

SCM

Round shaped cylinder

ø20, ø25, ø32, ø40
ø50, ø63, ø80, ø100



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General Type

Overview

A medium bore (ø20 to ø100) series among general cylinders, with abundant bore sizes and variations, and a very smart appearance. This is the most compact cylinder among general type cylinders.

Features

Smart Appearance

Simple design that is also functionally excellent

Excellent Cushion Needle Adjustment

A knob is included with the cushion needle part, significantly improving adjustment work.

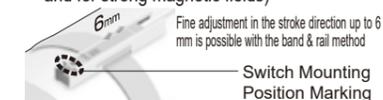
Easy Mounting Work

Good workability due to 4-bolt mounting. Furthermore, mounting with general tools is possible.

Selectable Switch Mounting Method

Band Type

- Switch mounting position is visible at a glance
The switch rail has markings for mounting at the highest sensitivity position, significantly reducing switch position setting time during maintenance. (Limited to stroke end detection. Excluding two-color indicator type and for strong magnetic fields)



- Switch can be rotated and moved freely
By simply loosening the fixing screw, the switch rail can be freely rotated and moved in the circumferential direction without changing the position of the band fixing part. Switch mounting and position adjustment on-site become easy.
- Prevention of fixing screw coming off
Anti-slip rubber is included with the inside of the band. It will not fall off even if the screw is loosened.

Fixed Rail Method

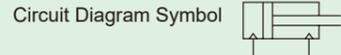
- Switch integrated into the rail
Ultra-compact switch neatly integrated into the switch rail. Lead wires can also be stored in the same rail. Cylinder switch movement and installation are easily possible with just screw adjustment.



Round shaped cylinder Double Acting/Single Rod Type

SCM Series

● Bore Size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



SCM Series

Model No. Notation Method

7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

8 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

9 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

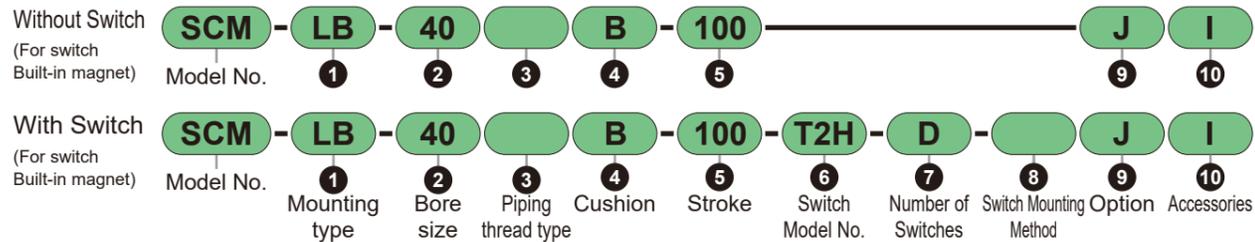
*1: For models with bellows, if the 1 mounting type is "LB" or "FA," the mounting brackets are shipped pre-assembled.
 *2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
 *3: If 8 switch mounting method "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

10 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B1	Single Bracket (ø80, ø100)
B2	Double Yoke Bracket (ø20 to ø63)

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Code	Content
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included) (ø20 to ø63)
CB	Double Clevis Type (Pin and Retaining Ring Included) (ø80, ø100)
TA	Rod Side Trunnion Type (ø20 to ø63)
TB	Head Side Trunnion Type (ø20 to ø63)

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	M5 (With air cushion, ø20, ø25 only) Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

*1: ø20, ø25 with air cushion cannot be selected.

4 Cushion

Code	Content
B	With Air Cushion on Both Sides
R	With Air Cushion on Rod Side
H	With Air Cushion on Head Side
D	With Rubber Cushion on Both Sides

5 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø32	10 to 1000	Every 1 mm
ø40 to ø100	10 to 1500	

Note: For number of switches mounted and min. stroke, see P. 326.

6 Switch Model No.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□
			—	—	—	—	T3PH□	T3PV□
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□
			—	—	—	—	T3WH□	T3WV□
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□
			—	—	—	5 to 20	T2YD□	—
			—	24 ± 10%	—	—	T2YDT□	—
		3-wire (NPN)	—	—	—	—	T2JH□	T2JV□
			—	—	—	—	T2HR3	T2VR3
			—	—	—	—	—	—
Reed	1-Color	No Indicator Lamp	110	12/24	7 to 20	5 to 50	T0H□	T0V□
			110	5/12/24	20 or less	50 or less	T5H□	T5V□
		2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□
	1-Color	Flexible Lead Wire Type	—	—	—	—	—	—
			—	—	—	—	—	—
			—	—	—	—	—	—

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
 1 m TOH
 3 m TOH 3
 5 m TOH 5

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Model No. Example)

SCM - - **XP5**

Clean Specification

(Catalog No. CB-033SAA)

●Dust prevention structure usable in cleanrooms

SCM - - **P7***

SCM - - **P5***

Food Manufacturing Process Compatible Specification

(Catalog No. CC-1271AA)

●Uses food grade grease that can be used in food manufacturing processes

SCM - - **FP1**

Rechargeable Battery Compatible Specification

(Catalog No. CC-1226AA)

●Design compatible with rechargeable battery manufacturing process

SCM - - **P4***

*Please contact us for details.

High Durability Components HP Series

(Catalog No. CC-1421AA)

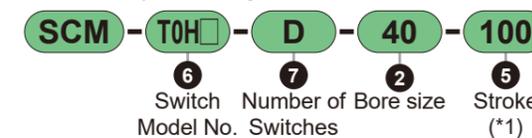
●Long-life actuator that contributes to productivity improvement with stable operation

SCM - - **HP***

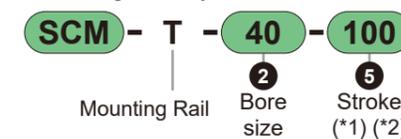
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

●Switch Body + Mounting Rail Set

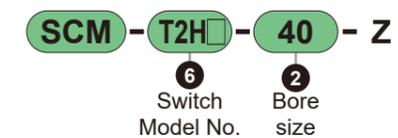


●Mounting Rail Only

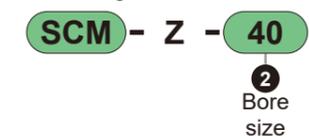


[Switch mounting: Band Type]

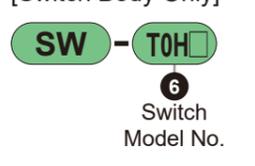
●Switch Body + Mounting Bracket Set + Band



●Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
 *2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM								
	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Bore Size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting Type								
Operating Fluid	Compressed Air								
Max. Working Pressure	MPa	1.0						0.05	
Min. Operating Pressure	MPa	0.1				0.05			
Proof Pressure	MPa	1.6							
Ambient Temperature	°C	-10 to 60 (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 0 (Up to 1000)		+1.4 0 (Up to 1500)	+2.3 0 (to 1000), +2.7 0 (to 1500)				
	With Air Cushion	+1.4 0 (Up to 1000)		+1.4 0 (Up to 1500)	+1.4 (to 1000), +1.8 (to 1500)				
Operating Piston Speed	mm/s	30 to 1000 (Use within allowable absorption energy.)							
Cushion	Rubber cushion/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 (When lubricating, use Turbine Oil ISO VG32)								
Allowable absorbed energy J	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 non-specified side when an air cushion is selected for the other side ("R"→ Head side, "H"→ Rod side) represents the allowable absorbed energy.

*2: Without a cushion, large energy generated by external load cannot be absorbed. Provide an external shock absorber.

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 100, 125,	1,000	10
ø25			
ø32			
ø40	150, 200, 250, 300	1500	10
ø50			
ø63			
ø80			
ø100			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25
ø80	10	25	10	25	10	25	10	25	10	25
ø100	10	25	10	25	10	25	10	25	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25
ø80	10	25	10	30	10	35	10	45	10	25
ø100	10	25	10	30	10	35	10	45	10	25

Cylinder Weight (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm With Switch Rail	Weight of Band per Switch
	Basic Type (OO)	Axial Foot Type (LB)	Flange Type (FA/FB)	Clevis Type	Trunnion Type (TA/TB)				
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight listed in the switch specifications on P. 971.	0.01	0.012	0.007
ø25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
ø32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
ø40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
ø50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
ø63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
ø80	2.04	3.00	2.75	2.75	-		0.07	0.072	0.010
ø100	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 at S = 0 mm 0.63 kg
- Added weight at 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	Operating 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
ø20	Push	-	31.4	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	-	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2	2.11×10^2	2.38×10^2	2.64×10^2
ø25	Push	-	49.1k	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	-	41.2	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2	3.30×10^2	3.71×10^2	4.12×10^2
ø32	Push	-	80.4	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	-	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	-	1.26×10^2	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	-	1.06×10^2	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	98.0	1.96×10^2	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	82.5	1.65×10^2	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	1.56×10^2	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	2.40×10^2	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	2.51×10^2	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	2.27×10^2	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	3.92×10^2	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	3.57×10^2	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

Mounting Bracket Model No. Notation Method

Bore Size (mm)	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket								
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
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Double Clevis (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	-	-

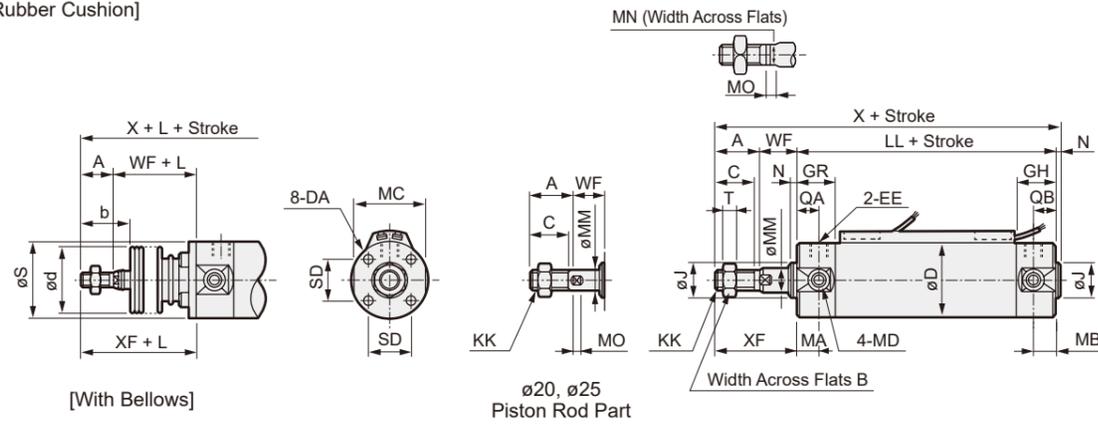
*1: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

● Basic type (OO)
[With Rubber Cushion]

• Switch Mounting Method: Rail Type



SCP3

CMK2

CMA2

SCM

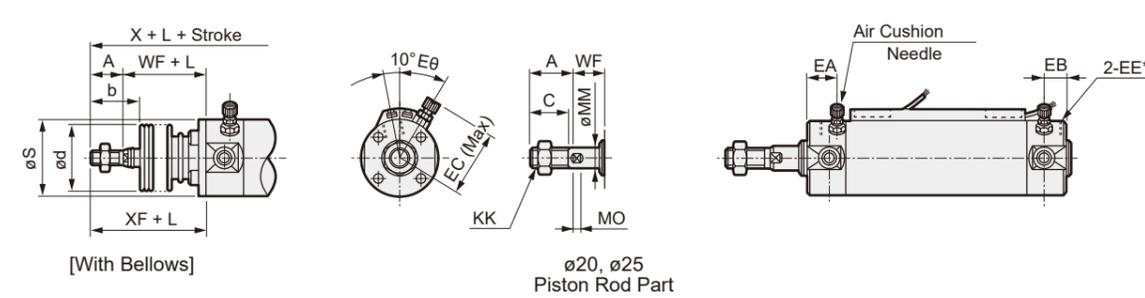
SCG

SCA2

SCS2

[With Air Cushion]

• Switch Mounting Method: Rail Type



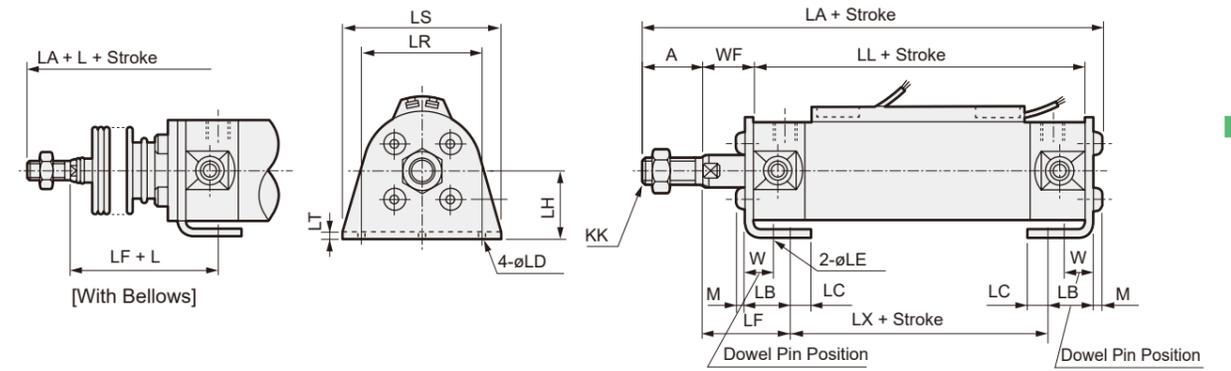
Code	Basic Type (OO) Basic Dimensions																	
	Bore Size (mm)																	
	A	B	C	D	DA	EE (*1)	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO
ø20	18	13	16	26	M4 Depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	8	6	4
ø25	22	17	20	31	M5 Depth 6.5	Rc1/8	17	19	14	M10 × 1.25	69	11	11	29	M6	10	8	5
ø32	22	17	20	38	M5 Depth 7.5	Rc1/8	17	19	18	M10 × 1.25	71	11	10	36	M8	12	10	5.5
ø40	30	22	27	47	M6 Depth 12	Rc1/8	19	20	25	M14 × 1.5	78	12	10	44	M10	16	14	6
ø50	35	27	32	58	M8 Depth 16	Rc1/4	22	25	30	M18 × 1.5	90	13	12	55	M12	20	17	8
ø63	35	27	32	72	M10 Depth 16	Rc1/4	22	25	32	M18 × 1.5	90	13	12	69	M14	20	17	8
ø80	40	32	37	89	M10 Depth 22	Rc3/8	28	28	40	M22 × 1.5	108	-	-	80	-	25	22	11
ø100	40	41	37	110	M12 Depth 22	Rc1/2	28	28	50	M26 × 1.5	108	-	-	100	-	30	27	13

Code	Basic Type (OO) Basic Dimensions																		
	Bore Size (mm)																		
	With Bellows								With Air Cushion										
	N	QA	QB	SD	T	WF	X	XF	b	d	s	L			EA	EB	EC	EE* (*1)	Eθ
ø20	2	12	10	14	5	17	106	35	30	30	25.7	(Stroke / 3) + 18.5			14	12	27	M5	30°
ø25	2	12	10	16.5	6	18	111	40	35	30	30.7	(Stroke / 3) + 20.5			14	12	29.5	M5	30°
ø32	2	12	10	20	6	18	113	40	31.5	35	37.7	(Stroke / 3) + 19			14	12	32.8	Rc1/8	25°
ø40	2	13	12	26	8	20	130	50	40	35	46.7	(Stroke / 3) + 18.5			15	14	36.6	Rc1/8	20°
ø50	2	15	12	32	11	23	150	58	46	40	57.7	(Stroke / 3.6) + 18.5			18.5	15.5	43	Rc1/4	20°
ø63	2	15	12	38	11	23	150	58	46	40	71.7	(Stroke / 3.6) + 18.5			18.5	15.5	50	Rc1/4	20°
ø80	3	15	15	50	13	31	182	71	55	50	88.7	(Stroke / 4.3) + 14.5			20	20	58.5	Rc3/8	20°
ø100	3	15	15	60	16	31	182	71	56	60	109.7	(Stroke / 4.5) + 21			20	20	69	Rc1/2	20°

1: For ø20, ø25 with air cushion, the piping port (EE) is different. Refer to the dimension table for with air cushion (EE).
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing (Bore Size: ø20 to ø100)

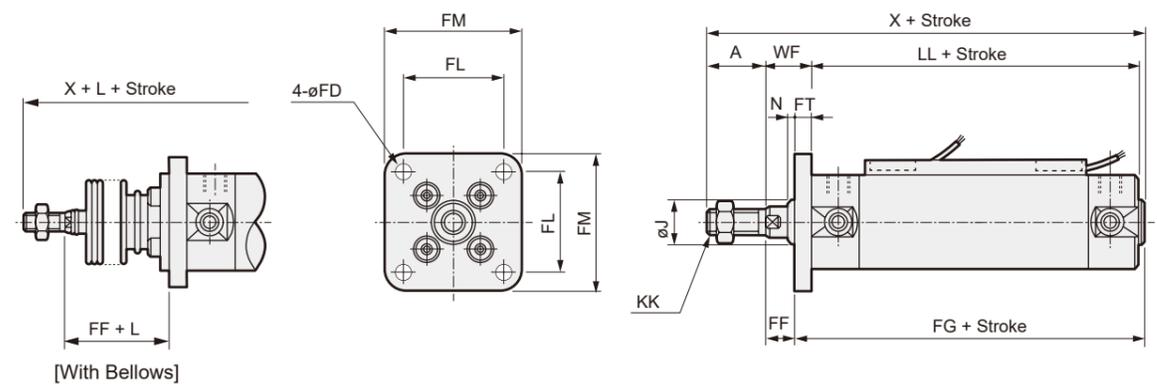
● Axial foot type (LB)



Code	Axial Foot Type (LB) Mounting Dimensions																	
	Bore Size (mm)																	
	A	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF	L
ø20	18	M8	109.8	15.1	7.1	5.7	4	28.9	20	69	32	44	3.2	45.2	2.6	10	17	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	115.6	15.1	7.1	5.7	4	29.9	22	69	36	49	3.2	45.2	3.4	10	18	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	117.6	16.1	8.1	6.8	4	30.9	25	71	44	58	3.2	45.2	3.4	10	18	(Stroke / 3) + 19
ø40	30	M14 × 1.5	135.2	16.6	9.1	6.8	4	33.4	30	78	54	71	3.2	51.2	4	10	20	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	157.5	22	11	9	5	40.5	40	90	66	86	4.5	55	5	17.5	23	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	157.5	22	13	11	5	40.5	45	90	82	106	4.5	55	5	17.5	23	(Stroke / 3.6) + 18.5
ø80	40	M22 × 1.5	189.5	28.5	14	11	6	55	55	108	100	125	4.5	60	6	20	31	(Stroke / 4.3) + 14.5
ø100	40	M26 × 1.5	192	30	16	14	6	55	65	108	120	150	6	60	7	20	31	(Stroke / 4.5) + 21

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

● Rod Side Flange Type (FA)

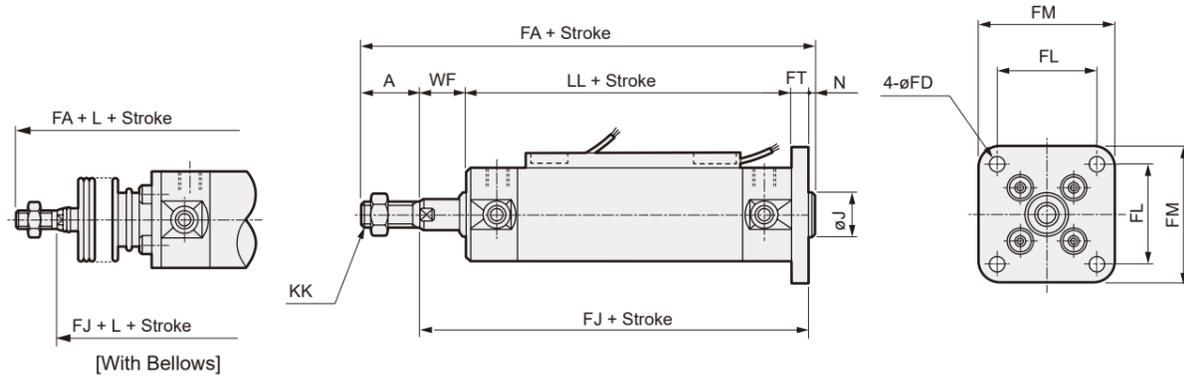


Code	Rod Side Flange Type (FA) Mounting Dimensions																
	Bore Size (mm)																
	A	FD	FF	FG	FL	FM	J	KK	LL	FT	N	WF	X	L			
ø20	18	5.5	11	77	28	40	12	M8	69	6	2	17	106	(Stroke / 3) + 18.5			
ø25	22	5.5	11	78	32	44	14	M10 × 1.25	69	7	2	18	111	(Stroke / 3) + 20.5			
ø32	22	6.6	11	80	38	53	18	M10 × 1.25	71	7	2	18	113	(Stroke / 3) + 19			
ø40	30	6.6	12	88	46	61	25	M14 × 1.5	78	8	2	20	130	(Stroke / 3) + 18.5			
ø50	35	9	14	101	58	76	30	M18 × 1.5	90	9	2	23	150	(Stroke / 3.6) + 18.5			
ø63	35	11	14	101	70	92	32	M18 × 1.5	90	9	2	23	150	(Stroke / 3.6) + 18.5			
ø80	40	11	20	122	82	104	40	M22 × 1.5	108	11	3	31	182	(Stroke / 4.3) + 14.5			
ø100	40	13	17	125	100	128	50	M26 × 1.5	108	14	3	31	182	(Stroke / 4.5) + 21			

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing (Bore Size: $\phi 20$ to $\phi 100$)

- Head Side Flange Type (FB)



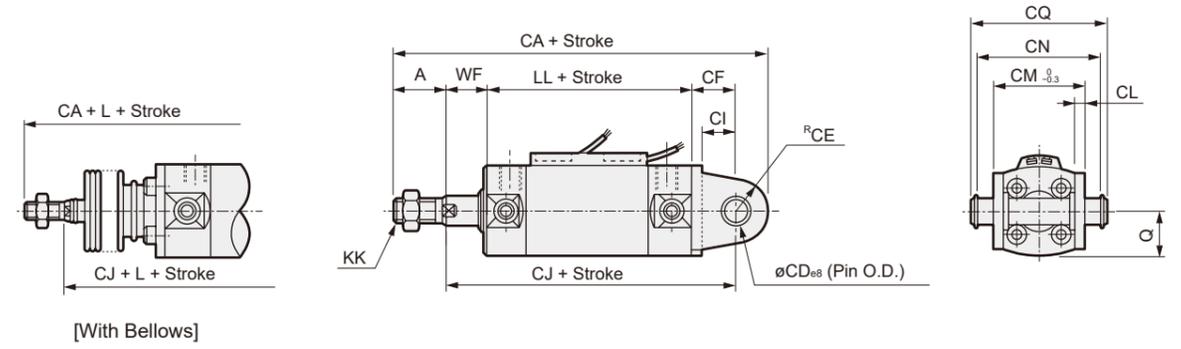
Code	Rod Side Flange Type (FB) Mounting Dimensions														With Bellows
	Bore Size (mm)	A	FA	FD	FJ	FL	FM	FT	J	KK	LL	N	WF	L	
SCM	$\phi 20$	18	112	5.5	92	28	40	6	12	M8	69	2	17	(Stroke / 3) + 18.5	
SCG	$\phi 25$	22	118	5.5	94	32	44	7	14	M10 × 1.25	69	2	18	(Stroke / 3) + 20.5	
SCA2	$\phi 32$	22	120	6.6	96	38	53	7	18	M10 × 1.25	71	2	18	(Stroke / 3) + 19	
SCS2	$\phi 40$	30	138	6.6	106	46	61	8	25	M14 × 1.5	78	2	20	(Stroke / 3) + 18.5	
	$\phi 50$	35	159	9	122	58	76	9	30	M18 × 1.5	90	2	23	(Stroke / 3.6) + 18.5	
	$\phi 63$	35	159	11	122	70	92	9	32	M18 × 1.5	90	2	23	(Stroke / 3.6) + 18.5	
	$\phi 80$	40	193	11	150	82	104	11	40	M22 × 1.5	108	3	31	(Stroke / 4.3) + 14.5	
	$\phi 100$	40	196	13	153	100	128	14	50	M26 × 1.5	108	3	31	(Stroke / 4.5) + 21	

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting/Single Rod Type

Outline Dimension Drawing (Bore Size: $\phi 20$ to $\phi 63$)

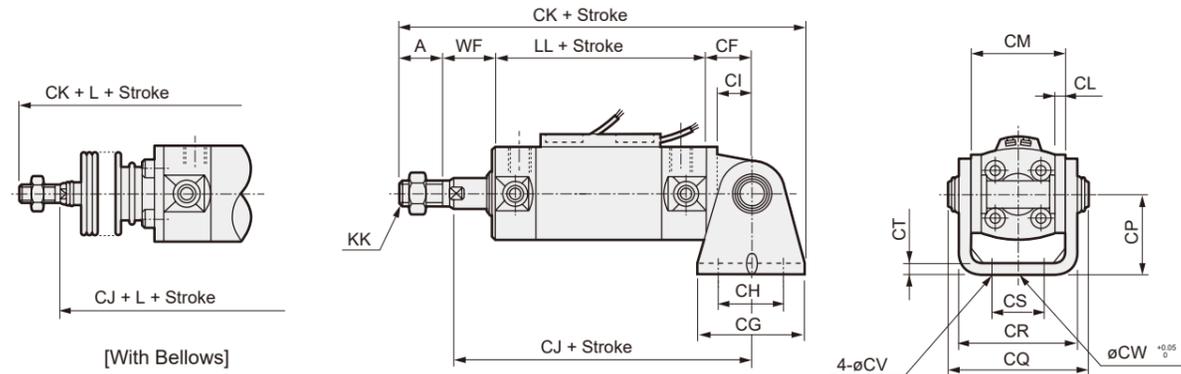
- Single Yoke Clevis Type (CA)



Code	Single Clevis Type (CA) Mounting Dimensions															With Bellows	
	Bore Size (mm)	A	CA	CD	CE	CF	CI	CJ	CL	CM	CN	CQ	KK	LL	Q	WF	L
SCM	$\phi 20$	18	129	8	11	14	10.8	100	3.2	29	38.6	43.4	M8	69	13	17	(Stroke / 3) + 18.5
SCG	$\phi 25$	22	138	10	13	16	12.8	103	3.2	33	42.6	48	M10 × 1.25	69	15.5	18	(Stroke / 3) + 20.5
SCA2	$\phi 32$	22	145.5	12	15	19.5	15.5	108.5	4.5	40	54	59.4	M10 × 1.25	71	19	18	(Stroke / 3) + 19
SCS2	$\phi 40$	30	167.5	14	18	21.5	17.5	119.5	4.5	49	65	71.4	M14 × 1.5	78	23.5	20	(Stroke / 3) + 18.5
	$\phi 50$	35	192.5	16	20	24.5	19	137.5	6	60	79.6	86	M18 × 1.5	90	29	23	(Stroke / 3.6) + 18.5
	$\phi 63$	35	199.5	18	22	29.5	22	142.5	8	74	97.8	105.4	M18 × 1.5	90	36	23	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

- Single Yoke Clevis Type (CA) with Bracket (Option code B2)

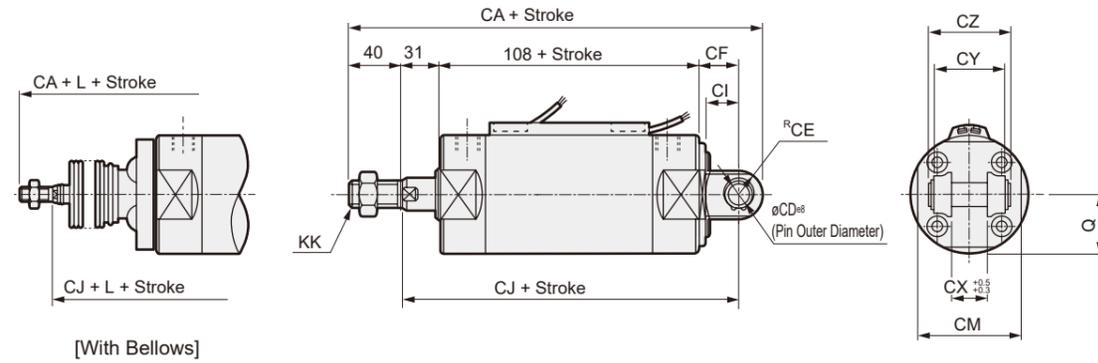


Code	Single Clevis Type (CA) With Bracket (Option code B2) Mounting Dimensions																			With Bellows	
	Bore Size (mm)	A	CF	CG	CH	CI	CJ	CK	CL	CM	CP	CQ	CR	CS	CT	Cv	CW	KK	LL	WF	L
SCM	$\phi 20$	18	14	42	28	10.8	100	139	3.2	29	25	43.4	35.8	16	3.2	5.5	10	M8	69	17	(Stroke / 3) + 18.5
SCG	$\phi 25$	22	16	42	28	12.8	103	146	3.2	33	30	48	39.8	20	3.2	5.5	10	M10 × 1.25	69	18	(Stroke / 3) + 20.5
SCA2	$\phi 32$	22	19.5	48	28	15.5	108.5	154.5	4.5	40	35	59.4	49.4	22	4.5	6.6	10	M10 × 1.25	71	18	(Stroke / 3) + 19
SCS2	$\phi 40$	30	21.5	56	30	17.5	119.5	177.5	4.5	49	40	71.4	58.4	30	4.5	6.6	10	M14 × 1.5	78	20	(Stroke / 3) + 18.5
	$\phi 50$	35	24.5	64	36	19	137.5	204.5	6	60	50	86	72.4	36	6	9	20	M18 × 1.5	90	23	(Stroke / 3.6) + 18.5
	$\phi 63$	35	29.5	74	46	22	142.5	214.5	8	74	60	105.4	90.4	46	7.5	11	20	M18 × 1.5	90	23	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing (Bore Size: ø80 to ø100)

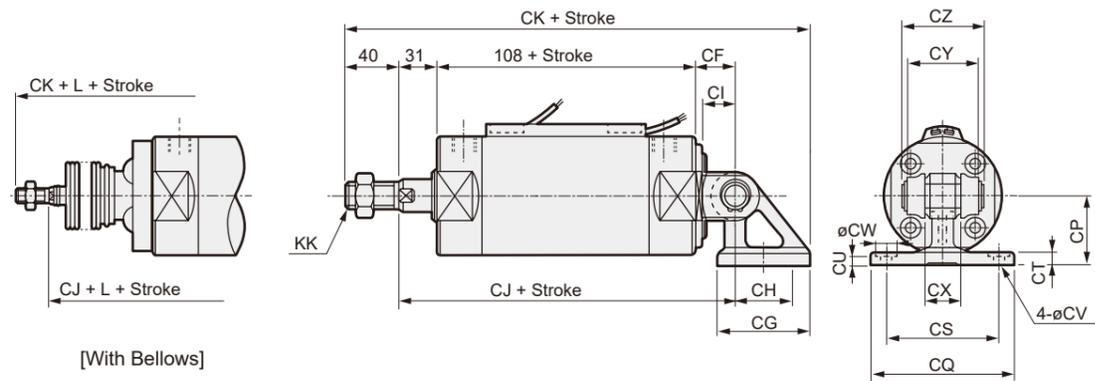
● Double clevis type (CB)



Code	Double Clevis Type (CB) Mounting Dimensions												With Bellows
	Bore Size (mm)	CA	CD	CE	CF	CI	CJ	CM	CX	CY	CZ	KK	Q
ø80	232	18	18	35	25	174	80	28	56	64	M22 × 1.5	44.5	(Stroke / 4.3) + 14.5
ø100	244	22	22	43	31	182	100	32	64	72	M26 × 1.5	55	(Stroke / 4.5) + 21

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

● Double clevis type (CB) with bracket (Option code B1)



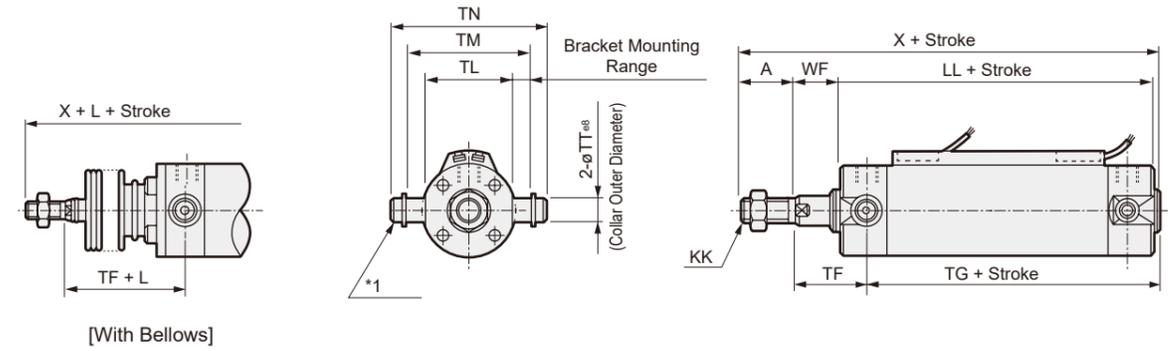
Code	Double Clevis Type (CB) With Bracket (Option code B1) Mounting Dimensions															With Bellows		
	Bore Size (mm)	CF	CG	CH	CI	CJ	CK	CP	CQ	CS	CT	CU	CW	Cv	CX	CY	CZ	KK
ø80	35	72	45	25	174	272.5	55	110	85	11	8	21	11	28	56	64	M22 × 1.5	(Stroke / 4.3) + 14.5
ø100	43	93	60	31	182	298.5	65	130	100	12	9	24	13.5	32	64	72	M26 × 1.5	(Stroke / 4.5) + 21

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting/Single Rod Type

Outline Dimension Drawing (Bore Size: ø20 to ø63)

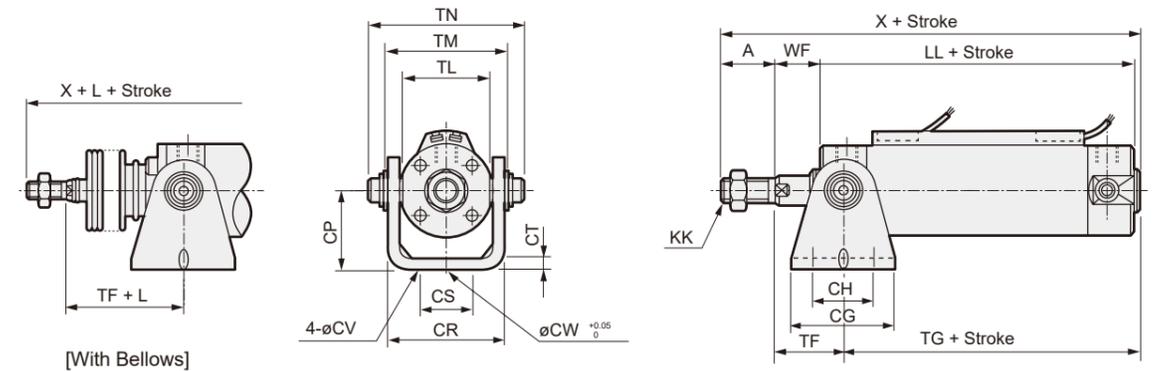
● Rod side trunnion type (TA)



Code	Rod Side Trunnion Type (TA) Mounting Dimensions											With Bellows
	Bore Size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X
ø20	18	M8	69	28	60	28	39	47.6	8	17	106	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	69	29	60	33	43	53	10	18	111	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	71	29	62	40	54.5	67.7	12	18	113	(Stroke / 3) + 19
ø40	30	M14 × 1.5	78	32	68	49	65.9	81.1	14	20	130	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	90	36	79	60	80	98.6	16	23	150	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	90	36	79	74	98	119.2	18	23	150	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

● Rod Side Trunnion (TA) With Bracket (Option code: B2)

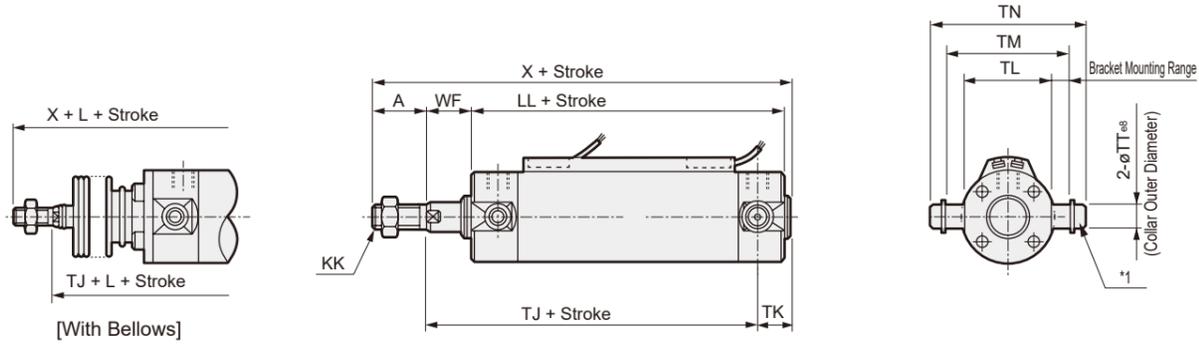


Code	Rod Side Trunnion Type (TA) with Bracket (Option code B2) Mounting Dimensions																With Bellows		
	Bore Size (mm)	A	CG	CH	CP	CR	CS	CT	Cv	CW	KK	LL	TF	TG	TL	TM	TN	WF	X
ø20	18	42	28	25	35.8	16	3.2	5.5	10	M8	69	28	60	28	39	47.6	17	106	(Stroke / 3) + 18.5
ø25	22	42	28	30	39.8	20	3.2	5.5	10	M10 × 1.25	69	29	60	33	43	53	18	111	(Stroke / 3) + 20.5
ø32	22	48	28	35	49.4	22	4.5	6.6	10	M10 × 1.25	71	29	62	40	54.5	67.7	18	113	(Stroke / 3) + 19
ø40	30	56	30	40	58.4	30	4.5	6.6	10	M14 × 1.5	78	32	68	49	65.9	81.1	20	130	(Stroke / 3) + 18.5
ø50	35	64	36	50	72.4	36	6	9	20	M18 × 1.5	90	36	79	60	80	98.6	23	150	(Stroke / 3.6) + 18.5
ø63	35	74	46	60	90.4	46	7.5	11	20	M18 × 1.5	90	36	79	74	98	119.2	23	150	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing (Bore Size: $\phi 20$ to $\phi 63$)

● Head Side Trunnion Type (TB)



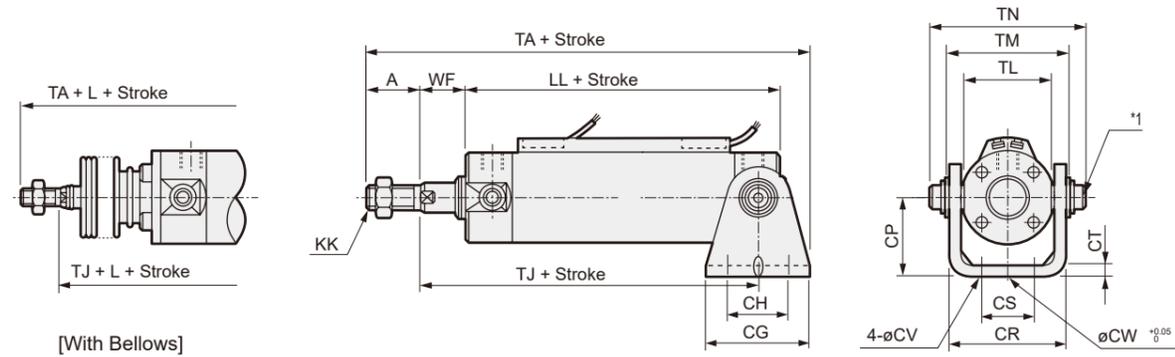
Code	Head Side Trunnion Type (TB) Mounting Dimensions											With Bellows	
	Bore Size (mm)	A	KK	LL	TJ	TK	TL	TM	TN	TT	WF	X	L
CMK2	$\phi 20$	18	M8	69	75	13	28	39	47.6	8	17	106	(Stroke / 3) + 18.5
CMA2	$\phi 25$	22	M10 × 1.25	69	76	13	33	43	53	10	18	111	(Stroke / 3) + 20.5
SCM	$\phi 32$	22	M10 × 1.25	71	79	12	40	54.5	67.7	12	18	113	(Stroke / 3) + 19
	$\phi 40$	30	M14 × 1.5	78	88	12	49	65.9	81.1	14	20	130	(Stroke / 3) + 18.5
SCG	$\phi 50$	35	M18 × 1.5	90	101	14	60	80	98.6	16	23	150	(Stroke / 3.6) + 18.5
	$\phi 63$	35	M18 × 1.5	90	101	14	74	98	119.2	18	23	150	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.

*2: For dimensions with each switch, see P. 468 to 473.

*3: For outer dimensions diagram of accessories, refer to P. 336.

● Head Side Trunnion (TB) With Bracket (Option code: B2)



Code	Head Side Trunnion Type (TB) With Bracket (Option code B2) Mounting Dimensions																With Bellows		
	Bore Size (mm)	A	CG	CH	CP	CR	CS	CT	Cv	CW	KK	LL	TA	TJ	TL	TM	TN	WF	L
CMK2	$\phi 20$	18	42	28	25	35.8	16	3.2	5.5	10	M8	69	114	75	28	39	47.6	17	(Stroke / 3) + 18.5
CMA2	$\phi 25$	22	42	28	30	39.8	20	3.2	5.5	10	M10 × 1.25	69	119	76	33	43	53	18	(Stroke / 3) + 20.5
SCM	$\phi 32$	22	48	28	35	49.4	22	4.5	6.6	10	M10 × 1.25	71	125	79	40	54.5	67.7	18	(Stroke / 3) + 19
	$\phi 40$	30	56	30	40	58.4	30	4.5	6.6	10	M14 × 1.5	78	146	88	49	65.9	81.1	20	(Stroke / 3) + 18.5
SCG	$\phi 50$	35	64	36	50	72.4	36	6	9	20	M18 × 1.5	90	168	101	60	80	98.6	23	(Stroke / 3.6) + 18.5
	$\phi 63$	35	74	46	60	90.4	46	7.5	11	20	M18 × 1.5	90	173	101	74	98	119.2	23	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.

*2: For dimensions with each switch, see P. 468 to 473.

*3: For outer dimensions diagram of accessories, refer to P. 336.

MEMO

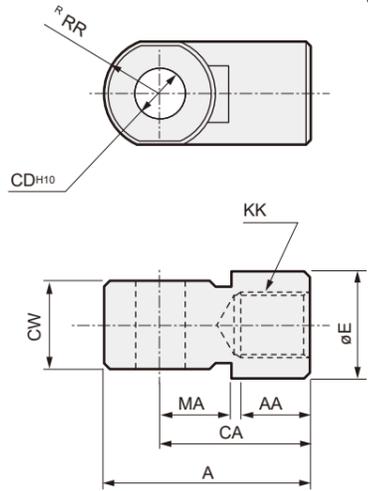
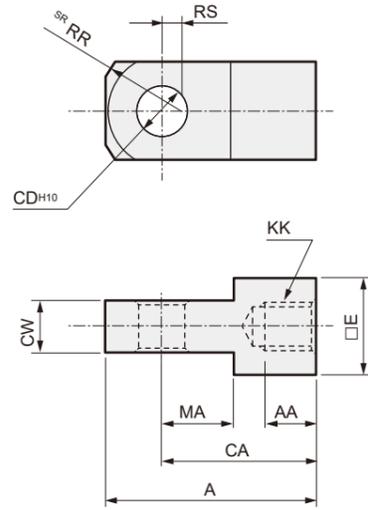
Accessories Outline Dimension Drawing

- Single Yoke Knuckle
- SCM-I- $\phi 20$ to $\phi 32$

Material: Steel
Chromate

- SCM-I- $\phi 40$ to $\phi 100$

Material: Cast Iron
Painting



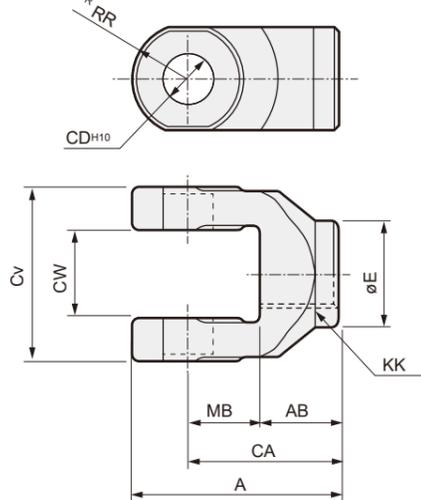
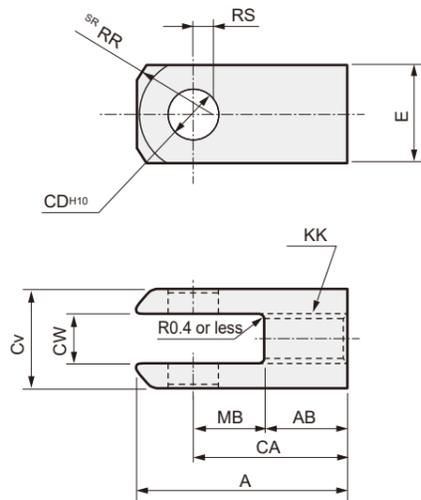
Model No.	Applicable Bore Size (mm)	A	AA	CA	CD	CW	E	KK	MA	RR	RS	Weight (g)
SCM-I-20	20	34	8.5	25	8	8 ^{-0.2/-0.4}	16	M8	11.5	13.4	3.1	39
SCM-I-25	25, 32	41	10.5	30	10	10 ^{-0.2/-0.4}	20	M10 × 1.25	14	17.1	4.5	72
SCM-I-40	40	42	14	30	10	18 ^{-0.3/-0.5}	22	M14 × 1.5	14	12	-	152
SCM-I-50	50, 63	56	18	40	14	22 ^{-0.3/-0.5}	28	M18 × 1.5	20	16	-	158
SCM-I-80	80	71	21	50	18	28 ^{-0.3/-0.5}	38	M22 × 1.5	27	21	-	395
SCM-I-100	100	79	21	55	22	32 ^{-0.3/-0.5}	44	M26 × 1.5	31	24	-	564

- Double Knuckle
- SCM-Y- $\phi 20$ to $\phi 32$

Material: Steel
Chromate

- SCM-Y- $\phi 40$ to $\phi 100$

Material: Cast Iron
Painting



Model No.	Applicable Bore Size (mm)	A	AB	CA	CD	Cv	CW	E	KK	MB	RR	RS	Applicable Pin Part Number	Weight (g)
SCM-Y-20	20	34	13.5	25	8	16	8 ^{+0.4/+0.2}	16	M8	11.5	13.4	3.1	SCM-P-20	46
SCM-Y-25	25, 32	41	16	30	10	20	10 ^{+0.4/+0.2}	20	M10 × 1.25	14	17.1	4.5	SCM-P-25	85
SCM-Y-40	40	42	16	30	10	36	18 ^{+0.5/+0.3}	22	M14 × 1.5	14	12	-	SCM-P-40	122
SCM-Y-50	50, 63	56	20	40	14	44	22 ^{+0.5/+0.3}	28	M18 × 1.5	20	16	-	SCM-P-50	258
SCM-Y-80	80	71	23	50	18	56	28 ^{+0.5/+0.3}	38	M22 × 1.5	27	21	-	SCM-P-80	590
SCM-Y-100	100	79	24	55	22	64	32 ^{+0.5/+0.3}	44	M26 × 1.5	31	24	-	SCM-P-100	909

Note: Note: Pin and retaining ring are included.

Accessories Outline Dimension Drawing

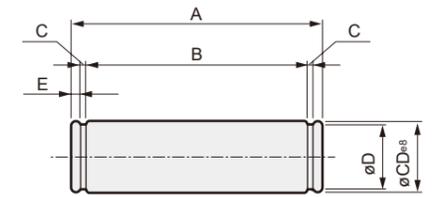
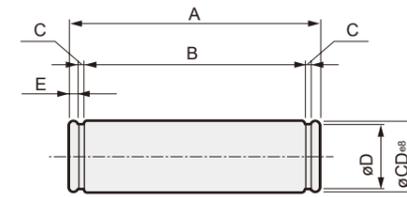
Accessories Outline Dimension Drawing

- Pin for Clevis

Material: Steel
Chromate

- Pin for Knuckle

Material: Steel
Chromate



Model No.	Applicable Bore size (mm)	A	B	C	CD	D	E	To Be Used Retaining ring	Weight (g)
SCM-P1-20	20	43.4	38.6	0.9	8	7.6	1.5	Shaft C-type 8	17
SCM-P1-25	25	48	42.6	1.15	10	9.6	1.6	C-type for Shaft 10	30
SCM-P1-32	32	59.4	54	1.15	12	11.5	1.6	C-type for Shaft 12	52
SCM-P1-40	40	71.4	65	1.15	14	13.4	2.1	C-type 14 for Shaft	85
SCM-P1-50	50	86	79.6	1.15	16	15.2	2.1	C-type for Shaft 16	133
SCM-P1-63	63	105.4	97.8	1.35	18	17	2.5	C-type for Shaft 18	207

*1: Pin and retaining ring are included to single clevis type and double clevis type.
*2: $\phi 80$, $\phi 100$ are common with knuckle pins.

Model No.	Applicable Bore size (mm)	A	B	C	CD	D	E	To Be Used Retaining ring	Weight (g)
SCM-P-20	20	21	16.2	0.9	8	7.6	1.5	Shaft C-type 8	9
SCM-P-25	25, 32	25.6	20.2	1.15	10	9.6	1.6	C-type for Shaft 10	16
SCM-P-40	40	41.6	36.2	1.15	10	9.6	1.6	C-type for Shaft 10	26
SCM-P-50	50, 63	50.6	44.2	1.15	14	13.4	2.1	C-type 14 for Shaft	60
SCM-P-80	80	64	56.2	1.35	18	17	2.6	C-type for Shaft 18	126
SCM-P-100	100	72	64.2	1.35	22	21	2.6	C-type for Shaft 22	213

*1: Pin and retaining ring are included to double knuckle.

