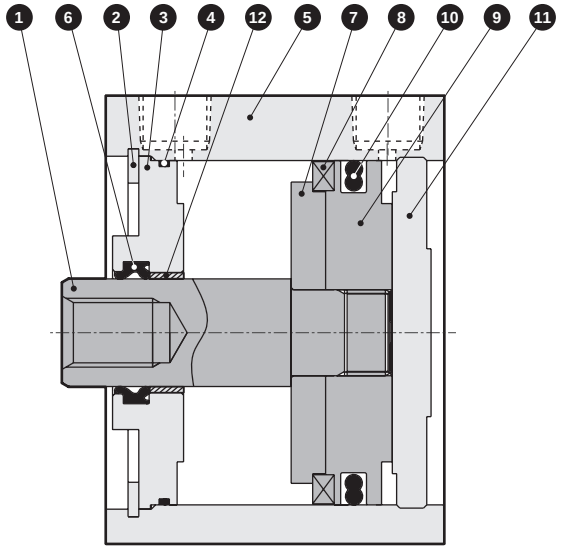
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating	7	Spacer	Aluminum alloy	ø12 to ø32: Chromate
2	C-snap ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod metal	Special aluminum	Alumite	9	Piston	Aluminum alloy	Chromate
4	Rod metal gasket	Nitrile rubber		10	Piston packing	Nitrile rubber	
5	Body	Aluminum alloy	Hard alumite	11	Cover	ø12 to ø25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
6	Rod packing	Nitrile rubber					

Repair parts list

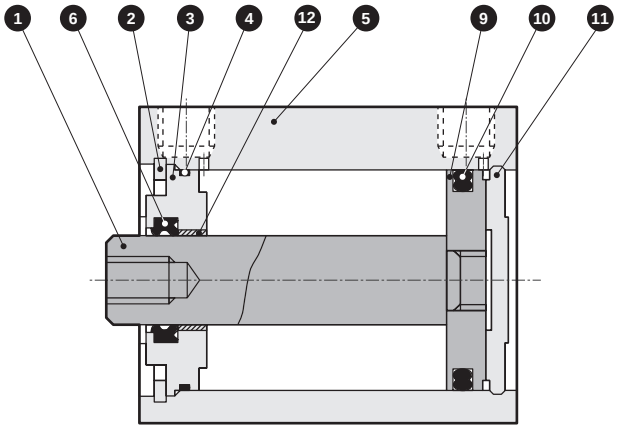
Bore size (mm)	Kit No.	Repair parts No.
ø12	SSD2-O-12K	4 6 10
ø16	SSD2-O-16K	
ø20	SSD2-O-20K	
ø25	SSD2-O-25K	
ø32	SSD2-O-32K	
ø40	SSD2-O-40K	
ø50	SSD2-O-50K	

Internal structure and parts list (ø63 to ø100)

● SSD2-O-L-63 to 100 (double acting/with switch)



● SSD2-O-63 to 100 (double acting)

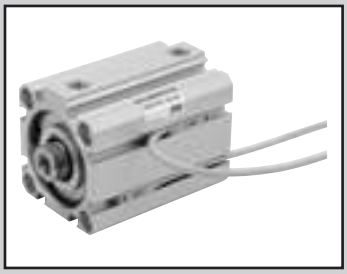


No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Steel	Industrial chrome plating	7	Spacer	Aluminum alloy	
2	C-snap ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod metal	Aluminum alloy	Chromate	9	Piston	Aluminum alloy	Chromate
4	Rod metal gasket	Nitrile rubber		10	Piston packing	Nitrile rubber	
5	Body	Aluminum alloy	Hard alumite	11	Cover	Aluminum alloy	Alumite
6	Rod packing	Nitrile rubber		12	Bush	Oiles drymet	*1

*1: Material is steel for copper and PTFE free specifications.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø63	SSD2-O-63K	④ ⑥ ⑩
ø80	SSD2-O-80K	
ø100	SSD2-O-100K	

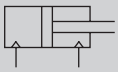


Compact cylinder double acting/high load/low friction

SSD2-KU Series

● Bore size: ø20/ø25/ø32/ø40
ø50/ø63/ø80/ø100

JIS symbol



RoHS CAD

Specifications

Item	SSD2-KU SSD2-KUL (with switch)							
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting							
Working fluid	Compressed air							
Max. working pressure MPa	0.7 (≈100 psi, 7 bar)							
Min. working pressure MPa	0.03 (≈4.4 psi, 0.3 bar)							
Proof pressure MPa	1.0 (≈150 psi, 10 bar)							
Ambient temperature °C	5 (41°F) to 60 (140°F)							
Port size	M5		Rc1/8		Rc1/4		Rc3/8	
Stroke tolerance mm	+2.0 0							
Working piston speed mm/s	10 to 500					10 to 300		
Cushion	Rubber cushion							
Lubrication	Not available							
Allowable absorbed energy J	0.16	0.16	0.40	0.63	0.98	1.56	2.51	3.92
Internal leakage ℓ/min	5						8	

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø20	5/10/15/20/25	50	5
ø25	30/35/40/45/50		
ø32	5/10/15/20/25/30/	100	
ø40	35/40/45/50/75/100		
ø50	10/15/20/25 30/35/40/45/50 75/100		
ø63			
ø80			
ø100			

*1 : When using the type with switch, refer to the table of the min. stroke with switch.
*2: Refer to page 789 for the min. stroke with mounting bracket LB.

Min. stroke with switch (1 or 2 switches)

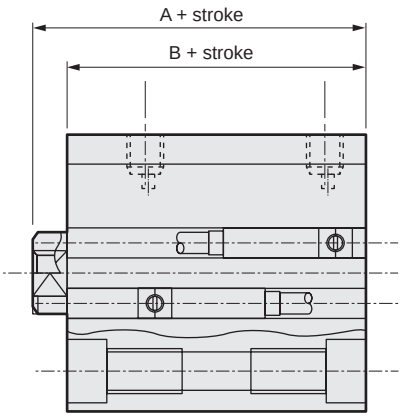
Bore size (mm)	T0H/V / T5H/V	T2H/V / T3H/V
ø20	5	5
ø25		
ø32		
ø40		
ø50		
ø63		
ø80		
ø100		

1: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch is not available.

Custom stroke

● SSD2-KU Series

Item	Standard products Standard stroke body with spacer	
Model No.	Refer to How to order.	
Description	A spacer is added to the standard stroke body to adjust the stroke in 1 mm increments.	
Stroke range	Bore size	Stroke range
	20 to 25	1 to 49
	32 to 100	1 to 99
Example of model No.	Model No.: SSD2-KU-32-41 A +4 mm spacer is added to the SSD2-KU-32-45 standard cylinder to create 41 mm stroke. B + stroke is 78mm.	



Switch specifications (F-switch)

● 1-color/2-color LED

Item	2-wire proximity	3-wire proximity	2-wire proximity		3-wire proximity		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (made to order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less		
Indicator	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1 mA or less		10 μA or less		
Weight g	1 m:10 3 m:29						

Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD(*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay		For programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-						
Pwr. supp. V.	-				10 to 28 VDC				-						
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa								
		0.03	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø20	Push	9.42	31.4	47.1	62.8	94.2	$1.26x10^2$	$1.57x10^2$	$1.88x10^2$	$2.20x10^2$
	Pull	7.07	23.6	35.3	47.1	70.7	94.2	$1.18x10^2$	$1.41x10^2$	$1.65x10^2$
ø25	Push	14.7	49.1	73.6	98.2	$1.47x10^2$	$1.96x10^2$	$2.45x10^2$	$2.95x10^2$	$3.44x10^2$
	Pull	11.3	37.8	56.7	75.6	$1.13x10^2$	$1.51x10^2$	$1.89x10^2$	$2.27x10^2$	$2.64x10^2$
ø32	Push	24.1	80.4	$1.21x10^2$	$1.61x10^2$	$2.41x10^2$	$3.22x10^2$	$4.02x10^2$	$4.83x10^2$	$5.63x10^2$
	Pull	18.1	60.3	90.5	$1.21x10^2$	$1.81x10^2$	$2.41x10^2$	$3.02x10^2$	$3.62x10^2$	$4.22x10^2$
ø40	Push	37.7	$1.26x10^2$	$1.88x10^2$	$2.51x10^2$	$3.77x10^2$	$5.03x10^2$	$6.28x10^2$	$7.54x10^2$	$8.80x10^2$
	Pull	31.7	$1.06x10^2$	$1.58x10^2$	$2.11x10^2$	$3.17x10^2$	$4.22x10^2$	$5.28x10^2$	$6.33x10^2$	$7.39x10^2$
ø50	Push	58.9	$1.96x10^2$	$2.95x10^2$	$3.93x10^2$	$5.89x10^2$	$7.85x10^2$	$9.82x10^2$	$1.18x10^3$	$1.37x10^3$
	Pull	49.5	$1.65x10^2$	$2.47x10^2$	$3.30x10^2$	$4.95x10^2$	$6.60x10^2$	$8.25x10^2$	$9.90x10^2$	$1.15x10^3$
ø63	Push	93.5	$3.12x10^2$	$4.68x10^2$	$6.23x10^2$	$9.35x10^2$	$1.25x10^3$	$1.56x10^3$	$1.87x10^3$	$2.18x10^3$
	Pull	84.0	$2.80x10^2$	$4.20x10^2$	$5.61x10^2$	$8.41x10^2$	$1.12x10^3$	$1.40x10^3$	$1.68x10^3$	$1.96x10^3$
ø80	Push	$1.51x10^2$	$5.03x10^2$	$7.54x10^2$	$1.01x10^3$	$1.51x10^3$	$2.01x10^3$	$2.51x10^3$	$3.02x10^3$	$3.52x10^3$
	Pull	$1.36x10^2$	$4.54x10^2$	$6.80x10^2$	$9.07x10^2$	$1.36x10^3$	$1.81x10^3$	$2.27x10^3$	$2.72x10^3$	$3.17x10^3$
ø100	Push	$2.36x10^2$	$7.85x10^2$	$1.18x10^3$	$1.57x10^3$	$2.36x10^3$	$3.14x10^3$	$3.93x10^3$	$4.71x10^3$	$5.50x10^3$
	Pull	$2.14x10^2$	$7.15x10^2$	$1.07x10^3$	$1.43x10^3$	$2.14x10^3$	$2.86x10^3$	$3.57x10^3$	$4.29x10^3$	$5.00x10^3$

How to order

No switch (without magnet for switch)

SSD2-KU - 20 ( ) - 10 ——— N - LB - I

With switch (built-in magnet for switch)

SSD2-KUL - 20 ( ) - 10 - T0H - R - N - LB - I

Ⓐ Bore size
Ⓑ Port thread
Ⓒ Stroke
Ⓓ Switch model No. *1 *6 *8
Ⓔ Switch quantity
Ⓕ Option *2
Ⓖ Mounting bracket *3 *4
Ⓗ Accessory *5

Precautions for model No. selection

*1 : The F-switch can only be mounted on the piping port surface of bore sizes ø20 and ø25.
*2 : Piston rod of ø20 and ø25 is stainless steel as standard. C-snap ring is stainless steel instead of steel. The rod end male thread nut is stainless steel.
*3 : The mounting bracket is included at shipment.
*4 : The projection dimension of piston rod WF when LB or FA is selected is different from that of the standard. Refer to the dimensions on pages 783, 785, 787, 789 and 790. 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.
*5 : "I" and "Y" cannot be selected together.
*6 : The F-switch with L lead wire on ø20 models cannot be selected on strokes 10 mm or under.
*7 : Refer to pages 750 and 751 for combinations of variations/options.
*8 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
*9 : F-switch cannot be selected.

[Example of model No.]

SSD2-KUL-20-10-T0H-R-N

Model: Compact cylinder, high load/low friction
Ⓐ Bore size : ø20 mm
Ⓑ Port thread : Rc thread
Ⓒ Stroke : 10mm
Ⓓ Switch model No. : Reed T0H switch
· Lead wire 1 m
Ⓔ Switch quantity : 1 on rod side
Ⓕ Option : Rod end male thread

Code	Description
Ⓐ Bore size (mm)	
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
Ⓑ Port thread	
Blank	Rc thread
NN	NPT thread (ø32 and over) (made-to-order product)
GN	G thread (ø32 and over) (made-to-order product)
Ⓒ Stroke (mm)	
Refer to the stroke table on the following page.	

Ⓓ Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Indicator	Lead wire	Bore size 20	25	32	40	50	63	80	100
-	F2S*	Proximity		●	1-color LED	2-wire	●	●						
-	F3S*			●		3-wire	●	●						
F2H*	F2V*			●		2-wire	●	●						
F3H*	F3V*			●		3-wire	●	●						
F3PH*	F3PV*			●	1-color LED (PNP output) (custom)	3-wire	●	●						
F2YH*	F2YV*			●	2-color LED	2-wire	●	●						
F3YH*	F3YV*			●		3-wire	●	●						
T0H*	T0V*	Reed	●	●	1-color LED	2-wire	●	●	●	●	●	●	●	●
T5H*	T5V*		●	●	No indicator lamp		●	●	●	●	●	●	●	●
T8H*	T8V*		●	●	1-color LED					●	●	●	●	●
T1H*	T1V*	Proximity	●		1-color LED	2-wire	●	●	●	●	●	●	●	●
T2H*	T2V*			●			●	●	●	●	●	●	●	●
T3H*	T3V*			●		3-wire	●	●	●	●	●	●	●	●
T3PH*	T3PV*			●	1-color LED (PNP output)		●	●	●	●	●	●	●	●
T2WH*	T2WV*			●	2-color LED	2-wire	●	●	●	●	●	●	●	●
T2YH*	T2YV*			●			●	●	●	●	●	●	●	●
T3WH*	T3WV*			●		3-wire	●	●	●	●	●	●	●	●
T3YH*	T3YV*			●			●	●	●	●	●	●	●	●
T2YD*	-			●	2-color LED for AC magnetic field	2-wire	●	●	●	●	●	●	●	●
T2YDT*	-			●			●	●	●	●	●	●	●	●
T2JH*	T2JV*			●	1-color LED off-delay	2-wire	●	●	●	●	●	●	●	●

*** Lead wire length**	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option) *9
Ⓔ Switch quantity	
R	1 on rod side
H	1 on head side
D	2
Ⓕ Option	
Blank	Rod end female thread
N	Rod end male thread
M *2	Piston rod material (stainless steel)
Ⓖ Mounting bracket	
Blank	Without mounting bracket
LB	Axial foot
CB	Clevis bracket (pin and snap ring included)
FA	Rod side flange
FB	Head side flange
Ⓗ Accessory (available when rod end male thread "N" is selected)	
I	Rod eye
Y	Rod clevis (pin and snap ring included)

[Stroke table]

Stroke (mm)		Applicable bore size							
		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard stroke	5	●	●	●	●				
	10	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●
	35	●	●	●	●	●	●	●	●
	40	●	●	●	●	●	●	●	●
	45	●	●	●	●	●	●	●	●
	50	●	●	●	●	●	●	●	●
	75			●	●	●	●	●	●
	100			●	●	●	●	●	●
Min. stroke (mm)		5							
Max. stroke (mm)		50		100					
Custom stroke *2		In 1 mm increments							

1 : Less than 10 mm with the 2-color LED, off-delay, strong magnetic field proof, T1 or T8* switch is not available.
Refer to page 864 for the min. stroke with switch.
*2 : The total length is the same as that of the next longer standard stroke.
*3 : Refer to page 789 for the min. stroke with mounting bracket LB.

How to order mounting bracket

Bore size (mm) / Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA/FB)	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100
Clevis bracket (CB)	SSD2-CB-20	SSD2-CB-25	SSD2-CB-32	SSD2-CB-40	SSD2-CB-50	SSD2-CB-63	SSD2-CB-80	SSD2-CB-100

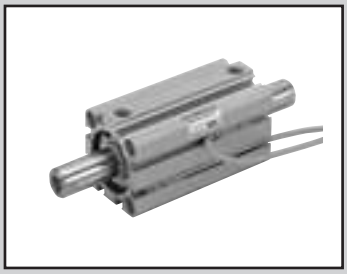
*1: The foot mounting bracket is provided as 2 pcs./set.

Dimensions

Same as SSD2-K Series (double acting/high load). Refer to pages 782 to 790.

Technical data

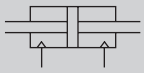
Refer to SCM-U Series on page 306 for technical data regarding sliding resistance values. SSD2-KU Series shows a similar trend to the data of “SCM-U Series”.



Compact cylinder double acting/double rod

SSD2-D Series

● Bore size: ø12/ø16/ø20/ø25/ø32/ø40/ø50/ø63/ø80/ø100

JIS symbol 

RoHS CAD

Specifications

Item		SSD2-D SSD2-DL (with switch)									
Bore size mm		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting									
Working fluid		Compressed air									
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)									
Min. working pressure MPa		0.15 (≈22 psi, 1.5 bar)							0.1 (≈15 psi, 1 bar)		
Proof pressure MPa		1.6 (≈230 psi, 16 bar)									
Ambient temperature °C		-10 (14°F) to 60 (140°F) (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 (use turbine oil class 1 ISO VG32 if necessary for lubrication)									
Allowable absorbed energy J	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 ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12	5/10/15/20 25/30	30	5
ø16			
ø20	5/10/15/20/25 30/35/40/45/50	50	
ø25			
ø32	5/10/15/20/25/30/ 35/40/45/50/75/100	100	
ø40			
ø50	10/15/20/25 30/35/40/45/50 75/100		10
ø63			
ø80			
ø100			

*: Refer to page 881 for the min. stroke with mounting bracket LB.

Min. stroke with switch (1 or 2 switches)

Bore size (mm)	T0H/V / T5H/V	T2H/V / T3H/V
ø12	5	5
ø16		
ø20		
ø25		
ø32		
ø40		
ø50		
ø63		
ø80		
ø100		

Note: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1* or T8* switch is not available.

Switch specifications (F-switch)

● 1-color/2-color LED

Item	2-wire proximity	3-wire proximity	2-wire proximity		3-wire proximity		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (made to order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less		
Indicator	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1 mA or less		10 μA or less		
Weight g	1 m:10 3 m:29						

Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD(*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay		For programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-						
Pwr. supp. V.	-				10 to 28 VDC				-						
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Cylinder weight table

(the weight of the switches is when there are 2 cylinder switches.) (Unit: g)

Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
ø12	52	105	60	105	69	115	77	124	86	134	95	147	-	-	-	-	-	-	-	-	-	-	-	-
ø16	74	133	85	133	95	144	106	156	117	168	128	177	-	-	-	-	-	-	-	-	-	-	-	-
ø20	131	187	143	222	161	238	179	254	196	269	214	285	232	301	249	316	267	332	284	347	-	-	-	-
ø25	147	238	162	253	178	269	194	285	210	301	226	316	242	332	257	348	275	364	288	379	-	-	-	-
ø32	184	299	230	344	275	390	322	436	366	481	413	527	459	573	469	612	485	628	522	665	776	785	1004	1012
ø40	283	426	310	453	336	479	363	506	390	533	416	569	443	601	507	617	553	663	601	707	1317	1333	1475	1490
ø50	-	-	508	702	558	751	608	803	658	851	708	901	758	950	808	1001	835	1033	911	1105	2007	2025	2252	2270
ø63	-	-	902	1266	977	1341	1052	1416	1127	1491	1202	1566	1278	1642	1353	1717	1428	1792	1503	1867	2218	2242	2593	2617
ø80	-	-	1608	1538	1725	1916	1841	2294	1958	2411	2074	2527	2191	2649	2308	2771	2425	2888	2541	3004	3560	3587	4143	4169
ø100	-	-	2483	3105	2652	3254	2820	3402	2989	3586	3158	3770	3327	3934	3495	4097	3664	4261	3833	4425	5213	5245	6033	6065

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push/Pull	-	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push/Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	$1.06x10^2$	$1.21x10^2$	$1.36x10^2$	$1.51x10^2$
ø20	Push/Pull	-	35.3	47.1	70.7	94.2	$1.18x10^2$	$1.41x10^2$	$1.65x10^2$	$1.88x10^2$	$2.12x10^2$	$2.36x10^2$
ø25	Push/Pull	-	56.7	75.6	$1.13x10^2$	$1.51x10^2$	$1.89x10^2$	$2.27x10^2$	$2.64x10^2$	$3.02x10^2$	$3.40x10^2$	$3.78x10^2$
ø32	Push/Pull	-	90.5	$1.21x10^2$	$1.81x10^2$	$2.41x10^2$	$3.02x10^2$	$3.62x10^2$	$4.22x10^2$	$4.83x10^2$	$5.43x10^2$	$6.03x10^2$
ø40	Push/Pull	-	$1.58x10^2$	$2.11x10^2$	$3.17x10^2$	$4.22x10^2$	$5.28x10^2$	$6.33x10^2$	$7.39x10^2$	$8.44x10^2$	$9.50x10^2$	$1.06x10^3$
ø50	Push/Pull	-	$2.47x10^2$	$3.30x10^2$	$4.95x10^2$	$6.60x10^2$	$8.25x10^2$	$9.90x10^2$	$1.15x10^3$	$1.32x10^3$	$1.48x10^3$	$1.65x10^3$
ø63	Push/Pull	$2.80x10^2$	$4.20x10^2$	$5.61x10^2$	$8.41x10^2$	$1.12x10^3$	$1.40x10^3$	$1.68x10^3$	$1.96x10^3$	$2.24x10^3$	$2.52x10^3$	$2.80x10^3$
ø80	Push/Pull	$4.54x10^2$	$6.80x10^2$	$9.07x10^2$	$1.36x10^3$	$1.81x10^3$	$2.27x10^3$	$2.72x10^3$	$3.17x10^3$	$3.63x10^3$	$4.08x10^3$	$4.54x10^3$
ø100	Push/Pull	$7.15x10^2$	$1.07x10^3$	$1.43x10^3$	$2.14x10^3$	$2.86x10^3$	$3.57x10^3$	$4.29x10^3$	$5.00x10^3$	$5.72x10^3$	$6.43x10^3$	$7.15x10^3$

How to order

No switch (without magnet for switch)

SSD2-D - 12 ○ ○ - 5 ——— N - LB - I

With switch (built-in magnet for switch)

SSD2-DL - 12 ○ ○ - 10 - T0H - R - N - LB - I

Ⓐ Model No.
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Cushion
Ⓔ Stroke
Ⓕ Switch model No. *1, *2 *3, *8 *9
Ⓖ Switch quantity
Ⓗ Option *4
Ⓘ Mounting bracket *5 *6
Ⓙ Accessory *7

Precautions for model No. selection

1 : The T2YD switch cannot be mounted on the ø12 and ø16 bore sizes.
2 : The T8 switch cannot be mounted on ø12 and ø16.
*3 : The F-switch can only be mounted on the piping port surface of bore sizes ø20 and ø25.
*4 : Piston rod of ø12 to ø25 is stainless steel as standard. C-snap ring is stainless steel instead of steel. The rod end male thread nut is stainless steel.
*5 : The mounting bracket is included at shipment.
*6 : The projection dimension of piston rod WF when LB or FA is selected is different from that of the standard. Refer to the dimensions on pages 877, 879 and 881. 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 type lead wire on ø20 models cannot be selected on strokes of 15 mm or under.
*9 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
*10: Refer to pages 750 and 751 for combinations of variations/options.
*11 : F-switch cannot be selected.

