SSD2

Compact cylinder

Space saving structure

ø12/ø16/ø20/ø25/ø32/ø40/ø50
ø63/ø80/ø100/ø125/ø140/ø160

Overview

Space saving series with a wide range of stroke lengths and switch mounting surface options compared with conventional models.
A widely varied series of space-saving cylinders, suitable for everything from general environments to specific applications.

Features

Cylinder switch grooves are arranged on four surfaces

A cylinder switch can be mounted on the same surface as the piping port, which improves visibility and maintenance efficiency (ø20 to ø100).

End thread options

Rod ends can be selected from two options: female thread (standard) and male thread (optional).

T switch mountable

T switch used in many CKD products can be mounted on cylinders of all bore sizes. The use of a unified switch helps to reduce stock quantity.

CONTENTS

Variation and option selection table

SSD2 (ø100 or smaller)

◎ : Option variation (check category 2)
○ : C5 compatible (check category 3)
△ : Available depending on conditions (estimation)
 : Not available

			Clean room specifications			
			Exhaust treatment	Vacuum treatment	Exhaust treatment	Vacuum treatment
		Code	P7	P71	P5	P51
Variation	Double acting basic	Blank	◎	◎	○	○
	High load	K	△	△	△	△
	Double acting double rod	D	△	△	△	△
	Back to back	B	○	○	○	○
	Two stage	W	△	△	△	△
	With position locking	Q	△	△	△	△
	Non-rotation	M	△	△	△	△
	Heat resistant (150°C)	T1	△	△		
	Fluoro rubber packing	T2	○	○	○	○
	Low speed	O	○	○	×	×
	With cylinder switch	L	◎	◎	○	○
	With cylinder switch (strong magnetic field proof)	L4	○	○	○	○
	With cylinder switch (heat resistance)	T1L	△	△		
	Fine speed	F	○	○		
Piping	NPT (ø32 to ø100)	N	○	○	○	○
	G (ø32 to ø100)	G	○	○	○	○
Option	Piston rod material stainless steel (including C ring)	M	(*1)	(*1)	(*1)	(*1)
	Male thread piston rod end	N	◎	◎	○	○
	Customized piston rod end form	N**	○	○	○	○
Accessory	Mounting bracket LB with bolts	LB	△	△	△	△
	Mounting bracket FA with bolts	FA	△	△	△	△
	Mounting bracket FB with bolts	FB	△	△	△	△

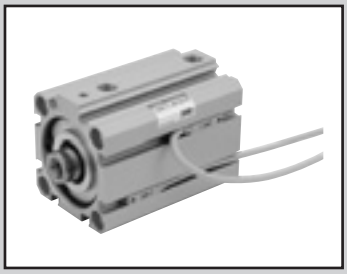
Caution
*1: When female thread of "P5", "P51", "P7" or "P71" is selected, the material for the piston rod and C ring is stainless steel.
The code "M" is not needed. If you need a stainless steel rod nut for male thread, combination with "M" is required.

SSD2 large bore size (ø125 to ø160)

◎ : Option variation (check category 2)
○ : C5 compatible (check category 3)
△ : Available depending on conditions (estimation)
 : Not available

			Clean room specifications			
			Exhaust treatment	Vacuum treatment	Exhaust treatment	Vacuum treatment
		Code	P7	P71	P5	P51
Variation	Double acting basic	Blank	◎	◎	○	○
	Double acting double rod	D	○	○	○	○
	With cylinder switch	L	◎	◎	○	○
Piping	NPT	N	○	○	○	○
	G	G	○	○	○	○
Option	Piston rod material stainless steel (including C ring)	M	(*1)	(*1)	(*1)	(*1)
	Male thread piston rod end	N	◎	◎	○	○
	Customized piston rod end form	N**	○	○	○	○

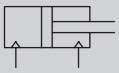
Caution
*1: When female thread of "P5", "P51", "P7" or "P71" is selected, the material for the piston rod and C ring is stainless steel.
The code "M" is not needed. If you need a stainless steel rod nut for male thread, combination with "M" is required.



Compact cylinder Double acting/single rod

SSD2 Series

● Bore size: ø12/ø16/ø20/ø25/ø32/ø40/ø50/ø63/ø80/ø100/ø125/ø140/ø160

JIS symbol 

RoHS

Structure and material restriction

	Structure	Material restriction	Model No.		Structure	Material restriction			Model No.
P7 Series	Exhaust treatment	-	P7	P5 Series (custom order product)	Exhaust treatment	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	P5
	Vacuum treatment	-	P71		Vacuum treatment	Copper-based materials prohibited	Silicon-based materials prohibited	Halogen-based materials prohibited (fluorine, chlorine, bromine)	P51

Specifications

Descriptions	SSD2-P7*/P5* SSD2-L-P7*/P5* (with switch)												
Bore size mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
Actuation	Double acting												
Working fluid	Compressed air												
Max. working pressure MPa	1.0												
Min. working pressure MPa	0.15							0.1					
Proof pressure MPa	1.6												
Ambient temperature °C	-10 to 60 (no freezing)												
Port size	M5				Rc1/8 *1		Rc1/4		Rc3/8				
Port size (relief port)	M5										Rc3/8		
Stroke tolerance mm	+1.0 0										+2.0 0		
Working piston speed mm/s	50 to 500							50 to 300					
Cushion	None										Rubber cushion		
Lubrication	Not available												
Allowable energy absorption J	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56	6.52	6.52	7.78

