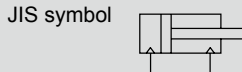




Round shaped cylinder Double acting/single rod

# SCM Series

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



## Specifications

Descriptions		SCM							
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure	MPa	1.0 ( $\approx 150$ psi, 10 bar)							
Min. working pressure	MPa	0.1 ( $\approx 15$ psi, 1 bar)				0.05 ( $\approx 7.3$ psi, 0.5 bar)			
Proof pressure	MPa	1.6 ( $\approx 230$ psi, 16 bar)							
Ambient temperature	$^{\circ}\text{C}$	-10 ( $14^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ ) (no freezing)							
Port size	With rubber cushion	Rc1/8				Rc1/4		Rc3/8	Rc1/2
	With air cushion	M5	Rc1/8			Rc1/4		Rc3/8	Rc1/2
Stroke tolerance	With rubber cushion	+1.4 (to 1000) 0			+1.4 (to 1500) 0	+2.3 (to 1000), 0		+2.7 (to 1500) 0	
	With air cushion	+1.4 (to 1000) 0			+1.4 (to 1500) 0	+1.4 (to 1000), 0		+1.8 (to 1500) 0	
Working piston speed	mm/s	30 to 1000 (Operate within the allowable absorbed energy.)							
Cushion		Either rubber cushion or air cushion can be selected.							
Effective air cushion length	mm	8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)							
Allowable absorbed energy	With rubber cushion	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
	With air cushion	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	Without cushion	-	-	-	-	0.057	0.057	0.112	0.153

\*1: The values of allowable absorbed energy for "No cushion" are the allowable absorbed energy on the non-specified side when an air cushion is selected for the other side ("R"→ Head side, "H"→ Rod side).

\*2: Without any cushion, this product cannot absorb large energy generated by an external load. Provide a shock absorber on the outside.

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10
$\phi 25$			
$\phi 32$			
$\phi 40$			
$\phi 50$			
$\phi 63$	1500		
$\phi 80$			
$\phi 100$			

\*1: The custom stroke length is available in 1 mm increments.

## Number of installed switches and min. stroke length (mm)

● Switch mounting method: Rail

Switch quantity	1				2				3				4				5			
	Proximity			Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	
	T2, T3	T2W, T3W	T*Y*		T2, T3	T*Y*		T2, T3	T2W, T3W		T*Y*	T2, T3		T2W, T3W	T*Y*		T2, T3	T2W, T3W		T*Y*
$\phi 20$	10			Reed	25		Reed	50	70	70	55	55	70	70	55	75	110	110	90	
$\phi 25$	10				25			50	70	70	55	55	70	70	55	75	110	110	90	
$\phi 32$	10			Reed	25		Reed	50	70	70	55	55	70	70	55	75	110	110	90	
$\phi 40$	10				25			50	70	70	55	55	70	70	55	75	110	110	90	
$\phi 50$	10			Reed	25		Reed	50	65	65	55	55	65	65	55	75	110	110	90	
$\phi 63$	10				25			50	65	65	55	55	65	65	55	75	110	110	90	
$\phi 80$	10			Reed	25		Reed	50	65	65	55	55	65	65	55	75	110	110	90	
$\phi 100$	10				25			50	65	65	55	55	65	65	55	75	110	110	90	

\*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 329 for mounting position.

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
	Proximity			Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	
	T2, T3	T2W, T3W	T*Y*		T <sub>0</sub> , T <sub>5</sub> T <sub>2</sub> , T <sub>3</sub>	T2W, T3W		T*Y*	T <sub>0</sub> , T <sub>5</sub> T <sub>2</sub> , T <sub>3</sub>		T2W, T3W	T*Y*		T <sub>0</sub> , T <sub>5</sub> T <sub>2</sub> , T <sub>3</sub>	T2W, T3W		T*Y*	T <sub>0</sub> , T <sub>5</sub> T <sub>2</sub> , T <sub>3</sub>		T2W, T3W
$\phi 20$	10			Reed	25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\phi 32$	10			Reed	25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\phi 50$	10			Reed	25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\phi 63$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\phi 83$	10			Reed	25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\phi 100$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95

### Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire		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 (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V	T8H/T8V		T2YD					
Applications	For programmable controller, relay, compact solenoid valve		Dedicated for programmable controller		For programmable controller, relay				For programmable controller, relay	For programmable controller, relay (no lamp), serial	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 (*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)	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)		Without 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 other switch specifications.

\*2: The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

\*3: The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.

\*4: Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.

\*5: Dimensions depend on switch model No. Refer to Ending Page 18 for details.

### Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
	Bore size (mm)	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis				
φ 20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.01	0.012	0.007
φ 25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
φ 32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
φ 40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
φ 50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
φ 63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
φ 80	2.04	3.00	2.75	2.75	-		0.07	0.072	0.010
φ 100	3.17	4.92	4.52	4.45	-		0.098	0.10	0.010

(Example) Product weight of SCM-LB-40B-100-T2H-D

- Product weight when S = 0 mm ..... 0.63 kg
- Additional weight when S = 100 mm .....  $0.032 \times \frac{100}{10} = 0.32$  kg
- Weight of 2 switches .....  $0.018 \times 2 = 0.036$  kg
- Product weight .....  $0.63 + 0.32 + 0.036 = 0.986$  kg

### 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
φ20	Push	31.4	47.1	62.8	94.2	$1.26 \times 10^2$	$1.57 \times 10^2$	$1.88 \times 10^2$	$2.20 \times 10^2$	$2.51 \times 10^2$	$2.83 \times 10^2$	$3.14 \times 10^2$
	Pull	26.4	39.6	52.8	79.2	$1.06 \times 10^2$	$1.32 \times 10^2$	$1.58 \times 10^2$	$1.85 \times 10^2$	$2.11 \times 10^2$	$2.38 \times 10^2$	$2.64 \times 10^2$
φ25	Push	49.1	73.6	98.2	$1.47 \times 10^2$	$1.96 \times 10^2$	$2.45 \times 10^2$	$2.95 \times 10^2$	$3.44 \times 10^2$	$3.93 \times 10^2$	$4.42 \times 10^2$	$4.91 \times 10^2$
	Pull	41.2	61.9	82.5	$1.24 \times 10^2$	$1.65 \times 10^2$	$2.06 \times 10^2$	$2.47 \times 10^2$	$2.89 \times 10^2$	$3.30 \times 10^2$	$3.71 \times 10^2$	$4.12 \times 10^2$
φ32	Push	80.4	$1.21 \times 10^2$	$1.61 \times 10^2$	$2.41 \times 10^2$	$3.22 \times 10^2$	$4.02 \times 10^2$	$4.83 \times 10^2$	$5.63 \times 10^2$	$6.43 \times 10^2$	$7.24 \times 10^2$	$8.04 \times 10^2$
	Pull	69.1	$1.04 \times 10^2$	$1.38 \times 10^2$	$2.07 \times 10^2$	$2.76 \times 10^2$	$3.46 \times 10^2$	$4.15 \times 10^2$	$4.84 \times 10^2$	$5.53 \times 10^2$	$6.22 \times 10^2$	$6.91 \times 10^2$
φ40	Push	$1.26 \times 10^2$	$1.88 \times 10^2$	$2.51 \times 10^2$	$3.77 \times 10^2$	$5.03 \times 10^2$	$6.28 \times 10^2$	$7.54 \times 10^2$	$8.80 \times 10^2$	$1.01 \times 10^3$	$1.13 \times 10^3$	$1.26 \times 10^3$
	Pull	$1.06 \times 10^2$	$1.58 \times 10^2$	$2.11 \times 10^2$	$3.17 \times 10^2$	$4.22 \times 10^2$	$5.28 \times 10^2$	$6.33 \times 10^2$	$7.39 \times 10^2$	$8.44 \times 10^2$	$9.50 \times 10^2$	$1.06 \times 10^3$
φ50	Push	$1.96 \times 10^2$	$2.95 \times 10^2$	$3.93 \times 10^2$	$5.89 \times 10^2$	$7.85 \times 10^2$	$9.82 \times 10^2$	$1.18 \times 10^3$	$1.37 \times 10^3$	$1.57 \times 10^3$	$1.77 \times 10^3$	$1.96 \times 10^3$
	Pull	$1.65 \times 10^2$	$2.47 \times 10^2$	$3.30 \times 10^2$	$4.95 \times 10^2$	$6.60 \times 10^2$	$8.25 \times 10^2$	$9.90 \times 10^2$	$1.15 \times 10^3$	$1.32 \times 10^3$	$1.48 \times 10^3$	$1.65 \times 10^3$
φ63	Push	$3.12 \times 10^2$	$4.68 \times 10^2$	$6.23 \times 10^2$	$9.35 \times 10^2$	$1.25 \times 10^3$	$1.56 \times 10^3$	$1.87 \times 10^3$	$2.18 \times 10^3$	$2.49 \times 10^3$	$2.81 \times 10^3$	$3.12 \times 10^3$
	Pull	$2.80 \times 10^2$	$4.20 \times 10^2$	$5.61 \times 10^2$	$8.41 \times 10^2$	$1.12 \times 10^3$	$1.40 \times 10^3$	$1.68 \times 10^3$	$1.96 \times 10^3$	$2.24 \times 10^3$	$2.52 \times 10^3$	$2.80 \times 10^3$
φ80	Push	$5.03 \times 10^2$	$7.54 \times 10^2$	$1.01 \times 10^3$	$1.51 \times 10^3$	$2.01 \times 10^3$	$2.51 \times 10^3$	$3.02 \times 10^3$	$3.52 \times 10^3$	$4.02 \times 10^3$	$4.52 \times 10^3$	$5.03 \times 10^3$
	Pull	$4.54 \times 10^2$	$6.80 \times 10^2$	$9.07 \times 10^2$	$1.36 \times 10^3$	$1.81 \times 10^3$	$2.27 \times 10^3$	$2.72 \times 10^3$	$3.17 \times 10^3$	$3.63 \times 10^3$	$4.08 \times 10^3$	$4.54 \times 10^3$
φ100	Push	$7.85 \times 10^2$	$1.18 \times 10^3$	$1.57 \times 10^3$	$2.36 \times 10^3$	$3.14 \times 10^3$	$3.93 \times 10^3$	$4.71 \times 10^3$	$5.50 \times 10^3$	$6.28 \times 10^3$	$7.07 \times 10^3$	$7.85 \times 10^3$
	Pull	$7.15 \times 10^2$	$1.07 \times 10^3$	$1.43 \times 10^3$	$2.14 \times 10^3$	$2.86 \times 10^3$	$3.57 \times 10^3$	$4.29 \times 10^3$	$5.00 \times 10^3$	$5.72 \times 10^3$	$6.43 \times 10^3$	$7.15 \times 10^3$

