



Round shaped cylinder Double acting/single rod

SCM Series

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

JIS symbol



Specifications

Item		SCM							
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure		1.0 (≈150 psi, 10 bar)							
Min. working pressure		0.1 (≈15 psi, 1 bar)				0.05 (≈7.3 psi, 0.5 bar)			
Proof pressure		1.6 (≈230 psi, 16 bar)							
Ambient temperature		-10 (14°F) to 60 (140°F) (no freezing)							
Port size	With rubber cushion	Rc1/8				Rc1/4		Rc3/8	Rc1/2
	With air cushion	M5		Rc1/8		Rc1/4		Rc3/8	Rc1/2
Stroke tolerance	With rubber cushion	+1.4 0 (to 1000)			+1.4 0 (to 1500)		+2.3 0 (to 1000), +2.7 0 (to 1500)		
	With air cushion	+1.4 0 (to 1000)			+1.4 0 (to 1500)		+1.4 0 (to 1000), +1.8 0 (to 1500)		
Working piston speed		30 to 1000 (Operate within the allowable absorbed energy.)							
Cushion		Either rubber cushion or air cushion can be selected.							
Effective air cushion length	mm	8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)							
Allowable absorbed energy	With rubber cushion	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
	With air cushion	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	Without cushion	-	-	-	-	0.057	0.057	0.112	0.153

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

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

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø 20	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10
ø 25			
ø 32			
ø 40		1500	
ø 50			
ø 63			
ø 80			
ø100			

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

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

● Switch mounting method: Rail

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

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
Bore size (mm)	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\varnothing 20$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\varnothing 25$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\varnothing 32$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\varnothing 40$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\varnothing 50$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\varnothing 63$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\varnothing 83$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
$\varnothing 100$	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire		Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT		
Applications	For programming controller, relay, compact solenoid valve		Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-								
Pwr. supp. V.	-				10 to 28 VDC				-								
Load voltage	85 to 265 VAC		10 to 30 VDC		24 VDC ±10%		30 VDC or less			12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA		5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)	
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC		1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33	1 m:18	1 m:33	1 m:18	1 m:18		1 m:33	1 m:18	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61	
	3 m:87	3 m:49	3 m:87	3 m:49	3 m:49		3 m:87	3 m:49								3 m:166	
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80		5 m:142	5 m:80								5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TB)				
ø 20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the specifications.	0.01	0.012	0.007
ø 25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
ø 32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
ø 40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
ø 50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
ø 63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
ø 80	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 when S = 0 mm.....0.63 kg Additional weight when S = 100 mm0.032 x $\frac{100}{10}$ = 0.32 kg Weight of 2 switches.....0.018 × 2 = 0.036 kg Product weight.....0.63 + 0.32 + 0.036 = 0.986 kg
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Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

How to order

Without switch (built-in magnet for switch)

SCM-LB-40-B-100-J-I

With switch (built-in magnet for switch)

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

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
*4
*5

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped with the product.
- *2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.
- *3 : Refer to page 232 for the number of installed switches and the min. stroke length.
- *4 : Switches other than **F** Switch model No. are also available. (Made to order)
Refer to Ending Page 16 for details.
- *5 : T8H/V switches cannot be mounted when the bore size is from ø20 to ø40 and the switch mounting style is the rail.
- *6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- *7 : Refer to Ending Page 85 for custom specifications of rod end form.
- *8 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
- *9 : "I" and "Y" cannot be selected together.
- *10 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

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

Model: Round shaped cylinder, double acting

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided air cushion
- E** Stroke length : 100 mm
- F** Switch model No. : Proximity T2H switch, lead wire 1 m
- G** Switch Quantity : 2 pcs. included
- H** Switch mounting : Rail
- I** Option : Bellows material for max. ambient temperature 100°C
- J** Accessory : Rod eye

I Option
*2
*6
*8

J Accessory
*9

Code	Description
A Mounting	
	Bore size (ø)
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and snap ring incl.)
TA	Rod side trunnion
TB	Head side trunnion

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

C Port thread	
Blank	Rc thread
N	NPT thread (made-to-order product) With air cushion: ø32 and over
G	G thread (made-to-order product) With air cushion: ø32 and over

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

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø20 to ø32	10 to 1000	In 1 mm increments
ø40 to ø100	10 to 1500	

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

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

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

H Switch mounting	
Blank	Rail method
Z	Band method

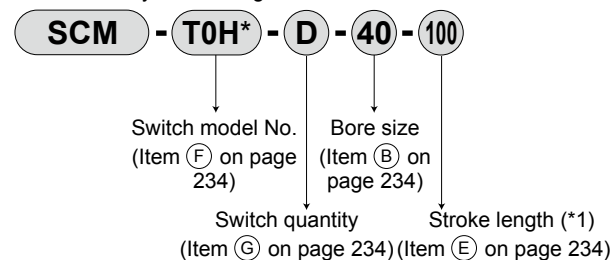
I Option			
		Max. ambient temperature	Instantaneous max. temperature
J	Bellows	100°C	200°C
L	Bellows	250°C	400°C
Q	Switch rail included at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

J Accessory	
	Bore size (ø)
I	Rod eye
Y	Rod clevis (pin and snap ring included)
B1	Eye bracket
B2	Clevis bracket

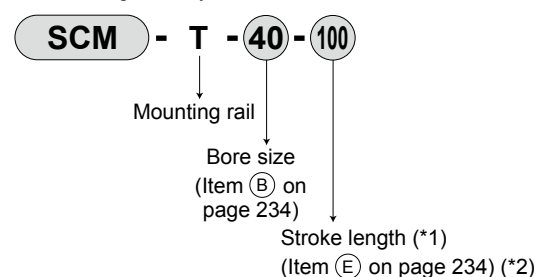
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



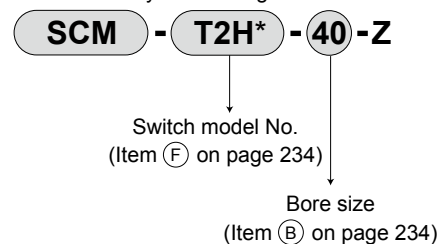
- Mounting rail only



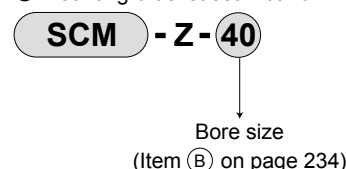
- *1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
- *2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

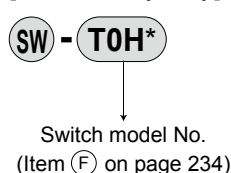
- Switch body + mounting bracket set + band



- Mounting bracket set + band



[Switch body only]



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

- Anti-dust generation structure for use in cleanrooms

SCM - - P7*

SCM - - P5*

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

- Design compatible with rechargeable battery manufacturing process

SCM - ... - P4*

* Contact CKD for details.

How to order mounting bracket

Bore size (mm)	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
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis bracket (CB)	-	-	-	-	-	-	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

*1: All mounting brackets are supplied with mounting bolts.

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

Material of mounting bracket

Mounting	Material
LB	Steel
FA/FB	Aluminum *2
TA/TB	Steel
CA	Steel
CB	Cast iron

*1: Mounting bracket will be shipped with the product.

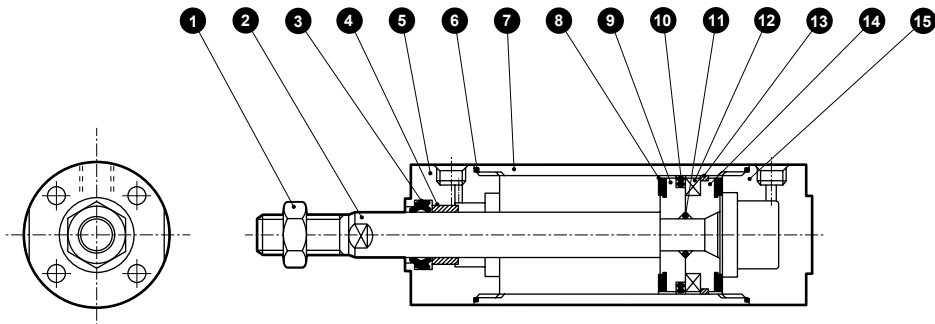
However, it will be attached to the product if the product is the type with bellows and LB, FA, or TA mounting bracket, SCM-P with LB, FB or TB mounting bracket, or SCM-R with LB, FB or TB mounting bracket.

*2: The ø50 to ø100 material is steel.

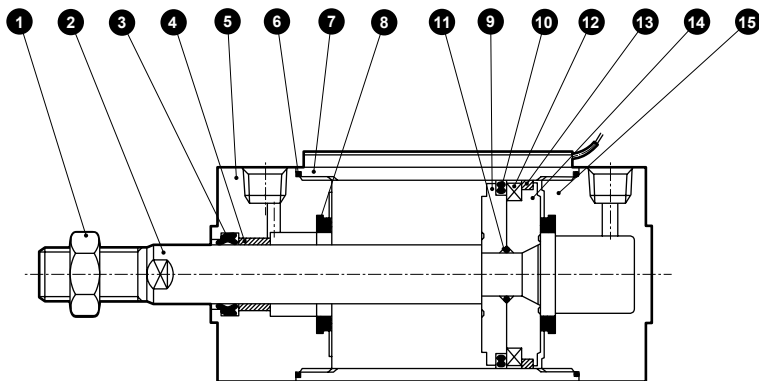
SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/ COVP/N2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/ MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

Internal structure and parts list (with rubber cushion)

● ø20 to ø40



● ø50 to ø100



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	9	Piston R	ø20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
2	Piston rod	ø20, ø25: Stainless steel ø32 to ø100: Steel	Industrial chrome plating	10	Piston packing	Nitrile rubber	
3	Rod packing	Nitrile rubber		11	Piston gasket	Nitrile rubber	
4	Bush	Oil impregnated bearing alloy *1		12	Magnet	Plastic	
5	Rod cover	Aluminum alloy	Hard alumite	13	Wear ring	Polyacetal resin	
6	Cylinder gasket	Nitrile rubber		14	Piston H	ø20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
7	Cylinder tube	Aluminum alloy	Hard alumite	15	Head cover	Aluminum alloy	Hard alumite
8	Cushion rubber	Urethane rubber					

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

Repair parts list

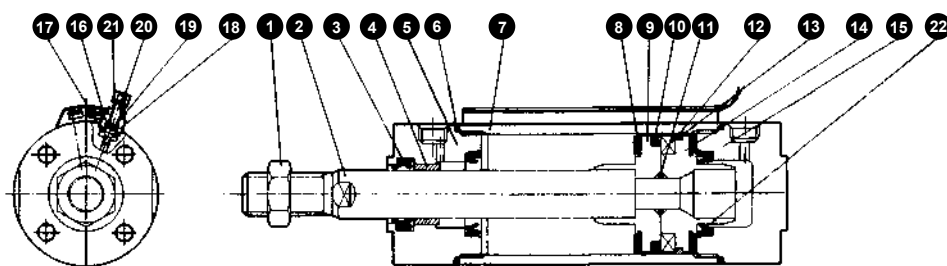
With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
ø 20	SCM-20DK	3 6 8 10 13
ø 25	SCM-25DK	
ø 32	SCM-32DK	
ø 40	SCM-40DK	
ø 50	SCM-50DK	
ø 63	SCM-63DK	
ø 80	SCM-80DK	
ø100	SCM-100DK	

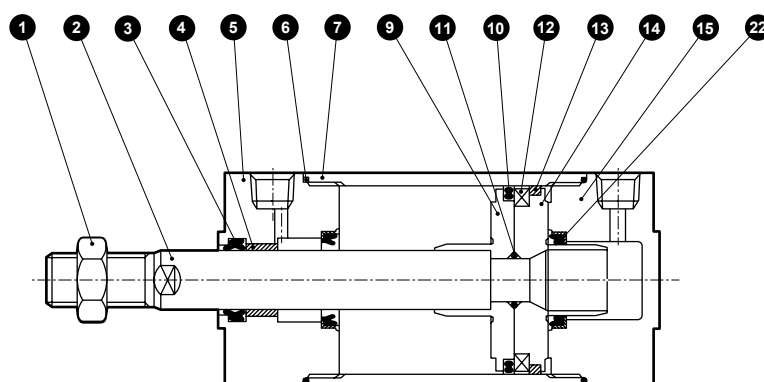
*1: Specify the kit No. when placing an order.