*1: The port size of 5 mm stroke length of ø32 without switch is M5.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø12	5/10/15/20 25/30	30	1 (5) The value in ( ) is for types with one or two switches.
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			
ø125	10/20/30/40/50 75/100/125/150 175/200/250/300	300	
ø140			
ø160			

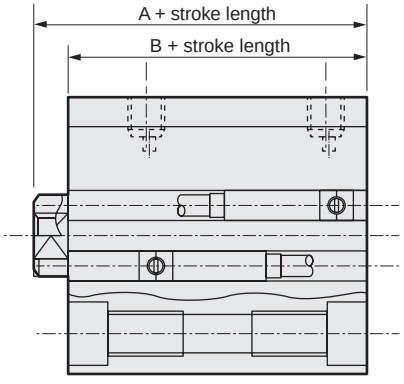
1: We cannot manufacture switches with 1-color display less than 5 mm, or switches with 2-color display, off-delay type, T1, T8* less than 10 mm.

Custom stroke length

● SSD2-P7*, P5* Series

Descriptions	Standard products	
	Standard stroke length body with spacer	
Model No.	Refer to how to order.	
Content	A spacer is added to the standard stroke length body to adjust the stroke length 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
	125 to 160	1 to 299
Example of model No.	Model No.: SSD2-32-38-P7 A +2 mm spacer is added to the SSD2-32-40-P7 standard cylinder to create 38 mm stroke length. B + stroke length is 73mm.	

*1 Custom stroke length is available in 1 mm increments.
*2 Total length dimension for intermediate strokes of ø125 to ø160 is handled as intermediate stroke with dedicated length.



Switch specifications (F switch)

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (custom order)	F3YH/F3YV
Applications	Programmable controller	Programmable controller, relay	Programmable controller		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		100 mA or less	50 mA or less	
Indicator lamp	Red LED (Lit when ON)		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)
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 display/for AC magnetic field

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	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(*3) T2YDT
Applications	Programmable controller relay, small solenoid valve	Programmable controller			Programmable controller, relay				Programmable controller, relay		Programmable controller, relay IC circuit (without indicator lamp), serial connection		Programmable controller, relay			Programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Power supply voltage	-				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 (*2)			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 lamp	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)		LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	1 mA or less with 100 VAC, 2 mA or less with 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 page 309 for detailed switch specifications and dimensions.
*2: Max. load current: 20mA at 25°C.The current is lower than 25 mA if the operating ambient temperature around the switch is higher than 20˚C. (60 to 5 mA at 10°C)
*3: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.
*4: The F type switch uses a bend-resistant lead wire.

Cylinder weight table (The weight with switch includes weight of two cylinder switches)

● ø12 to ø100 (Unit: g)

Stroke length (mm)	5		10		15		20		25		30		35		40		45		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	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch	No switch	With switch
ø12	66	107	74	116	83	125	91	133	100	142	108	150	-	-	-	-	-	-	-	-	-	-	-	-
ø16	92	138	103	148	113	158	124	169	135	180	146	191	-	-	-	-	-	-	-	-	-	-	-	-
ø20	130	185	142	217	155	230	168	243	180	255	193	268	206	281	219	294	232	307	245	320	-	-	-	-
ø25	181	272	196	287	212	303	228	319	244	335	259	350	275	366	291	382	307	398	322	413	-	-	-	-
ø32	254	368	276	390	298	412	320	434	341	455	363	477	385	499	407	521	429	543	450	564	558	672	665	779
ø40	373	516	400	543	426	569	453	596	480	623	506	649	533	676	559	702	586	729	612	755	745	888	877	1020
ø50	-	-	691	885	733	927	775	969	817	1011	860	1054	902	1096	944	1138	986	1180	1028	1222	1238	1432	1448	1642
ø63	-	-	939	1218	994	1273	1049	1328	1104	1383	1159	1438	1215	1494	1270	1549	1325	1604	1380	1659	1655	1934	1930	2209
ø80	-	-	1911	2324	1998	2411	2084	2497	2171	2584	2257	2670	2344	2757	2431	2844	2518	2931	2604	3017	3037	3450	3469	3882
ø100	-	-	2625	3192	2739	3306	2852	3419	2966	3533	3080	3647	3194	3761	3307	3874	3421	3988	3535	4102	4105	4672	4675	5242

● ø125 to ø160 (Unit: kg)

Stroke length (mm)	10		20		30		40		50		75		100		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	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	6.12	6.22	6.39	6.49	6.65	6.75	6.92	7.02	7.18	7.28	7.90	8.25	8.51	8.61	9.18	9.28	9.84	9.94	10.51	10.61	11.17	11.27	12.50	12.60	13.83	13.93
ø140	8.50	8.61	8.80	8.91	9.11	9.22	9.41	9.52	9.72	9.83	10.54	10.94	11.24	11.35	12.00	12.11	12.76	12.87	13.52	13.63	14.28	14.39	15.80	15.91	17.32	17.43
ø160	11.86	11.98	12.24	12.36	12.62	12.74	13.00	13.12	13.38	13.50	14.39	14.90	15.28	15.40	16.23	16.35	17.18	17.30	18.13	18.25	19.08	19.20	20.98	21.10	22.88	23.00