[Example of model No.]

SSD2-DL-12-5-T0H-R-N-LB-I

Model: Compact cylinder double acting/double rod

Ⓑ Bore size : ø12 mm
Ⓒ Port thread : Rc thread
Ⓓ Cushion : No cushion
Ⓔ Stroke : 5mm
Ⓕ Switch model No. : Reed T0H switch/ Lead wire length 1 m
Ⓖ Switch quantity : 1 on rod side
Ⓗ Option : Rod end male thread
Ⓘ Mounting bracket : Axial foot
Ⓙ Accessory : Rod eye

How to order switch

SW - T0H

Switch model No. (Item Ⓕ above)

Code	Description
Ⓐ Model No.	
SSD2-D	Double acting/double rod
SSD2-DL	Double acting/double rod/with switch
Ⓑ Bore size (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
Ⓒ Port thread	
Blank	Rc thread
NN	NPT thread (ø32 and over) (made-to-order product)
GN	G thread (ø32 and over) (made-to-order product)
Ⓓ Cushion	
Blank	Without cushion
D	With rubber cushion
Ⓔ Stroke (mm)	
Refer to the stroke table on the following page.	

Ⓕ Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Indicator	Lead wire	Bore size 12	16	20	25	32	40	50	63	80	100
-	F2S*	Proximity		●	1-color LED	2-wire			●	●						
-	F3S*	Proximity		●	1-color LED	3-wire			●	●						
F2H*	F2V*	Proximity		●	1-color LED	2-wire			●	●						
F3H*	F3V*	Proximity		●	1-color LED	3-wire			●	●						
F3PH*	F3PV*	Proximity		●	1-color LED (PNP output) (custom)	3-wire			●	●						
F2YH*	F2YV*	Proximity		●	2-color LED	2-wire			●	●						
F3YH*	F3YV*	Proximity		●	2-color LED	3-wire			●	●						
T0H*	T0V*	Reed	●	●	1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T5H*	T5V*	Reed	●	●	No indicator lamp	2-wire	●	●	●	●	●	●	●	●	●	●
T8H*	T8V*	Reed	●	●	1-color LED	2-wire			●	●	●	●	●	●	●	●
T1H*	T1V*	Proximity	●		1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T2H*	T2V*	Proximity		●	1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T3H*	T3V*	Proximity		●	1-color LED	3-wire	●	●	●	●	●	●	●	●	●	●
T3PH*	T3PV*	Proximity		●	1-color LED (PNP output)	3-wire	●	●	●	●	●	●	●	●	●	●
T2WH*	T2WV*	Proximity		●	2-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T2YH*	T2YV*	Proximity		●	2-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T3WH*	T3WV*	Proximity		●	2-color LED	3-wire	●	●	●	●	●	●	●	●	●	●
T3YH*	T3YV*	Proximity		●	2-color LED	3-wire	●	●	●	●	●	●	●	●	●	●
T2YD*	-	Proximity		●	2-color LED	2-wire			●	●	●	●	●	●	●	●
T2YDT*	-	Proximity		●	AC magnetic field	2-wire			●	●	●	●	●	●	●	●
T2JH*	T2JV*	Proximity		●	1-color LED off-delay	2-wire	●	●	●	●	●	●	●	●	●	●

*** Lead wire length**	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option) *11

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

Ⓗ Option

	Bore size (mm)	12	16	20	25	32	40	50	63	80	100
Blank	Rod end female thread	●	●	●	●	●	●	●	●	●	●
N	Rod end male thread	●	●	●	●	●	●	●	●	●	●
P6	Copper and PTFE free specifications	Supported as standard							●	●	●
M *4	Piston rod material (stainless steel)	●	●	●	●	●	●	●	●	●	●
P4	Specifications for rechargeable battery (made to order)	●	●	●	●	●	●	●	●	●	●
P40		●	●	●	●	●	●	●	●	●	●

Ⓘ Mounting bracket	
Blank	Without mounting bracket
LB	Axial foot
FA	Rod side flange

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

[Stroke table]

Stroke (mm)		Applicable bore size									
		12	16	20	25	32	40	50	63	80	100
Standard stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Min. stroke (mm) *1		1									
Max. stroke (mm)		30		50		100					
Custom stroke *2		-				In 5 mm increments					

***1: Less than 5 mm for 1-color LED switch and less than 10 mm for the 2-color LED, off-delay, AC magnetic field proof, T1* or T8* switch are not available. Refer to page 868 for the min. stroke with switch.**

*2: Available only for more than 50 mm stroke.

How to order mounting brackets

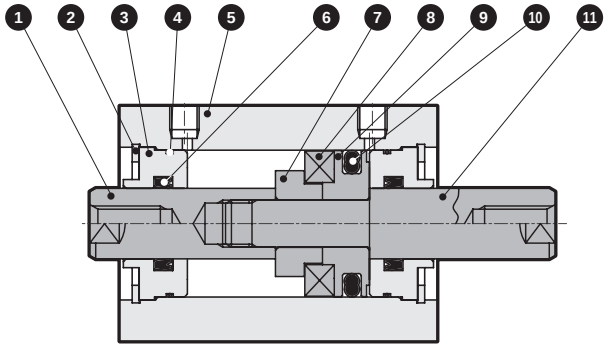
Bore size (mm) / Mounting bracket	ø12	ø16	ø20	ø25	ø32	ø40	ø50
Foot (LB)	SSD2-LB-12	SSD2-LB-16	SSD2-LB-20	SSD2-LB-25	SSD2-LB-32	SSD2-LB-40	SSD2-LB-50
Flange (FA)	SSD2-FA-12	SSD2-FA-16	SSD2-FA-20	SSD2-FA-25	SSD2-FA-32	SSD2-FA-40	SSD2-FA-50

Bore size (mm) / Mounting bracket	ø63	ø80	ø100
Foot (LB)	SSD2-LB-63	SSD2-LB-80	SSD2-LB-100
Flange (FA)	SSD2-FA-63	SSD2-FA-80	SSD2-FA-100

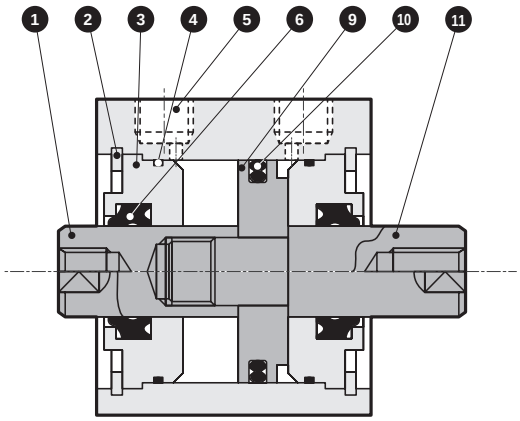
*1: The foot mounting bracket is provided as 2 pcs./set.

Internal structure and parts list (ø12 to 50) (no cushion)

● SSD2-DL-12 to 50 (double acting/double rod/with switch)



● SSD2-D-12 to 50 (double acting/double rod)



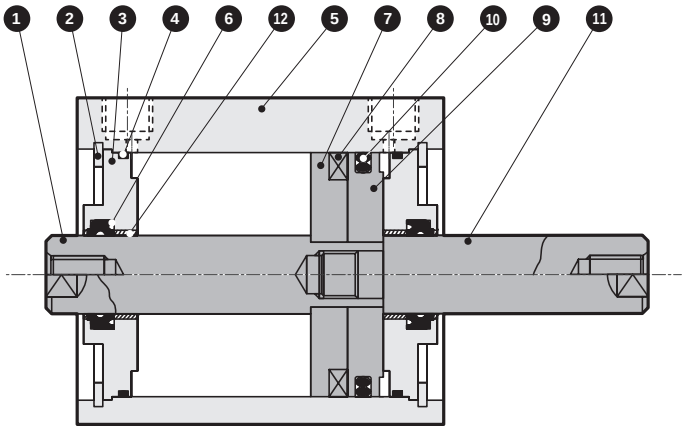
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod Ⓐ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating	7	Spacer	ø12, ø20, ø32, ø40: Aluminum alloy ø16, ø25, ø50: Special resin	ø12, 20, 32, 40: Chromate
2	C-snap ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod metal	Special aluminum	Alumite	9	Piston	Aluminum alloy	Chromate
4	Rod metal gasket	Nitrile rubber		10	Piston packing	Nitrile rubber	
5	Body	Aluminum alloy	Hard alumite	11	Piston rod Ⓑ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
6	Rod packing	Nitrile rubber					

Repair parts list

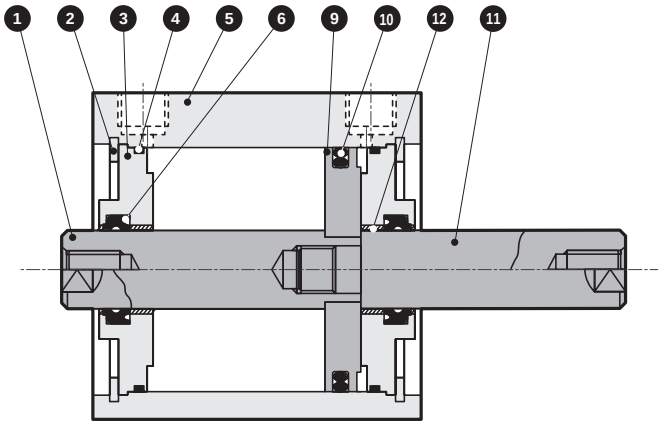
Bore size (mm)	Kit No.	Repair parts No.
ø12	SSD2-D-12K	④ ⑥ ⑩
ø16	SSD2-D-16K	
ø20	SSD2-D-20K	
ø25	SSD2-D-25K	
ø32	SSD2-D-32K	
ø40	SSD2-D-40K	
ø50	SSD2-D-50K	

Internal structure and parts list (ø63 to 100) (no cushion)

● SSD2-DL-63 to 100 (double acting/double rod/with switch)



● SSD2-D-63 to 100 (double acting/double rod)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod Ⓐ	Steel	Industrial chrome plating	7	Spacer	Aluminum alloy	Chromate
2	C-snap ring	Steel	Zinc phosphate	8	Magnet	Plastic	
3	Rod metal	Aluminum alloy	Alumite	9	Piston	Aluminum alloy	Chromate
4	Rod metal gasket	Nitrile rubber		10	Piston packing	Nitrile rubber	
5	Body	Aluminum alloy	Hard alumite	11	Piston rod Ⓑ	Steel	Industrial chrome plating
6	Rod packing	Nitrile rubber		12	Bush	Oiles drymet	*1

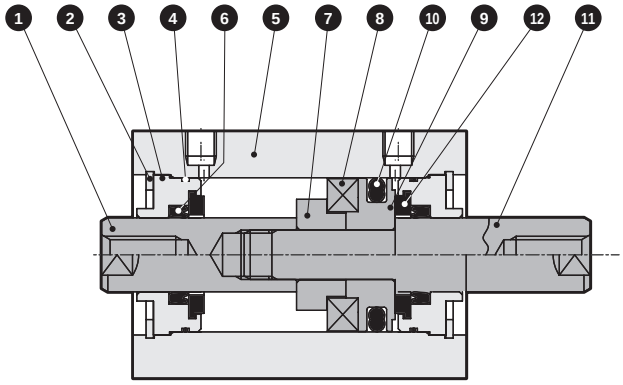
*1: Material is steel for copper and PTFE free specifications.

Repair parts list

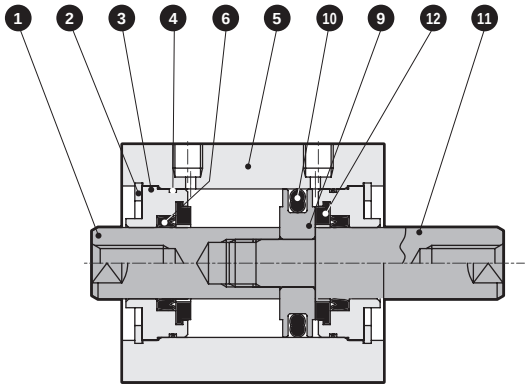
Bore size (mm)	Kit No.	Repair parts No.
ø63	SSD2-D-63K	④ ⑥ ⑩
ø80	SSD2-D-80K	
ø100	SSD2-D-100K	

Internal structure and parts list (ø12 to 50) (with rubber cushion)

● SSD2-DL-12D to 50D (double acting/double rod/with switch)



● SSD2-D-12D to 50D (double acting/double rod)



No.	Part name	Material	Remarks
1	Piston rod Ⓐ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
2	C-snap ring	Steel	Zinc phosphate
3	Rod metal	Special aluminum	Alumite
4	Rod metal gasket	Nitrile rubber	
5	Body	Aluminum alloy	Hard alumite
6	Rod packing	Nitrile rubber	
7	Spacer	ø12, ø20, ø32, ø40: Aluminum alloy ø16, ø25, ø50: Special resin	ø12, 20, 32, 40: Chromate

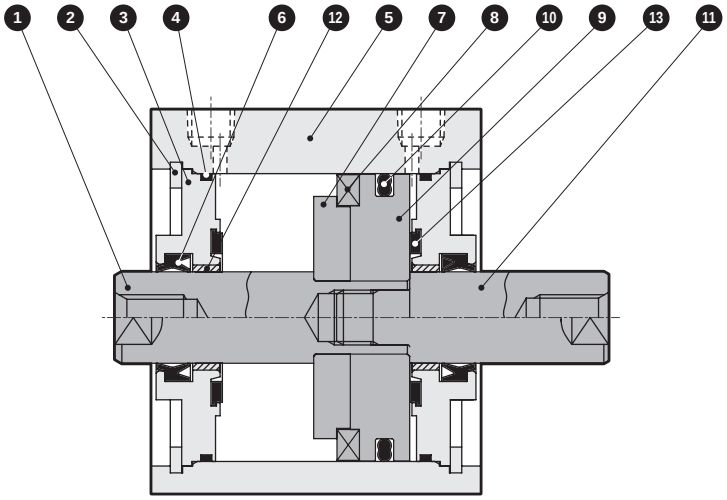
No.	Part name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum alloy	Chromate
10	Piston packing	Nitrile rubber	
11	Piston rod Ⓑ	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50: Industrial chrome plating
12	Cushion rubber	Urethane rubber	

Repair parts list

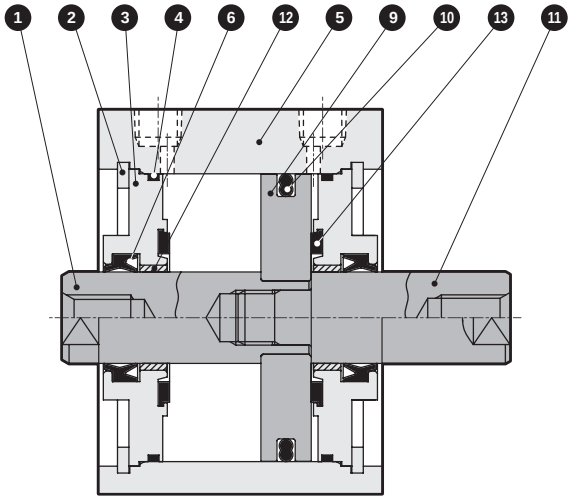
Bore size (mm)	Kit No.	Repair parts No.
ø12	SSD2-D-12DK	④ ⑥ ⑩ ⑫
ø16	SSD2-D-16DK	
ø20	SSD2-D-20DK	
ø25	SSD2-D-25DK	
ø32	SSD2-D-32DK	
ø40	SSD2-D-40DK	
ø50	SSD2-D-50DK	

Internal structure and parts list (ø63 to 100) (with rubber cushion)

● SSD2-DL-63D to 100D (double acting/double rod/with switch)



● SSD2-D-63D to 100D (double acting/double rod)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod Ⓐ	Steel	Industrial chrome plating	8	Magnet	Plastic	
2	C-snap ring	Steel	Zinc phosphate	9	Piston	Aluminum alloy	Chromate
3	Rod metal	Aluminum alloy	Alumite	10	Piston packing	Nitrile rubber	
4	Rod metal gasket	Nitrile rubber		11	Piston rod Ⓑ	Steel	Industrial chrome plating
5	Body	Aluminum alloy	Hard alumite	12	Bush	Oiles drymet	*1
6	Rod packing	Nitrile rubber		13	Cushion rubber	Urethane rubber	
7	Spacer	Aluminum alloy	Chromate				

*1: Material is steel for copper and PTFE free specifications.

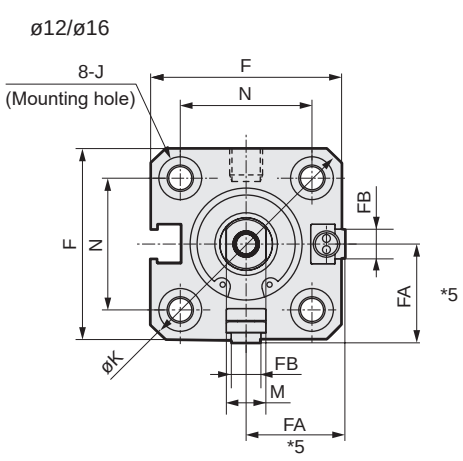
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø63	SSD2-D-63DK	④ ⑥ ⑩ ⑬
ø80	SSD2-D-80DK	
ø100	SSD2-D-100DK	

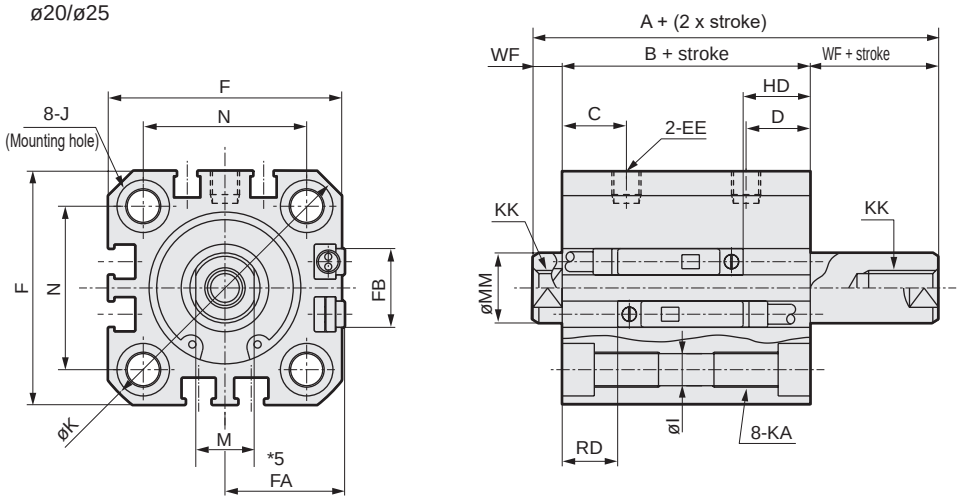
Dimensions CAD

● SSD2-DL-12 to 25 (with switch)

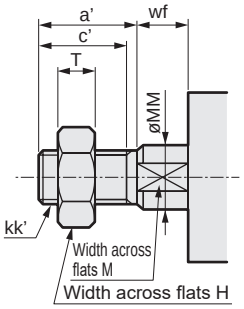
ø12/ø16



ø20/ø25



● Rod end male thread



Note: The positions for the left and right widths across flats are unspecified.