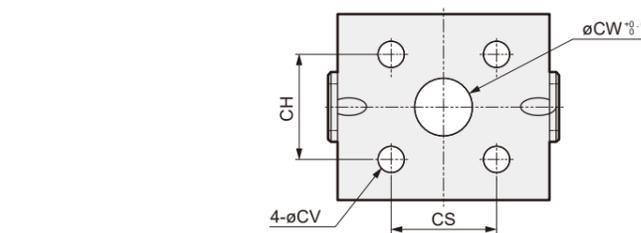
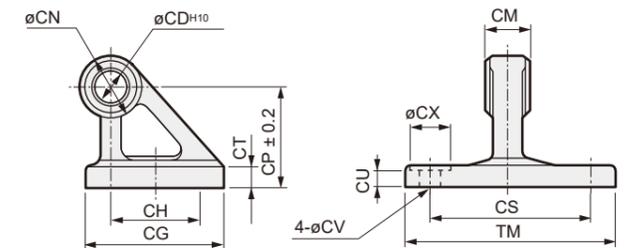
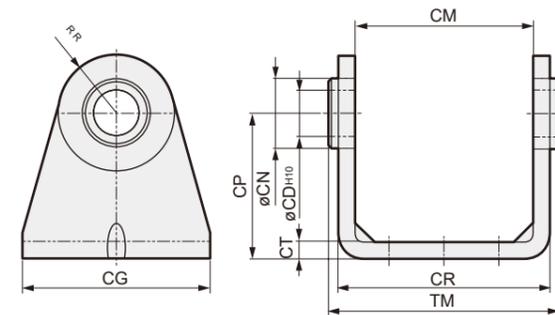
- 2nd bracket

- Double Bracket (B2)
- SCM-B2- $\phi 20$ to $\phi 63$

Material: Steel
Chromate

- Single Bracket (B1)
- SCM-B1- $\phi 80$ to $\phi 100$

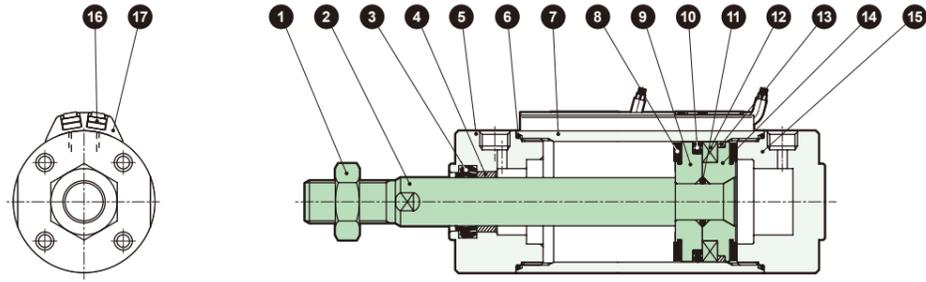
Material: Cast Iron
Painting



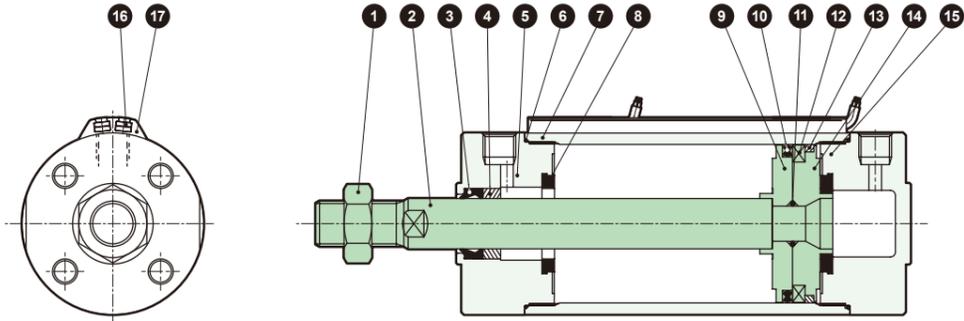
Model No.	Applicable Bore size (mm)	CD	CG	CH	CM	CN	CP	CR	CS	CT	CU	Cv	CW	CX	R	TM	Weight (g)
SCM-B2-20	20	8	42	28	29 ^{+0.4/+0.1}	13	25	35.8	16	3.2	-	5.5	10	-	11	38	72
SCM-B2-25	25	10	42	28	33 ^{+0.4/+0.1}	15	30	39.8	20	3.2	-	5.5	10	-	13	42	90
SCM-B2-32	32	12	48	28	40 ^{+0.5/+0.1}	17	35	49.4	22	4.5	-	6.6	10	-	15	53.4	166
SCM-B2-40	40	14	56	30	49 ^{+0.5/+0.1}	21	40	58.4	30	4.5	-	6.6	10	-	18	64.4	239
SCM-B2-50	50	16	64	36	60 ^{+0.5/+0.1}	24	50	72.4	36	6	-	9	20	-	20	78.8	417
SCM-B2-63	63	18	74	46	74 ^{+0.7/+0.1}	26	60	90.4	46	7.5	-	11	20	-	22	96.6	754
SCM-B1-80	80	18	72	45	28 ^{-0.1/-0.3}	36	55	-	85	11	8	11	-	21	-	110	1,000
SCM-B1-100	100	22	93	60	32 ^{-0.1/-0.3}	50	65	-	100	12	9	13.5	-	24	-	130	1735

Internal Structure Diagram / Material (With Rubber Cushion)

● ϕ 20 to ϕ 40



● ϕ 50 to ϕ 100



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	10	Piston Packing	Nitrile Rubber	
2	Piston Rod	ϕ 20, ϕ 25: Stainless Steel ϕ 32 to ϕ 100: Steel	Industrial Hard Chrome Plating	11	Piston Gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		12	Magnet	Plastic	
4	Bushing	Oil-Impregnated Bearing Alloy		13	Wear Ring	Polyacetal	
5	Rod Cover	Aluminum Alloy	Hard Anodized	14	Piston H	Aluminum Alloy	
6	Cylinder Gasket	Nitrile Rubber		15	Head Cover	Aluminum Alloy	Hard Anodized
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	With Switch			
8	Cushion Rubber	Urethane Rubber		16	Switch		
9	Piston R	Aluminum Alloy		17	Mounting Rail	Aluminum Alloy, Double-Sided Tape	

Mounting Bracket Material

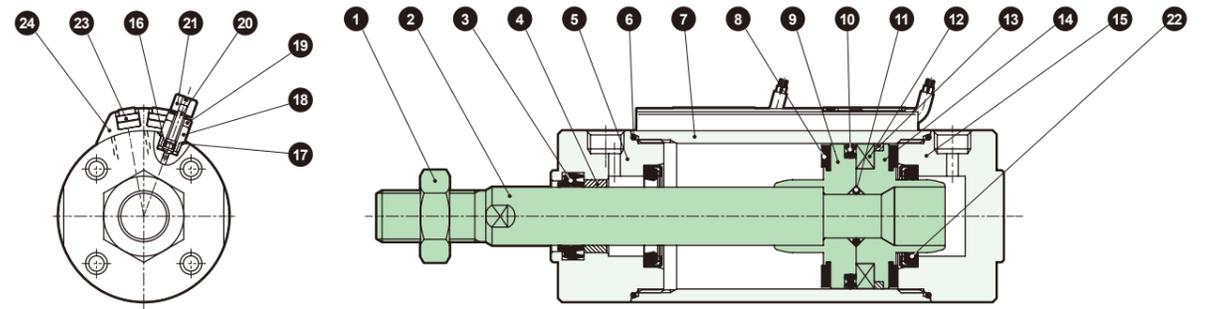
Mounting type	Material
Foot (LB)	Steel
Flange (FA / FB)	ϕ 20 to ϕ 40: Aluminum Alloy ϕ 50 to ϕ 100: Steel
Trunnion (TA / TB)	Steel
Single Clevis (CA)	Steel
Double Clevis (CB)	Cast Iron

For maintenance parts, please visit the CKD Equipment Product Site
(<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts

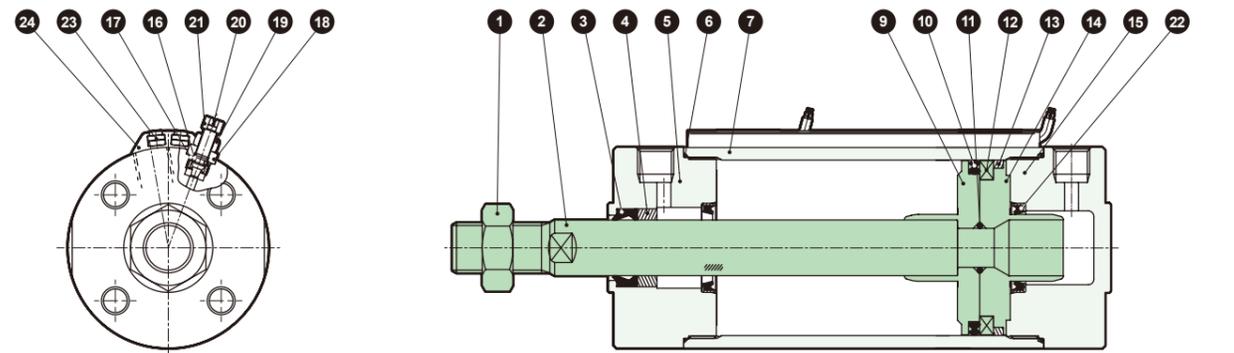
Internal Structure Diagram / Material

Internal Structure Diagram / Material (With Air Cushion)

● ϕ 20 to ϕ 40



● ϕ 50 to ϕ 100



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	14	Piston H	Aluminum Alloy	
2	Piston Rod	ϕ 20, ϕ 25: Stainless Steel ϕ 32 to ϕ 100: Steel	Industrial Hard Chrome Plating	15	Head Cover	Aluminum Alloy	Hard Anodized
3	Rod Packing	Nitrile Rubber		16	Needle Gasket	Nitrile Rubber	
4	Bushing	Oil-Impregnated Bearing Alloy		17	Holder Gasket	Nitrile Rubber	
5	Rod Cover	Aluminum Alloy	Hard Anodized	18	Needle Holder	Aluminum Alloy	
6	Cylinder Gasket	Nitrile Rubber		19	Lock Nut	Steel	Nickel Plating
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	20	Needle	Stainless Steel	
8	Cushion Rubber	Urethane Rubber		21	Knob	Aluminum Alloy	Chromate
9	Piston R	Aluminum Alloy		22	Cushion Packing	Nitrile Rubber, Steel	
10	Piston Packing	Nitrile Rubber		With Switch			
11	Piston Gasket	Nitrile Rubber		23	Switch		
12	Magnet	Plastic		24	Mounting Rail	Aluminum Alloy, Double-Sided Tape	
13	Wear Ring	Polyacetal					

For maintenance parts, please visit the CKD Equipment Product Site
(<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

Cylinder Switch

Ending



Round shaped cylinder
Single Acting, Push Type

SCM-X Series

● Bore Size: ø20, ø25, ø32, ø40

Circuit Diagram Symbol



SCM-X Series

Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

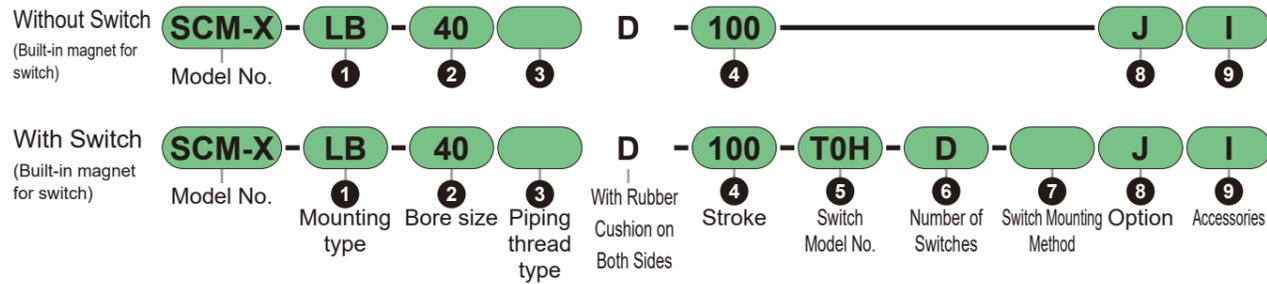
- *1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.
- *2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
- *3: "Q" (switch rail attached at shipment) is not available for "Z" 7 switch mounting.

9 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B2	Double Yoke Bracket

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Code	Content
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included)
TA	Rod Side Trunnion Type
TB	Head Side Trunnion Type

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø40	5 to 200	Every 1 mm

Note: For number of switches mounted and min. stroke, see P. 342.

5 Switch Model No.

For switch details, please refer to 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□
			—	—	—	—	T3PH□	T3PV□
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□
			—	—	—	—	T3WH□	T3WV□
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□
			—	—	—	5 to 20	T2YD□	—
			—	24 ± 10%	—	—	T2YDT□	—
		3-wire (NPN)	—	30 or less	—	50 or less	T2JH□	T2JV□
			—	—	—	—	T2HR3	T2VR3
			—	—	—	—	—	—
Reed	1-Color	No Indicator Lamp	110	12/24	7 to 20	5 to 50	T0H□	T0V□
			110	5/12/24	20 or less	50 or less	T5H□	T5V□
		2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□
	1-Color	Flexible Lead Wire Type	—	—	—	—	—	—
			—	—	—	—	—	—
			—	—	—	—	—	—

- *1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.
- *2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
- *3: This does not guarantee the water resistance of the cylinder.
- *4: T8H/V switches cannot be mounted when the switch mounting type is the rail type.
- *5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H ③
5 m T0H ⑤

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

SCM - X - - FP1

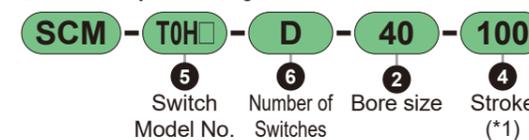
Model No. Example)

SCM - X - - XP5

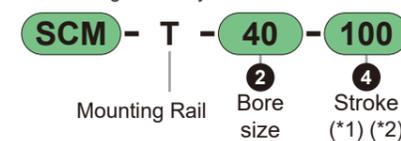
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

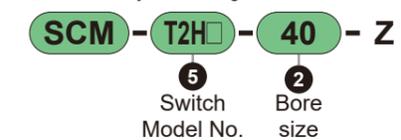


● Mounting Rail Only

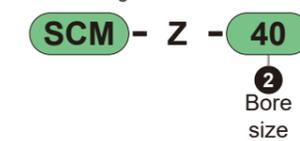


[Switch mounting: Band Type]

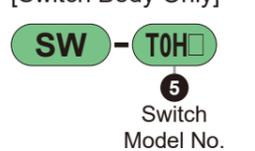
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



- *1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
- *2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-X				
	mm	ø20	ø25	ø32	ø40
Bore Size	mm	ø20	ø25	ø32	ø40
Actuation method	Single Acting, Push Type				
Operating Fluid	Compressed Air				
Max. Working Pressure	MPa	1.0			
Min. Operating Pressure	MPa	0.2			
Proof Pressure	MPa	1.6			
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)			
Port Size	Rc1/8				
Stroke tolerance	mm	+2.0			
		0			
Operating Piston Speed	mm/s	50 to 1000 (Use within allowable absorption energy.)			
Cushion	Rubber Cushion				
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)				
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9

Note: Do not leave single acting cylinders pressurized. If left pressurized, the piston rod may not return by spring load when the pressure is released.

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 100, 125, 150, 200	200	5
ø25			
ø32			
ø40			

Note: Intermediate strokes can be produced in 1 mm increments.

Spring Load (Unit: N)

Bore Size (mm)	At Stroke 0 mm	At Full Stroke Operation
ø20	11.8	38
ø25	12.5	40.2
ø32	24.3	54.9
ø40	28.4	100

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)										
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)										
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

● Stroke: 5 to 50 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (With Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.15	0.26	0.18	0.20	0.16	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.24	0.37	0.28	0.32	0.26		0.014	0.016	0.007
ø32	0.36	0.52	0.42	0.51	0.39		0.018	0.020	0.007
ø40	0.59	0.81	0.67	0.82	0.64		0.030	0.032	0.007

● Stroke: 51 to 100 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (With Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.19	0.30	0.22	0.24	0.20	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.32	0.45	0.36	0.40	0.34		0.014	0.016	0.007
ø32	0.46	0.62	0.52	0.61	0.49		0.018	0.020	0.007
ø40	0.76	0.98	0.84	0.99	0.81		0.030	0.032	0.007

● Stroke: 101 to 150 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (With Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.24	0.35	0.27	0.29	0.25	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.39	0.52	0.43	0.47	0.41		0.014	0.016	0.007
ø32	0.55	0.71	0.61	0.70	0.58		0.018	0.020	0.007
ø40	0.94	1.16	1.02	1.17	0.99		0.030	0.032	0.007

● Stroke: 151 to 200 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (With Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.29	0.40	0.32	0.34	0.30	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.46	0.59	0.50	0.54	0.48		0.014	0.016	0.007
ø32	0.65	0.81	0.71	0.80	0.68		0.018	0.020	0.007
ø40	1.11	1.33	1.19	1.34	1.16		0.030	0.032	0.007

(Example) Product Weight of SCM-X-LB-40D-100-T2H-D

- Product Weight at S=0 mm0.98 kg
- Added Weight at S=100 mm0.032 × $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches0.036 kg
- Product Weight0.98 kg + 0.32 kg + 0.036 kg = 1.336 kg

Theoretical Thrust Table

Bore size (mm)	Operating Pressure MPa								
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	25	56	88	1.19 × 10 ²	1.50 × 10 ²	1.82 × 10 ²	2.13 × 10 ²	2.45 × 10 ²	2.76 × 10 ²
ø25	58	1.07 × 10 ²	1.56 × 10 ²	2.05 × 10 ²	2.54 × 10 ²	3.03 × 10 ²	3.52 × 10 ²	4.02 × 10 ²	4.51 × 10 ²
ø32	1.06 × 10 ²	1.86 × 10 ²	2.67 × 10 ²	3.47 × 10 ²	4.28 × 10 ²	5.08 × 10 ²	5.88 × 10 ²	6.69 × 10 ²	7.49 × 10 ²
ø40	1.51 × 10 ²	2.77 × 10 ²	4.03 × 10 ²	5.28 × 10 ²	6.54 × 10 ²	7.80 × 10 ²	9.05 × 10 ²	1.03 × 10 ³	1.16 × 10 ³

Note: The load above indicates thrust excluding the spring force at the push end.

Mounting Bracket Model No. Notation Method

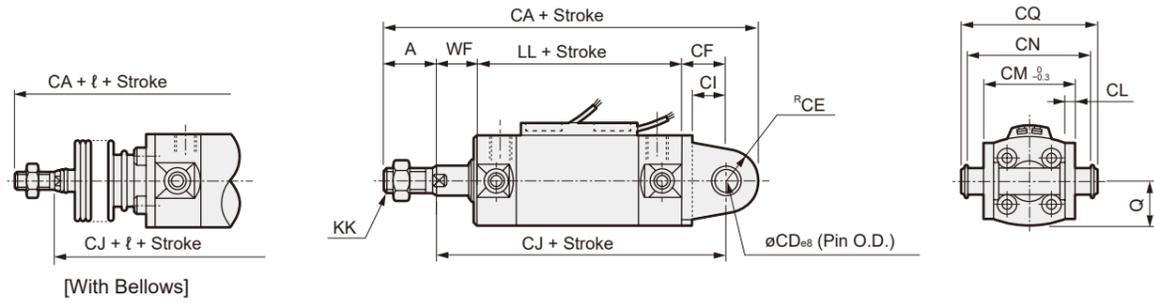
Bore Size (mm)	ø20	ø25	ø32	ø40
Mounting bracket				
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40

*1: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

● Single Clevis Type (CA)

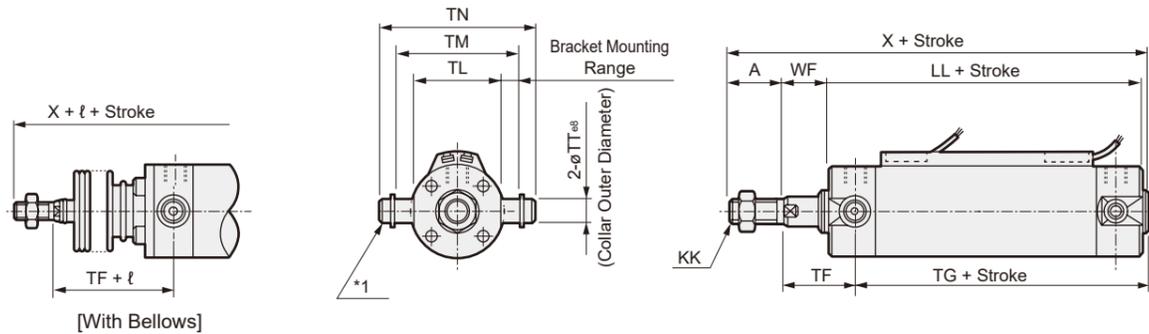


Code														Single Clevis Type (CA) Mounting Dimensions													
Bore Size (mm)	A	CA				CD	CF	CE	CI	CJ				CL													
		5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200					5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200														
ø20	18	156	183	210	237	8	14	11	10.8	127	154	181	208	3.2													
ø25	22	168	198	228	258	10	16	13	12.8	133	163	193	223	3.2													
ø32	22	175.5	205.5	235.5	265.5	12	19.5	15	15.5	138.5	168.5	198.5	228.5	4.5													
ø40	30	197.5	227.5	257.5	287.5	14	21.5	18	17.5	149.5	179.5	209.5	239.5	4.5													

Code														With Bellows													
Bore Size (mm)	CM	CN	CQ	KK	LL				Q	WF	ℓ																
					5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200																			
ø20	29	38.6	43.4	M8	96	123	150	177	13	17	(Stroke / 3) + 18.5																
ø25	33	42.6	48	M10 × 1.25	99	129	159	189	15.5	18	(Stroke / 3) + 20.5																
ø32	40	54	59.4	M10 × 1.25	101	131	161	191	19	18	(Stroke / 3) + 19																
ø40	49	65	71.4	M14 × 1.5	108	138	168	198	23.5	20	(Stroke / 3) + 18.5																

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

● Rod side trunnion type (TA)



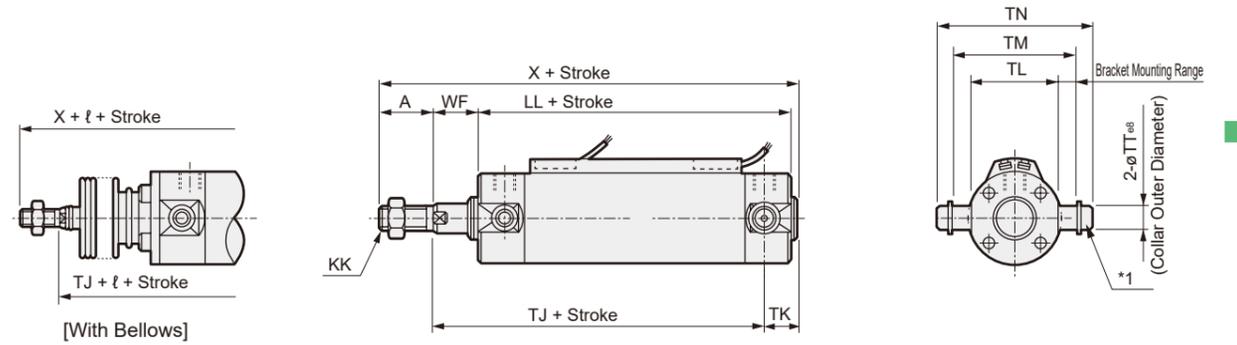
Code														Rod Side Trunnion Type (TA) Mounting Dimensions													
Bore Size (mm)	A	KK	LL				TF	TG																			
			5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200																
ø20	18	M8	96	123	150	177	28	87	114	141	168																
ø25	22	M10 × 1.25	99	129	159	189	29	90	120	150	180																
ø32	22	M10 × 1.25	101	131	161	191	29	92	122	152	182																
ø40	30	M14 × 1.5	108	138	168	198	32	98	128	158	188																

Code														With Bellows													
Bore Size (mm)	TL	TM	TN	TT	WF	X				ℓ																	
						5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200																		
ø20	28	39	47.6	8	17	133	160	187	214	(Stroke / 3) + 18.5																	
ø25	33	43	53	10	18	141	171	201	231	(Stroke / 3) + 20.5																	
ø32	40	54.5	67.7	12	18	143	173	203	233	(Stroke / 3) + 19																	
ø40	49	65.9	81.1	14	20	160	190	220	250	(Stroke / 3) + 18.5																	

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

● Head Side Trunnion Type (TB)



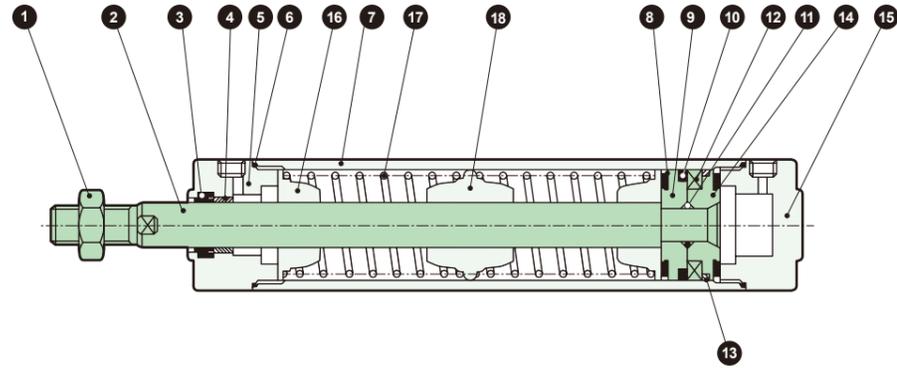
Code														Head Side Trunnion Type (TB) Mounting Dimensions													
Bore Size (mm)	A	KK	LL				TJ				TK																
			5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200																	
ø20	18	M8	96	123	150	177	102	129	156	183	13																
ø25	22	M10 × 1.25	99	129	159	189	106	136	166	196	13																
ø32	22	M10 × 1.25	101	131	161	191	109	139	169	199	12																
ø40	30	M14 × 1.5	108	138	168	198	118	148	178	208	12																

Code														With Bellows													
Bore Size (mm)	TL	TM	TN	TT	WF	X				ℓ																	
						5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200																		
ø20	28	39	47.6	8	17	133	160	187	214	(Stroke / 3) + 18.5																	
ø25	33	43	53	10	18	141	171	201	231	(Stroke / 3) + 20.5																	
ø32	40	54.5	67.7	12	18	143	173	203	233	(Stroke / 3) + 19																	
ø40	49	65.9	81.1	14	20	160	190	220	250	(Stroke / 3) + 18.5																	

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

Internal Structure Diagram / Material

MEMO



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	10	Piston Packing	Nitrile Rubber	
2	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø40: Steel	Industrial Hard Chrome Plating	11	Piston Gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		12	Magnet	Plastic	
4	Bushing	Oil-Impregnated Bearing Alloy		13	Wear Ring	Polyacetal	
5	Rod Cover	Aluminum Alloy	Hard Anodized	14	Piston H	Aluminum Alloy	
6	Cylinder Gasket	Nitrile Rubber		15	Head Cover	Aluminum Alloy	Hard Anodized
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	16	Spring Retainer A	Aluminum Alloy	
8	Cushion Rubber	Urethane Rubber		17	Coil Spring	Piano Wire	Electrodeposition Coating
9	Piston R	Aluminum Alloy		18	Spring Retainer B	Aluminum Alloy	

For maintenance parts, please visit the CKD Equipment Product Site
 (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts



Round shaped cylinder
Single Acting, Pull Type

SCM-Y Series

● Bore Size: ø20, ø25, ø32, ø40

Circuit Diagram Symbol



SCM-Y Series Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

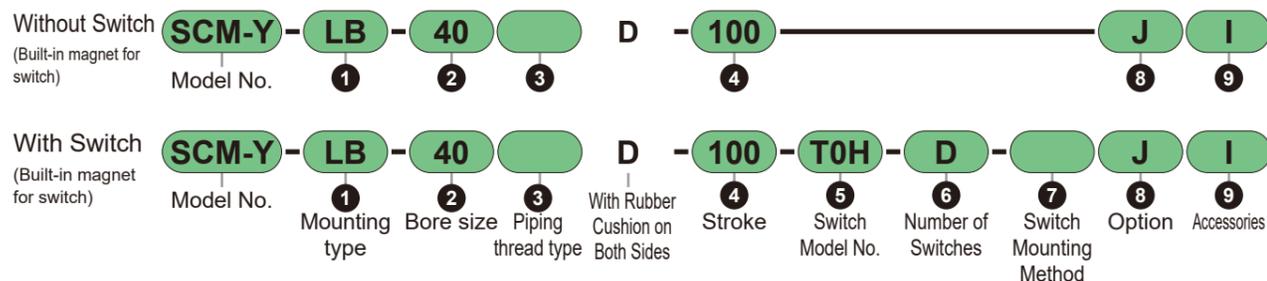
*1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.
*2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
*3: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

9 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B2	Double Yoke Bracket

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Content
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included)
TA	Rod Side Trunnion Type
TB	Head Side Trunnion Type

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø40	5 to 200	Every 1 mm

Note: For the number of switches to be mounted and minimum stroke, refer to P. 352.

5 Switch Model No.

For switch details, please refer to 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
			—	—	—	—	T3PH□	T3PV□	
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□	
			—	—	—	—	T3WH□	T3WV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	
			—	—	—	5 to 20	T2YD□	—	
		3-wire (NPN)	—	30 or less	—	50 or less	T2YDT□	—	
			—	—	—	—	T2JH□	T2JV□	
		2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20 *2	T2HR3	T2VR3
				—	—	—	—	—	—
2-Color For AC Magnetic Field	2-wire	—	24 ± 10%	—	—	—	—		
		—	—	—	—	—	—		
1-Color Off-Delay Type	2-wire	—	10 to 30	—	—	—	—		
		—	—	—	—	—	—		
1-Color Flexible Lead Wire Type	2-wire	—	10 to 30	—	—	—	—		
		—	—	—	—	—	—		
Reed	1-Color No Indicator Lamp	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
			110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the switch mounting type is the rail type.

*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length

- 1 m TOH
- 3 m TOH 3
- 5 m TOH 5

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

SCM - Y - - FP1

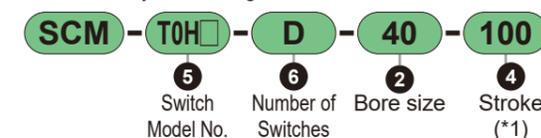
Model No. Example)

SCM - Y - - XP5

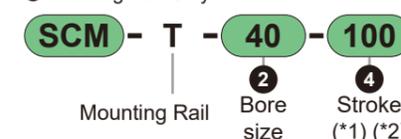
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

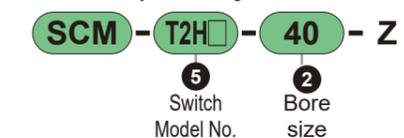


● Mounting Rail Only

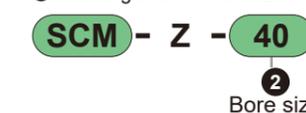


[Switch mounting: Band Type]

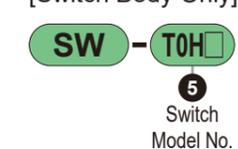
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-Y				
	mm	ø20	ø25	ø32	ø40
Bore Size	mm	ø20	ø25	ø32	ø40
Actuation method		Single Acting, Pull Type			
Operating Fluid		Compressed Air			
Max. Working Pressure	MPa	1.0			
Min. Operating Pressure	MPa	0.2			
Proof Pressure	MPa	1.6			
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)			
Port Size		Rc1/8			
Stroke tolerance	mm	+2.0			
		0			
Operating Piston Speed	mm/s	50 to 1000 (Use within allowable absorption energy.)			
Cushion		Rubber Cushion			
Lubrication		Not Required (When lubricating, use Turbine Oil ISO VG32)			
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9

Note: Do not leave single acting cylinders pressurized. If left pressurized, the piston rod may not return by spring load when the pressure is released.

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75	200	5
ø25			
ø32	100, 125		
ø40	150, 200		

Note: Intermediate strokes can be produced in 1 mm increments.

Spring Load (Unit: N)

Bore Size (mm)	At 0 Stroke	At Full Stroke Operation
ø20	11.8	38
ø25	12.5	40.2
ø32	24.3	54.9
ø40	28.4	100

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)										
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method: Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)										
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

● Stroke 5 to 50 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.14	0.25	0.17	0.19	0.15	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.22	0.35	0.26	0.30	0.24		0.014	0.016	0.007
ø32	0.33	0.49	0.39	0.48	0.36		0.018	0.020	0.007
ø40	0.54	0.76	0.62	0.77	0.59		0.030	0.032	0.007

● Stroke 51 to 100 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.17	0.28	0.20	0.22	0.18	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.28	0.41	0.32	0.36	0.30		0.014	0.016	0.007
ø32	0.40	0.56	0.46	0.55	0.43		0.018	0.020	0.007
ø40	0.67	0.89	0.75	0.90	0.72		0.030	0.032	0.007

● Stroke 101 to 150 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.21	0.32	0.24	0.26	0.22	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.33	0.46	0.37	0.41	0.35		0.014	0.016	0.007
ø32	0.47	0.63	0.53	0.62	0.50		0.018	0.020	0.007
ø40	0.80	1.02	0.88	1.03	0.85		0.030	0.032	0.007

● Stroke 151 to 200 (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.24	0.35	0.27	0.29	0.25	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.39	0.52	0.43	0.47	0.41		0.014	0.016	0.007
ø32	0.54	0.70	0.60	0.69	0.57		0.018	0.020	0.007
ø40	0.92	1.14	1.00	1.15	0.97		0.030	0.032	0.007

(Example) Product Weight of SCM-Y-LB-40D-100-T2H-D

- Product Weight at S=0 mm0.89 kg
- Added Weight at S=100 mm0.032 × $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches0.036 kg
- Product Weight 0.89 kg+0.32 kg+0.036 kg=1.246 kg

Theoretical Thrust Table

Bore size (mm)	Operating Pressure MPa									
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
ø20	15	41	68	94	1.20 × 10 ²	1.47 × 10 ²	1.73 × 10 ²	2.00 × 10 ²	2.26 × 10 ²	
ø25	42	84	1.25 × 10 ²	1.66 × 10 ²	2.07 × 10 ²	2.48 × 10 ²	2.90 × 10 ²	3.31 × 10 ²	3.72 × 10 ²	
ø32	83	1.52 × 10 ²	2.22 × 10 ²	2.91 × 10 ²	3.60 × 10 ²	4.29 × 10 ²	4.98 × 10 ²	5.67 × 10 ²	6.36 × 10 ²	
ø40	1.11 × 10 ²	2.17 × 10 ²	3.22 × 10 ²	4.28 × 10 ²	5.33 × 10 ²	6.39 × 10 ²	7.44 × 10 ²	8.50 × 10 ²	9.56 × 10 ²	

Note: The load above is the pulling thrust after subtracting the spring force at the retracted end.

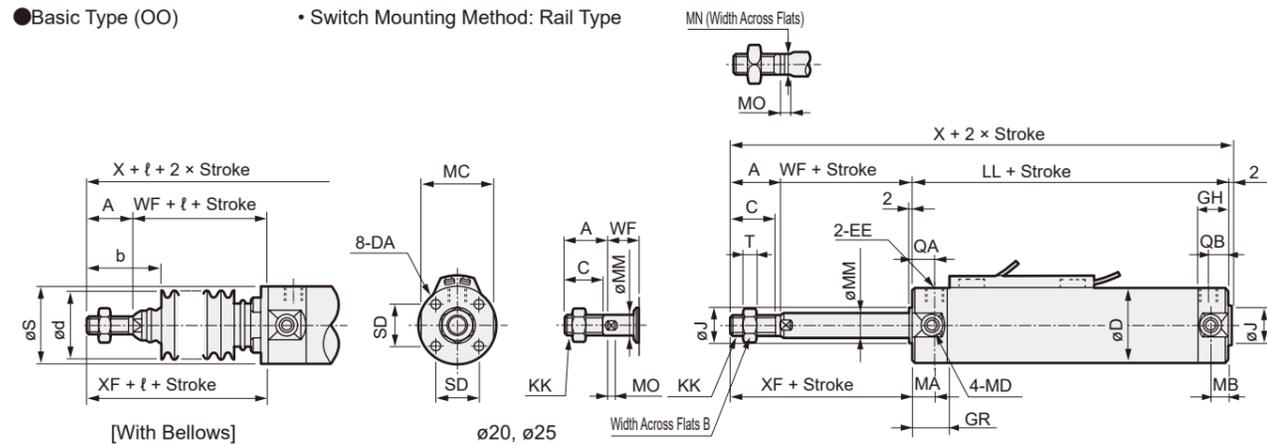
Mounting Bracket Model No. Notation Method

Bore Size (mm)	ø20	ø25	ø32	ø40
Mounting bracket				
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40

*1: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

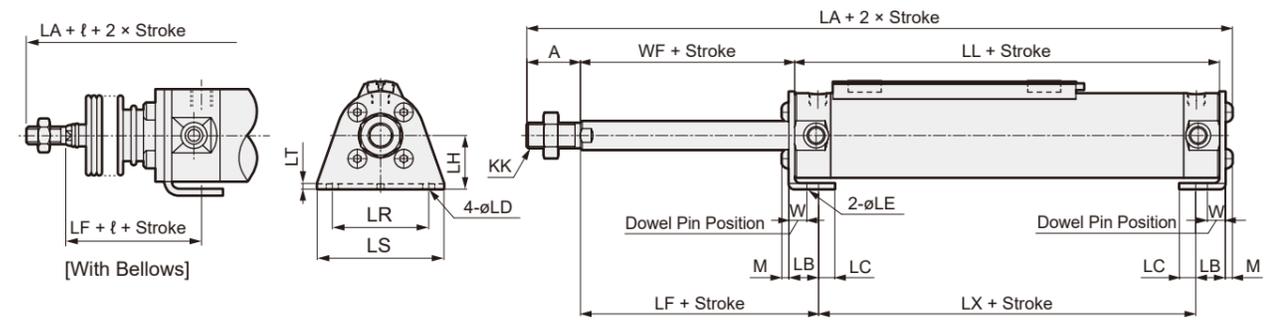


Code	Basic Type (OO) Basic Dimensions											LL						
	A	B	C	D	DA	EE	GR	GH	J	KK	5 or more 50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	MA	MB	MC	MD
SCP□3	18	13	16	26	M4 Depth 6.5	Rc1/8	19	17	12	M8	96	123	150	177	11	11	24	M5
CMK2	22	17	20	31	M5 Depth 6.5	Rc1/8	19	17	14	M10 × 1.25	99	129	159	189	11	11	29	M6
	22	17	20	38	M5 Depth 7.5	Rc1/8	19	17	18	M10 × 1.25	101	131	161	191	11	10	36	M8
CMA2	30	22	27	47	M6 Depth 12	Rc1/8	20	19	25	M14 × 1.5	108	138	168	198	12	10	44	M10

Code	With Bellows																
	MM	MN	MO	QA	QB	SD	T	WF	X				XF	b	d	s	ℓ
Bore Size (mm)	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200													
SCM	8	6	4	12	10	14	5	17	133	160	187	214	35	30	30	25.7	(Stroke / 3) + 18.5
SCG	10	8	5	12	10	16.5	6	18	141	171	201	231	40	35	30	30.7	(Stroke / 3) + 20.5
SCA2	12	10	5.5	12	10	20	6	18	143	173	203	233	40	31.5	35	37.7	(Stroke / 3) + 19
SCS2	16	14	6	13	12	26	8	20	160	190	220	250	50	40	35	46.7	(Stroke / 3) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

● Axial Foot Type (LB)



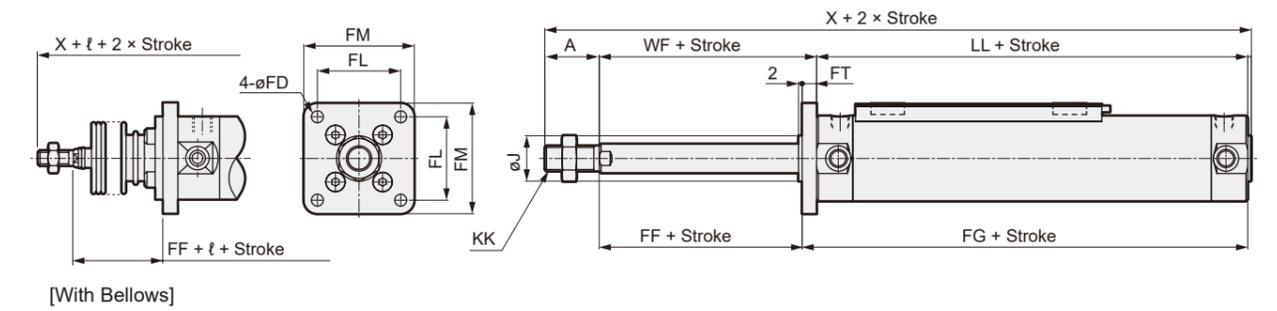
Code	Axial Foot Type (LB) Mounting Dimensions															
	A	KK	LA				LB	LC	LD	LE	LF	LH	LL			
Bore Size (mm)			5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200						5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	
SCM	18	M8	136.8	163.8	190.8	217.8	15.1	7.1	5.7	4	28.9	20	96	123	150	177
SCG	22	M10 × 1.25	145.6	175.6	205.6	235.6	15.1	7.1	5.7	4	29.9	22	99	129	159	189
SCA2	22	M10 × 1.25	147.6	177.6	207.6	237.6	16.1	8.1	6.8	4	30.9	25	101	131	161	191
SCS2	30	M14 × 1.5	165.2	195.2	225.2	255.2	16.6	9.1	6.8	4	33.4	30	108	138	168	198

Code	With Bellows														
	LR	LS	LT	LX				M	W	WF	ℓ				
Bore Size (mm)	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200											
SCM	32	44	3.2	72.2	99.2	126.2	153.2	2.6	10	17	(Stroke / 3) + 18.5				
SCG	36	49	3.2	75.2	105.2	135.2	165.2	3.4	10	18	(Stroke / 3) + 20.5				
SCA2	44	58	3.2	75.2	105.2	135.2	165.2	3.4	10	18	(Stroke / 3) + 19				
SCS2	54	71	3.2	81.2	111.2	141.2	171.2	4	10	20	(Stroke / 3) + 18.5				

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

● Rod Side Flange Type (FA)

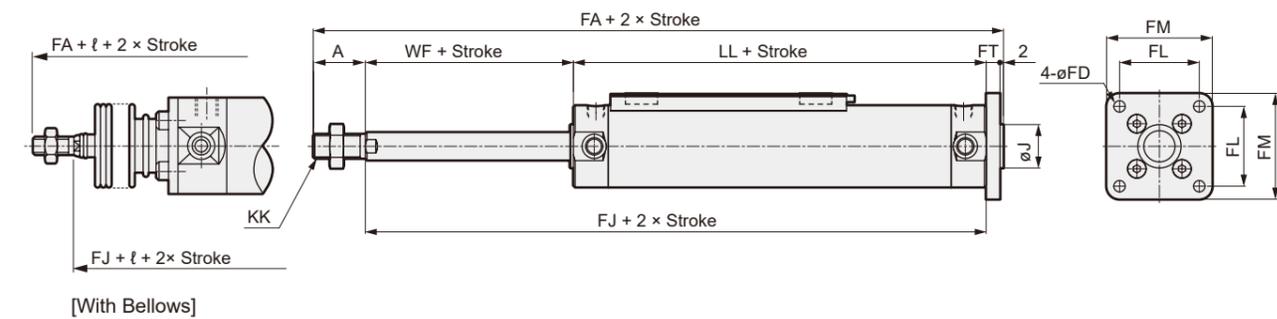


Code	Rod Side Flange Type (FA) Mounting Dimensions											
	A	FD	FF	FG				FL	FM	FT	J	KK
Bore Size (mm)				5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200					
SCM	18	5.5	11	104	131	158	185	28	40	6	12	M8
SCG	22	5.5	11	108	138	168	198	32	44	7	14	M10 × 1.25
SCA2	22	6.6	11	110	140	170	200	38	53	7	18	M10 × 1.25
SCS2	30	6.6	12	118	148	178	208	46	61	8	25	M14 × 1.5

Code	With Bellows									
	LL				WF	X				ℓ
Bore Size (mm)	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	
SCM	96	123	150	177	17	133	160	187	214	(Stroke / 3) + 18.5
SCG	99	129	159	189	18	141	171	201	231	(Stroke / 3) + 20.5
SCA2	101	131	161	191	18	143	173	203	233	(Stroke / 3) + 19
SCS2	108	138	168	198	20	160	190	220	250	(Stroke / 3) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

● Head Side Flange Type (FB)



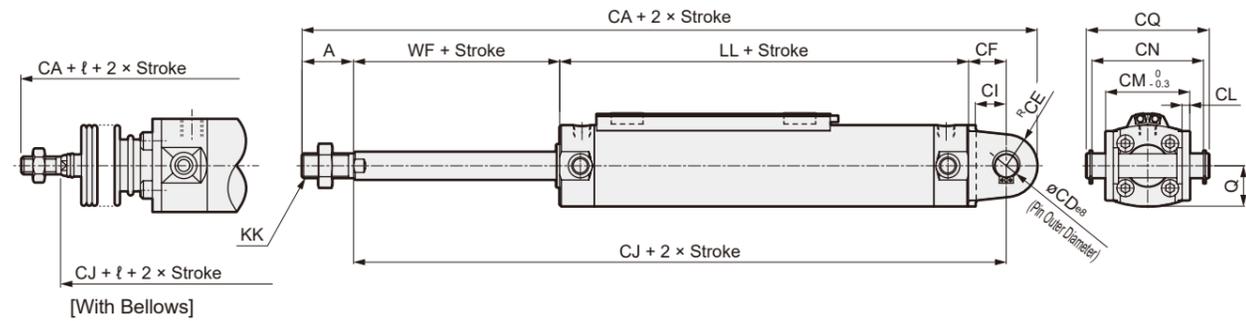
Code	Head Side Flange Type (FB) Mounting Dimensions											
	A	FA				FD	FJ				FL	FM
Bore Size (mm)		5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		
SCM	18	139	166	193	220	5.5	119	146	173	200	28	40
SCG	22	148	178	208	238	5.5	124	154	184	214	32	44
SCA2	22	150	180	210	240	6.6	126	156	186	216	38	53
SCS2	30	168	198	228	258	6.6	136	166	196	226	46	61

Code	With Bellows								
	FT	J	KK	LL				WF	ℓ
Bore Size (mm)	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200					
SCM	6	12	M8	96	123	150	177	17	(Stroke / 3) + 18.5
SCG	7	14	M10 × 1.25	99	129	159	189	18	(Stroke / 3) + 20.5
SCA2	7	18	M10 × 1.25	101	131	161	191	18	(Stroke / 3) + 19
SCS2	8	25	M14 × 1.5	108	138	168	198	20	(Stroke / 3) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

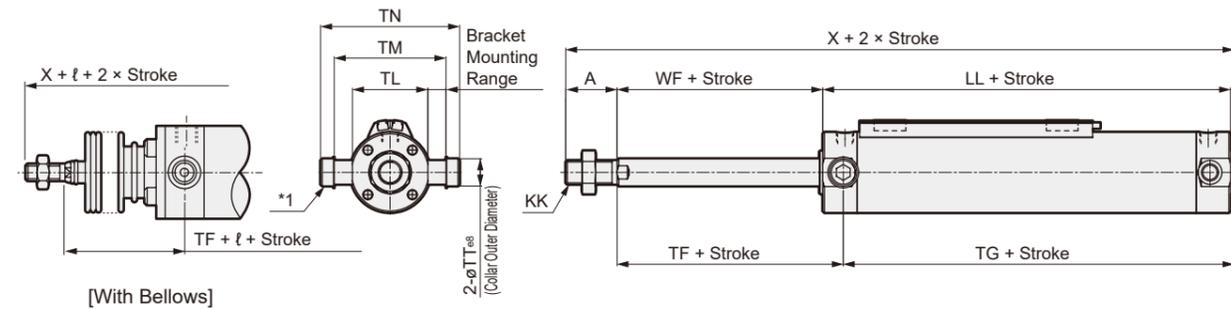
● Single Clevis Type (CA)



Code		Single Clevis Type (CA) Mounting Dimensions												
Bore Size (mm)	A	CF	CA				CD	CE	CI	CJ				CL
			5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200				5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	
ø20	18	14	156	183	210	237	8	11	10.8	127	154	181	208	3.2
ø25	22	16	168	198	228	258	10	13	12.8	133	163	193	223	3.2
ø32	22	19.5	175.5	205.5	235.5	265.5	12	15	15.5	138.5	168.5	198.5	228.5	4.5
ø40	30	21.5	197.5	227.5	257.5	287.5	14	18	17.5	149.5	179.5	209.5	239.5	4.5
Code		With Bellows												
Bore Size (mm)	CM	CN	CQ	KK	LL				Q	WF	ℓ			
					5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200						
ø20	29	38.6	43.4	M8	96	123	150	177	13	17	(Stroke / 3) + 18.5			
ø25	33	42.6	48	M10 × 1.25	99	129	159	189	15.5	18	(Stroke / 3) + 20.5			
ø32	40	54	59.4	M10 × 1.25	101	131	161	191	19	18	(Stroke / 3) + 19			
ø40	49	65	71.4	M14 × 1.5	108	138	168	198	23.5	20	(Stroke / 3) + 18.5			

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

● Rod side trunnion type (TA)

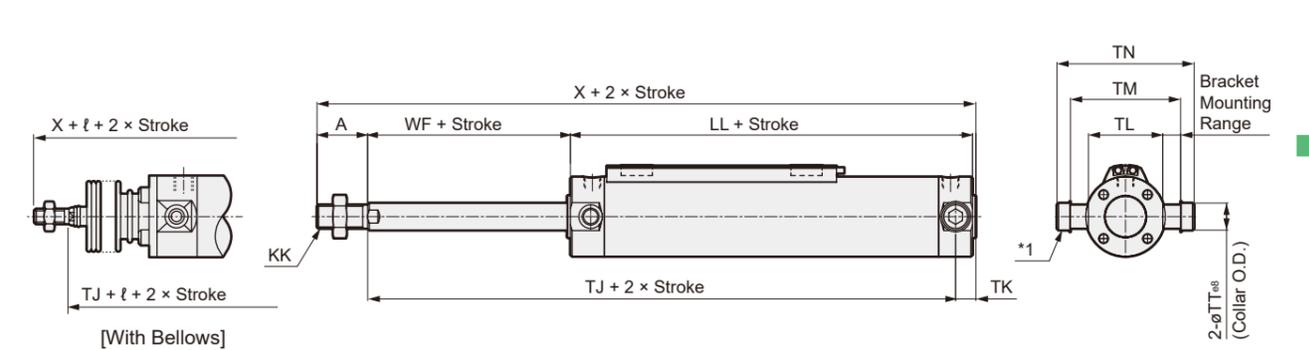


Code		Rod Side Trunnion Type (TA) Mounting Dimensions											
Bore Size (mm)	A	KK	LL				TF	TG				TL	
			5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		
ø20	18	M8	96	123	150	177	28	87	114	141	168	28	
ø25	22	M10 × 1.25	99	129	159	189	29	90	120	150	180	33	
ø32	22	M10 × 1.25	101	131	161	191	29	92	122	152	182	40	
ø40	30	M14 × 1.5	108	138	168	198	32	98	128	158	188	49	
Code		With Bellows											
Bore Size (mm)	TM	TN	TT	WF	X				ℓ				
					5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200					
ø20	39	47.6	8	17	133	160	187	214	(Stroke / 3) + 18.5				
ø25	43	53	10	18	141	171	201	231	(Stroke / 3) + 20.5				
ø32	54.5	67.7	12	18	143	173	203	233	(Stroke / 3) + 19				
ø40	65.9	81.1	14	20	160	190	220	250	(Stroke / 3) + 18.5				

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

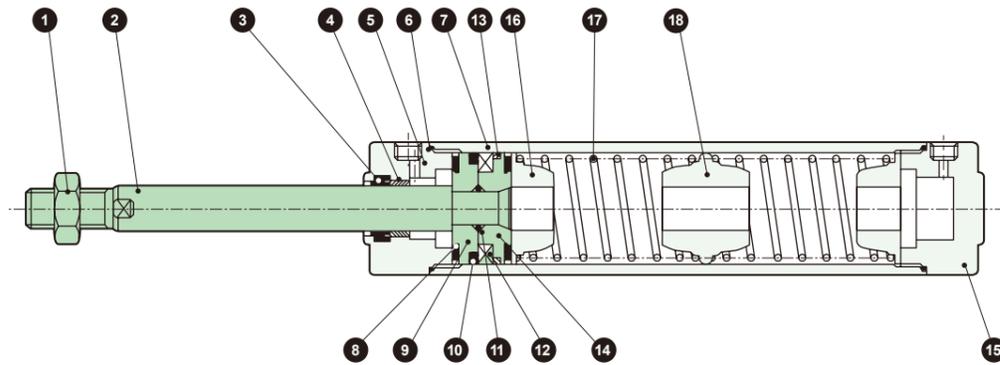
Outline Dimension Drawing

● Head Side Trunnion Type (TB)



Code		Head Side Trunnion Type (TB) Mounting Dimensions											
Bore Size (mm)	A	KK	LL				TJ				TK	TL	
			5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200			
ø20	18	M8	96	123	150	177	102	129	156	183	13	28	
ø25	22	M10 × 1.25	99	129	159	189	106	136	166	196	13	33	
ø32	22	M10 × 1.25	101	131	161	191	109	139	169	199	12	40	
ø40	30	M14 × 1.5	108	138	168	198	118	148	178	208	12	49	
Code		With Bellows											
Bore Size (mm)	TM	TN	TT	WF	X				ℓ				
					5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200					
ø20	39	47.6	8	17	133	160	187	214	(Stroke / 3) + 18.5				
ø25	43	53	10	18	141	171	201	231	(Stroke / 3) + 20.5				
ø32	54.5	67.7	12	18	143	173	203	233	(Stroke / 3) + 19				
ø40	65.9	81.1	14	20	160	190	220	250	(Stroke / 3) + 18.5				

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	10	Piston Packing	Nitrile Rubber	
2	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø40: Steel	Industrial Hard Chrome Plating	11	Piston Gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		12	Magnet	Plastic	
4	Bushing	Oil-impregnated Bearing Alloy		13	Wear Ring	Polyacetal	
5	Rod Cover	Aluminum Alloy	Hard Anodized	14	Piston H	Aluminum Alloy	
6	Cylinder Gasket	Nitrile Rubber		15	Head Cover	Aluminum Alloy	Hard Anodized
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	16	Spring Retainer A	Aluminum Alloy	
8	Cushion Rubber	Urethane Rubber		17	Coil Spring	Piano Wire	Electrodeposition Coating
9	Piston R	Aluminum Alloy		18	Spring Retainer B	Aluminum Alloy	

General Type

General Type

SCP□3

SCP□3

CMK2

CMK2

CMA2

CMA2

SCM

SCM

SCG

SCG

SCA2

SCA2

SCS2

SCS2

Cylinder Switch

Cylinder Switch

Ending

Ending

For maintenance parts, please visit the CKD Equipment Product Site
 (<https://www.ckd.co.jp/kiki/en/>) → "model No." →



Round shaped cylinder
Double Acting, Stroke Adjustment Type (Push)

SCM-P Series

● Bore Size: $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

Circuit Diagram Symbol



SCM-P Series Model No. Notation Method

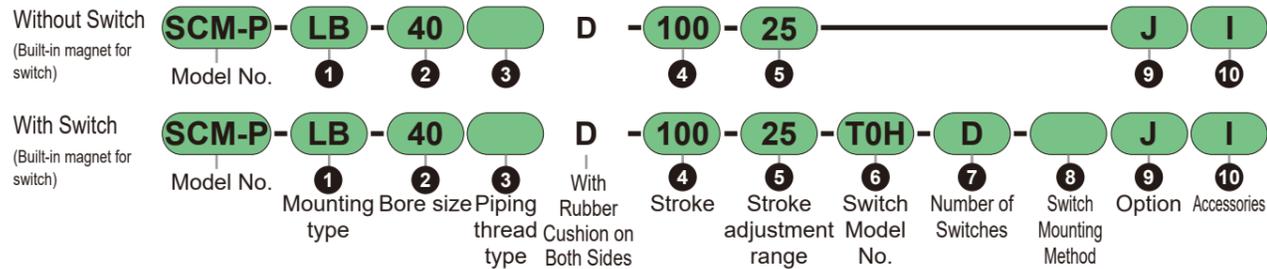
7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

8 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

Model No. Notation Method



1 Mounting type LB mounting brackets are assembled to the product for shipment. FA / TA / TB are included with the product at shipment.

Code	Content
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
TA	Rod Side Trunnion Type
TB	Head Side Trunnion Type

2 Bore Size (mm)

Code	Content
20	$\phi 20$
25	$\phi 25$
32	$\phi 32$
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
$\phi 20$ to $\phi 63$	10 to 600	Every 1 mm

Note: For the number of switches to be mounted and minimum stroke, refer to P. 362.

5 Stroke adjustment range (mm)

Code	Content
25	25
50	50

6 Switch Model No.

For switch details, please refer to 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□
			—	—	—	—	T3PH□	T3PV□
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□
			—	—	—	—	T3WH□	T3WV□
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□
			—	—	—	—	T2YD□	—
		3-wire (NPN)	—	30 or less	—	50 or less	T2YDT□	—
			—	—	—	—	T2JH□	T2JV□
		2-wire	—	24 ± 10%	—	5 to 20	T2HR3	T2VR3
			—	—	—	—	—	—
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□
			110	5/12/24	20 or less	50 or less	T5H□	T5V□
	No Indicator Lamp	—	—	—	—	—	—	
Ending	1-Color	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is $\phi 20$ to $\phi 40$ and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH [3]
5 m TOH [5]

9 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

*1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.

*2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.

*3: If 8 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Model No. Example)

SCM - P - - XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

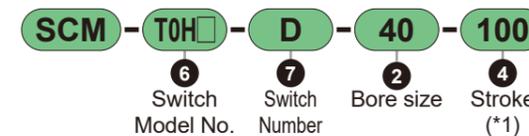
● Uses food grade grease that can be used in food manufacturing processes

SCM - P - - FP1

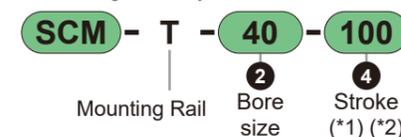
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

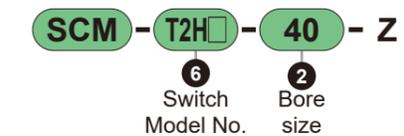


● Mounting Rail Only

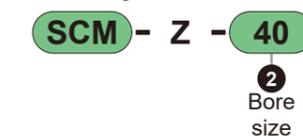


[Switch mounting: Band Type]

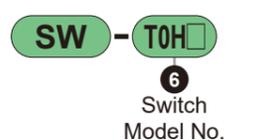
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.