Internal structure and parts list (with air cushion)

● ø20 to ø40



● ø50 to ø100



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	12	Magnet	Plastic	
2	Piston rod	ø20, ø25: Stainless steel ø32 to ø100: Steel	Industrial chrome plating	13	Wear ring	Polyacetal resin	
3	Rod packing	Nitrile rubber		14	Piston H	ø20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy *1		15	Head cover	Aluminum alloy	Hard alumite
5	Rod cover	Aluminum alloy	Hard alumite	16	Needle gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		17	Holder gasket	Nitrile rubber	
7	Cylinder tube	Aluminum alloy	Hard alumite	18	Needle holder	Aluminum alloy	
8	Cushion rubber	Urethane rubber		19	Lock nut	Steel	Nickeling
9	Piston R	20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		20	Needle	Stainless steel	
10	Piston packing	Nitrile rubber		21	Knob	Aluminum alloy	Chromate
11	Piston gasket	Nitrile rubber		22	Cushion packing	Nitrile rubber/steel	

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

Repair parts list

With air cushion

Bore size (mm)	Kit No.	Repair parts No.
ø 20	SCM-20BK	*2 3 6 8 10 13 16 17 22
ø 25	SCM-25BK	
ø 32	SCM-32BK	
ø 40	SCM-40BK	
ø 50	SCM-50BK	
ø 63	SCM-63BK	
ø 80	SCM-80BK	
ø100	SCM-100BK	

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

*2: 8 is not supplied with ø50 to ø100.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

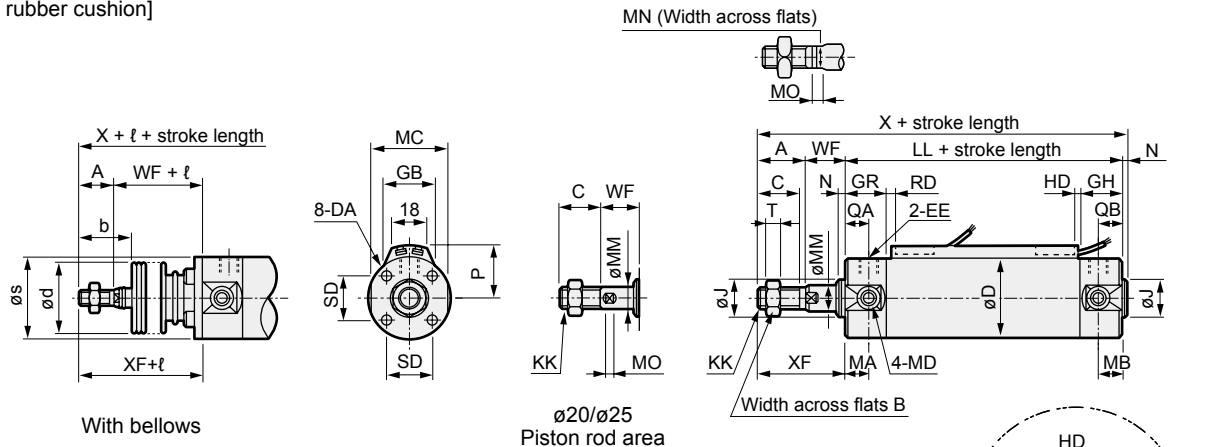
Ending

Dimensions



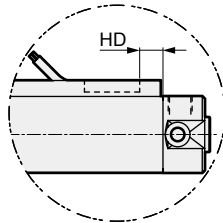
- Basic (00) $\phi 20$ to $\phi 100$
[With rubber cushion]

· Switch mounting method: Rail



With bellows

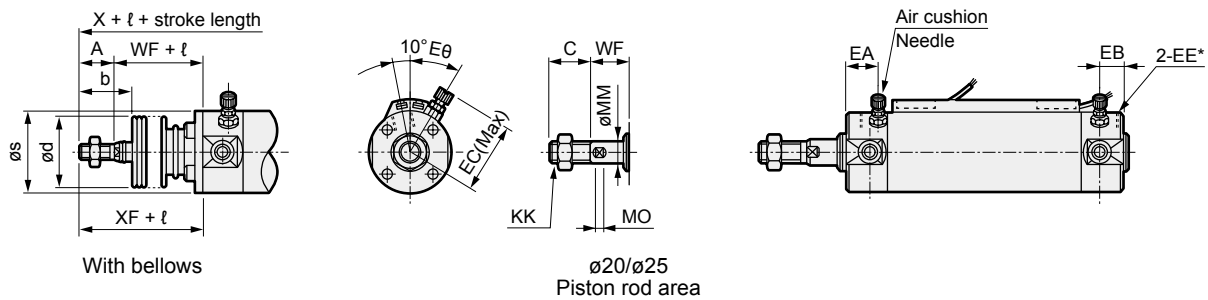
$\phi 20/\phi 25$
Piston rod area



In the case of T2W, T3W

[With air cushion]

· Switch mounting method: Rail



With bellows

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

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

*2 : Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3 : For the dimensions of the accessories, refer to pages 252 and 253.

Code	Basic (00) basic dimensions																					
Bore size (mm)	A	B	C	D	DA	EE (Note)	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	N	QA	QB	SD
ø 20	-	13	16	26	M4 depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	8	6	4	2	12	10	14
ø 25	-	17	20	31	M5 depth 6.5	Rc1/8	17	19	14	M10×1.25	69	11	11	29	M6	10	8	5	2	12	10	16.5
ø 32	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	2	12	10	20
ø 40	30	22	27	47	M6 depth 12	Rc1/8	19	20	25	M14×1.5	78	12	10	44	M10	16	14	6	2	13	12	26
ø 50	35	27	32	58	M8 depth 16	Rc1/4	22	25	30	M18×1.5	90	13	12	55	M12	20	17	8	2	15	12	32
ø 63	35	27	32	72	M10 depth 16	Rc1/4	22	25	32	M18×1.5	90	13	12	69	M14	20	17	8	2	15	12	38
ø 80	40	32	37	89	M10 depth 22	Rc3/8	28	28	40	M22×1.5	108	-	-	80	-	25	22	11	3	15	15	50
ø100	40	41	37	110	M12 depth 22	Rc1/2	28	28	50	M26×1.5	108	-	-	100	-	30	27	13	3	15	15	60

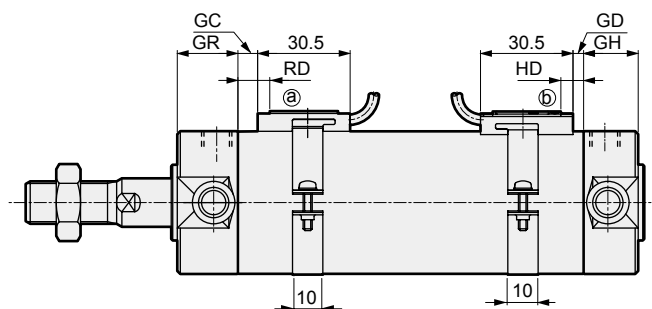
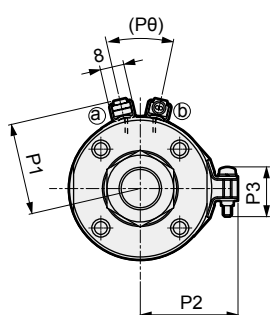
Code					With bellows				With air cushion					Switch mounting: Rail							
Bore size (mm)	T	WF	X	XF	b	d	s	ℓ	EA	EB	EC	EE* (Note)	Eθ	P	GB	HD			RD		
																T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø 20	5	19	106	35	30	30	25.7	(Stroke length/3) + 18.5	14	12	27	M5	30°	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
ø 25	6	20	111	40	35	30	30.7	(Stroke length/3) + 20.5	14	12	29.5	M5	30°	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø 32	6	18	113	40	31.5	35	37.7	(Stroke length/3) + 19	14	12	32.8	Rc1/8	25°	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5
ø 40	8	20	130	50	40	35	46.7	(Stroke length/3) + 18.5	15	12	36.6	Rc1/8	20°	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø 50	11	23	150	58	46	40	57.7	(Stroke length/3.6) + 18.5	18.5	15.5	43	Rc1/4	20°	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø 63	11	23	150	58	46	40	71.7	(Stroke length/3.6) + 18.5	18.5	15.5	50	Rc1/4	20°	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0
ø 80	13	31	182	71	55	50	88.7	(Stroke length/4.3) + 14.5	20	20	58.5	Rc3/8	20°	51	26.7	9.5	13.0	15.0	20.0	20.0	22.0
ø100	16	31	182	71	56	60	109.7	(Stroke length/4.5) + 21	20	20	69	Rc1/2	20°	61.5	26.7	10.0	13.5	15.5	19.5	19.5	21.5

Dimensions



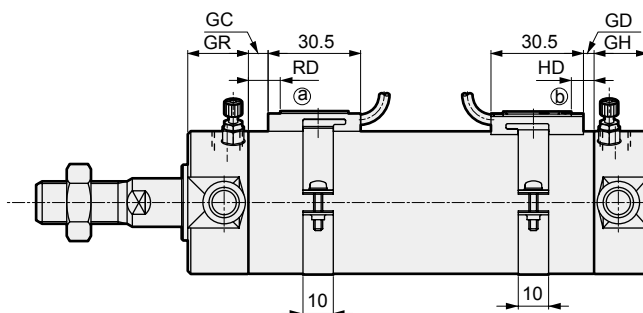
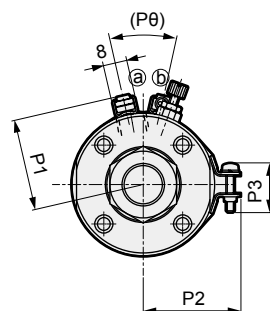
- Basic (00) $\phi 20$ to $\phi 100$
[With rubber cushion]

· Switch mounting: Band



[With air cushion]

· Switch mounting: Band



*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*2: For the dimensions of the accessories, refer to pages 252 and 253.