Code	Common dimensions with switch																
Bore size (mm)	A	B	C	D	EE	F	FA *5	FB	I	J	K	KA	KK	M	MM	N	WF
ø12	34	27	5.5	5.5	M5	25	13(16.5)	4.5	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	34	27	5.5	5.5	M5	29	15(18.5)	4.5	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	45	36	8	8	M5	36	18.5(22)	12.5	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	49	39	11	11	M5	40	20.5(24)	13.5	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5

Switch dimensions	Reed T0H/T0V, T5H/T5V *6		Proximity T2H/T2V, T3H/T3V *6		Proximity T2WH/T2WV, T3WH/T3WV *6		Proximity F2H/F2V, F3H/F3V, F2YH/F2YV, F3YH/F3YV		Proximity F2S/F3S	
Bore size (mm)	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD
ø12	5.5	3	5.5	3	7.5	4.5				
ø16	5	2	5	2	6.5	3.5				
ø20	10	7.5	10	7.5	11.5	9.5	14	12	13	11
ø25	11.5	9.5	11.5	9.5	11.5	11	15	13	14	12

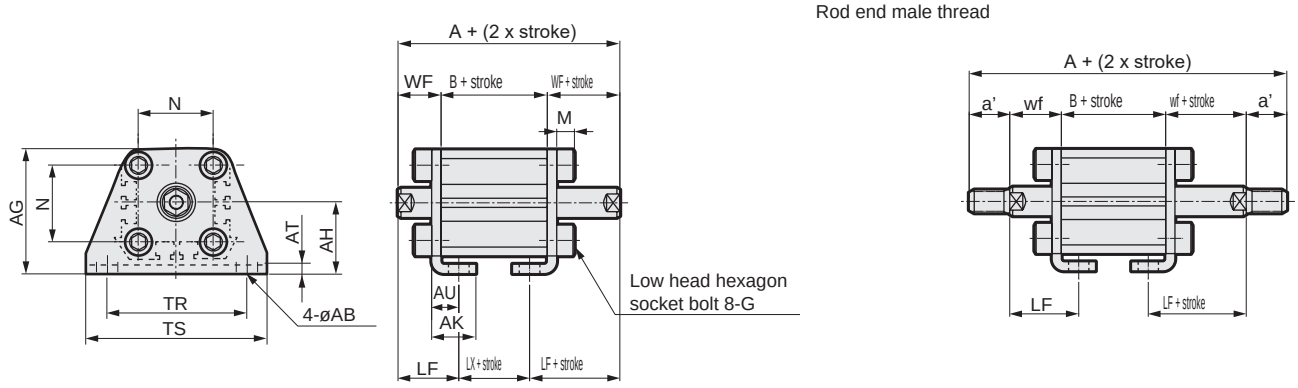
*1 : Only F-switch is available for the ø20 or ø25 piping port surface.
*2 : HD and RD dimensions for 5 mm stroke differ from these dimensions according to the setting.
3 : Refer to page 1044 for HD, RD and protruding dimensions of the 2-color LED, off-delay, AC magnetic field proof, T1 and T8* switches.
*4 : Dimensions in ( ) of FA are for the L-shaped lead wire.
*5 : For dimensions of individual accessories, refer to pages 1046 to 1049.
*6 : The RD side can be identified with a mark on the port surface of the body.

● Dimensions of rod end male thread part

Code / Bore size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10x1.25	10	12	6	5

Dimensions with mounting bracket

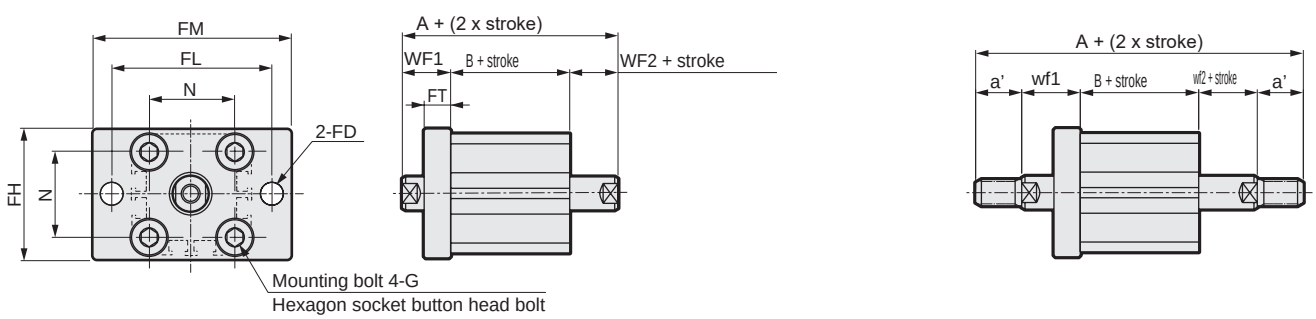
● Axial foot (LB) with switch
SSD2-DL-12 to 25 -LB



Code	Common dimensions										
Bore size (mm)	AB	AG	AH	AK	AT	AU	G	N	TR	TS	M
ø12	5	29.5	17	12.5	2	8	M4x10	15.5	34	44	4.8
ø16	5	33.5	19	13	2	8	M4x10	20	38	48	4.8
ø20	7	42	24	15	3.2	9.2	M6x16	25.5	48	62	7.2
ø25	7	46	26	16.5	3.2	10.7	M6x16	28	52	66	7.2

Code	Female thread					Male thread				
Bore size (mm)	WF	LF	A	B	LX	a'	wf	LF	A	B	LX
ø12	13.5	19.5	54	27	15	10.5	13.5	19.5	75	27	15
ø16	13.5	19.5	54	27	15	12	13.5	19.5	78	27	15
ø20	14.5	20.5	65	36	24	14	14.5	20.5	93	36	24
ø25	15	22.5	69	39	24	17.5	15	22.5	104	39	24

● Rod side flange (FA) with switch
SSD2-DL-12 to 25 -FA

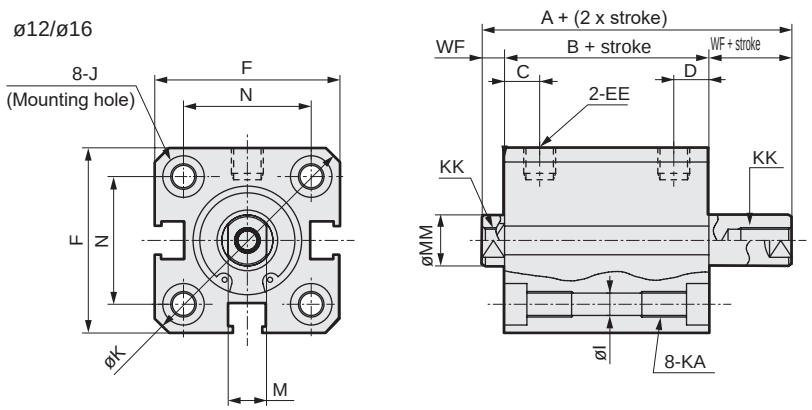


Code	Common dimensions							Female thread				Male thread				
Bore size (mm)	FD	FH	FL	FM	FT	N	G	WF1	WF2	A	B	a'	wf1	wf2	A	B
ø12	4.5	25	45	55	5.5	15.5	M4x12	13.5	3.5	44	27	11	13.5	3.5	65	27
ø16	4.5	30	45	55	5.5	20	M4x12	13.5	3.5	44	27	12	13.5	3.5	68	27
ø20	6.6	39	48	60	8	25.5	M6x16	14.5	4.5	55	36	14	14.5	4.5	83	36
ø25	6.6	42	52	64	8	28	M6x16	15	5	59	39	18	15	5	94	39

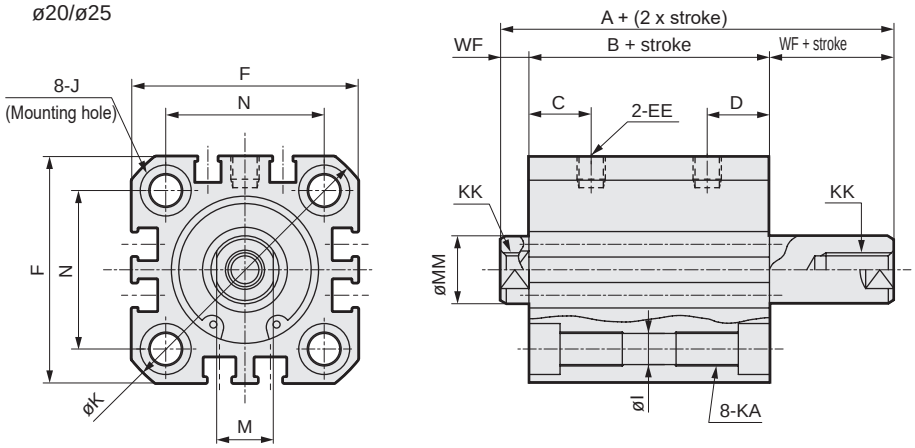
Dimensions CAD

● SSD2-D-12 to 25 (without switch)

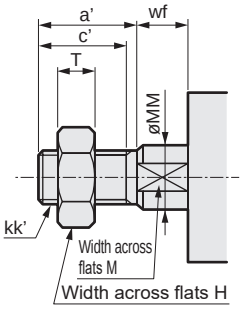
ø12/ø16



ø20/ø25



● Rod end male thread



Note: The positions for the left and right widths across flats are unspecified.

Code / Bore size (mm)	Dimensions without switch and common dimensions														
	A	B	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF
ø12	29	22	5.5	5.5	M5	25	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	29	22	5.5	5.5	M5	29	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	35	26	8	8	M5	36	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	39	29	11	11	M5	40	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5

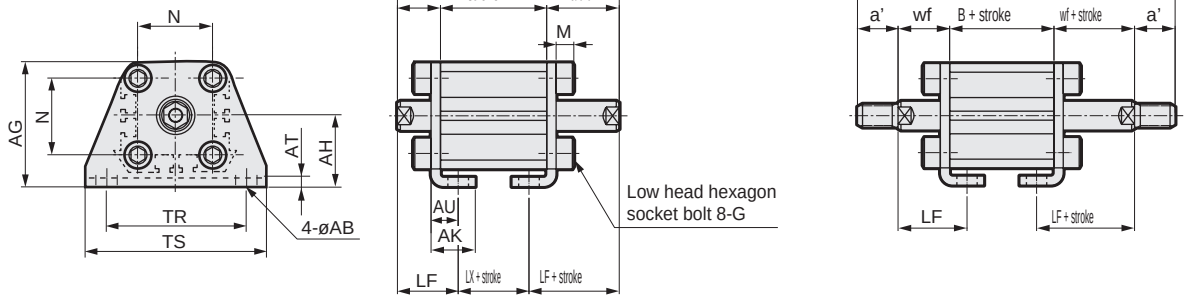
● Dimensions of rod end male thread part

Code / Bore size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10x1.25	10	12	6	5

*1: For dimensions of individual accessories, refer to pages 1046 to 1049.

Dimensions with mounting bracket

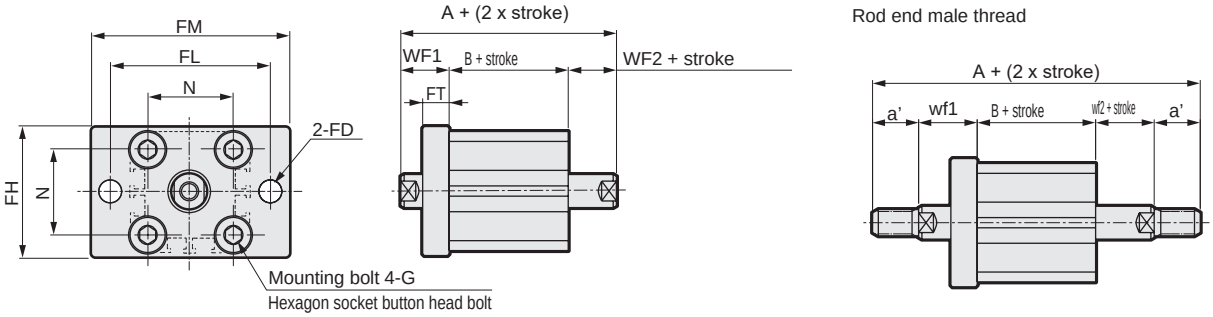
● Axial foot (LB) without switch
SSD2-D-12 to 25 -LB



Code	Common dimensions										
Bore size (mm)	AB	AG	AH	AK	AT	AU	G	N	TR	TS	M
ø12	5	29.5	17	12.5	2	8	M4x10	15.5	34	44	4.8
ø16	5	33.5	19	13	2	8	M4x10	20	38	48	4.8
ø20	7	42	24	15	3.2	9.2	M6x16	25.5	48	62	7.2
ø25	7	46	26	16.5	3.2	10.7	M6x16	28	52	66	7.2

Code	Female thread					Male thread				
Bore size (mm)	WF	LF	A	B	LX	a'	wf	LF	A	B	LX
ø12	13.5	19.5	49	22	10	10.5	13.5	19.5	70	22	10
ø16	13.5	19.5	49	22	10	12	13.5	19.5	73	22	10
ø20	14.5	20.5	55	26	14	14	14.5	20.5	83	26	14
ø25	15	22.5	59	29	14	17.5	15	22.5	94	29	14

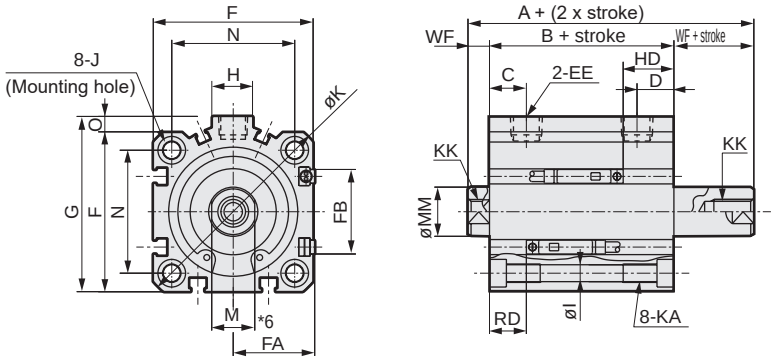
● Rod side flange (FA) without switch
SSD2-D-12 to 25 -FA



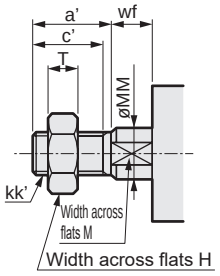
Code	Common dimensions							Female thread				Male thread				
Bore size (mm)	FD	FH	FL	FM	FT	N	G	WF1	WF2	A	B	a'	wf1	wf2	A	B
ø12	4.5	25	45	55	5.5	15.5	M4x12	13.5	3.5	39	22	11	13.5	3.5	60	22
ø16	4.5	30	45	55	5.5	20	M4x12	13.5	3.5	39	22	12	13.5	3.5	63	22
ø20	6.6	39	48	60	8	25.5	M6x16	14.5	4.5	45	26	14	14.5	4.5	73	26
ø25	6.6	42	52	64	8	28	M6x16	15	5	49	29	18	15	5	84	29

Dimensions CAD

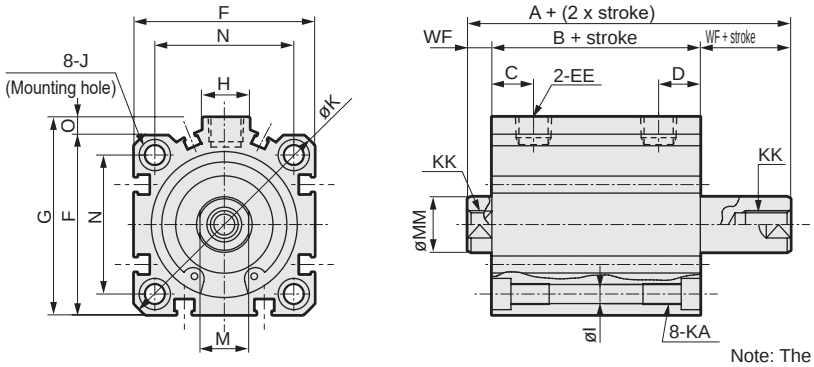
● SSD2-DL-32 to 100 (with switch)



● Rod end male thread



● SSD2-D-32 to 100 (without switch)



Note: The positions for the left and right widths across flats are unspecified.

Code	No switch		Common dimensions with switch														
Bore size (mm)	A *2, *8	B *3, *8	A *2	B *3	C *10	D *10	EE *9	F	FA *6	FB	G	H	I	J	K	KA	KK
ø32	44.5(54.5)	30.5(40.5)	54.5	40.5	8(10)	8(5.5)	Rc1/8	45	23(26.5)	20.5	49.5	12.5	5.5	9 spot face depth 5.5	60	M6 depth 11	M8 depth 13
ø40	54(64)	40(50)	64	50	12(11.4)	12(7.8)	Rc1/8	52	26.5(30)	27.5	57	15	5.5	9 spot face depth 5.5	69	M6 depth 11	M8 depth 13
ø50	56.5(66.5)	40.5(50.5)	66.5	50.5	10.5	10.5	Rc1/4	64	32.5(36)	28.5	71	18	6.9	11 spot face depth 6.5	86	M8 depth 13	M10 depth 15
ø63	58(68)	42(52)	68	52	13	13	Rc1/4	77	39(42.5)	28.5	84	23	8.7	14 spot face depth 9	103	M10 depth 25	M10 depth 15
ø80	71(81)	51(61)	81	61	16	16	Rc3/8	98	49.5(53)	28.5	104	31	10.5	17.5 spot face depth 11	132	M12 depth 28	M16 depth 21
ø100	84.5(94.5)	60.5(70.5)	94.5	70.5	23	23	Rc3/8	117	59(62.5)	28.5	123.5	38	10.5	17.5 spot face depth 11	156	M12 depth 28	M20 depth 27

Code	Common dimensions with switch					Switch dimensions					
						Reed T0H/T0V, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH/T3WV	
Bore size (mm)	M	MM	N	O	WF	HD *4	RD *4	HD *4	RD *4	HD	RD
ø32	14	16	34	4.5	7	11	9	11	9	12.5	10.5
ø40	14	16	40	5	7	16.5	12	16.5	12	18	13.5
ø50	17	20	50	7	8	16.5	12.5	16.5	12.5	18	14
ø63	17	20	60	7	8	18	13	18	13	19.5	14.5
ø80	22	25	77	6	10	23	15.5	23	15.5	24.5	17
ø100	27	30	94	6.5	12	28.5	19.5	28.5	19.5	30	21

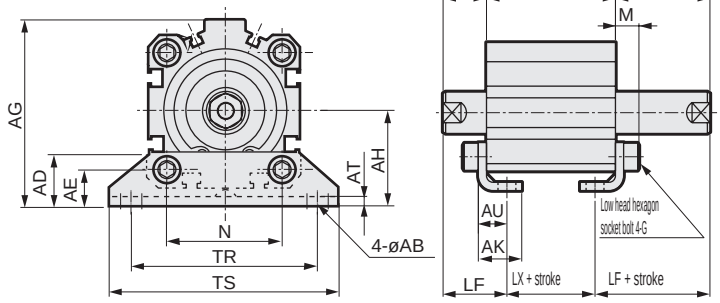
*1 : Custom stroke is available only for more than 50 mm strokes.
*2 : To calculate A + (2 x stroke) when using a custom stroke, apply "A + next longer standard stroke + custom stroke".
(Example) If the custom stroke is 70 mm, apply "A + standard stroke 75 mm + custom stroke 70 mm".
*3 : To calculate B + stroke when using custom stroke, apply the next longer standard stroke instead of the custom stroke.
(Example) If the custom stroke is 70 mm, apply the standard stroke 75 mm.
*4 : HD and RD dimensions for 5 mm stroke differ from these dimensions according to the setting.
5 : Refer to page 1044 for HD, RD and protruding dimensions of the 2-color LED, off-delay, AC magnetic field proof, T1 and T8* switches.
*6 : Dimensions in ( ) of FA are for the L-shaped lead wire.
*7 : For dimensions of individual accessories, refer to pages 1046 to 1049.
*8 : Dimensions in ( ) of codes A and B are for strokes of more than 50 mm.
*9 : The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.*10 : Dimensions in ( ) of codes C and D are when the value is for a 5 mm stroke without switch.
*11 : The RD side can be identified with a mark on the port surface of the body.