*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-P						
	mm	ø20	ø25	ø32	ø40	ø50	ø63
Bore Size	mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting, Stroke Adjustment Type (Push)						
Operating Fluid	Compressed Air						
Max. Working Pressure	MPa	1.0					
Min. Operating Pressure	MPa	0.15			0.1		
Proof Pressure	MPa	1.6					
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)					
Port Size		Rc1/8			Rc1/4		
Stroke tolerance	mm	+1.4 0			+2.3 0		
Operating Piston Speed	mm/s	30 to 1000 (Use within allowable absorption energy.)					
Cushion	Rubber Cushion						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Stroke adjustment range	mm	25, 50					
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke

(Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	600	10
ø25			
ø32			
ø40			
ø50			
ø63			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Stroke adjustment range	Product Weight at Stroke (S) = 0 mm				Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch						
		Basic type	Axial Foot Type	Flange Type	Trunnion Type										
ø20	25	0.18	0.29	0.26	0.19	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007						
	50	0.21	0.31	0.29	0.22										
ø25	25	0.33	0.44	0.43	0.35					0.014	0.016	0.007			
	50	0.37	0.48	0.47	0.39										
ø32	25	0.50	0.64	0.64	0.53								0.018	0.020	0.007
	50	0.56	0.71	0.70	0.59										
ø40	25	0.93	1.12	1.13	0.98		0.030	0.032	0.007						
	50	1.03	1.22	1.23	1.08										
ø50	25	1.71	2.12	2.05	1.85					0.044	0.046	0.008			
	50	1.90	2.31	2.24	2.04										
ø63	25	2.25	2.87	2.75	2.39								0.052	0.054	0.009
	50	2.44	3.06	2.94	2.58										

(Example) Product Weight of SCM-P-LB-40D-100-50-T2H-D

- Product Weight at S=0 mm 1.22 kg
- Added Weight at S=100 mm 0.032 × $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches 0.036 kg
- Product Weight..... 1.22 kg+0.32kg+0.036kg=1.576kg

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push/Pull	-	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 10 ²
ø25	Push/Pull	-	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 10 ²
ø32	Push/Pull	-	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 10 ²
ø40	Push/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/Pull	1.65 × 10 ²	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/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

Mounting Bracket Model No. Notation Method

Bore Size (mm)	ø20	ø25	ø32	ø40	ø50	ø63
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

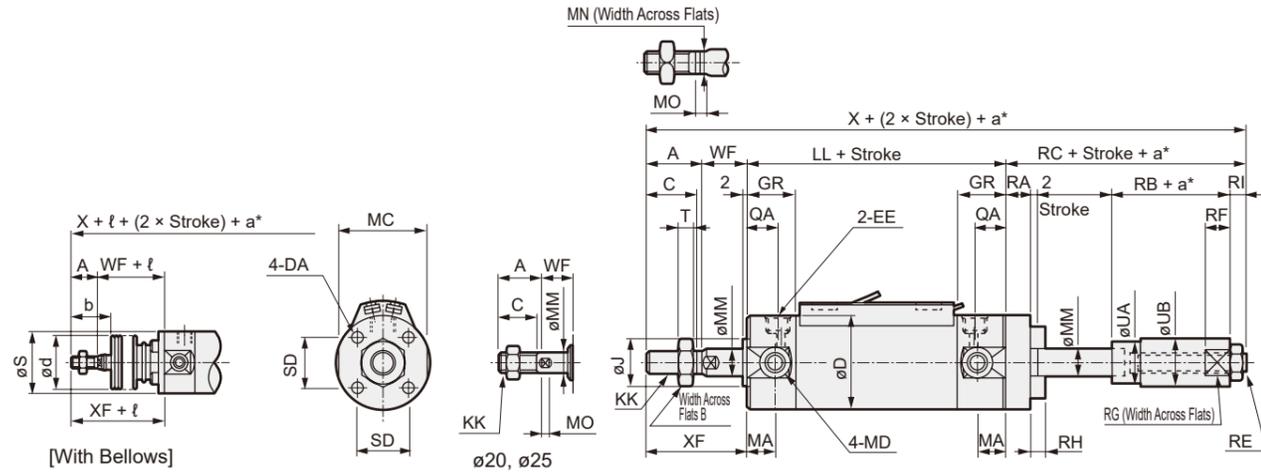
*1: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

● Basic Type (OO)

● Switch Mounting Method: Rail Type



*a: Stroke adjustment range

Code	Basic Type (OO) Basic Dimensions																With Bellows					
	A	B	C	D	DA	EE	GR	J	KK	LL	MA	MC	MD	MM	MN	MO	QA	SD	b	d	s	ℓ
ø20	18	13	16	26	M4 Depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	12	14				(Stroke / 3) + 18.5
ø25	22	17	20	31	M5 Depth 6.5	Rc1/8	19	14	M10 x 1.25	71	11	29	M6	10	8	5	12	16.5				(Stroke / 3) + 20.5
ø32	22	17	20	38	M5 Depth 7.5	Rc1/8	19	18	M10 x 1.25	73	11	36	M8	12	10	5.5	12	20				(Stroke / 3) + 19
ø40	30	22	27	47	M6 Depth 12	Rc1/8	20	25	M14 x 1.5	79	12	44	M10	16	14	6	13	26				(Stroke / 3) + 18.5
ø50	35	27	32	58	M8 Depth 16	Rc1/4	25	30	M18 x 1.5	93	13	55	M12	20	17	8	15	32				(Stroke / 3.6) + 18.5
ø63	35	27	32	72	M10 Depth 16	Rc1/4	25	32	M18 x 1.5	93	13	69	M14	20	17	8	15	38				(Stroke / 3.6) + 18.5

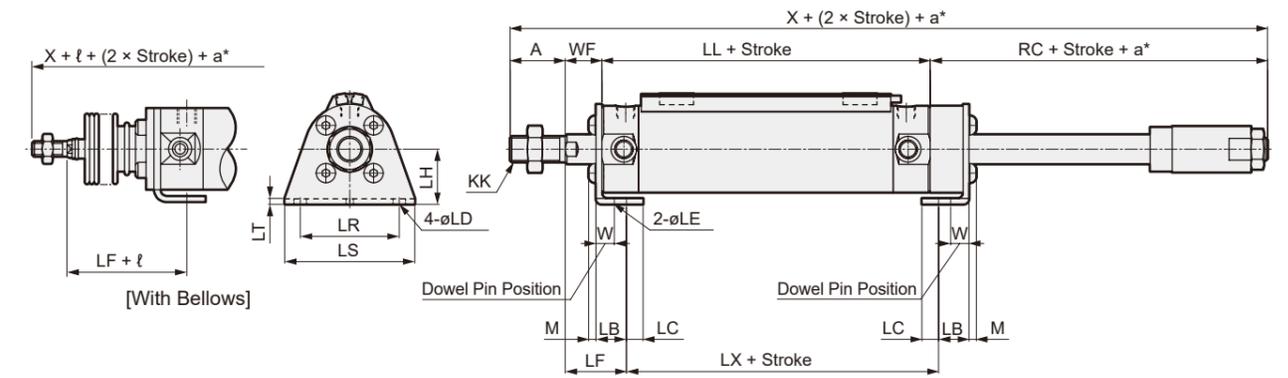
Code	Basic Type (OO) Basic Dimensions														With Bellows			
	T	WF	X	XF	RA	RB	RC	RE	RI	RF	RG	RH	UA	UB	b	d	s	ℓ
ø20	5	17	141	35	8	19	35	M6	6	7	10	4	11.5	12	30	30	25.7	(Stroke / 3) + 18.5
ø25	6	18	152	40	10	22	41	M8	7	9	14	5	13.5	16	35	30	30.7	(Stroke / 3) + 20.5
ø32	6	18	154	40	10	22	41	M8	7	10	17	5	17.5	20	31.5	35	37.7	(Stroke / 3) + 19
ø40	8	20	188	50	18	30	59	M12 x 1.5	9	12	22	6	24	25	40	35	46.7	(Stroke / 3) + 18.5
ø50	11	23	217	58	20	32	66	M16 x 1.5	12	15	30	8	29	35	46	40	57.7	(Stroke / 3.6) + 18.5
ø63	11	23	217	58	20	32	66	M16 x 1.5	12	15	30	10	29	35	46	40	71.7	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting, Stroke Adjustment Type (Push)

Outline Dimension Drawing

● Axial Foot Type (LB)

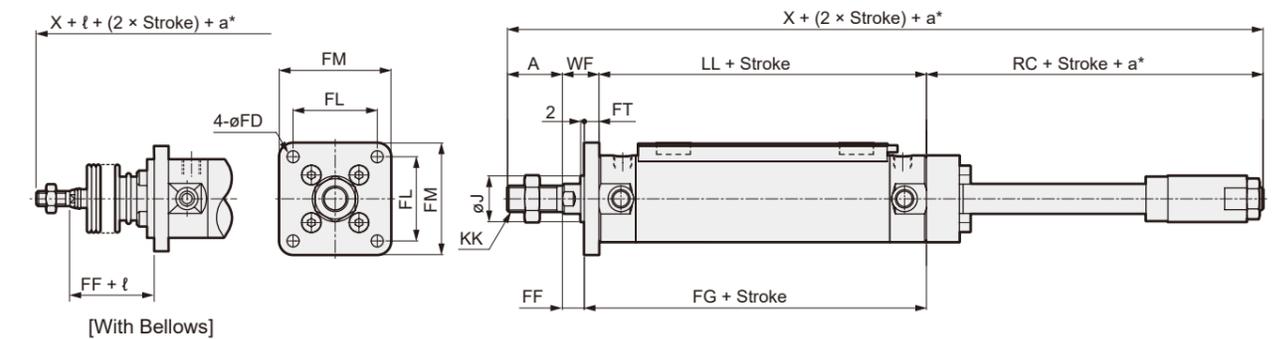


*a: Stroke adjustment range

Code	Axial Foot Type (LB) Mounting Dimensions																	With Bellows	
	A	KK	X	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF	RC	ℓ
ø20	18	M8	141	15.1	7.1	5.7	4	28.9	20	71	32	44	3.2	47.2	2.6	10	17	35	(Stroke / 3) + 18.5
ø25	22	M10 x 1.25	152	15.1	7.1	5.7	4	29.9	22	71	36	49	3.2	47.2	3.4	10	18	41	(Stroke / 3) + 20.5
ø32	22	M10 x 1.25	154	16.1	8.1	6.8	4	30.9	25	73	44	58	3.2	47.2	3.4	10	18	41	(Stroke / 3) + 19
ø40	30	M14 x 1.5	188	16.6	9.1	6.8	4	33.4	30	79	54	71	3.2	52.2	4	10	20	59	(Stroke / 3) + 18.5
ø50	35	M18 x 1.5	217	22	11	9	5	40.5	40	93	66	86	4.5	58	5	17.5	23	66	(Stroke / 3.6) + 18.5
ø63	35	M18 x 1.5	217	22	13	11	5	40.5	45	93	82	106	4.5	58	5	17.5	23	66	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

● Rod Side Flange Type (FA)



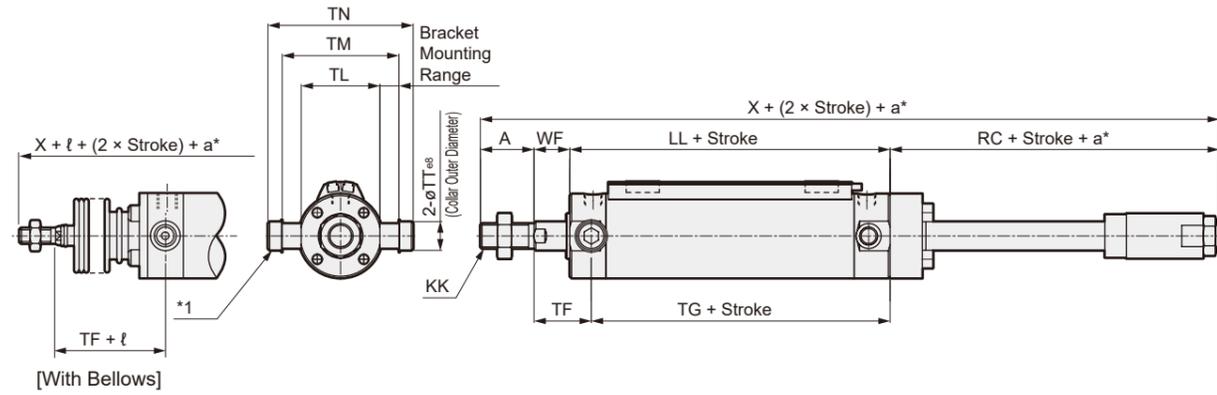
*a: Stroke adjustment range

Code	Rod Side Flange Type (FA) Mounting Dimensions													With Bellows	
	A	FD	FF	FG	FL	FM	FT	J	KK	LL	WF	X	RC	ℓ	
ø20	18	5.5	11	79	28	40	6	12	M8	71	17	141	35	(Stroke / 3) + 18.5	
ø25	22	5.5	11	80	32	44	7	14	M10 x 1.25	71	18	152	41	(Stroke / 3) + 20.5	
ø32	22	6.6	11	82	38	53	7	18	M10 x 1.25	73	18	154	41	(Stroke / 3) + 19	
ø40	30	6.6	12	89	46	61	8	25	M14 x 1.5	79	20	188	59	(Stroke / 3) + 18.5	
ø50	35	9	14	104	58	76	9	30	M18 x 1.5	93	23	217	66	(Stroke / 3.6) + 18.5	
ø63	35	11	14	104	70	92	9	32	M18 x 1.5	93	23	217	66	(Stroke / 3.6) + 18.5	

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

●Rod side trunnion type (TA)

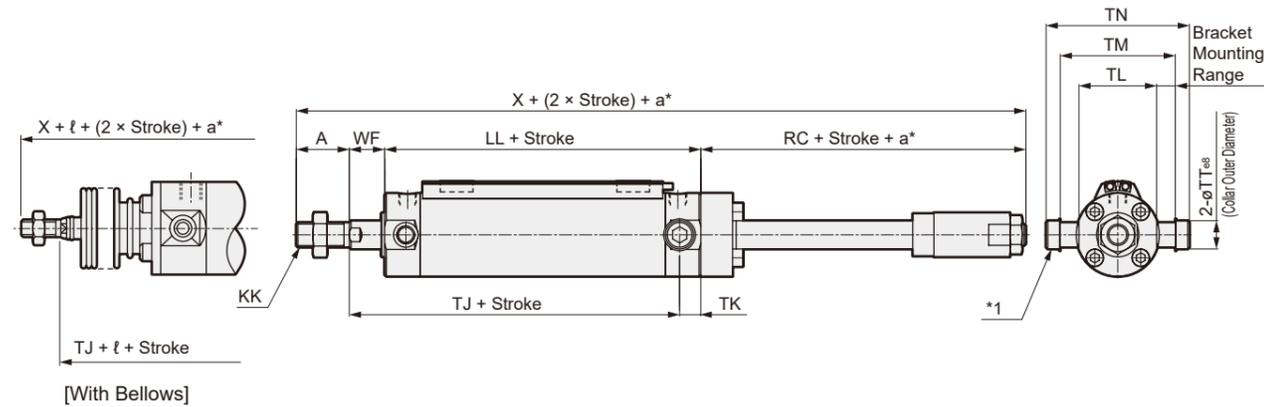


*a: Stroke adjustment range

Code	Rod Side Trunnion Type (TA) Mounting Dimensions												With Bellows
Bore Size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X	RC	ℓ
ø20	18	M8	71	28	62	28	39	47.6	8	17	141	35	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	71	29	62	33	43	53	10	18	152	41	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	73	29	64	40	54.5	67.7	12	18	154	41	(Stroke / 3) + 19
ø40	30	M14 × 1.5	79	32	69	49	65.9	81.1	14	20	188	59	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	93	36	82	60	80	98.6	16	23	217	66	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	93	36	82	74	98	119.2	18	23	217	66	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

●Head Side Trunnion Type (TB)



*a: Stroke adjustment range

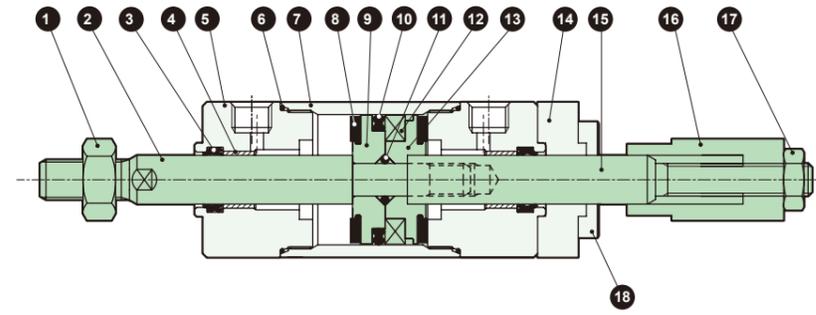
Code	Head Side Trunnion Type (TB) Mounting Dimensions												With Bellows
Bore Size (mm)	A	KK	LL	TJ	TK	TL	TM	TN	TT	WF	X	RC	ℓ
ø20	18	M8	71	77	11	28	39	47.6	8	17	141	35	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	71	78	11	33	43	53	10	18	152	41	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	73	80	11	40	54.5	67.7	12	18	154	41	(Stroke / 3) + 19
ø40	30	M14 × 1.5	79	87	12	49	65.9	81.1	14	20	188	59	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	93	103	13	60	80	98.6	16	23	217	66	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	93	103	13	74	98	119.2	18	23	217	66	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

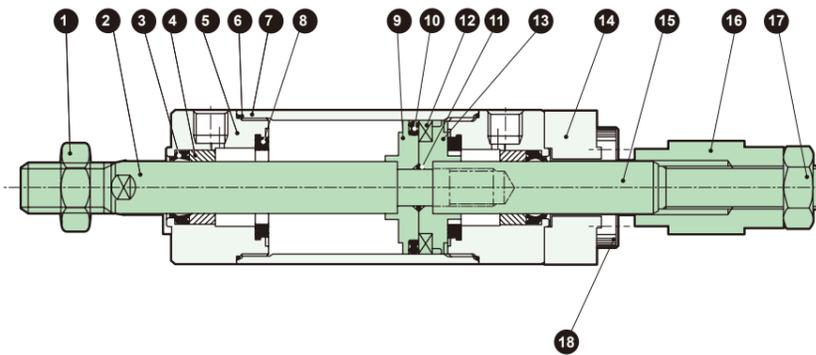
Internal Structure Diagram / Material

Internal Structure Diagram / Material

●ø20 to ø40



●ø50 to ø100



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	10	Piston Packing	Nitrile Rubber	
2	Piston Rod R	ø20, ø25: Stainless Steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	11	Piston Gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		12	Magnet	Plastic	
4	Bushing	Oil-impregnated Bearing Alloy		13	Piston H	Aluminum Alloy	
5	Rod Cover	Aluminum Alloy	Hard Anodized	14	Cover	Steel	Zinc Chromate
6	Cylinder Gasket	Nitrile Rubber		15	Piston Rod H	Steel	Industrial Hard Chrome Plating
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	16	Stopper	Steel	Zinc Chromate
8	Cushion Rubber	Urethane Rubber		17	Hexagon Nut	Steel	Nickel Plating
9	Piston R	Aluminum Alloy		18	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide

For maintenance parts, please visit the CKD Equipment Product Site
 (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts



Round shaped cylinder
Double Acting, Stroke Adjustment Type (Pull)

SCM-R Series

● Bore Size: $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$, $\phi 50$, $\phi 63$

Circuit Diagram Symbol



SCM-R Series Model No. Notation Method

7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

8 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

9 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

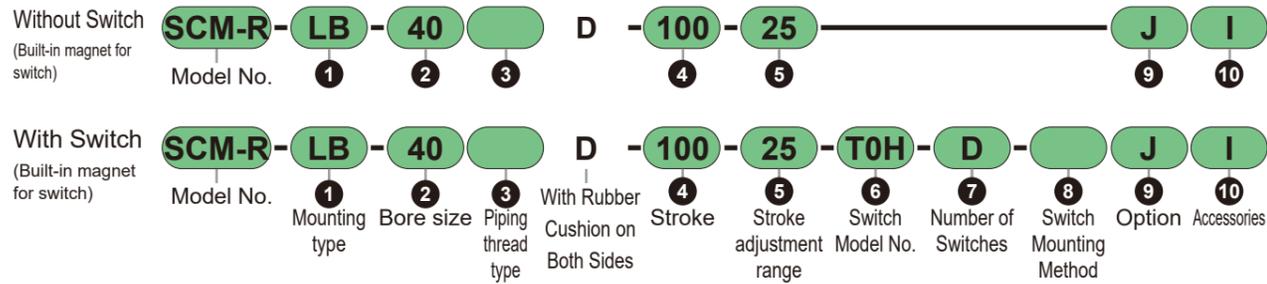
- *1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.
- *2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
- *3: If switch 8 mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

10 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B2	Double Yoke Bracket

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting type

LB mounting brackets are assembled to the product for shipment. FA / TA / TB are included with the product at shipment.

Code	Content
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
TA	Rod Side Trunnion Type
TB	Head Side Trunnion Type

2 Bore Size (mm)

Code	Content
20	$\phi 20$
25	$\phi 25$
32	$\phi 32$
40	$\phi 40$
50	$\phi 50$
63	$\phi 63$

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
$\phi 20$ to $\phi 32$	10 to 1000	Every 1 mm
$\phi 40$ to $\phi 63$	10 to 1500	

- *1: For the number of switches to be mounted and minimum stroke, refer to P. 370.
- *2: If the stroke exceeds 600 mm, it will be a custom order product.

5 Stroke adjustment range (mm)

Code	Content
25	25
50	50

- *1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.
- *2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
- *3: This does not guarantee the water resistance of the cylinder.
- *4: T8H/V switches cannot be mounted when the bore size is $\phi 20$ to $\phi 40$ and switch mounting is the rail type.
- *5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH ③
5 m TOH ⑤

6 Switch Model No.

For switch details, please refer to 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□	
			3-wire (NPN)	—	30 or less	—	50 or less	T3WH□	T3WV□
		2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□
				—	24 ± 10%	—		T2YD□	—
			2-Color for AC Magnetic Field	—	—	—	—	T2YDT□	—
		1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□
				1-Color Flexible Lead Wire Type	—	10 to 30		—	T2HR3
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
			110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	No Indicator Lamp	—	—	—	—	—	—		
Ending	1-Color	—	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Model No. Example)

SCM-R-.....-XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

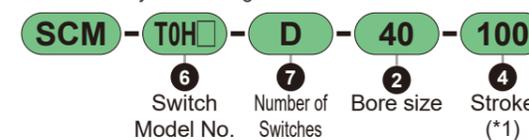
● Uses food grade grease that can be used in food manufacturing processes

SCM-R-.....-FP1

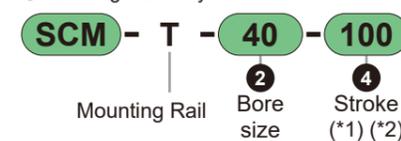
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

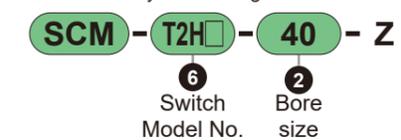


● Mounting Rail Only

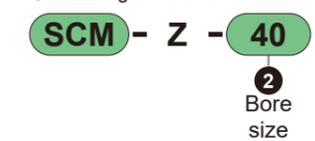


[Switch mounting: Band Type]

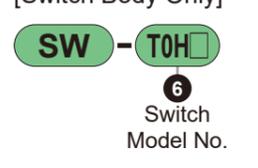
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



- *1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
- *2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-R						
	Bore Size	mm	ø20	ø25	ø32	ø40	ø50
Actuation method	Double Acting, Stroke Adjustment Type (Pull)						
Operating Fluid	Compressed Air						
Max. Working Pressure	MPa	1.0					
Min. Operating Pressure	MPa	0.1			0.05		
Proof Pressure	MPa	1.6					
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)					
Port Size		Rc1/8			Rc1/4		
Stroke tolerance	mm	+1.4 (to 1000) 0		+1.4 (to 1500) 0		+2.3 (to 1000), +2.7 (to 1500) 0	
Operating Piston Speed	mm/s	30 to 1000 (Use within allowable absorption energy.)					
Cushion	Rubber Cushion						
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)						
Stroke adjustment range	mm	25, 50					
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke

(Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75 50, 75, 100 50, 75, 100	1,000	10
ø25			
ø32			
ø40			
ø50	1500	1500	10
ø63			

*1: Intermediate strokes can be manufactured in 1 mm increments.
*2: If the stroke exceeds 600 mm, it will be made to order, so please consult with us.

Number of Switches Mounted and Min. Stroke (mm)

● Switch mounting: Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25

● Switch mounting: Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Stroke adjustment range	Product Weight at Stroke (S) = 0 mm				Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
		Basic type	Axial Foot Type	Flange Type	Trunnion Type				
ø20	25	0.14	0.25	0.17	0.15	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
	50	0.15	0.25	0.18	0.16				
ø25	25	0.25	0.36	0.29	0.27		0.014	0.016	0.007
	50	0.26	0.37	0.30	0.28				
ø32	25	0.37	0.52	0.43	0.40		0.018	0.020	0.007
	50	0.38	0.52	0.44	0.41				
ø40	25	0.70	0.89	0.78	0.75		0.030	0.032	0.007
	50	0.72	0.91	0.80	0.77				
ø50	25	1.30	1.71	1.64	1.44		0.044	0.046	0.008
	50	1.33	1.75	1.67	1.47				
ø63	25	1.83	2.45	2.33	1.97	0.052	0.054	0.009	
	50	1.86	2.48	2.36	2.00				

(Example) Product Weight of SCM-R-LB-40D-100-25-T2H-D
 Product Weight at S=0 mm0.89 kg
 Added Weight at S=100 mm ...0.032 × $\frac{100}{10}$ = 0.32 kg
 Weight of 2 switches0.036 kg
 Product Weight 0.89 kg+0.32 kg+0.036 kg=1.246 kg

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating 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
ø20	Push	-	31.4	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	-	26.4	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 10 ²
ø25	Push	-	49.1k	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	-	41.2	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 10 ²
ø32	Push	-	80.4	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	-	69.1	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 10 ²
ø40	Push	-	1.26 × 10 ²	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	-	1.06 × 10 ²	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	98.0	1.96 × 10 ²	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	82.5	1.65 × 10 ²	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	1.56 × 10 ²	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	2.40 × 10 ²	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

Mounting Bracket Model No. Notation Method

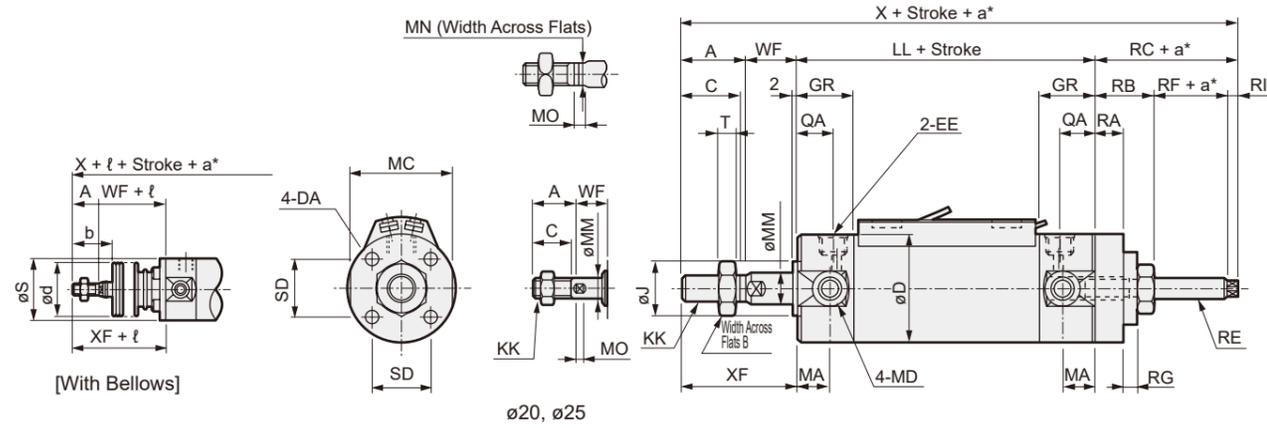
Bore Size (mm)	ø20	ø25	ø32	ø40	ø50	ø63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

*1: Mounting bolts are included to each mounting bracket.
*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

● Basic Type (OO)

• Switch Mounting Method: Rail Type



*a: Stroke adjustment range

Code	Basic Type (OO) Basic Dimensions																
	Bore Size (mm)	A	B	C	D	DA	EE	GR	J	KK	LL	MA	MC	MD	MM	MN	MO
ø20	18	13	16	26	M4 Depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	12
ø25	22	17	20	31	M5 Depth 6.5	Rc1/8	19	14	M10 × 1.25	71	11	29	M6	10	8	5	12
ø32	22	17	20	38	M5 Depth 7.5	Rc1/8	19	18	M10 × 1.25	73	11	36	M8	12	10	5.5	12
ø40	30	22	27	47	M6 Depth 12	Rc1/8	20	25	M14 × 1.5	79	12	44	M10	16	14	6	13
ø50	35	27	32	58	M8 Depth 16	Rc1/4	25	30	M18 × 1.5	93	13	55	M12	20	17	8	15
ø63	35	27	32	72	M10 Depth 16	Rc1/4	25	32	M18 × 1.5	93	13	69	M14	20	17	8	15

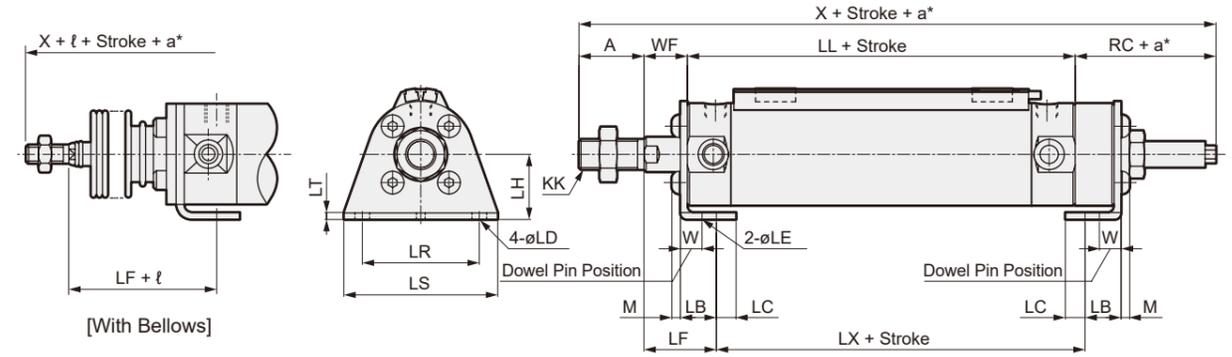
Code	With Bellows																
	Bore Size (mm)	SD	T	WF	X	XF	RA	RB	RC	RE	RI	RF	RG	b	d	s	ℓ
ø20	14	5	17	128.5	35	8	16	22.5	M6	4	2.5	4	30	30	25.7	(Stroke / 3) + 18.5	
ø25	16.5	6	18	141	40	10	20	30	M8	4	6	5	35	30	30.7	(Stroke / 3) + 20.5	
ø32	20	6	18	140	40	10	20	27	M8	4	3	5	31.5	35	37.7	(Stroke / 3) + 19	
ø40	26	8	20	169	50	18	32	40	M12 × 1.5	5	3	6	40	35	46.7	(Stroke / 3) + 18.5	
ø50	32	11	23	198	58	20	37	47	M16 × 1.5	7	3	8	46	40	57.7	(Stroke / 3.6) + 18.5	
ø63	38	11	23	198	58	20	37	47	M16 × 1.5	7	3	10	46	40	71.7	(Stroke / 3.6) + 18.5	

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting, Stroke Adjustment Type (Pull)

Outline Dimension Drawing

● Axial Foot Type (LB)

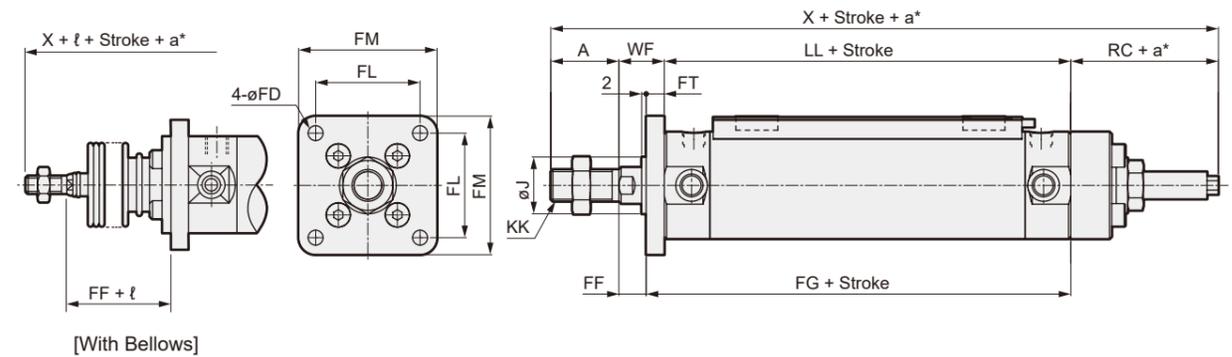


*a: Stroke adjustment range

Code	Axial Foot Type (LB) Mounting Dimensions																	With Bellows	
	Bore Size (mm)	A	KK	X	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF	RC
ø20	18	M8	128.5	15.1	7.1	5.7	4	28.9	20	71	32	44	3.2	47.2	2.6	10	17	22.5	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	141	15.1	7.1	5.7	4	29.9	22	71	36	49	3.2	47.2	3.4	10	18	30	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	140	16.1	8.1	6.8	4	30.9	25	73	44	58	3.2	47.2	3.4	10	18	27	(Stroke / 3) + 19
ø40	30	M14 × 1.5	169	16.6	9.1	6.8	4	33.4	30	79	54	71	3.2	52.2	4	10	20	40	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	198	22	11	9	5	40.5	40	93	66	86	4.5	58	5	17.5	23	47	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	198	22	13	11	5	40.5	45	93	82	106	4.5	58	5	17.5	23	47	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

● Rod Side Flange Type (FA)



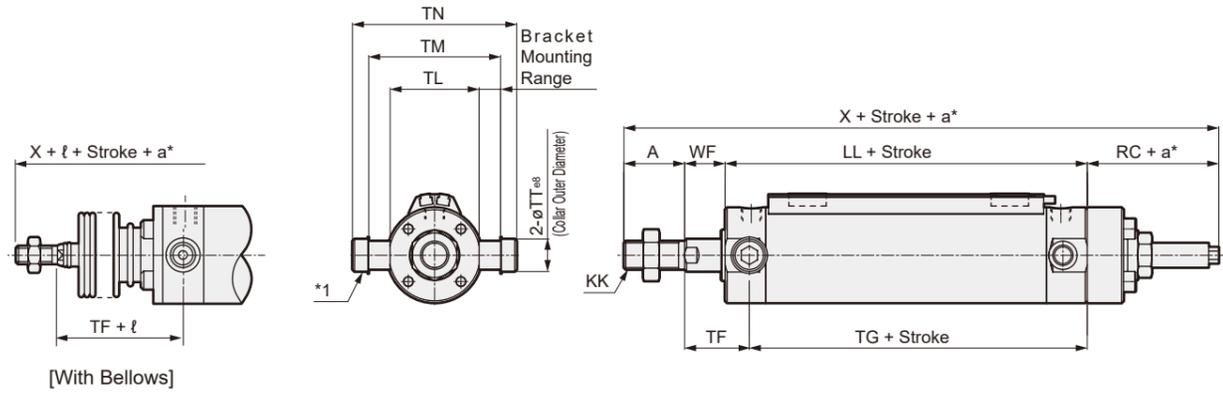
*a: Stroke adjustment range

Code	Rod Side Flange Type (FA) Mounting Dimensions													With Bellows
	Bore Size (mm)	A	FD	FF	FG	FL	FM	FT	J	KK	LL	WF	X	RC
ø20	18	5.5	11	79	28	40	6	12	M8	71	17	128.5	22.5	(Stroke / 3) + 18.5
ø25	22	5.5	11	80	32	44	7	14	M10 × 1.25	71	18	141	30	(Stroke / 3) + 20.5
ø32	22	6.6	11	82	38	53	7	18	M10 × 1.25	73	18	140	27	(Stroke / 3) + 19
ø40	30	6.6	12	89	46	61	8	25	M14 × 1.5	79	20	169	40	(Stroke / 3) + 18.5
ø50	35	9	14	104	58	76	9	30	M18 × 1.5	93	23	198	47	(Stroke / 3.6) + 18.5
ø63	35	11	14	104	70	92	9	32	M18 × 1.5	93	23	198	47	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

● Rod side trunnion type (TA)

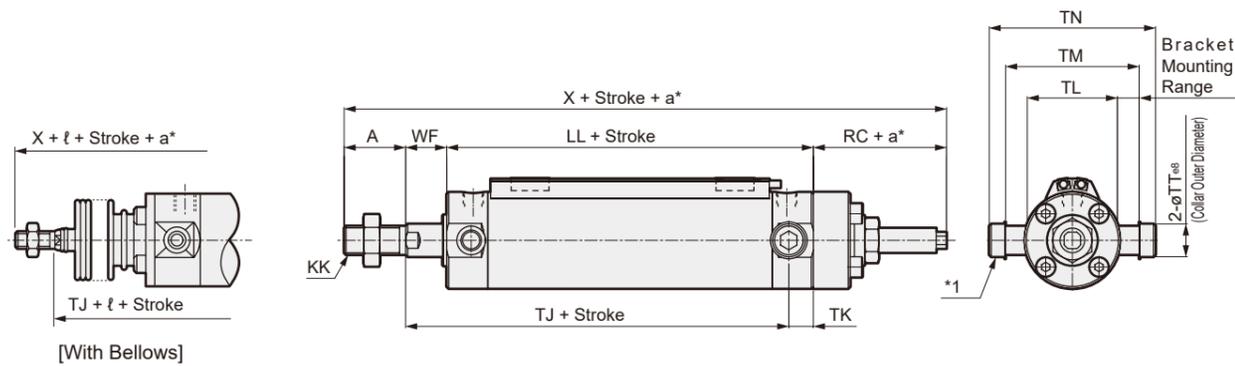


*a: Stroke adjustment range

Code	Rod Side Trunnion Type (TA) Mounting Dimensions												With Bellows
Bore Size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X	RC	ℓ
ø20	18	M8	71	28	62	28	39	47.6	8	17	128.5	22.5	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	71	29	62	33	43	53	10	18	141	30	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	73	29	64	40	54.5	67.7	12	18	140	27	(Stroke / 3) + 19
ø40	30	M14 × 1.5	79	32	69	49	65.9	81.1	14	20	169	40	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	93	36	82	60	80	98.6	16	23	198	47	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	93	36	82	74	98	119.2	18	23	198	47	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

● Head Side Trunnion Type (TB)



*a: Stroke adjustment range

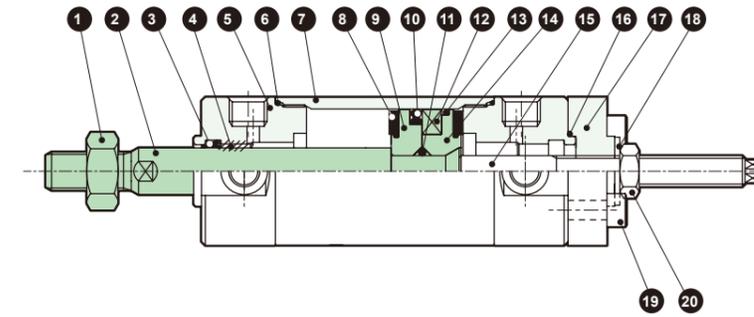
Code	Head Side Trunnion Type (TB) Mounting Dimensions												With Bellows
Bore Size (mm)	A	KK	LL	TJ	TK	TL	TM	TN	TT	WF	X	RC	ℓ
ø20	18	M8	71	77	11	28	39	47.6	8	17	128.5	22.5	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	71	78	11	33	43	53	10	18	141	30	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	73	80	11	40	54.5	67.7	12	18	140	27	(Stroke / 3) + 19
ø40	30	M14 × 1.5	79	87	12	49	65.9	81.1	14	20	169	40	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	93	103	13	60	80	98.6	16	23	198	47	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	93	103	13	74	98	119.2	18	23	198	47	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

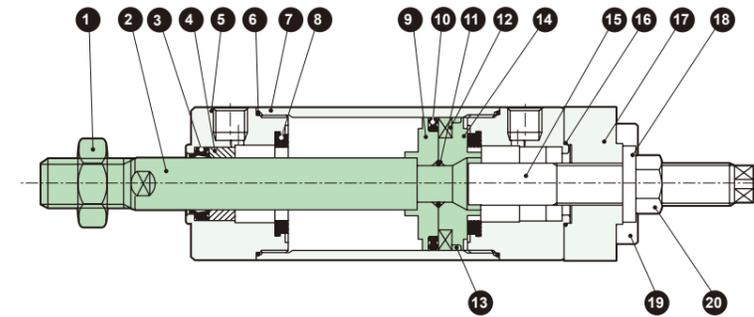
Internal Structure Diagram / Material

Internal Structure Diagram / Material

● ø20 to ø40



● ø50 to ø100



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	11	Piston Gasket	Nitrile Rubber	
2	Piston Rod	Steel	Industrial Hard Chrome Plating	12	Magnet	Plastic	
3	Rod Packing	Nitrile Rubber		13	Wear Ring	Polyacetal	
4	Bushing	Oil-impregnated Bearing Alloy		14	Piston H	Aluminum Alloy	
5	Rod Cover	Aluminum Alloy	Hard Anodized	15	Bolt	Steel	Zinc Chromate
6	Cylinder Gasket	Nitrile Rubber		16	Gasket	Nitrile Rubber	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	17	Cover	Steel	Zinc Chromate
8	Cushion Rubber	Urethane Rubber		18	Die Thread	Steel + Nitrile Rubber	
9	Piston R	Aluminum Alloy		19	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
10	Piston Packing	Nitrile Rubber		20	Hexagon Nut	Steel	Nickel Plating

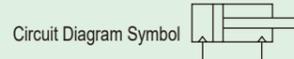
For maintenance parts, please visit the CKD Equipment Product Site
 (https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts



Round shaped cylinder Double Acting, Heat Resistant Type

SCM-T Series

● Bore Size: ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



Specifications

Item	SCM-T									
	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	
Actuation method		Double Acting/Heat Resistant Type								
Operating Fluid		Compressed Air								
Max. Working Pressure	MPa	1.0								
Min. Operating Pressure	MPa	0.1			0.05					
Proof Pressure	MPa	1.6								
Ambient Temperature	°C	5 to 120								
Port Size		Rc1/8			Rc1/4	Rc3/8	Rc1/2			
Stroke tolerance	mm	+1.8 (to 1000) 0		+1.8 (to 1500) 0	+1.4 (to 1000), +1.8 (to 1500) 0					
Operating Piston Speed	mm/s	30 to 1000 (Use within allowable absorption energy.)								
Cushion		Rubber Cushion				Air Cushion				
Lubrication	(*1)	Not Available								
Allowable absorbed energy J	With Rubber Cushion	0.1	0.2	0.5	0.9	-	-	-	-	
	With Air Cushion	-	-	-	-	8.0	14.4	25.4	45.6	
	Without Cushion (*2)	-	-	-	-	0.057	0.057	0.112	0.153	

*1: Grease up regularly with heat-resistant grease.

*2: Without cushion for allowable absorbed energy indicates the allowable absorbed energy on the unindicated side when single side air cushion is selected ("R" -> head side, "H" -> rod side).

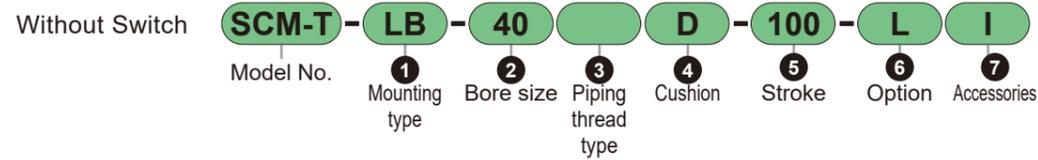
*3: Without a cushion, large energy generated by external load cannot be absorbed. Provide an external shock absorber.

Stroke

Bore size (mm)	Standard Stroke (mm)	Max. Stroke (mm)	Min. Stroke (mm)		
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	1,000	10		
ø25					
ø32					
ø40					
ø50					
ø63					
ø80					
ø100					
ø20				1,500	
ø25					
ø32					
ø40					
ø50					
ø63					
ø80					
ø100					

Note: Intermediate strokes can be produced in 1 mm increments.

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Content
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included) (ø20 to ø63)
CB	Double Clevis Type (Pin and Retaining Ring Included) (ø80, ø100)
TA	Rod Side Trunnion Type (ø20 to ø63)
TB	Head Side Trunnion Type (ø20 to ø63)

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Cushion

Code	Content
B	With Air Cushion on Both Sides (ø50 to ø100)
R	With Rod Side Air Cushion (ø50 to ø100)
H	With Head Side Air Cushion (ø50 to ø100)
D	With Rubber Cushion on Both Sides (ø20 to ø40)

5 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø32	10 to 1000	Every 1 mm
ø40 to ø100	10 to 1500	

6 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature
L	Bellows	250°C	400°C
M	Piston Rod Material (Stainless Steel)		

7 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B1	Single Bracket (ø80, ø100)
B2	Double Yoke Bracket (ø20 to ø63)

*1: "I" and "Y" cannot be selected at the same time.

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Model No. Example)

SCM - T - - XP5

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Added Weight per S = 10 mm
	Basic type	Axial Foot Type	Flange Type	Clevis Type	Trunnion Type	
ø20	0.10	0.21	0.13	0.15	0.11	0.010
ø25	0.17	0.30	0.21	0.25	0.19	0.014
ø32	0.25	0.41	0.31	0.40	0.28	0.018
ø40	0.40	0.62	0.48	0.63	0.45	0.030
ø50	0.75	1.23	1.09	1.15	0.89	0.044
ø63	1.05	1.77	1.55	1.73	1.19	0.052
ø80	2.02	2.98	2.73	2.73	-	0.070
ø100	3.14	4.89	4.49	4.42	-	0.098

(Example) Product Weight of SCM-T-LB-40-100

Product Weight at S=0 mm0.62 kg
 Added Weight at S=100 mm0.030 × $\frac{100}{10}$ = 0.30 kg
 Product Weight0.62 kg+0.30 kg
 0.92 kg

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating 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
ø20	Push	-	31.4	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	-	26.4	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 10 ²
ø25	Push	-	49.1	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	-	41.2	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 10 ²
ø32	Push	-	80.4	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	-	69.1	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 10 ²
ø40	Push	-	1.26 × 10 ²	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	-	1.06 × 10 ²	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	98.0	1.96 × 10 ²	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	82.5	1.65 × 10 ²	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	1.56 × 10 ²	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	2.40 × 10 ²	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	2.51 × 10 ²	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	2.27 × 10 ²	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	3.92 × 10 ²	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	3.57 × 10 ²	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

Mounting Bracket Model No. Notation Method

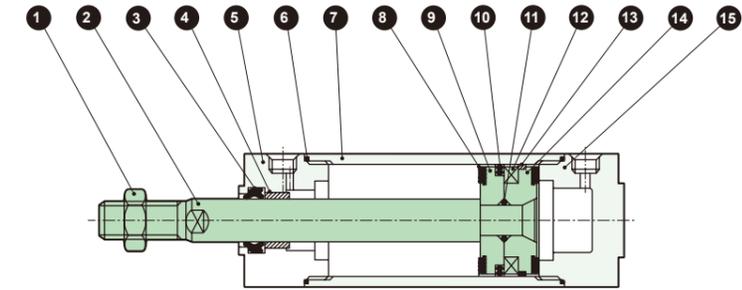
Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Double Clevis (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: Mounting bolts are included to each mounting bracket.

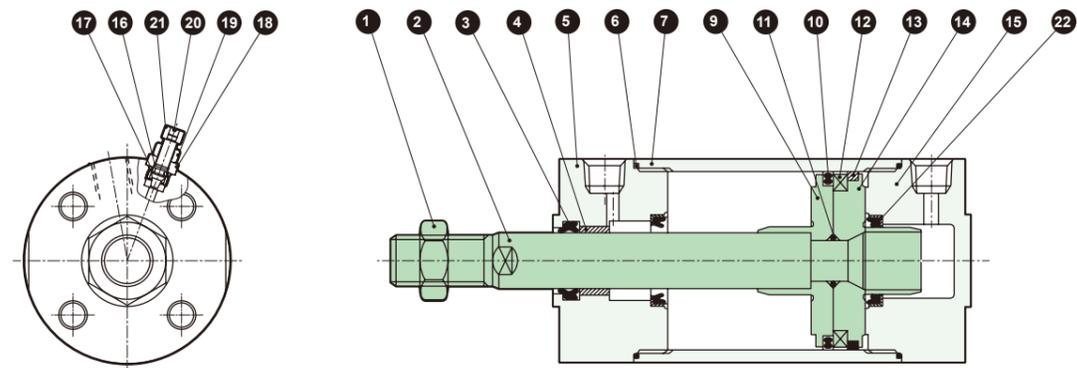
*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Internal Structure Diagram / Material

●ø20 to ø40 (with Rubber Cushion)



●ø50 to ø100 (with Air Cushion)



Part No.	Part Name	Material	Remarks	Part Number	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	13	Wear Ring	Special Resin	
2	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø100: Steel	Industrial Hard Chrome Plating	14	Piston H	Aluminum Alloy	
				15	Head Cover	Aluminum Alloy	Hard Anodized
3	Rod Packing	Fluoro Rubber		With Air Cushion			
4	Bushing	Oil-Impregnated Bearing Alloy		16	Needle Gasket	Fluoro Rubber	
5	Rod Cover	Aluminum Alloy	Hard Anodized	17	Holder Gasket	Fluoro Rubber	
6	Cylinder Gasket	Fluoro Rubber		18	Needle Holder	Aluminum Alloy	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	19	Lock Nut	Steel	Nickel Plating
8	Cushion Rubber	Fluoro Rubber		20	Needle	Stainless Steel	
9	Piston R	Aluminum Alloy		21	Knob	Aluminum Alloy	Chromate
10	Piston Packing	Fluoro Rubber		22	Cushion Packing	Fluororubber, Steel	
11	Piston Gasket	Fluoro Rubber					
12	Piston Ring	ø20 to ø32: Aluminum Alloy ø40 to ø100: Steel	ø40 to ø100: Zinc Chromate				

Outline Dimension Drawing

Same dimensions as standard single rod type. Refer to P. 328 to 334. However, please note that cylinder switch is not included.

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts



Round shaped cylinder Double Acting, Drop Prevention Type

SCM-Q Series

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

Circuit Diagram Symbol



SCM-Q Series

Model No. Notation Method

8 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

9 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

10 Option

Code	Content
Q	Shipped with Switch Rail Attached

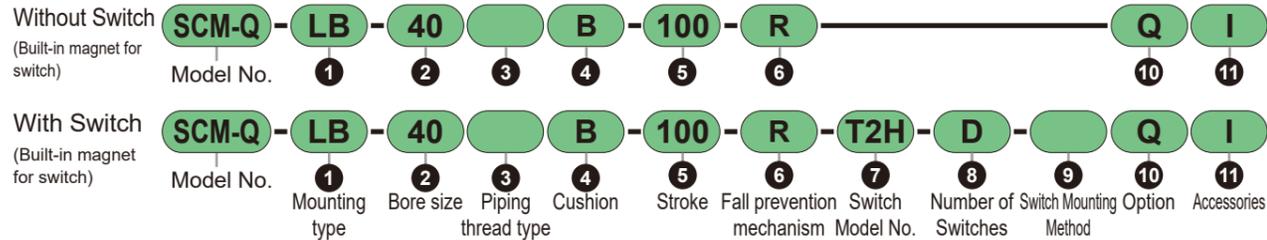
Note: If switch mounting method "Z" is selected, "Q" (shipped with switch rail included) cannot be selected.

11 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B1	Single Bracket (ø80, ø100)
B2	Double Yoke Bracket (ø20 to ø63)

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Contents
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included) (ø20 to ø63)
CB	Double Clevis Type (Pin and Retaining Ring Included) (ø80, ø100)
TA	Rod Side Trunnion Type (ø20 to ø63)
TB	Head Side Trunnion Type (ø20 to ø63)

*1: For mounting style LB, mounting to a frame, etc. with the bracket included with the cylinder is not possible. For details, see Precautions for Use.

*2: Cannot be selected if rod side drop prevention is included.

*3: Cannot be selected if head side drop prevention is included.

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

4 Cushion

Code	Content
B	With Air Cushion on Both Sides
R	With Air Cushion on Rod Side
H	With Air Cushion on Head Side

3 Piping thread type

Code	Content
Blank	M5 (With Air Cushion ø20, ø25 only) Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

*1: ø20, ø25 cannot be selected.

5 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø32	10 to 1000	Every 1 mm
ø40 to ø100	10 to 1500	

Note: For the number of switches to be mounted and minimum stroke, refer to P. 382.

6 Drop prevention mechanism

Code	Content
R	With rod side fall prevention
H	With head side fall prevention

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*4: Switches other than those listed on the left are also available. (Custom order) For details, refer to 971.

*Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m T0H
3 m T0H 3
5 m T0H 5

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to End of Volume P. 11.

Model No. Example)

SCM-Q-.....-XP5

Clean Specification (Catalog No. CB-033SAA)

Dust prevention structure usable in cleanrooms

SCM-Q-.....-P7*

SCM-Q-.....-P5*

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Structure usable in rechargeable battery manufacturing processes

SCM-Q-.....-P4*

*Please contact us for details.