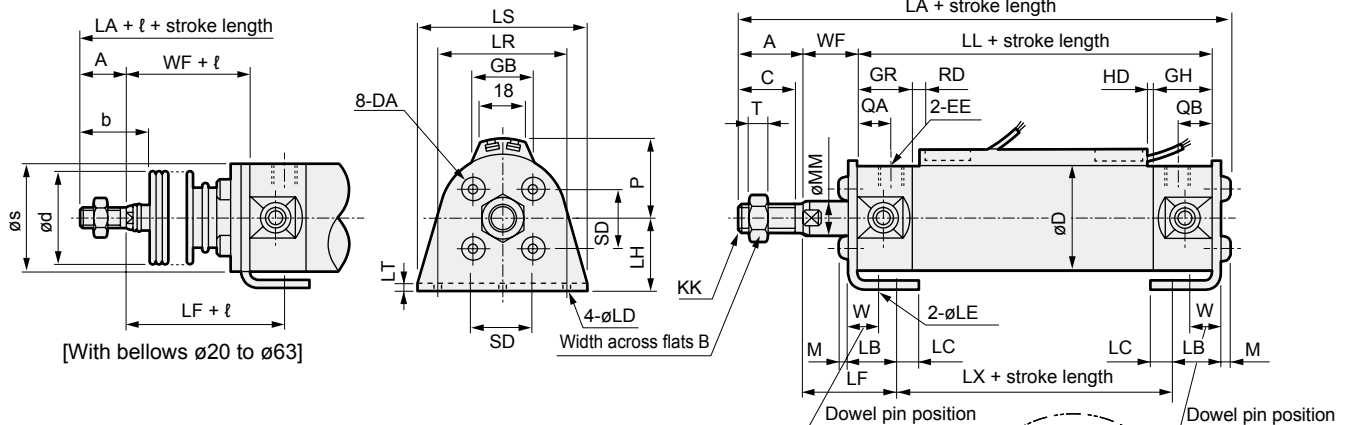
Code	Switch mounting: Band																	
Bore size (mm)	GD			GC			GH	GR	HD			RD			P1	P2	P3	Pθ
	T0/T5	T2, T3	T2W/T3W	T0/T5	T2, T3	T2W/T3W			T0/T5	T2, T3	T2W/T3W	T0/T5	T2, T3	T2W/T3W				
ø 20	2.5	2.5	4.5	3.5	3.5	5.5	17	19	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø 25	1.5	1.5	3.5	4.5	4.5	6.5	17	19	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø 32	2.5	2.5	4.5	5.5	5.5	7.5	17	19	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
ø 40	4.5	4.5	6.5	7.5	7.5	9.5	19	20	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
ø 50	7.0	7.0	9.0	9.0	9.0	11.0	22	25	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
ø 63	7.0	7.0	9.0	9.0	9.0	11.0	22	25	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)
ø 80	9.0	9.0	11.0	16.0	16.0	18.0	28	28	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
ø100	9.5	9.5	11.5	15.5	15.5	17.5	28	28	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)

Dimensions

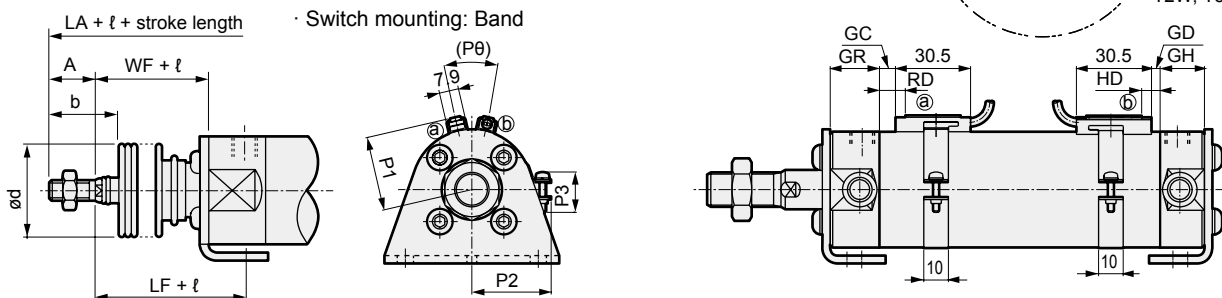


● Axial foot (LB)

· Switch mounting method: Rail



· Switch mounting: Band



[With bellows ø80/ø100]

Code	Axial foot (LB) basic dimensions																		
Bore size (mm)	A	B	C	D	DA	EE (*1)	GH	GR	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS
ø 20	-	13	16	26	M4	Rc1/8	17	19	M8	109.8	15.1	7.1	5.7	4	28.9	20	69	32	44
ø 25	-	17	20	31	M5	Rc1/8	17	19	M10×1.25	115.6	15.1	7.1	5.7	4	29.9	22	69	36	49
ø 32	22	17	20	38	M5	Rc1/8	17	19	M10×1.25	117.6	16.1	8.1	6.8	4	30.9	25	71	44	58
ø 40	30	22	27	47	M6	Rc1/8	19	20	M14×1.5	135.2	16.6	9.1	6.8	4	33.4	30	78	54	71
ø 50	35	27	32	58	M8	Rc1/4	22	25	M18×1.5	157.5	22	11	9	5	40.5	40	90	66	86
ø 63	35	27	32	72	M10	Rc1/4	22	25	M18×1.5	157.5	22	13	11	5	40.5	45	90	82	106
ø 80	40	32	37	89	M10	Rc3/8	28	28	M22×1.5	189.5	28.5	14	11	6	55	55	108	100	125
ø100	40	41	37	110	M12	Rc1/2	28	28	M26×1.5	192	30	16	14	6	55	65	108	120	150

Code							With bellows				Switch mounting: Rail								Switch mounting: Band					
Bore size (mm)	QA	QB	SD	T	W	WF	b	d	s	ℓ	P	GB	HD			RD			GD			GC		
													T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W
ø 20	12	10	14	5	10	19	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	2.5	2.5	4.5	3.5	3.5	5.5
ø 25	12	10	16.5	6	10	20	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	1.5	1.5	3.5	4.5	4.5	6.5
ø 32	12	10	20	6	10	18	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	2.5	2.5	4.5	5.5	5.5	7.5
ø 40	13	12	26	8	10	20	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	4.5	4.5	6.5	7.5	7.5	9.5
ø 50	15	12	32	11	17.5	23	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0
ø 63	15	12	38	11	17.5	23	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0
ø 80	15	15	50	13	20	31	55	50	-	(Stroke length/4.3) + 14.5	51	26.7	9.5	13.0	15.0	20.0	20.0	22.0	9.0	9.0	11.0	16.0	16.0	18.0
ø100	15	15	60	16	20	31	56	60	-	(Stroke length/4.5) + 21	61.5	26.7	10.0	13.5	15.5	19.5	19.5	21.5	9.5	9.5	11.5	15.5	15.5	17.5

Code	With bellows										Switch mounting: Rail				Switch mounting: Band				
Bore size (mm)	HD			RD			P1	P2	P3	P0	P1		P2		P3		P0		
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W					GC	GB	HD	RD	T2/T2R T3/T3P	T2W T3W	GC	GB	HD
ø 20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)									
ø 25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)									
ø 32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)									
ø 40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)									
ø 50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)									
ø 63	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)									
ø 80	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)									
ø100	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)									

*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

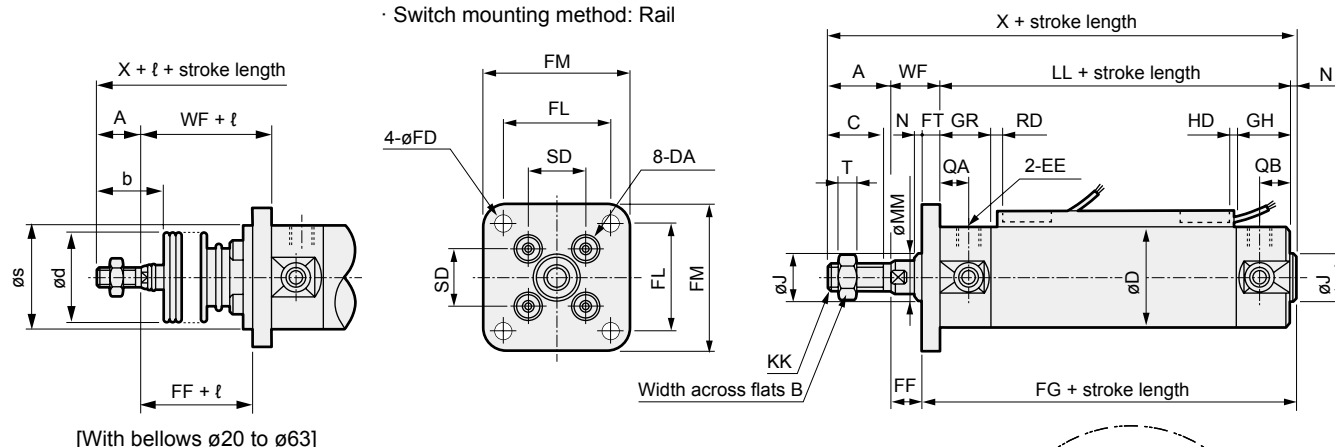
*3: For the dimensions of the accessories, refer to pages 252 and 253.

Dimensions



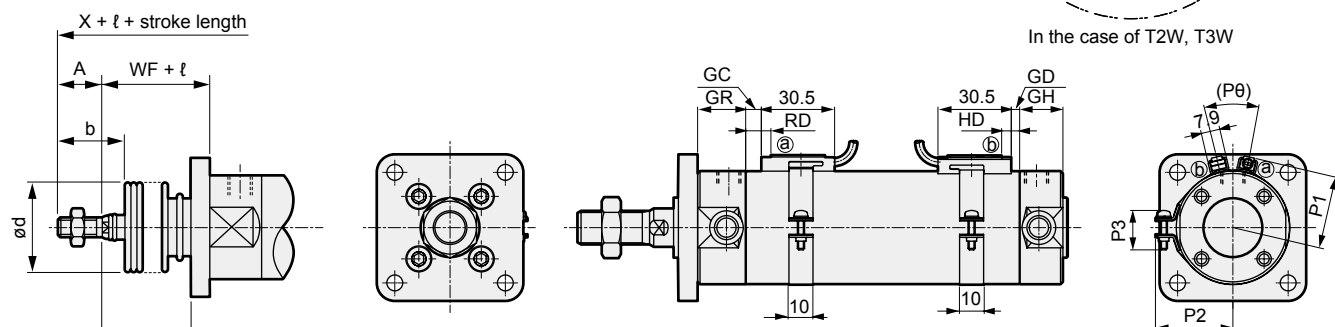
● Rod side flange (FA)

· Switch mounting method: Rail



[With bellows ø20 to ø63]

· Switch mounting: Band



[With bellows ø80/ø100]

*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: For the dimensions of the accessories, refer to pages 252 and 253.