How to order

Without switch (No magnet for switch)

SSD2 - 12 - 5 ——— N - P7

With switch (Magnet for switch incorporated)

SSD2-L - 12 - 5 - T0H - R - N - P7

Ⓐ Model No.
Ⓑ Bore size
Ⓒ Stroke length
Ⓓ Switch
* indicates lead wire length.
*1
*2
*3
*4
Ⓔ Switch quantity
Ⓕ Option
Ⓖ Clean room specifications
*6

Precautions for model No. selection

1: T2YD switch cannot be installed on ø12 and ø16.
2: ø12 to ø32 is not compatible with T8 switch built-in.
*3: The F switch can be connected only to the piping port surface of bore sizes ø20 and ø25.
*4: ø20 F switch with L lead wire models cannot be selected on stroke lengths of 15 mm or under.
*5: The 5 m lead wire cannot be selected for the F switch.
*6: "P5""P51" is made to order.
*7: Refer to pages 48 and 49 for combinations of variations/options.

[Example of model No.]

SSD2-L-12-5-T0H-R-NP7

Ⓐ Model : Compact cylinder, standard
Ⓑ Bore size : ø12 mm
Ⓒ Stroke length : 5 mm
Ⓓ Switch model No. : Reed switch T0H, 1 m lead wire length
Ⓔ Switch quantity : 1 (on rod end)
Ⓕ Option : Rod end male thread
Ⓖ Clean room specifications : Exhaust treatment

Code	Content
Ⓐ Model No.	
SSD2	Double acting/single rod
SSD2-L	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
125	ø125
140	ø140
160	ø160

Ⓒ Stroke length (mm)

Refer to the stroke length table on following page.

Ⓓ Switch model No.

Lead wire straight	Lead wire L-shaped	Contact	Voltage AC	Voltage DC	Display	Lead wire	Bore size 12	16	20	25	32	40	50	63	80	100	125	140	160
F2S		Proximity		●	1-color display	2 wires			●	●									
F3S				●		3 wires			●	●									
F2H*	F2V*			●		2 wires			●	●									
F3H*	F3V*			●		3 wires			●	●									
F3PH*	F3PV*			●	1-color display (PNP output) (custom order)				●	●									
F2YH*	F2YV*			●	2-color display	2 wires			●	●									
F3YH*	F3YV*			●		3 wires			●	●									
T0H*	T0V*	Reed	●	●	1-color display	2 wires	●	●	●	●	●	●	●	●	●	●	●	●	●
T5H*	T5V*		●	●	Without indicator lamp		●	●	●	●	●	●	●	●	●	●	●	●	●
T8H*	T8V*		●	●	1-color display							●	●	●	●	●	●	●	●
T1H*	T1V*	Proximity	●		1-color display	2 wires			●	●	●	●	●	●	●	●	●	●	●
T2H*	T2V*			●			●	●	●	●	●	●	●	●	●	●	●	●	●
T3H*	T3V*			●		3 wires	●	●	●	●	●	●	●	●	●	●	●	●	●
T3PH*	T3PV*			●	1-color display (PNP output)		●	●	●	●	●	●	●	●	●	●	●	●	●
T2WH*	T2WV*			●	2-color display	2 wires	●	●	●	●	●	●	●	●	●	●	●	●	●
T2YH*	T2YV*			●					●	●	●	●	●	●	●	●	●	●	●
T3WH*	T3WV*			●		3 wires	●	●	●	●	●	●	●	●	●	●	●	●	●
T3YH*	T3YV*			●					●	●	●	●	●	●	●	●	●	●	●
T2YD*	-			●	2-color display AC magnetic field	2 wires			●	●	●	●	●	●	●	●	●	●	●
T2YDT*	-			●					●	●	●	●	●	●	●	●	●	●	●
T2JH*	T2JV*			●	1-color display off-delay	2 wires			●	●	●	●	●	●	●	●	●	●	●

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

Ⓔ Switch quantity

R	1 (on rod end)
H	1 (on head end)
D	2

Ⓕ Option

Blank	Rod end female thread
N	Rod end male thread

Ⓖ Clean room specifications

	Structure	Material restriction
P7	Exhaust treatment	-
P71	Vacuum treatment	-
P5	Exhaust treatment	Copper-based/silicon-based/halogen-based materials (fluorine, chlorine, bromine) are prohibited
P51	Vacuum treatment	Copper-based/silicon-based/halogen-based materials (fluorine, chlorine, bromine) are prohibited

(Stroke length table)

Stroke (mm)		Applicable bore size												
		ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160
Standard stroke	5	●	●	●	●	●	●							
	10	●	●	●	●	●	●	●	●	●	●	●	●	●
	15	●	●	●	●	●	●	●	●	●	●			
	20	●	●	●	●	●	●	●	●	●	●	●	●	●
	25	●	●	●	●	●	●	●	●	●	●			
	30	●	●	●	●	●	●	●	●	●	●	●	●	●
	35			●	●	●	●	●	●	●	●			
	40			●	●	●	●	●	●	●	●	●	●	●
	45			●	●	●	●	●	●	●	●			
	50			●	●	●	●	●	●	●	●	●	●	●
	75					●	●	●	●	●	●	●	●	●
	100					●	●	●	●	●	●	●	●	●
	125											●	●	●
	150											●	●	●
	175											●	●	●
	200											●	●	●
	250											●	●	●
	300											●	●	●
Min. stroke length (mm) (*1)		1												
Max. stroke length (mm)		30		50		100						300		
Custom stroke length (mm) (*2)		By 1 mm increments												