7 Switch Model No.

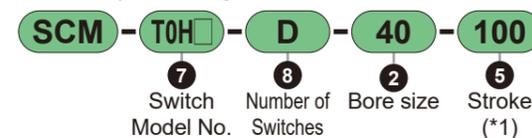
For switch details, please refer to P. 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T5V□	T5V□
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□
			—	30 or less	—	100 or less	T3H□	T3V□
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□
			—	30 or less	—	50 or less	T3WH□	T3WV□
			—	—	—	—	T5V□	—
Cylinder Switch	No Indicator Lamp	2-wire	—	24 ± 10%	—	5 to 20	T5V□	—
			—	10 to 30	—	5 to 20 *2	T5V□	T5V□
			—	10 to 30	—	—	T2HR3	T2VR3
			—	—	—	—	—	—
Ending	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□
			110	5/12/24	20 or less	50 or less	T5H□	T5V□
Ending	1-Color	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T5V□

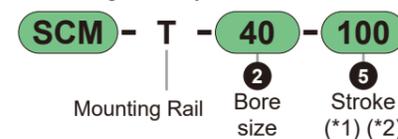
*3

Switch Single Unit Model No. Notation Method

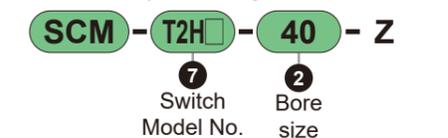
[Switch mounting: Rail Type]
Switch Body + Mounting Rail Set



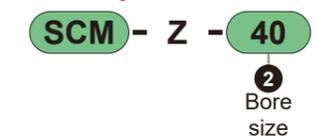
● Mounting Rail Only



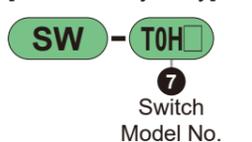
[Switch mounting: Band Type]
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.

*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-Q									
	Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting, Drop Prevention Type									
Operating Fluid	Compressed Air									
Max. Working Pressure	MPa	1.0								
Min. Operating Pressure	MPa	0.15			0.1					
Proof Pressure	MPa	1.6								
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)								
Port Size		M5	Rc1/8		Rc1/4		Rc3/8	Rc1/2		
Stroke tolerance	mm	+1.4 0 (to 1000)		+1.4 0 (to 1500)	+1.4 0 (to 1000)		+1.8 0 (to 1500)			
Operating Piston Speed	mm/s	30 to 500 (Use within allowable absorbed energy.)								
Cushion	Air Cushion									
Effective air cushion length	mm	8.1	8.1	8.6	8.6	13.4	15.4	15.4		
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)									
Fall prevention mechanism	Head Side or Rod Side									
Holding Force	N	Max. Thrust × 0.7								
Allowable absorbed energy	With 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: Without cushion for allowable absorbed energy indicates the allowable absorbed energy on the unindicated side when single side air cushion is selected ("R" => head side, "H" => rod side).

*2: Without a cushion, large energy generated by external load cannot be absorbed. Provide an external shock absorber.

Stroke

(Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 100, 125, 150, 200, 250, 300	1,000	10
ø25			
ø32			
ø40		1,500	
ø50			
ø63			
ø80			
ø100			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State						Reed	
	T2, T3		T2W, T3W		T□Y□		1	2
	1	2	1	2	1	2		
Number of Switches								
Bore size (mm)								
ø20	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25
ø80	10	25	10	25	10	25	10	25
ø100	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State						Reed	
	T2, T3		T2W, T3W		T□Y□		1	2
	1	2	1	2	1	2		
Number of Switches								
Bore size (mm)								
ø20	10	25	10	30	10	35	10	25
ø25	10	25	10	30	10	35	10	25
ø32	10	25	10	30	10	35	10	25
ø40	10	25	10	30	10	35	10	25
ø50	10	25	10	30	10	35	10	25
ø63	10	25	10	30	10	35	10	25
ø80	10	25	10	30	10	35	10	25
ø100	10	25	10	30	10	35	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

With Rod Side Drop Prevention (R)

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
	Bore size (mm)	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.15	0.26	0.18	0.20	0.16	Refer to the weight listed in the switch specifications on P. 971.	0.010	0.012	0.007
ø25	0.24	0.37	0.28	0.32	0.26		0.014	0.016	0.007
ø32	0.32	0.48	0.38	0.47	0.35		0.018	0.020	0.007
ø40	0.64	0.86	0.72	0.87	0.69		0.030	0.032	0.007
ø50	1.09	1.57	1.43	1.49	1.23		0.044	0.046	0.008
ø63	1.49	2.21	1.99	2.17	1.63		0.052	0.054	0.009
ø80	2.67	3.63	3.38	3.38	-		0.070	0.072	0.010
ø100	4.15	5.90	5.50	5.43	-		0.098	0.100	0.010

With Head Side Drop Prevention (H)

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
	Bore size (mm)	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.15	0.26	0.18	0.20	0.16	Refer to the weight listed in the switch specifications on P. 971.	0.010	0.012	0.007
ø25	0.24	0.37	0.28	0.32	0.26		0.014	0.016	0.007
ø32	0.35	0.51	0.41	0.50	0.38		0.018	0.020	0.007
ø40	0.69	0.91	0.77	0.92	0.74		0.030	0.032	0.007
ø50	1.19	1.67	1.53	1.59	1.33		0.044	0.046	0.008
ø63	1.60	2.32	2.10	2.28	1.74		0.052	0.054	0.009
ø80	2.86	3.82	3.57	3.57	-		0.070	0.072	0.010
ø100	4.30	6.05	5.65	5.58	-		0.098	0.100	0.010

(Example) Product Weight of SCM-Q-LB-40B-100-R-T2H-D
 Product Weight at S=0 mm 0.86 kg
 Added Weight at S=100 mm 0.032 × $\frac{100}{10}$ = 0.32 kg
 Weight of 2 switches 0.036 kg
 Product Weight 0.86 kg + 0.32 kg + 0.036 kg = 1.216 kg

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	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	1.26 × 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	-	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 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	-	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 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	-	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 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	1.96 × 10 ²	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	1.65 × 10 ²	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

▲ Before use, be sure to read "Precautions for Use" (3. Drop Prevention Type SCM-Q) section (P. 478, 481).

Mounting Bracket Model No. Notation Method

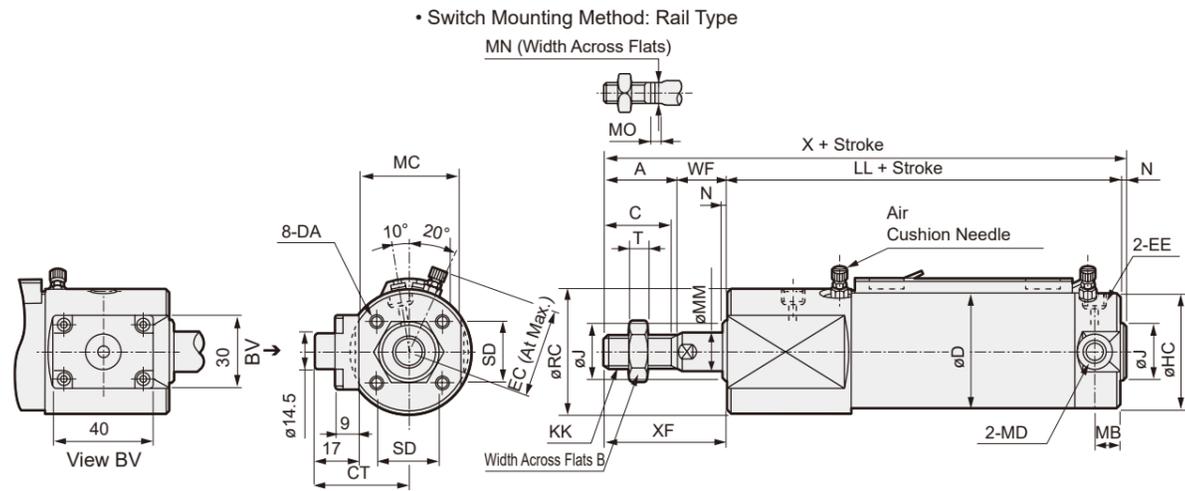
Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket								
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	—	—
Double Clevis (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: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outer Dimensions Diagram (ø20 to ø32)

● Basic Type (OO)
(With rod side fall prevention)



Code	Basic Type (OO) (With Rod Side Drop Prevention) Basic Dimensions														
Bore size (mm)	A	B	C	CD	CH	CL	CS	CT	D	DA	EC	EE	Eθ	HC	J
ø20	18	13	16	16	15.5	22	9.5	28	26	M4 Depth 6.5	27	M5	30°	26	12
ø25	22	17	20	16	15.5	22	9.5	31	31	M5 Depth 6.5	29.5	M5	30°	31	14
ø32	22	17	20	16	15.5	22	9.5	31.5	38	M5 Depth 7.5	32.8	Rc1/8	25°	38	18

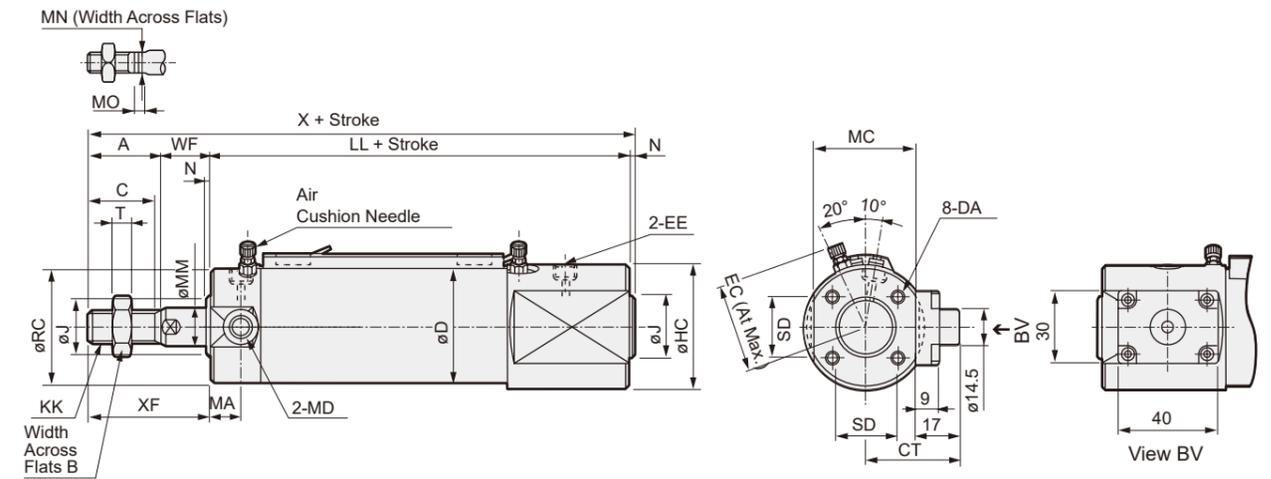
Code	Basic Type (OO) (With Rod Side Drop Prevention) Basic Dimensions														
Bore size (mm)	KK	LL	MB	MC	MD	MM	MO	MN	N	RC	SD	T	WF	X	XF
ø20	M8	84	11	25	M5	8	4	6	2	30	14	5	17	121	35
ø25	M10 × 1.25	84	11	31	M6	10	5	8	2	35	16.5	6	18	126	40
ø32	M10 × 1.25	86	10	32	M8	12	5.5	10	2	38	20	6	18	128	40

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting, Drop Prevention Type

Outer Dimensions Diagram (ø20 to ø32)

● Basic Type (OO)
(With head side fall prevention)



Code	Basic Type (OO) (With Head Side Drop Prevention) Basic Dimensions														
Bore size (mm)	A	B	C	CD	CH	CL	CS	CT	D	DA	EC	EE	Eθ	HC	J
ø20	18	13	16	16	15.5	22	9.5	28	26	M4 Depth 6.5	27	M5	30°	30	12
ø25	22	17	20	16	15.5	22	9.5	31	31	M5 Depth 6.5	29.5	M5	30°	35	14
ø32	22	17	20	16	15.5	22	9.5	31.5	38	M5 Depth 7.5	32.8	Rc1/8	25°	38	18

Code	Basic Type (OO) (With Head Side Drop Prevention) Basic Dimensions														
Bore size (mm)	J	KK	LL	MC	MD	MM	MO	MN	N	RC	SD	T	WF	X	XF
ø20	12	M8	84	25	M5	8	4	6	2	26	14	5	17	121	35
ø25	14	M10 × 1.25	84	31	M6	10	5	8	2	31	16.5	6	18	126	40
ø32	18	M10 × 1.25	86	32	M8	12	5.5	10	2	38	20	6	18	128	40

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

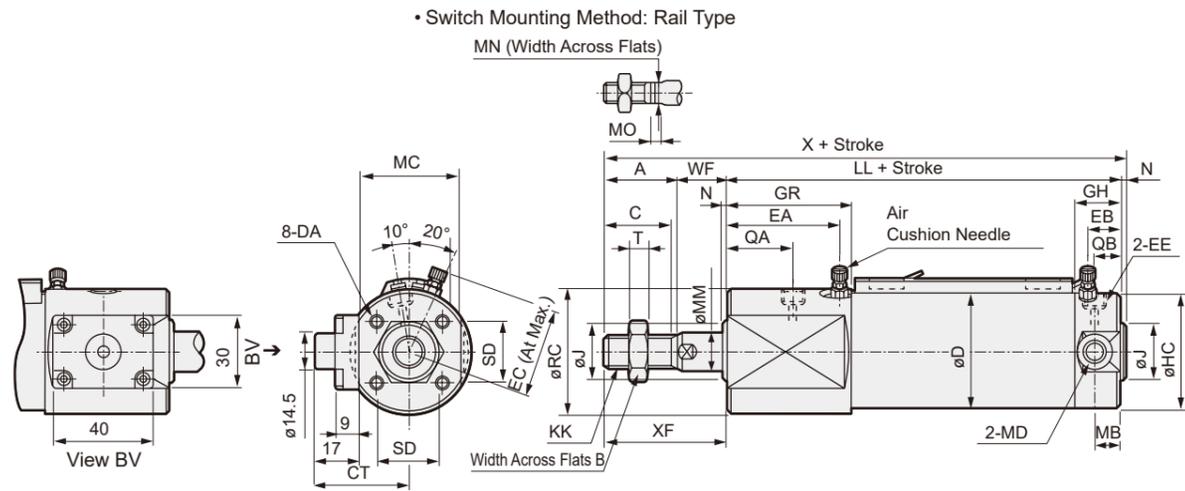
SCS2

Cylinder Switch

Ending

Outer Dimensions Diagram (ø40 to ø100)

- Basic Type (OO)
(With rod side fall prevention)



Code	Basic Type (OO) (With Rod Side Drop Prevention) Basic Dimensions															
Bore size (mm)	A	B	C	CT	D	DA	EA	EB	EC	EE	GH	GR	HC	J	KK	
ø40	30	22	27	37.5	47	M6 Depth 12	45	14	36.6	Rc1/8	19	50	47	25	M14 × 1.5	
ø50	35	27	32	43.5	58	M8 Depth 16	48.5	15.5	43	Rc1/4	22	55	58	30	M18 × 1.5	
ø63	35	27	32	49.5	72	M10 Depth 16	48.5	15.5	50	Rc1/4	22	55	72	32	M18 × 1.5	
ø80	40	32	37	57.5	89	M10 Depth 22	50	20	58.5	Rc3/8	28	58	89	40	M22 × 1.5	
ø100	40	41	37	68.5	110	M12 Depth 22	50	20	69	Rc1/2	28	58	110	50	M26 × 1.5	

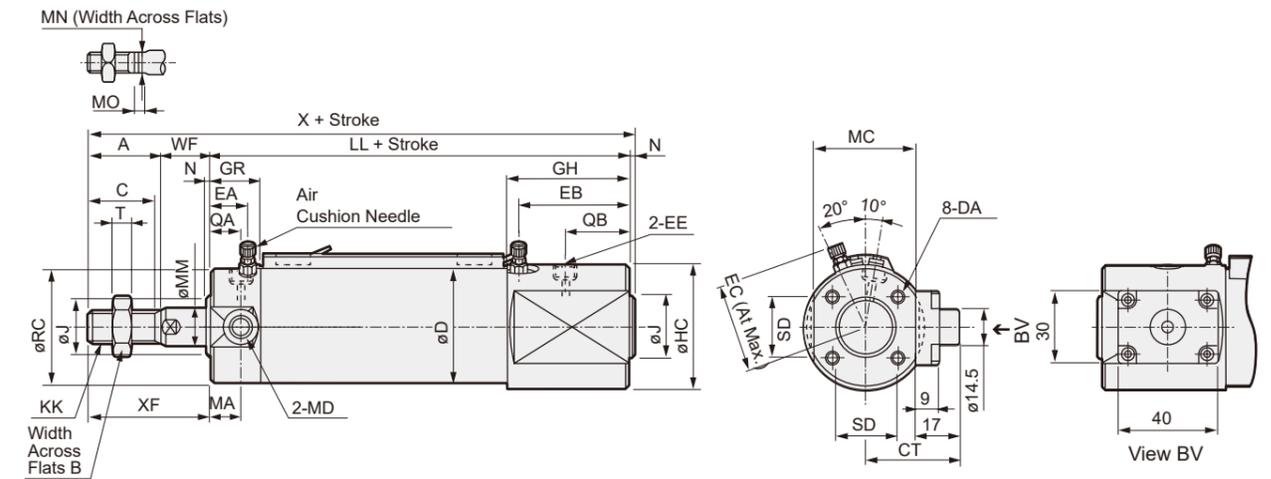
Code	Basic Type (OO) (With Rod Side Drop Prevention) Basic Dimensions															
Bore size (mm)	LL	MB	MC	MD	MM	MO	MN	N	QA	QB	RC	SD	T	WF	X	XF
ø40	108	10	41	M10	16	6	14	2	26.5	12	51	26	8	20	160	50
ø50	120	12	53	M12	20	8	17	2	30	12	61	32	11	23	180	58
ø63	120	12	65	M14	20	8	17	2	30	12	72	38	11	23	180	58
ø80	138	-	81	-	25	11	22	3	31.5	15	89	50	13	31	212	71
ø100	138	-	103	-	30	13	27	3	31.5	15	110	60	16	31	212	71

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting, Drop Prevention Type

Outer Dimensions Diagram (ø40 to ø100)

- Basic Type (OO)
(With head side fall prevention)
- Switch Mounting Method: Rail Type



Code	Basic Type (OO) (With Head Side Drop Prevention) Basic Dimensions															
Bore size (mm)	A	B	C	CT	D	DA	EA	EB	EC	EE	GH	GR	HC	J	KK	
ø40	30	22	27	37.5	47	M6 Depth 12	15	44	36.6	Rc1/8	49	20	51	25	M14 × 1.5	
ø50	35	27	32	43.5	58	M8 Depth 16	18.5	45.5	43	Rc1/4	52	25	61	30	M18 × 1.5	
ø63	35	27	32	49.5	72	M10 Depth 16	18.5	45.5	50	Rc1/4	52	25	72	32	M18 × 1.5	
ø80	40	32	37	57.5	89	M10 Depth 22	20	50	58.5	Rc3/8	58	28	89	40	M22 × 1.5	
ø100	40	41	37	68.5	110	M12 Depth 22	20	50	69	Rc1/2	58	28	110	50	M26 × 1.5	

Code	Basic Type (OO) (With Head Side Drop Prevention) Basic Dimensions															
Bore size (mm)	LL	MA	MC	MD	MM	MO	MN	N	QA	QB	RC	SD	T	WF	X	XF
ø40	108	12	41	M10	16	6	14	2	13	25.5	47	26	8	20	160	50
ø50	120	13	53	M12	20	8	17	2	15	27	58	32	11	23	180	58
ø63	120	13	65	M14	20	8	17	2	15	27	72	38	11	23	180	58
ø80	138	-	81	-	25	11	22	3	15	31.5	89	50	13	31	212	71
ø100	138	-	103	-	30	13	27	3	15	31.5	110	60	16	31	212	71

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

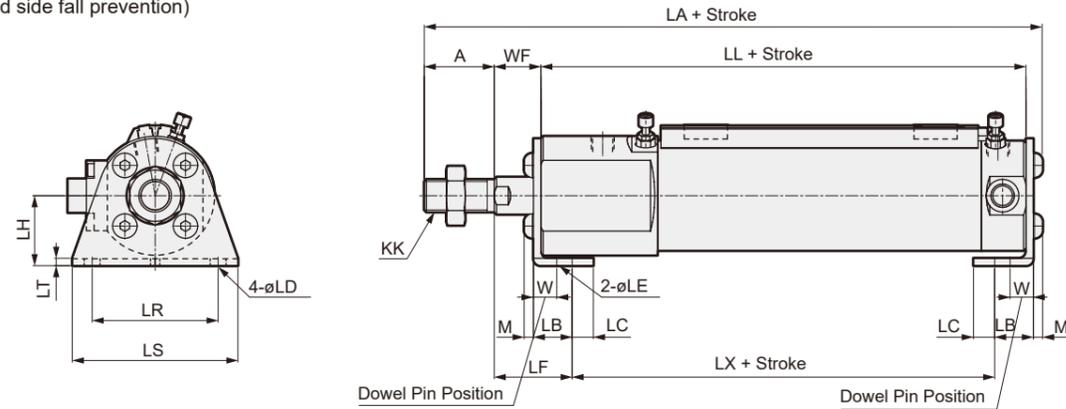
SCS2

Cylinder Switch

Ending

Outer Dimensions Diagram (Bore size: $\phi 20$ to $\phi 100$)

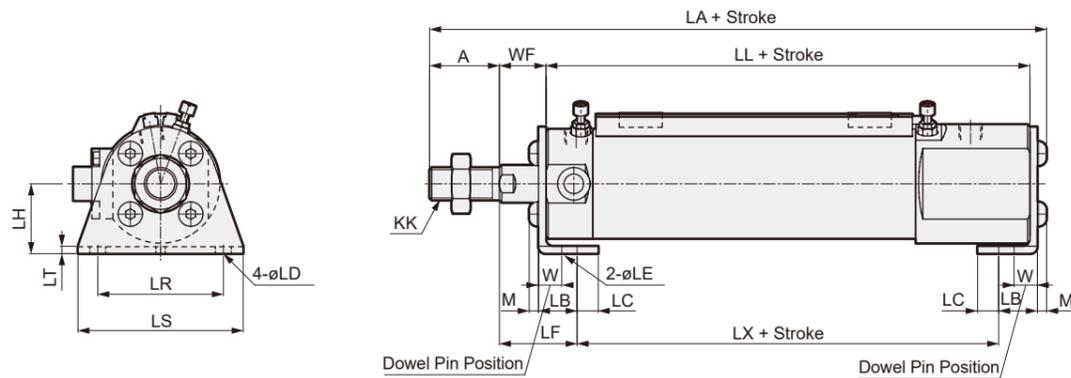
● Axial Foot Type (LB)
(With rod side fall prevention)



Code	Axial Foot Type (LB) Mounting Dimensions																
Bore size (mm)	A	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF
20	18	M8	124.8	15.1	7.1	5.7	4	28.9	20	84	32	44	3.2	60.2	2.6	10	17
25	22	M10 × 1.25	130.6	15.1	7.1	5.7	4	29.9	22	84	36	49	3.2	60.2	3.4	10	18
32	22	M10 × 1.25	132.6	16.1	8.1	6.8	4	30.9	25	86	44	58	3.2	60.2	3.4	10	18
40	30	M14 × 1.5	165.2	16.6	9.1	6.8	4	33.4	30	108	54	71	3.2	81.2	4	10	20
50	35	M18 × 1.5	187.5	22	11	9	5	40.5	40	120	66	86	4.5	85	5	17.5	23
63	35	M18 × 1.5	187.5	22	13	11	5	40.5	45	120	82	106	4.5	85	5	17.5	23
80	40	M22 × 1.5	219.5	28.5	14	11	6	55	55	138	100	125	4.5	90	6	20	31
100	40	M26 × 1.5	222	30	16	14	6	55	65	138	120	150	6	90	7	20	31

*1: Mounting style: For LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. For details, see Precautions for Use.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

● Axial Foot Type (LB)
(With head side fall prevention)

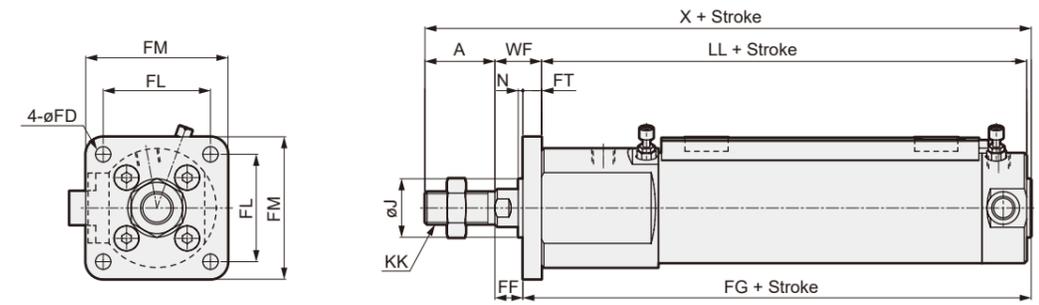


Code	Axial Foot Type (LB) Mounting Dimensions																
Bore size (mm)	A	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF
20	18	M8	124.8	15.1	7.1	5.7	4	28.9	20	84	32	44	3.2	60.2	2.6	10	17
25	22	M10 × 1.25	130.6	15.1	7.1	5.7	4	29.9	22	84	36	49	3.2	60.2	3.4	10	18
32	22	M10 × 1.25	132.6	16.1	8.1	6.8	4	30.9	25	86	44	58	3.2	60.2	3.4	10	18
40	30	M14 × 1.5	165.2	16.6	9.1	6.8	4	33.4	30	108	54	71	3.2	81.2	4	10	20
50	35	M18 × 1.5	187.5	22	11	9	5	40.5	40	120	66	86	4.5	85	5	17.5	23
63	35	M18 × 1.5	187.5	22	13	11	5	40.5	45	120	82	106	4.5	85	5	17.5	23
80	40	M22 × 1.5	219.5	28.5	14	11	6	55	55	138	100	125	4.5	90	6	20	31
100	40	M26 × 1.5	222	30	16	14	6	55	65	138	120	150	6	90	7	20	31

*1: Mounting style: For LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. For details, see Precautions for Use.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

Outer Dimensions Diagram (Bore size: $\phi 20$ to $\phi 100$)

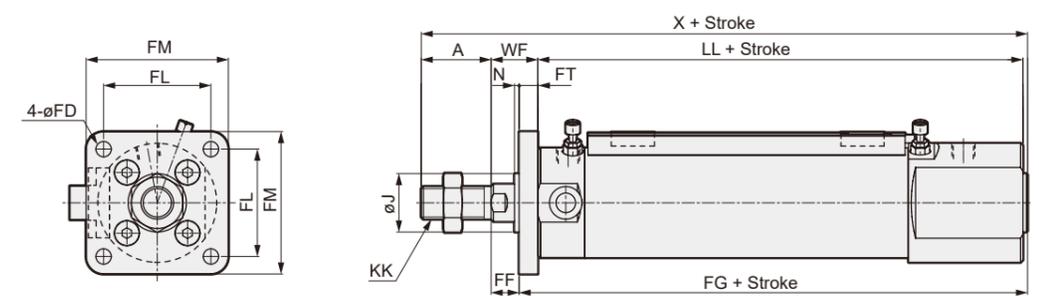
● Rod Side Flange Type (FA)
(With rod side fall prevention)



Code	Rod Side Flange Type (FA) Mounting Dimensions													
Bore size (mm)	A	FD	FF	FG	FL	FM	FT	J	KK	LL	N	WF	X	
20	18	5.5	11	92	28	40	6	12	M8	84	2	17	121	
25	22	5.5	11	93	32	44	7	14	M10 × 1.25	84	2	18	126	
32	22	6.6	11	95	38	53	7	18	M10 × 1.25	86	2	18	128	
40	30	6.6	12	118	46	61	8	25	M14 × 1.5	108	2	20	160	
50	35	9	14	131	58	76	9	30	M18 × 1.5	120	2	23	180	
63	35	11	14	131	70	92	9	32	M18 × 1.5	120	2	23	180	
80	40	11	20	152	82	104	11	40	M22 × 1.5	138	3	31	212	
100	40	13	17	155	100	128	14	50	M26 × 1.5	138	3	31	212	

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

● Rod Side Flange Type (FA)
(With head side fall prevention)

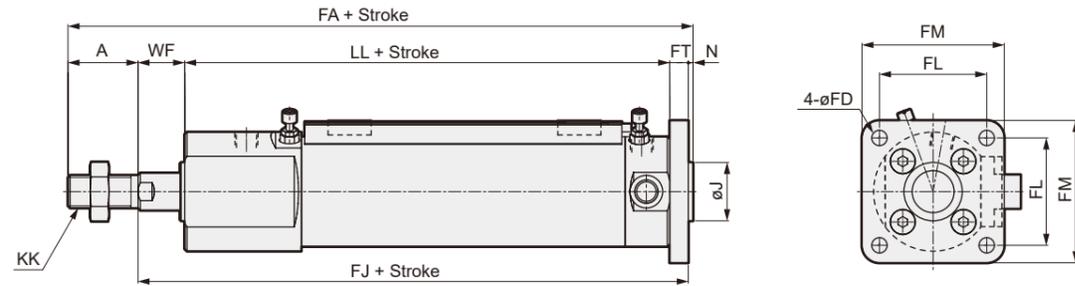


Code	Rod Side Flange Type (FA) Mounting Dimensions													
Bore size (mm)	A	FD	FF	FG	FL	FM	FT	J	KK	LL	N	WF	X	
20	18	5.5	11	92	28	40	6	12	M8	84	2	17	121	
25	22	5.5	11	93	32	44	7	14	M10 × 1.25	84	2	18	126	
32	22	6.6	11	95	38	53	7	18	M10 × 1.25	86	2	18	128	
40	30	6.6	12	118	46	61	8	25	M14 × 1.5	108	2	20	160	
50	35	9	14	131	58	76	9	30	M18 × 1.5	120	2	23	180	
63	35	11	14	131	70	92	9	32	M18 × 1.5	120	2	23	180	
80	40	11	20	152	82	104	11	40	M22 × 1.5	138	3	31	212	
100	40	13	17	155	100	128	14	50	M26 × 1.5	138	3	31	212	

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outer Dimensions Diagram (Bore size: $\phi 20$ to $\phi 100$)

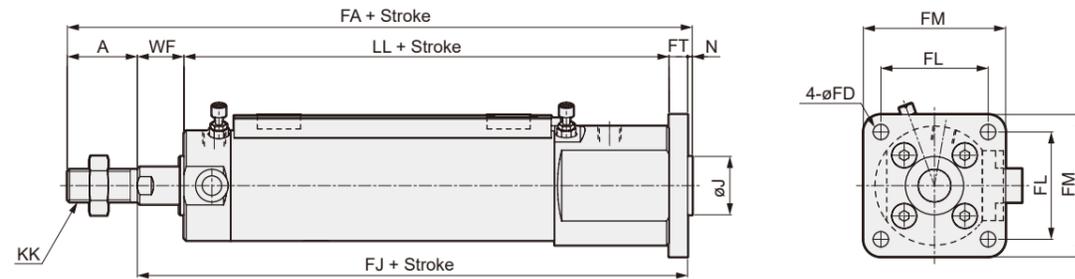
- Head Side Flange Type (FB)
(With rod side fall prevention)



Code	Head Side Flange Type (FB) Mounting Dimensions											
Bore size (mm)	A	FA	FD	FJ	FL	FM	FT	J	KK	LL	N	WF
20	18	127	5.5	107	28	40	6	12	M8	84	2	17
25	22	133	5.5	109	32	44	7	14	M10 × 1.25	84	2	18
32	22	135	6.6	111	38	53	7	18	M10 × 1.25	86	2	18
40	30	168	6.6	136	46	61	8	25	M14 × 1.5	108	2	20
50	35	189	9	152	58	76	9	30	M18 × 1.5	120	2	23
63	35	189	11	152	70	92	9	32	M18 × 1.5	120	2	23
80	40	223	11	180	82	104	11	40	M22 × 1.5	138	3	31
100	40	226	13	183	100	128	14	50	M26 × 1.5	138	3	31

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

- Head Side Flange Type (FB)
(With head side fall prevention)

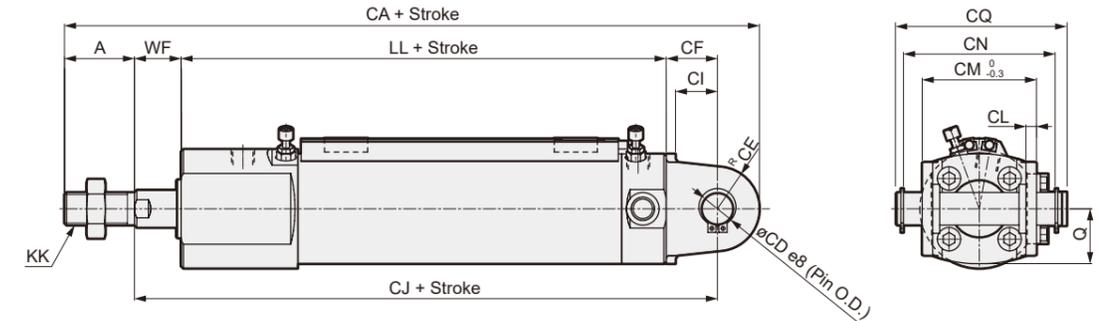


Code	Head Side Flange Type (FB) Mounting Dimensions											
Bore size (mm)	A	FA	FD	FJ	FL	FM	FT	J	KK	LL	N	WF
20	18	127	5.5	107	28	40	6	12	M8	84	2	17
25	22	133	5.5	109	32	44	7	14	M10 × 1.25	84	2	18
32	22	135	6.6	111	38	53	7	18	M10 × 1.25	86	2	18
40	30	168	6.6	136	46	61	8	25	M14 × 1.5	108	2	20
50	35	189	9	152	58	76	9	30	M18 × 1.5	120	2	23
63	35	189	11	152	70	92	9	32	M18 × 1.5	120	2	23
80	40	223	11	180	82	104	11	40	M22 × 1.5	138	3	31
100	40	226	13	183	100	128	14	50	M26 × 1.5	138	3	31

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outer Dimensions Diagram (Bore size: $\phi 20$ to $\phi 63$)

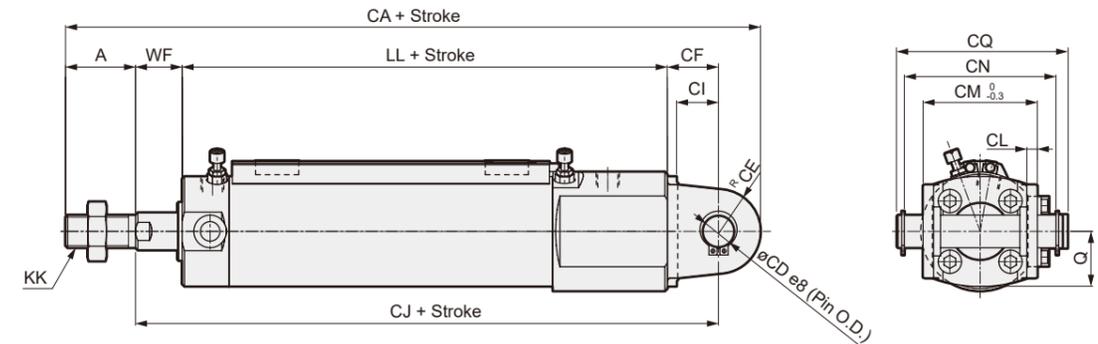
- Single Clevis Type (CA)
(With rod side fall prevention)



Code	Single Clevis Type (CA) Mounting Dimensions														
Bore size (mm)	A	CA	CD	CE	CF	CI	CJ	CL	CM	CN	CQ	KK	LL	Q	WF
$\phi 20$	18	144	8	11	14	10.8	115	3.2	29	38.6	43.4	M8	84	13	17
$\phi 25$	22	153	10	13	16	12.8	118	3.2	33	42.6	48	M10 × 1.25	84	15.5	18
$\phi 32$	22	160.5	12	15	19.5	15.5	123.5	4.5	40	54	59.4	M10 × 1.25	86	19	18
$\phi 40$	30	197.5	14	18	21.5	17.5	149.5	4.5	49	65	71.4	M14 × 1.5	108	23.5	20
$\phi 50$	35	222.5	16	20	24.5	19	167.5	6	60	79.6	86	M18 × 1.5	120	29	23
$\phi 63$	35	229.5	18	22	29.5	22	172.5	8	74	97.8	105.4	M18 × 1.5	120	36	23

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

- Single Clevis Type (CA)
(With head side fall prevention)

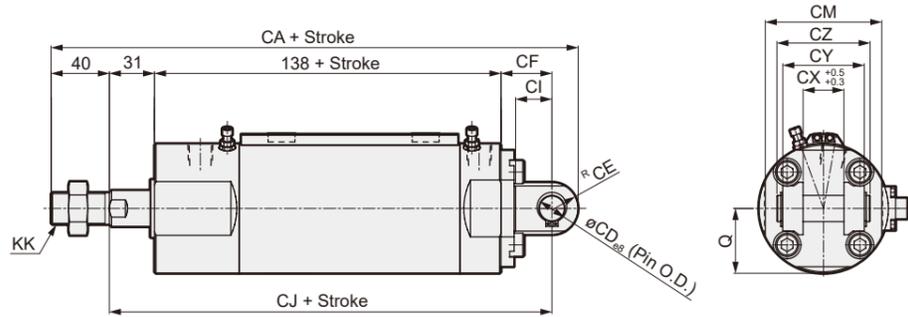


Code	Single Clevis Type (CA) Mounting Dimensions														
Bore size (mm)	A	CA	CD	CE	CF	CI	CJ	CL	CM	CN	CQ	KK	LL	Q	WF
$\phi 20$	18	144	8	11	14	10.8	115	3.2	29	38.6	43.4	M8	84	13	17
$\phi 25$	22	153	10	13	16	12.8	118	3.2	33	42.6	48	M10 × 1.25	84	15.5	18
$\phi 32$	22	160.5	12	15	19.5	15.5	123.5	4.5	40	54	59.4	M10 × 1.25	86	19	18
$\phi 40$	30	197.5	14	18	21.5	17.5	149.5	4.5	49	65	71.4	M14 × 1.5	108	23.5	20
$\phi 50$	35	222.5	16	20	24.5	19	167.5	6	60	79.6	86	M18 × 1.5	120	29	23
$\phi 63$	35	229.5	18	22	29.5	22	172.5	8	74	97.8	105.4	M18 × 1.5	120	36	23

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outer Dimensions Diagram (Bore size: $\phi 80$ to $\phi 100$)

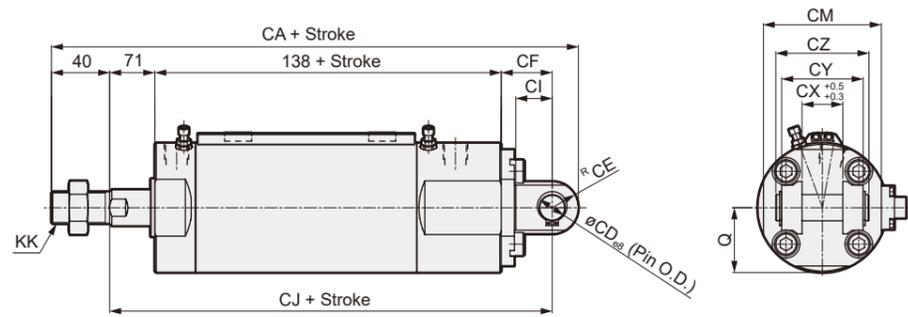
- Double clevis type (CB)
(With rod side fall prevention)



Code	Double Clevis Type (CB) Mounting Dimensions											
Bore size (mm)	CA	CD	CE	CF	CI	CJ	CM	CX	CY	CZ	KK	Q
$\phi 80$	262	18	18	35	25	204	80	28	56	64	M22 \times 1.5	44.5
$\phi 100$	274	22	22	43	31	212	100	32	64	72	M26 \times 1.5	55

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

- Double clevis type (CB)
(With head side fall prevention)



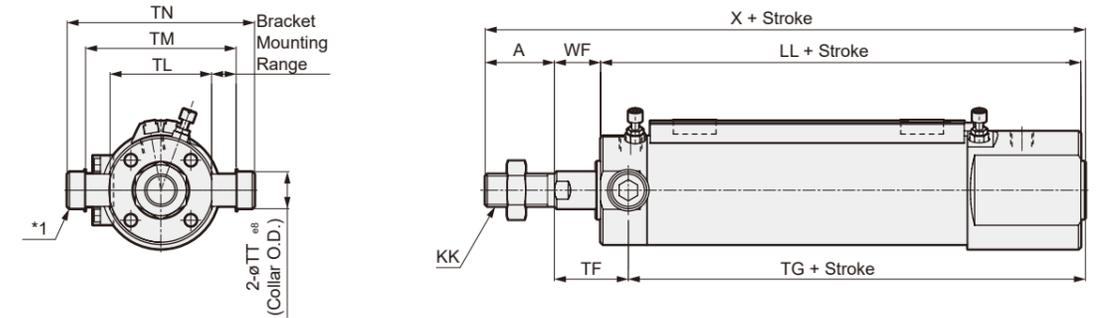
Code	Double Clevis Type (CB) Mounting Dimensions											
Bore size (mm)	CA	CD	CE	CF	CI	CJ	CM	CX	CY	CZ	KK	Q
$\phi 80$	262	18	18	35	25	204	80	28	56	64	M22 \times 1.5	44.5
$\phi 100$	274	22	22	43	31	212	100	32	64	72	M26 \times 1.5	55

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting, Drop Prevention Type

Outer Dimensions Diagram (Bore size: $\phi 20$ to $\phi 63$)

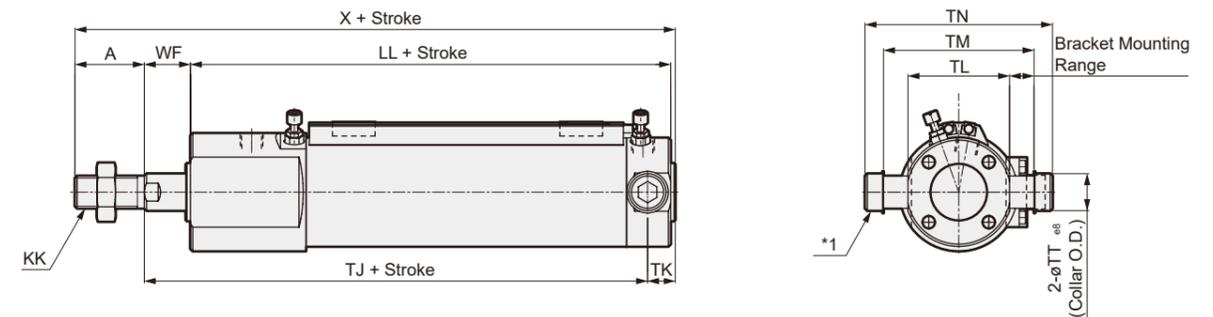
- Rod side trunnion type (TA)
(With head side fall prevention)



Code	Rod Side Trunnion Type (TA) Mounting Dimensions										
Bore size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X
$\phi 20$	18	M8	84	28	75	28	39	47.6	8	17	121
$\phi 25$	22	M10 \times 1.25	84	29	75	33	43	53	10	18	126
$\phi 32$	22	M10 \times 1.25	86	29	77	40	54.5	67.7	12	18	128
$\phi 40$	30	M14 \times 1.5	108	32	98	49	65.9	81.1	14	20	160
$\phi 50$	35	M18 \times 1.5	120	36	109	60	80	98.6	16	23	180
$\phi 63$	35	M18 \times 1.5	120	36	109	74	98	119.2	18	23	180

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

- Head Side Trunnion Type (TB)
(With rod side fall prevention)

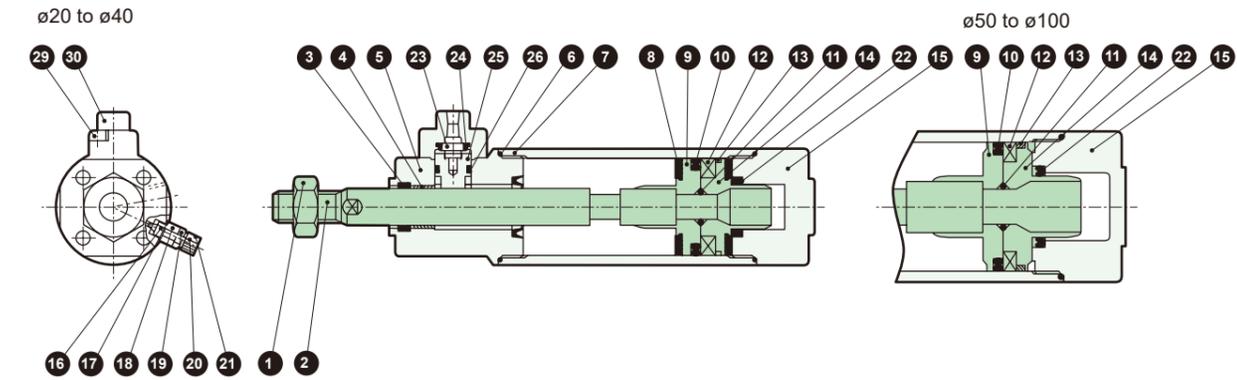


Code	Head Side Trunnion Type (TB) Mounting Dimensions										
Bore size (mm)	A	KK	LL	TJ	TK	TL	TM	TN	TT	WF	X
$\phi 20$	18	M8	84	90	13	28	39	47.6	8	17	121
$\phi 25$	22	M10 \times 1.25	84	91	13	33	43	53	10	18	126
$\phi 32$	22	M10 \times 1.25	86	94	12	40	54.5	67.7	12	18	128
$\phi 40$	30	M14 \times 1.5	108	118	12	49	65.9	81.1	14	20	160
$\phi 50$	35	M18 \times 1.5	120	131	14	60	80	98.6	16	23	180
$\phi 63$	35	M18 \times 1.5	120	131	14	74	98	119.2	18	23	180

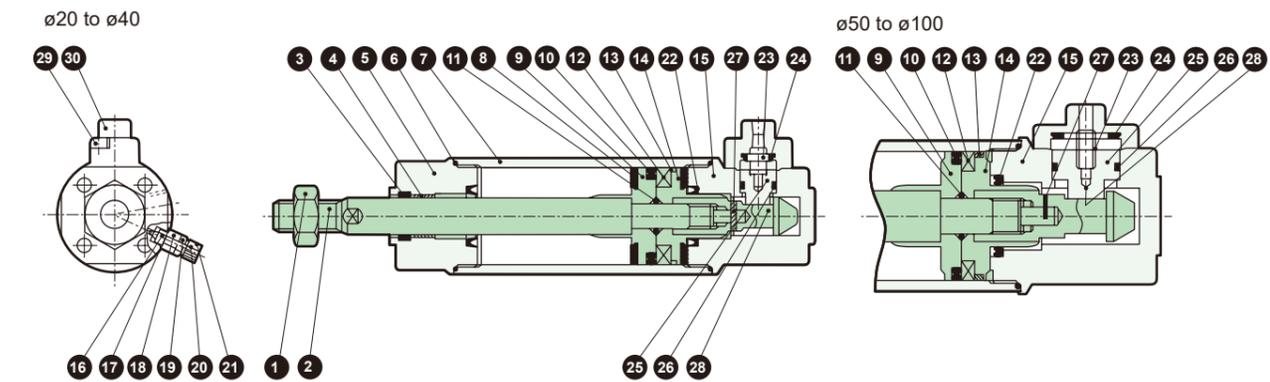
*1: Consists of collar, flat washer, and hexagon socket head cap screw.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

Internal Structure Diagram / Material

●SCM-Q (Rod Side Drop Prevention)



●SCM-Q (Head Side Drop Prevention)



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	16	Needle Gasket	Nitrile Rubber	
2	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø100: Steel	Industrial Hard Chrome Plating	17	Holder Gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		18	Needle Holder	Aluminum Alloy	
4	Bushing	Oil-Impregnated Bearing Alloy		19	Lock Nut	Steel	Nickel Plating
5	Rod Cover	Aluminum Alloy	Hard Anodized	20	Needle	Stainless Steel	
6	Cylinder Gasket	Nitrile Rubber		21	Knob	Aluminum Alloy	Chromate
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	22	Cushion Packing	Nitrile Rubber, Steel	
8	Cushion Rubber	Urethane Rubber		23	Coil Spring	Piano Wire	Electrodeposition Coating
9	Piston R	Aluminum Alloy		24	Cushion Rubber (R)	Urethane Rubber	
10	Piston Packing	Nitrile Rubber		25	Stopper Piston	Steel	Nitriding Treatment
11	Piston Gasket	Nitrile Rubber		26	Piston Packing (B)	Nitrile Rubber	
12	Magnet	Plastic		27	Spring Pin	Steel	
13	Wear Ring	Polyacetal		28	Sleeve	Steel	Nitriding Treatment
14	Piston H	Aluminum Alloy		29	Hexagon Socket Head Cap Screw	Alloy Steel	Black Oxide
15	Head Cover	Aluminum Alloy	Hard Anodized	30	Stopper Cover	Aluminum Alloy	Chromate

MEMO

For maintenance parts, please visit the CKD Equipment Product Site
(<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts



Round shaped cylinder Double Acting, Ultra Low Speed Type

SCM-F Series

● Bore size: ø20, ø25, ø32, ø40

Circuit Diagram Symbol



SCM-F Series

Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

Code	Content
Q	Shipped with Switch Rail Attached
M	Piston Rod Material (Stainless Steel)

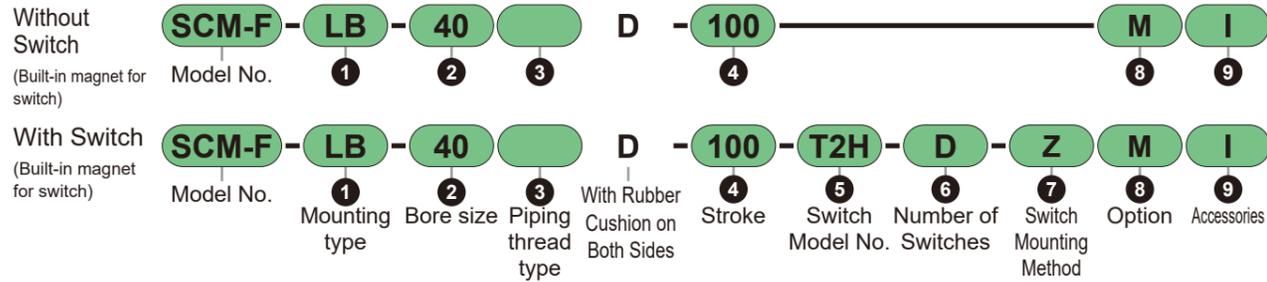
*1: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

9 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle
B2	Double Yoke Bracket

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Contents
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included)
TA	Rod Side Trunnion Type
TB	Head Side Trunnion Type

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø40	10 to 500	Every 1 mm

Note: For the number of switches to be mounted and minimum stroke, refer to P. 398.

5 Switch Model No.

For switch details, please refer to P. 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T5V□	T5V□
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□
			—	—	—	—	T3PH□	T3PV□
		3-wire (PNP)	—	—	—	—	T3WH□	T3WV□
			—	—	—	—	—	—
	2-Color	2-wire	24 ± 10%	—	5 to 20	—	T2WLH□	T2WLV□
			—	30 or less	—	50 or less	T5V□	—
		3-wire (NPN)	—	24 ± 10%	—	—	—	—
			—	—	—	—	—	—
		2-wire	—	10 to 30	—	5 to 20 *2	T5V□	T5V□
			—	10 to 30	—	—	T2HR3	T2VR3
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□
			110	5/12/24	20 or less	50 or less	T5H□	T5V□
	1-Color	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T5V□	

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the switch mounting type is the rail type.

*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH □
3 m TOH □
5 m TOH □

About Custom Product Specifications

For details, see P. 474 to 477.

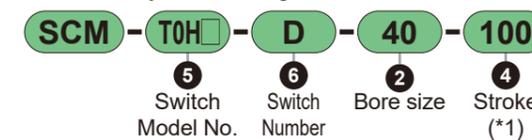
Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to End of Volume P. 11.

Model No. Example)

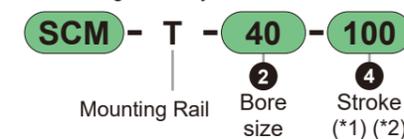
SCM - F - - XP5

Switch Single Unit Model No. Notation Method

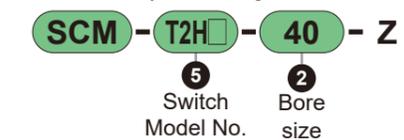
[Switch mounting: Rail Type]
Switch Body + Mounting Rail Set



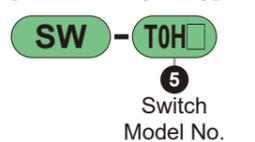
● Mounting Rail Only



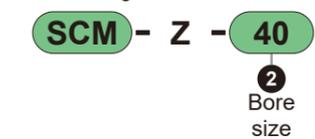
[Switch mounting: Band Type]
● Switch Body + Mounting Bracket Set + Band



[Switch Body Only]



● Mounting Bracket Set + Band



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM				
	ø20	ø25	ø32	ø40	
Bore size	mm	ø20	ø25	ø32	ø40
Actuation method	Double Acting/Fine Speed Type				
Operating Fluid	Compressed Air				
Max. Working Pressure	MPa	1.0			
Min. Operating Pressure	MPa	0.1			
Proof Pressure	MPa	1.6			
Ambient Temperature	°C	-10 to 60 (No freezing)			
Port Size	Rc1/8				
Stroke tolerance	mm	+1.4 0			
Operating Piston Speed	mm/s	1 to 200 (Use within allowable absorbed energy.)			
Cushion	Rubber Cushion				
Lubrication	Not Available				
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (With Switch Rail)	Weight of Band per Switch
	Basic Type (OO)	Axial Foot Type (LB)	Flange Type (FA/FB)	Clevis Type	Trunnion Type (TA/TB)				
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight listed in the switch specifications on P. 971.	0.01	0.012	0.007
ø25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
ø32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
ø40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007

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

- Product mass at S = 0 mm:0.63 kg
- Added mass at S = 100 mm:0.032 × $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches0.018 × 2 = 0.036 kg
- Product weight0.63 kg+0.32 kg+0.036=0.986 kg

Stroke

(Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 100, 125, 150, 200, 250, 300	500	10
ø25			
ø32			
ø40			

Note: Intermediate strokes can be produced in 1 mm increments.