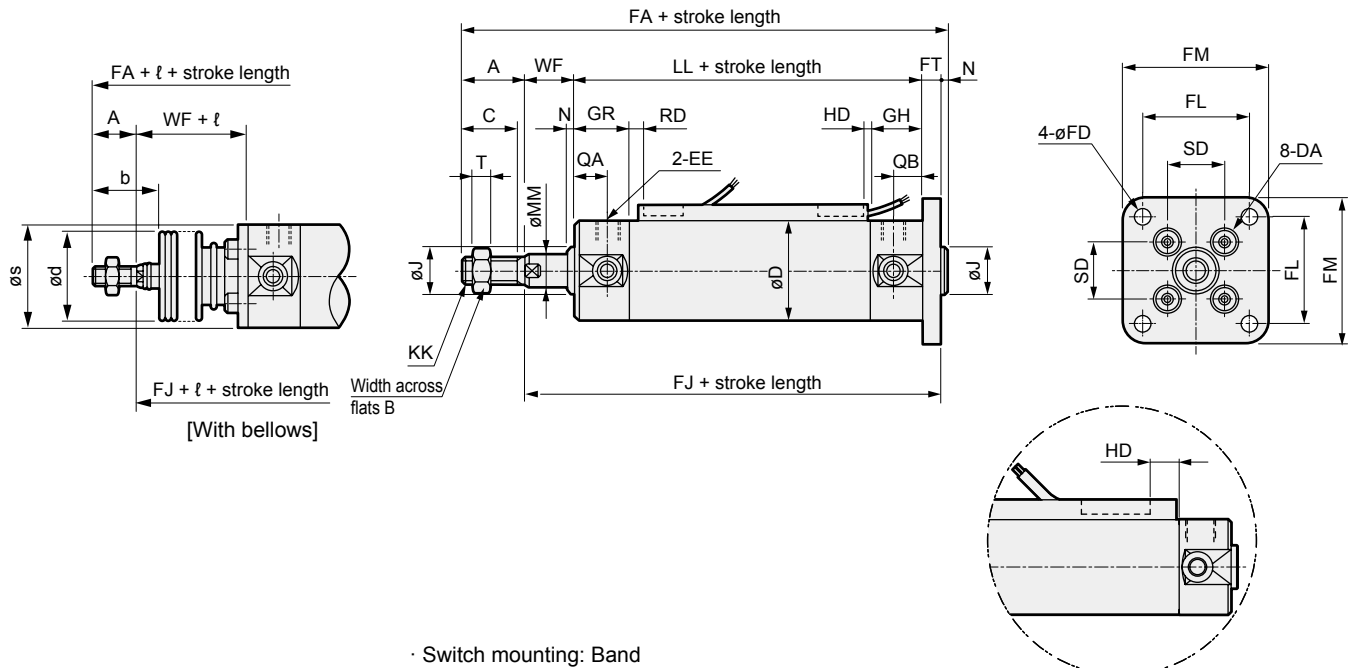
Code	Rod side flange (FA) basic dimensions																									
Bore size (mm)	A	B	C	D	DA	EE (*1)	FD	FF	FG	FL	FM	FT	GH	GR	J	KK	LL	MM	N	QA	QB	SD	T	WF	X	
ø 20	-	13	16	26	M4	Rc1/8	5.5	11	77	28	40	6	17	19	12	M8	69	8	2	12	10	14	5	19	106	
ø 25	-	17	20	31	M5	Rc1/8	5.5	11	78	32	44	7	17	19	14	M10×1.25	69	10	2	12	10	16.5	6	20	111	
ø 32	22	17	20	38	M5	Rc1/8	6.6	11	80	38	53	7	17	19	18	M10×1.25	71	12	2	12	10	20	6	18	113	
ø 40	30	22	27	47	M6	Rc1/8	6.6	12	88	46	61	8	19	20	25	M14×1.5	78	16	2	13	12	26	8	20	130	
ø 50	35	27	32	58	M8	Rc1/4	9	14	101	58	76	9	22	25	30	M18×1.5	90	20	2	15	12	32	11	23	150	
ø 63	35	27	32	72	M10	Rc1/4	11	14	101	70	92	9	22	25	32	M18×1.5	90	20	2	15	12	38	11	23	150	
ø 80	40	32	37	89	M10	Rc3/8	11	20	122	82	104	11	28	28	40	M22×1.5	108	25	3	15	15	50	13	31	182	
ø100	40	41	37	110	M12	Rc1/2	13	17	125	100	128	14	28	28	50	M26×1.5	108	30	3	15	15	60	16	31	182	
Code	With bellows				Switch mounting: Rail									Switch mounting: Band												
Bore size (mm)	b	d	s	ℓ	HD			RD			GD			GC			HD			RD			P1	P2	P3	P6
					T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø 20	30	30	25.7	(Stroke length/3) + 18.5	3.0	6.5	8.5	7.5	7.5	9.5	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø 25	35	30	30.7	(Stroke length/3) + 20.5	2.0	5.5	7.5	8.5	8.5	10.5	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø 32	31.5	35	37.7	(Stroke length/3) + 19	3.0	6.5	8.5	9.5	9.5	11.5	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
ø 40	40	35	46.7	(Stroke length/3) + 18.5	5.0	8.5	10.5	11.5	11.5	13.5	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
ø 50	46	40	57.7	(Stroke length/3.6) + 18.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
ø 63	46	40	71.7	(Stroke length/3.6) + 18.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)
ø 80	55	50	-	(Stroke length/4.3) + 14.5	9.5	13.0	15.0	20.0	20.0	22.0	9.0	9.0	11.0	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
ø100	56	60	-	(Stroke length/4.5) + 21	10.0	13.5	15.5	19.5	19.5	21.5	9.5	9.5	11.5	15.5	15.5	17.5	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)

Dimensions

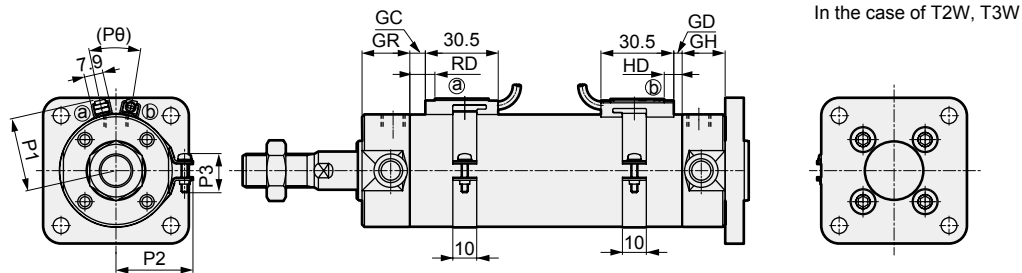


● Head side flange (FB)

· Switch mounting method: Rail



· Switch mounting: Band



*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: For the dimensions of the accessories, refer to pages 252 and 253.

Code	Rod side flange (FB) basic dimensions																								
Bore size (mm)	A	B	C	D	DA	EE (*1)	FA	FD	FJ	FL	FM	FT	GH	GR	J	KK	LL	MM	N	QA	QB	SD	T	WF	b
ø 20	-	13	16	26	M4	Rc1/8	112	5.5	92	28	40	6	17	19	12	M8	69	8	2	12	10	14	5	19	30
ø 25	-	17	20	31	M5	Rc1/8	118	5.5	94	32	44	7	17	19	14	M10×1.25	69	10	2	12	10	16.5	6	20	35
ø 32	22	17	20	38	M5	Rc1/8	120	6.6	96	38	53	7	17	19	18	M10×1.25	71	12	2	12	10	20	6	18	31.5
ø 40	30	22	27	47	M6	Rc1/8	138	6.6	106	46	61	8	19	20	25	M14×1.5	78	16	2	13	12	26	8	20	40
ø 50	35	27	32	58	M8	Rc1/4	159	9	122	58	76	9	22	25	30	M18×1.5	90	20	2	15	12	32	11	23	46
ø 63	35	27	32	72	M10	Rc1/4	159	11	122	70	92	9	22	25	32	M18×1.5	90	20	2	15	12	38	11	23	46
ø 80	40	32	37	89	M10	Rc3/8	193	11	150	82	104	11	28	28	40	M22×1.5	108	25	3	15	15	50	13	31	55
ø100	40	41	37	110	M12	Rc1/2	196	13	153	100	128	14	28	28	50	M26×1.5	108	30	3	15	15	60	16	31	56
Code	With bellows					Switch mounting: Rail									Switch mounting: Band										
Bore size (mm)	d	s	ℓ	HD			RD			GD			GC			HD			RD			P1	P2	P3	Pθ
				T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø 20	30	25.7	(Stroke length/3) + 18.5	3.0	6.5	8.5	7.5	7.5	9.5	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø 25	30	30.7	(Stroke length/3) + 20.5	2.0	5.5	7.5	8.5	8.5	10.5	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø 32	35	37.7	(Stroke length/3) + 19	3.0	6.5	8.5	9.5	9.5	11.5	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
ø 40	35	46.7	(Stroke length/3) + 18.5	5.0	8.5	10.5	11.5	11.5	13.5	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
ø 50	40	57.7	(Stroke length/3.6) + 18.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
ø 63	40	71.7	(Stroke length/3.6) + 18.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)
ø 80	50	88.7	(Stroke length/4.3) + 14.5	9.5	13.0	15.0	20.0	20.0	22.0	9.0	9.0	11.0	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
ø100	60	109.7	(Stroke length/4.5) + 21	10.0	13.5	15.5	19.5	19.5	21.5	9.5	9.5	11.5	15.5	15.5	17.5	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

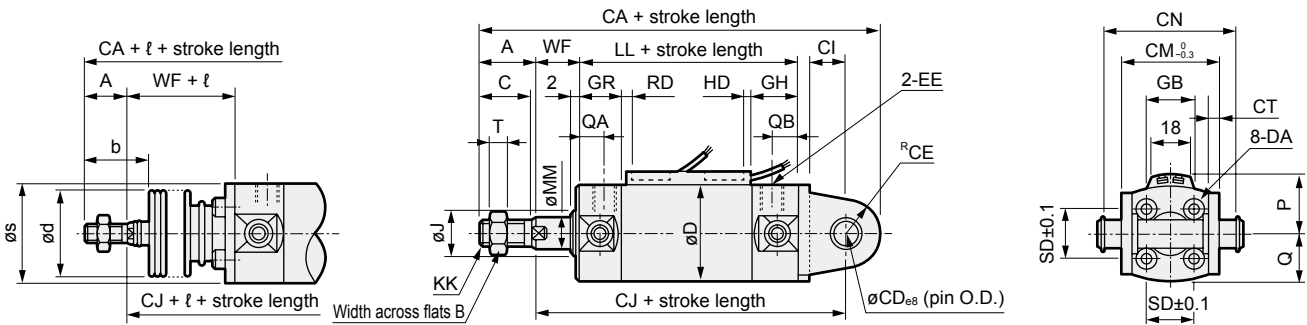
Ending



Dimensions (ø20 to ø63)

● Eye bracket (CA)