● Dimensions of rod end male thread part

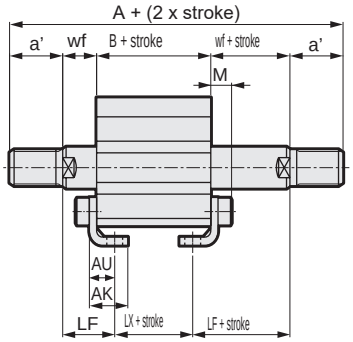
Code	a'	c'	H	kk'	M	MM	T	wf
Bore size (mm)								
ø32	23.5	20.5	22	M14x1.5	14	16	8	5
ø40	23.5	20.5	22	M14x1.5	14	16	8	5
ø50	28.5	26	27	M18x1.5	17	20	11	5
ø63	28.5	26	27	M18x1.5	17	20	11	5
ø80	35.5	32.5	32	M22x1.5	22	25	13	8
ø100	35.5	32.5	41	M26x1.5	27	30	16	8

Dimensions with mounting bracket

● Axial foot (LB)
SSD2-D(L)-32 to 100 -LB



Rod end male thread

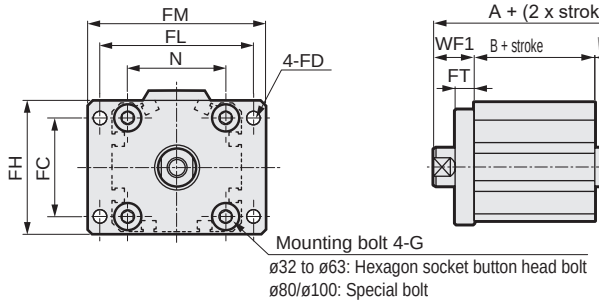


Code	Common dimensions												
Bore size (mm)	AB	AD	AE	AG	AH	AK	AT	AU	G	N	TR	TS	M
ø32	7	18.5	13	57	30	17	3.2	11.2	M6x16	34	57	71	7.2
ø40	7	18	13	64	33	18.2	3.2	11.2	M6x16	40	64	78	7.2
ø50	9	22	14	78	39	22.7	3.2	14.7	M8x20	50	79	95	8.2
ø63	11	26	16	91.5	46	25.2	3.2	16.2	M10x25	60	95	113	9.2
ø80	13	31.5	20.5	114	59	30.5	4.5	19.5	M12x40	77	118	140	11.5
ø100	13	35	24	136	71	35.5	6	23	M12x40	94	137	162	13

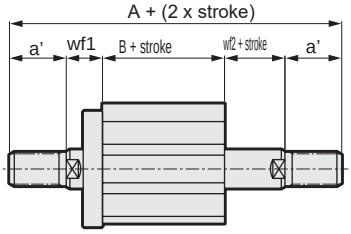
Code	Female thread								Male thread								
Bore size (mm)	WF	LF	No switch			With switch			a'	wf	LF	No switch			With switch		
			A	B	LX	A	B	LX				A	B	LX	A	B	LX
ø32	17	25	64.5(74.5)	30.5(40.5)	14.5(24.5)	74.5	40.5	24.5	23.5	15	23	107.5(117.5)	30.5(40.5)	14.5(24.5)	117.5	40.5	24.5
ø40	17	25	74(84)	40(50)	24(34)	84	50	34	23.5	15	23	117(127)	40(50)	24(34)	127	50	34
ø50	18	29.5	76.5(86.5)	40.5(50.5)	17.5(27.5)	86.5	50.5	27.5	28.5	15	26.5	127.5(137.59)	40.5(50.5)	17.5(27.5)	137.5	50.5	27.5
ø63	18	31	78(88)	42(52)	16(26)	88	52	26	28.5	15	28	129(139)	42(52)	16(26)	139	52	26
ø80	20	35	91(101)	51(61)	21(31)	101	61	31	35.5	18	33	158(168)	51(61)	21(31)	168	61	31
ø100	22	39	104.5(114.5)	60.5(70.5)	26.5(36.5)	115	70.5	36.5	35.5	18	35	167.5(177.5)	60.5(70.5)	26.5(36.5)	177.5	70.5	36.5

* Dimensions in ( ) are for strokes of more than 50 mm.
Note: ø80: LB cannot be selected when B + stroke is 72 or less.

● Rod side flange (FA)
SSD2-D(L)-32 to 100 -FA



Rod end male thread



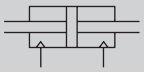
Code	Common dimensions								Female thread						Male thread							
Bore size (mm)	FC	FD	FH	FL	FM	FT	N	G	WF1	WF2	No switch		With switch		a'	wf1	wf2	No switch		With switch	
											A	B	A	B				A	B	A	B
ø32	34	5.5	48	56	65	8	34	M6x16	17	7	54.5(64.5)	30.5(40.5)	64.5	40.5	24	15	5	97.5(107.5)	30.5(40.5)	107.5	40.5
ø40	40	5.5	54	62	72	8	40	M6x16	17	7	64(74)	40(50)	74	50	24	15	5	107(117)	40(50)	117	50
ø50	50	6.6	67	76	89	9	50	M8x20	18	8	66.5(76.5)	40.5(50.5)	76.5	50.5	29	15	5	117.5(127.5)	40.5(50.5)	127.5	50.5
ø63	60	9	80	92	108	9	60	M10x25	18	8	68(78)	42(52)	78	52	29	15	5	119(129)	42(52)	129	52
ø80	77	11	99	116	134	11	77	M12x40	20	10	81(91)	51(61)	91	61	36	18	8	148(158)	51(61)	158	61
ø100	94	11	117	136	154	11	94	M12x40	22	12	94.5(104.5)	60.5(70.5)	104.5	70.5	36	18	8	157.5(167.5)	60.5(70.5)	167.5	70.5

* Dimensions in ( ) are for strokes of more than 50 mm.

Compact cylinder double acting/double rod (large bore size)

SSD2-D Series

● Bore size: ø125/ø140/ø160/ø180/ø200

JIS symbol 

RoHS CAD

Specifications

Item	SSD2-D SSD2-DL (with switch)				
Bore size mm	ø125	ø140	ø160	ø180	ø200
Actuation	Double acting/double rod				
Working fluid	Compressed air				
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)			0.7 (≈100 psi, 7 bar)	
Min. working pressure MPa	0.05 (≈7.3 psi, 0.5 bar)				
Proof pressure MPa	1.6 (≈230 psi, 16 bar)			1.05 (≈150 psi, 10.5 bar)	
Ambient temperature °C	-10 (14°F) to 60 (140°F) (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 (use turbine oil ISO VG32 if necessary for lubrication)				
Allowable absorbed energy J	6.52	6.52	7.78	12.4	

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø125	10, 20, 30, 40, 50 75, 100, 125, 150 175, 200, 250, 300	300	10
ø140			
ø160			
ø180			
ø200			

*1: Total length dimension with custom stroke is handled as custom stroke dedicated length.
*2: When using the type with switch, refer to the table below.

Number of installed switches and min. stroke (mm)

Switch quantity	1	2	3	4	5
Switch model No. / Bore size (mm)	T*	T*	T*	T*	T*
ø125	10	10	40	55	70
ø140	10	10	40	55	70
ø160	10	10	40	55	70
ø180	10	10	40	55	70
ø200	10	10	40	55	70

Switch specifications

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed							2-wire proximity
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD(*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay			For programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Cylinder weight table (the weight of the switches is when there are 2 cylinder switches.)

(Unit: kg)

Stroke (mm)	10		20		30		40		50		75		100	
Bore size (mm)	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch
ø125	4.64	4.74	4.98	5.08	5.32	5.42	5.66	5.76	6.00	6.10	6.85	6.95	7.70	7.80
ø140	6.62	6.73	7.00	7.11	7.38	7.49	7.77	7.88	8.15	8.26	9.00	9.11	10.07	10.18
ø160	9.10	9.22	9.58	9.70	10.06	10.18	10.54	10.66	11.02	11.14	12.22	12.34	13.41	13.53
ø180	13.12	13.27	13.62	13.77	14.12	14.27	14.62	14.77	15.12	15.27	16.36	16.51	17.61	17.76
ø200	16.09	16.27	16.65	16.83	17.21	17.39	17.77	17.95	18.33	18.51	19.73	19.91	21.13	21.31

Stroke (mm)	125		150		175		200		250		300	
Bore size (mm)	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch
ø125	8.55	8.65	9.40	9.50	10.25	10.35	11.10	11.20	12.80	12.90	14.50	14.60
ø140	11.02	11.13	11.87	11.98	12.72	12.83	13.57	13.68	15.27	15.38	16.97	17.08
ø160	14.61	14.73	15.81	15.93	17.01	17.13	18.21	18.33	20.61	20.73	23.01	23.13
ø180	18.85	19.00	20.10	20.25	21.35	21.50	22.59	22.74	25.09	25.24	27.58	27.73
ø200	22.53	22.71	23.93	24.11	25.32	25.50	26.72	26.90	29.52	29.70	32.32	32.50

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø125	Push/Pull	$1.13x10^3$	$1.70x10^3$	$2.26x10^3$	$3.39x10^3$	$4.52x10^3$	$5.65x10^3$	$6.79x10^3$	$7.92x10^3$	$9.05x10^3$	$1.02x10^4$	$1.13x10^4$
ø140	Push/Pull	$1.44x10^3$	$2.16x10^3$	$2.89x10^3$	$4.33x10^3$	$5.77x10^3$	$7.22x10^3$	$8.66x10^3$	$1.01x10^4$	$1.15x10^4$	$1.30x10^4$	$1.44x10^4$
ø160	Push/Pull	$1.88x10^3$	$2.83x10^3$	$3.77x10^3$	$5.65x10^3$	$7.54x10^3$	$9.42x10^3$	$1.13x10^4$	$1.32x10^4$	-	-	-
ø180	Push/Pull	$2.39x10^3$	$3.58x10^3$	$4.77x10^3$	$7.16x10^3$	$9.54x10^3$	$1.19x10^4$	$1.43x10^4$	$1.67x10^4$	-	-	-
ø200	Push/Pull	$3.02x10^3$	$4.52x10^3$	$6.03x10^3$	$9.05x10^3$	$1.21x10^4$	$1.51x10^4$	$1.81x10^4$	$2.11x10^4$	-	-	-

How to order

No switch (without magnet for switch)

SSD2-D - 125 ○ - 50 ——— N

With switch (built-in magnet for switch)

SSD2-DL - 125 ○ - 50 - T0H - R - N

Ⓐ Bore size

Ⓑ Port thread

Ⓒ Stroke

Ⓓ Switch model No. *1

Ⓔ Switch quantity

Ⓕ Option

Code	Description
Ⓐ Bore size (mm)	
125	ø125
140	ø140
160	ø160
180	ø180
200	ø200
Ⓑ Port thread	
Blank	Rc thread
NN	NPT thread (ø125 to ø160) (made-to-order product)
GN	G thread (ø125 to ø160) (made-to-order product)
Ⓒ Stroke (mm)	
Refer to the stroke table on the following page.	

Ⓓ Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Indicator	Lead Line
T0H*	**T0V***	Reed	●	●	1-color LED	2-wire
T5H*	**T5V***	Reed	●	●	No indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color LED	2-wire
T1H*	**T1V***	Proximity	●		1-color LED	2-wire
T2H*	**T2V***	Proximity		●	1-color LED	2-wire
T3H*	**T3V***	Proximity		●	1-color LED	3-wire
T3PH*	**T3PV***	Proximity		●	1-color LED	3-wire
T2WH*	**T2WV***	Proximity		●	2-color LED	2-wire
T2YH*	**T2YV***	Proximity		●	2-color LED	2-wire
T3WH*	**T3WV***	Proximity		●	2-color LED	3-wire
T3YH*	**T3YV***	Proximity		●	2-color LED	3-wire
T2JH*	**T2JV***	Proximity		●	1-color LED off-delay	2-wire
T2YD*	**-**	Proximity		●	2-color LED AC magnetic field	2-wire
T2YDT*	**-**	Proximity		●	2-color LED AC magnetic field	2-wire

*** Lead wire length**	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

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

Ⓕ Option	
Blank	Rod end female thread
N	Rod end male thread
P4	Specifications for rechargeable battery (made to order)
P40	

⚠ Precautions for model No. selection

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

[Example of model No.]

SSD2-DL-125-50-T0H-R-N

Model: Compact cylinder double acting/double rod

Ⓐ Bore size : 125 mm
Ⓑ Port thread : Rc thread
Ⓒ Stroke : 50 mm
Ⓓ Switch model No. : Reed T0H switch
· Lead wire length 1 m
Ⓔ Switch quantity : 1 on rod side
Ⓕ Option : Rod end male thread

How to order switch

SW - T0H

Switch model No.
(Item Ⓓ above)

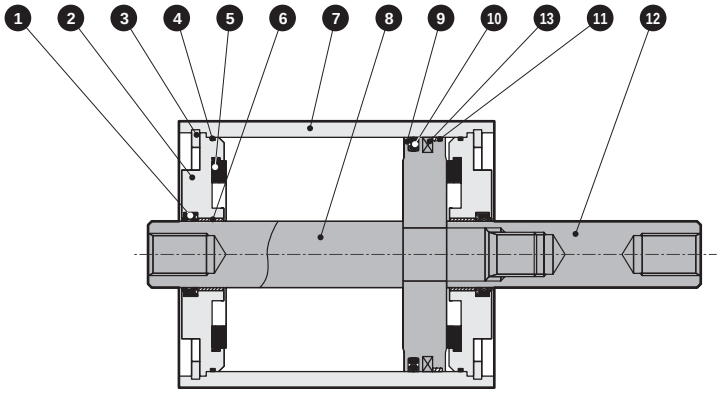
[Stroke table]

Stroke (mm)		Applicable bore size				
		ø125	ø140	ø160	ø180	ø200
Standard stroke	10	●	●	●	●	●
	20	●	●	●	●	●
	30	●	●	●	●	●
	40	●	●	●	●	●
	50	●	●	●	●	●
	75	●	●	●	●	●
	100	●	●	●	●	●
	125	●	●	●	●	●
	150	●	●	●	●	●
	175	●	●	●	●	●
	200	●	●	●	●	●
	250	●	●	●	●	●
	300	●	●	●	●	●
Min. stroke (mm) *1		10				
Max. stroke (mm)		300				
Custom stroke *2		In 1 mm increments				

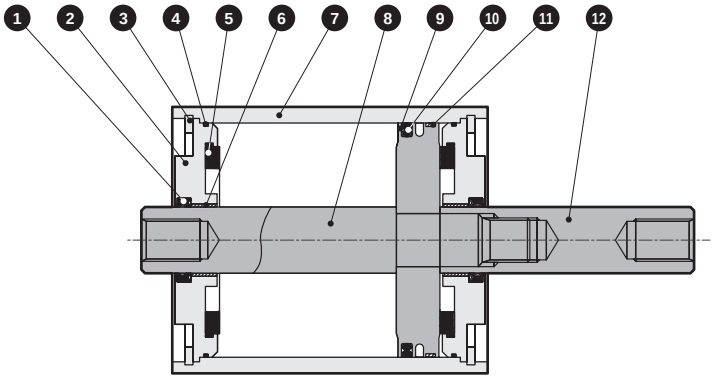
*1 : Refer to page 882 for the number of installed switches and the min. stroke.
*2 : Total length dimension with custom stroke is handled as custom stroke dedicated length.

Internal structure and parts list (ø125 to 160)

● SSD2-DL-125 to 160 (double acting/double rod/with switch)



● SSD2-D-125 to 160 (double acting/double rod/without switch)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing	Nitrile rubber		8	Piston rod Ⓐ	Steel	Industrial chrome plating
2	Rod metal	Aluminum die-casting	Chromate	9	Piston	Aluminum die-casting	
3	C-snap ring	Steel	Zinc phosphate	10	Piston packing	Nitrile rubber	
4	Metal gasket	Nitrile rubber		11	Wear ring	Polyacetal resin	
5	Cushion rubber	Urethane rubber		12	Piston rod Ⓑ	Steel	Industrial chrome plating
6	Bush	Oiles drymet		13	Magnet	Rubber	With switch only
7	Body	Aluminum alloy	Hard alumite				

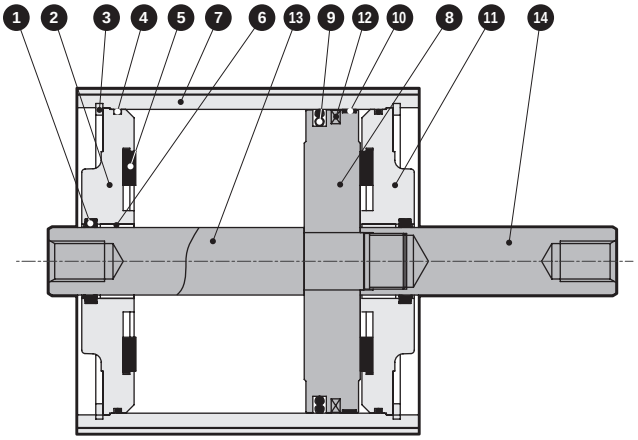
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø125	SSD2-D-125K	1 4 5 10 11
ø140	SSD2-D-140K	
ø160	SSD2-D-160K	

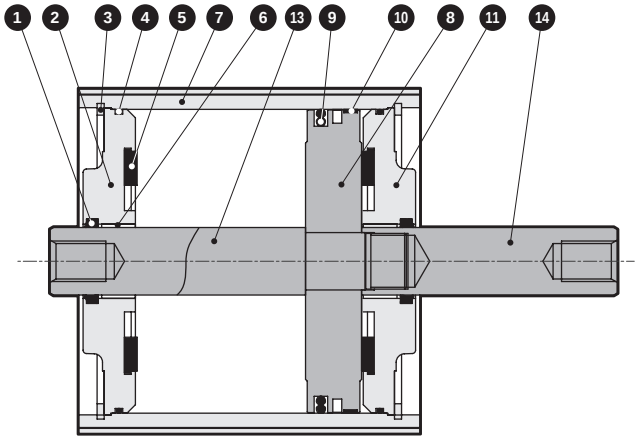
*1: Specify the kit No. when placing an order.

Internal structure and parts list (ø180, ø200)

● SSD2-DL-180, 200 (double acting/double rod/with switch)



● SSD2-D-180, 200 (double acting/double rod/without switch)



Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing	Nitrile rubber		8	Piston	Aluminum alloy	
2	Rod metal	Cast iron	Paint	9	Piston packing	Nitrile rubber	
3	C-snap ring	Steel	Zinc phosphate	10	Wear ring	Polyacetal resin	
4	Gasket	Nitrile rubber		11	Cover	Cast iron	Paint
5	Cushion rubber	Urethane rubber		12	Magnet	Rubber	With switch only
6	Bush	Oiles drymet		13	Piston rod A	Steel	Industrial chrome plating
7	Body	Aluminum alloy	Hard alumite	14	Piston rod B	Steel	Industrial chrome plating

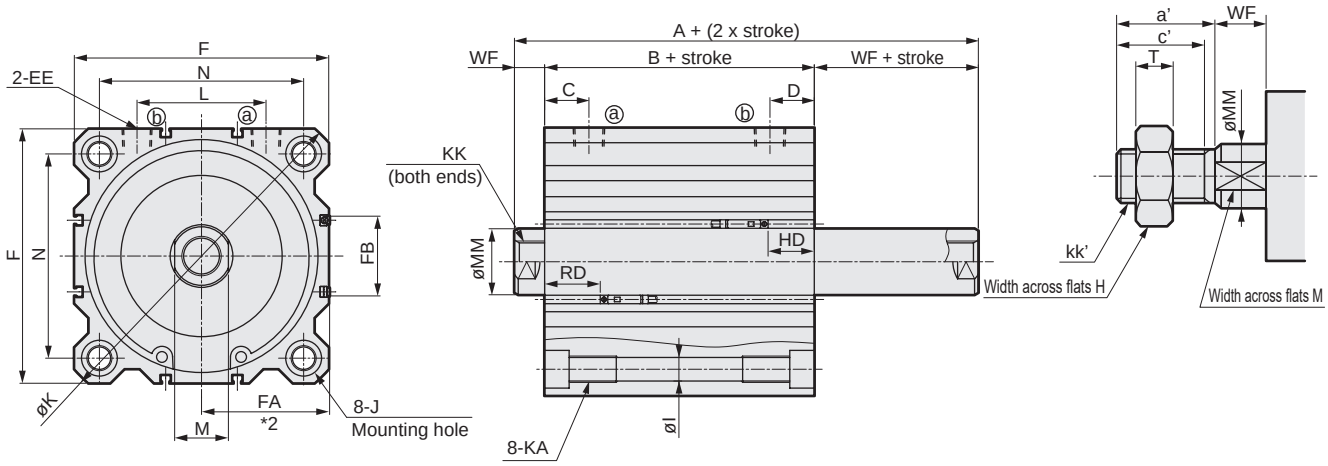
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø180	SSD2-D-180K	1 4 5 9 10
ø200	SSD2-D-200K	

Dimensions (ø125 to ø160) CAD

● SSD2-D(L)-125 to 160 (double acting/single rod)

● Rod end male thread



Note: The positions for the left and right widths across flats are unspecified.