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	31.4	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	26.4	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 10 ²
ø25	Push	49.1k	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	41.2	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 10 ²
ø32	Push	80.4	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	69.1	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 10 ²
ø40	Push	1.26 × 10 ²	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	1.06 × 10 ²	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

Number of Switches Mounted and Min. Stroke (mm)

●Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25

*1: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

●Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25

Mounting Bracket Model No. Notation Method

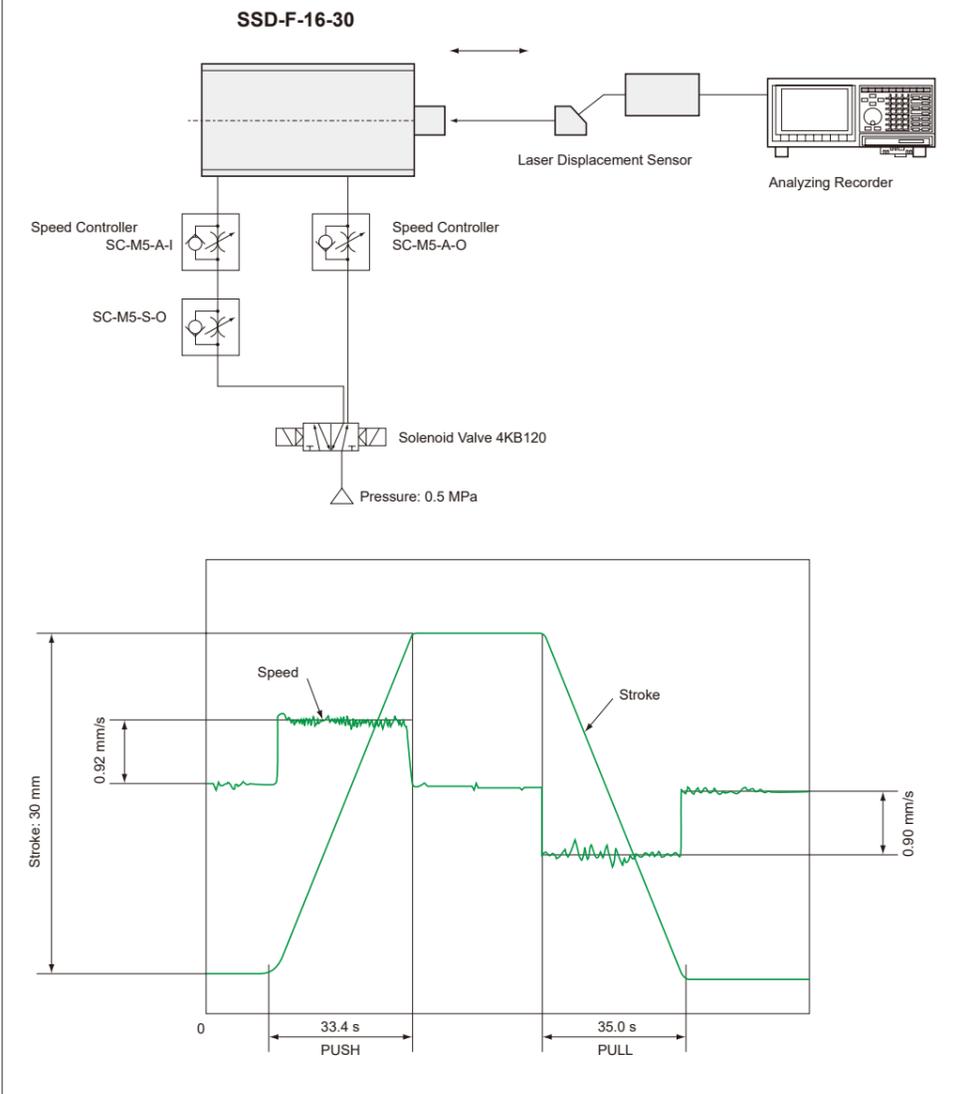
Bore size (mm)	ø20	ø25	ø32	ø40
Mounting bracket				
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40
Double Clevis (CB)	-	-	-	-
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40

Note: Mounting bolts are included to each mounting bracket.

Outline Dimension Drawing

Same as Double Acting, Single Rod Type SCM Series. Refer to P. 328 to 334.

● Measurement Method





Round shaped cylinder Double Acting, Low Speed Type

SCM-O Series

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

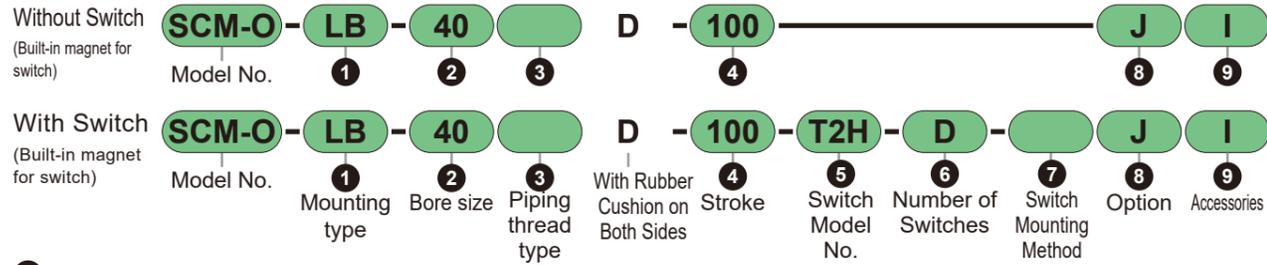
Circuit Diagram Symbol



SCM-O Series

Model No. Notation Method

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Contents
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included) (ø20 to ø63)
CB	Double Clevis Type (Pin and Retaining Ring Included) (ø80, ø100)
TA	Rod Side Trunnion Type (ø20 to ø63)
TB	Head Side Trunnion Type (ø20 to ø63)

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø32	10 to 1000	Every 1 mm
ø40 to ø100	10 to 1500	

Note: For the number of switches to be mounted and minimum stroke, refer to P. 404.

5 Switch Model No.

For switch details, please refer to P. 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T5V□	T5V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
			—	—	—	—	T3PH□	T3PV□	
		3-wire (PNP)	—	—	—	—	T3WH□	T3VW□	
			—	—	—	—	—	—	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WL□	
			—	—	—	5 to 20	T5V□	—	
		3-wire (NPN)	—	30 or less	—	50 or less	T5V□	—	
			—	—	—	—	T5V□	—	
		1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T5V□	T5V□
				—	10 to 30	—	—	T2HR3	T2VR3
Reed	1-Color No Indicator Lamp	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
			110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T5V□		

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WL□ can be selected.

Example) Lead wire length
1 m T0H
3 m T0H [3]
5 m T0H [5]

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

8 Option

Code	Contents	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

*1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.

*2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.

*3: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
[[A2]]	With 2 Rod Nuts
Rod End Shape Modification	Refer to End of Volume P. 11.

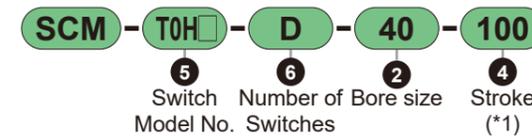
Model No. Example)

SCM - O - - XP5

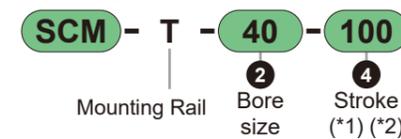
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

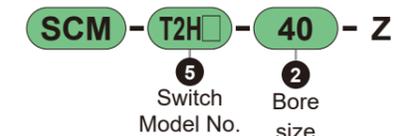


● Mounting Rail Only

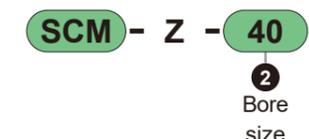


[Switch mounting: Band Type]

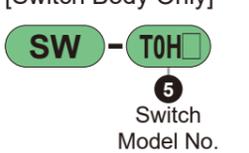
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.

*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

General Type

General Type

SCP□3

SCP□3

CMK2

CMK2

CMA2

CMA2

SCM

SCM

SCG

SCG

SCA2

SCA2

SCS2

SCS2

Cylinder Switch

Cylinder Switch

Ending

Ending

Specifications

Item	SCM-O								
	Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80
Actuation method	Double Acting/Low Speed Type								
Operating Fluid	Compressed Air								
Max. Working Pressure	MPa	1.0							
Min. Operating Pressure	MPa	0.1				0.05			
Proof Pressure	MPa	1.6							
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)							
Port Size		Rc1/8			Rc1/4		Rc3/8	Rc1/2	
Stroke tolerance	mm	+1.4 0 (Up to 1000)		+1.4 0 (Up to 1500)	+2.3 0 (Up to 1000),		+2.7 0 (Up to 1500)		
Operating Piston Speed	mm/s	10 to 200 (Use within allowable absorbed energy.)							
Cushion		Rubber Cushion							
Lubrication		Not Available							
Allowable Absorbed Energy	J	0.11	0.2	0.53	0.91	1.6	1.6	3.3	5.8

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	1,000	10
ø25			
ø32			
ø40			
ø50			
ø63	1500		
ø80			
ø100			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
	1	2	1	2	1	2	1	2	1	2
Number of Switches										
Bore size (mm)										
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25
ø80	10	25	10	25	10	25	10	25	10	25
ø100	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
	1	2	1	2	1	2	1	2	1	2
Number of Switches										
Bore size (mm)										
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	15	45	10	25
ø50	10	25	10	30	10	35	15	45	10	25
ø63	10	25	10	30	10	35	15	45	10	25
ø80	10	25	10	30	10	35	15	45	10	25
ø100	10	25	10	30	10	35	15	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	S= Per 10 mm Added Weight	Added Weight per S = 10 mm (Switch With Rail)	Weight of Band per Switch
	Basic Type (OO)	Axial Foot Type (LB)	Flange Type (FA/FB)	Clevis Type	Trunnion Type (TA/TB)				
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight listed in the switch specifications on P. 971.	0.01	0.012	0.007
ø25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
ø32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
ø40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
ø50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
ø63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
ø80	2.04	3.00	2.75	2.75	-		0.07	0.072	0.010
ø100	3.17	4.92	4.52	4.45	-		0.098	0.10	0.010

(Example) Product Weight of SCM-O-LB-40D-100-T2H-D

- Product mass at S = 0 mm:0.63 kg
- Added mass at S = 100 mm:0.032 × $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches0.036 kg
- Product weight0.63 kg+0.32 kg+0.036=0.986 kg

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating 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
ø20	Push	-	31.4	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	-	26.4	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 10 ²
ø25	Push	-	49.1	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	-	41.2	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 10 ²
ø32	Push	-	80.4	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	-	69.1	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 10 ²
ø40	Push	-	1.26 × 10 ²	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	-	1.06 × 10 ²	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	98.0	1.96 × 10 ²	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	82.5	1.65 × 10 ²	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	1.56 × 10 ²	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	2.40 × 10 ²	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	2.51 × 10 ²	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	2.27 × 10 ²	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	3.92 × 10 ²	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	3.57 × 10 ²	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

Mounting Bracket Model No. Notation Method

Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket								
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
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Double Clevis (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	-	-

Note 1: Mounting bolts are included to each mounting bracket.

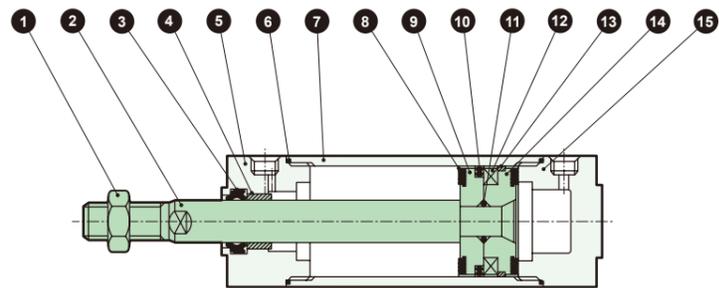
Note 2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

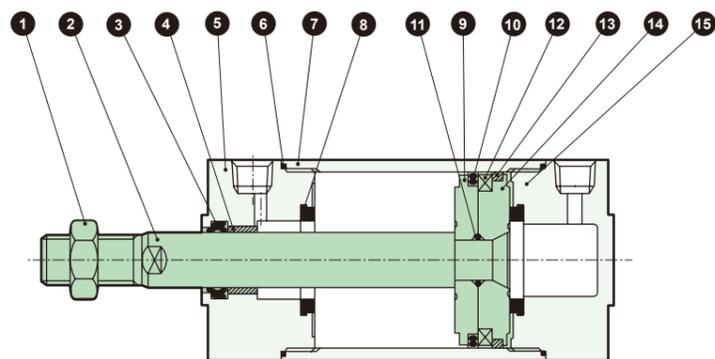
Same as Double Acting, Single Rod Type SCM Series. Refer to P. 328 to 334.

Internal Structure Diagram / Material (With Rubber Cushion)

● ϕ 20 to ϕ 40



● ϕ 50 to ϕ 100



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	8	Cushion Rubber	Urethane Rubber	
2	Piston Rod	ϕ 20, ϕ 25: Stainless Steel ϕ 32 to ϕ 100: Steel	Industrial Hard Chrome Plating	9	Piston R	Aluminum Alloy	
3	Rod Packing	Nitrile Rubber		10	Piston Packing	Nitrile Rubber	
4	Bushing	Oil-impregnated Bearing Alloy		11	Piston Gasket	Nitrile Rubber	
5	Rod Cover	Aluminum Alloy	Hard Anodized	12	Magnet	Plastic	
6	Cylinder Gasket	Nitrile Rubber		13	Wear Ring	Polyacetal	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	14	Piston H	Aluminum Alloy	
				15	Head Cover	Aluminum Alloy	Hard Anodized

MEMO

For maintenance parts, please visit the CKD Equipment Product Site
 (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts



Round shaped cylinder Double Acting, Low Friction Type

SCM-U Series

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

Circuit Diagram Symbol



SCM-U Series

Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

Code	Content
Q	Shipped with Switch Rail Attached
M	Piston Rod Material (Stainless Steel)

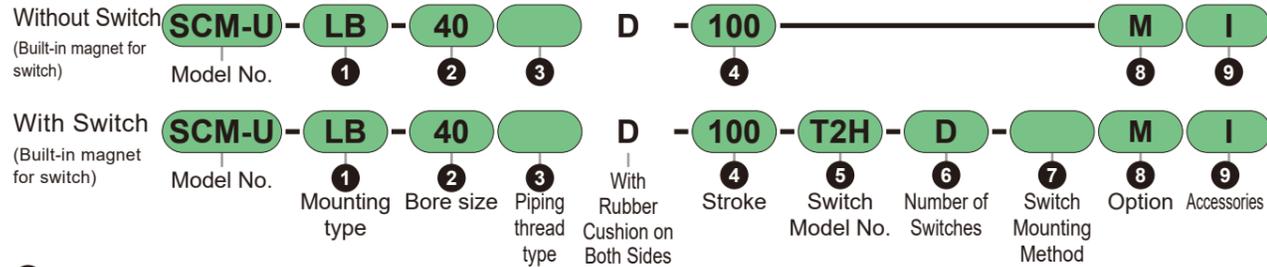
*1: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

9 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B1	Single Bracket (ø80, ø100)
B2	Double Yoke Bracket (ø20 to ø63)

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Contents
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included) (ø20 to ø63)
CB	Double Clevis Type (Pin and Retaining Ring Included) (ø80, ø100)
TA	Rod Side Trunnion Type (ø20 to ø63)
TB	Head Side Trunnion Type (ø20 to ø63)

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø32	10 to 1000	Every 1 mm
ø40 to ø100	10 to 1500	

Note: For the number of switches to be mounted and minimum stroke, refer to P. 410.

5 Switch Model No.

For switch details, please refer to P. 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T5V□	T5V□
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□
			—	30 or less	—	100 or less	T3H□	T3V□
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WH□	T2WV□
			—	30 or less	—	50 or less	T3WH□	T3WV□
			—	—	—	—	T2WLH□	T2WLV□
	2-Color Water Resistance Improved	2-wire	—	24 ± 10%	—	5 to 20	T5V□	—
			—	24 ± 10%	—	—	T5V□	—
			—	10 to 30	—	5 to 20 *2	T5V□	T5V□
			—	10 to 30	—	—	T2HR3	T2VR3
Cylinder Switch	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□
			110	5/12/24	20 or less	50 or less	T5H□	T5V□
	No Indicator Lamp	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T5V□	

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H [3]
5 m T0H [5]

About Custom Product Specifications

For details, see P. 474 to 477.

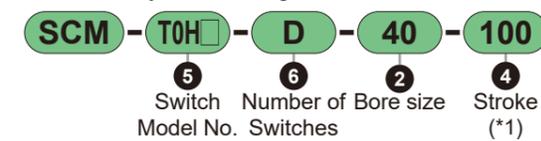
Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to End of Volume P. 11.

Model No. Example)

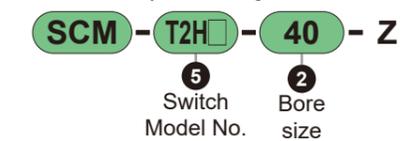
SCM - U - - XP5

Switch Single Unit Model No. Notation Method

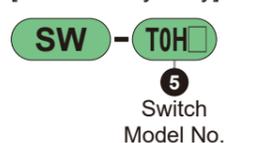
[Switch mounting: Rail Type]
Switch Body + Mounting Rail Set



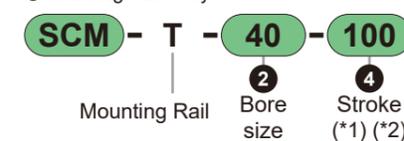
[Switch mounting: Band Type]
● Switch Body + Mounting Bracket Set + Band



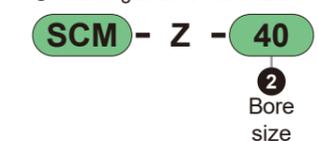
[Switch Body Only]



● Mounting Rail Only



● Mounting Bracket Set + Band



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.

*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-U								
	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method		Double Acting, Low Friction Type							
Operating Fluid		Compressed Air							
Max. Working Pressure	MPa	0.7							
Min. Operating Pressure	MPa	0.03							
Proof Pressure	MPa	1.0							
Ambient Temperature	°C	5 to 60							
Port Size		Rc1/8			Rc1/4		Rc3/8	Rc1/2	
Stroke tolerance	mm	^{+1.4} / ₀ (to 1000)		^{+1.4} / ₀ (to 1500)		^{+2.3} / ₀ (to 1000), ^{+2.7} / ₀ (to 1500)			
Operating Piston Speed	mm/s	10 to 1000 (Use within allowable absorbed energy.)							
Cushion		Rubber Cushion							
Lubrication		Not Available							
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
Internal Leakage Volume (L/min)		5						8	

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (Switch With Rail)	Weight of Band per Switch
	Bore size (mm)	Basic Type (OO)	Axial Foot Type (LB)	Flange Type (FA/FB)	Clevis Type				
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight listed in the switch specifications on P. 971.	0.01	0.012	0.007
ø25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
ø32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
ø40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
ø50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
ø63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
ø80	2.04	3.00	2.75	2.75	-		0.07	0.072	0.010
ø100	3.17	4.92	4.52	4.45	-		0.098	0.10	0.010

(Example) Product Weight of SCM-U-LB-40D-100-T2H-D

- Product mass at S = 0 mm:0.63 kg
- Added mass at S = 100 mm:0.032 × $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches0.036 kg
- Product weight0.63 kg+0.32 kg+0.036=0.986 kg

Stroke

(Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 100, 125, 150, 200, 250, 300	1,000	10
ø25			
ø32			
ø40			
ø50			
ø63	1500	10	
ø80			
ø100			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25
ø80	10	25	10	25	10	25	10	25	10	25
ø100	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25
ø80	10	25	10	30	10	35	10	45	10	25
ø100	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa								
		0.03	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø20	Push	9.4	31.4	47.1	62.8	94.2	1.26 × 10 ²	1.57 × 10 ²	1.88 × 10 ²	2.20 × 10 ²
	Pull	7.9	26.4	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²
ø25	Push	14.7	49.1k	73.6	98.2	1.47 × 10 ²	1.96 × 10 ²	2.45 × 10 ²	2.95 × 10 ²	3.44 × 10 ²
	Pull	12.4	41.2	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²
ø32	Push	24.1	80.4	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
	Pull	20.7	69.1	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²
ø40	Push	37.7	1.26 × 10 ²	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
	Pull	31.7	1.06 × 10 ²	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
ø50	Push	58.9	1.96 × 10 ²	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
	Pull	49.5	1.65 × 10 ²	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
ø63	Push	93.5	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
	Pull	84.1	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
ø80	Push	15.1 × 10 ³	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
	Pull	13.6 × 10 ³	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
ø100	Push	23.6 × 10 ³	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
	Pull	21.4 × 10 ³	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

Mounting Bracket Model No. Notation Method

Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket								
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
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Double Clevis (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: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

Same as Double Acting, Single Rod Type SCM Series. Refer to P. 328 to 334.

Sliding Resistance Value

Data are measured values under the following conditions. Values vary depending on installation method, pressurization direction, etc., and are not guaranteed values.

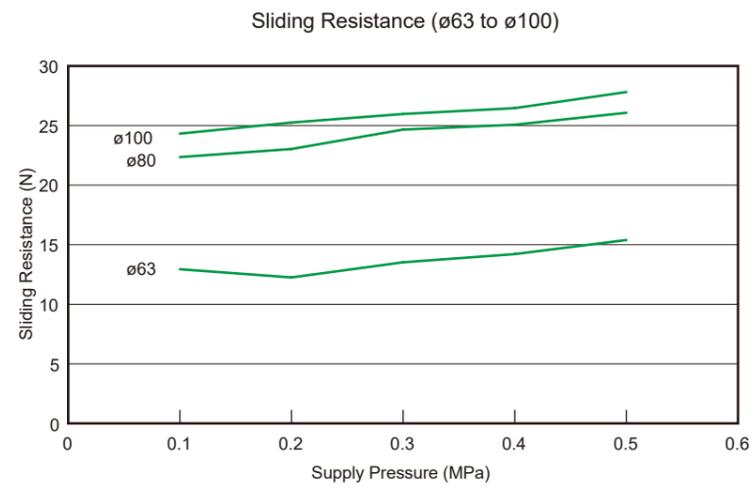
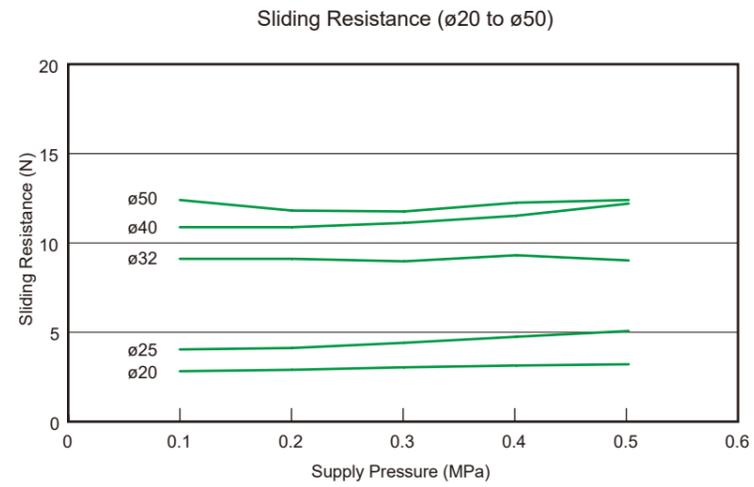
(Test Conditions)

Cylinder Type: SCM-U

Cylinder Mounting Direction: Vertical

Cylinder Speed: 10 mm/min (Driven by external motor)

Cylinder Pressurization Direction: Head Side (Rod side is open to atmosphere)



General Type
SCP□3
CMK2
CMA2
SCM
SCG
SCA2
SCS2

General Type
SCP□3
CMK2
CMA2
SCM
SCG
SCA2
SCS2

Cylinder Switch
Ending

Cylinder Switch
Ending



Round shaped cylinder Double Acting, Double Rod Type

SCM-D Series

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

Circuit Diagram Symbol



SCM-D Series

Model No. Notation Method

7 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

8 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

9 Option

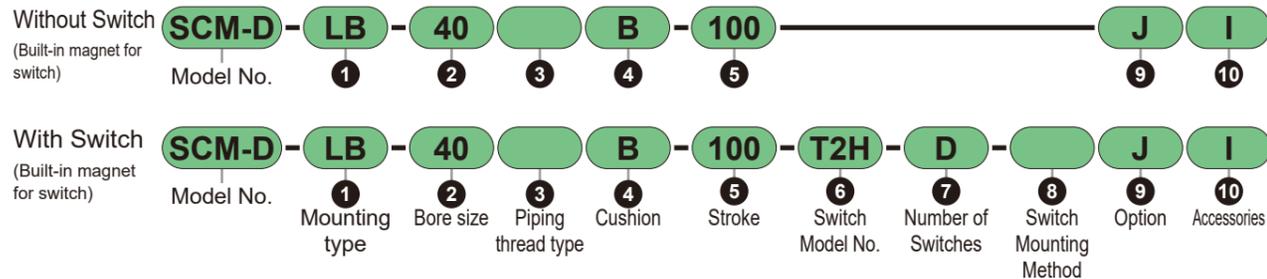
Code	Contents	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

*1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.
 *2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
 *3: When type with bellows is selected, the bellows will be attached to the rods on both sides.
 *4: If 3 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

10 Accessories

Code	Contents
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B2	Double Yoke Bracket (ø20 to ø63)

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Contents
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
TA	Rod Side Trunnion Type (ø20 to ø63)

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100

3 Piping thread type

Code	Content
Blank	M5 (With air cushion, ø20, ø25 only) Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

*1: ø20, ø25 with air cushion cannot be selected.

4 Cushion

Code	Content
B	With Air Cushion on Both Sides
R	With Air Cushion on Rod Side
H	With Air Cushion on Head Side
D	With Rubber Cushion on Both Sides

5 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø100	10 to 600	Every 1 mm

Note: For the number of switches to be mounted and minimum stroke, refer to P. 416.

6 Switch Model No.

For switch details, please refer to P. 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T5V□	T5V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
			—	—	—	—	T3PH□	T3PV□	
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□	
			—	—	—	—	T3WH□	T3WV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	
			—	—	—	5 to 20	T5V□	—	
		3-wire (NPN)	—	30 or less	—	50 or less	T5V□	—	
			—	—	—	—	T5V□	—	
		2-Color Water Resistance Improved	2-wire	—	24 ± 10%	—	5 to 20	T5V□	T5V□
				—	—	—	—	T2HR3	T2VR3
2-Color AC For Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T5V□	T5V□		
		—	—	—	—	T5V□	T5V□		
1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T5V□	T5V□		
		—	10 to 30	—	—	T2HR3	T2VR3		
1-Color Flexible Lead Wire Type	2-wire	—	10 to 30	—	—	T5V□	T5V□		
		—	—	—	—	T5V□	T5V□		
Reed	1-Color No Indicator Lamp	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
			110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T5V□	

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.
 *2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
 *3: This does not guarantee the water resistance of the cylinder.
 *4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.
 *5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.
 Example) Lead wire length
 1 m T0H
 3 m T0H [3]
 5 m T0H [5]

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to End of Volume P. 11.

Model No. Example)

SCM - D - - XP5

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

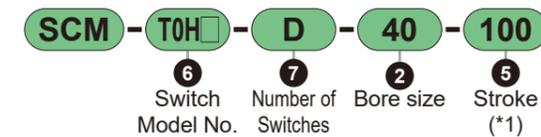
● Uses food-grade lubricant usable in food manufacturing processes

SCM - D - - FP1

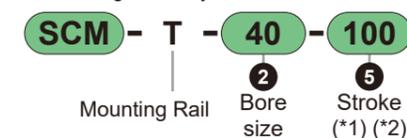
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

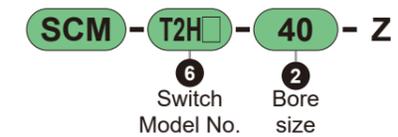


● Mounting Rail Only

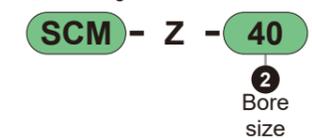


[Switch mounting: Band Type]

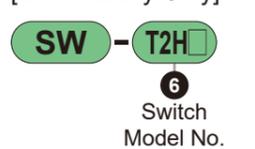
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
 *2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-D									
	Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation method	Double Acting/Double Rod Type									
Operating Fluid	Compressed Air									
Max. Working Pressure MPa	1.0									
Min. Operating Pressure MPa	0.15			0.1						
Proof Pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)									
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 mm	With Rubber Cushion	+1.4 0			+2.3 0 (to 600)					
	With Air Cushion	+1.4 0			+1.4 0 (to 600)					
Operating Piston Speed mm/s	30 to 1000 (Use within allowable absorption energy.)									
Cushion	Rubber cushion/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 (When lubricating, use Turbine Oil ISO VG32)									
Allowable absorbed energy J	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: Without cushion for allowable absorbed energy indicates the allowable absorbed energy on the unindicated side when single side air cushion is selected ("R" => head side, "H" => rod side).

*2: Without a cushion, large energy generated by external load cannot be absorbed. Provide an external shock absorber.

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 100, 125, 150, 200, 250, 300	600	10
ø25			
ø32			
ø40			
ø50			
ø63			
ø80			
ø100			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25
ø80	10	25	10	25	10	25	10	25	10	25
ø100	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	15	45	10	25
ø50	10	25	10	30	10	35	15	45	10	25
ø63	10	25	10	30	10	35	15	45	10	25
ø80	10	25	10	30	10	35	15	45	10	25
ø100	10	25	10	30	10	35	15	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm				Switch Weight (Per Piece)	S= Per 10 mm Added Weight	S= Per 10 mm Added Weight (Switch With Rail)
	Basic Type (OO)	Axial Foot Type (LB)	Flange Type (FA)	Trunnion Type (TA)			
ø20	0.12	0.23	0.20	0.13	Refer to the weight listed in the switch specifications on P. 971.	0.014	0.016
ø25	0.21	0.34	0.31	0.23		0.020	0.022
ø32	0.32	0.48	0.46	0.35		0.026	0.028
ø40	0.52	0.74	0.72	0.57		0.046	0.048
ø50	0.96	1.44	1.30	1.10		0.068	0.070
ø63	1.27	1.99	1.77	1.41		0.076	0.078
ø80	2.41	3.37	3.12	-		0.108	0.110
ø100	3.73	5.48	5.08	-		0.154	0.156

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

- Product Weight at S=0 mm.....0.74 kg
- Added Weight at S=100 mm0.048 × $\frac{100}{10}$ = 0.48 kg
- Weight of 2 switches.....0.018 x 2 = 0.036 kg
- Product Weight.....0.74+0.48+0.036=1.256 kg

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating Pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push/Pull	-	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 10 ²
ø25	Push/Pull	-	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 10 ²
ø32	Push/Pull	-	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 10 ²
ø40	Push/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/Pull	1.65 × 10 ²	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/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/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/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

Mounting Bracket Model No. Notation Method

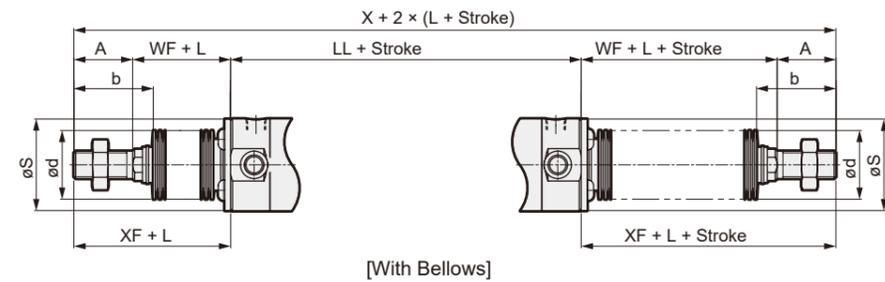
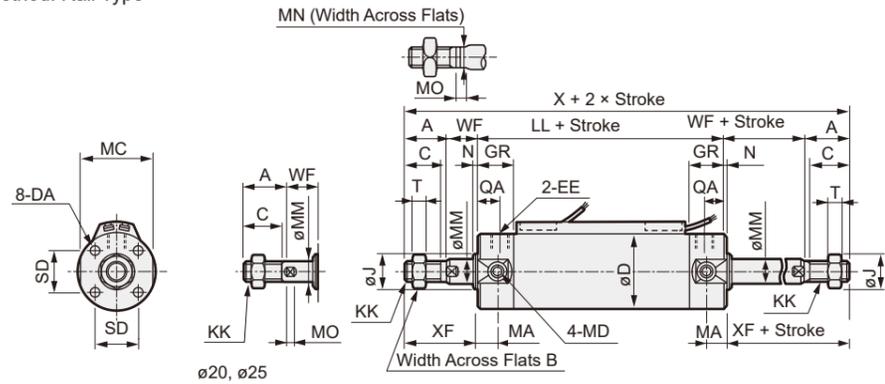
Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket								
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Trunnion (TA)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

*1: Mounting bolts are included to each mounting bracket.

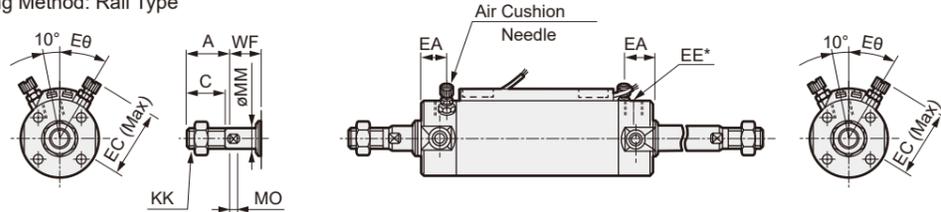
*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

- Basic Type (OO)
- [With Rubber Cushion]
- Switch Mounting Method: Rail Type



- [With Air Cushion]
- Switch Mounting Method: Rail Type



Code	Basic Type (OO) Basic Dimensions															
Bore size (mm)	A	B	C	D	DA	EE (*1)	GR	J	KK	LL	MA	MC	MD	MM	MN	MO
ø20	18	13	16	26	M4 Depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4
ø25	22	17	20	31	M5 Depth 6.5	Rc1/8	19	14	M10 × 1.25	71	11	29	M6	10	8	5
ø32	22	17	20	38	M5 Depth 7.5	Rc1/8	19	18	M10 × 1.25	73	11	36	M8	12	10	5.5
ø40	30	22	27	47	M6 Depth 12	Rc1/8	20	25	M14 × 1.5	79	12	44	M10	16	14	6
ø50	35	27	32	58	M8 Depth 16	Rc1/4	25	30	M18 × 1.5	93	13	55	M12	20	17	8
ø63	35	27	32	72	M10 Depth 16	Rc1/4	25	32	M18 × 1.5	93	13	69	M14	20	17	8
ø80	40	32	37	89	M10 Depth 22	Rc3/8	28	40	M22 × 1.5	108	-	80	-	25	22	11
ø100	40	41	37	110	M12 Depth 22	Rc1/2	28	50	M26 × 1.5	108	-	100	-	30	27	13

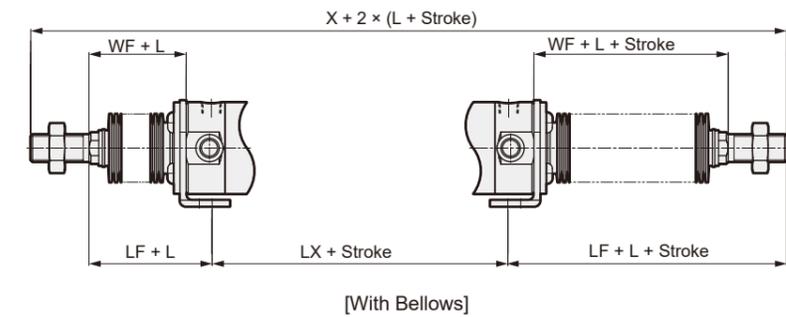
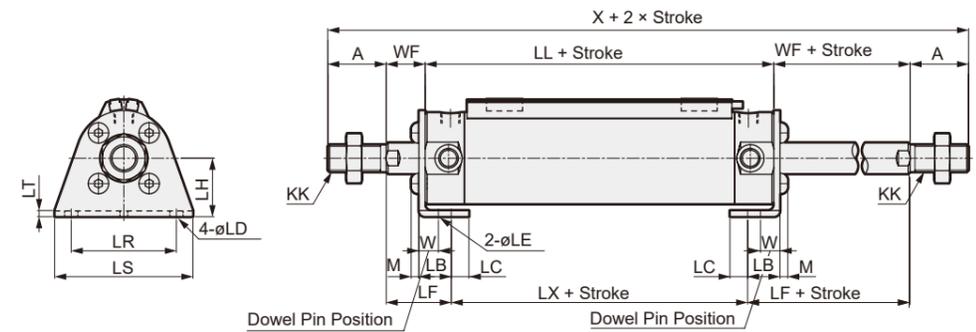
Code	With Bellows										With Air Cushion				
Bore size (mm)	N	QA	SD	T	WF	X	XF	b	d	s	L	EA	EC	EE* *1	Eθ
ø20	2	12	14	5	17	141	35	30	30	25.7	(Stroke / 3) + 18.5	14	27	M5	30°
ø25	2	12	16.5	6	18	151	40	35	30	30.7	(Stroke / 3) + 20.5	14	29.5	M5	30°
ø32	2	12	20	6	18	153	40	31.5	35	37.7	(Stroke / 3) + 19	14	32.8	Rc1/8	25°
ø40	2	13	26	8	20	179	50	40	35	46.7	(Stroke / 3) + 18.5	15	36.6	Rc1/8	20°
ø50	2	15	32	11	23	209	58	46	40	57.7	(Stroke / 3.6) + 18.5	18.5	43	Rc1/4	20°
ø63	2	15	38	11	23	209	58	46	40	71.7	(Stroke / 3.6) + 18.5	18.5	50	Rc1/4	20°
ø80	3	15	50	13	31	250	71	55	50	88.7	(Stroke / 4.3) + 14.5	20	58.5	Rc3/8	20°
ø100	3	15	60	16	31	250	71	56	60	109.7	(Stroke / 4.5) + 21	20	69	Rc1/2	20°

1: For ø20, ø25 with air cushion, the piping port (EE) is different. Refer to the dimension table for with air cushion (EE^{*}).
 *2: Needle-related dimensions for air cushion type are the same as double acting type. Refer to P. 328 to 334.
 *3: The position of the width across flats for spanner engagement on the left and right is not fixed.
 *4: For dimensions with each switch, see P. 468 to 473.
 *5: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting/Double Rod Type

Outline Dimension Drawing

- Axial Foot Type (LB)

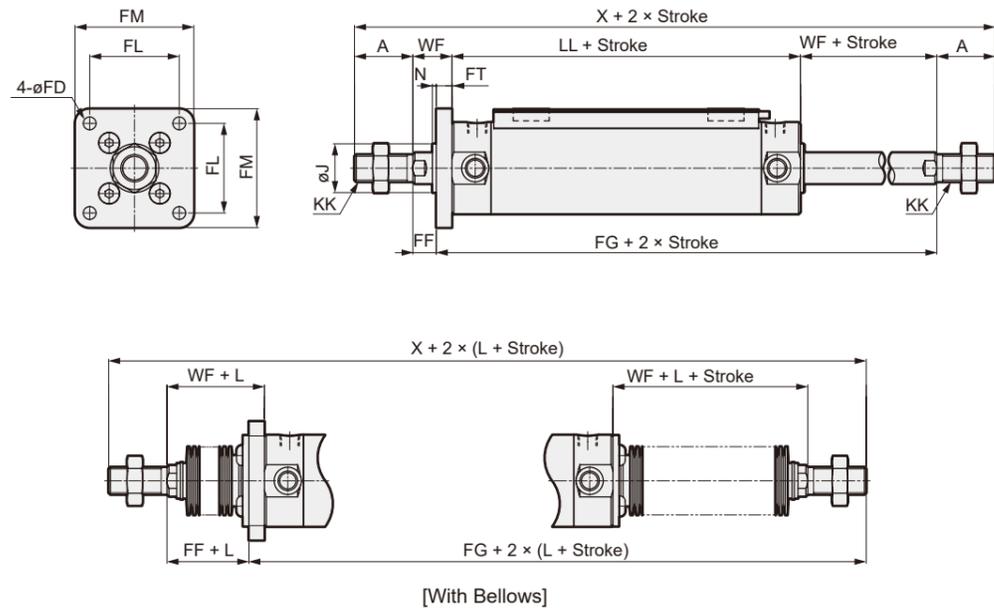


Code	Axial Foot Type (LB) Mounting Dimensions														With Bellows			
	A	KK	X	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF	L
20	18	M8	141	15.1	7.1	5.7	4	28.9	20	71	32	44	3.2	47.2	2.6	10	17	(Stroke / 3) + 18.5
25	22	M10 × 1.25	151	15.1	7.1	5.7	4	29.9	22	71	36	49	3.2	47.2	3.4	10	18	(Stroke / 3) + 20.5
32	22	M10 × 1.25	153	16.1	8.1	6.8	4	30.9	25	73	44	58	3.2	47.2	3.4	10	18	(Stroke / 3) + 19
40	30	M14 × 1.5	179	16.6	9.1	6.8	4	33.4	30	79	54	71	3.2	52.2	4	10	20	(Stroke / 3) + 18.5
50	35	M18 × 1.5	209	22	11	9	5	40.5	40	93	66	86	4.5	58	5	17.5	23	(Stroke / 3.6) + 18.5
63	35	M18 × 1.5	209	22	13	11	5	40.5	45	93	82	106	4.5	58	5	17.5	23	(Stroke / 3.6) + 18.5
80	40	M22 × 1.5	250	28.5	14	11	6	55	55	108	100	125	4.5	60	6	20	31	(Stroke / 4.3) + 14.5
100	40	M26 × 1.5	250	30	16	14	6	55	65	108	120	150	6	60	7	20	31	(Stroke / 4.5) + 21

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

●Rod Side Flange Type (FA)



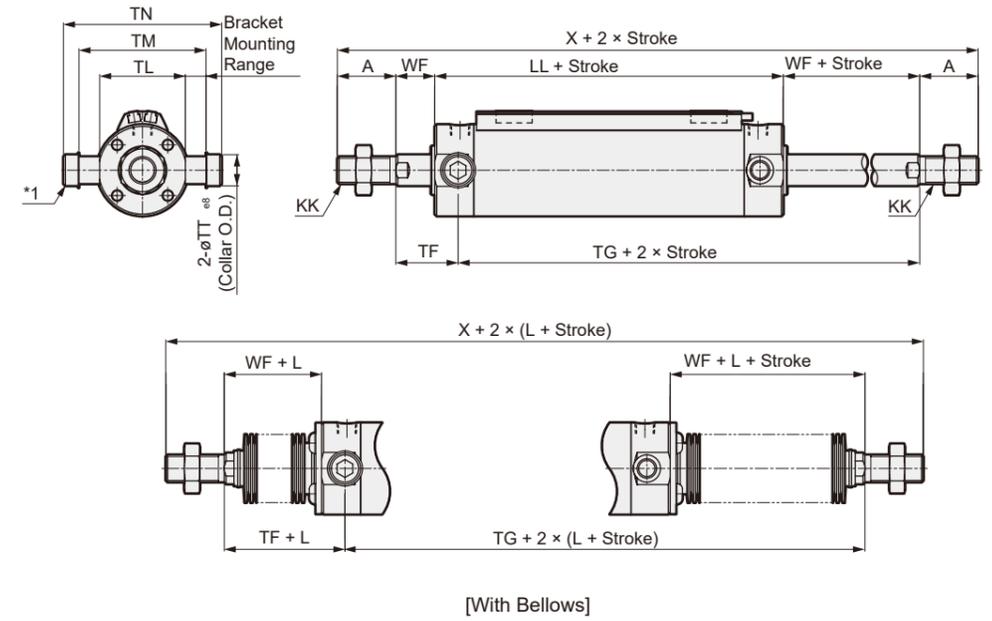
Code	Rod Side Flange Type (FA) Mounting Dimensions													With Bellows
Bore size (mm)	A	FD	FF	FG	FL	FM	FT	J	KK	LL	N	WF	X	L
20	18	5.5	11	94	28	40	6	12	M8	71	2	17	141	(Stroke / 3) + 18.5
25	22	5.5	11	96	32	44	7	14	M10 × 1.25	71	2	18	151	(Stroke / 3) + 20.5
32	22	6.6	11	98	38	53	7	18	M10 × 1.25	73	2	18	153	(Stroke / 3) + 19
40	30	6.6	12	107	46	61	8	25	M14 × 1.5	79	2	20	179	(Stroke / 3) + 18.5
50	35	9	14	125	58	76	9	30	M18 × 1.5	93	2	23	209	(Stroke / 3.6) + 18.5
63	35	11	14	125	70	92	9	32	M18 × 1.5	93	2	23	209	(Stroke / 3.6) + 18.5
80	40	11	20	150	82	104	11	40	M22 × 1.5	108	3	31	250	(Stroke / 4.3) + 14.5
100	40	13	17	153	100	128	14	50	M26 × 1.5	108	3	31	250	(Stroke / 4.5) + 21

*1: For dimensions with each switch, see P. 468 to 473.
 *2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting/Double Rod Type

Outline Dimension Drawing

●Rod side trunnion type (TA)



Code	Rod Side Trunnion Type (TA) Mounting Dimensions											With Bellows
Bore size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X	L
ø20	18	M8	71	28	77	28	39	47.6	8	17	141	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	71	29	78	33	43	53	10	18	151	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	73	29	80	40	54.5	67.7	12	18	153	(Stroke / 3) + 19
ø40	30	M14 × 1.5	79	32	87	49	65.9	81.1	14	20	179	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	93	36	103	60	80	98.6	16	23	209	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	93	36	103	74	98	119.2	18	23	209	(Stroke / 3.6) + 18.5

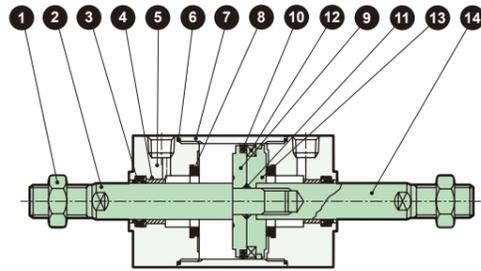
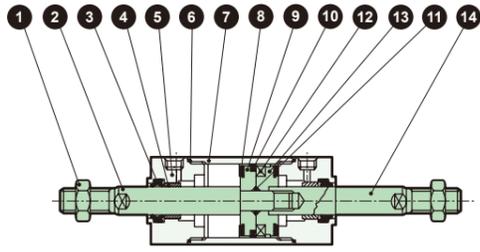
*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

Internal Structure Diagram / Material

MEMO

With Rubber Cushion
ø20 to ø40

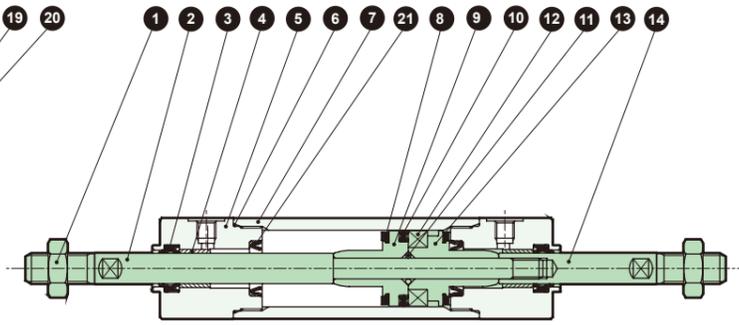
ø50 to ø100



With Air Cushion
ø20 to ø40

15 16 17 18 19 20

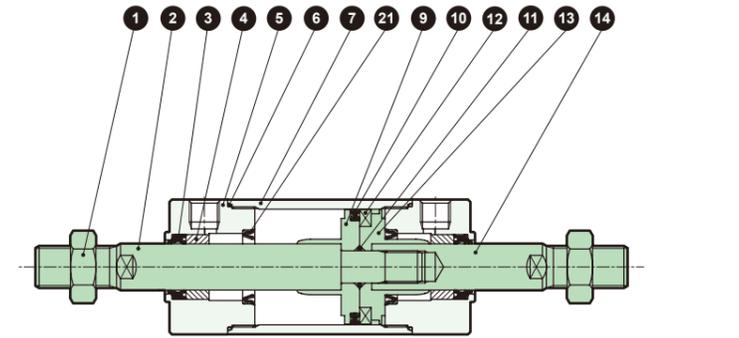
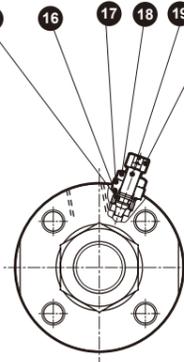
1 2 3 4 5 6 7 21 8 9 10 12 11 13 14



ø50 to ø100

15 16 17 18 19 20

1 2 3 4 5 6 7 21 9 10 12 11 13 14



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	12	Magnet	Plastic	
2	Piston Rod A	ø20, ø25: Stainless Steel ø32 to ø100: Steel	Industrial Hard Chrome Plating	13	Piston H	Aluminum Alloy	
3	Rod Packing	Nitrile Rubber		14	Piston Rod B	ø20, ø25: Stainless Steel ø32 to ø100: Steel	Industrial Hard Chrome Plating
4	Bushing	Oil-Impregnated Bearing Alloy		With Air Cushion			
5	Rod Cover	Aluminum Alloy	Hard Anodized	15	Needle Gasket	Nitrile Rubber	
6	Cylinder Gasket	Nitrile Rubber		16	Holder Gasket	Nitrile Rubber	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	17	Needle Holder	Aluminum Alloy	
8	Cushion Rubber	Urethane Rubber		18	Lock Nut	Steel	Nickel Plating
9	Piston R	Aluminum Alloy		19	Needle	Stainless Steel	
10	Piston Packing	Nitrile Rubber		20	Knob	Aluminum Alloy	Chromate
11	Piston Gasket	Nitrile Rubber		21	Cushion Packing	Nitrile Rubber, Steel	

For maintenance parts, please visit the CKD Equipment Product Site
(<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending



Round shaped cylinder
Double Acting, Back-to-Back Type

SCM-B Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol



SCM-B Series

Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

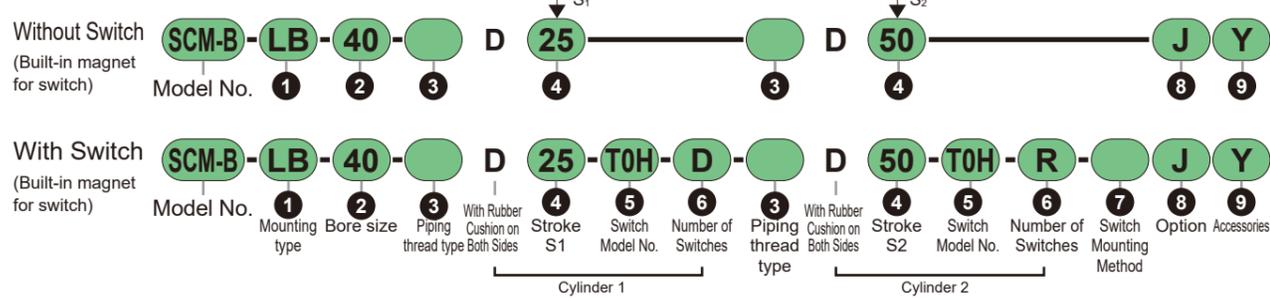
Code	Contents	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q		Shipped with Switch Rail Attached	
M	Piston Rod Material (Stainless Steel)		

- *1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.
- *2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
- *3: When type with bellows is selected, the bellows will be attached to the rods on both sides.
- *4: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

9 Accessories

Code	Contents
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B2	Double Yoke Bracket

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Contents
00	Basic type
LB	Axial Foot Type
FA	Cylinder 1 Side Flange Type
FB	Cylinder 2 Side Flange Type
TA	Cylinder 1 Side Trunnion Type
TB	Cylinder 2 Side Trunnion Type

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

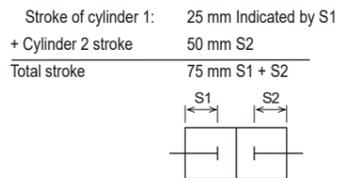
3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø32	10 to 500	Every 1 mm
ø40 to ø63	10 to 750	

Note: For the number of switches to be mounted and minimum stroke, refer to P. 426.



About Custom Product Specifications

For details, see P. 474 to 477.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
[[A2]]	With 2 Rod Nuts
Rod End Shape Modification	Refer to End of Volume P. 11.