1: Stroke length less than 5 mm for 1-color display and stroke length less than 10 mm is not available for 2-color display, off-delay, or types with T1 or T8* switches.
*2: Total length of when using custom stroke length is different between ø12 to ø100 and ø125 to ø160 as below.
(ø12 to ø100)
The total length with the custom stroke length are the same as the next longer standard stroke length.
(ø125 to ø160)
Special total length for custom stroke length is provided when custom stroke length is used.

Theoretical thrust table

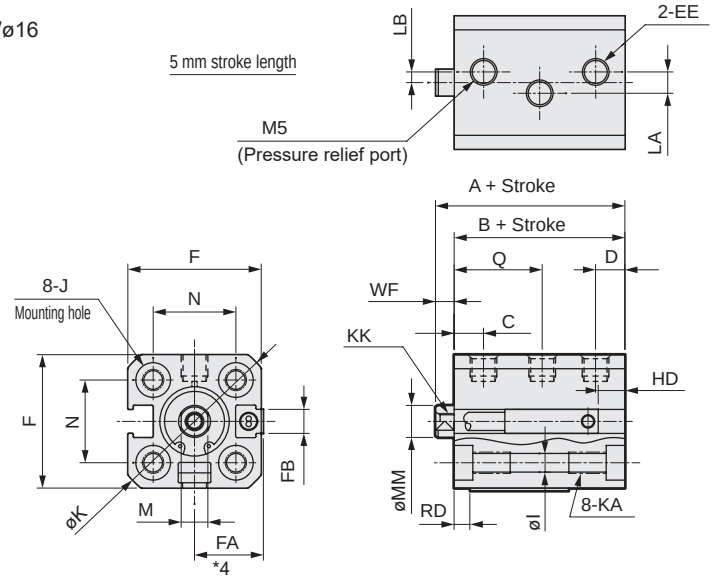
(Unit: N)

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	-	17.0	22.6	33.9	45.2	56.5	67.9	79.2	90.5	1.02×10^2	1.13×10^2
	Pull	-	12.7	17.0	25.4	33.9	42.4	50.9	59.4	67.9	76.3	84.8
ø16	Push	-	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	-	22.6	30.2	45.2	60.3	75.4	90.5	1.06×10^2	1.21×10^2	1.36×10^2	1.51×10^2
ø20	Push	-	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	35.3	47.1	70.7	94.2	1.18×10^2	1.41×10^2	1.65×10^2	1.88×10^2	2.12×10^2	2.36×10^2
ø25	Push	-	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Pull	-	56.7	75.6	1.13×10^2	1.51×10^2	1.89×10^2	2.27×10^2	2.64×10^2	3.02×10^2	3.40×10^2	3.78×10^2
ø32	Push	-	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	-	90.5	1.21×10^2	1.81×10^2	2.41×10^2	3.02×10^2	3.62×10^2	4.22×10^2	4.83×10^2	5.43×10^2	6.03×10^2
ø40	Push	-	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	-	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	-	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	-	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3
ø125	Push	1.23×10^3	1.84×10^3	2.45×10^3	3.68×10^3	4.91×10^3	6.14×10^3	7.36×10^3	8.59×10^3	9.82×10^3	1.10×10^4	1.23×10^4
	Pull	1.13×10^3	1.70×10^3	2.26×10^3	3.39×10^3	4.52×10^3	5.65×10^3	6.79×10^3	7.92×10^3	9.05×10^3	1.02×10^4	1.13×10^4
ø140	Push	1.54×10^3	2.31×10^3	3.08×10^3	4.62×10^3	6.16×10^3	7.70×10^3	9.24×10^3	1.08×10^4	1.23×10^4	1.39×10^4	1.54×10^4
	Pull	1.44×10^3	2.16×10^3	2.89×10^3	4.33×10^3	5.77×10^3	7.22×10^3	8.66×10^3	1.01×10^4	1.15×10^4	1.30×10^4	1.44×10^4
ø160	Push	2.01×10^3	3.02×10^3	4.02×10^3	6.03×10^3	8.04×10^3	1.01×10^4	1.21×10^4	1.41×10^4	1.61×10^4	1.81×10^4	2.01×10^4
	Pull	1.88×10^3	2.83×10^3	3.77×10^3	5.65×10^3	7.54×10^3	9.42×10^3	1.13×10^4	1.32×10^4	1.51×10^4	1.70×10^4	1.88×10^4