- SCP\*3
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS2
- CKV2
- CAV2/  
COVPIN2
- SSD2
- SSG
- SSD
- CAT
- MDC2
- MVC
- SMG
- MSD/  
MSDG
- FC\*
- STK
- SRL3
- SRG3
- SRM3
- SRT3
- MRL2
- MRG2
- SM-25
- ShkAbs
- FJ
- FK
- Spd  
Contr
- Ending

## How to order

Without switch (built-in magnet for switch)

**SCM-LB-40-B-100** ————— **J I**

With switch (built-in magnet for switch)

**SCM-LB-40-B-100-T2H-D** ————— **J I**

**A** Mounting  
\*1

**B** Bore size

**C** Port thread

**D** Cushion

**E** Stroke length

**F** Switch model No.  
\*4  
\*5

## ⚠ Precautions for model No. selection

- \*1 : Mounting bracket will be shipped with the product.
- \*2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.
- \*3 : Refer to page 218 for the number of installed switches and the min. stroke length.
- \*4 : Switches other than **F** Switch model No. are also available. (Custom order)  
Refer to Ending Page 16 for details.
- \*5 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 and the switch mounting style is the rail.
- \*6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- \*7 : Refer to Ending Page 85 for custom specifications of rod end form.
- \*8 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
- \*9 : "I" and "Y" cannot be selected together.
- \*10 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

**SCM-LB-40B-100-T2H-D-JI**

Model: Round shaped cylinder, double acting

- A** Mounting : Axial foot
- B** Bore size : φ40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided air cushion
- E** Stroke length : 100 mm
- F** Switch model No. : Proximity T2H switch, lead wire 1 m
- G** Switch Quantity : 2 pcs. included
- H** Switch mounting : Rail
- I** Option : Bellows material for max. ambient temperature 60°C
- J** Accessory : Rod eye

**I** Option  
\*2  
\*6  
\*8

**J** Accessory  
\*9

Code	Content								
<b>A Mounting</b>									
	Bore size (φ)	20	25	32	40	50	63	80	100
<b>00</b>	Basic	●	●	●	●	●	●	●	●
<b>LB</b>	Axial foot	●	●	●	●	●	●	●	●
<b>FA</b>	Rod side flange	●	●	●	●	●	●	●	●
<b>FB</b>	Head side flange	●	●	●	●	●	●	●	●
<b>CA</b>	Eye bracket	●	●	●	●	●	●	●	●
<b>CB</b>	Clevis bracket (pin and snap ring incl.)							●	●
<b>TA</b>	Rod side trunnion	●	●	●	●	●	●		
<b>TB</b>	Head side trunnion	●	●	●	●	●	●		

<b>B Bore size (mm)</b>	
<b>20</b>	φ20
<b>25</b>	φ25
<b>32</b>	φ32
<b>40</b>	φ40
<b>50</b>	φ50
<b>63</b>	φ63
<b>80</b>	φ80
<b>100</b>	φ100

<b>C Port thread</b>	
<b>Blank</b>	Rc thread
<b>N</b>	NPT thread (custom order product) With air cushion: φ32 and over
<b>G</b>	G thread (custom order product) With air cushion: φ32 and over