Model No. Example)

SCM - B - - **XP5**

Food Manufacturing Process Compatible Specification

(Catalog No. CC-1271AA)

- Uses food grade grease that can be used in food manufacturing processes

SCM - B - - **FP1**

5 Switch Model No.

For switch details, please refer to P. 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T5V□	T5V□
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□
			—	—	—	—	T3PH□	T3PV□
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□
			—	—	—	—	T3WH□	T3WV□
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□
			—	—	—	5 to 20	T5V□	—
		3-wire (NPN)	—	30 or less	—	50 or less	T5V□	—
			—	—	—	—	T5V□	—
		2-wire	—	24 ± 10%	—	5 to 20	T5V□	T5V□
			—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3
Reed	1-Color	No Indicator Lamp	110	12/24	7 to 20	5 to 50	T0H□	T0V□
			110	5/12/24	20 or less	50 or less	T5H□	T5V□
	1-Color	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T5V□

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

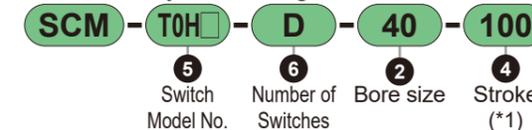
*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH ③
5 m TOH ⑤

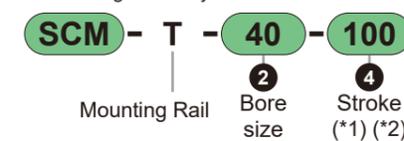
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

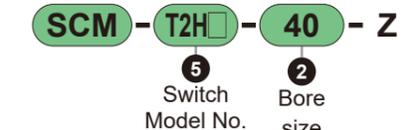


● Mounting Rail Only

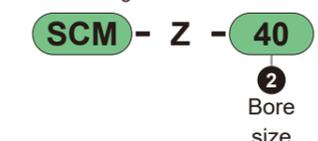


[Switch mounting: Band Type]

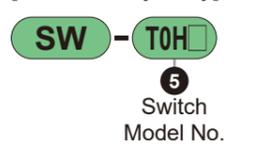
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



- *1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
- *2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-B						
	Bore size	mm	ø20	ø25	ø32	ø40	ø50
Actuation method	Double Acting, Back-to-Back Type						
Operating Fluid	Compressed Air						
Max. Working Pressure	MPa	1.0					
Min. Operating Pressure	MPa	0.1			0.05		
Proof Pressure	MPa	1.6					
Ambient Temperature	°C	-10 to 60 (No freezing)					
Port Size		Rc1/8			Rc1/4		
Stroke tolerance	mm	+1.4 0 (to 500)		+1.4 0 (to 750)		+2.3 0 (to 750)	
Operating Piston Speed	mm/s	30 to 1000 (Use within allowable absorption energy.)					
Cushion		Rubber Cushion					
Lubrication		Not Required (When lubricating, use Turbine Oil ISO VG32)					
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	500	10
ø25			
ø32			
ø40			
ø50			
ø63	750		

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm	Added Weight				Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm	Weight of Band per Switch
		Basic Type (OO)	Basic type	Axial Foot Type	Flange Type				
ø20	0.10	0.00	0.11	0.03	0.01	Refer to the weight listed in the switch specifications on P. 971.	0.01	0.012	0.007
ø25	0.17	0.00	0.13	0.04	0.02		0.014	0.016	0.007
ø32	0.26	0.02	0.18	0.08	0.05		0.018	0.02	0.007
ø40	0.41	0.05	0.27	0.13	0.10		0.03	0.032	0.007
ø50	0.77	0.07	0.55	0.41	0.21		0.044	0.046	0.008
ø63	1.07	0.11	0.83	0.61	0.25		0.052	0.054	0.009

(Example)

Product Weight of SCM-B-LB-40D-25-T2H-D-D50-T2H-R

[S1 Weight]

Product Weight at S=0 mm 0.41 kg

Added Weight at S=25 mm $0.032 \times \frac{25}{10} = 0.08$ kg

Weight of 2 switches 0.036 kg

S1 Weight 0.41 kg + 0.08 kg + 0.036 kg = 0.526 kg

[S2 Weight]

Product Weight at S=0 mm 0.41 kg

Added Weight at S=50 mm $0.032 \times \frac{25}{10} = 0.16$ kg

Weight of 1 Switch 0.018 kg

S2 Weight 0.63 kg + 0.16 kg + 0.018 kg = 0.588 kg

Product Weight (S1 Weight + S2 Weight + Added Weight) 0.526 kg + 0.588 kg + 0.27 kg = 1.384 kg

Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating 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
ø20	Push	-	31.4	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	-	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2	2.11×10^2	2.38×10^2	2.64×10^2
ø25	Push	-	49.1	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	-	41.2	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2	3.30×10^2	3.71×10^2	4.12×10^2
ø32	Push	-	80.4	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	-	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	-	1.26×10^2	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	-	1.06×10^2	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	98.0	1.96×10^2	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	82.5	1.65×10^2	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	1.56×10^2	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	2.40×10^2	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

Mounting Bracket Model No. Notation Method

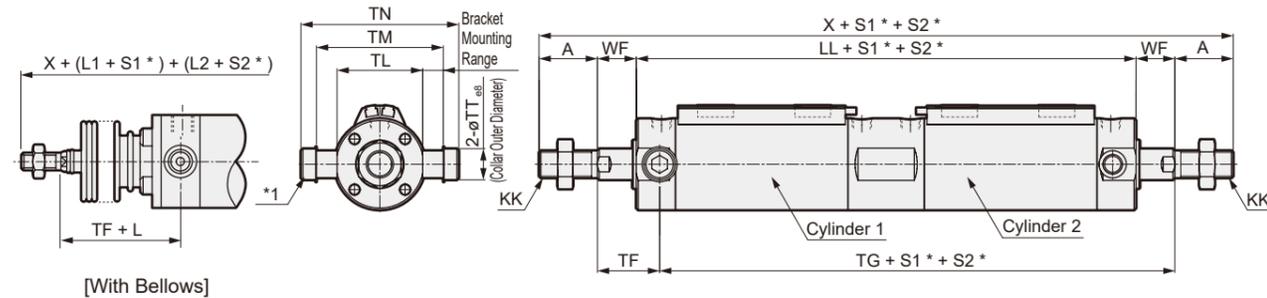
Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Trunnion (TA)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

*1: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

● Rod side trunnion type (TA)

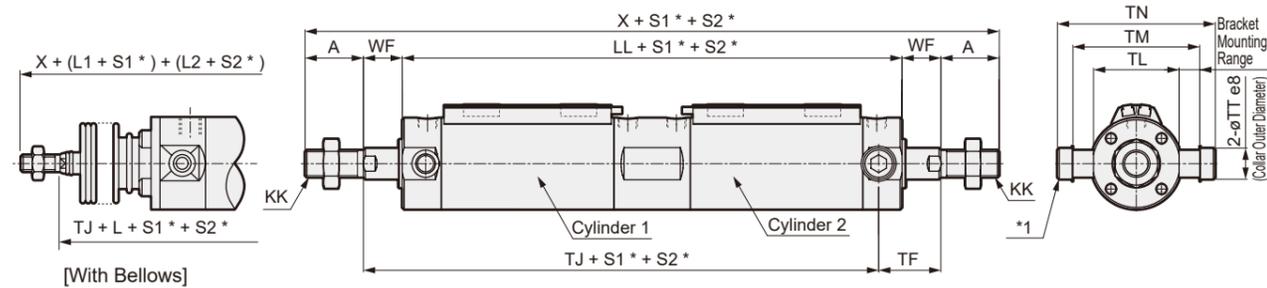


* S1: Cylinder 1 Stroke, S2: Cylinder 2 Stroke

Code	Rod Side Trunnion Type (TA) Mounting Dimensions											With Bellows
	Bore size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X
ø20	18	M8	137	28	143	28	39	47.6	8	17	207	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	137	29	144	33	43	53	10	18	217	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	143	29	150	40	54.5	67.7	12	18	223	(Stroke / 3) + 19
ø40	30	M14 × 1.5	157	32	165	49	65.9	81.1	14	20	257	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	184	36	194	60	80	98.6	16	23	300	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	184	36	194	74	98	119.2	18	23	300	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

● Head Side Trunnion Type (TB)



* S1: Cylinder 1 Stroke, S2: Cylinder 2 Stroke

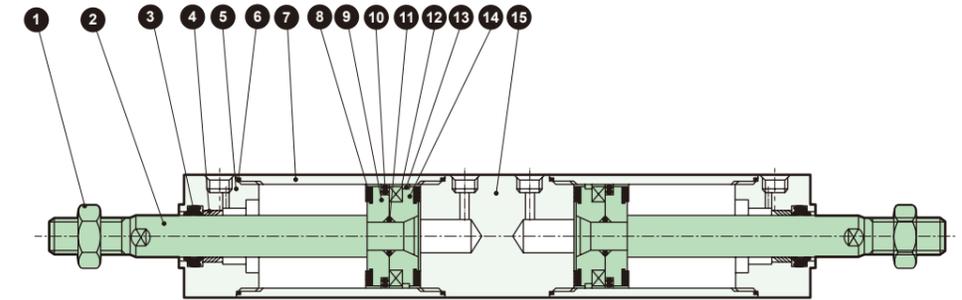
Code	Head Side Trunnion Type (TB) Mounting Dimensions											With Bellows
	Bore size (mm)	A	KK	LL	TF	TJ	TL	TM	TN	TT	WF	X
ø20	18	M8	137	28	143	28	39	47.6	8	17	207	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	137	29	144	33	43	53	10	18	217	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	143	29	150	40	54.5	67.7	12	18	223	(Stroke / 3) + 19
ø40	30	M14 × 1.5	157	32	165	49	65.9	81.1	14	20	257	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	184	36	194	60	80	98.6	16	23	300	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	184	36	194	74	98	119.2	18	23	300	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

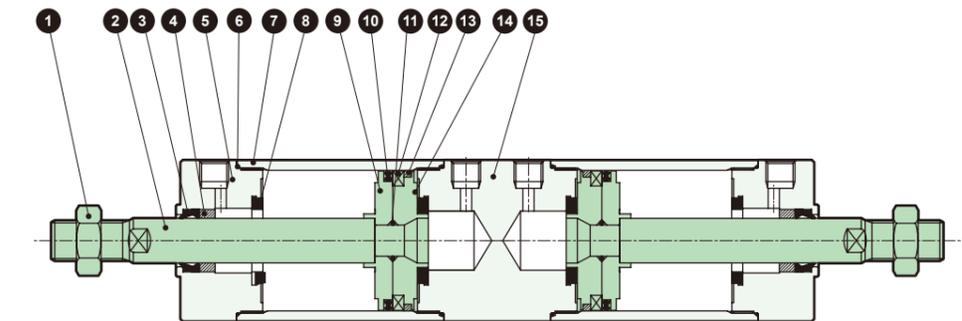
Internal Structure Diagram / Materials/Application Examples

Internal Structure Diagram / Material

• ø20 to ø40



• ø50 to ø63

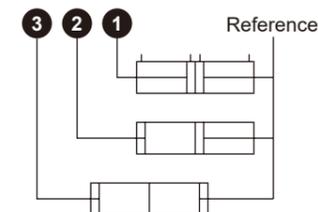


Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	8	Cushion Rubber	Urethane Rubber	
2	Piston Rod	ø20, ø25: Stainless Steel	Industrial Hard Chrome Plating	9	Piston R	Aluminum Alloy	
		ø32 to ø63: Steel		10	Piston Packing	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		11	Piston Gasket	Nitrile Rubber	
4	Bushing	Oil-impregnated Bearing Alloy		12	Magnet	Plastic	
5	Rod Cover	Aluminum Alloy	Hard Anodized	13	Wear Ring	Polyacetal	
6	Cylinder Gasket	Nitrile Rubber		14	Piston H	Aluminum Alloy	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	15	Intermediate Cover	Aluminum Alloy	Hard Anodized

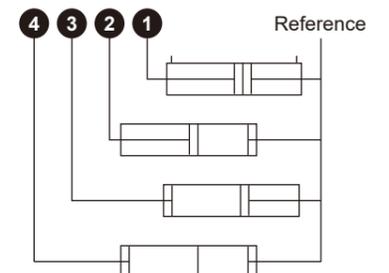
For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts

Usage Example

When combining the same stroke. 3 positions can be taken.



When combining different strokes. 4 positions can be taken.





Round shaped cylinder
Double Acting, Two-Stage Type

SCM-W Series

● Bore size: ø20, ø25, ø32, ø40, ø50, ø63



SCM-W Series Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

Code	Contents	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		
M	Piston Rod Material (Stainless Steel)		

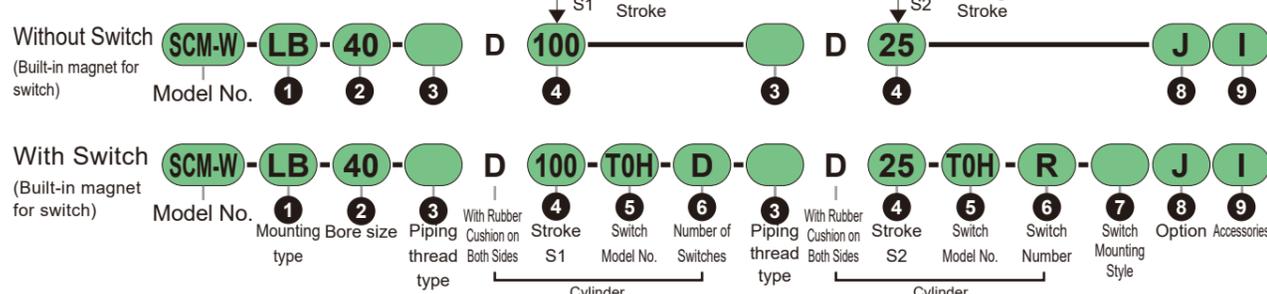
*1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.
*2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
*3: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

9 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B2	Double Yoke Bracket

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Code	Contents
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included)
TA	Rod Side Trunnion Type
TB	Head Side Trunnion Type

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

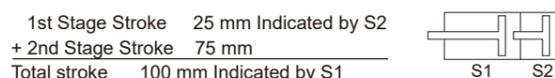
3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø63	S1 (Total stroke): 10 to 600	Every 1 mm
	S2 (1st Stage Stroke): 10 to 200	

Note: For the number of switches to be mounted and minimum stroke, refer to P. 434.



5 Switch Model No.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T5V□	T5V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
			—	—	—	—	T3PH□	T3PV□	
		3-wire (PNP)	—	—	—	—	T3WH□	T3WV□	
			—	—	—	—	—	—	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	
			—	—	—	5 to 20	T5V□	—	
		3-wire (NPN)	—	30 or less	—	50 or less	T5V□	—	
			—	—	—	—	T5V□	—	
		1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T5V□	T5V□
				—	10 to 30	—	—	T2HR3	T2VR3
Reed	1-Color No Indicator Lamp	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
			110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T5V□	T5V□		

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.
*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: This does not guarantee the water resistance of the cylinder.
*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.
*5: Switches other than those listed on the left are also available. (Custom Product) For details, see P. 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m T0H
3 m T0H [3]
5 m T0H [5]

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Contents
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
[[A2]]	With 2 Rod Nuts
Rod End Shape Modification	Refer to End of Volume P. 11.

Model No. Example)

SCM - W - - XP5

Food Manufacturing Process Compatible Specification

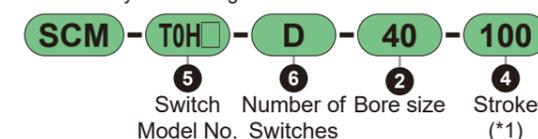
(Catalog No. CC-1271AA)

● Uses food grade grease that can be used in food manufacturing processes

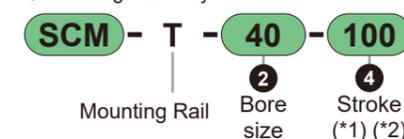
SCM - W - - FP1

Switch Single Unit Model No. Notation Method

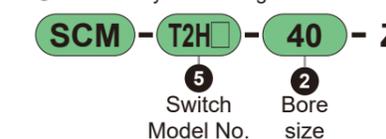
[Switch mounting: Rail Type]
Switch Body + Mounting Rail Set



● Mounting Rail Only



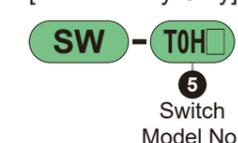
[Switch mounting: Band Type]
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-W							
	mm	ø20	ø25	ø32	ø40	ø50	ø63	
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	
Actuation method	Double Acting, Two-Stage Type							
Operating Fluid	Compressed Air							
Max. Working Pressure	MPa	1.0 (*1)						
Min. Operating Pressure	MPa	0.2					0.1	
Proof Pressure	MPa	1.6						
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)						
Port Size		Rc1/8			Rc1/4			
Stroke tolerance	S1	±1.4					±2.3	
	S2	+1.4					+2.3	
mm		0					0	
Operating Piston Speed	mm/s	50 to 1000 (Use within allowable absorbed energy.)						
Cushion	Rubber Cushion							
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)							
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9	1.6	1.6	

Note: If S1 and S2 are the same, use with a maximum operating pressure of 0.5 MPa.

Stroke

(Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	600	10
ø25			
ø32			
ø40			
ø50			
ø63			

*1: Intermediate strokes can be manufactured in 1 mm increments.
*2: The maximum stroke for S2 is 200 mm.

Number of Switches Mounted and Min. Stroke (mm)

● Switch mounting: Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)										
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25

● Switch mounting: Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL			
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore size (mm)										
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm	Added Weight					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (Switch With Rail)	Weight of Band per Switch
		Basic Type (OO)	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.10	-0.01	0.10	0.02	0.04	0.00	Refer to the weight listed in the switch specifications on P. 971.	0.01	0.012	0.007
ø25	0.17	-0.02	0.11	0.02	0.06	0.00		0.014	0.016	0.007
ø32	0.26	-0.01	0.15	0.05	0.14	0.02		0.018	0.02	0.007
ø40	0.41	-0.03	0.19	0.05	0.20	0.02		0.03	0.032	0.007
ø50	0.77	-0.06	0.42	0.28	0.34	0.08		0.044	0.046	0.008
ø63	1.07	-0.02	0.70	0.48	0.66	0.12		0.052	0.054	0.009

(Example)
Product Weight of SCM-W-LB-40-D100-T2H-D-D25-T2H-R

[S1 Weight]
Product mass at S = 0 mm:0.41 kg
Added mass at S = 100 mm:.....0.032 × $\frac{100}{10}$ = 0.32 kg
Weight of 2 switches 0.036 kg
S1 weight 0.41 kg+0.32 kg+0.036 kg=0.766 kg

[S2 Weight]
Product mass at S = 0 mm:0.41 kg
Added weight at S = 100 mm...0.032 × $\frac{25}{10}$ = 0.08 kg
Weight of 1 switches 0.018 kg
S2 weight..... 0.41 kg+0.08 kg+0.018 kg=0.508 kg

Product weight
(S1 weight + S2 weight + additional weight) 0.766 kg+0.508 kg+0.19 kg=1.464 kg

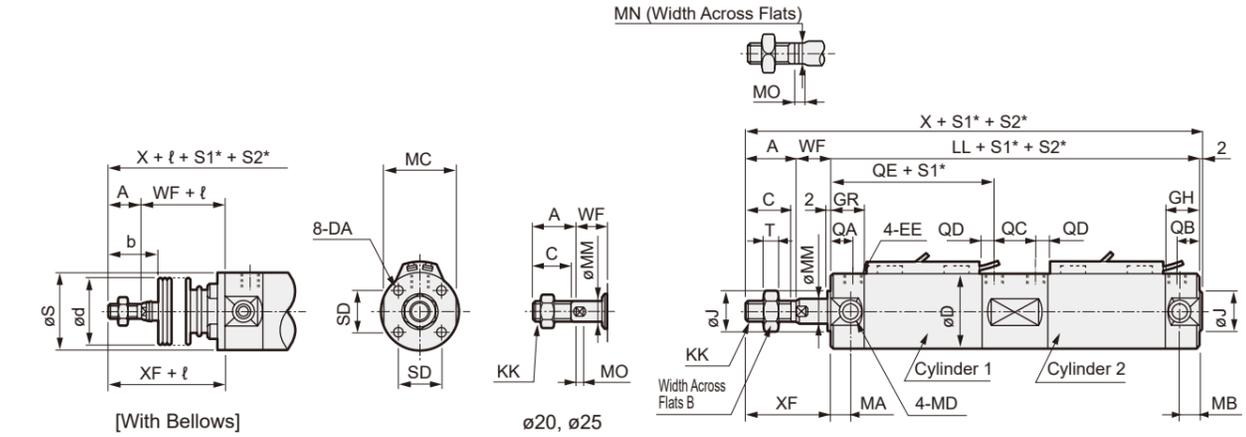
Mounting Bracket Model No. Notation Method

Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

*1: Mounting bolts are included to each mounting bracket.
*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

- Basic type (OO) • Switch Mounting Method: Rail Type



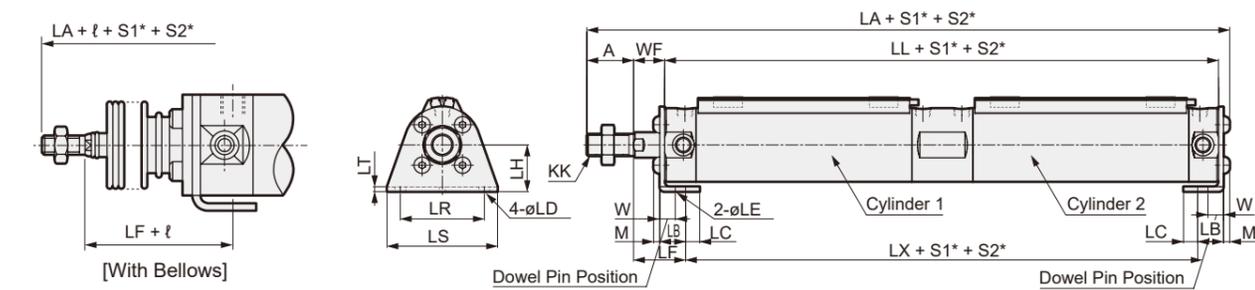
* S1: Total Stroke, S2: 1st Stage (Cylinder 2) Stroke

Code	Basic Type (OO) Basic Dimensions																			
	A	B	C	D	DA	EE	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	QA	QB
ø20	18	13	16	26	M4 Depth 6.5	Rc1/8	17	19	12	M8	135	11	11	24	M5	8	6	4	12	10
ø25	22	17	20	31	M5 Depth 6.5	Rc1/8	17	19	14	M10 × 1.25	135	11	11	29	M6	10	8	5	12	10
ø32	22	17	20	38	M5 Depth 7.5	Rc1/8	17	19	18	M10 × 1.25	141	11	10	36	M8	12	10	5.5	12	10
ø40	30	22	27	47	M6 Depth 12	Rc1/8	19	20	25	M14 × 1.5	156	12	10	44	M10	16	14	6	13	12
ø50	35	27	32	58	M8 Depth 16	Rc1/4	22	25	30	M18 × 1.5	181	13	12	55	M12	20	17	8	15	12
ø63	35	27	32	72	M10 Depth 16	Rc1/4	22	25	32	M18 × 1.5	181	13	12	69	M14	20	17	8	15	12

Code	With Bellows											
	QC	QD	QE	SD	T	WF	X	XF	b	d	s	ℓ
ø20	19	7	59	14	5	17	172	35	30	30	25.7	(S1 / 3) + 18.5
ø25	19	7	59	16.5	6	18	177	40	35	30	30.7	(S1 / 3) + 20.5
ø32	21	7	61	20	6	18	183	40	31.5	35	37.7	(S1 / 3) + 19
ø40	25	7	66	26	8	20	208	50	40	35	46.7	(S1 / 3) + 18.5
ø50	28	10	78	32	11	23	241	58	46	40	57.7	(S1 / 3.6) + 18.5
ø63	28	10	78	38	11	23	241	58	46	40	71.7	(S1 / 3.6) + 18.5

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

- Axial foot type (LB)



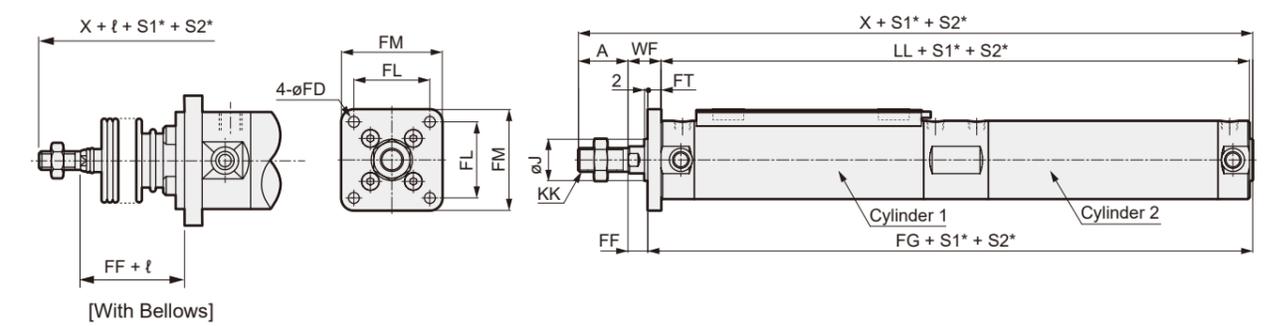
* S1: Total Stroke, S2: 1st Stage (Cylinder 2) Stroke

Code	Axial Foot Type (LB) Mounting Dimensions																	
	A	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF	ℓ
ø20	18	M8	175.8	15.1	7.1	5.7	4	28.9	20	135	32	44	3.2	111.2	2.6	10	17	(S1 / 3) + 18.5
ø25	22	M10 × 1.25	181.6	15.1	7.1	5.7	4	29.9	22	135	36	49	3.2	111.2	3.4	10	18	(S1 / 3) + 20.5
ø32	22	M10 × 1.25	187.6	16.1	8.1	6.8	4	30.9	25	141	44	58	3.2	115.2	3.4	10	18	(S1 / 3) + 19
ø40	30	M14 × 1.5	213.2	16.6	9.1	6.8	4	33.4	30	156	54	71	3.2	129.2	4	10	20	(S1 / 3) + 18.5
ø50	35	M18 × 1.5	248.5	22	11	9	5	40.5	40	181	66	86	4.5	146	5	17.5	23	(S1 / 3.6) + 18.5
ø63	35	M18 × 1.5	248.5	22	13	11	5	40.5	45	181	82	106	4.5	146	5	17.5	23	(S1 / 3.6) + 18.5

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

- Rod Side Flange Type (FA)

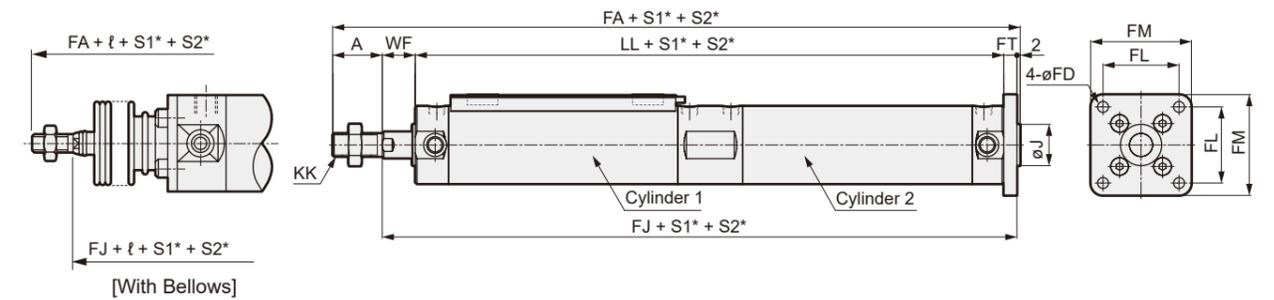


* S1: Total Stroke, S2: 1st Stage (Cylinder 2) Stroke

Code	Rod Side Flange Type (FA) Mounting Dimensions												With Bellows
	A	FD	FF	FG	FL	FM	FT	J	KK	LL	WF	X	ℓ
ø20	18	5.5	11	143	28	40	6	12	M8	135	17	172	(S1 / 3) + 18.5
ø25	22	5.5	11	144	32	44	7	14	M10 × 1.25	135	18	177	(S1 / 3) + 20.5
ø32	22	6.6	11	150	38	53	7	18	M10 × 1.25	141	18	183	(S1 / 3) + 19
ø40	30	6.6	12	166	46	61	8	25	M14 × 1.5	156	20	208	(S1 / 3) + 18.5
ø50	35	9	14	192	58	76	9	30	M18 × 1.5	181	23	241	(S1 / 3.6) + 18.5
ø63	35	11	14	192	70	92	9	32	M18 × 1.5	181	23	241	(S1 / 3.6) + 18.5

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

- Head Side Flange Type (FB)



* S1: Total Stroke, S2: 1st Stage (Cylinder 2) Stroke

Code	Head Side Flange Type (FB) Mounting Dimensions												With Bellows
	A	FA	FD	FJ	FL	FM	FT	J	KK	LL	WF	ℓ	
ø20	18	178	5.5	158	28	40	6	12	M8	135	17	(S1 / 3) + 18.5	
ø25	22	184	5.5	160	32	44	7	14	M10 × 1.25	135	18	(S1 / 3) + 20.5	
ø32	22	190	6.6	166	38	53	7	18	M10 × 1.25	141	18	(S1 / 3) + 19	
ø40	30	216	6.6	184	46	61	8	25	M14 × 1.5	156	20	(S1 / 3) + 18.5	
ø50	35	250	9	213	58	76	9	30	M18 × 1.5	181	23	(S1 / 3.6) + 18.5	
ø63	35	250	11	213	70	92	9	32	M18 × 1.5	181	23	(S1 / 3.6) + 18.5	

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

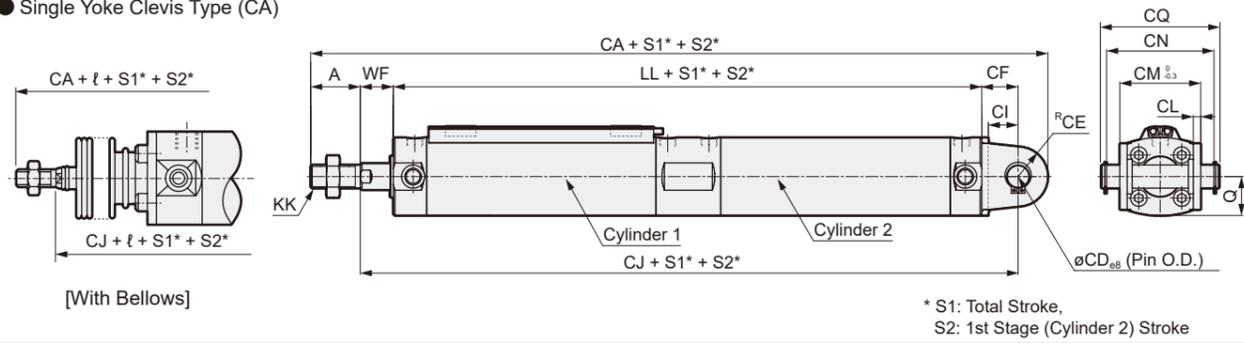
SCS2

Cylinder Switch

Ending

Outline Dimension Drawing

● Single Yoke Clevis Type (CA)



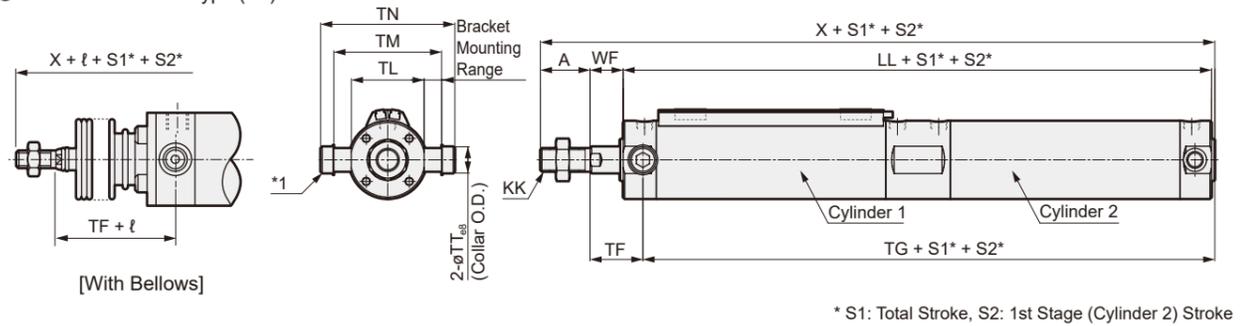
* S1: Total Stroke,
S2: 1st Stage (Cylinder 2) Stroke

Code	Single Clevis Type (CA) Mounting Dimensions															With Bellows	
	Bore size (mm)	A	CA	CD	CE	CF	CI	CJ	CL	CM	CN	CQ	KK	LL	Q		WF
	ø20	18	195	8	11	14	10.8	166	3.2	29	38.6	43.4	M8	135	13	17	(S1 / 3) + 18.5
	ø25	22	204	10	13	16	12.8	169	3.2	33	42.6	48	M10 × 1.25	135	15.5	18	(S1 / 3) + 20.5
SCP□3	ø32	22	215.5	12	15	19.5	15.5	178.5	4.5	40	54	59.4	M10 × 1.25	141	19	18	(S1 / 3) + 19
	ø40	30	245.5	14	18	21.5	17.5	197.5	4.5	49	65	71.4	M14 × 1.5	156	23.5	20	(S1 / 3) + 18.5
CMK2	ø50	35	283.5	16	20	24.5	19	228.5	6	60	79.6	86	M18 × 1.5	181	29	23	(S1 / 3.6) + 18.5
	ø63	35	290.5	18	22	29.5	22	233.5	8	74	97.8	105.4	M18 × 1.5	181	36	23	(S1 / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

SCM

● Rod Side Trunnion Type (TA)



* S1: Total Stroke, S2: 1st Stage (Cylinder 2) Stroke

Code	Rod Side Trunnion Type (TA) Mounting Dimensions												With Bellows
	Bore size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X	
	ø20	18	M8	135	28	126	28	39	47.6	8	17	172	(S1 / 3) + 18.5
	ø25	22	M10 × 1.25	135	29	126	33	43	53	10	18	177	(S1 / 3) + 20.5
	ø32	22	M10 × 1.25	141	29	132	40	54.5	67.7	12	18	183	(S1 / 3) + 19
	ø40	30	M14 × 1.5	156	32	146	49	65.9	81.1	14	20	208	(S1 / 3) + 18.5
	ø50	35	M18 × 1.5	181	36	170	60	80	98.6	16	23	241	(S1 / 3.6) + 18.5
	ø63	35	M18 × 1.5	181	36	170	74	98	119.2	18	23	241	(S1 / 3.6) + 18.5

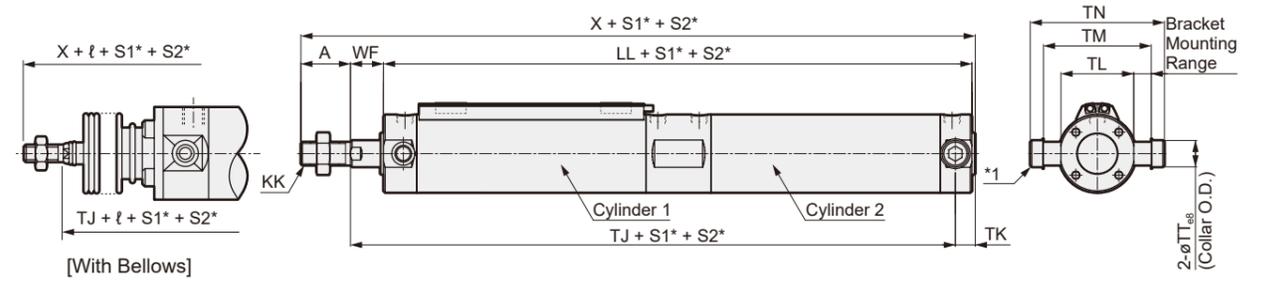
*1: Consists of collar, flat washer, and hexagon socket head cap screw.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

Cylinder Switch

Ending

Outline Dimension Drawing

● Head Side Trunnion Type (TB)



* S1: Total Stroke, S2: 1st Stage (Cylinder 2) Stroke

Code	Head Side Trunnion Type (TB) Mounting Dimensions												With Bellows
	Bore size (mm)	A	KK	LL	TJ	TK	TL	TM	TN	TT	WF	X	
	ø20	18	M8	135	141	13	28	39	47.6	8	17	172	(S1 / 3) + 18.5
	ø25	22	M10 × 1.25	135	142	13	33	43	53	10	18	177	(S1 / 3) + 20.5
SCP□3	ø32	22	M10 × 1.25	141	149	12	40	54.5	67.7	12	18	183	(S1 / 3) + 19
	ø40	30	M14 × 1.5	156	166	12	49	65.9	81.1	14	20	208	(S1 / 3) + 18.5
CMK2	ø50	35	M18 × 1.5	181	192	14	60	80	98.6	16	23	241	(S1 / 3.6) + 18.5
	ø63	35	M18 × 1.5	181	192	14	74	98	119.2	18	23	241	(S1 / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
*2: For dimensions with each switch, see P. 468 to 473.
*3: For outer dimensions diagram of accessories, refer to P. 336.

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

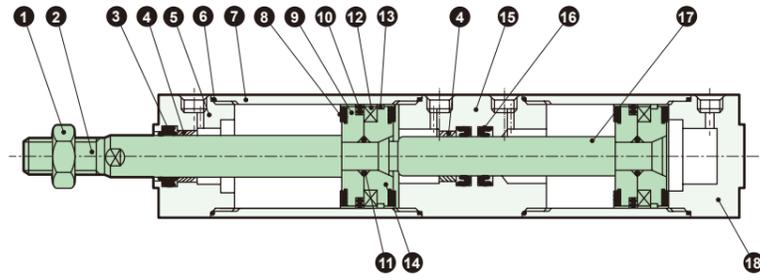
SCS2

Cylinder Switch

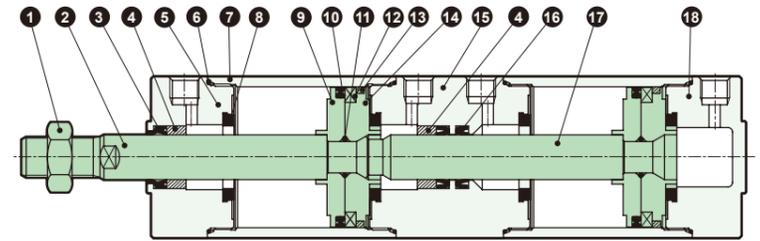
Ending

Internal Structure Diagram / Material

• ø20 to ø40



• ø50 to ø63



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	10	Piston Packing	Nitrile Rubber	
2	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	11	Piston Gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		12	Magnet	Plastic	
4	Bushing	Oil-Impregnated Bearing Alloy		13	Wear Ring	Polyacetal	
5	Rod Cover	Aluminum Alloy	Hard Anodized	14	Piston H	Aluminum Alloy	
6	Cylinder Gasket	Nitrile Rubber		15	Intermediate Cover	Aluminum Alloy	Hard Anodized
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	16	Rod Packing	Nitrile Rubber	
8	Cushion Rubber	Urethane Rubber		17	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø100: Steel	Industrial Hard Chrome Plating
9	Piston R	Aluminum Alloy		18	Head Cover	Aluminum Alloy	Hard Anodized

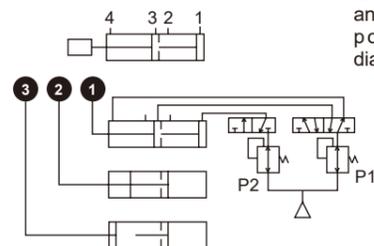
MEMO

For maintenance parts, please visit the CKD Equipment Product Site
 (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts

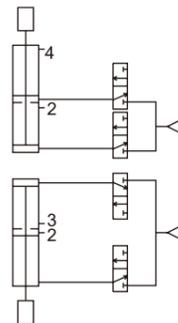
Usage Example

Set pressure $P2 > P1$.

- First stage push
While keeping port 4 pressurized, pressurize port 1.
- Second stage push
While keeping port 1 pressurized, pressurize port 3.



Depending on the load direction, $P2 = P1$ may be acceptable. In case of single acting use due to natural drop of load, ports 2 and 4 in the upper diagram, and ports 2 and 3 in the lower diagram become breather ports.





Round shaped cylinder
Double Acting, Tandem Type

SCM-W4 Series

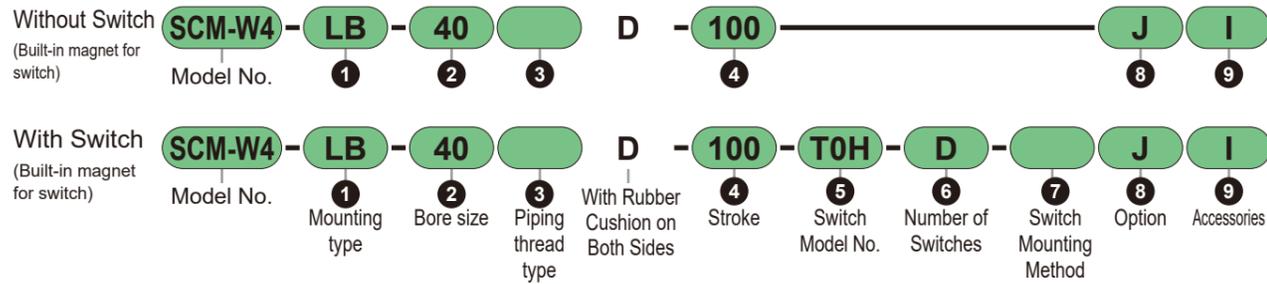
● Bore Size: ø20, ø25, ø32, ø40, ø50, ø63



SCM-W4 Series

Model No. Notation Method

Model No. Notation Method



1 Mounting Type

Mounting brackets are included with the product for shipment.

Code	Content	Image
00	Basic type	
LB	Axial Foot Type	
FA	Rod Side Flange Type	
FB	Head Side Flange Type	
CA	Single Clevis Type (pin and retaining ring included)	
TA	Rod Side Trunnion Type	
TB	Head Side Trunnion Type	

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø63	10 to 600	Every 1 mm

Note: For the number of switches to be mounted and minimum stroke, refer to P. 444.

5 Switch Model No.

For switch details, please refer to 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		Image	
			AC	DC	AC	DC	Straight	L-shape		
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□		
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□		
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□		
			—	—	—	—	T3PH□	T3PV□		
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□		
			—	—	—	—	T3WH□	T3WV□		
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□		
			—	—	—	5 to 20	T2YD□	—		
		3-wire (NPN)	—	30 or less	—	50 or less	T2YDT□	—		
			—	—	—	—	T2JH□	T2JV□		
		2-Color Water Resistance Improved	2-wire	—	24 ± 10%	—	5 to 20	T2JH□		T2JV□
				—	—	—	—	T2HR3		T2VR3
2-Color AC For Magnetic Field	2-wire	—	24 ± 10%	—	5 to 20	T2JH□	T2JV□			
		—	—	—	—	T2HR3	T2VR3			
1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□			
		—	10 to 30	—	—	T2HR3	T2VR3			
1-Color Flexible Lead Wire Type	2-wire	—	10 to 30	—	—	T2HR3	T2VR3			
		—	—	—	—	T2HR3	T2VR3			
Reed	1-Color	No Indicator Lamp	110	12/24	7 to 20	5 to 50	T0H□	T0V□		
			110	5/12/24	20 or less	50 or less	T5H□	T5V□		
	1-Color	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□		

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom order) For details, refer to 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH [3]
5 m TOH [5]

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

8 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature	Image
J	Bellows	100°C	200°C	
L		250°C	400°C	
Q	Shipped with Switch Rail Attached			
M	Piston Rod Material (Stainless Steel)			

*1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.

*2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.

*3: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Model No. Example)

SCM - W4 - - XP5

7 Switch Mounting Method

Code	Content	Image
Blank	Rail Type	
Z	Band Type	

9 Accessories

Code	Content	Image
I	Single Knuckle	
Y	Double Knuckle (Pin and retaining ring included)	
B2	Double Yoke Bracket	

*1: "I" and "Y" cannot be selected at the same time.

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

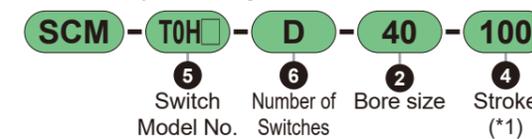
● Uses food grade grease that can be used in food manufacturing processes

SCM - W4 - - FP1

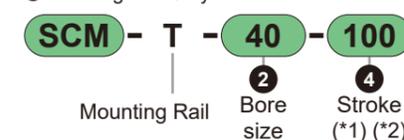
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

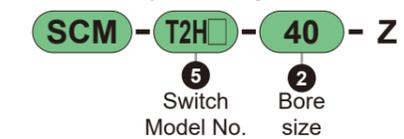


● Mounting Rail Only

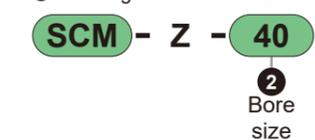


[Switch mounting: Band Type]

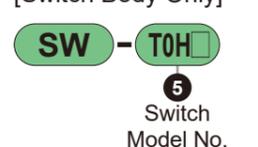
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.

*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-W4					
	ø20	ø25	ø32	ø40	ø50	ø63
Bore Size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method	Double Acting, Tandem Type					
Operating Fluid	Compressed Air					
Max. Working Pressure MPa	0.5					
Min. Operating Pressure MPa	0.2			0.1		
Proof Pressure MPa	1.6					
Ambient Temperature °C	-10 to 60 (Provided that freezing does not occur)					
Port Size	Rc1/8			Rc1/4		
Stroke tolerance mm	+1.4			+2.3		
	-1.0			-1.0		
Operating Piston Speed mm/s	50 to 1000 (Use within allowable absorbed energy.)					
Cushion	Rubber Cushion					
Lubrication	Not Required (When lubricating, use Turbine Oil ISO VG32)					
Allowable Absorbed Energy J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	600	10
ø25			
ø32			
ø40			
ø50			
ø63			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm	Added Weight					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S = 10 mm (With Switch Rail)	Weight of Band per Switch
		Basic Type (OO)	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.10	0.00	0.11	0.03	0.05	0.01	Refer to the weight listed in the switch specifications on P. 971.	0.01	0.012	0.007
ø25	0.17	-0.01	0.12	0.03	0.07	0.01		0.014	0.016	0.007
ø32	0.26	0.00	0.16	0.06	0.15	0.03		0.018	0.02	0.007
ø40	0.41	-0.01	0.21	0.07	0.22	0.04		0.03	0.032	0.007
ø50	0.77	-0.01	0.47	0.33	0.39	0.13		0.044	0.046	0.008
ø63	1.07	0.02	0.74	0.52	0.70	0.16		0.052	0.054	0.009

(Example)
Product Weight of SCM-W4-LB-40D-100-T2H-D

- ① Product mass at S = 0 mm: 0.41 kg
- ② Added mass at S = 100 mm: $0.032 \times \frac{100}{10} = 0.32$ kg
- ③ Weight of 2 switches 0.036 kg
- ④ Sum of ①+② and ③. 0.41 kg+0.32 kg+0.036 kg=0.766 kg

Product Weight (Double ④ and add the added weight) 0.766 kg×2+0.21 kg=1.742 kg

Mounting Bracket Model No. Notation Method

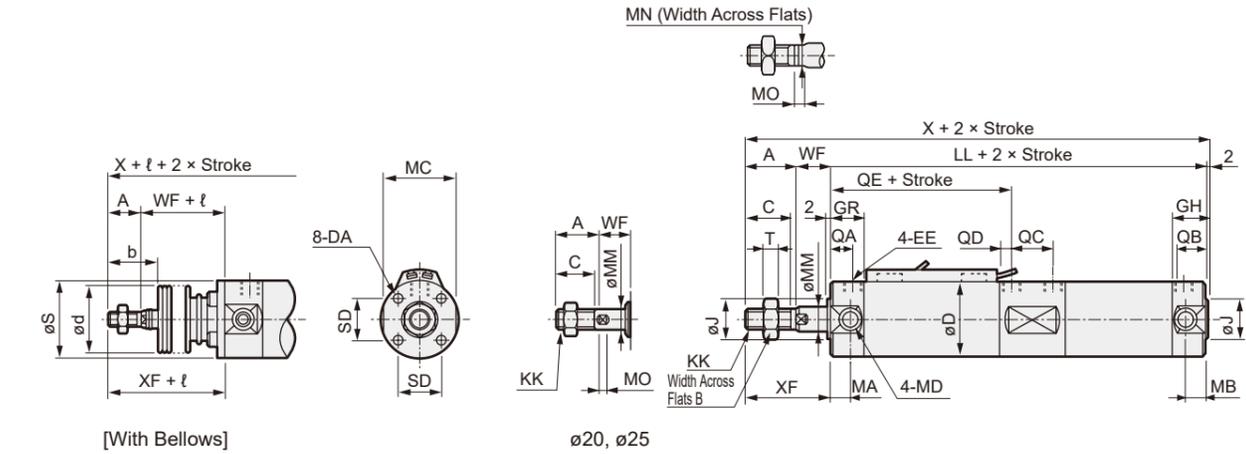
Bore Size (mm)	ø20	ø25	ø32	ø40	ø50	ø63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

*1: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

- Basic Type (OO)
- Switch Mounting Method: Rail Type

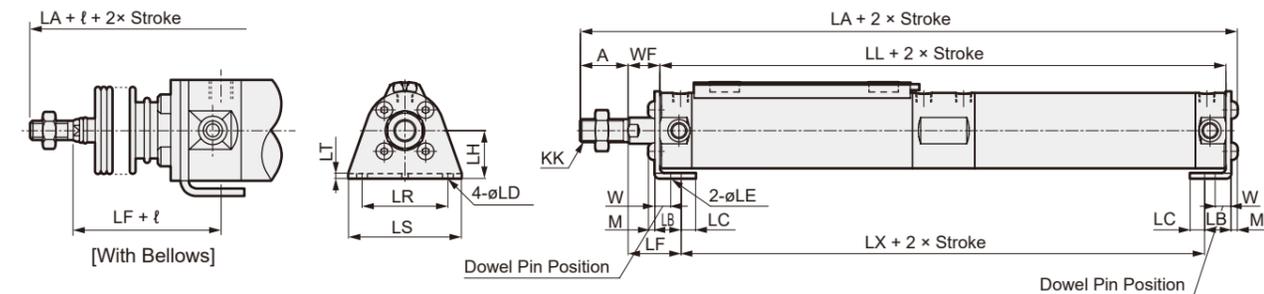


Code	Basic Type (OO) Basic Dimensions															
Bore Size (mm)	A	B	C	D	DA	EE	GH	GR	J	KK	LL	MA	MB	MC	MD	MM
ø20	18	13	16	26	M4 Depth 6.5	Rc1/8	17	19	12	M8	135	11	11	24	M5	8
ø25	22	17	20	31	M5 Depth 6.5	Rc1/8	17	19	14	M10 × 1.25	135	11	11	29	M6	10
ø32	22	17	20	38	M5 Depth 7.5	Rc1/8	17	19	18	M10 × 1.25	141	11	10	36	M8	12
ø40	30	22	27	47	M6 Depth 12	Rc1/8	19	20	25	M14 × 1.5	156	12	10	44	M10	16
ø50	35	27	32	58	M8 Depth 16	Rc1/4	22	25	30	M18 × 1.5	181	13	12	55	M12	20
ø63	35	27	32	72	M10 Depth 16	Rc1/4	22	25	32	M18 × 1.5	181	13	12	69	M14	20

Code	With Bellows															
Bore Size (mm)	MN	MO	QA	QB	QC	QD	QE	SD	T	WF	X	XF	b	d	s	ℓ
ø20	6	4	12	10	19	7	59	14	5	17	172	35	30	30	25.7	(Stroke / 3) + 18.5
ø25	8	5	12	10	19	7	59	16.5	6	18	177	40	35	30	30.7	(Stroke / 3) + 20.5
ø32	10	5.5	12	10	21	7	61	20	6	18	183	40	31.5	35	37.7	(Stroke / 3) + 19
ø40	14	6	13	12	25	7	66	26	8	20	208	50	40	35	46.7	(Stroke / 3) + 18.5
ø50	17	8	15	12	28	10	78	32	11	23	241	58	46	40	57.7	(Stroke / 3.6) + 18.5
ø63	17	8	15	12	28	10	78	38	11	23	241	58	46	40	71.7	(Stroke / 3.6) + 18.5

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

- Axial Foot Type (LB)

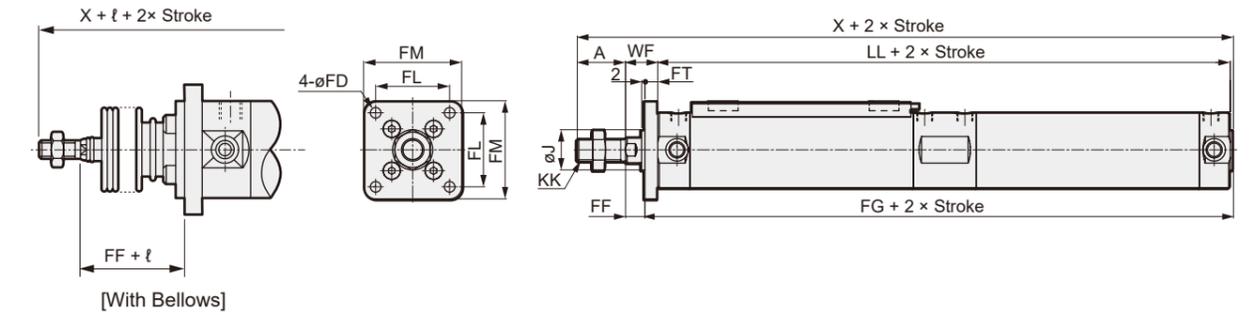


Code	Axial Foot Type (LB) Mounting Dimensions																	
Bore Size (mm)	A	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF	ℓ
ø20	18	M8	175.8	15.1	7.1	5.7	4	28.9	20	135	32	44	3.2	111.2	2.6	10	17	(Stroke / 3) + 18.5
ø25	22	M10 × 1.25	181.6	15.1	7.1	5.7	4	29.9	22	135	36	49	3.2	111.2	3.4	10	18	(Stroke / 3) + 20.5
ø32	22	M10 × 1.25	187.6	16.1	8.1	6.8	4	30.9	25	141	44	58	3.2	115.2	3.4	10	18	(Stroke / 3) + 19
ø40	30	M14 × 1.5	213.2	16.6	9.1	6.8	4	33.4	30	156	54	71	3.2	129.2	4	10	20	(Stroke / 3) + 18.5
ø50	35	M18 × 1.5	248.5	22	11	9	5	40.5	40	181	66	86	4.5	146	5	17.5	23	(Stroke / 3.6) + 18.5
ø63	35	M18 × 1.5	248.5	22	13	11	5	40.5	45	181	82	106	4.5	146	5	17.5	23	(Stroke / 3.6) + 18.5

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

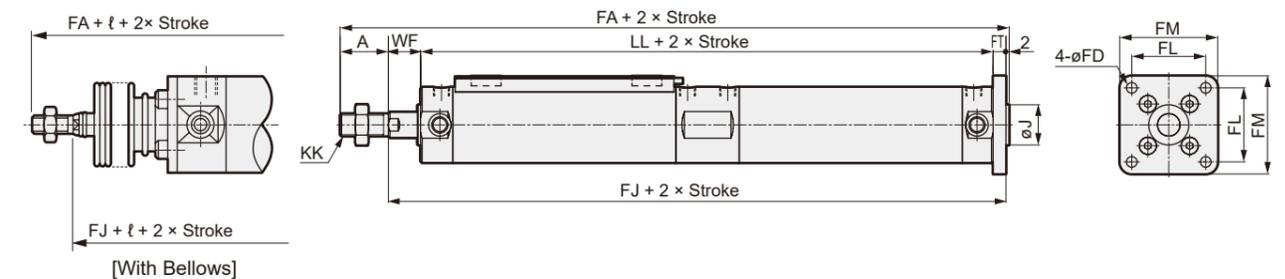
- Rod Side Flange Type (FA)



Code	Rod Side Flange Type (FA) Mounting Dimensions												With Bellows
Bore Size (mm)	A	FD	FF	FG	FL	FM	FT	J	KK	LL	WF	X	ℓ
ø20	18	5.5	11	143	28	40	6	12	M8	135	17	172	(Stroke / 3) + 18.5
ø25	22	5.5	11	144	32	44	7	14	M10 × 1.25	135	18	177	(Stroke / 3) + 20.5
ø32	22	6.6	11	150	38	53	7	18	M10 × 1.25	141	18	183	(Stroke / 3) + 19
ø40	30	6.6	12	166	46	61	8	25	M14 × 1.5	156	20	208	(Stroke / 3) + 18.5
ø50	35	9	14	192	58	76	9	30	M18 × 1.5	181	23	241	(Stroke / 3.6) + 18.5
ø63	35	11	14	192	70	92	9	32	M18 × 1.5	181	23	241	(Stroke / 3.6) + 18.5

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

- Head Side Flange Type (FB)

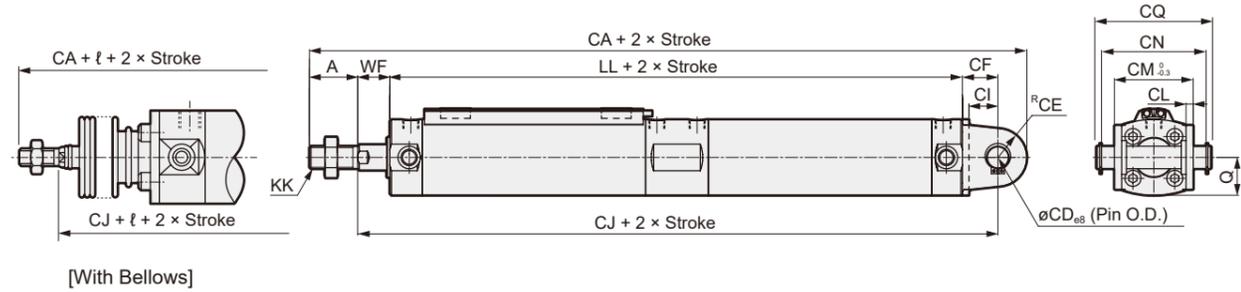


Code	Head Side Flange Type (FB) Mounting Dimensions												With Bellows
Bore Size (mm)	A	FA	FD	FJ	FL	FM	FT	J	KK	LL	WF	ℓ	
ø20	18	178	5.5	158	28	40	6	12	M8	135	17	(Stroke / 3) + 18.5	
ø25	22	184	5.5	160	32	44	7	14	M10 × 1.25	135	18	(Stroke / 3) + 20.5	
ø32	22	190	6.6	166	38	53	7	18	M10 × 1.25	141	18	(Stroke / 3) + 19	
ø40	30	216	6.6	184	46	61	8	25	M14 × 1.5	156	20	(Stroke / 3) + 18.5	
ø50	35	250	9	213	58	76	9	30	M18 × 1.5	181	23	(Stroke / 3.6) + 18.5	
ø63	35	250	11	213	70	92	9	32	M18 × 1.5	181	23	(Stroke / 3.6) + 18.5	

- *1: For dimensions with each switch, see P. 468 to 473.
- *2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

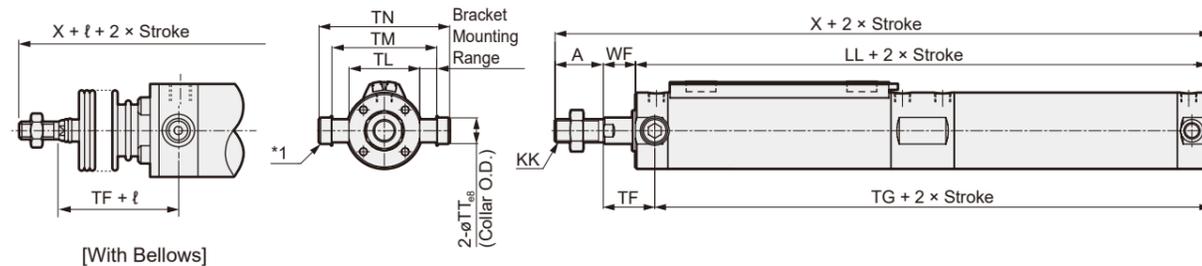
● Single Clevis Type (CA)



Code	Single Clevis Type (CA) Mounting Dimensions															With Bellows
Bore Size (mm)	A	CA	CD	CE	CF	CI	CJ	CL	CM	CN	CQ	KK	LL	Q	WF	ℓ
ø20	18	195	8	11	14	10.8	166	3.2	29	38.6	43.4	M8	135	13	17	(Stroke / 3) + 18.5
ø25	22	204	10	13	16	12.8	169	3.2	33	42.6	48	M10 × 1.25	135	15.5	18	(Stroke / 3) + 20.5
ø32	22	215.5	12	15	19.5	15.5	178.5	4.5	40	54	59.4	M10 × 1.25	141	19	18	(Stroke / 3) + 19
ø40	30	245.5	14	18	21.5	17.5	197.5	4.5	49	65	71.4	M14 × 1.5	156	23.5	20	(Stroke / 3) + 18.5
ø50	35	283.5	16	20	24.5	19	228.5	6	60	79.6	86	M18 × 1.5	181	29	23	(Stroke / 3.6) + 18.5
ø63	35	290.5	18	22	29.5	22	233.5	8	74	97.8	105.4	M18 × 1.5	181	36	23	(Stroke / 3.6) + 18.5

- *1: Consists of collar, flat washer, and hexagon socket head cap screw.
- *2: For dimensions with each switch, see P. 468 to 473.
- *3: For outer dimensions diagram of accessories, refer to P. 336.