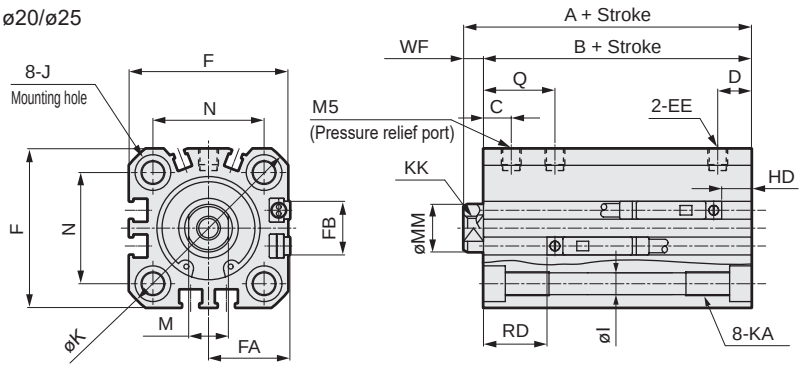
Dimensions

● SSD2-(L-)12 to 25-P7*/P5* (With switch TOH/V, T5H/V, T2H/V, T3H/V)

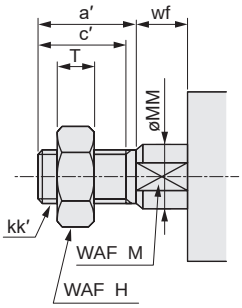
ø12/ø16



ø20/ø25



● Rod end male thread



● Precautions regarding the switch mounting groove

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

Code	Without switch		Common dimension with switch																	
							LA		LB											
Bore size (mm)	A *1	B *1	A	B	C	D	5 mm stroke length or less	Over 5 mm stroke length	5 mm stroke length or less	Over 5 mm stroke length	Q *5	EE	F	FA *4	FB	I	J	K	KA	KK
ø12	30.5	27	35.5	32	5.5	5.5	4	0	2	0	16.5 (16)	M5	25	13 (16.5)	4.5	3.5	6.5 spot face depth 3.5	32	M4 depth 7	M3 depth 6
ø16	30.5	27	35.5	32	5.5	5.5	6	0	0	0	16.5	M5	29	15 (18.5)	4.5	3.5	6.5 spot face depth 3.5	38	M4 depth 7	M4 depth 8
ø20	34	29.5	44	39.5	5.5	7	-	-	-	-	16.5	M5	36	18.5 (22)	12.5	5.5	9 spot face depth 5.5	47	M6 depth 11	M5 depth 7
ø25	37.5	32.5	47.5	42.5	7	8.5	-	-	-	-	18	M5	40	20.5 (24)	13.5	5.5	9 spot face depth 5.5	51	M6 depth 11	M6 depth 12

Code	Common dimension with switch				Reed T0H/T0V, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WV, T3WH/T3WV		Proximity F2H/F2V, F3H/F3V, F2YH/F2YV, F3YH/F3YV		Proximity F2S/F3S	
Bore size (mm)	M	MM	N	WF	HD	RD	HD	RD	HD	RD	HD	RD	HD	RD
ø12	5	6	15.5	3.5	4	9	4	9	6	11	-	-	-	-
ø16	6	8	20	3.5	2	11.5	2	11.5	3	13.5	-	-	-	-
ø20	8	10	25.5	4.5	6	14.5	6	14.5	8	16.5	10.5	19	9.5	18
ø25	10	12	28	5	8	16	8	16	10	18	12.5	20	11.5	19

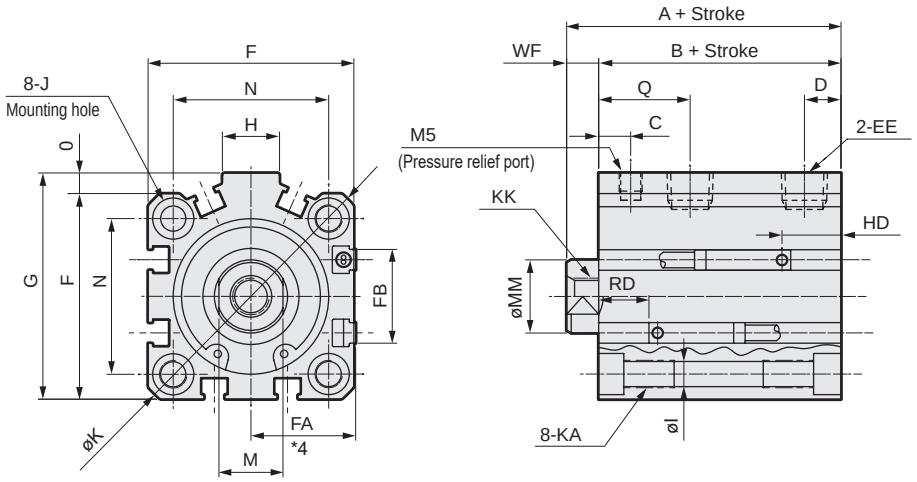
*1: To calculate A + stroke length or B + stroke length when using custom stroke length, apply the next longer standard stroke length instead of the custom stroke length to the stroke length.
Example: If the custom stroke length is 7 mm, apply the standard stroke length 10 mm.
*2: HD and RD dimensions for 5 mm stroke length differ from these dimensions according to the setting.
3: Refer to page 57 for dimensions of HD, RD and projection of the switches of 2-color display, off-delay, AC magnetic field, T1 and T8*.
*4: Dimensions in ( ) of code FA are for the L type lead wire.
*5: Dimensions in ( ) of code Q are for 5 mm stroke length without switch.