<b>D Cushion</b>	
<b>B</b>	With two-sided air cushion
<b>R</b>	Rod side air cushioned
<b>H</b>	Head side air cushioned
<b>D</b>	With two-sided rubber cushion

<b>E Stroke length (mm)</b>		
Bore size	Stroke length *2	Custom stroke length
φ20 to φ32	10 to 1000	In 1 mm increments
φ40 to φ100	10 to 1500	

<b>F Switch model No.</b>						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
<b>T0H*</b>	<b>T0V*</b>	Reed	●	●	1-color display	2-wire
<b>T5H*</b>	<b>T5V*</b>		●	●	Without indicator lamp	
<b>T8H*</b>	<b>T8V*</b>		●	●	1-color display	
<b>T1H*</b>	<b>T1V*</b>	Proximity	●	●	1-color display	2-wire
<b>T2H*</b>	<b>T2V*</b>		●	●		
<b>T3H*</b>	<b>T3V*</b>		●	●	1-color display (custom order)	3-wire
<b>T3PH*</b>	<b>T3PV*</b>		●	●		
<b>T2WH*</b>	<b>T2WV*</b>		●	●	2-color display	2-wire
<b>T2YH*</b>	<b>T2YV*</b>		●	●		
<b>T3WH*</b>	<b>T3WV*</b>	●	●	2-color display	3-wire	
<b>T3YH*</b>	<b>T3YV*</b>	●	●			
<b>T2YD*</b>	-		●	●	2-color display	2-wire
<b>T2YDT*</b>	-		●	●	for AC magnetic field	
<b>T2JH*</b>	<b>T2JV*</b>		●	●	1-color display off-delay	2-wire

<b>* Lead wire length</b>	
<b>Blank</b>	1 m (standard)
<b>3</b>	3 m (option)
<b>5</b>	5 m (option)

<b>G Switch quantity</b>	
<b>R</b>	1 on rod side
<b>H</b>	1 on head side
<b>D</b>	2
<b>T</b>	3
<b>4</b>	4 (when there are more than 4 switches, indicate switch quantity.)

<b>H Switch mounting</b>	
<b>Blank</b>	Rail method
<b>Z</b>	Band method

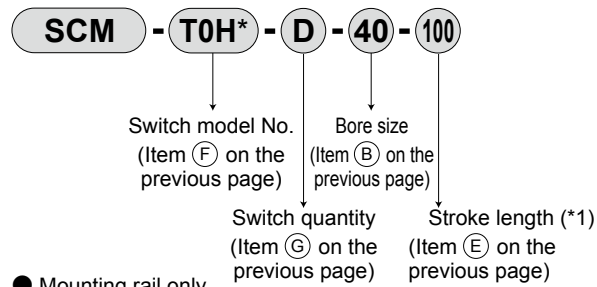
<b>I Option</b>			
		Max. ambient temperature	Instantaneous max. temperature
<b>J</b>	Bellows	60°C	100°C
<b>K</b>	Bellows	100°C	200°C
<b>L</b>	Bellows	250°C	400°C
<b>Q</b>	Switch rail attached at shipment		
<b>M</b>	Piston rod material (stainless steel)		
<b>P6</b>	Copper and PTFE free		

<b>J Accessory</b>									
	Bore size (φ)	20	25	32	40	50	63	80	100
<b>I</b>	Rod eye	●	●	●	●	●	●	●	●
<b>Y</b>	Rod clevis (pin and snap ring attached)	●	●	●	●	●	●	●	●
<b>B1</b>	Eye bracket							●	●
<b>B2</b>	Clevis bracket	●	●	●	●	●	●		

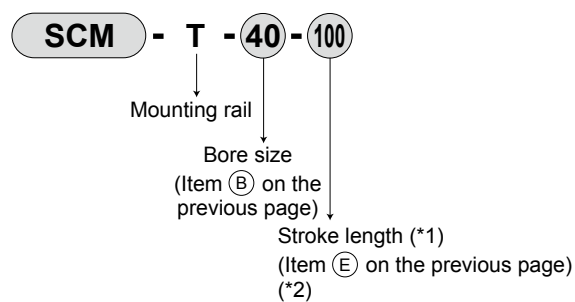
## How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



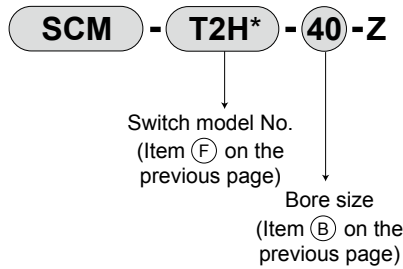
- Mounting rail only



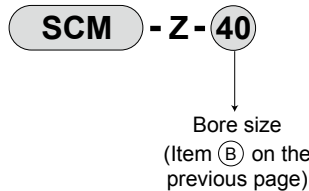
- \*1: Indicate X if the stroke length exceeds 300 mm. If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
- \*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