● Rod side trunnion type (TA)

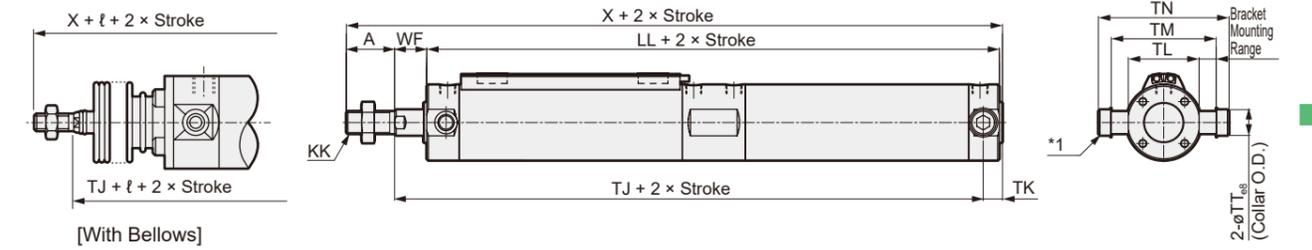


Code	Rod Side Trunnion Type (TA) Mounting Dimensions												With Bellows
Bore Size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X	ℓ	
ø20	18	M8	135	28	126	28	39	47.6	8	17	172	(Stroke / 3) + 18.5	
ø25	22	M10 × 1.25	135	29	126	33	43	53	10	18	177	(Stroke / 3) + 20.5	
ø32	22	M10 × 1.25	141	29	132	40	54.5	67.7	12	18	183	(Stroke / 3) + 19	
ø40	30	M14 × 1.5	156	32	146	49	65.9	81.1	14	20	208	(Stroke / 3) + 18.5	
ø50	35	M18 × 1.5	181	36	170	60	80	98.6	16	23	241	(Stroke / 3.6) + 18.5	
ø63	35	M18 × 1.5	181	36	170	74	98	119.2	18	23	241	(Stroke / 3.6) + 18.5	

- *1: Consists of collar, flat washer, and hexagon socket head cap screw.
- *2: For dimensions with each switch, see P. 468 to 473.
- *3: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

● Head Side Trunnion Type (TB)

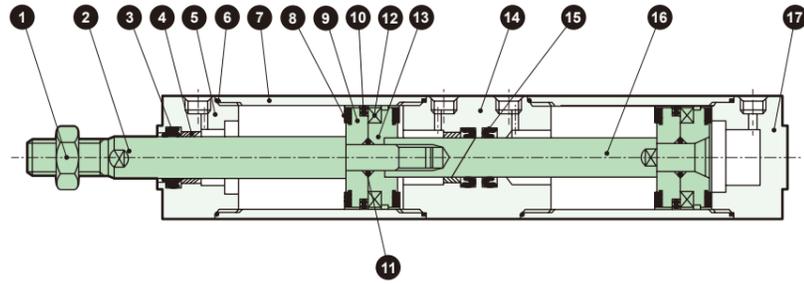


Code	Head Side Trunnion Type (TB) Mounting Dimensions												With Bellows
Bore Size (mm)	A	KK	LL	TJ	TK	TL	TM	TN	TT	WF	X	ℓ	
ø20	18	M8	135	141	13	28	39	47.6	8	17	172	(Stroke / 3) + 18.5	
ø25	22	M10 × 1.25	135	142	13	33	43	53	10	18	177	(Stroke / 3) + 20.5	
ø32	22	M10 × 1.25	141	149	12	40	54.5	67.7	12	18	183	(Stroke / 3) + 19	
ø40	30	M14 × 1.5	156	166	12	49	65.9	81.1	14	20	208	(Stroke / 3) + 18.5	
ø50	35	M18 × 1.5	181	192	14	60	80	98.6	16	23	241	(Stroke / 3.6) + 18.5	
ø63	35	M18 × 1.5	181	192	14	74	98	119.2	18	23	241	(Stroke / 3.6) + 18.5	

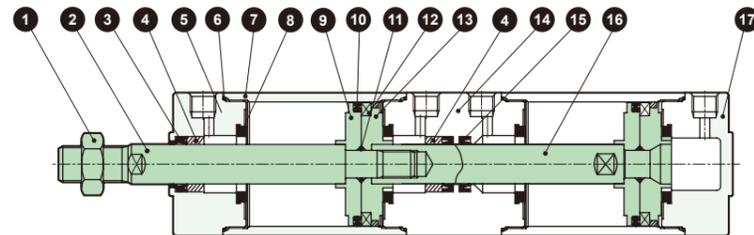
- *1: Consists of collar, flat washer, and hexagon socket head cap screw.
- *2: For dimensions with each switch, see P. 468 to 473.
- *3: For outer dimensions diagram of accessories, refer to P. 336.

Internal Structure Diagram / Material

• ø20 to ø40



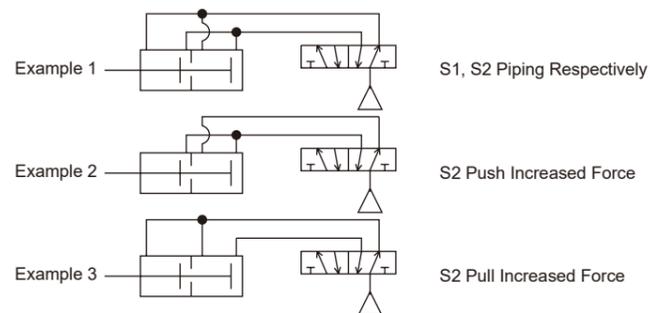
• ø50 to ø63



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	10	Piston Packing	Nitrile Rubber	
2	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø63: Steel	Industrial Hard Chrome Plating	11	Piston Gasket	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		12	Magnet	Plastic	
4	Bushing	Oil-Impregnated Bearing Alloy		13	Piston H	Aluminum Alloy	
5	Rod Cover	Aluminum Alloy	Hard Anodized	14	Intermediate Cover	Aluminum Alloy	Hard Anodized
6	Cylinder Gasket	Nitrile Rubber		15	Rod Packing	Nitrile Rubber	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	16	Piston Rod	ø20, ø25: Stainless Steel ø32 to ø100: Steel	Industrial Hard Chrome Plating
8	Cushion Rubber	Urethane Rubber		17	Head Cover	Aluminum Alloy	Hard Anodized
9	Piston R	Aluminum Alloy					

For maintenance parts, please visit the CKD Equipment Product Site
[\(https://www.ckd.co.jp/kiki/en/\)](https://www.ckd.co.jp/kiki/en/) → "model No." → Maintenance Parts

Usage Example



MEMO

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

Cylinder Switch

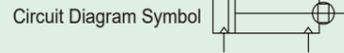
Ending



Round shaped cylinder
Double Acting, Non-Rotating Type

SCM-M Series

● Bore Size: ø20, ø25, ø32, ø40, ø50, ø63



SCM-M Series Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

Code	Content	Max. Ambient Temperature	Instantaneous Max. Temperature
J	Bellows	100°C	200°C
L		250°C	400°C
Q	Shipped with Switch Rail Attached		

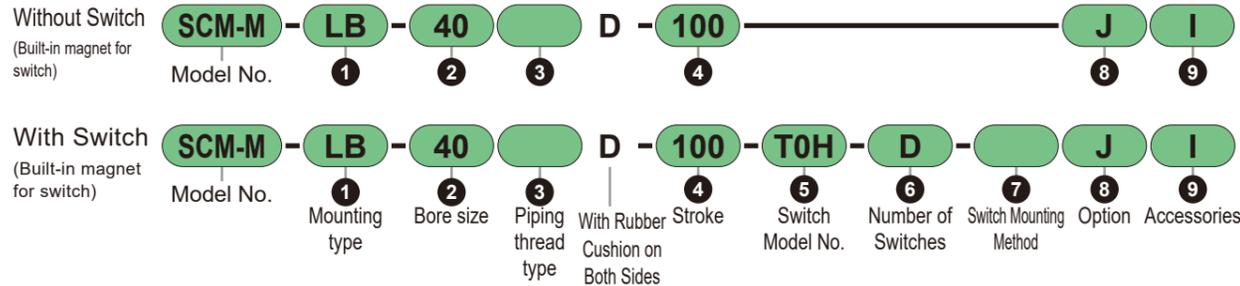
- *1: For models with bellows, if the 1 mounting style is "LB" or "FA," the mounting brackets are shipped pre-assembled.
- *2: The instantaneous max. temperature is that at which sparks, cutting chips, etc., instantaneously contact bellows.
- *3: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

9 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)
B2	Double Yoke Bracket

*1: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting Type

Code	Content
00	Basic type
LB	Axial Foot Type
FA	Rod Side Flange Type
FB	Head Side Flange Type
CA	Single Clevis Type (pin and retaining ring included)
TA	Rod Side Trunnion Type
TB	Head Side Trunnion Type

2 Bore size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø63	10 to 600	Every 1 mm

Note: For the number of switches to be mounted and minimum stroke, refer to P. 454.

5 Switch Model No.

For switch details, please refer to 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	30 or less	—	100 or less	T3H□	T3V□	
			—	—	—	—	T3PH□	T3PV□	
		3-wire (PNP)	—	—	—	—	T2WH□	T2WV□	
			—	—	—	—	T3WH□	T3WV□	
	2-Color	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□	
			—	—	—	5 to 20	T2YD□	—	
		3-wire (NPN)	—	30 or less	—	50 or less	T2YDT□	—	
			—	—	—	—	T2JH□	T2JV□	
		2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20 *2	T2HR3	T2VR3
				—	—	—	—	—	—
2-Color for AC Magnetic Field	2-wire	—	10 to 30	—	—	—	—		
		—	10 to 30	—	—	—	—		
1-Color Off-Delay Type	1-Color Flexible Lead Wire Type	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
			110	5/12/24	20 or less	50 or less	T5H□	T5V□	
			110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom order) For details, refer to 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+) 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH □
3 m TOH □
5 m TOH □

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-XJ9	Without Bellows
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

Model No. Example)

SCM - M - - **XP5**

Food Manufacturing Process Compatible Specification (Catalog No. CC-1271AA)

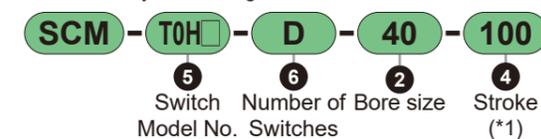
● Uses food grade grease that can be used in food manufacturing processes

SCM - M - - **FP1**

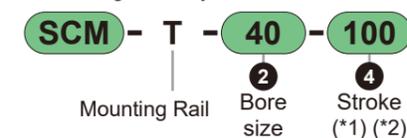
Switch Single Unit Model No. Notation Method

[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

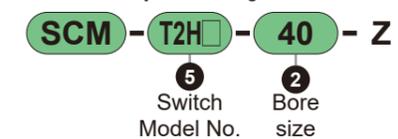


● Mounting Rail Only

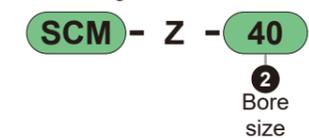


[Switch mounting: Band Type]

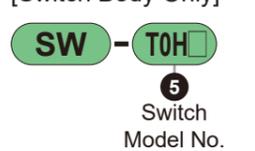
● Switch Body + Mounting Bracket Set + Band



● Mounting Bracket Set + Band



[Switch Body Only]



- *1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.
- *2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-M						
	mm	ø20	ø25	ø32	ø40	ø50	ø63
Bore Size	mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method		Double Acting, Non-Rotating Type					
Operating Fluid		Compressed Air					
Max. Working Pressure	MPa	1.0					
Min. Operating Pressure	MPa	0.1				0.05	
Proof Pressure	MPa	1.6					
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)					
Port Size		Rc1/8			Rc1/4		
Stroke tolerance	mm	+1.4 0			+2.3 0		
Operating Piston Speed	mm/s	30 to 1000 (Use within allowable absorption energy.)					
Cushion		Rubber Cushion					
Lubrication		Not Required (When lubricating, use Turbine Oil ISO VG32)					
Non-rotating accuracy degrees		±1					
Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke (Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	600	10
ø25			
ø32			
ø40			
ø50			
ø63			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)										
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)										
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight (Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm					Switch Weight (Per Piece)	Added Weight per S = 10 mm	Added Weight per S=10 mm (with Rail)	Weight of Band per Switch
	Bore	Basic type	Axial Foot Type	Flange Type	Clevis Type				
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight listed in the switch specifications on P. 971.	0.010	0.012	0.007
ø25	0.18	0.31	0.22	0.26	0.20		0.014	0.016	0.007
ø32	0.27	0.43	0.33	0.42	0.30		0.018	0.020	0.007
ø40	0.44	0.66	0.52	0.67	0.49		0.030	0.032	0.007
ø50	0.85	1.33	1.19	1.25	0.99		0.044	0.046	0.008
ø63	1.15	1.87	1.65	1.83	1.29		0.052	0.054	0.009

(Example)
Product Weight of SCM-M-LB-40D-100-T2H-D

- Product mass at S = 0 mm: ... 0.66 kg
- Added mass at S = 100 mm: ... $0.032 \times \frac{100}{10} = 0.32$ kg
- Weight of 2 switches: 0.036 kg
- Product Weight: 0.56 kg + 0.32 kg + 0.036 kg = 0.916 kg

Theoretical Thrust Table (Unit: N)

Bore size (mm)	Operating Direction	Operating 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
ø20	Push	-	31.4	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	-	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2	2.11×10^2	2.38×10^2	2.64×10^2
ø25	Push	-	49.1k	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	-	41.2	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2	3.30×10^2	3.71×10^2	4.12×10^2
ø32	Push	-	80.4	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	-	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	-	1.26×10^2	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	-	1.06×10^2	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	-	1.96×10^2	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	-	1.65×10^2	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	1.56×10^2	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	2.40×10^2	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

Mounting Bracket Model No. Notation Method

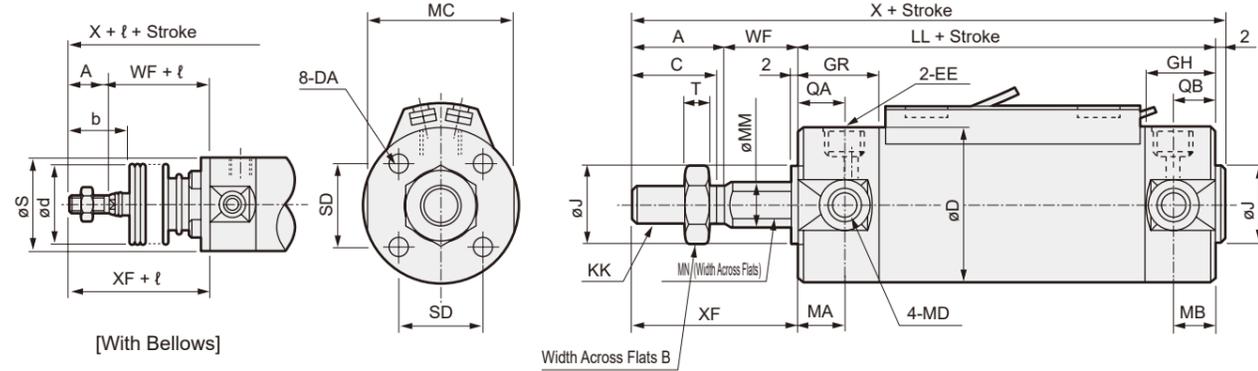
Bore Size (mm)	ø20	ø25	ø32	ø40	ø50	ø63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Single Clevis (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

*1: Mounting bolts are included to each mounting bracket.

*2: Foot type mounting brackets (LB) and trunnion mounting brackets (TA/TB) are 2 pcs/set.

Outline Dimension Drawing

- Basic Type (OO)
- Switch Mounting Method: Rail Type

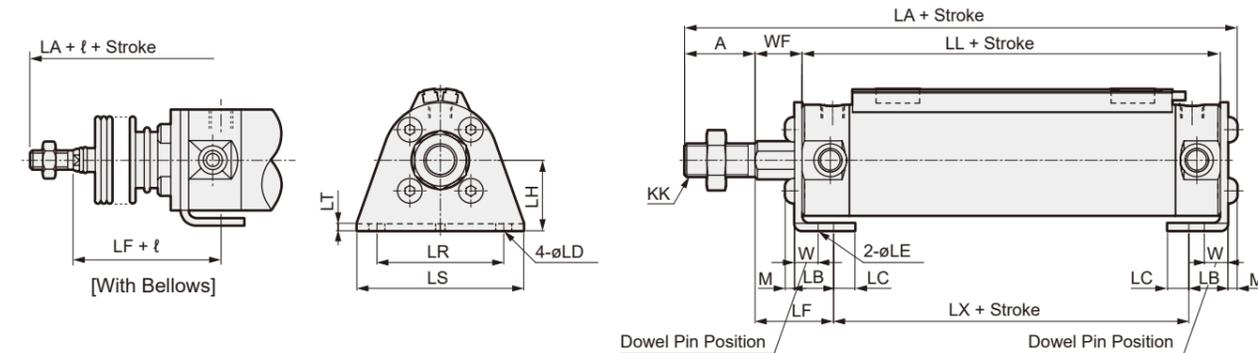


Code	Basic Type (OO) Basic Dimensions												
Bore Size (mm)	A	B	C	D	DA	EE	GH	GR	J	KK	LL	MA	MB
SCP3	18	13	16	26	M4 Depth 6.5	Rc1/8	17	19	12	M8	69	11	11
CMK2	22	17	20	31	M5 Depth 6.5	Rc1/8	17	19	14	M10 × 1.25	69	11	11
	22	17	20	38	M5 Depth 7.5	Rc1/8	17	19	18	M10 × 1.25	71	11	10
CMA2	30	22	27	47	M6 Depth 12	Rc1/8	19	20	25	M14 × 1.5	78	12	10
	35	27	32	58	M8 Depth 16	Rc1/4	22	25	30	M18 × 1.5	90	13	12
	35	27	32	72	M10 Depth 16	Rc1/4	22	25	32	M18 × 1.5	90	13	12

Code	Basic Type (OO) Mounting Dimensions														
Bore Size (mm)	MC	MD	MM	MN	QA	QB	SD	T	WF	X	XF	With Bellows	Stroke		
SCG	24	M5	10	8	12	10	14	5	17	106	35	b	d	s	ℓ
	29	M6	12	10	12	10	16.5	6	18	111	40	30	30	30.7	(Stroke / 3) + 20.5
SCA2	36	M8	12	10	12	10	20	6	18	113	40	31.5	35	37.7	(Stroke / 3) + 19
	44	M10	16	14	13	12	26	8	20	130	50	40	35	46.7	(Stroke / 3) + 18.5
	55	M12	20	18	15	12	32	11	23	150	58	46	40	57.7	(Stroke / 3.6) + 18.5
SCS2	69	M14	20	18	15	12	38	11	23	150	58	46	40	71.7	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

- Axial Foot Type (LB)



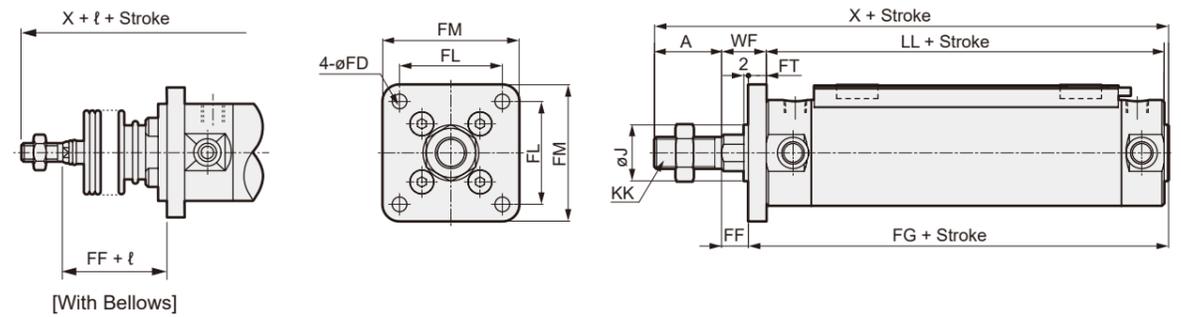
Code	Axial Foot Type (LB) Mounting Dimensions																	
Bore Size (mm)	A	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M	W	WF	With Bellows
	18	M8	109.8	15.1	7.1	5.7	4	28.9	20	69	32	44	3.2	45.2	2.6	10	17	(Stroke / 3) + 18.5
	22	M10 × 1.25	115.6	15.1	7.1	5.7	4	29.9	22	69	36	49	3.2	45.2	3.4	10	18	(Stroke / 3) + 20.5
	22	M10 × 1.25	117.6	16.1	8.1	6.8	4	30.9	25	71	44	58	3.2	45.2	3.4	10	18	(Stroke / 3) + 19
	30	M14 × 1.5	135.2	16.6	9.1	6.8	4	33.4	30	78	54	71	3.2	51.2	4	10	20	(Stroke / 3) + 18.5
	35	M18 × 1.5	157.5	22	11	9	5	40.5	40	90	66	86	4.5	55	5	17.5	23	(Stroke / 3.6) + 18.5
	35	M18 × 1.5	157.5	22	13	11	5	40.5	45	90	82	106	4.5	55	5	17.5	23	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Double Acting, Non-Rotating Type

Outline Dimension Drawing

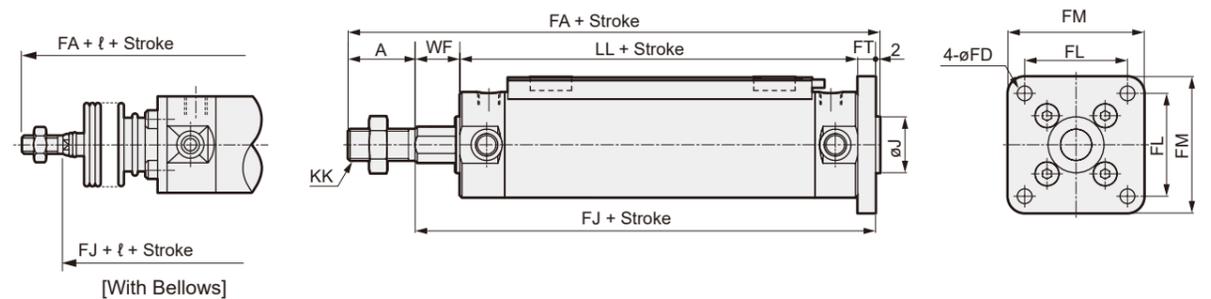
- Rod Side Flange Type (FA)



Code	Rod Side Flange Type (FA) Mounting Dimensions												With Bellows
Bore Size (mm)	A	FD	FF	FG	FL	FM	FT	J	KK	LL	WF	X	Stroke
	18	5.5	11	77	28	40	6	12	M8	69	17	106	(Stroke / 3) + 18.5
	22	5.5	11	78	32	44	7	14	M10 × 1.25	69	18	111	(Stroke / 3) + 20.5
	22	6.6	11	80	38	53	7	18	M10 × 1.25	71	18	113	(Stroke / 3) + 19
	30	6.6	12	88	46	61	8	25	M14 × 1.5	78	20	130	(Stroke / 3) + 18.5
	35	9	14	101	58	76	9	30	M18 × 1.5	90	23	150	(Stroke / 3.6) + 18.5
	35	11	14	101	70	92	9	32	M18 × 1.5	90	23	150	(Stroke / 3.6) + 18.5

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

- Head Side Flange Type (FB)

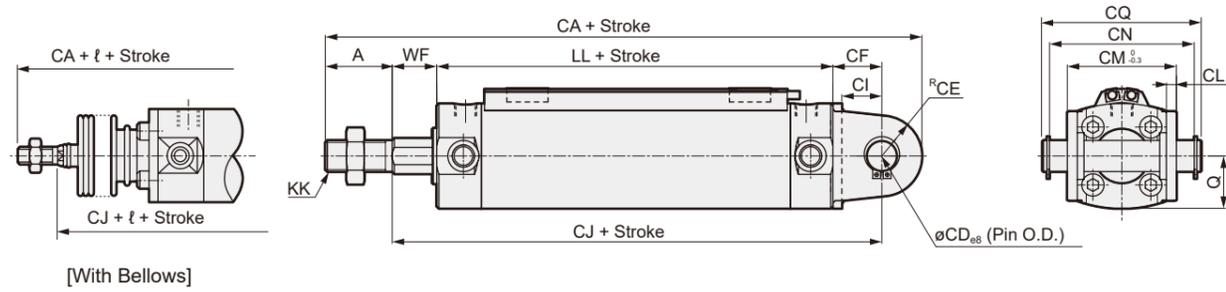


Code	Head Side Flange Type (FB) Mounting Dimensions												With Bellows
Bore Size (mm)	A	FA	FD	FJ	FL	FM	FT	J	KK	LL	WF	Stroke	
	18	112	5.5	92	28	40	6	12	M8	69	17	(Stroke / 3) + 18.5	
	22	118	5.5	94	32	44	7	14	M10 × 1.25	69	18	(Stroke / 3) + 20.5	
	22	120	6.6	96	38	53	7	18	M10 × 1.25	71	18	(Stroke / 3) + 19	
	30	138	6.6	106	46	61	8	25	M14 × 1.5	78	20	(Stroke / 3) + 18.5	
	35	159	9	122	58	76	9	30	M18 × 1.5	90	23	(Stroke / 3.6) + 18.5	
	35	159	11	122	70	92	9	32	M18 × 1.5	90	23	(Stroke / 3.6) + 18.5	

*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

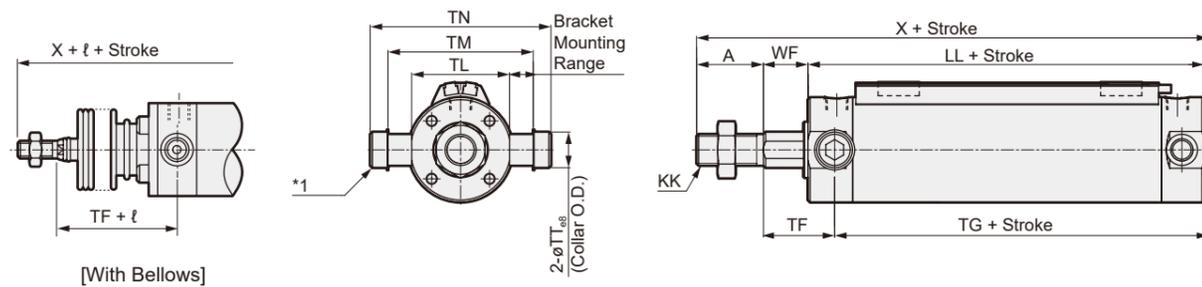
●Single Clevis Type (CA)



Code	Single Clevis Type (CA) Mounting Dimensions														With Bellows		
	Bore Size (mm)	A	CA	CD	CE	CF	CI	CJ	CL	CM	CN	CQ	KK	LL	Q	WF	ℓ
	ø20	18	129	8	11	14	10.8	100	3.2	29	38.6	43.4	M8	69	13	17	(Stroke / 3) + 18.5
	ø25	22	138	10	13	16	12.8	103	3.2	33	42.6	48	M10 × 1.25	69	15.5	18	(Stroke / 3) + 20.5
SCP□3	ø32	22	145.5	12	15	19.5	15.5	108.5	4.5	40	54	59.4	M10 × 1.25	71	19	18	(Stroke / 3) + 19
	ø40	30	167.5	14	18	21.5	17.5	119.5	4.5	49	65	71.4	M14 × 1.5	78	23.5	20	(Stroke / 3) + 18.5
CMK2	ø50	35	192.5	16	20	24.5	19	137.5	6	60	79.6	86	M18 × 1.5	90	29	23	(Stroke / 3.6) + 18.5
	ø63	35	199.5	18	22	29.5	22	142.5	8	74	97.8	105.4	M18 × 1.5	90	36	23	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

●Rod side trunnion type (TA)

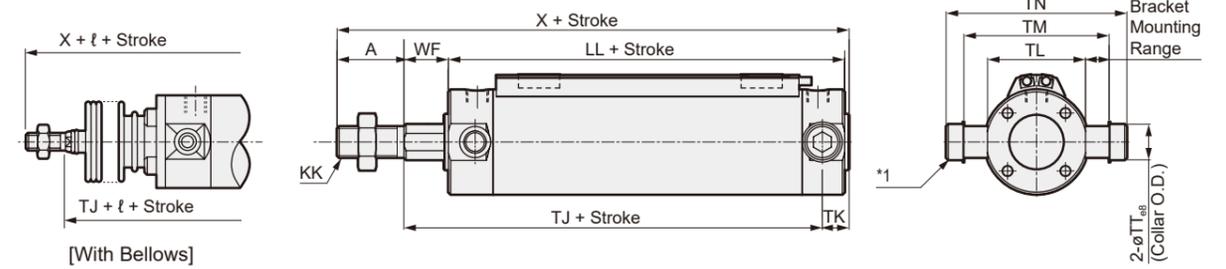


Code	Rod Side Trunnion Type (TA) Mounting Dimensions											With Bellows	
	Bore Size (mm)	A	KK	LL	TF	TG	TL	TM	TN	TT	WF	X	ℓ
	ø20	18	M8	69	28	60	28	39	47.6	8	17	106	(Stroke / 3) + 18.5
	ø25	22	M10 × 1.25	69	29	60	33	43	53	10	18	111	(Stroke / 3) + 20.5
	ø32	22	M10 × 1.25	71	29	62	40	54.5	67.7	12	18	113	(Stroke / 3) + 19
	ø40	30	M14 × 1.5	78	32	68	49	65.9	81.1	14	20	130	(Stroke / 3) + 18.5
	ø50	35	M18 × 1.5	90	36	79	60	80	98.6	16	23	150	(Stroke / 3.6) + 18.5
	ø63	35	M18 × 1.5	90	36	79	74	98	119.2	18	23	150	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

Outline Dimension Drawing

●Head Side Trunnion Type (TB)



Code	Head Side Trunnion Type (TB) Mounting Dimensions											With Bellows	
	Bore Size (mm)	A	KK	LL	TJ	TK	TL	TM	TN	TT	WF	X	ℓ
	ø20	18	M8	69	75	13	28	39	47.6	8	17	106	(Stroke / 3) + 18.5
	ø25	22	M10 × 1.25	69	76	13	33	43	53	10	18	111	(Stroke / 3) + 20.5
SCP□3	ø32	22	M10 × 1.25	71	79	12	40	54.5	67.7	12	18	113	(Stroke / 3) + 19
	ø40	30	M14 × 1.5	78	88	12	49	65.9	81.1	14	20	130	(Stroke / 3) + 18.5
CMK2	ø50	35	M18 × 1.5	90	101	14	60	80	98.6	16	23	150	(Stroke / 3.6) + 18.5
	ø63	35	M18 × 1.5	90	101	14	74	98	119.2	18	23	150	(Stroke / 3.6) + 18.5

*1: Consists of collar, flat washer, and hexagon socket head cap screw.
 *2: For dimensions with each switch, see P. 468 to 473.
 *3: For outer dimensions diagram of accessories, refer to P. 336.

General Type

General Type

SCM

SCM

SCG

SCG

SCA2

SCA2

SCS2

SCS2

Cylinder Switch

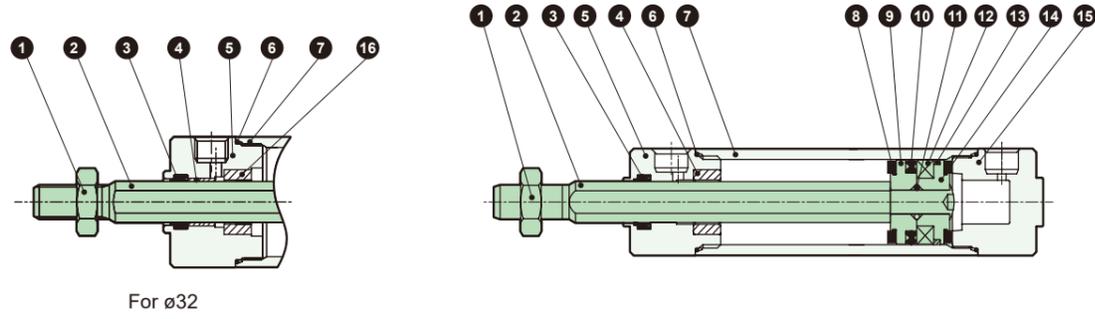
Cylinder Switch

Ending

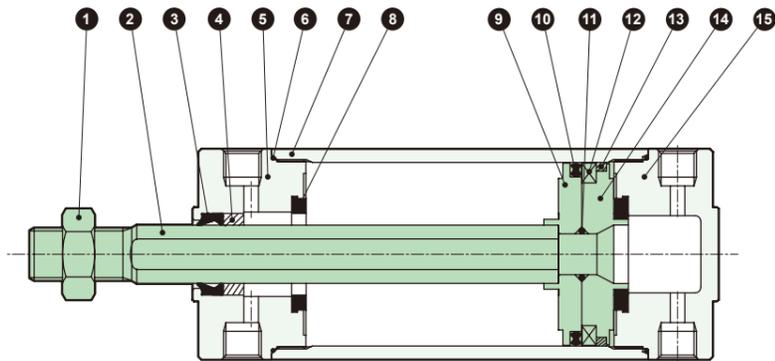
Ending

Internal Structure Diagram / Material (With Rubber Cushion)

● ϕ 20 to ϕ 40



● ϕ 50 to ϕ 63



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	9	Piston R	Aluminum Alloy	
2	Piston Rod	ϕ 20, ϕ 25: Stainless Steel ϕ 32 to ϕ 100: Steel	Industrial Hard Chrome Plating	10	Piston Packing	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		11	Piston Gasket	Nitrile Rubber	
4	Bushing	Oil-impregnated Bearing Alloy		12	Magnet	Plastic	
5	Rod Cover	Aluminum Alloy	Hard Anodized	13	Wear Ring	Polyacetal	
6	Cylinder Gasket	Nitrile Rubber		14	Piston H	Aluminum Alloy	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	15	Head Cover	Aluminum Alloy	Hard Anodized
8	Cushion Rubber	Urethane Rubber		16	Bushing	Oil-impregnated Bearing Alloy	

MEMO

For maintenance parts, please visit the CKD Equipment Product Site
 (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts



Round shaped cylinder
Double Acting, Direct Foot Type

SCM-LD Series

● Bore Size: ø20, ø25, ø32, ø40, ø50, ø63

Circuit Diagram Symbol



SCM-LD Series Model No. Notation Method

6 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs
T	With 3 pcs

7 Switch Mounting Method

Code	Content
Blank	Rail Type
Z	Band Type

8 Option

Code	Content
Q	Shipped with Switch Rail Attached
M	Piston Rod Material (Stainless Steel)

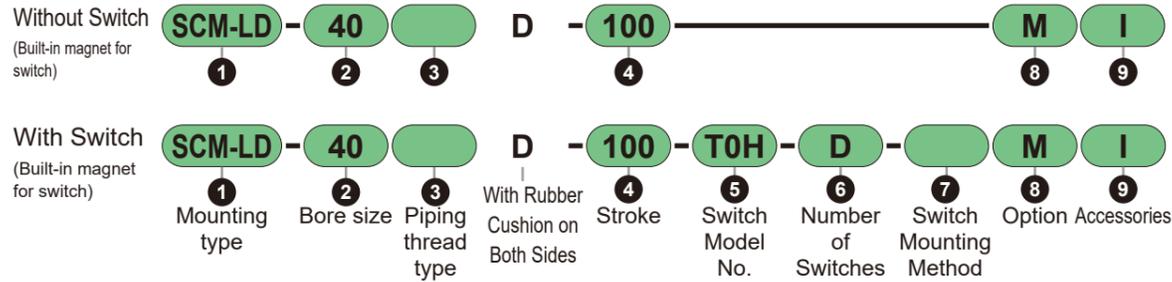
*1: If 7 switch mounting style "Z" is selected, the "Switch rail shipped attached" option ("Q") cannot be selected.

9 Accessories

Code	Content
I	Single Knuckle
Y	Double Knuckle (Pin and retaining ring included)

Note: "I" and "Y" cannot be selected at the same time.

Model No. Notation Method



1 Mounting type

Code	Content
LD	Direct Foot Type

2 Bore Size (mm)

Code	Content
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

3 Piping thread type

Code	Content
Blank	Rc Thread
N	NPT Thread (Custom Order Product)
G	G Thread (Custom Order Product)

4 Stroke (mm)

Bore size	Stroke	Intermediate Stroke
ø20 to ø63	10 to 300	Every 1 mm

Note: For the number of switches to be mounted and minimum stroke, refer to P. 464.

5 Switch Model No.

For switch details, please refer to 971. Switches are included with the product and shipped.

Contact	Indicator Lamp Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	85 to 265	—	5 to 100	—	T1H□	T1V□	
			—	10 to 30	—	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	—	—	—	100 or less	—	T3H□	T3V□
			—	30 or less	—	—	—	T3PH□	T3PV□
		3-wire (PNP)	—	—	—	—	—	T2WH□	T2WV□
			—	24 ± 10%	—	5 to 20	—	T3WH□	T3WV□
	2-Color	2-Color Improved Water Resistance	2-wire	—	24 ± 10%	—	5 to 20	T2WLH□	T2WLV□
				—	—	—	—	T2YD□	—
			—	24 ± 10%	—	—	—	T2YDT□	—
		2-Color for AC Magnetic Field	2-wire	—	—	—	—	—	—
				—	10 to 30	—	5 to 20 *2	T2JH□	T2JV□
		1-Color Off-Delay Type	2-wire	—	10 to 30	—	5 to 20 *2	T2HR3	T2VR3
1-Color Flexible Lead Wire Type	2-wire	—	10 to 30	—	5 to 20 *2	—	—		
Reed	1-Color No Indicator Lamp	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□	
			110	5/12/24	20 or less	50 or less	T5H□	T5V□	
	1-Color	2-wire	110/220	12/24	7 to 20 / 7 to 10	5 to 50	T8H□	T8V□	

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: Max. load current as shown on the left: 20 mA, is at 25 °C. If the switch operating ambient temperature is higher than 25 °C, it will be lower than 20 mA. (At 60 °C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: T8H/V switches cannot be mounted when the bore size is ø20 to ø40 and switch mounting is the rail type.

*5: Switches other than those listed on the left are also available. (Custom order) For details, refer to 971.

*Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*6: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH □
3 m TOH □
5 m TOH □

About Custom Product Specifications

For details, see P. 474 to 477.

Code	Content
-XP5	Knuckle Pin/Clevis Pin Split Pin
-XP7	Knuckle fixed by pin driving
-XP8	Knuckle pin/clevis pin split pin specification, knuckle fixed by pin driving
-A2	With 2 Rod Nuts
Rod End Shape Modification	Refer to Ending P. 11.

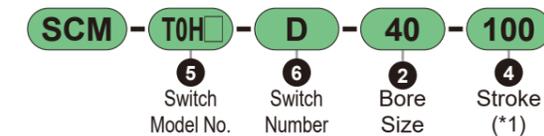
Model No. Example)

SCM - LD - - XP5

Switch Single Unit Model No. Notation Method

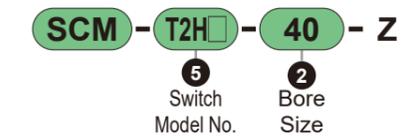
[Switch mounting: Rail Type]

● Switch Body + Mounting Rail Set

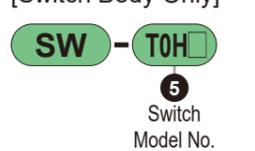


[Switch mounting: Band Type]

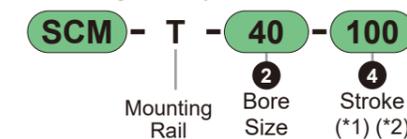
● Switch Body + Mounting Bracket Set + Band



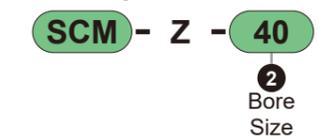
[Switch Body Only]



● Mounting Rail Only



● Mounting Bracket Set + Band



*1: Indicate items with a stroke exceeding 300 mm as X. If exceeding 300 mm, one short rail (switch adjustment travel distance 100 mm) is included per switch.

*2: When indicating X for mounting rail only, order the same number of rails as the number of switches used.

Specifications

Item	SCM-LD						
	mm	ø20	ø25	ø32	ø40	ø50	ø63
Bore Size	mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation method		Double Acting, Direct Foot Type					
Operating Fluid		Compressed Air					
Max. Working Pressure	MPa	1.0					
Min. Operating Pressure	MPa	0.1					0.05
Proof Pressure	MPa	1.6					
Ambient Temperature	°C	-10 to 60 (Provided that freezing does not occur)					
Port Size		Rc1/8			Rc1/4		
Stroke tolerance	mm	+1.4					+2.3
		0					0
Operating Piston Speed	mm/s	30 to 1000 (Use within allowable absorption energy.)					
Cushion		Rubber Cushion					
Lubrication		Not Required (When lubricating, use Turbine Oil ISO VG32)					
J Allowable Absorbed Energy	J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke

(Unit: mm)

Bore size	Standard Stroke	Max. Stroke	Min. Stroke
ø20	25, 50, 75, 50, 75, 100, 50, 75, 100	300	10
ø25			
ø32			
ø40			
ø50			
ø63			

Note: Intermediate strokes can be produced in 1 mm increments.

Number of Switches Mounted and Min. Stroke (mm)

● Switch Mounting Method Rail Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	25	10	25	10	25	10	25
ø25	10	25	10	25	10	25	10	25	10	25
ø32	10	25	10	25	10	25	10	25	10	25
ø40	10	25	10	25	10	25	10	25	10	25
ø50	10	25	10	25	10	25	10	25	10	25
ø63	10	25	10	25	10	25	10	25	10	25

● Switch Mounting Method Band Type

Switch Model No.	Solid State								Reed	
	T2, T3		T2W, T3W		T□Y□		T2WL		1	2
Number of Switches	1	2	1	2	1	2	1	2	1	2
Bore Size (mm)	1	2	1	2	1	2	1	2	1	2
ø20	10	25	10	30	10	35	15	45	10	25
ø25	10	25	10	30	10	35	15	45	10	25
ø32	10	25	10	30	10	35	15	45	10	25
ø40	10	25	10	30	10	35	10	45	10	25
ø50	10	25	10	30	10	35	10	45	10	25
ø63	10	25	10	30	10	35	10	45	10	25

Note: For products with 1 switch and stroke of 10 mm or more but less than 25 mm, the switch rail mounting position changes, and trunnion type mounting cannot be produced. For mounting position, see P. 468 to 473.

Cylinder Weight

(Unit: kg)

Item/Mounting Style	Product Weight at Stroke (S) = 0 mm	Switch Weight (Per Piece)	Added Weight per S = 10 mm	S= Per 10 mm Added Weight (with Rail)	Per Switch Band Weight
Bore Size (mm)	Basic type				
ø20	0.14	Please refer to the weight listed in the switch specifications of P. 971	0.010	0.012	0.007
ø25	0.22		0.014	0.016	0.007
ø32	0.34		0.018	0.020	0.007
ø40	0.56		0.030	0.032	0.007
ø50	1.04		0.044	0.046	0.008
ø63	1.46		0.052	0.054	0.009

(Example)
Product Weight of SCM-LD-40D-100-T2H-D

- Product mass at S = 0 mm:0.56 kg
- Added mass at S = 100 mm: ...0.032 × $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches0.036 kg
- Product Weight0.56 kg+0.32 kg+0.036 kg=0.916 kg

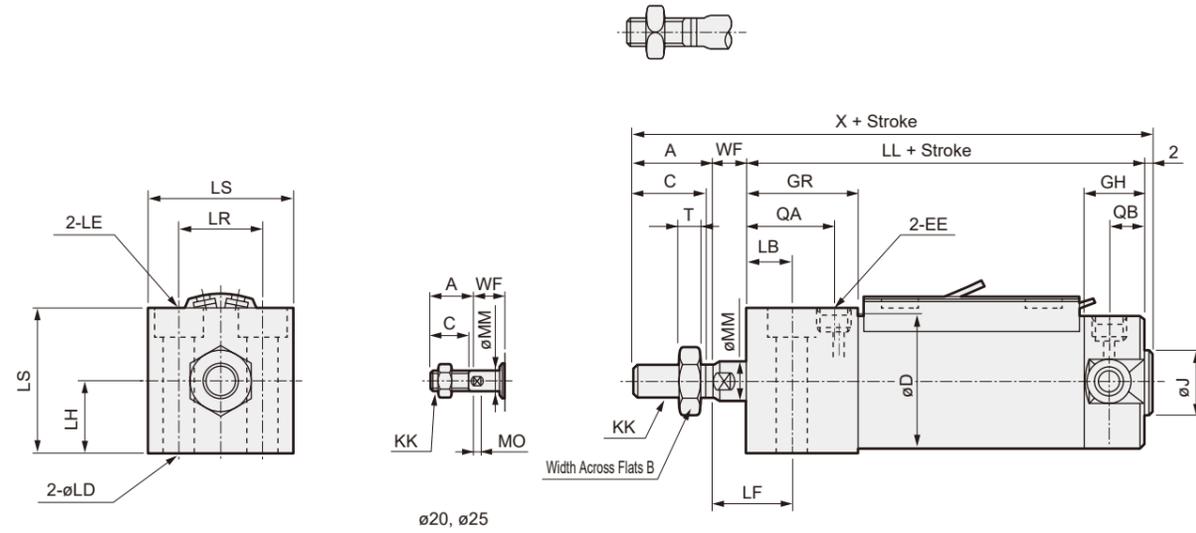
Theoretical Thrust Table

(Unit: N)

Bore size (mm)	Operating Direction	Operating 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
ø20	Push	-	31.4	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	-	26.4	39.6	52.8	79.2	1.06 × 10 ²	1.32 × 10 ²	1.58 × 10 ²	1.85 × 10 ²	2.11 × 10 ²	2.38 × 10 ²	2.64 × 10 ²
ø25	Push	-	49.1	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	-	41.2	61.9	82.5	1.24 × 10 ²	1.65 × 10 ²	2.06 × 10 ²	2.47 × 10 ²	2.89 × 10 ²	3.30 × 10 ²	3.71 × 10 ²	4.12 × 10 ²
ø32	Push	-	80.4	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	-	69.1	1.04 × 10 ²	1.38 × 10 ²	2.07 × 10 ²	2.76 × 10 ²	3.46 × 10 ²	4.15 × 10 ²	4.84 × 10 ²	5.53 × 10 ²	6.22 × 10 ²	6.91 × 10 ²
ø40	Push	-	1.26 × 10 ²	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	-	1.06 × 10 ²	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	98.0	1.96 × 10 ²	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	82.5	1.65 × 10 ²	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	1.56 × 10 ²	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	2.40 × 10 ²	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

Outline Dimension Drawing

● Double Acting, Direct Foot Type • Switch Mounting Method: Rail Type

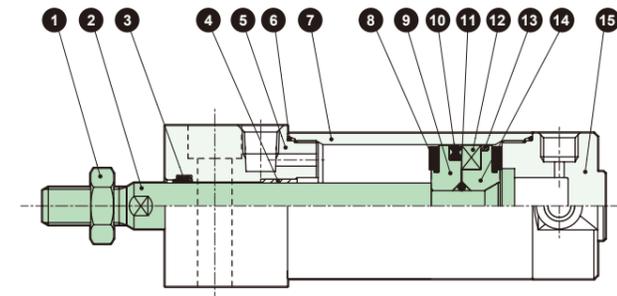


Code	Basic Type (OO) Basic Dimensions																								
Bore Size (mm)	A	B	C	D	EE	GH	GR	J	KK	LL	MM	MN	MO	QA	QB	T	WF	X	LB	LD	LE	LF	LH	LR	LS
ø20	18	13	16	26	Rc1/8	17	27	12	M8	77	8	6	4	20	10	5	9	106	11	5.5	9.5 Counterbore Depth 5.4	20	15	18	30
ø25	22	17	20	31	Rc1/8	17	27	14	M10 × 1.25	77	10	8	5	20	10	6	10	111	12	6.6	11 Counterbore Depth 6.5	22	18	22	36
ø32	22	17	20	38	Rc1/8	17	32	18	M10 × 1.25	84	12	10	5.5	25	10	6	10	118	13	9	14 Counterbore Depth 8.6	23	21	24	42
ø40	30	22	27	47	Rc1/8	19	36	25	M14 × 1.5	94	16	14	6	29	12	8	9	135	16	11	17.5 Counterbore Depth 10.8	25	26	32	52
ø50	35	27	32	58	Rc1/4	22	43	30	M18 × 1.5	108	20	17	8	33	12	11	10	155	17	14	20 Counterbore Depth 13	27	32	41	64
ø63	35	27	32	72	Rc1/4	22	48	32	M18 × 1.5	113	20	17	8	38	12	11	10	160	19	18	26 Counterbore Depth 17.5	29	38	46	76

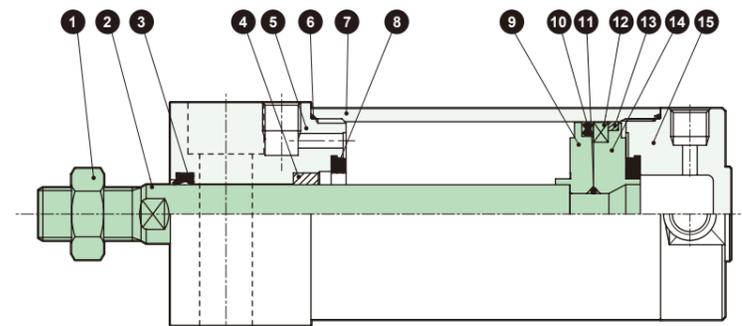
*1: For dimensions with each switch, see P. 468 to 473.
*2: For outer dimensions diagram of accessories, refer to P. 336.