● Rod end male thread

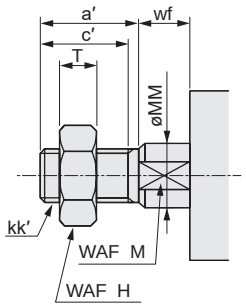
Code / Bore size (mm)	a′	c′	H	kk′	M	MM	T	wf
ø12	10.5	9	8	M5	5	6	3.2	3.5
ø16	12	10	10	M6	6	8	3.6	3.5
ø20	14	12	13	M8	8	10	5	4.5
ø25	17.5	15	17	M10 × 1.25	10	12	6	5

Dimensions

● SSD2-(L-)32 to 100-P7*/P5* (With switch TOH/V, T5H/V, T2H/V, T3H/V)



● Rod end male thread



Code	Without switch		Common dimension with switch													
Bore size (mm)	A *1 *5	B *1 *5	A *1	B *1	C	D *7	Q	EE	F	FA *4	FB	G	H	I	J	K
ø32	40 (50)	33 (43)	50	43	7	8(5.5)	20	Rc1/8 *6	45	23 (26.5)	20.5	49.5	12.5	5.5	9 spot face depth 5.5	60
ø40	46.5 (56.5)	39.5 (49.5)	56.5	49.5	8.5	8	21.5	Rc1/8	52	26.5 (30)	27.5	57	15	5.5	9 spot face depth 5.5	69
ø50	48.5 (58.5)	40.5 (50.5)	58.5	50.5	9.5	10.5(9.5)	25	Rc1/4 *6	64	32.5 (36)	28.5	71	18	6.9	11 spot face depth 6.5	86
ø63	54 (64)	46 (56)	64	56	10	11	25.5	Rc1/4	77	39 (42.5)	28.5	84	23	8.7	14 spot face depth 9	103
ø80	68.5 (78.5)	58.5 (68.5)	78.5	68.5	11.5	13	30	Rc3/8	98	49.5 (53)	28.5	104	31	10.5	17.5 spot face depth 11	132
ø100	80 (90)	68 (78)	90	78	15.5	15	35	Rc3/8	117	59 (62.5)	28.5	123.5	38	10.5	17.5 spot face depth 11	156

Code	Common dimension 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	RD	HD	RD	HD	RD
ø32	M6 depth 11	M8 depth 13	14	16	34	4.5	7	4	19.5	4	19.5	6	21.5
ø40	M6 depth 11	M8 depth 13	14	16	40	5	7	7	22	7	22	8.5	23.5
ø50	M8 depth 13	M10 depth 15	17	20	50	7	8	7.5	22.5	7.5	22.5	9	24
ø63	M10 depth 25	M10 depth 15	17	20	60	7	8	12.5	23	12.5	23	14	24.5
ø80	M12 depth 28	M16 depth 21	22	25	77	6	10	17.5	25.5	17.5	25.5	19	27
ø100	M12 depth 28	M20 depth 27	27	30	94	6.5	12	23	29.5	23	29.5	24.5	31

*1: To calculate A + stroke length or B + stroke length when using custom stroke length, apply the next longer standard stroke length instead of the custom stroke length to the stroke length. Example: If the custom stroke length is 7 mm, apply the standard stroke length 10 mm.
*2: HD and RD dimensions for 5 mm stroke length differfrom these dimensions according to setting.
3: Refer to page 57 for dimensions of HD, RD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1 and T8* switches.
*4: Dimensions in ( ) of code FA are for the L type lead wire type.
*5: Dimensions in ( ) of A and B are for the stroke length 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. The ø50 bore size with a 10 mm stroke and without a switch has a port size of Rc1/8.
*7: Dimensions in ( ) of codes C and D are for 5 mm stroke length without switch.