Code	Common dimensions with switch															
Bore size (mm)	A	B	C	D	EE	F	I	J	K	KA	KK (*1)	L	M	MM	N	WF
ø125	115	83	29	29	Rc3/8	142	12.5	20 spot face depth 13	190	M14 depth 25	M22 x 2.5 depth 30 (22.5)	72	30	35	114	16
ø140	115	83	27.5	27.5	Rc3/8	158	12.5	20 spot face depth 13	210	M14 depth 25	M22 x 2.5 depth 30 (22.5)	80	30	35	128	16
ø160	125	91	30	30	Rc3/8	178	14.7	23 spot face depth 15.2	238	M16 depth 28	M24 x 3 depth 33 (24)	90	36	40	144	17

Code	T0H/V, T2H/V, T3H/V, T5/V				T2YH/V, T3YH/V, T2JH/V				T1H/V, T2YD			
Bore size (mm)	HD	RD	FA *2	FB	HD	RD	FA *2	FB	HD	RD	FA *2	FB
ø125	30	35	71.5(75)	44.5	28.5	33.5	77(80)	48	28.5	33.5	82.5(85.5)	48
ø140	31.5	33.5	79.5(83)	44.5	30	32	85(88)	48	30	32	90.5(93.5)	48
ø160	34	39	89.5(93)	48.5	32.5	37.5	95(98)	52	32.5	37.5	100.5(103.5)	52

Code	T2WH/V, T3WH/V				T8H/V			
Bore size (mm)	HD	RD	FA *2	FB	HD	RD	FA *2	FB
ø125	31.5	36.5	71.5(75)	44.5	24	29	77(80)	48
ø140	33	35	79.5(83)	44.5	25.5	27.5	85(88)	48
ø160	35.5	40.5	89.5(93)	48.5	28	33	95(98)	52

*1: Values in ( ) for KK dimensions indicate effective thread length on one side with 10 mm stroke.
*2: Dimensions in ( ) of FA are for the L-shaped lead wire.
*3: The RD side can be identified by a mark on the port surface of the body.

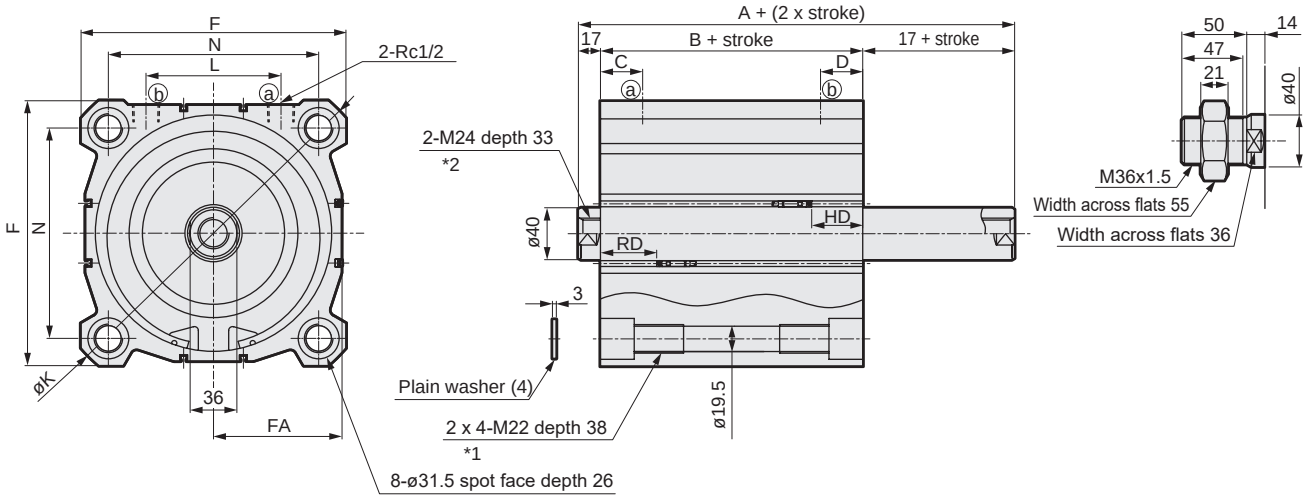
Dimensions of rod end male thread

Code	a'	c'	H	kk'	M	MM	T	wf
Bore size (mm)								
ø125	45	42	46	M30x1.5	30	35	18	13
ø140	45	42	46	M30x1.5	30	35	18	13
ø160	50	47	55	M36x1.5	36	40	21	14

Dimensions (ø180 to ø200)

● SSD2-D(L)-180, 200 (double acting/double rod)

● Rod end male thread



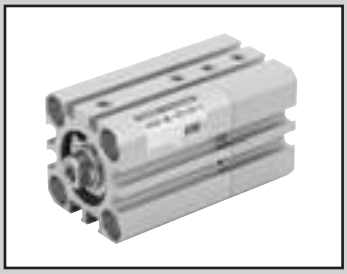
*1: 2x4-M22 through hole for 20 mm or less stroke.
*2: 2-M24 depth 27 (ø180) and 2-M24 depth 29 (ø200) for 10 mm stroke.
*3: The positions for the left and right widths across flats are unspecified.

Code / Bore size (mm)	A	B	C	D	F	K	L	N
ø180	136	102	32.5	32.5	204	270	104	162
ø200	143	109	33.5	33.5	226	300	110	182

Code	T0H/V, T2H/V, T3H/V, T5H/V			T2YH/V, T3YH/V, T2JH/V			T1H/V, T2YD		
Bore size (mm)	HD	RD	FA	HD	RD	FA	HD	RD	FA
ø180	39.5	43.5	99(102.5)	38.5	42.5	104.5(107.5)	38.5	42.5	110(113)
ø200	44.5	45.5	109.5(113)	43.5	44.5	115(118)	43.5	44.5	120.5(123.5)

Code	T2WH/V, T3WH/V			T8H/V		
Bore size (mm)	HD	RD	FA	HD	RD	FA
ø180	41.5	45.5	99(102.5)	33.5	37.5	104.5(107.5)
ø200	46.5	47.5	109.5(113)	38.5	39.5	115(118)

*1: Dimensions in ( ) of FA are for the L-shaped lead wire.
*2: The RD side can be identified by a mark on the port surface of the body.

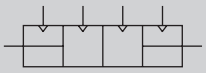


Compact cylinder double acting/back to back

SSD2-B Series

● Bore size: ø12/ø16/ø20/ø25/ø32/ø40/ø50/ø63/ø80/ø100

JIS symbol



RoHS

Specifications

Item	SSD2-B SSD2-BL (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting/back to back									
Working fluid	Compressed air									
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)									
Min. working pressure MPa	0.1 (≈15 psi, 1 bar)							0.05 (≈7.3 psi, 0.5 bar)		
Proof pressure MPa	1.6 (≈230 psi, 16 bar)									
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)									
Port size	M5				Rc1/8 *1		Rc1/4		Rc3/8	
Stroke tolerance mm	$S_1=^{+1.0}_{0}$ $S_2=^{+1.0}_{0}$									
Working piston speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12	5/10/15/20 25/30	30	1
ø16			
ø20	5/10/15/20/25 30/35/40/45/50	50	
ø25			
ø32	5/10/15/20/25/30/ 35/40/45/50/75/100	100	
ø40			
ø50	10/15/20/25 30/35/40/45/50 75/100		
ø63			
ø80			
ø100			

*1: When using the type with switch, refer to the table of the min. stroke with switch.

Min. stroke with switch (2 switches)

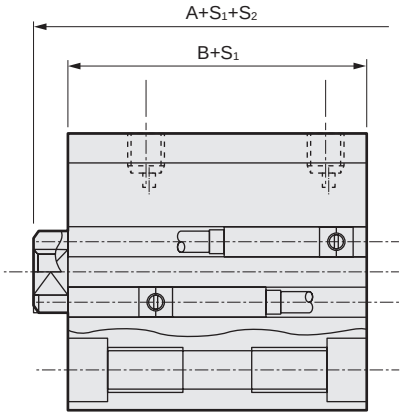
Bore size (mm)	T0H/V / T5H/V	T2H/V / T3H/V
ø12	10(5)	5
ø16		
ø20	5	
ø25		
ø32		
ø40		
ø50		
ø63		
ø80		
ø100		

1: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch is not available.
*2: Values in ( ) are for the type with 1 on rod side.

Custom stroke

● SSD2-B Series

Item	Standard products Standard stroke body with spacer	
Model No.	Refer to How to order.	
Description	A spacer is added to the standard stroke body to adjust the stroke in 1 mm increments.	
Stroke range	Bore size	Stroke range
	12/16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Example of model No.	Model No.: SSD2-B-32-38-50 A +2 mm spacer is added to the SSD2-B-32-40 standard cylinder to create 38 mm stroke. B + S_1 dimension is 63 mm.	



Switch specifications (F-switch)

● 1-color/2-color LED

Item	2-wire proximity	3-wire proximity	2-wire proximity		3-wire proximity		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (made to order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less		
Indicator	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1mA or less		10 μA or less		
Weight g	1 m:10 3 m:29						

Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed							2-wire proximity
	T1H/T1V	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T3WH/T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD(*4) T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay			Dedicated for programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Cylinder weight table (the weight of the switches is when there are 2 cylinder switches.)

(Unit: g)

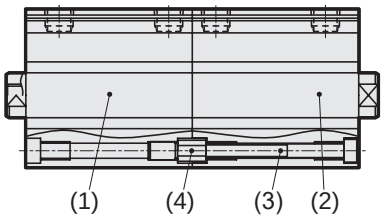
Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
ø12	36	86	44	86	53	95	61	103	70	112	72	114	-	-	-	-	-	-	-	-	-	-	-	-
ø16	48	104	59	104	69	114	80	125	91	136	102	147	-	-	-	-	-	-	-	-	-	-	-	-
ø20	63	118	75	150	88	163	101	176	113	188	126	201	139	214	152	227	165	240	203	278	-	-	-	-
ø25	87	178	102	193	118	209	134	225	160	241	165	256	181	272	197	288	213	304	228	319	-	-	-	-
ø32	122	236	144	258	166	280	188	302	209	323	231	345	253	367	275	389	297	411	318	432	494	542	604	652
ø40	183	326	210	353	236	379	263	406	290	433	316	459	342	485	369	512	395	538	472	565	646	695	776	825
ø50	-	-	341	535	383	577	425	619	467	661	510	704	552	746	594	788	636	830	678	872	1025	1082	1235	1292
ø63	-	-	507	786	562	841	617	896	672	951	727	1006	782	1061	838	1117	893	1172	948	1227	1438	1502	1713	1777
ø80	-	-	928	1341	1015	1428	1101	1514	1188	1601	1274	1887	1361	1774	1448	1861	1535	1948	1621	2034	2401	2467	2833	2899
ø100	-	-	1433	2000	1547	2114	1660	2227	1774	2341	1888	2455	2002	2569	2115	2682	2229	2796	2343	2910	3406	3478	3973	4045

Hexagon socket head cap screw weight

(Unit: g)

Stroke (mm)	Cylinder 2 stroke												Connector
Bore size (mm)	5	10	15	20	25	30	35	40	45	50	75	100	
ø12	3.2	4	4.8	5.6	6.4	7.2	-	-	-	-	-	-	5.6
ø16	3.2	2.4	2.4	2.4	2.4	2.4	-	-	-	-	-	-	5.6
ø20	8	11	14	16	19	22	25	28	30	33	-	-	14
ø25	8	11	14	16	19	22	25	28	30	33	-	-	14
ø32	8	11	14	16	19	22	25	28	30	33	47	61	14
ø40	8	11	14	16	19	22	25	28	30	33	47	61	14
ø50	-	16.7	20.6	24.5	28.5	32.4	36.3	40.3	44.2	48.1	67.8	87.5	28.8
ø63	-	40.8	47.2	53.6	60	66.4	72.8	79.2	85.6	92	124	156	60
ø80	-	60	72	84	96	108	120	132	144	156	216	276	116
ø100	-	60	72	84	96	108	120	132	144	156	216	276	116

(1) Cylinder 1
(2) Cylinder 2
(3) Hexagon socket head cap screw
(4) Connector



Total cylinder weight
Total weight = weight of cylinder 1 + weight of cylinder 2 + (hexagon socket head cap screw + connector).

[Example: Total weight of SSD-B-25-30-N-10-N]
Weight of ø25 with 30 mm stroke:····(1)
Weight of ø25 with 10 mm stroke:····(2)
Weight of hexagon socket head cap screw for ø25 cylinder 2 with 10 mm stroke + weight of connector: ··· (3)
Total weight = (1) + (2) + (3) = 165 g + 102 g + 11 g + 14 g = 292 g

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø12	Push	-	11.3	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	$1.02x10^2$	$1.13x10^2$
	Pull	-	8.48	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	20.1	30.2	40.2	60.3	80.4	$1.01x10^2$	$1.21x10^2$	$1.41x10^2$	$1.61x10^2$	$1.81x10^2$	$2.01x10^2$
	Pull	-	15.1	22.6	30.2	45.2	60.3	75.4	90.5	$1.06x10^2$	$1.21x10^2$	$1.36x10^2$	$1.51x10^2$
ø20	Push	-	31.4	47.1	62.8	94.2	$1.26x10^2$	$1.57x10^2$	$1.88x10^2$	$2.20x10^2$	$2.51x10^2$	$2.83x10^2$	$3.14x10^2$
	Pull	-	23.6	35.3	47.1	70.7	94.2	$1.18x10^2$	$1.41x10^2$	$1.65x10^2$	$1.88x10^2$	$2.12x10^2$	$2.36x10^2$
ø25	Push	-	49.1	73.6	98.2	$1.47x10^2$	$1.96x10^2$	$2.45x10^2$	$2.95x10^2$	$3.44x10^2$	$3.93x10^2$	$4.42x10^2$	$4.91x10^2$
	Pull	-	37.8	56.7	75.6	$1.13x10^2$	$1.51x10^2$	$1.89x10^2$	$2.27x10^2$	$2.64x10^2$	$3.02x10^2$	$3.40x10^2$	$3.78x10^2$
ø32	Push	-	80.4	$1.21x10^2$	$1.61x10^2$	$2.41x10^2$	$3.22x10^2$	$4.02x10^2$	$4.83x10^2$	$5.63x10^2$	$6.43x10^2$	$7.24x10^2$	$8.04x10^2$
	Pull	-	60.3	90.5	$1.21x10^2$	$1.81x10^2$	$2.41x10^2$	$3.02x10^2$	$3.62x10^2$	$4.22x10^2$	$4.83x10^2$	$5.43x10^2$	$6.03x10^2$
ø40	Push	-	$1.26x10^2$	$1.88x10^2$	$2.51x10^2$	$3.77x10^2$	$5.03x10^2$	$6.28x10^2$	$7.54x10^2$	$8.80x10^2$	$1.01x10^3$	$1.13x10^3$	$1.26x10^3$
	Pull	-	$1.06x10^2$	$1.58x10^2$	$2.11x10^2$	$3.17x10^2$	$4.22x10^2$	$5.28x10^2$	$6.33x10^2$	$7.39x10^2$	$8.44x10^2$	$9.50x10^2$	$1.06x10^3$
ø50	Push	-	$1.96x10^2$	$2.95x10^2$	$3.93x10^2$	$5.89x10^2$	$7.85x10^2$	$9.82x10^2$	$1.18x10^3$	$1.37x10^3$	$1.57x10^3$	$1.77x10^3$	$1.96x10^3$
	Pull	-	$1.65x10^2$	$2.47x10^2$	$3.30x10^2$	$4.95x10^2$	$6.60x10^2$	$8.25x10^2$	$9.90x10^2$	$1.15x10^3$	$1.32x10^3$	$1.48x10^3$	$1.65x10^3$
ø63	Push	$1.56x10^2$	$3.12x10^2$	$4.68x10^2$	$6.23x10^2$	$9.35x10^2$	$1.25x10^3$	$1.56x10^3$	$1.87x10^3$	$2.18x10^3$	$2.49x10^3$	$2.81x10^3$	$3.12x10^3$
	Pull	$1.40x10^2$	$2.80x10^2$	$4.20x10^2$	$5.61x10^2$	$8.41x10^2$	$1.12x10^3$	$1.40x10^3$	$1.68x10^3$	$1.96x10^3$	$2.24x10^3$	$2.52x10^3$	$2.80x10^3$
ø80	Push	$2.51x10^2$	$5.03x10^2$	$7.54x10^2$	$1.01x10^3$	$1.51x10^3$	$2.01x10^3$	$2.51x10^3$	$3.02x10^3$	$3.52x10^3$	$4.02x10^3$	$4.52x10^3$	$5.03x10^3$
	Pull	$2.27x10^2$	$4.54x10^2$	$6.80x10^2$	$9.07x10^2$	$1.36x10^3$	$1.81x10^3$	$2.27x10^3$	$2.72x10^3$	$3.17x10^3$	$3.63x10^3$	$4.08x10^3$	$4.54x10^3$
ø100	Push	$3.93x10^2$	$7.85x10^2$	$1.18x10^3$	$1.57x10^3$	$2.36x10^3$	$3.14x10^3$	$3.93x10^3$	$4.71x10^3$	$5.50x10^3$	$6.28x10^3$	$7.07x10^3$	$7.85x10^3$
	Pull	$3.57x10^2$	$7.15x10^2$	$1.07x10^3$	$1.43x10^3$	$2.14x10^3$	$2.86x10^3$	$3.57x10^3$	$4.29x10^3$	$5.00x10^3$	$5.72x10^3$	$6.43x10^3$	$7.15x10^3$

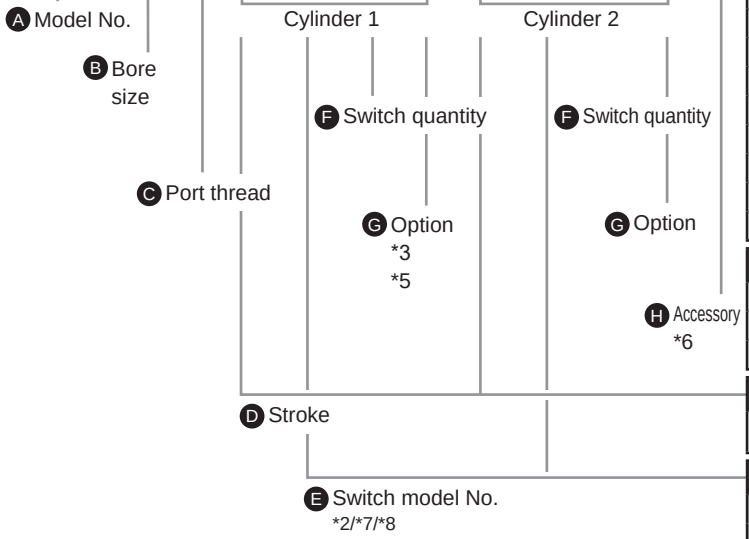
How to order

No switch (without magnet for switch)

SSD2-B - 12 - ○ 5 (S1: Cylinder 1 stroke) — N - 10 (S2: Cylinder 2 stroke) — N - I

With switch (built-in magnet for switch)

SSD2-BL - 12 - ○ 5 - T0H - R - N - 10 - T0H - R - N - I



Precautions for model No. selection

*1 : When two cylinders are connected, the connection is from Cylinder 2 side. (Refer to dimensions) Determine cylinders 1 and 2 with the mounting method in mind.
2 : The T2YD switch cannot be installed on ø12 and ø16. In addition, T8* switch cannot be installed on ø12 to ø32.
*3 : Piston rod of ø12 to ø25 is stainless steel as standard. C-snap ring is stainless steel instead of steel. The rod end male thread nut is stainless steel.
*4 : Refer to pages 750 and 751 for combinations of variations/options.
*5 : Option "N" will be inscribed on both S1 and S2 sides, but for all other option codes, they will only be written on S2.
*6 : Two units are included when an accessory is selected. One unit each is included when "IY" is selected.
*7 : The F-switch with L type lead wire on ø20 models cannot be selected on strokes of 15 mm or under.
*8 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
*9 : When S1 stroke is at or below that in the table below, the length of the usable mounting bolts will differ from the standard and so contact CKD.