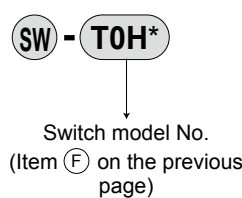
- Switch body + mounting bracket set + band



- Mounting bracket set + band



[Switch body only]



### Clean-room specifications (Catalog No. CB-033SA)

- Anti-dust generation structure for use in cleanrooms

SCM - ..... - P7\*

SCM - ..... - P5\*

### Specifications for rechargeable battery (Catalog No. CC-1226A)

- Design compatible with rechargeable battery manufacturing process

SCM - ... - P4\*

\* Contact CKD for details.

## How to order mounting bracket

Bore size (mm)	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis bracket (CB)	-	-	-	-	-	-	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

- \*1: All mounting brackets are supplied with mounting bolts.
- \*2: The foot mounting bracket is provided as 2 pcs./set.

## Material of mounting bracket

Mounting	Material
LB	Steel
FA/FB	Aluminum
TA/TB	Steel
CA	Steel
CB	Cast iron

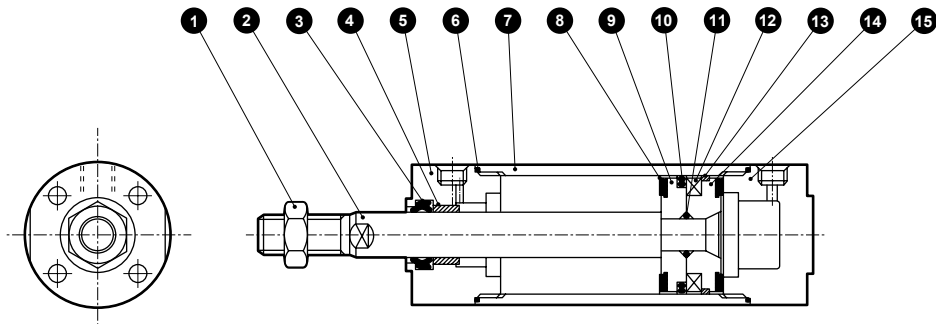
Note: Mounting bracket will be shipped with the product.

However, it will be attached to the product if the product is the type with bellows and LB, FA, or TA mounting bracket, SCM-P with LB, FB or TB mounting bracket, or SCM-R with LB, FB or TB mounting bracket.

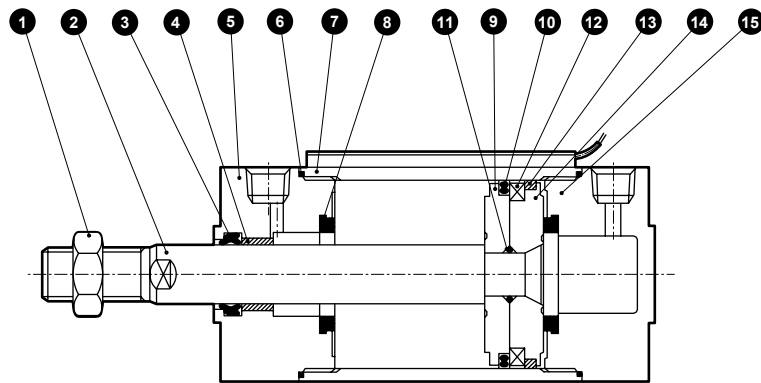
- SCP\*3
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS2
- CKV2
- CAV2/COVP/N2
- SSD2
- SSG
- SSD
- CAT
- MDC2
- MVC
- SMG
- MSD/MSDG
- FC\*
- STK
- SRL3
- SRG3
- SRM3
- SRT3
- MRL2
- MRG2
- SM-25
- ShkAbs
- FJ
- FK
- Spd Contr
- Ending

## Internal structure and parts list (with rubber cushion)

● φ20 to φ40



● φ50 to φ100



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	9	Piston R	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting	
2	Piston rod	φ20, φ25: Stainless steel φ32 to φ100: Steel	Industrial chrome plating	10	Piston packing	Nitrile rubber	
3	Rod packing	Nitrile rubber		11	Piston gasket	Nitrile rubber	
4	Bush	Oil impregnated bearing alloy <sup>*1</sup>		12	Magnet	Plastic	
5	Rod cover	Aluminum alloy <sup>*2</sup>	Paint	13	Wear ring	Polyacetal resin	
6	Cylinder gasket	Nitrile rubber		14	Piston H	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting	
7	Cylinder tube	Aluminum alloy	Hard alumite	15	Head cover	Aluminum alloy <sup>*2</sup>	Paint
8	Cushion rubber	Urethane rubber					

\*1: Oil-impregnated cast iron bearing for copper and PTFE free.