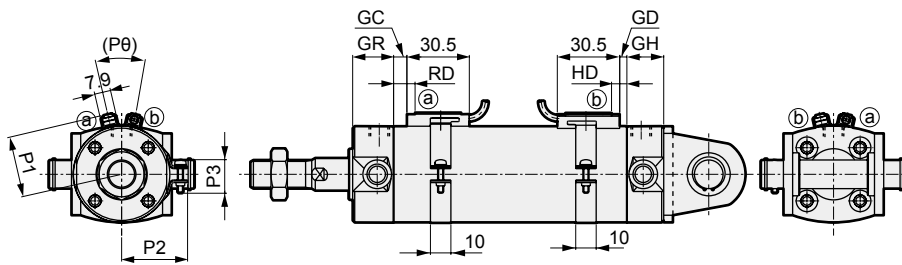
· Switch mounting method: Rail



[With bellows]

· Switch mounting: Band

In the case of T2W, T3W



Code	Eye bracket (CA) basic dimensions																							
Bore size (mm)	A	B	C	CA	CD	CE	CT	CI	CJ	CM	CN	D	DA	EE (*1)	GH	GR	J	KK	LL	MM	Q			
ø20	-	13	16	129	8	11	3.2	10.8	100	29	38.6	26	M4	Rc1/8	17	19	12	M8	69	8	13			
ø25	-	17	20	138	10	13	3.2	12.8	103	33	42.6	31	M5	Rc1/8	17	19	14	M10×1.25	69	10	15.5			
ø32	22	17	20	145.5	12	15	4.5	15.5	108.5	40	54	38	M5	Rc1/8	17	19	18	M10×1.25	71	12	19			
ø40	30	22	27	167.5	14	18	4.5	17.5	119.5	49	65	47	M6	Rc1/8	19	20	25	M14×1.5	78	16	23.5			
ø50	35	27	32	192.5	16	20	6	19	137.5	60	79.6	58	M8	Rc1/4	22	25	30	M18×1.5	90	20	29			
ø63	35	27	32	199.5	18	22	8	22	142.5	74	97.8	72	M10	Rc1/4	22	25	32	M18×1.5	90	20	36			
Code						With bellows				Switch mounting: Rail								Switch mounting: Band						
Bore size (mm)	QA	QB	SD	T	WF	b	d	s	ℓ	P	GB	HD			RD			GD			GC			
ø20	12	10	14	5	19	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	2.5	2.5	4.5	3.5	3.5	5.5	
ø25	12	10	16.5	6	20	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	1.5	1.5	3.5	4.5	4.5	6.5	
ø32	12	10	20	6	18	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	2.5	2.5	4.5	5.5	5.5	7.5	
ø40	13	12	26	8	20	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	4.5	4.5	6.5	7.5	7.5	9.5	
ø50	15	12	32	11	23	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	
ø63	15	12	38	11	23	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	
Code	Switch mounting: Band																							
Bore size (mm)	HD				RD			P1	P2	P3	P0													
ø20	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	19.6	21.5	14	(38°)														
ø25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)														
ø32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)														
ø40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)														
ø50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)														
ø63	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)														
*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.) *2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches. *3: For the dimensions of the accessories, refer to pages 252 and 253.																								

*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

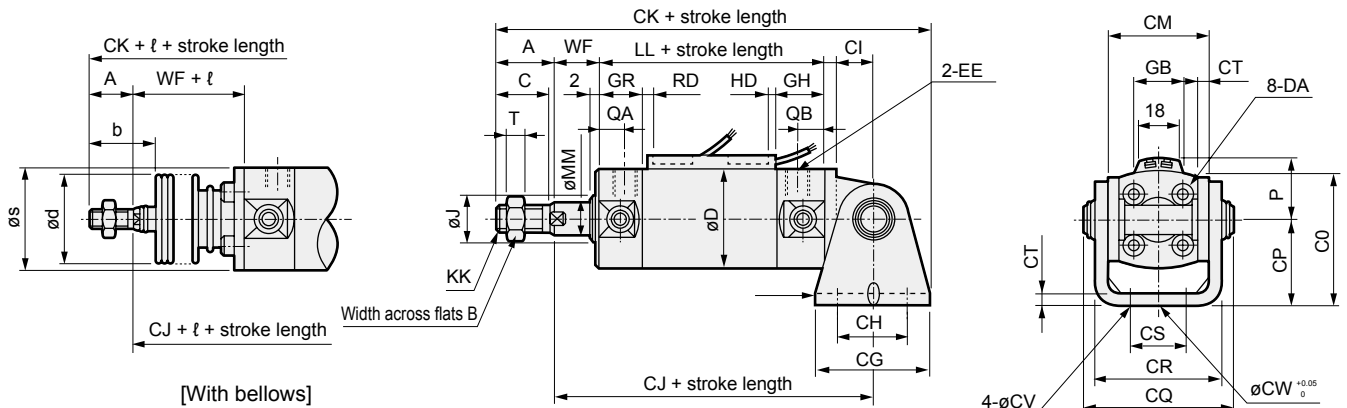
*3: For the dimensions of the accessories, refer to pages 252 and 253.

Dimensions (ø20 to ø63)

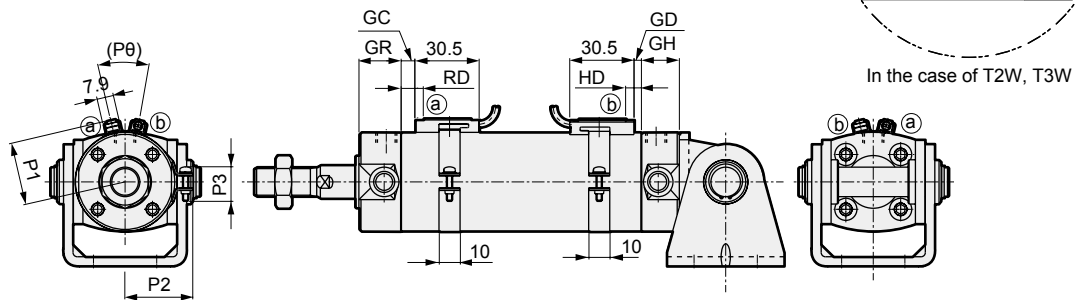


● Eye bracket (CA) with bracket (option code B2)

· Switch mounting method: Rail



· Switch mounting: Band



Code	Eye bracket (CA) with bracket (option code B2) basic dimensions																							
Bore size (mm)	A	B	C	CG	CH	CI	CJ	CK	CM	CO	CP	CQ	CR	CS	CT	CV	CW	D	DA	EE (*1)	GH	GR	J	KK
ø20	-	13	16	42	28	10.8	100	139	29	38	25	43.4	35.8	16	3.2	5.5	10	26	M4	Rc1/8	17	19	12	M8
ø25	-	17	20	42	28	12.8	103	146	33	45.5	30	48	39.8	20	3.2	5.5	10	31	M5	Rc1/8	17	19	14	M10×1.25
ø32	22	17	20	48	28	15.5	108.5	154.5	40	54	35	59.4	49.4	22	4.5	6.6	10	38	M5	Rc1/8	17	19	18	M10×1.25
ø40	30	22	27	56	30	17.5	119.5	177.5	49	63.5	40	71.4	58.4	30	4.5	6.6	10	47	M6	Rc1/8	19	20	25	M14×1.5
ø50	35	27	32	64	36	19	137.5	204.5	60	79	50	86	72.4	36	6	9	20	58	M8	Rc1/4	22	25	30	M18×1.5
ø63	35	27	32	74	46	22	142.5	214.5	74	96	60	105.4	90.4	46	8	11	20	72	M10	Rc1/4	22	25	32	M18×1.5
Code							With bellows				Switch mounting: Rail								Switch mounting: Band					
Bore size (mm)	LL	MM	QA	QB	T	WF	b	d	s	ℓ	P	GB	HD			RD			GD			GC		
													T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W
ø20	69	8	12	10	5	19	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	2.5	2.5	4.5	3.5	3.5	5.5
ø25	69	10	12	10	6	20	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	1.5	1.5	3.5	4.5	4.5	6.5
ø32	71	12	12	10	6	18	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	2.5	2.5	4.5	5.5	5.5	7.5
ø40	78	16	13	12	8	20	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	4.5	4.5	6.5	7.5	7.5	9.5
ø50	90	20	15	12	11	23	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0
ø63	90	20	15	12	11	23	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0
Code	Switch mounting: Band																							
Bore size (mm)	HD						RD				P1	P2	P3	Pθ										
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W																		
ø20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)														
ø25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)														
ø32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)														
ø40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)														
ø50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)														
ø63	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)														
*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.) *2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches. *3: For the dimensions of the accessories, refer to pages 252 and 253.																								

*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

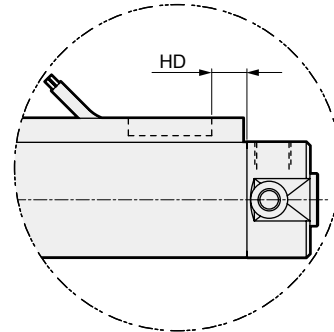
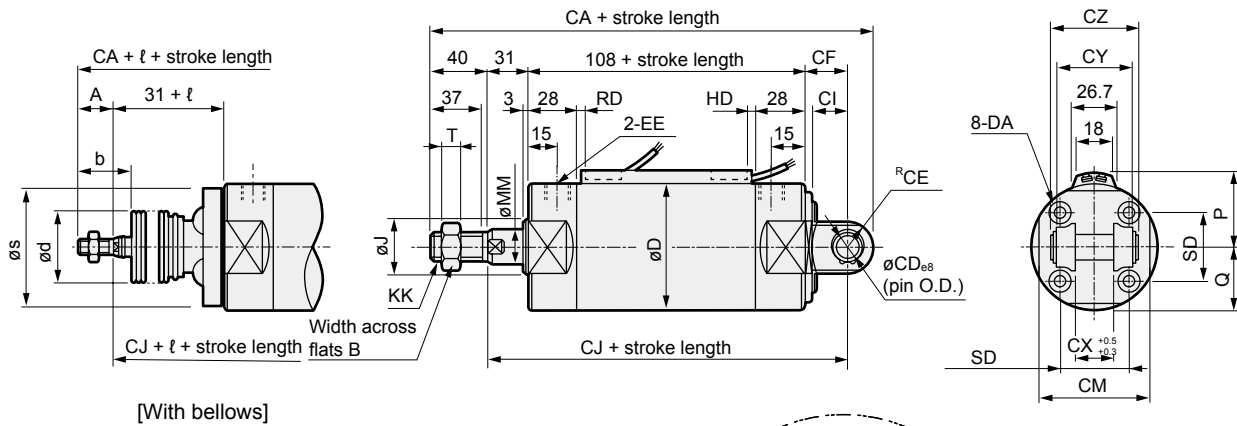
*3: For the dimensions of the accessories, refer to pages 252 and 253.