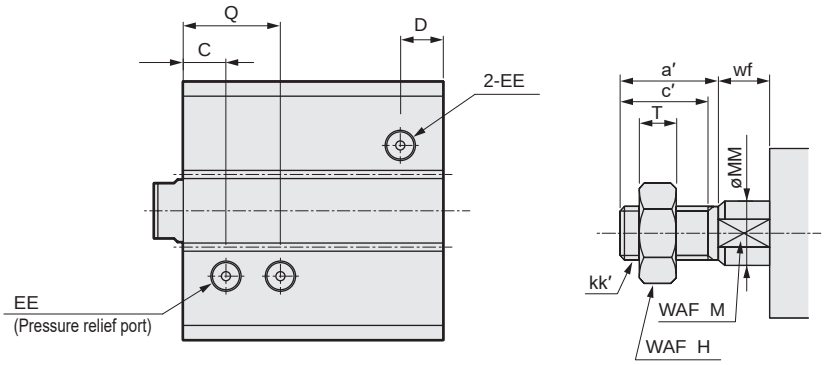
● Rod end male thread

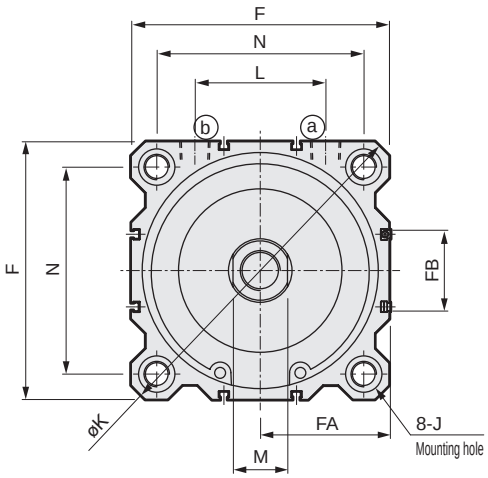
Code	a′	c′	H	kk′	M	MM	T	wf
Bore size (mm)								
ø32	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø40	23.5	20.5	22	M14 × 1.5	14	16	8	5
ø50	28.5	26	27	M18 × 1.5	17	20	11	5
ø63	28.5	26	27	M18 × 1.5	17	20	11	5
ø80	35.5	32.5	32	M22 × 1.5	22	25	13	8
ø100	35.5	32.5	41	M26 × 1.5	27	30	16	8

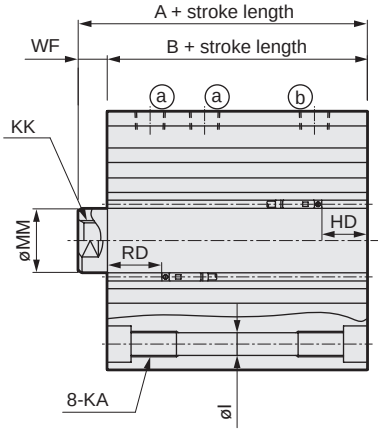
Dimensions (ø125 to ø160)

● SSD2-(L-)125 to 160-P7*/P5* (With switch)

● Rod end male thread







Code	Common dimensions in the type with switch and without switch																		
Bore size (mm)	A	B	C	D	EE	F	FA	FB	I	J	K	KA	KK	L	M	MM	N	Q	WF
ø125	118	102	23.5	23.5	Rc3/8	142	71.5 (75)	44.5	12.5	20 spot face depth 13	190	M14 depth 25	M22 depth 30	72	30	35	114	53.5	16
ø140	128	112	27	27	Rc3/8	158	79.5 (83)	44.5	12.5	20 spot face depth 13	210	M14 depth 25	M22 depth 30	80	30	35	128	57	16
ø160	143	126	30	30	Rc3/8	178	89.5 (93)	48.5	14.7	23 spot face depth 15.2	238	M16 depth 28	M24 depth 33	90	36	40	144	65	17

Code	Reed T0H/T0V, T5H/T5V		Proximity T2H/T2V, T3H/T3V		Proximity T2WH/T2WY, T3WY/T3WV	
Bore size (mm)	HD	RD	HD	RD	HD	RD
ø125	24.5	59.5	24.5	59.5	26	61
ø140	31	63	31	63	32.5	64.5
ø160	34	74	34	74	35.5	75.5

• *1: Refer to page 57 for HD and RD dimensions and projection dimensions of 2-color display switches.
• *2: Dimensions in ( ) of code FA are for the L type lead wire.

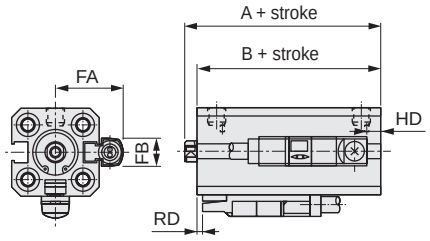
Dimensions of rod end male thread

Code	a′	c′	H	kk′	M	MM	T	wf
Bore size (mm)								
ø125	45	42	46	M30 × 1.5	30	35	18	13
ø140	45	42	46	M30 × 1.5	30	35	18	13
ø160	50	47	55	M36 × 1.5	36	40	21	14

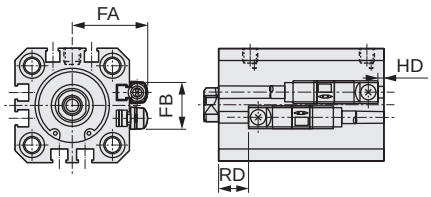
Dimensions common to SSD2 Series with switches (2-color display, off-delay, for AC magnetic field, with T1* and T8* switches)

● SSD2-L-12 to 160 (2-color display, off-delay, with T8* switch: T2YH/V, T3YH/V, T2JH/V, T8H/V)