\*2: Aluminum alloy die-casting for φ50 and φ63.

## Repair parts list

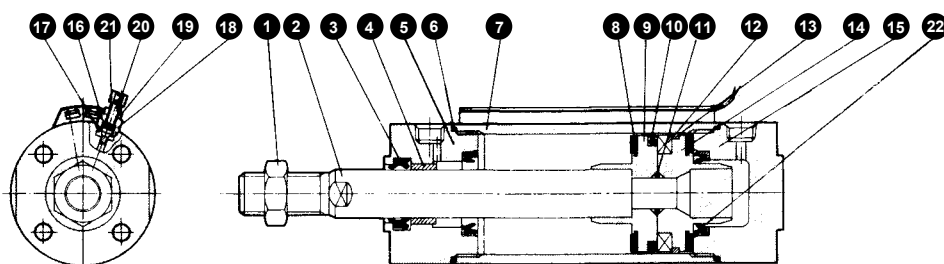
With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
φ 20	SCM-20DK	<div style="display: flex; justify-content: center; gap: 10px;"> <span>3</span> <span>6</span> <span>8</span> <span>10</span> <span>13</span> </div>
φ 25	SCM-25DK	
φ 32	SCM-32DK	
φ 40	SCM-40DK	
φ 50	SCM-50DK	
φ 63	SCM-63DK	
φ 80	SCM-80DK	
φ 100	SCM-100DK	

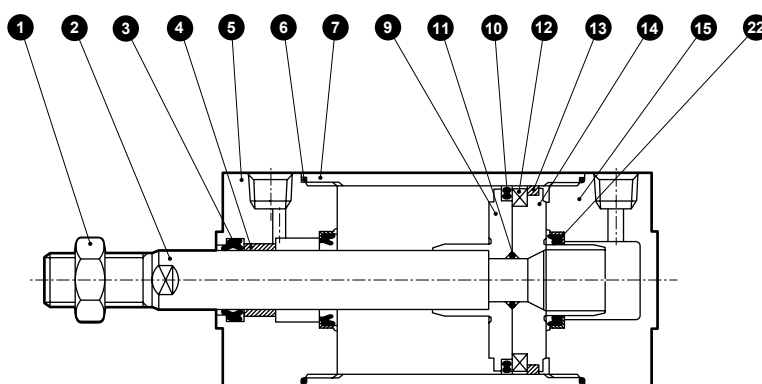
\*1: Specify the kit No. when placing an order.

### Internal structure and parts list (with air cushion)

● φ20 to φ40



● φ50 to φ100



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	12	Magnet	Plastic	
2	Piston rod	φ20, φ25: Stainless steel φ32 to φ100: Steel	Industrial chrome plating	13	Wear ring	Polyacetal resin	
3	Rod packing	Nitrile rubber		14	Piston H	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy *1		15	Head cover	Aluminum alloy *2	Paint
5	Rod cover	Aluminum alloy *2	Paint	16	Needle gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		17	Holder gasket	Nitrile rubber	
7	Cylinder tube	Aluminum alloy	Hard alumite	18	Needle holder	Aluminum alloy	
8	Cushion rubber	Urethane rubber		19	Lock nut	Steel	Nickeling
9	Piston R	20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting		20	Needle	Stainless steel	
10	Piston packing	Nitrile rubber		21	Knob	Aluminum alloy	Chromate
11	Piston gasket	Nitrile rubber		22	Cushion packing	Nitrile rubber/steel	

\*1: Oil-impregnated cast iron bearing for copper and PTFE free.

\*2: Aluminum alloy die-casting for φ50 and φ63.

### Repair parts list

With air cushion

Bore size (mm)	Kit No.	Repair parts No.
φ 20	SCM-20BK	
φ 25	SCM-25BK	
φ 32	SCM-32BK	
φ 40	SCM-40BK	
φ 50	SCM-50BK	*2 3 6 8 10 13 16 17 22
φ 63	SCM-63BK	
φ 80	SCM-80BK	
φ100	SCM-100BK	

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

\*2: 8 is not supplied with φ50 to φ100.