Dimensions (ø80 to ø100)

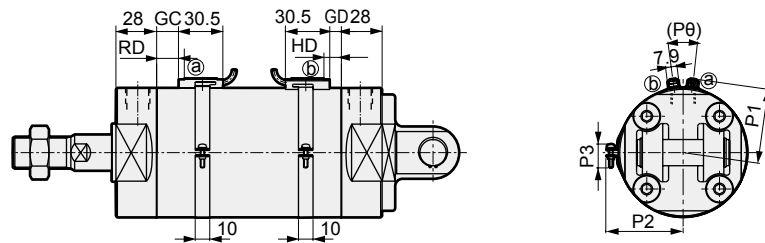
● Clevis bracket (CB)

· Switch mounting method: Rail



In the case of T2W, T3W

· Switch mounting: Band



*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239.

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: For the dimensions of the accessories, refer to pages 252 and 253.

Code	Clevis bracket (CB) basic dimensions																			
Bore size (mm)	B	CA	CD	CE	CF	CI	CJ	CM	CX	CY	CZ	D	DA	EE (*1)	J	KK	MM	Q	SD	T
ø80	32	232	18	18	35	25	174	80	28	56	64	89	M10	Rc3/8	40	M22×1.5	25	44.5	50	13
ø100	41	244	22	22	43	31	182	100	32	64	72	110	M12	Rc1/2	50	M26×1.5	30	55	60	16

Code	With bellows					Switch mounting: Rail							Switch mounting: Band					
Bore size (mm)	b	d	s	ℓ	P	HD			RD			GD			GC			
						T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	
ø80	55	50	88.7	(Stroke length/4.3) + 14.5	51	9.5	13.0	15.0	20.0	20.0	22.0	9.0	9.0	11.0	16.0	16.0	18.0	
ø100	56	60	109.7	(Stroke length/4.5) + 21	61.5	10.0	13.5	15.5	19.5	19.5	21.5	9.5	9.5	11.5	15.5	15.5	17.5	

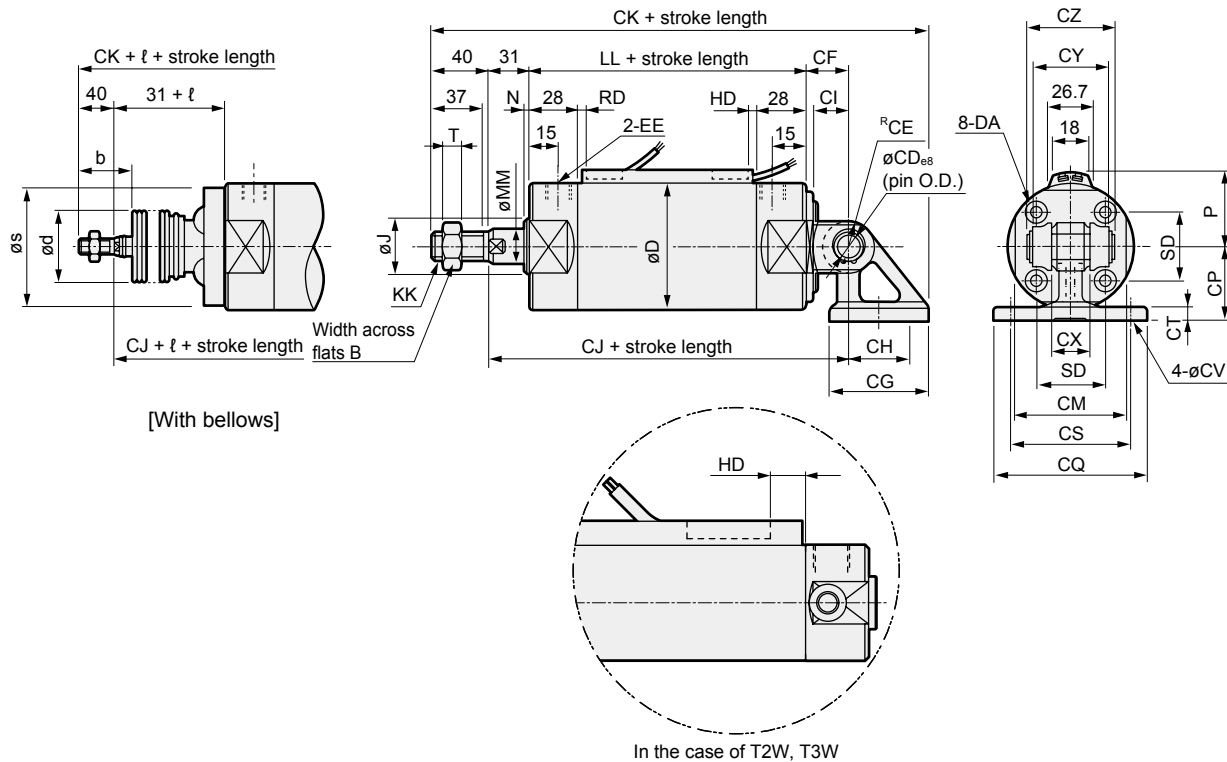
Code										
Bore size (mm)	HD			RD			P1	P2	P3	P0
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
	ø80	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16
ø100	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)

Dimensions (ø80 to ø100)

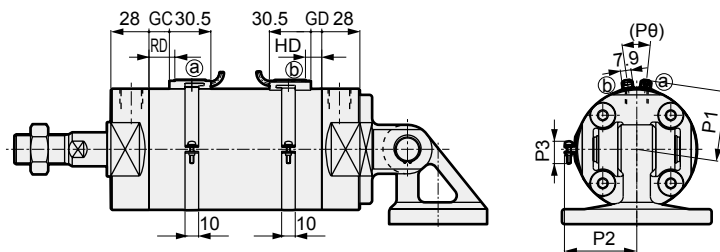


- Clevis bracket (CB) with bracket (option code B1)

· Switch mounting method: Rail



· Switch mounting: Band



*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239.

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: For the dimensions of the accessories, refer to pages 252 and 253.

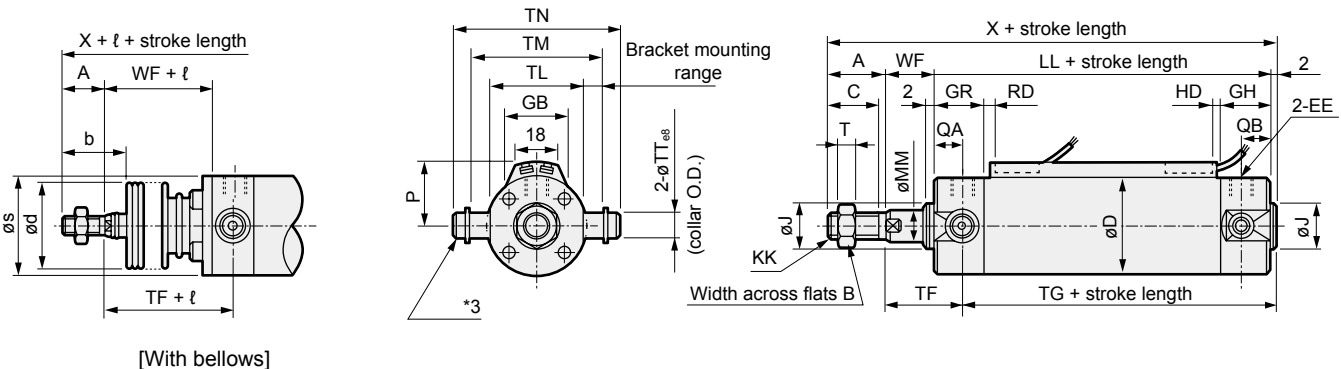
Code	Clevis bracket (CB) with bracket (option code B1) basic dimensions																						
Bore size (mm)	B	CD	CE	CF	CG	CH	CI	CJ	CK	CM	CP	CQ	CS	CT	CV	CX	CY	CZ	D	DA	EE (*1)	J	KK
ø80	32	18	18	35	72	45	25	174	272.5	80	55	110	85	11	11	28	56	64	89	M10	Rc3/8	40	M22×1.5
ø100	41	22	22	43	93	60	31	182	298.5	100	65	130	100	12	13.5	32	64	72	110	M12	Rc1/2	50	M26×1.5
Code						With bellows					Switch mounting: Rail										Switch mounting: Band		
Bore size (mm)	LL	MM	N	SD	T	b	d	s	ℓ	P	HD			RD			GD						
											T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø80	108	25	3	50	13	55	50	88.7	(Stroke length/4.3) + 14.5	51	9.5	13.0	15.0	20.0	20.0	22.0	9.0	9.0	11.0				
ø100	108	30	3	60	16	56	60	109.7	(Stroke length/4.5) + 21	61.5	10.0	13.5	15.5	19.5	19.5	21.5	9.5	9.5	11.5				
Code																							
Bore size (mm)	GC			HD			RD			P1	P2	P3	P8										
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W														
ø80	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)										
ø100	15.5	15.5	17.5	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)										

Dimensions (ø20 to ø63)

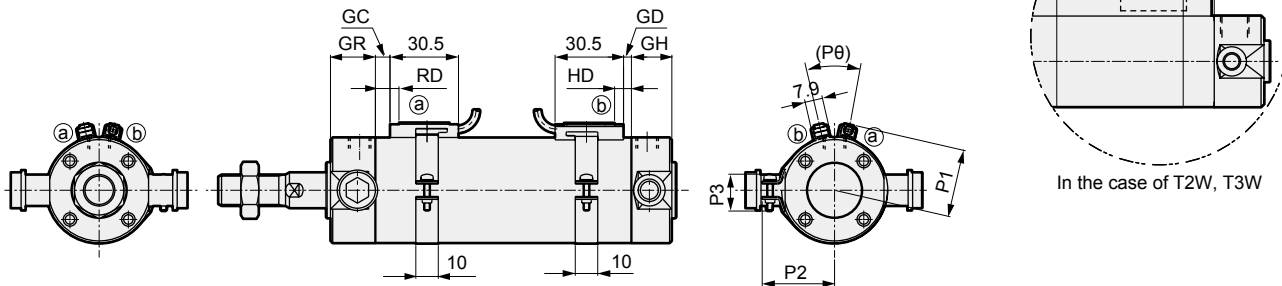


● Rod side trunnion (TA)

· Switch mounting method: Rail



· Switch mounting: Band



*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: Composed of a collar, plain washer and hexagon socket head cap screw.

*4: For the dimensions of the accessories, refer to pages 252 and 253.