Bore size	No switch	With switch
	S1 Stroke	
ø20	10 or less	-
ø25	5 or less	-
ø32	5 or less	-
ø50	5 or less	-
ø63	15 or less	5 or less
ø80	20 or less	10 or less
ø100	10 or less	-

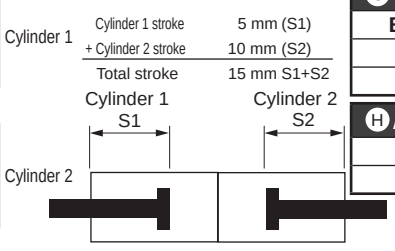
*10: F-switch cannot be selected.

[Example of model No.]

SSD2-BL-12-5-T0H-R-N-10-T0H-R-N

Model: Compact cylinder, back to back

- B Bore size : ø12 mm
- C Port thread : Rc thread
- D Stroke S1 : 5 mm
- E Switch model No. : Reed switch T0H, lead wire 1 m
- F Switch quantity : 1 on rod side
- G Option : Rod end male thread
- D Stroke S2 : 10 mm
- E Switch model No. : Reed switch T0H, lead wire 1 m
- F Switch quantity : 1 on rod side
- G Option : Rod end male thread



Code	Description
A Model No.	
SSD2-B	Double acting/back to back
SSD2-BL	Double acting/back to back/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 product)
GN	G thread (ø32 and over) (made-to-order product)

D Stroke (mm)

Refer to the stroke table on the following page.

E Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC		Lead wire	Bore size 12	16	20	25	32	40	50	63	80	100
-	F2S*	Proximity		●	1-color LED	2-wire			●	●						
-	F3S*			●		3-wire			●	●						
F2H*	F2V*			●		2-wire			●	●						
F3H*	F3V*			●		3-wire			●	●						
F3PH*	F3PV*			●	1-color LED (PNP output) (custom)	3-wire			●	●						
F2YH*	F2YV*			●	2-color LED	2-wire			●	●						
F3YH*	F3YV*			●		3-wire			●	●						
T0H*	T0V*	Reed	●	●	1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T5H*	T5V*		●	●	no indicator lamp		●	●	●	●	●	●	●	●	●	●
T8H*	T8V*		●	●	1-color LED							●	●	●	●	●
T1H*	T1V*	Proximity	●		1-color LED	2-wire			●	●	●	●	●	●	●	●
T2H*	T2V*			●			●	●	●	●	●	●	●	●	●	●
T3H*	T3V*			●		3-wire	●	●	●	●	●	●	●	●	●	●
T3PH*	T3PV*			●	1-color LED (PNP output)		●	●	●	●	●	●	●	●	●	●
T2WH*	T2WV*			●	2-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T2YH*	T2YV*			●					●	●	●	●	●	●	●	●
T3WH*	T3WV*			●		3-wire	●	●	●	●	●	●	●	●	●	●
T3YH*	T3YV*			●					●	●	●	●	●	●	●	●
T2YD*	-			●	2-color LED (AC magnetic field)	2-wire			●	●	●	●	●	●	●	●
T2YDT*	-			●					●	●	●	●	●	●	●	●
T2JH*	T2JV*			●	1-color LED off-delay	2-wire			●	●	●	●	●	●	●	●

*** Lead wire length**

Blank	1 m (standard)
3	3 m (option)
5	5 m (option) *9

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
M *3	Piston rod material (stainless steel)

H Accessory (available when rod end male thread "N" is selected)

I	Rod eye
Y	Rod clevis (pin and snap ring included)

[Stroke table]

Stroke (mm)		Applicable bore size									
		12	16	20	25	32	40	50	63	80	100
Standard stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●
	100					●	●	●	●	●	●
Min. stroke (mm) *1		1									
Max. stroke (mm)		30		50		100					
Custom stroke *2		In 1 mm increments									

1 : Less than 5 mm for 1-color LED switch and less than 10 mm for the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch are not available.
Refer to page 890 for the min. stroke with switch.

*2 : The total length when using a custom stroke is the same as that when using the next longer standard stroke.

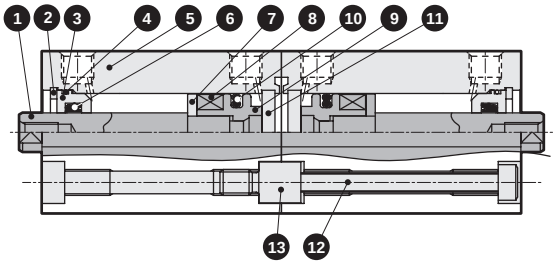
How to order switch

SW - T0H

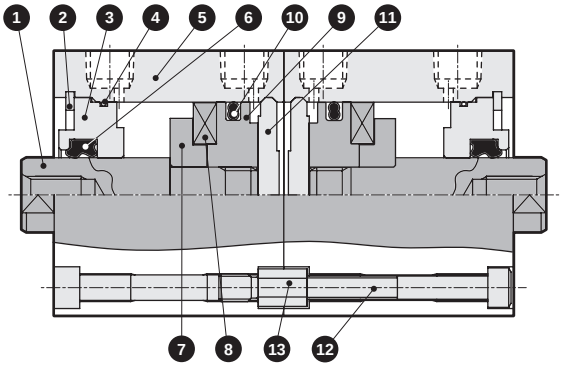
Switch model No.
(Item Ⓔ on page 894)

Internal structure and parts list

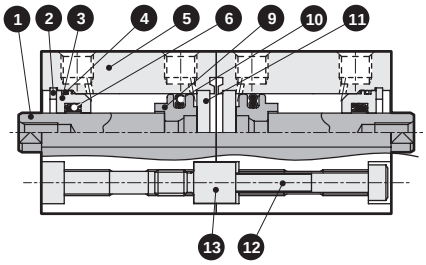
● SSD2-BL-12 to 25 (double acting/back to back/with switch)



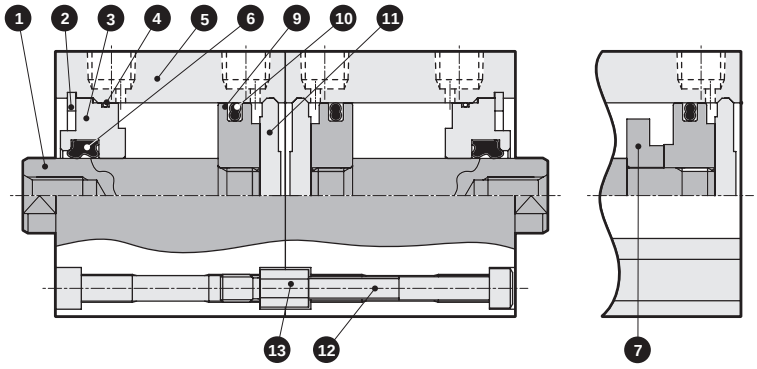
● SSD2-BL-32 to 50 (double acting/back to back/with switch)



● SSD2-B-12 to 25 (double acting/back to back)



● SSD2-B-32 to 50 (double acting/back to back)



Over 50 st

No.	Part name	Material	Remarks
1	Piston rod	ø12 to ø25: Stainless steel ø32 to ø50: Steel	ø16 to ø50 Industrial chrome plating
2	C-snap ring	Steel	Zinc phosphate
3	Rod metal	Special aluminum	Alumite
4	Rod metal gasket	Nitrile rubber	
5	Body	Aluminum alloy	Hard alumite
6	Rod packing	Nitrile rubber	
7	Spacer	Aluminum alloy	Chromate

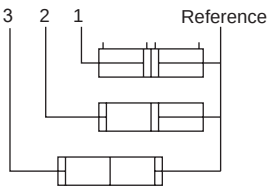
No.	Part name	Material	Remarks
8	Magnet	Plastic	
9	Piston	Aluminum alloy	Chromate
10	Piston packing	Nitrile rubber	
11	Cover	ø12 to 25: Stainless steel ø32 to ø50: Aluminum alloy	ø32 to ø50: Alumite
12	Hexagon socket head cap screw	Steel	Black finish
13	Connector	Steel	Zinc chromate

Repair parts list

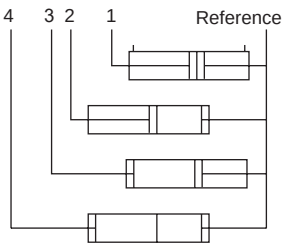
Bore size (mm)	Kit No.	Repair parts No.
ø12	SSD2-B-12K	④ ⑥ ⑩
ø16	SSD2-B-16K	
ø20	SSD2-B-20K	
ø25	SSD2-B-25K	
ø32	SSD2-B-32K	
ø40	SSD2-B-40K	
ø50	SSD2-B-50K	

SSD2-B application examples

When the same strokes are combined, 3 positions are possible.

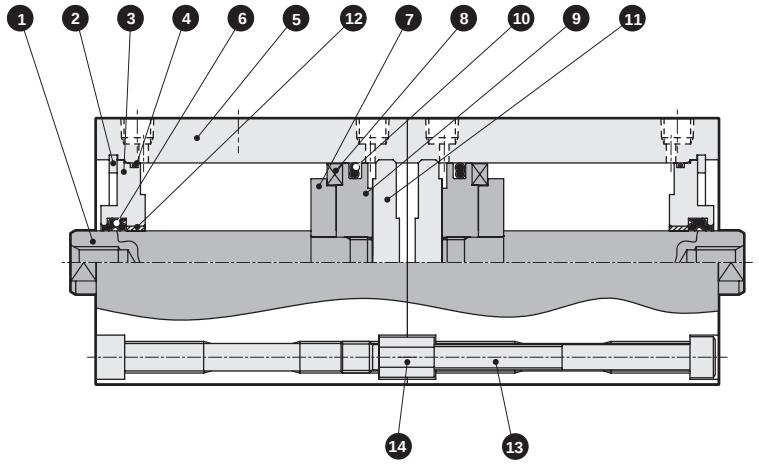


When different strokes are combined, 4 positions are possible.

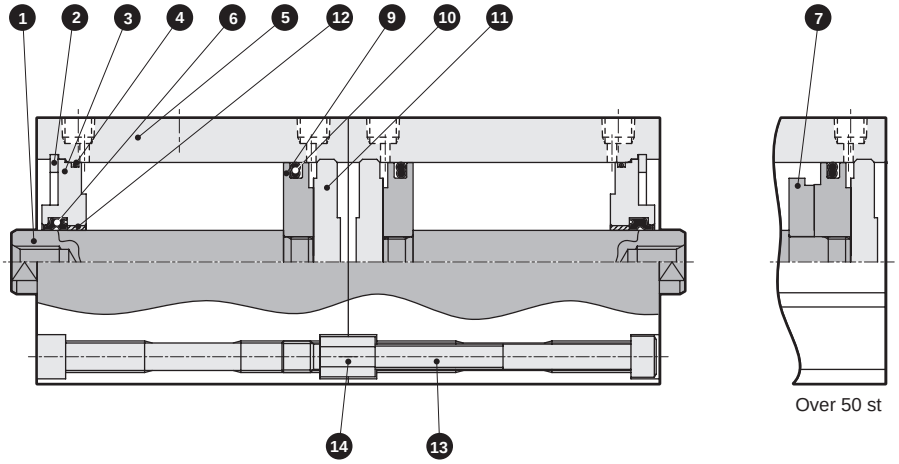


Internal structure and parts list

● SSD2-BL-63 to 100 (double acting/back to back/with switch)



● SSD2-B-63 to 100 (double acting/back to back)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Steel	Industrial chrome plating	8	Magnet	Plastic	
2	C-snap ring	Steel	Zinc phosphate	9	Piston	Aluminum alloy	Chromate
3	Rod metal	Aluminum alloy	Chromate	10	Piston packing	Nitrile rubber	
4	Rod metal gasket	Nitrile rubber		11	Cover	Aluminum alloy	Alumite
5	Body	Aluminum alloy	Hard alumite	12	Bush	Oiles drymet	*1
6	Rod packing	Nitrile rubber		13	Hexagon socket head cap screw	Steel	Black finish
7	Spacer	Aluminum alloy	Chromate	14	Connector	Steel	Zinc chromate

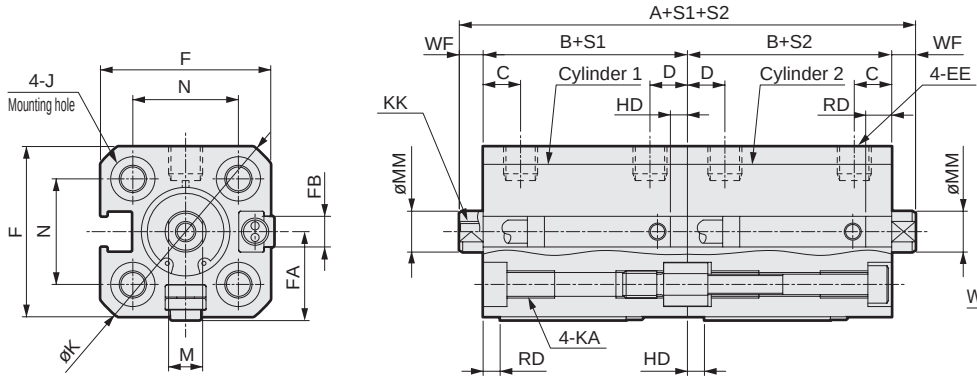
*1: Material is steel for copper and PTFE free specifications.

Repair parts list

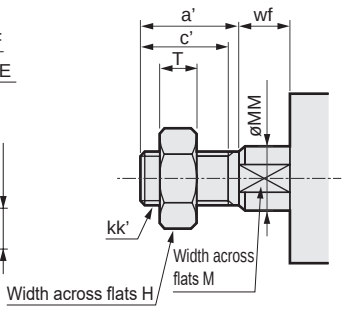
Bore size (mm)	Kit No.	Repair parts No.
ø63	SSD2-B-63K	4 6 10
ø80	SSD2-B-80K	
ø100	SSD2-B-100K	

Dimensions

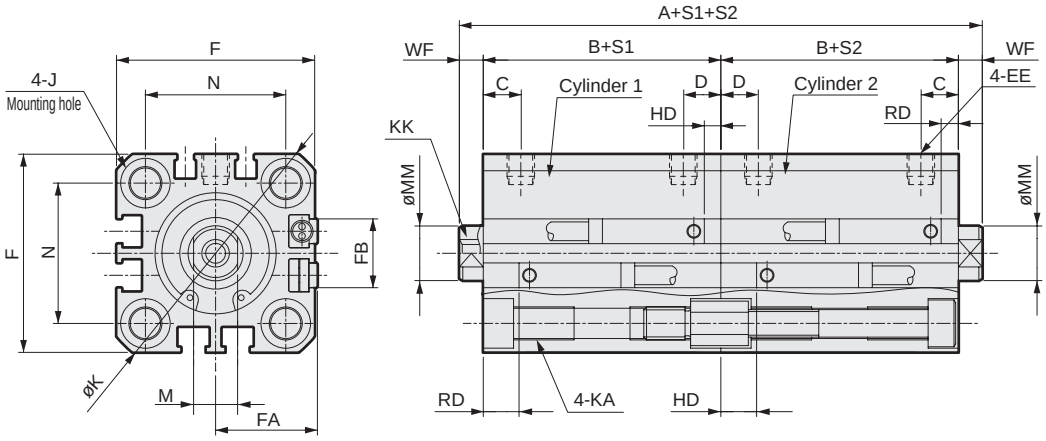
● SSD2-BL-12/16 (with switch)



● Rod end male thread



● SSD2-BL-25, 32 (with switch)



Code	Common dimensions with switch															
Bore size (mm)	A *1	B *1	C	D	EE	F	FA *4	FB	J	K	KA	KK	M	MM	N	WF
ø12	51	22	5.5	5.5	M5	25	13(16.5)	4.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	51	22	5.5	5.5	M5	29	15(18.5)	4.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	68	29.5	8	5.5	M5	36	18.5(22)	12.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	75	32.5	11	6	M5	40	20.5(24)	13.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5

Switch dimensions	Reed T0H/T0V, T5H/T5V *6		Proximity T2H/T2V, T3H/T3V *6		Proximity T2WH/T2WV, T3WH/T3WV *6		Proximity F2H/F2V, F3H/F3V, F2YH/F2YV, F3YH/F3YV		Proximity F2S/F3S	
Bore size (mm)	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD
ø12	1.5	1.5	1.5	1.5	3.5	3.5				
ø16	0	4	0	4.5	1	6				
ø20	3	7.5	3	7.5	5	9.5	7.5	12	6.5	11
ø25	4	9.5	4	9.5	6	11.5	8.5	14	7.5	13

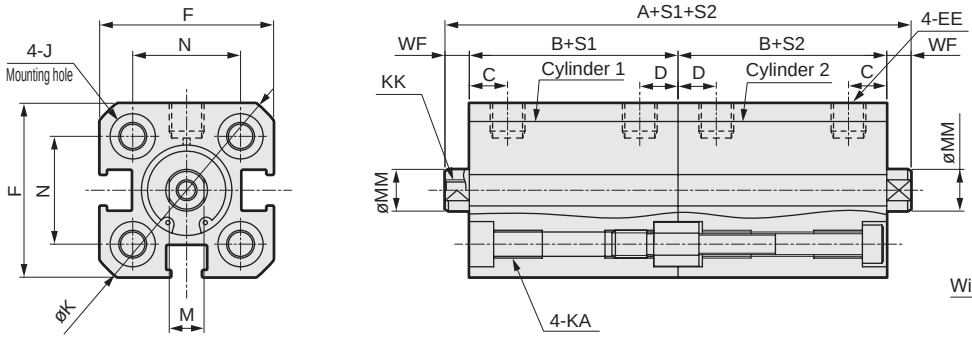
*1 : To calculate A + S1 + S2, B + S1 or B + S2 when using custom stroke, apply the next longer standard stroke (instead of the custom stroke) to the stroke.
(Example) If the custom stroke is 7 mm, apply the standard stroke of 10 mm.
*2 : HD and RD dimensions for 5 mm stroke differ from these dimensions according to the setting.
3 : Refer to page 1044 for HD, RD and protruding dimensions of the 2-color LED, off-delay, AC magnetic field proof, T1 and T8* switches.
*4 : Dimensions in ( ) of FA are for the L-shaped lead wire.
*5 : For dimensions of individual accessories, refer to pages 1046 to 1049.
*6 : Only F-switch is available for the ø20 or ø25 piping port surface.