Internal Structure Diagram / Material

● ø20 to ø40



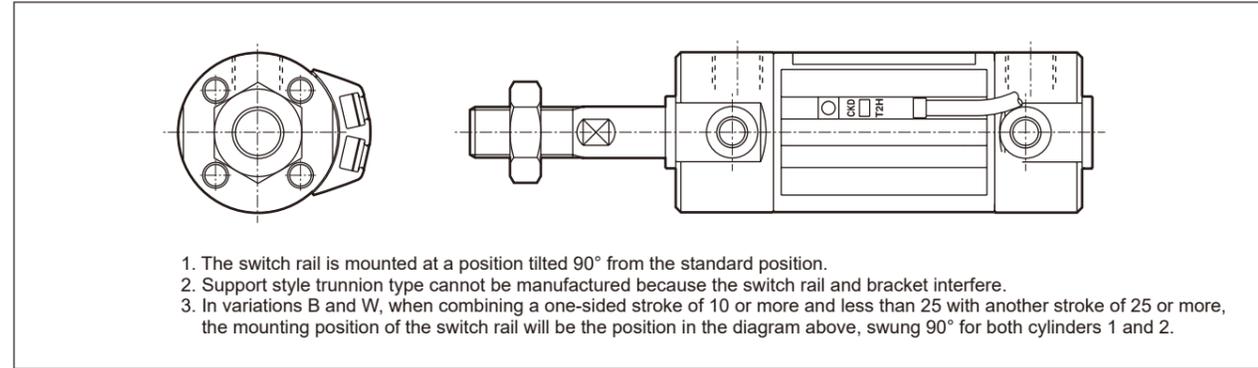
● ø50 to ø63



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Rod Nut	Steel	Nickel Plating	8	Cushion Rubber	Urethane Rubber	
2	Piston Rod	ø20, ø25: Stainless Steel	Industrial Hard Chrome Plating	9	Piston R	Aluminum Alloy	
		ø32 to ø63: Steel		10	Piston Packing	Nitrile Rubber	
3	Rod Packing	Nitrile Rubber		11	Piston Gasket	Nitrile Rubber	
4	Bushing	Oil-Impregnated Bearing Alloy		12	Magnet	Plastic	
5	Rod Cover	Aluminum Alloy	Hard Anodized	13	Wear Ring	Polyacetal	
6	Cylinder Gasket	Nitrile Rubber		14	Piston H	Aluminum Alloy	
7	Cylinder Tube	Aluminum Alloy	Hard Anodized	15	Head Cover	Aluminum Alloy	Hard Anodized

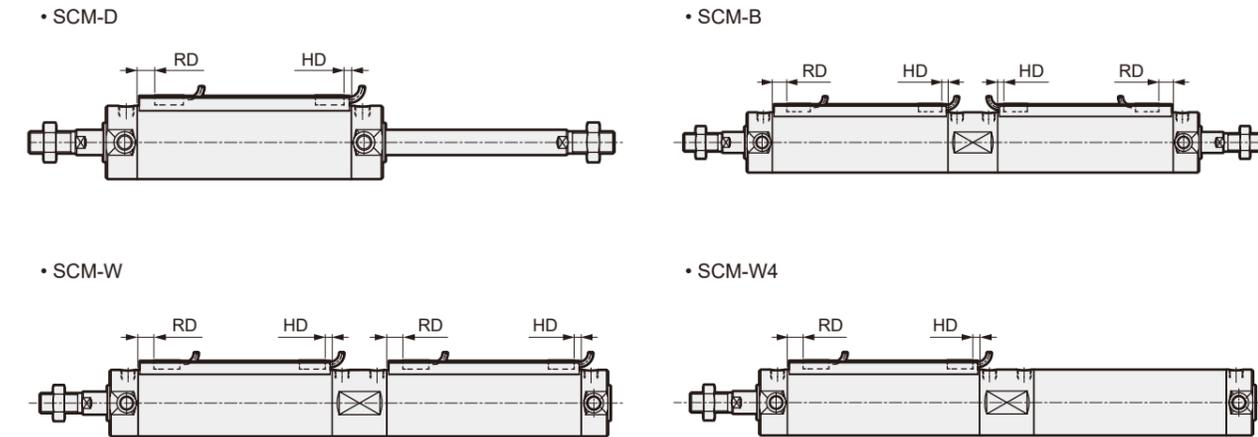
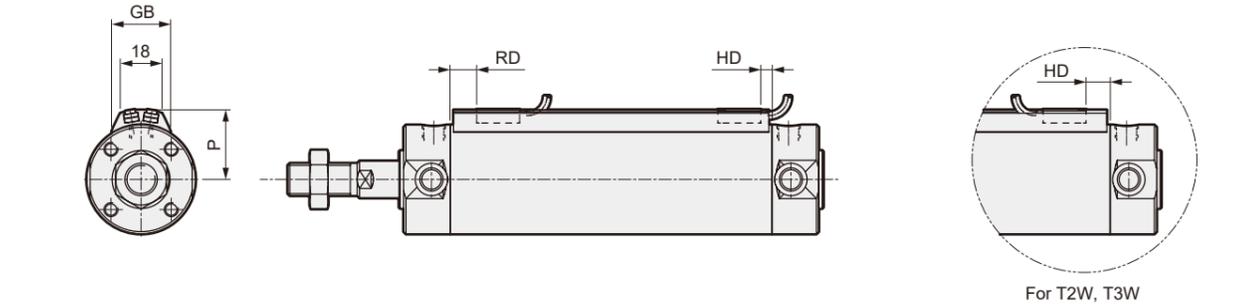
For maintenance parts, please visit the CKD Equipment Product Site
(<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts

Regarding Switch Rail Mounting Position (Rail mounting position when stroke is 10 or more and less than 25 and there is 1 switch)



SCM Series Outer Dimensions Diagram with Switch

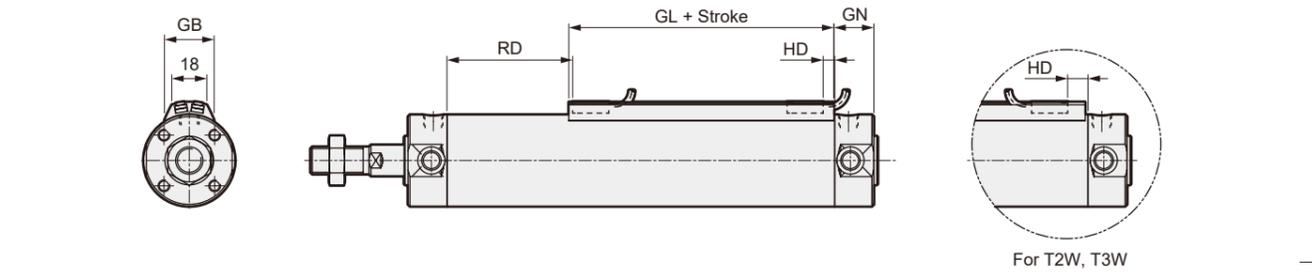
- T0H/V, T5H/V, T2H/V, T3H/V, T2HR3/VR3, T3PH/V, T2WH/V, T3WH/V, T2WLH/V
 Switch Mounting Method: Rail Mounting
 • SCM, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-M, SCM-LD



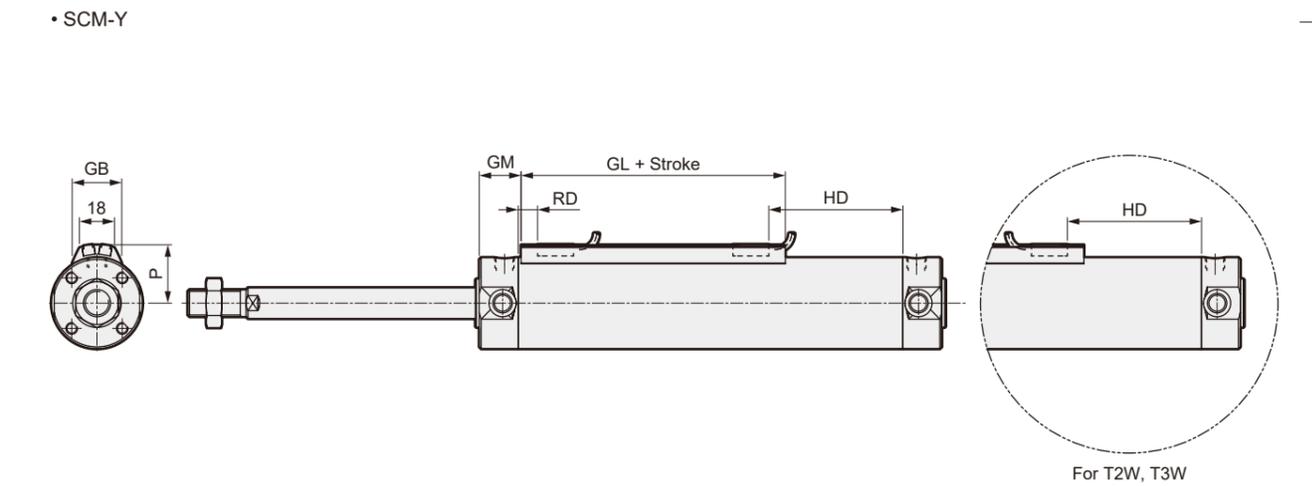
Code	SCM, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-D, SCM-B, SCM-W, SCM-W4, SCM-M, SCM-LD								
	Bore Size (mm)	P	GB	T0, T5		T2, T2◇R3, T3, T3P		T2W, T3W, T2WL	
RD				HD	RD	HD	RD	HD	
ø20	19.5	23	7.5	3.0	7.5	6.5	9.5	8.5	
ø25	22	24.4	8.5	2.0	8.5	5.5	10.5	7.5	
ø32	25.5	25	9.5	3.0	9.5	6.5	11.5	8.5	
ø40	30	25.7	11.5	5.0	11.5	8.5	13.5	10.5	
ø50	35.5	26.2	13.0	7.5	13.0	11.0	15.0	13.0	
ø63	42.5	26.5	13.0	7.5	13.0	11.0	15.0	13.0	
ø80	51	26.7	20.0	9.5	20.0	13.0	22.0	15.0	
ø100	61.5	26.7	19.5	10.0	19.5	13.5	21.5	15.5	

SCM Series Outer Dimensions Diagram with Switch

- T0H/V, T5H/V, T2H/V, T3H/V, T2HR3/VR3, T3PH/V, T2WH/V, T3WH/V, T2WLH/V
 Switch Mounting Method: Rail Mounting
 • SCM-X



Code	SCM-X																		
	Bore Size (mm)	P	GB	GL	GN	T0, T5				HD	T2, T2◇R3, T3, T3P				HD	T2W, T3W, T2WL			
						RD					RD					RD			
ø20	19.5	23	30	18.5	33.5	60.5	87.5	114.5	4.0	34.5	61.5	88.5	115.5	7.0	35.5	62.5	89.5	116.5	9.5
ø25	22	24.4	30	18.5	37.5	67.5	97.5	127.5	3.0	38.5	68.5	98.5	128.5	6.0	39.5	69.5	99.5	129.5	8.5
ø32	25.5	25	32	18.5	38.5	68.5	98.5	128.5	4.0	39.5	69.5	99.5	129.5	7.0	40.5	70.5	100.5	130.5	9.5
ø40	30	25.7	36	20.5	40.5	70.5	100.5	130.5	6.0	41.5	71.5	101.5	131.5	9.0	42.5	72.5	102.5	132.5	11.5

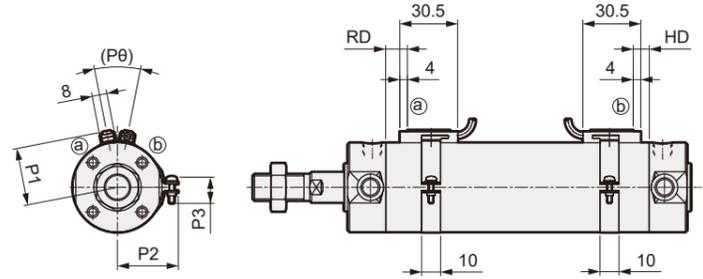


Code	SCM-Y																		
	Bore Size (mm)	P	GB	GL	GM	T0, T5				RD	T2, T2◇R3, T3, T3P				RD	T2W, T3W, T2WL			
						HD					HD					HD			
ø20	19.5	23	30	20.5	6.5	31.0	58.0	85.0	112.0	7.5	34.0	61.0	88.0	115.0	7.0	36.5	63.5	90.5	117.5
ø25	22	24.4	30	20.5	7.5	33.0	63.0	93.0	123.0	8.5	36.0	66.0	96.0	126.0	8.0	38.5	68.5	98.5	128.5
ø32	25.5	25	32	20.5	8.5	34.0	64.0	94.0	124.0	9.5	37.0	67.0	97.0	127.0	9.0	39.5	69.5	99.5	129.5
ø40	30	25.7	36	21.5	10.5	36.0	66.0	96.0	126.0	11.5	39.0	69.0	99.0	129.0	11.0	41.5	71.5	101.5	131.5

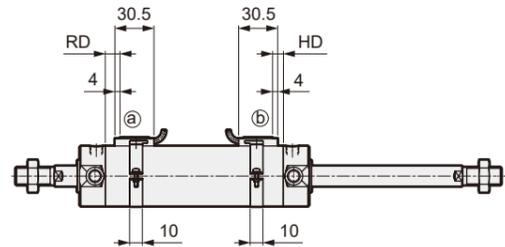
SCM Series Outer Dimensions Diagram with Switch

● T0H/V, T5H/V, T2H/V, T3H/V, T2HR3/VR3, T3PH/V, T2WH/V, T3WH/V, T2WLH/V
Switch Mounting Method: Band mounting

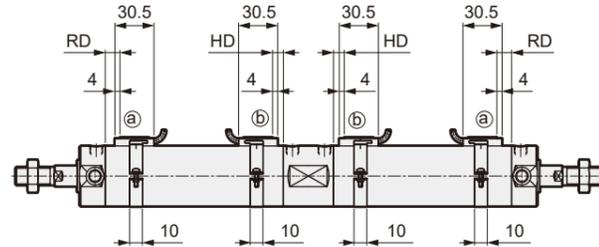
- SCM, SCM-X, SCM-Y, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-M, SCM-LD



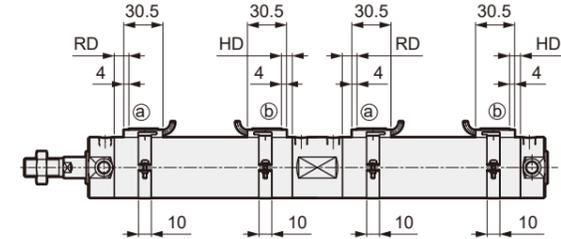
• SCM-D



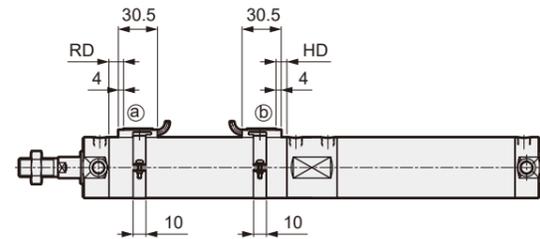
• SCM-B



• SCM-W



• SCM-W4



Code	SCM, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-D, SCM-B, SCM-W, SCM-W4, SCM-M, SCM-LD										
	Bore Size (mm)	P1	P2	P3	Pθ	T0, T5		T2, T2□R3, T3, T3P		T2W, T3W, T2WL	
						RD	HD	RD	HD	RD	HD
ø20	19.6	21.5	14	(38°)	7.5	6.5	7.5	6.5	9.5	8.5	
ø25	22.1	23.9	14	(34°)	8.5	5.5	8.5	5.5	10.5	7.5	
ø32	25.6	27.6	16	(30°)	9.5	6.5	9.5	6.5	11.5	8.5	
ø40	30.2	32.1	16	(26°)	11.5	8.5	11.5	8.5	13.5	10.5	
ø50	35.7	37.4	16	(22°)	13.0	11.0	13.0	11.0	15.0	13.0	
ø63	42.7	44.4	16	(20°)	13.0	11.0	13.0	11.0	15.0	13.0	
ø80	51.2	53	16	(16°)	20.0	13.0	20.0	13.0	22.0	15.0	
ø100	61.7	63.5	16	(16°)	19.5	13.5	19.5	13.5	21.5	15.5	

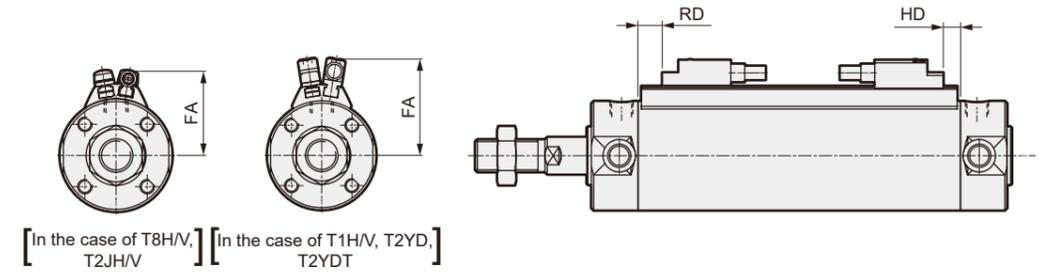
Code	SCM-X																			
	Bore Size (mm)	P1	P2	P3	Pθ	T0, T5				T2, T2□R3, T3, T3P				T2W, T3W						
						RD				HD	RD				HD	RD				HD
						10 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		10 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		10 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	
ø20	19.6	21.5	14	(38°)	33.5	60.5	87.5	114.5	5.5	34.5	61.5	88.5	115.5	6.5	35.5	62.5	89.5	116.5	9.5	
ø25	22.1	23.9	14	(34°)	37.5	67.5	97.5	127.5	4.5	38.5	68.5	98.5	128.5	5.5	39.5	69.5	99.5	129.5	8.5	
ø32	25.6	27.6	16	(30°)	38.5	68.5	98.5	128.5	5.5	39.5	69.5	99.5	129.5	6.5	40.5	70.5	100.5	130.5	9.5	
ø40	30.2	32.1	16	(26°)	40.5	70.5	100.5	130.5	7.5	41.5	71.5	101.5	131.5	8.5	42.5	72.5	102.5	132.5	11.5	

Code	SCM-Y																		
	Bore Size (mm)	P1	P2	P3	Pθ	T0, T5				T2, T2□R3, T3, T3P				T2W, T3W, T2WL					
						RD	HD			RD	HD			RD	HD				
							10 to 50	Over 50 to 100	Over 100 to 150		Over 150 to 200	10 to 50	Over 50 to 100		Over 100 to 150	Over 150 to 200	10 to 50	Over 50 to 100	Over 100 to 150
ø20	19.6	21.5	14	(38°)	6.5	32.5	59.5	86.5	113.5	7.5	33.5	60.5	87.5	114.5	7	36.5	63.5	90.5	117.5
ø25	22.1	23.9	14	(34°)	7.5	34.5	64.5	94.5	124.5	8.5	35.5	65.5	95.5	125.5	8	38.5	68.5	98.5	128.5
ø32	25.6	27.6	16	(30°)	8.5	35.5	65.5	95.5	125.5	9.5	36.5	66.5	96.5	126.5	9	39.5	69.5	99.5	129.5
ø40	30.2	32.1	16	(26°)	10.5	37.5	67.5	97.5	127.5	11.5	38.5	68.5	98.5	128.5	11	41.5	71.5	101.5	131.5

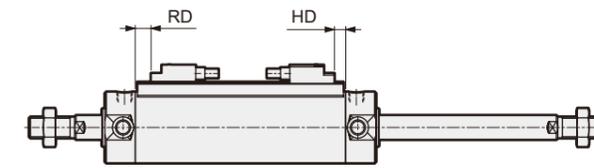
SCM Series Outer Dimensions Diagram with Switch

● T8H/V, T2JH/V, T1H/V, T2YD, T2YDT
Switch Mounting Method: Rail Mounting

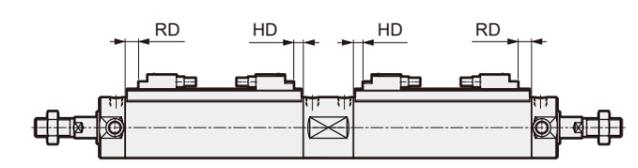
- SCM, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-M, SCM-LD



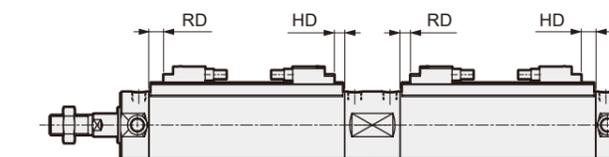
• SCM-D



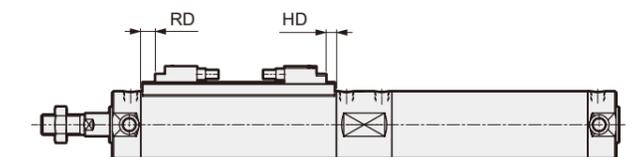
• SCM-B



• SCM-W



• SCM-W4



Code	SCM, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-D, SCM-B, SCM-W, SCM-W4, SCM-M, SCM-LD									
	Bore Size (mm)	T8			T2J			T1, T2YD, T2YDT		
		FA	RD	HD	FA	RD	HD	FA	RD	HD
ø20	24	1.5	0.5	24	6.5	5.5	29.5	6.5	5.5	
ø25	26.5	2.5	0	26.5	7.5	4.5	32	7.5	4.5	
ø32	30	3.5	0.5	30	8.5	5.5	35.5	8.5	5.5	
ø40	34.5	5.5	2.5	34.5	10.5	7.5	40	10.5	7.5	
ø50	40	7	5	40	12	10	45.5	12	10	
ø63	47	7	5	47	12	10	52.5	12	10	
ø80	55.5	14	7	55.5	19	12	61	19	12	
ø100	66	1.5	7.5	66	18.5	12.5	71.5	18.5	12.5	

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

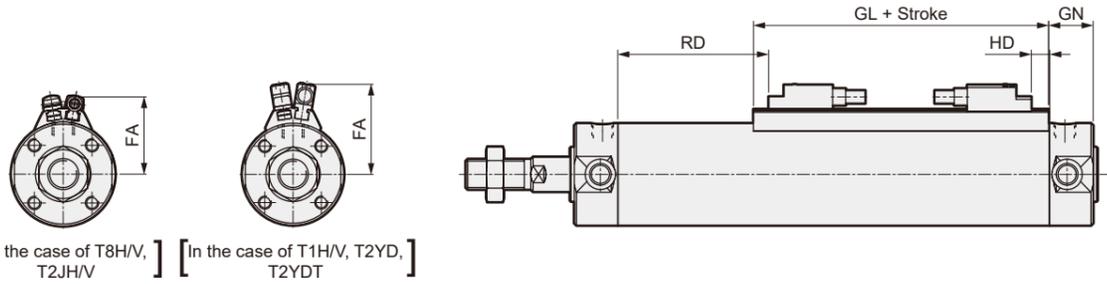
SCS2

Cylinder Switch

Ending

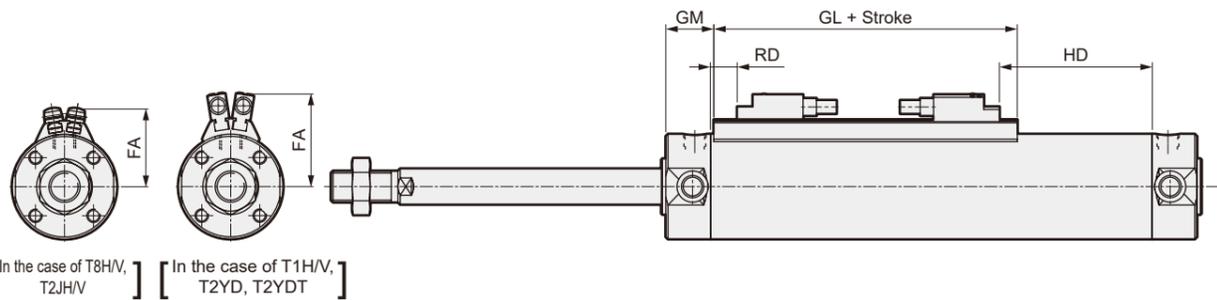
SCM Series Outer Dimensions Diagram with Switch

- T8H/V, T2JH/V, T1H/V, T2YD, T2YDT
- Switch Mounting Method: Rail Mounting
- SCM-X



Code	SCM-X																			
	Bore Size (mm)	GL	GN	FA	T8				HD	FA	T2J				HD	FA	T1, T2YD, T2YDT			
					RD	RD	RD	RD			RD	RD	RD	RD			RD	RD	RD	RD
ø20	30	18.5	24	27.5	54.5	81.5	108.5	1.5	24	32.5	59.5	86.5	113.5	6.5	29.5	32.5	59.5	86.5	113.5	6.5
ø25	30	18.5	26.5	31.5	61.5	91.5	121.5	0.5	26.5	36.5	66.5	96.5	126.5	5.5	32	36.5	66.5	96.5	126.5	5.5
ø32	32	18.5	30	32.5	62.5	92.5	122.5	1.5	30	37.5	67.5	97.5	127.5	6.5	35.5	37.5	67.5	97.5	127.5	6.5
ø40	36	20.5	34.5	34.5	64.5	94.5	124.5	3.5	34.5	39.5	69.5	99.5	129.5	8.5	40	39.5	69.5	99.5	129.5	8.5

- SCM-Y

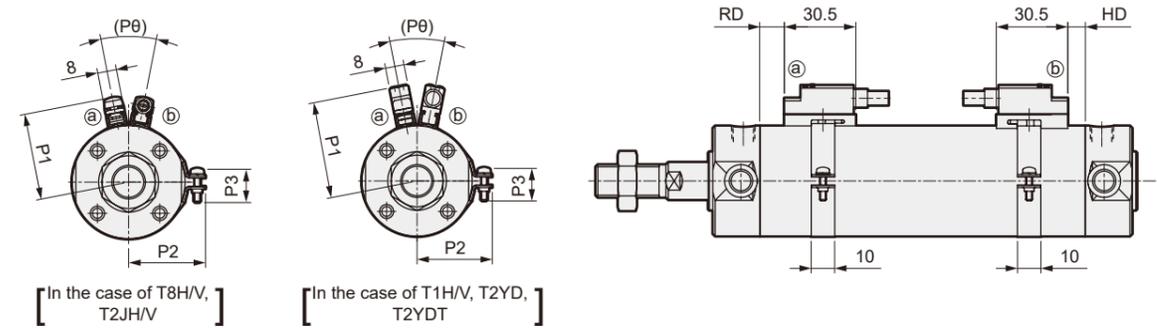


Code	SCM-Y																				
	Bore Size (mm)	GL	GM	FA	RD	T8				FA	RD	T2J				FA	RD	T1, T2YD, T2YDT			
						RD	RD	RD	RD			RD	RD	RD	RD			RD	RD	RD	RD
ø20	30	20.5	24	0.0	28.5	55.5	82.5	109.5	24	4.0	33.5	60.5	87.5	114.5	29.5	4.0	33.5	60.5	87.5	114.5	
ø25	30	20.5	26.5	0.0	30.5	60.5	90.5	120.5	26.5	5.0	35.5	65.5	95.5	125.5	32	5.0	35.5	65.5	95.5	125.5	
ø32	32	20.5	30	1.0	31.5	61.5	91.5	121.5	30	6.0	36.5	66.5	96.5	126.5	35.5	6.0	36.5	66.5	96.5	126.5	
ø40	36	21.5	34.5	3.0	33.5	63.5	93.5	123.5	34.5	8.0	38.5	68.5	98.5	128.5	40	8.0	38.5	68.5	98.5	128.5	

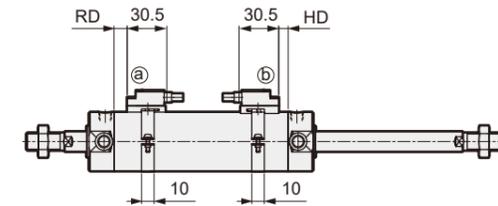
External Dimensions Diagram with Switch

SCM Series Outer Dimensions Diagram with Switch

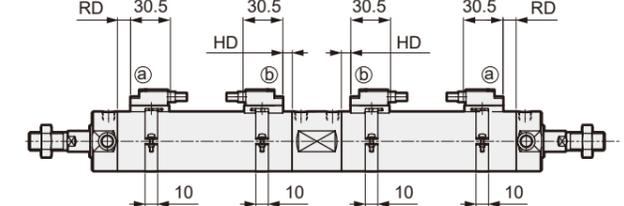
- T8H/V, T2JH/V, T1H/V, T2YD, T2YDT
- Switch Mounting Method: Band mounting
- SCM, SCM-X, SCM-Y, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-M, SCM-LD



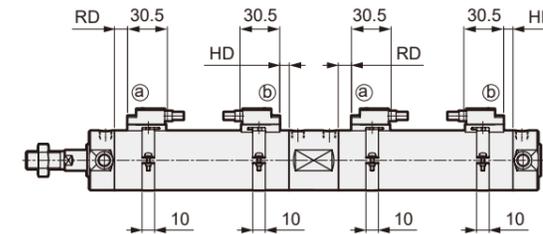
- SCM-D



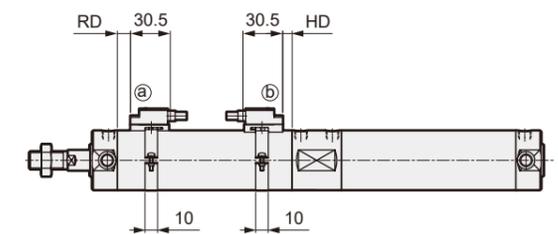
- SCM-B



- SCM-W



- SCM-W4



Code	SCM, SCM-P, SCM-R, SCM-Q, SCM-F, SCM-O, SCM-U, SCM-D, SCM-B, SCM-W, SCM-W4, SCM-M, SCM-LD											
	Bore Size (mm)	P2	P3	P0	T8			T2J			T1, T2YD, T2YDT	
P1					RD	HD	P1	RD	HD	P1	RD	HD
ø20	21.5	14	(38°)	25.4	1.5	0.5	25.4	6.5	5.5	30.4	6.5	5.5
ø25	23.9	14	(34°)	27.9	2.5	0	27.9	7.5	4.5	32.9	7.5	4.5
ø32	27.6	16	(30°)	31.4	3.5	0.5	31.4	8.5	5.5	36.4	8.5	5.5
ø40	32.1	16	(26°)	36	5.5	2.5	36	10.5	7.5	41	10.5	7.5
ø50	37.4	16	(22°)	41.5	7	5	41.5	12	10	46.5	12	10
ø63	44.4	16	(20°)	48.5	7	5	48.5	12	10	53.5	12	10
ø80	53	16	(16°)	57	14	7	57	19	12	62	19	12
ø100	63.5	16	(16°)	67.5	1.5	7.5	67.5	18.5	12.5	72.5	18.5	12.5

Code	SCM-X																				
	Bore Size (mm)	P2	P3	P0	P1	T8				P1	T2J				P1	T1, T2YD, T2YDT					
						RD	RD	RD	RD		RD	RD	RD	RD		RD	RD	RD	RD		
ø20	21.5	14	(38°)	25.4	27.5	54.5	81.5	108.5	1.5	25.4	32.5	59.5	86.5	113.5	6.5	30.4	32.5	59.5	86.5	113.5	6.5
ø25	23.9	14	(34°)	27.9	31.5	61.5	91.5	121.5	0.5	27.9	36.5	66.5	96.5	126.5	5.5	32.9	36.5	66.5	96.5	126.5	5.5
ø32	27.6	16	(30°)	31.4	32.5	62.5	92.5	122.5	1.5	31.4	37.5	67.5	97.5	127.5	6.5	36.4	37.5	67.5	97.5	127.5	6.5
ø40	32.1	16	(26°)	36	34.5	64.5	94.5	124.5	3.5	36	39.5	69.5	99.5	129.5	8.5	41	39.5	69.5	99.5	129.5	8.5

Code	SCM-Y																					
	Bore Size (mm)	P2	P3	P0	P1	RD	T8				P1	RD	T2J				P1	RD	T1, T2YD, T2YDT			
							RD	RD	RD	RD			RD	RD	RD	RD			RD	RD	RD	RD
ø20	21.5	14	(38°)	25.4	0	28.5	55.5	82.5	109.5	25.4	4	33.5	60.5	87.5	114.5	30.4	4	33.5	60.5	87.5	114.5	
ø25	23.9	14	(34°)	27.9	0	30.5	60.5	90.5	120.5	27.9	5	35.5	65.5	95.5	125.5	32.9	5	35.5	65.5	95.5	125.5	
ø32	27.6	16	(30°)	31.4	1	31.5	61.5	91.5	121.5	31.4	6	36.5	66.5	96.5	126.5	36.4	6	36.5	66.5	96.5	126.5	
ø40	32.1	16	(26°)	36	3	33.5	63.5	93.5	123.5	36	8	38.5	68.5	98.5	128.5	41	8	38.5	68.5	98.5	128.5	

Knuckle Pin/Clevis Pin Split Pin (-XP5)

Content: The retaining rings for knuckle pins and clevis pins will be split pins.

Model No. Notation Method

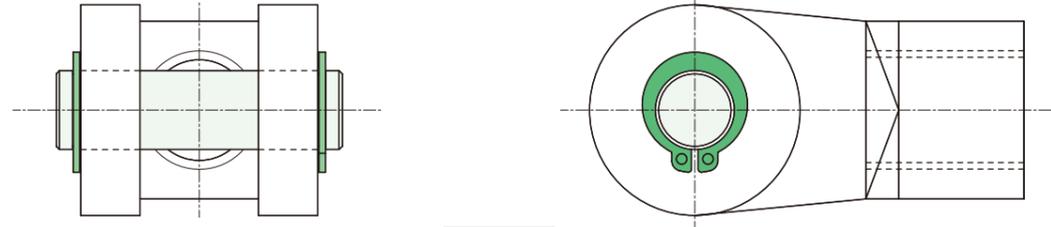
SCM - 00 - 40 B - 100 - Y - XP5

Model No.

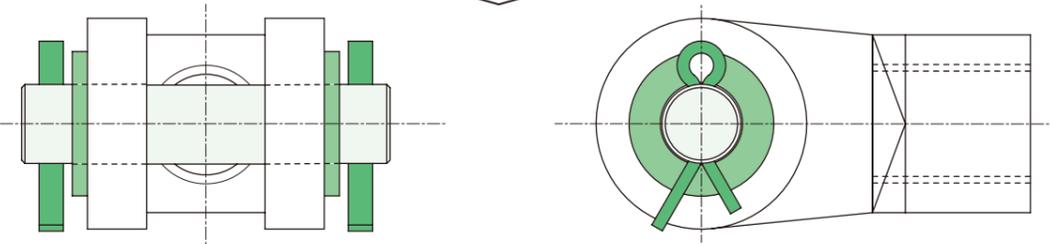
See the SCM Series Model No. Notation Method.

Outer Dimensions Diagram

● Retaining ring



● Split pin



Pin Diameter	Split Pin Size
12	ø4 × 20
14	ø4 × 20
20	ø4 × 25
25	ø4 × 30
28	ø5 × 35
32	ø5 × 40
40	ø5 × 50
50	ø5 × 60

Knuckle Fixed by Pinning (-XP7)

Content: Also, drive a spring pin into the knuckle to prevent loosening.

Model No. Notation Method

SCM - LB - 40 B - 100 - Y - XP7

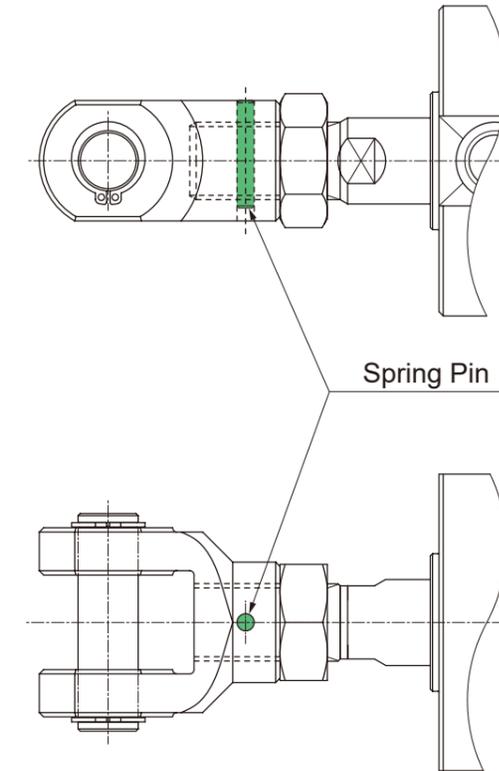
Model No.

See the SCM Series Model No. Notation Method.

Outer Dimensions Diagram

Same as with Knuckle specification.

(Spring pin driving direction varies depending on the model.)



Knuckle Pin/Clevis Pin Split Pin Specification, Knuckle Fixed by Pinning (-XP8)

Content: The retaining rings for knuckle pins and clevis pins will be split pins. Also, drive a spring pin into the knuckle to prevent loosening. (XP5 + XP7)

Model No. Notation Method

SCM - 00 - 40 B - 100 - Y - XP8

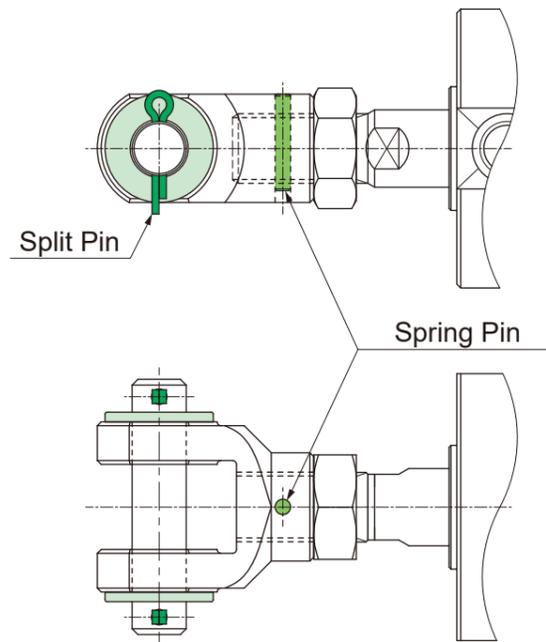
Model No.

See the SCM Series Model No. Notation Method.

Outer Dimensions Diagram

Mounting dimensions are the same as with Knuckle specification.

It is a combination of XP5 (P. 474) and XP7 (P. 475).



Without Bellows (-XJ9)

Content: Piston rod with dimensions for bellows, but bellows not assembled

Model No. Notation Method

SCM - 00 - 40 B - 100 - XJ9

Model No.

See the SCM Series Model No. Notation Method.

Outline Dimension Drawing

Same dimensions as with bellows, but bellows are not attached.

With 2 Rod Nuts (-A2)

Content: Shipped with 2 rod nuts, same as standard.

Model No. Notation Method

SCM - 00 - 40 B - 100 - A2

Model No.

See the SCM Series Model No. Notation Method.

Outer Dimensions Diagram

Same as standard type except that 2 rod nuts are included.



To Use This Product Safely

Be sure to read this before use.

For general cylinder information, see Intro 41, and for cylinder switches, see P. 1026.

Individual Precautions: Round shaped cylinder SCM Series

During Design / Selection

1. Common

⚠ Caution

■ Rubber cushion type and air cushion type are available as cushion mechanisms built into the cylinder. The purpose of the air cushion is to absorb the kinetic energy held by the piston by utilizing the compressibility of air, and to prevent the piston and cover from hitting impulsively at the stroke end. Therefore, the cushion is not for low-speed operation (deceleration operation) of the piston speed from near the stroke end. The table below shows the kinetic energy that can be absorbed by the cushion. If the kinetic energy exceeds this value or if you want to avoid bouncing due to air compressibility, provide a separate shock absorber.

Bore Size (mm)	Rubber Cushion		Air Cushion	
	Allowable Absorbed Energy J	Effective Cushion Length (mm)	Allowable Absorbed Energy J	Allowable Absorbed Energy J
ø20	0.1	8.1	0.8	
ø25	0.2	8.1	1.2	
ø32	0.5	8.6	2.5	
ø40	0.9	8.6	3.7	
ø50	1.6	13.4	8.0	
ø63	1.6	13.4	14.4	
ø80	3.3	15.4	25.4	
ø100	5.8	15.4	45.6	

Kinetic Energy (J) =

$$\frac{1}{2} \times \text{Mass (kg)} \times \{\text{Speed (m/s)}\}^2$$

(Note) Regarding calculation of kinetic energy: The average speed of the cylinder is obtained by $V_a = \frac{L}{T}$.

V_a : Average speed (m/s)

L : Cylinder stroke (m)

T : Operating Time (s)

In contrast, the cylinder speed just before entering the cushion can be found with the following simple formula.

$$V_m = \frac{L}{T} \times \left(1 + 1.5 \times \frac{\omega}{100}\right)$$

V_m : Stroke end speed (m/s)

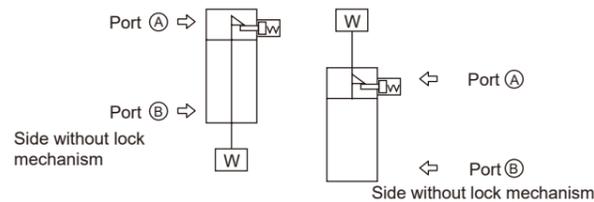
ω : Cylinder load factor (%)

For calculating kinetic energy, use this V_m value as the speed.

2. Drop Prevention Type SCM-Q

⚠ Warning

■ In a locked state, if pressure is supplied to the (A) port from a state where both ports are unpressurized, the lock may not release, or the lock may suddenly release and the piston rod may fly out, which is very dangerous. When releasing the lock mechanism, always supply pressure to the (B) port and release it from a state where no load is applied to the lock mechanism.



■ When using a quick exhaust valve to increase the lowering speed, the cylinder body may start moving before the lock pin operates, and normal release may not be possible. Do not use a quick exhaust valve with a drop prevention type cylinder.

■ Do not use 3-position valves.

Do not use in combination with 3-position valves (especially closed center metal seal type). If pressure is sealed in the port on the side with the lock mechanism, the lock will not engage. Also, even if locked once, air leaking from the valve may enter the cylinder, and the lock may be released over time.

⚠ Caution

■ Keep the cylinder load factor at 50% or less.

If the load factor is high, the lock may not be released, or it may lead to damage to the lock part.

■ If back pressure is applied to the lock mechanism side, the lock may be released, so use a single valve or a manifold with individual exhaust.

■ Do not use multiple cylinders synchronized.

Do not use a method where two or more fall prevention type cylinders are synchronized to move one workpiece. The cylinder lock may become impossible to release.

3. Fine Speed Type SCM-F

⚠ Caution

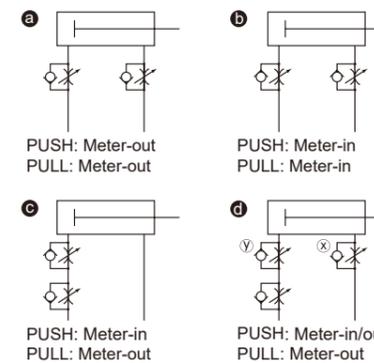
■ Do not lubricate. It will cause characteristics to fluctuate.

■ Install the speed controller near the cylinder.

If installed far from the cylinder, the speed will become unstable. Use SC-M3/M5, SC3W, SCD-M3/M5, SC3U series speed controllers.

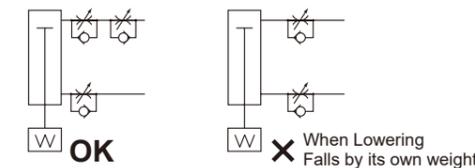
■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed. Use with a load factor of 50% or less.

■ Speed control with a meter-out circuit provides stability. When driving a single-rod cylinder at creep speed in the PUSH direction, if the load resistance is small, a flying-out phenomenon may occur at the start of operation. As countermeasures, use circuits (b), (c) or (d). In addition, the (d) circuit is the most stable.

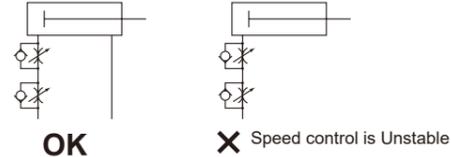


(*) Speed adjustment method for PUSH operation of the circuit:
1. Speed setting with x speed controller
2. Throttle with y speed controller until projection stops.
3. Reconfirmation of speed

(*1) Comparing (b) (c) (d), the (d) circuit is the most stable in operation.
(*2) For vertical mounting, it will fall by its own weight in a meter-in circuit, so combine it with a meter-out circuit.



(*3) For series connection of speed controllers, use the circuit shown in the figure below.



(Guideline for lurching occurrence)

Lurching occurs in the following cases:

• Thrust > Resistance

*Resistance: *Resistance: Thrust due to residual pressure on exhaust side (For creep speed type, intake pressure = residual pressure) + [For horizontal use: Frictional force due to load
For vertical use: Dead weight of the load

■ Do not apply lateral load to the cylinder. Operation becomes unstable when lateral load is applied.

■ Avoid use in locations with vibration.

Operation becomes unstable due to the influence of vibration.

4. Low Friction Type SCM-U

⚠ Warning

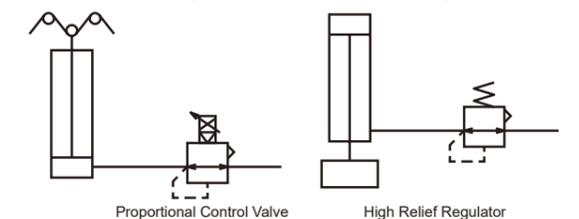
■ Durability varies depending on usage conditions and model characteristics. This cylinder is a cylinder with internal leakage. For leakage volume, check the specifications (P. 410).

⚠ Caution

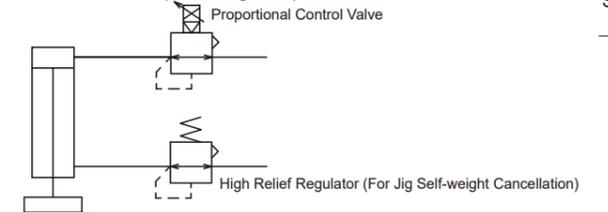
■ Install a speed controller on the cylinder.

Install a speed controller on the cylinder. Use within the operating piston speed range of each cylinder. However, when used with a balancer, etc., it may be better not to attach a speed controller to improve supply/exhaust efficiency. Depending on the application, circuits (a) to (c) below are recommended.

(a) Tension Control (Winding Machine, etc.) (b) Balancer (Processing Machine Z-axis, etc.)



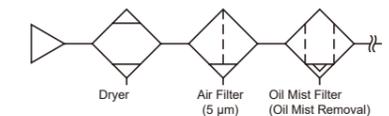
(c) Load Control (Polishing, etc.)



*To improve supply/exhaust characteristics, maximize piping volume as much as possible.

■ Do not lubricate. It will cause characteristics to fluctuate.

■ Poor quality air adversely affects characteristics and durability, so use clean air with the following piping.



■ Install the speed controller near the cylinder.

If installed far from the cylinder, adjustment will be unstable.

■ Generally, the higher the air pressure and the lower the load factor, the more stable the speed. Use with a load factor of 50% or less.

During Use

1. Common

Caution

The switch rail is joined with industrial adhesive tape, so do not use it in an atmosphere of inorganic/organic solvents or water vapor, as this may cause the rail to peel off.
Main Inorganic/Organic Solvents
Inorganic/Organic Solvents: Sodium Hydroxide, Hydrochloric Acid, etc. Organic Solvents: Toluene, Ethanol, Hexane, Gasoline, Kerosene, etc.

When adhering the switch rail, sufficiently remove oil, moisture, dust, etc. from the surface of the main body (tube). (Adhere by referring to the instruction manual attached to the parts)

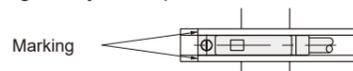
Precautions for Air Cushion Type

For $\phi 20$ and $\phi 25$, there are restrictions on usable pipe fittings, so refer to the following and use accordingly.

Item	Port Size	Usable Fittings	Unusable Fittings
$\phi 20$	M5	SC3W-M5-4/6	GWL6-M5
		SC3R-M5	
$\phi 25$	M5	GWS4-M5 GWS4-M5-S	GWL6-M5-45
		GWS6-M5 GWS6-M5-S	
		GWL4-M5 GWL4-M5-45	
		GWL4-M5-T GWL6-M5-T	

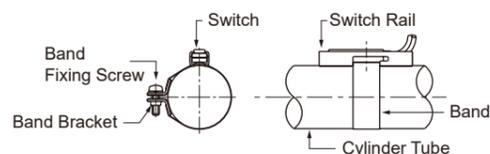
Switch Mounting Method: Switch Mounting Method: Precautions for Band Method

When Moving the Switch Position in the Stroke Direction
The 1-color indicator switch can be finely adjusted by about ± 3 mm from the mounting position at the time of shipment. Loosen the switch mounting screw, move the switch along the rail, and tighten at the specified position. If the adjustment range exceeds ± 3 mm, or when finely adjusting the position of the 2-color indicator switch, move the band position. For T2, T3, T0, T5, use a flat-blade screwdriver with a grip diameter of 5 to 6 mm, tip shape width of 2.4 mm or less, and thickness of 0.3 mm or less (watchmaker's screwdriver, precision screwdriver, etc.) to tighten the switch fixing screw with a tightening torque of 0.1 to 0.2 N·m. For T2J, T2Y, T3Y, tighten with a tightening torque of 0.5 to 0.7 N·m. The switch rail has a marking 4 mm from the end face of the rail. Use this as a guide for the mounting position when replacing the switch. The marking on the switch rail is set to the switch's highest sensitivity position at the time of factory shipment. If the switch type is changed, the band is moved, or the highest sensitivity position changes, adjust the position each time.



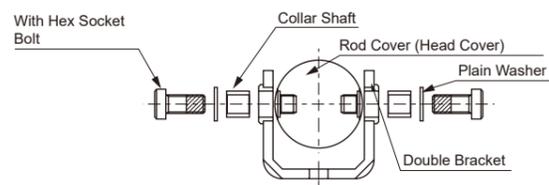
When Moving the Switch Position in the Circumferential Direction
Loosen the band fixing screw, move the switch rail circumferentially, and tighten it at the specified position. Tightening torque is 0.6 to 0.8 N·m. When loosening or tightening the band fixing screw, hold the band bracket with a tool, etc., keeping the bracket parallel.

When Moving the Band Position
Loosen the band fixing screw, move the switch rail and band along the cylinder tube, and tighten them at the specified position. Tightening torque is 0.6 to 0.8 N·m. When loosening or tightening the band fixing screw, hold the band bracket with a tool, etc., keeping the bracket parallel.



For trunnion mounting style, assemble as shown in the diagram below, and tighten with the tightening torque specified in the table below.

Bore size	Tightening Torque [N·m]
$\phi 20$	6
$\phi 25$	11
$\phi 32$	18
$\phi 40$	27
$\phi 50$	38
$\phi 63$	51



2. Single Acting Type SCM-X/Y

Caution

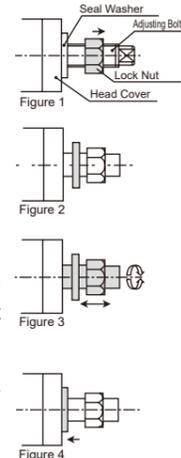
Do not leave single acting cylinders pressurized. If left pressurized, the piston rod may not return by spring load when the pressure is released.

3. Stroke Adjustment Type SCM-R

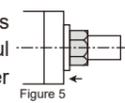
Caution

When adjusting the stroke, strictly follow steps (1) to (5) below. If adjustment is not performed using this method, the seal washer will be damaged after 1 or 2 adjustments. [Stroke Adjustment Procedure]

- First, loosen the lock nut to the state shown in Figure 1.
- Next, manually detach the seal washer from the adapter to the state shown in Figure 2.
- In state (2), turn the adjustment bolt, lock nut, and seal washer together as shown in Figure 3 to adjust the stroke. At this time, be careful not to let the rubber part of the seal washer get caught in the threaded part.
- After stroke adjustment, first bring the seal washer close to the adapter by hand as shown in Figure 4.



Then, securely tighten with the lock nut as shown in Figure 5. At this time, be careful not to let the rubber part of the seal washer get caught in the threaded part.



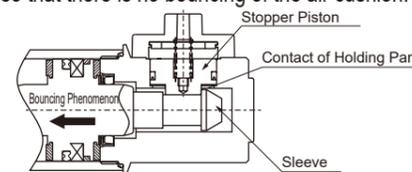
After stroke adjustment, securely tighten the lock nut. If used for a long time, the lock nut may loosen, causing external leakage.

4. Drop Prevention Type SCM-Q

Warning

During equipment maintenance, please take separate measures for safety so that the load does not fall due to its own weight.

For cylinders with air cushion, if the air cushion needle on the lock mechanism side is tightened too much, the piston will bounce at the stroke end, and the sleeve and stopper piston will make impact contact, leading to damage to the lock mechanism. Also, if the air cushion needle is opened too much, the piston will rebound at the stroke end, similarly leading to damage. Adjust the needle so that there is no bouncing of the air cushion.



When stopping with external shock absorbing equipment (shock absorber, etc.), adjust similarly to prevent bouncing. Also, please perform periodic inspections once or twice a year to check for damage to the holding part due to this phenomenon.

Caution

Axial Foot Type (Mounting type: LB), if you try to fix the support bracket to a frame etc. while it is attached to the cylinder, the bolt and stopper cover will interfere, preventing fixation. First, fix the mounting bracket on the drop prevention side to the frame etc., and then install the cylinder.

Since the lock mechanism works at the stroke end, if an external stopper is applied mid-stroke, the lock mechanism will not work, and there is a risk of falling. When setting the load, be sure to confirm that the lock mechanism is working before installing.

Supply pressure equal to or higher than the minimum operating pressure to the port on the side with the lock mechanism.

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) -> "Model No." -> **Instruction Manual**

Individual Precautions

If the piping on the side with the lock mechanism is thin and long, or if the speed controller is far from the cylinder port, the exhaust speed may be slow and it may take time for the lock to engage, so please be careful. Also, clogging of the silencer attached to the valve's EXH. port will lead to similar results.

After manually operating the lock mechanism, return the lock mechanism to its original state before use. Also, do not perform manual operations other than during adjustment, as it is dangerous.

Release the lock when installing or adjusting the cylinder. If installation work, etc. is performed while the lock is engaged, the lock part may be damaged.

Use the speed controller with meter-out control. Lock may not be released with meter-in control.

Always use the side with the lock at the cylinder's stroke end. If the cylinder piston has not reached the stroke end, the lock may not engage, or it may not be possible to release the lock.

5. Fine Speed Type SCM-F

Warning

Since fluorine grease is used, if you smoke with it adhered to your hands, toxic gas may be generated, potentially harming the human body, so please be careful.

6. Low Friction Type SCM-U

Caution

Avoid use in steam, humid environments, or alkaline atmospheres.

Do not disassemble this product. If disassembled, performance may no longer be maintained. Furthermore, only consumable parts are not provided for this product.

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending

General Type

SCP□3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

Cylinder Switch

Ending