Code	Rod side trunnion (TA) basic dimensions																
Bore size (mm)	A	B	C	D	EE (*1)	GH	GR	J	KK	LL	MM	QA	QB	T	TF	TG	TL
ø20	-	13	16	26	Rc1/8	17	19	12	M8	69	8	12	10	5	28	60	28
ø25	-	17	20	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10	6	29	60	33
ø32	22	17	20	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10	6	29	62	40
ø40	30	22	27	47	Rc1/8	19	20	25	M14×1.5	78	16	13	12	8	32	68	49
ø50	35	27	32	58	Rc1/4	22	25	30	M18×1.5	90	20	15	12	11	36	79	60
ø63	35	27	32	72	Rc1/4	22	25	32	M18×1.5	90	20	15	12	11	36	79	74

Code	With bellows										Switch mounting: Rail						
Bore size (mm)	TM	TN	TT	WF	X	b	d	s	ℓ	P	GB	HD			RD		
												T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø20	39	47.6	8	19	106	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
ø25	43	53	10	20	111	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø32	54.5	67.7	12	18	113	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5
ø40	65.9	81.1	14	20	130	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø50	80	98.6	16	23	150	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø63	98	119.2	18	23	150	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0

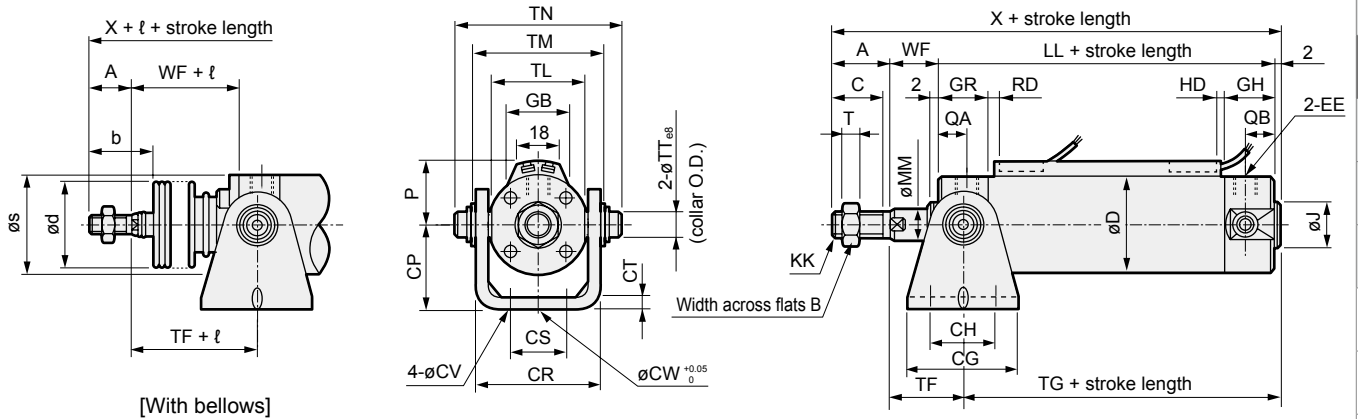
Code	Switch mounting: Band													
Bore size (mm)	GD			GC			HD			RD			P1	P2
	T0/T5	T2	T3	T2W T3W	T0/T5	T2	T3	T2W T3W	T0/T5	T2	T3	T2W T3W		
ø20	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5
ø25	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9
ø32	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6
ø40	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1
ø50	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4
ø63	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4

Dimensions (ø20 to ø63)

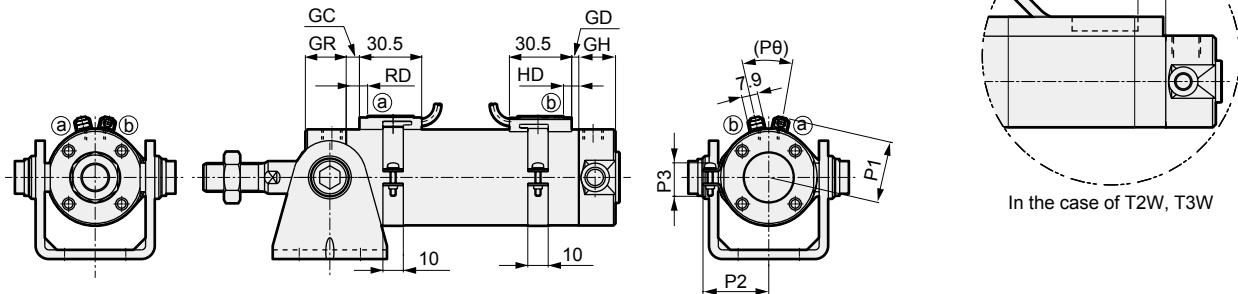


● Rod side trunnion (TA) with bracket (option code B2)

· Switch mounting method: Rail



· Switch mounting: Band



*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: For the dimensions of the accessories, refer to pages 252 and 253.

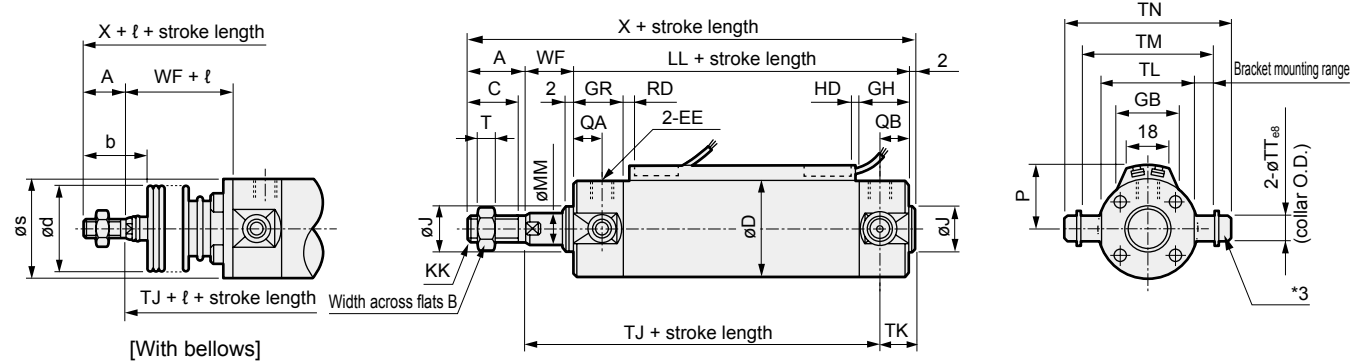
Code	Rod side trunnion (TA) with bracket (option code B2) basic dimensions																				
Bore size (mm)	A	B	C	CG	CH	CP	CR	CS	CT	CV	CW	D	EE (*1)	GH	GR	J	KK	LL	MM	QA	QB
ø20	-	13	16	42	28	25	35.8	16	3.2	5.5	10	26	Rc1/8	17	19	12	M8	69	8	12	10
ø25	-	17	20	42	28	30	39.8	20	3.2	5.5	10	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10
ø32	22	17	20	48	28	35	49.4	22	4.5	6.6	10	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10
ø40	30	22	27	56	30	40	58.4	30	4.5	6.6	10	47	Rc1/8	19	20	25	M14×1.5	78	16	13	12
ø50	35	27	32	64	36	50	72.4	36	6	9	20	58	Rc1/4	22	25	30	M18×1.5	90	20	15	12
ø63	35	27	32	74	46	60	90.4	46	8	11	20	72	Rc1/4	22	25	32	M18×1.5	90	20	15	12
Code											With bellows				Switch mounting: Rail						
Bore size (mm)	T	TF	TG	TL	TM	TN	TT	WF	X	b	d	s	ℓ	P	GB	HD			RD		
																T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø20	5	28	60	28	39	47.6	8	19	106	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
ø25	6	29	60	33	43	53	10	20	111	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø32	6	29	62	40	54.5	67.7	12	18	113	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5
ø40	8	32	68	49	65.9	81.1	14	20	130	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø50	11	36	79	60	80	98.6	16	23	150	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø63	11	36	79	74	98	119.2	18	23	150	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0
Code	Switch mounting: Band																				
Bore size (mm)	GD			GC			HD			RD			P1	P2	P3	Pθ					
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W									
ø20	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)					
ø25	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)					
ø32	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)					
ø40	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)					
ø50	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)					
ø63	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)					

Dimensions (ø20 to ø63)

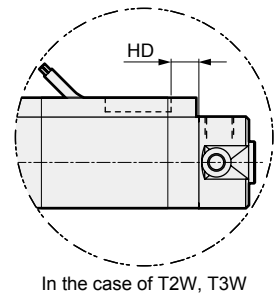
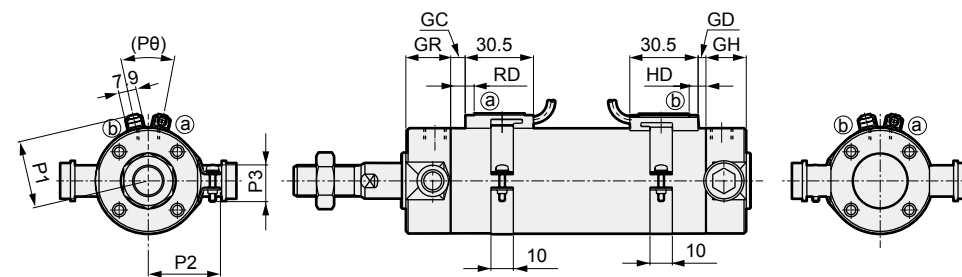


● Head side trunnion (TB)

· Switch mounting method: Rail



· Switch mounting: Band



In the case of T2W, T3W

*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: Composed of a collar, plain washer and hexagon socket head cap screw.

*4: For the dimensions of the accessories, refer to pages 252 and 253.

Code	Head side trunnion (TB) basic dimensions																					
Bore size (mm)	A	B	C	D	EE (*1)	GH	GR	J	KK	LL	MM	QA	QB	T	TJ	TK	TL	TM	TN	TT	WF	X
ø20	-	13	16	26	Rc1/8	17	19	12	M8	69	8	12	10	5	75	13	28	39	47.6	8	19	106
ø25	-	17	20	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10	6	76	13	33	43	53	10	20	111
ø32	22	17	20	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10	6	79	12	40	54.5	67.7	12	18	113
ø40	30	22	27	47	Rc1/8	19	20	25	M14×1.5	78	16	13	12	8	88	12	49	65.9	81.1	14	20	130
ø50	35	27	32	58	Rc1/4	22	25	30	M18×1.5	90	20	15	12	11	101	14	60	80	98.6	16	23	150
ø63	35	27	32	72	Rc1/4	22	25	32	M18×1.5	90	20	15	12	11	101	14	74	98	119.2	18	23	150

Code	With bellows							Switch mounting: Rail							Switch mounting: Band					
Bore size (mm)	b	d	s	ℓ	P	GB	HD			RD			GD			GC				
							T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W		
ø20	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	2.5	2.5	4.5	3.5	3.5	5.5		
ø25	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	1.5	1.5	3.5	4.5	4.5	6.5		
ø32	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	2.5	2.5	4.5	5.5	5.5	7.5		
ø40	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	4.5	4.5	6.5	7.5	7.5	9.5		
ø50	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0		
ø63	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0		