SCP\*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/  
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/  
MSDG

FC\*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd  
Contr

Ending

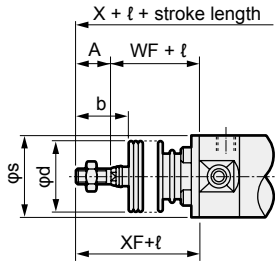


## Dimensions

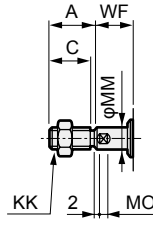
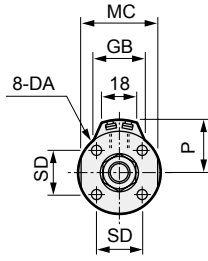


● Basic (00)  $\phi 20$  to  $\phi 100$   
[With rubber cushion]

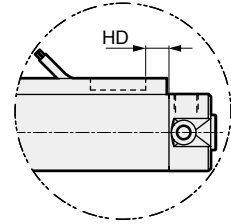
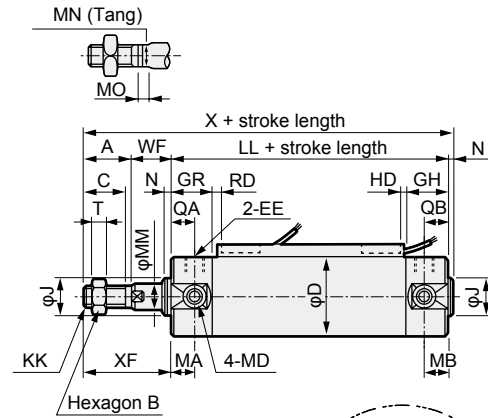
· Switch mounting method: Rail



With bellows



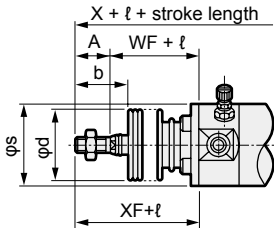
$\phi 20/\phi 25$   
Piston rod area



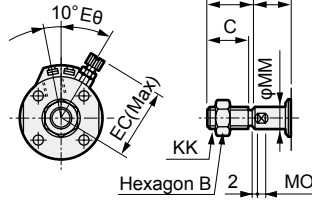
In the case of T2W, T3W

[With air cushion]

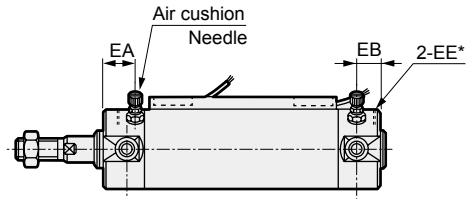
· Switch mounting method: Rail



With bellows



$\phi 20/\phi 25$   
Piston rod area



\*1 : Piping port (EE) of  $\phi 20$  and  $\phi 25$  is different. Refer to the dimensions (EE\*) of the type with air cushion.

\*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

\*3: For the dimensions of the accessories, refer to pages 238 and 239.

Code	Basic (00) basic dimensions																						
	Bore size (mm)		A	B	C	D	DA	EE (Note)	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	N	QA	QB
$\phi 20$	18	13	16	26	M4 depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	8	6	4	2	12	10	14	
$\phi 25$	22	17	20	31	M5 depth 6.5	Rc1/8	17	19	14	M10 $\times$ 1.25	69	11	11	29	M6	10	8	5	2	12	10	16.5	
$\phi 32$	22	17	20	38	M5 depth 7.5	Rc1/8	17	19	18	M10 $\times$ 1.25	71	11	10	36	M8	12	10	5.5	2	12	10	20	
$\phi 40$	30	22	27	47	M6 depth 12	Rc1/8	19	20	25	M14 $\times$ 1.5	78	12	10	44	M10	16	14	6	2	13	12	26	
$\phi 50$	35	27	32	58	M8 depth 16	Rc1/4	22	25	30	M18 $\times$ 1.5	90	13	12	55	M12	20	17	8	2	15	12	32	
$\phi 63$	35	27	32	72	M10 depth 16	Rc1/4	22	25	32	M18 $\times$ 1.5	90	13	12	69	M14	20	17	8	2	15	12	38	
$\phi 80$	40	32	37	89	M10 depth 22	Rc3/8	28	28	40	M22 $\times$ 1.5	108	-	-	80	-	25	22	11	3	15	15	50	
$\phi 100$	40	41	37	110	M12 depth 22	Rc1/2	28	28	50	M26 $\times$ 1.5	108	-	-	100	-	30	27	13	3	15	15	60	