● Rod end male thread

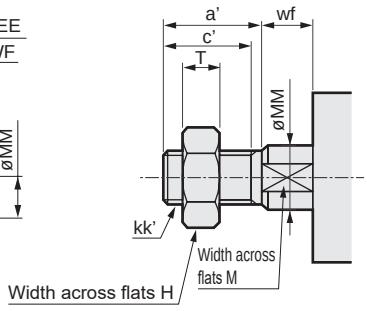
Code / Bore size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10x1.25	10	12	6	5

Dimensions

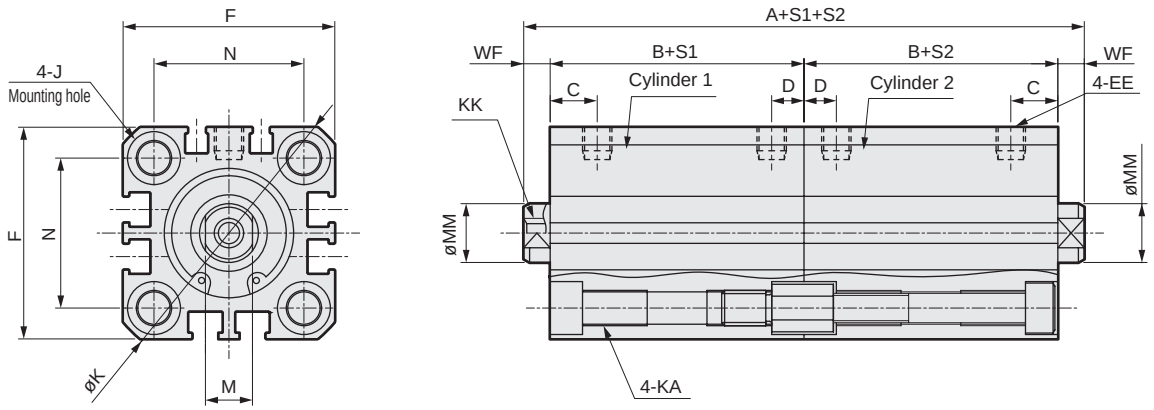
● SSD2-B-12/16 (without switch)



● Rod end male thread



● SSD2-B-20, 25 (without switch)



Code	Dimensions without switch and common dimensions													
Bore size (mm)	A *1	B *1	C	D	EE	F	J	K	KA	KK	M	MM	N	WF
ø12	41	17	5.5	5.5	M5	25	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5
ø16	41	17	5.5	5.5	M5	29	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5
ø20	48	19.5	8	5.5	M5	36	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5
ø25	55	22.5	11	6	M5	40	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5

● Rod end male thread

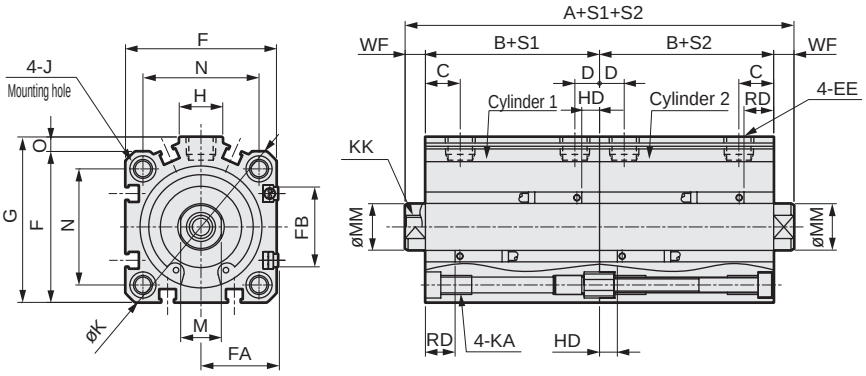
Code	a'	c'	H	kk'	M	MM	T	wf
Bore size (mm)								
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10x1.25	10	12	6	5

*1 : To calculate A + S1 + S2, B + S1 or B + S2 when using custom stroke, apply the next longer standard stroke (instead of the custom stroke) to the stroke.
(Example) If the custom stroke is 7 mm, apply the standard stroke of 10 mm.

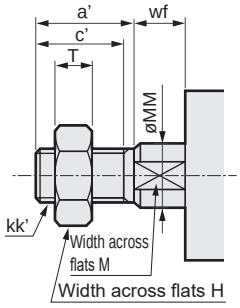
*2 : For dimensions of individual accessories, refer to pages 1046 to 1049.

Dimensions

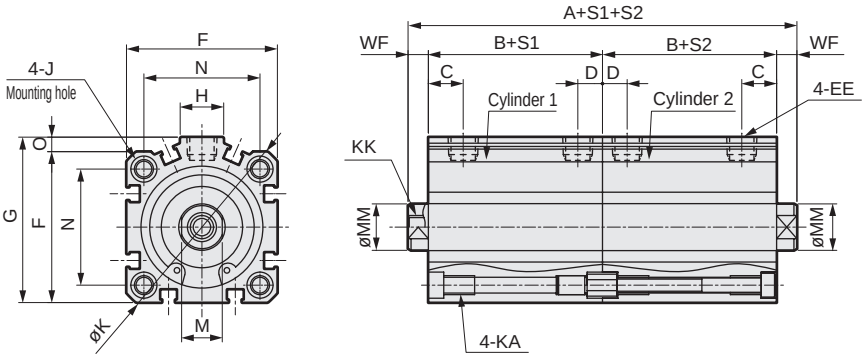
● SSD2-BL-32 to 100 (with switch)



● Rod end male thread



● SSD2-B-32 to 100 (without switch)



Code	No switch		Common dimensions with switch											
Bore size (mm)	A *1, *6	B *1, *6	A *1	B *1	C *8	D *8	EE	F	FA *4	FB	G	H	J	K
ø32	60(80)	23(33)	80	33	8(10)	8(5.5)	Rc1/8 *7	45	23(26.5)	20.5	49.5	12.5	9 spot face depth 5.5	60
ø40	73(93)	29.5(39.5)	93	39.5	12(11.5)	8.5(8)	Rc1/8	52	26.5(30)	27.5	57	15	9 spot face depth 5.5	69
ø50	77(97)	30.5(40.5)	97	40.5	10.5	10.5	Rc1/4	64	32.5(36)	28.5	71	18	11 spot face depth 6.5	86
ø63	88(108)	36(46)	108	46	13	11	Rc1/4	77	39(42.5)	28.5	84	23	14 spot face depth 9	103
ø80	107(127)	43.5(53.5)	127	53.5	16	13	Rc3/8	98	49.5(53)	28.5	104	31	17.5 spot face depth 11	132
ø100	130(150)	53(63)	150	63	23	15	Rc3/8	117	59(62.5)	28.5	123.5	38	17.5 spot face depth 11	156

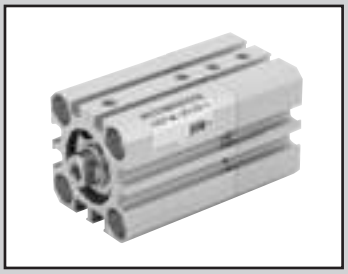
Code	Common dimensions with switch							Reed T0H/T0V, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH T3WV	
Bore size (mm)	KA	KK	M	MM	N	O	WF	HD *2	RD *2	HD *2	RD *2	HD	RD
ø32	M6 depth 11	M8 depth 13	14	16	34	4.5	7	4	9.5	4	9.5	6	11.5
ø40	M6 depth 11	M8 depth 13	14	16	40	5	7	7	12	7	12	8.5	13.5
ø50	M8 depth 13	M10 depth 15	17	20	50	7	8	7.5	12.5	7.5	12.5	9	14
ø63	M10 depth 25	M10 depth 15	17	20	60	7	8	12.5	13	12.5	13	14	14.5
ø80	M12 depth 28	M16 depth 21	22	25	77	6	10	17.5	15.5	17.5	15.5	19	17
ø100	M12 depth 28	M20 depth 27	27	30	94	6.5	12	23	19.5	23	19.5	24.5	21

*1 : To calculate A + S1 + S2, B + S1 or B + S2 when using custom stroke, apply the next longer standard stroke (instead of the custom stroke) to the stroke. (Example) If the custom stroke is 7 mm, apply the standard stroke of 10 mm.
*2 : HD and RD dimensions for 5 mm stroke differ from these dimensions according to the setting.
3 : Refer to page 1044 for HD, RD and protruding dimensions of the 2-color LED, off-delay, AC magnetic field proof, T1 and T8* switches.
*4 : Dimensions in ( ) of FA are for the L-shaped lead wire.
*5 : For dimensions of individual accessories, refer to pages 1046 to 1049.
*6 : Dimensions in ( ) of codes A and B are for strokes of more than 50 mm.
*7 : The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.*8 : Dimensions in ( ) of codes C and D are when the value is for a 5 mm stroke without switch.

● Rod end male thread

Code	a'	c'	H	kk'	M	MM	T	wf
Bore size (mm)								
ø32	23.5	20.5	22	M14x1.5	14	16	8	5
ø40	23.5	20.5	22	M14x1.5	14	16	8	5
ø50	28.5	26	27	M18x1.5	17	20	11	5
ø63	28.5	26	27	M18x1.5	17	20	11	5
ø80	35.5	32.5	32	M22x1.5	22	25	13	8
ø100	35.5	32.5	41	M26x1.5	27	30	16	8

MEMO



Compact cylinder double acting/2-stage

SSD2-W Series

● Bore size: ø12/ø16/ø20/ø25/ø32/ø40/ø50/ø63/ø80/ø100

RoHS

Specifications

Item	SSD2-W SSD2-WL (with switch)									
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation	Double acting/2-stage									
Working fluid	Compressed air									
Max. working pressure MPa	1.0 (≈150 psi, 10 bar) (*1)									
Min. working pressure MPa	0.15 (≈22 psi, 1.5 bar)							0.1 (≈15 psi, 1 bar)		
Proof pressure MPa	1.6 (≈230 psi, 16 bar)									
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)									
Port size	M5				Rc1/8 (*2)		Rc1/4		Rc3/8	
Stroke tolerance mm	$S_1=^{+1.0}_{0}$						$S_2=^{0}_{-1.5}$			
Working piston speed mm/s	50 to 500							50 to 300		
Cushion	None									
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)									
Allowable absorbed energy J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

*1: The max. working pressure is 0.5 MPa when S1 and S2 are the same value.
*2: The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12	5/10/15/20 25/30	30	1
ø16			
ø20	5/10/15/20/25 30/35/40/45/50	50	
ø25			
ø32			
ø40			
ø50	10/15/20/25 30/35/40/45/50	50	
ø63			
ø80			
ø100			

*1: The custom stroke is available in 1 mm increments. However, the total length is the same as that of the next longer standard stroke.
*2: When using the type with switch, refer to the table on the right.

Min. stroke with switch (2 switches)

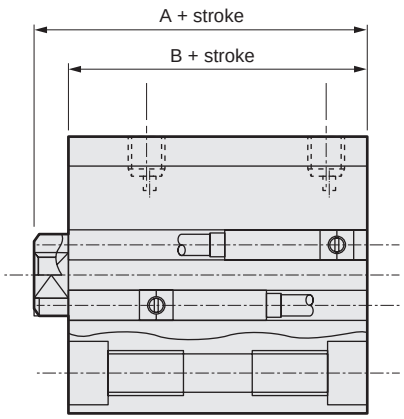
Bore size (mm)	T0H/V / T5H/V	T2H/V / T3H/V
ø12	10(5)	5
ø16		
ø20	5	
ø25		
ø32		
ø40		
ø50		
ø63		
ø80		
ø100		

1: Less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch is not available.
*2: Values in ( ) are for the type with 1 on rod side.

Custom stroke

● SSD2-W Series

Item	Standard products Standard stroke body with spacer	
Model No.	Refer to How to order.	
Description	A spacer is added to the standard stroke body to adjust the stroke in 1 mm increments.	
Stroke range	Bore size	Stroke range
	12/16	1 to 29
	20 to 25	1 to 49
	32 to 100	1 to 99
Example of model No.	Model No.: SSD2-W-32-38 A +2 mm spacer is added to the SSD2-W-32-40 standard cylinder to create 38 mm stroke. B + stroke is 63mm.	



Switch specifications (F-switch)

● 1-color/2-color LED

Item	2-wire proximity	3-wire proximity	2-wire proximity		3-wire proximity		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (made to order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA		50 mA or less		
Indicator	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 μA or less	1 mA or less		10 μA or less		
Weight g	1 m:10 3 m:29						

Switch specifications (T-switch)

● 1-color/2-color LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity
	T1H/T1V	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T3WH/T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD(*4)T2YDT
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller, relay		Dedicated for programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-						
Pwr. supp. V.	-				10 to 28 VDC				-						
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		No indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25˚C. (5 to 10 mA at 60°C)
*4 : Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*5 : The F-switch uses a bend-resistant lead wire.

Cylinder weight table (the weight of the switches is when there are 2 cylinder switches.)

(Unit: g)

Stroke (mm)	5		10		15		20		25		30		35		40		45		50		75		100	
Bore size (mm)	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch	No switch	Switch
ø12	37	87	45	87	54	96	62	104	71	113	73	115	-	-	-	-	-	-	-	-	-	-	-	-
ø16	49	105	60	105	70	115	81	126	92	137	103	148	-	-	-	-	-	-	-	-	-	-	-	-
ø20	65	120	77	152	90	165	103	178	115	190	128	203	141	216	154	229	167	242	205	280	-	-	-	-
ø25	90	181	105	196	121	212	137	228	163	244	168	259	184	275	200	291	216	307	231	322	-	-	-	-
ø32	126	240	148	262	170	284	192	306	213	327	235	349	257	371	279	393	301	415	322	436	494	542	604	652
ø40	189	332	216	359	242	385	269	412	296	439	322	465	348	491	375	518	401	544	478	571	646	695	776	825
ø50	-	-	354	548	396	590	438	632	480	674	523	717	565	759	607	801	649	843	691	885	1038	1095	1248	1305
ø63	-	-	543	822	598	877	653	932	708	987	763	1042	818	1097	874	1153	929	1208	984	1263	1474	1538	1749	1813
ø80	-	-	1002	1415	1089	1502	1175	1588	1262	1675	1348	1961	1435	1848	1522	1935	1609	2022	1695	2108	2475	2541	2907	2973
ø100	-	-	1558	2125	1672	2239	1785	2352	1899	2466	2013	2580	2127	2694	2240	2807	2354	2921	2468	3035	3531	3603	4098	4170

Total cylinder weight

Total weight = weight of cylinder 1 + weight of cylinder 2.

[Example: Total weight of SSD-W-25-30-N-10-N]

Weight of ø25 with 30 mm stroke:·····(1)

Weight of ø25 with 10 mm stroke:·····(2)

Total weight = (1) + (2) = 168 g + 105 g = 273 g

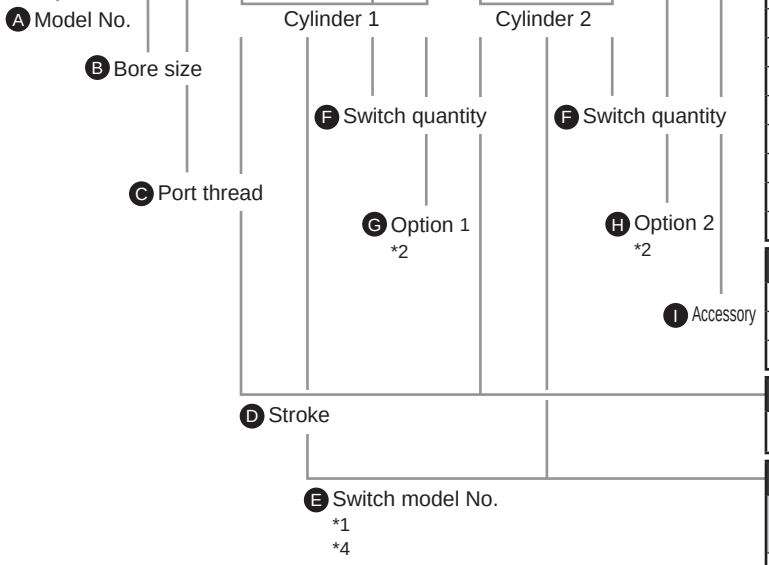
How to order

No switch (without magnet for switch)

SSD2-W - 12 ○ - 30 (Total stroke S1) - N - 5 (1st stage stroke S2) - M - I

With switch (built-in magnet for switch)

SSD2-WL - 12 ○ - 30 - T0H - R - N - 5 - T0H - R - M - I



Precautions for model No. selection

1 : T2YD switch cannot be installed on ø12 and ø16. In addition, T8* switch cannot be installed on ø12 to ø32.

*2 : Piston rod of ø12 to ø25 is stainless steel as standard. C-snap ring is stainless steel instead of steel. The rod end male thread nut is stainless steel.

*3 : Refer to pages 750 and 751 for combinations of variations/options.

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

*5 : F-switch cannot be selected.

[Example of model No.]

SSD2-WL-12-30-T0H-R-N-5-T0H-R-I

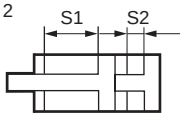
Model: Compact cylinder 2-stage

- B Bore size : ø12 mm
- C Port thread : Rc thread
- D Total stroke S1 : 30 mm
- E Switch model No. : Reed switch T0H, lead wire 1 m
- F Switch quantity : 1 on rod side
- G Option 1 : Rod end male thread
- D 1st stage stroke S2 : 5 mm
  2nd stage stroke : 25 mm
- E Switch model No. : Reed switch T0H, lead wire 1 m
- F Switch quantity : 1 on rod side
- I Accessory : Rod eye

Cylinder 1

1st stage stroke	5 mm (S2)
+ 2nd stage stroke	25 mm
Total stroke	30 mm (S1)

Cylinder 2



Code	Description
A Model No.	
SSD2-W	Double acting/2-stage
SSD2-WL	Double acting/2-stage/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 product)
GN	G thread (ø32 and over) (made-to-order product)

D Stroke (mm)

Refer to the stroke table on the following page.

E Switch model No.

Lead wire Straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC		Lead wire	Bore size 12	16	20	25	32	40	50	63	80	100
-	F2S*	Proximity		●	1-color LED	2-wire			●	●						
-	F3S*			●		3-wire			●	●						
F2H*	F2V*			●		2-wire			●	●						
F3H*	F3V*			●		3-wire			●	●						
F3PH*	F3PV*			●	1-color LED (PNP output) (custom)	3-wire			●	●						
F2YH*	F2YV*			●	2-color LED	2-wire			●	●						
F3YH*	F3YV*			●		3-wire			●	●						
T0H*	T0V*	Reed	●	●	1-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T5H*	T5V*		●	●	no indicator lamp		●	●	●	●	●	●	●	●	●	●
T8H*	T8V*		●	●	1-color LED							●	●	●	●	●
T1H*	T1V*	Proximity	●		1-color LED	2-wire			●	●	●	●	●	●	●	●
T2H*	T2V*			●			●	●	●	●	●	●	●	●	●	●
T3H*	T3V*			●		3-wire	●	●	●	●	●	●	●	●	●	●
T3PH*	T3PV*			●	1-color LED (PNP output)		●	●	●	●	●	●	●	●	●	●
T2WH*	T2WV*			●	2-color LED	2-wire	●	●	●	●	●	●	●	●	●	●
T2YH*	T2YV*			●					●	●	●	●	●	●	●	●
T3WH*	T3WV*			●		3-wire	●	●	●	●	●	●	●	●	●	●
T3YH*	T3YV*			●					●	●	●	●	●	●	●	●
T2YD*	-			●	2-color LED (AC magnetic field)	2-wire			●	●	●	●	●	●	●	●
T2YDT*	-			●					●	●	●	●	●	●	●	●
T2JH*	T2JV*			●	1-color LED off-delay	2-wire			●	●	●	●	●	●	●	●

*** Lead wire length**

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

F Switch quantity

R	1 on rod side
H	1 on head side
D	2

G Option 1

Blank	Rod end female thread
N	Rod end male thread

H Option 2 *2

M	Piston rod material (stainless steel)

I Accessory (available when rod end male thread "N" is selected)

I	Rod eye
Y	Rod clevis (pin and snap ring included)

[Stroke table]

Stroke (mm)		Applicable bore size									
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Standard stroke	5	●	●	●	●	●	●				
	10	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●
	20	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●
	30	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●
	40			●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●
	50			●	●	●	●	●	●	●	●
Min. stroke (mm)		1									
Max. stroke (mm)		30		50							
Custom stroke *1		In 1 mm increments									

1 : Less than 5 mm with 1-color LED switch and less than 10 mm with the 2-color LED, off-delay, AC magnetic field proof, T1 or T8* switch are not available.
Refer to page 902 for the number of installed switches and the min. stroke.
*2 : The total length is the same as that of the next longer standard stroke.