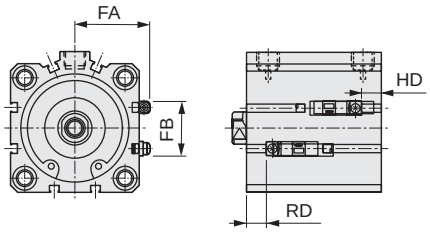
・ø12/ø16



・ø20/ø25



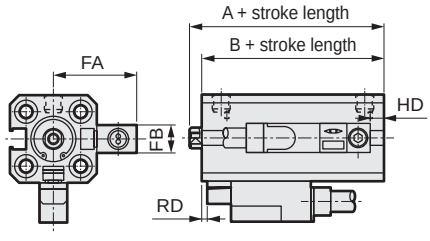
・ø32 to ø160



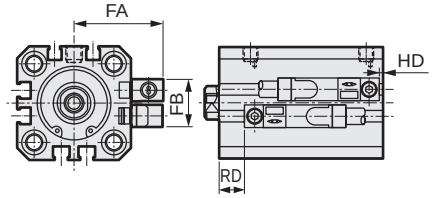
Code / Bore size (mm)	FA	FB	T2YH/V, T3YH/V, T2JH/V		T8H/V	
			RD	HD	RD	HD
ø12	18.8	8	-	-	-	-
ø16	20.8	8	-	-	-	-
ø20	24.3	16	6.5	2	-	-
ø25	26.3	17	8.5	3	-	-
ø32	28.8	24	8.5	3.5	-	-
ø40	32.3	31	10.5	5.5	6	1
ø50	38.3	32	11	6	6.5	1.5
ø63	44.8	32	11.5	11	7	6.5
ø80	55.3	32	14	16	9.5	11.5
ø100	64.8	32	18	21.5	13.5	17
ø125	77	48	58	23	53	18
ø140	85	48	61.5	29.5	56.5	24.5
ø160	95	52	72.5	32.5	67.5	27.5

● SSD2-L-12 to 160 (for AC magnetic field, with T1* switch, T2YD, T2YDT, T1H/V)

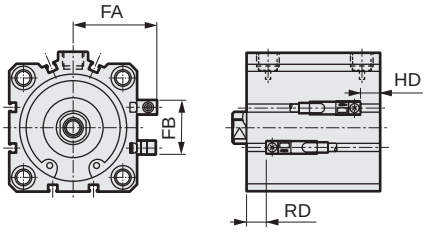
・ø12/ø16



・ø20/ø25



・ø32 to ø160



Code / Bore size (mm)	FA	FB	RD	HD
ø12	23.8	8	-	-
ø16	25.8	8	-	-
ø20	29.3	16	6.5	2
ø25	31.3	17	8.5	3
ø32	33.8	24	8.5	3.5
ø40	37.3	31	10.5	5.5
ø50	43.3	32	11	6
ø63	49.8	32	11.5	11
ø80	60.3	32	14	16
ø100	60.8	32	18	21.5
ø125	82.5	48	58	23
ø140	90.5	48	61.5	29.5
ø160	100.5	52	72.5	32.5

Safety Precautions

Always read this section before use.
Refer to page 2 for general information of the cylinder, and to page 320 for general information of the cylinder switch.

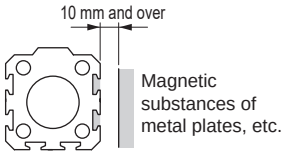
Compact cylinder SSD2 Series

Installation & adjustment

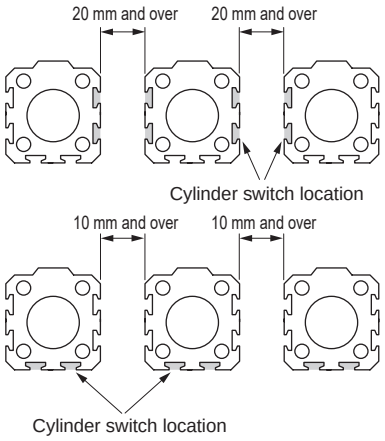
1. Common

⚠CAUTION

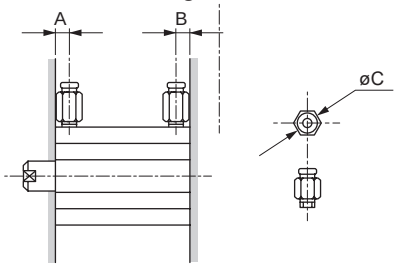
■ The cylinder switch may malfunction if there is a magnetic substance such as a metal plate installed adjacently. Confirm that a distance of at least 10 mm is allocated from the surface of the cylinders.
(Same clearance for all bore sizes)



■ The cylinder switch may malfunction if cylinders are installed adjacently. Check that the following distances are allocated between cylinders.
(Same clearance for all bore sizes)



■ As compatible fittings are limited, see the following table to select the fitting.



Descriptions / Bore size (mm)	Port diameter	Port location dimensions A	Port location dimensions B	Applicable fittings	Fitting O.D. øC	Inapplicable fittings
ø12	M5	5.5	5.5	SC3W-M5-4-P7* SC3W-M5-6-P7* GWS4-M5-S-P7*	ø11 or less	GWS6-M5
ø16						
ø20		8	5.5	GWS4-M5-P7* GWL4-M5-P7*		
ø25		11	6	GWL6-M5-P7*		
ø32	Rc1/8	8	8	SC3W-6-4, 6, 8-P7* GWS4-6 GWS6-6-P7*	ø15 or less	GWS10-6 GWL8-6 GWL10-6
ø40		12	8.5	GWS8-6 GWL4-6-P7* GWL6-6-P7*		
ø50	Rc1/4	10.5	10.5	SC3W-8-6, 8, 10-P7* GWS4-8 GWS6-8-P7*	ø21 or less	GWS12-8
ø63		13	11	GWS10-8-P7* GWL4 to 12-8-P7*		
ø80	Rc3/8	16	13	SC3W-10-6, 8, 10-P7* GWS6-10 GWS8-10-P7*	ø21 or less	-
ø100		23	15	GWS10-10-P7* GWL6 to 12-10-P7*		