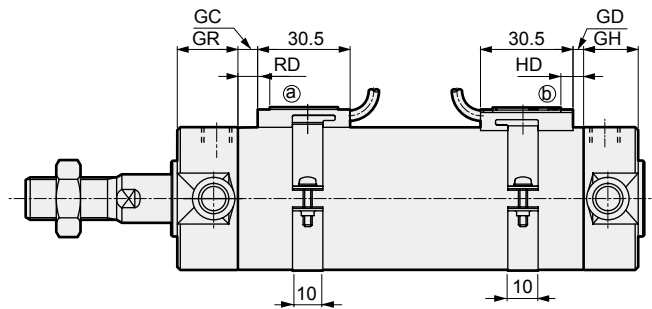
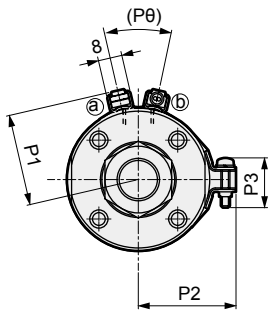
Code	With bellows								With air cushion					Switch mounting: Rail								
	Bore size (mm)		T	WF	X	XF	b	d	s	$\ell$	EA	EB	EC	EE* (Note)	E $\theta$	P	GB	HD			RD	
																	T0/T5	T2/T2R T3/T3P	T3W	T0/T5	T2/T2R T3/T3P	T3W
$\phi 20$	5	17	106	35	30	30	25.7	(Stroke length/3) + 18.5	14	12	27	M5	30°	19.5	23	3.0	6.5	8.5	7.5	7.5	7.5	9.5
$\phi 25$	6	18	111	40	35	30	30.7	(Stroke length/3) + 20.5	14	12	29.5	M5	30°	22	24.4	2.0	5.5	7.5	8.5	8.5	8.5	10.5
$\phi 32$	6	18	113	40	31.5	35	37.7	(Stroke length/3) + 19	14	12	32.8	Rc1/8	25°	25.5	25	3.0	6.5	8.5	9.5	9.5	9.5	11.5
$\phi 40$	8	20	130	50	40	35	46.7	(Stroke length/3) + 18.5	15	12	36.6	Rc1/8	20°	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	13.5
$\phi 50$	11	23	150	58	46	40	57.7	(Stroke length/3.6) + 18.5	18.5	15.5	43	Rc1/4	20°	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	15.0
$\phi 63$	11	23	150	58	46	40	71.7	(Stroke length/3.6) + 18.5	18.5	15.5	50	Rc1/4	20°	42.5	26.5	7.5	11.0	13.0	13.0	13.0	20.0	20.0
$\phi 80$	13	31	182	71	55	50	88.7	(Stroke length/4.3) + 14.5	20	20	58.5	Rc3/8	20°	51	26.7	9.5	13.0	15.0	20.0	20.0	22.0	22.0
$\phi 100$	16	31	182	71	56	60	109.7	(Stroke length/4.5) + 21	20	20	69	Rc1/2	20°	61.5	26.7	10.0	13.5	15.5	19.5	19.5	21.5	21.5

## Dimensions



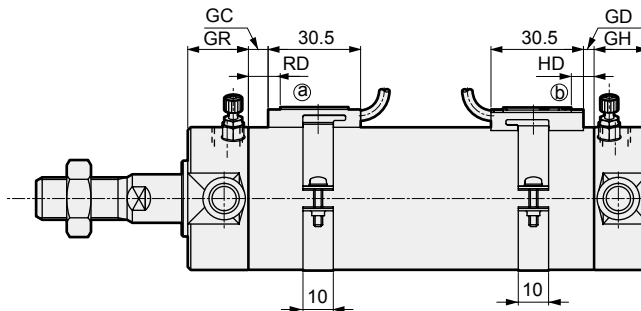
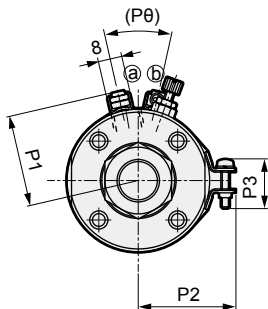
● Basic (00)  $\phi 20$  to  $\phi 100$   
[With rubber cushion]

· Switch mounting: Band



[With air cushion]

· Switch mounting: Band



\*1: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

\*2: For the dimensions of the accessories, refer to pages 238 and 239.

Code	Switch mounting: Band																	
	GD			GC			GH	GR	HD			RD			P1	P2	P3	P0
	T0/T5	T2, T3	T2W/T3W	T0/T5	T2, T3	T2W/T3W			T0/T5	T2, T3	T2W/T3W	T0/T5	T2, T3	T2W/T3W				
$\phi 20$	2.5	2.5	4.5	3.5	3.5	5.5	17	19	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
$\phi 25$	1.5	1.5	3.5	4.5	4.5	6.5	17	19	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
$\phi 32$	2.5	2.5	4.5	5.5	5.5	7.5	17	19	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
$\phi 40$	4.5	4.5	6.5	7.5	7.5	9.5	19	20	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
$\phi 50$	7.0	7.0	9.0	9.0	9.0	11.0	22	25	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
$\phi 63$	7.0	7.0	9.0	9.0	9.0	11.0	22	25	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)
$\phi 80$	9.0	9.0	11.0	16.0	16.0	18.0	28	28	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
$\phi 100$	9.5	9.5	11.5	15.5	15.5	17.5	28	28	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)

SCP\*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/  
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/  
MSDG

FC\*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd  
Contr

Ending