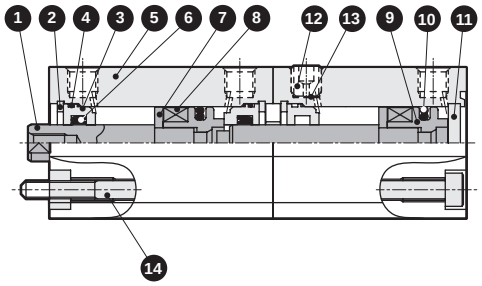
How to order switch

SW - T0H

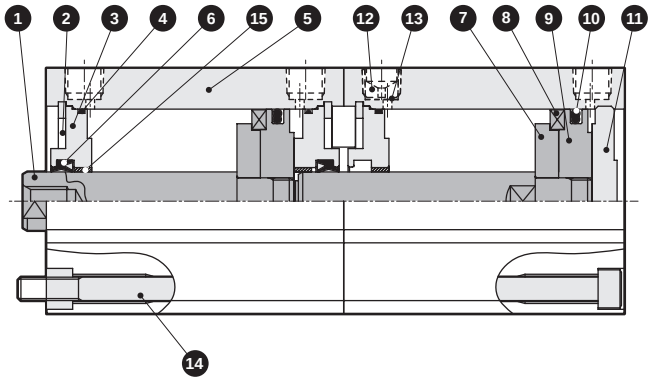
Switch model No.
(Item Ⓔ on page 904)

Internal structure and parts list

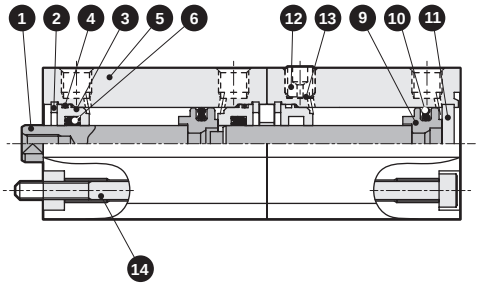
● SSD2-WL-12 to 50 (double acting/2-stage/with switch)



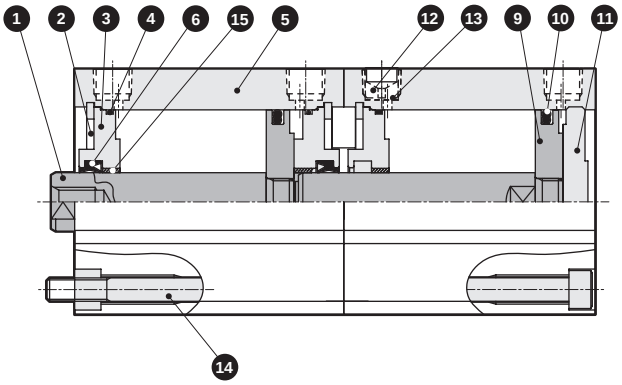
● SSD2-WL-63 to 100 (double acting/2-stage/with switch)



● SSD2-W-12 to 50 (double acting/2-stage)



● SSD2-W-63 to 100 (double acting/2-stage)



No.	Part name	Material	Remarks
1	Piston rod	ø12 to ø25: Stainless steel ø32 to ø100: Steel	ø16 to ø100 Industrial chrome plating
2	C-snap ring	Steel	Zinc phosphate
3	Rod metal	ø12 to ø50: Special aluminum ø63 to ø100: Aluminum alloy	ø12 to ø50: Alumite ø63 to ø100: Chromate
4	Rod metal gasket	Nitrile rubber	
5	Body	Aluminum alloy	Hard alumite
6	Rod packing	Nitrile rubber	
7	Spacer	Aluminum alloy	Chromate
8	Magnet	Plastic	

No.	Part name	Material	Remarks
9	Piston	Aluminum alloy	Chromate
10	Piston packing	Nitrile rubber	
11	Cover	ø12 to 25: Stainless steel ø32 to ø100: Aluminum alloy	ø32 to ø100 Alumite
12	Plug	Stainless steel	
13	Stainless steel mesh	Stainless steel	
14	Hexagon socket head cap screw	Steel	Black finish
15	Bush	Oiles drymet	

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø12	SSD2-W-12K	④ ⑥ ⑩
ø16	SSD2-W-16K	
ø20	SSD2-W-20K	
ø25	SSD2-W-25K	
ø32	SSD2-W-32K	
ø40	SSD2-W-40K	
ø50	SSD2-W-50K	
ø63	SSD2-W-63K	
ø80	SSD2-W-80K	
ø100	SSD2-W-100K	

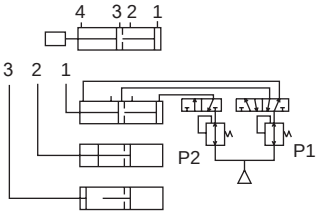
SSD2-W application examples

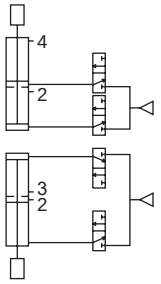
Pressure setting: P2 > P1

● 1st stage push
Keeping port 4 pressurized, pressurize port 1.

● 2nd stage push
Keeping port 1 pressurized, pressurize port 3.

It may not be P2 = P1 depending on the load direction. When using a single acting cylinder with free fall load, ports 2 and 4 in the upper figure and ports 2 and 3 in the lower figure are breathing holes. Port 2, which basically needs no piping as a rule, is plugged with a filter.

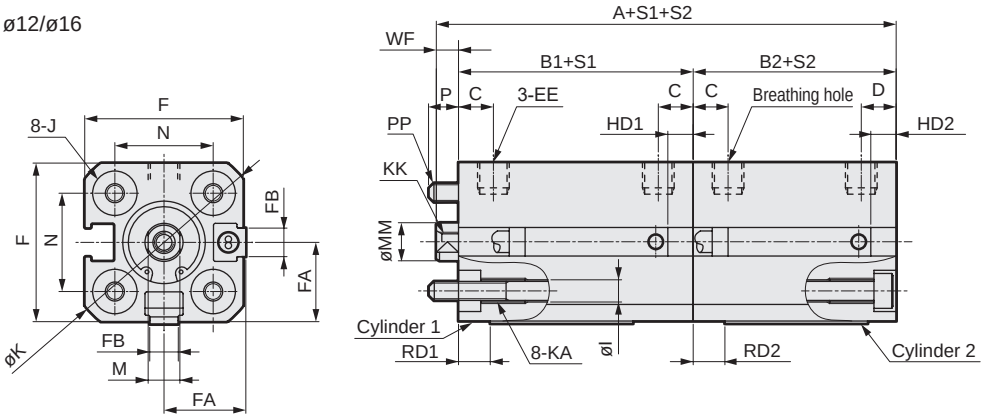




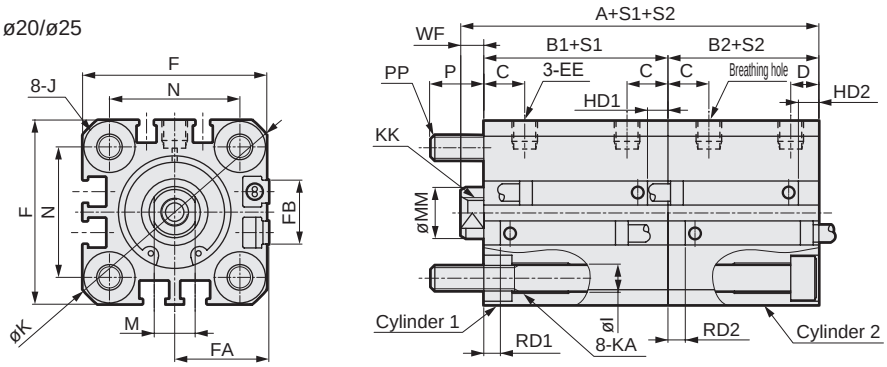
Dimensions

● SSD2-WL-12 to 25 (with switch T0H/V, T5H/V, T2H/V, T3H/V)

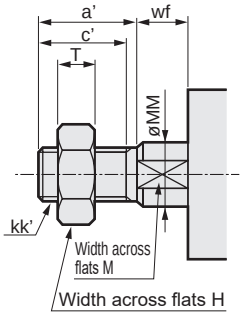
ø12/ø16



ø20/ø25



● Rod end male thread



Code	Common dimensions with switch																		
Bore size (mm)	A	B1	B2	C	D	EE	F	FA *3	FB	I	J	K	KA	KK	M	MM	N	WF	P	PP
ø12	52.5	27	22	5.5	5.5	M5	25	13(16.5)	4.5	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5	4.5	M3
ø16	52.5	27	22	5.5	5.5	M5	29	15(18.5)	4.5	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5	4.5	M3
ø20	70	36	29.5	8	5.5	M5	36	18.5(22)	12.5	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5	10	M5
ø25	76.5	39	32.5	11	6	M5	40	20.5(24)	13.5	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5	9	M5

Switch dimensions	Reed T0H/TOV, T5H/T5V			Proximity T2H/T2V, T3H/T3V			Proximity T2WH/T2WV, T3WH/T3WV			Proximity F2H/F2V, F3H/F3V, F2YH/F2YV, F3YH/F3YV		
Bore size (mm)	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2
ø12	1.5	6.5	1.5	1.5	6.5	1.5	3.5	8.5	3.5			
ø16	3.5	4.5	0	3.5	4.5	0	5.5	6.5	1.5			
ø20	7.5	9.5	3	7.5	9.5	3	9.5	11.5	5	12	14	7.5
ø25	9.5	10.5	4	9.5	10.5	4	11.5	12.5	6	14	15	8.5

Switch dimensions	Proximity F2S/F3S			Proximity T2YH/T2YV/ T3YH/T3YV/T2JH/T2JV			AC magnetic field proof T2YD/T2YDT/T1H/T1V		
Bore size (mm)	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2
ø12				-	-	-	-	-	-
ø16				-	-	-	-	-	-
ø20	11	13	6.5	6.5	8.5	2	6.5	8.5	2
ø25	13	14	7.5	8.5	9.5	3	8.5	9.5	3

*1 : To calculate A + S1 + S2, B1 + S1 or B2 + S2 when using custom stroke, apply the next longer standard stroke (instead of the custom stroke) to the stroke.
(Example) If the custom stroke is 7 mm, apply the standard stroke of 10 mm.
*2 : HD and RD dimensions for 5 mm stroke differ from these dimensions according to the setting.
*3 : Dimensions in ( ) of FA are for the L-shaped lead wire.
*4 : For dimensions of individual accessories, refer to pages 1046 to 1049.
*5 : Only F-switch is available for the ø20 or ø25 piping port surface.

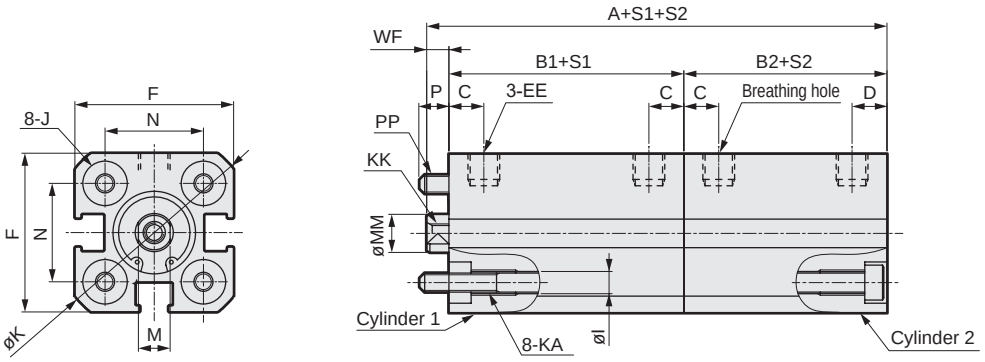
● Rod end male thread

Code / Bore size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10x1.25	10	12	6	5

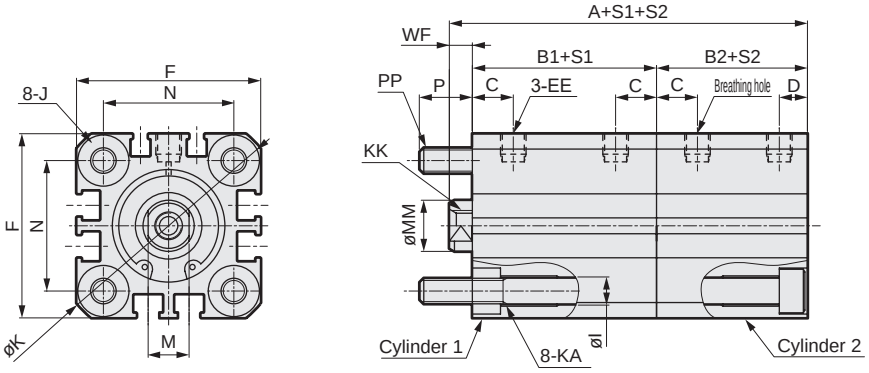
Dimensions

● SSD2-W-12 to 25 (without switch)

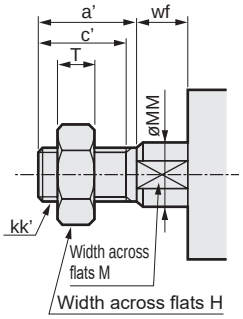
ø12/ø16



ø20/ø25



● Rod end male thread



Code / Bore size (mm)	Dimensions without switch and common dimensions																	
	A	B1	B2	C	D	EE	F	I	J	K	KA	KK	M	MM	N	WF	P	PP
ø12	42.5	22	17	5.5	5.5	M5	25	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6	5	6	15.5	3.5	4.5	M3
ø16	42.5	22	17	5.5	5.5	M5	29	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8	6	8	20	3.5	4.5	M3
ø20	50	26	19.5	8	5.5	M5	36	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7	8	10	25.5	4.5	10	M5
ø25	56.5	29	22.5	11	6	M5	40	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12	10	12	28	5	9	M5

● Rod end male thread

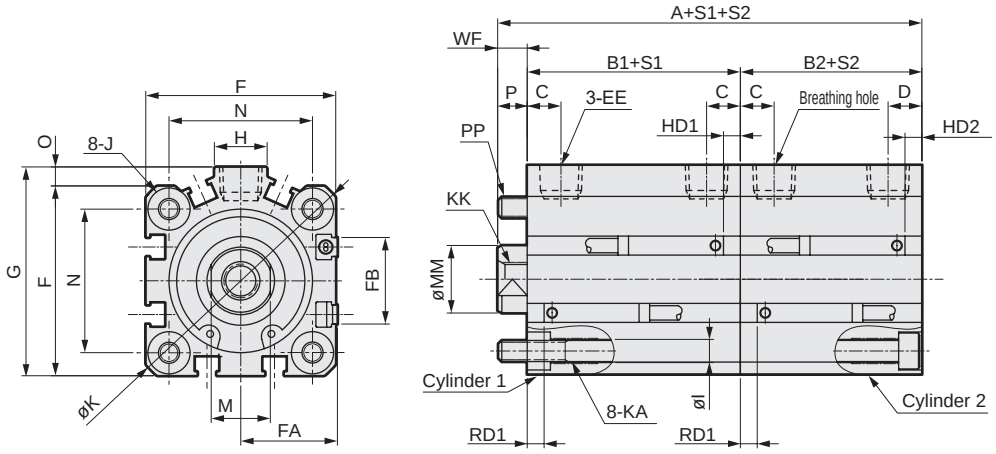
Code / Bore size (mm)	a'	c'	H	kk'	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10x1.25	10	12	6	5

*1 : To calculate A + S1 + S2, B1 + S1 or B2 + S2 when using custom stroke, apply the next longer standard stroke (instead of the custom stroke) to the stroke.
(Example) If the custom stroke is 7 mm, apply the standard stroke of 10 mm.

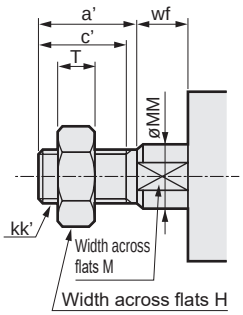
*2 : For dimensions of individual accessories, refer to pages 1046 to 1049.

Dimensions

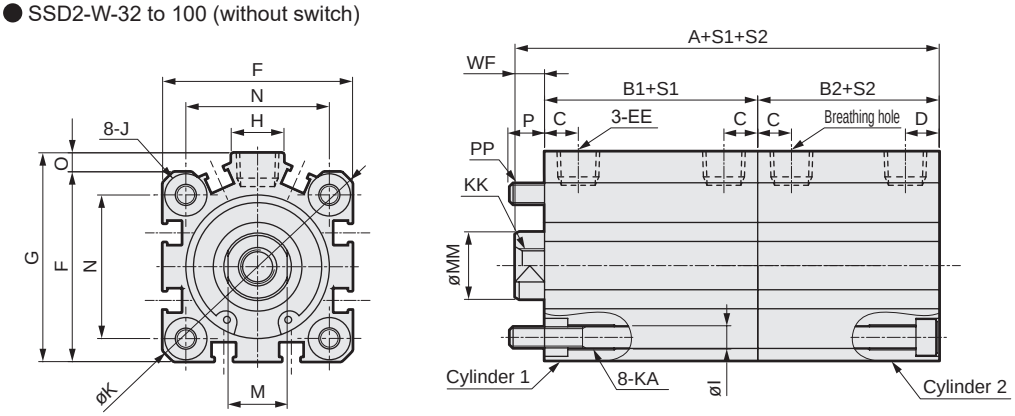
● SSD2-WL-32 to 100 (with switch T0H/V, T5H/V, T2H/V, T3H/V)



● Rod end male thread



● SSD2-W-32 to 100 (without switch)



Code	No switch			Common dimensions with switch																				
Bore size (mm)	A	B1	B2	A	B1	B2	C *7	D *7	EE	F	FA *3	FB	G	H	I	J	K	KA	KK	M	MM	N	O	WF	P	PP
ø32	60.5	30.5	23	80.5	40.5	33	8(11)	8(5.5)	Rc1/8 *7	45	23(26.5)	20.5	49.5	12.5	5.5	9 spot face depth 5.5	60	M6 depth 11	M8 depth 13	14	16	34	4.5	7	7	M5
ø40	76.5	40	29.5	96.5	50	39.5	12(11.5)	8.5(8)	Rc1/8	52	26.5(30)	27.5	57	15	5.5	9 spot face depth 5.5	69	M6 depth 11	M8 depth 13	14	16	40	5	7	6	M5
ø50	79	40.5	30.5	99	50.5	40.5	10.5	10.5	Rc1/4	64	32.5(36)	28.5	71	18	6.9	11 spot face depth 6.5	86	M8 depth 13	M10 depth 15	17	20	50	7	8	10.5	M6
ø63	86	42	36	106	52	46	13	11	Rc1/4	77	39(42.5)	28.5	84	23	8.7	14 spot face depth 9	103	M10 depth 25	M10 depth 15	17	20	60	7	8	11	M8
ø80	104.5	51	43.5	124.5	61	53.5	16	13	Rc3/8	98	49.5(53)	28.5	104	31	10.5	17.5 spot face depth 11	132	M12 depth 28	M16 depth 21	22	25	77	6	10	11.5	M10
ø100	125.5	60.5	53	145.5	70.5	63	23	15	Rc3/8	117	59(62.5)	28.5	123.5	38	10.5	17.5 spot face depth 11	156	M12 depth 28	M20 depth 27	27	30	94	6.5	12	12.5	M10

Switch dimensions	Reed T0H/TOV, T5H/T5V			Proximity T2H/T2V, T3H/T3V			Proximity T2WH/T2WV, T3WH/T3WV			Proximity T2YH/T2YV/ T3YH/T3YV/T2JH/T2JV			Reed T8H/T8V		
Bore size (mm)	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2	RD1, RD2	HD1	HD2
ø32	10	11.5	4	10	11.5	4	12	13.5	6	8.5	11	3.5	-	-	-
ø40	13	18	7.5	13	18	7.5	15	20	9.5	10.5	16	5.5	6	11.5	1
ø50	13	18.5	8.5	13	18.5	8.5	15	20.5	10.5	11	16	6	6.5	11.5	1.5
ø63	13.5	19.5	13.5	13.5	19.5	13.5	15.5	21.5	15.5	11.5	17	11	7	12.5	6.5
ø80	16	26	18.5	16	26	18.5	18	28	20.5	14	23.5	16	9.5	19	11.5
ø100	20.5	31.5	24	20.5	31.5	24	22.5	33.5	26	18	29	21.5	13.5	24.5	17

Switch dimensions	AC magnetic field proof T2YD/T2YDT/T1H/T1V		
Bore size (mm)	RD1, RD2	HD1	HD2
ø32	8.5	11	3.5
ø40	10.5	16	5.5
ø50	11	16	6
ø63	11.5	17	11
ø80	14	23.5	16
ø100	18	29	21.5

*1 : To calculate A + S1 + S2, B1 + S1 or B2 + S2 when using custom stroke, apply the next longer standard stroke (instead of the custom stroke) to the stroke. (Example) If the custom stroke is 7 mm, apply the standard stroke of 10 mm.
*2 : HD and RD dimensions for 5 mm stroke differ from these dimensions according to the setting.
*3 : Dimensions in ( ) of FA are for the L-shaped lead wire.
*4 : For dimensions of individual accessories, refer to pages 1046 to 1049.
*5 : Dimensions in ( ) of codes A and B are for strokes of more than 50 mm.
*6 : The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.*7 :

● Rod end male thread

Code	a'	c'	H	kk'	M	MM	T	wf
Bore size (mm)								
ø32	23.5	20.5	22	M14x1.5	14	16	8	5
ø40	23.5	20.5	22	M14x1.5	14	16	8	5
ø50	28.5	26	27	M18x1.5	17	20	11	5
ø63	28.5	26	27	M18x1.5	17	20	11	5
ø80	35.5	32.5	32	M22x1.5	22	25	13	8
ø100	35.5	32.5	41	M26x1.5	27	30	16	8