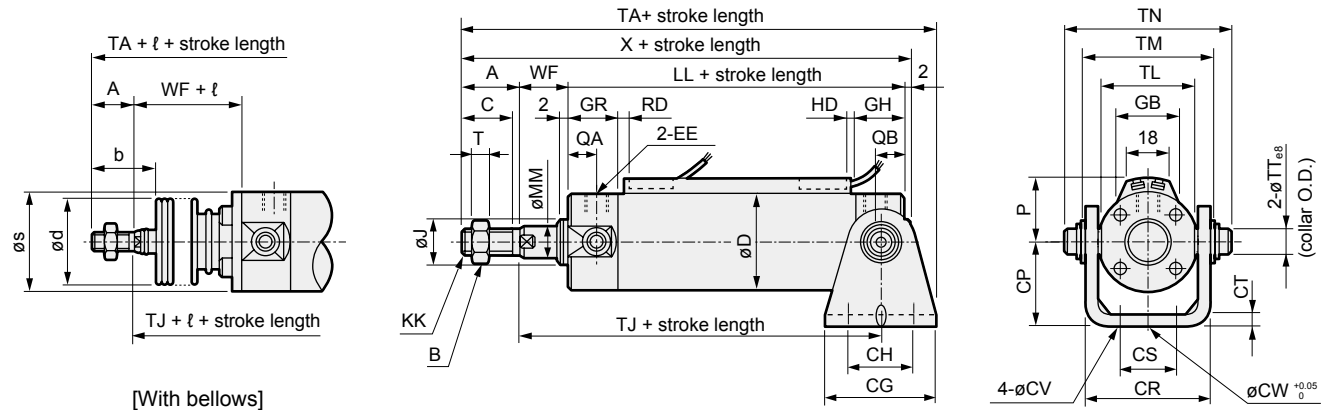
Code										
Bore size (mm)	HD			RD			P1	P2	P3	P0
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
ø40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
ø50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
ø63	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)

Dimensions (ø20 to ø63)

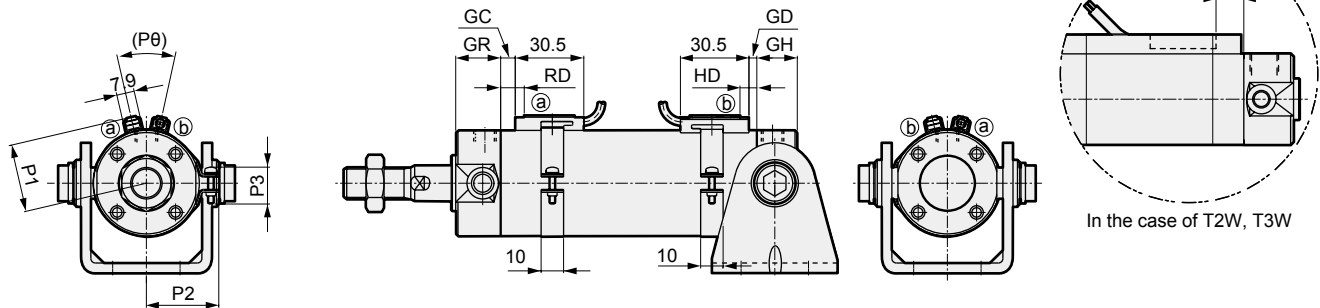


● Head side trunnion (TB) with bracket (option code B2)

· Switch mounting method: Rail



· Switch mounting: Band



*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to pages 238 and 239. (Those of ø20/ø25 are different from the basic.)

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*3: For the dimensions of the accessories, refer to pages 252 and 253.

Code	Head side trunnion (TB) with bracket (option code B2) basic dimensions																				
Bore size (mm)	A	B	C	CG	CH	CP	CR	CS	CT	CV	CW	D	EE (*1)	GH	GR	J	KK	LL	MM	QA	QB
ø20	-	13	16	42	28	25	35.4	16	3.2	5.5	10	26	Rc1/8	17	19	12	M8	69	8	12	10
ø25	-	17	20	42	28	30	39.4	20	3.2	5.5	10	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10
ø32	22	17	20	48	28	35	49	22	4.5	6.6	10	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10
ø40	30	22	27	56	30	40	58	30	4.5	6.6	10	47	Rc1/8	19	20	25	M14×1.5	78	16	13	12
ø50	35	27	32	64	36	50	72	36	6	9	20	58	Rc1/4	22	25	30	M18×1.5	90	20	15	12
ø63	35	27	32	74	46	60	90	46	8	11	20	72	Rc1/4	22	25	32	M18×1.5	90	20	15	12

Code											With bellows				Switch mounting: Rail							
Bore size (mm)	T	TA	TJ	TL	TM	TN	TT	WF	X	b	d	s	ℓ	P	GB	HD			RD			
																T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	
ø20	5	114	75	28	39	47.6	8	19	106	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	
ø25	6	119	76	33	43	53	10	20	111	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	
ø32	6	125	79	40	54.5	67.7	12	18	113	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	
ø40	8	146	88	49	65.9	81.1	14	20	130	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5	
ø50	11	168	101	60	80	98.6	16	23	150	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0	
ø63	11	173	101	74	98	119.2	18	23	150	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0	

Code	Switch mounting: Band															
Bore size (mm)	GD			GC			HD			RD			P1	P2	P3	Pø
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø20	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø25	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø32	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
ø40	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
ø50	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
ø63	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)



Accessory dimensions

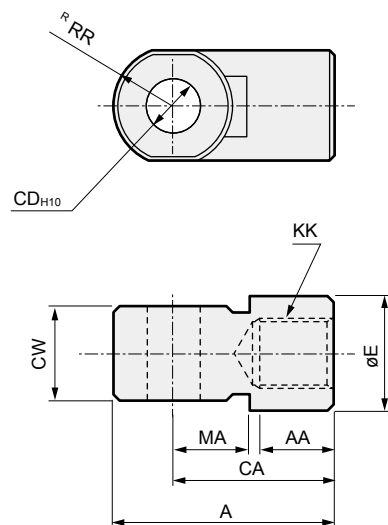
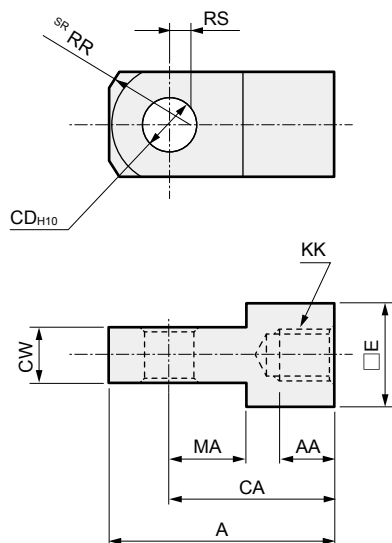
● Rod eye

● SCM-I- ϕ 20 to ϕ 32

Material: Steel
Chromate
treatment

● SCM-I- ϕ 40 to ϕ 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

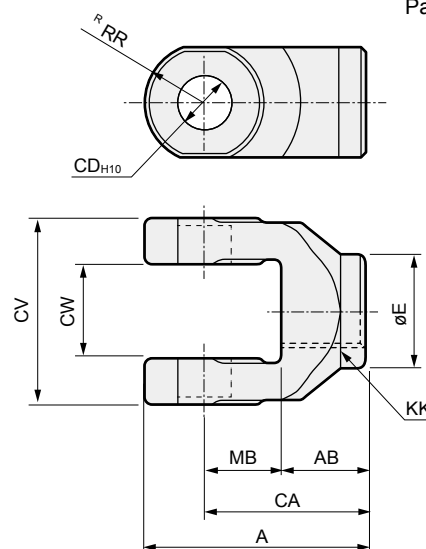
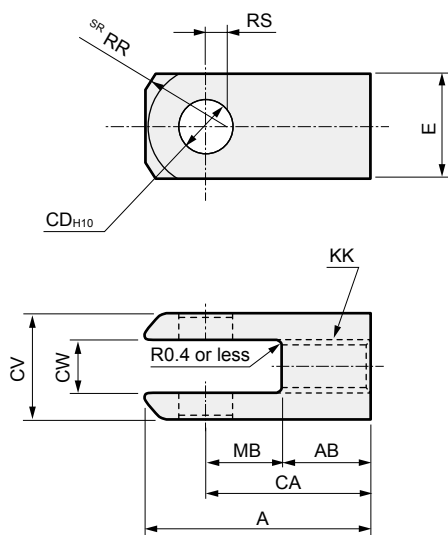
● Rod clevis

● SCM-Y- ϕ 20 to ϕ 32

Material: Steel
Chromate
treatment

● SCM-Y- ϕ 40 to ϕ 100

Material: Cast iron
Painting



Model No.	Applicable bore size (mm)	A	AB	CA	CD	CV	CW	E	KK	MB	RR	RS	Applicable pin No.	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

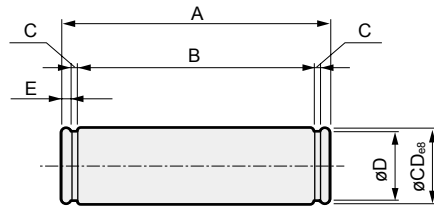
Note: A pin and a snap ring are included.

Accessory dimensions

● Pin for clevis



Material: Steel
Chromate
treatment



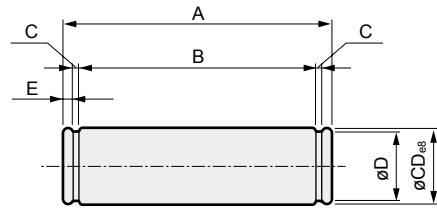
Model No.	Bore size (mm)	A	B	C	CD	D	E	Shaft snap ring	Weight (g)
SCM-P1-20	20	43.4	38.6	0.9	8	7.6	1.5	C for shaft 8	17
SCM-P1-25	25	48	42.6	1.15	10	9.6	1.6	C for shaft 10	30
SCM-P1-32	32	59.4	54	1.15	12	11.5	1.6	C for shaft 12	52
SCM-P1-40	40	71.4	65	1.15	14	13.4	2.1	C for shaft 14	85
SCM-P1-50	50	86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

*1: A pin and a snap ring are attached to the eye bracket and clevis bracket.
*2: For bore sizes $\phi 80$ and $\phi 100$, the dimension is the same as the pin for rod eye.

● Rod eye pin



Material: Steel
Chromate
treatment



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

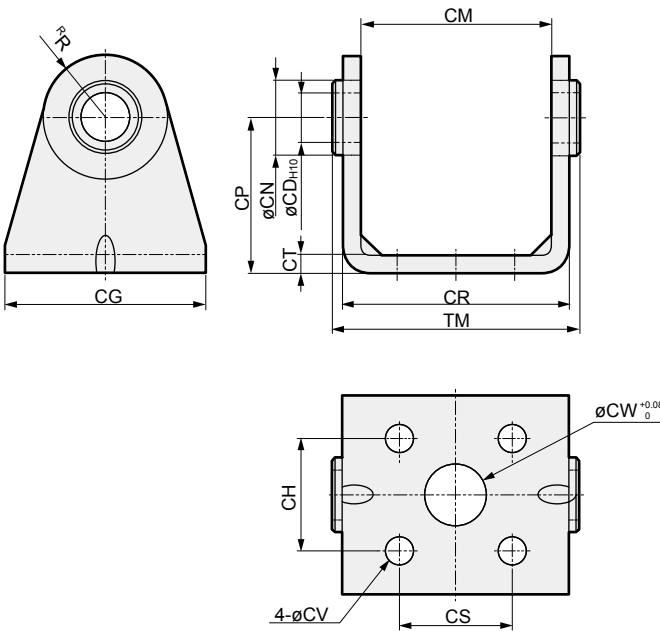
Note: A pin and a snap ring are included with the rod clevis.

● No.2 bracket



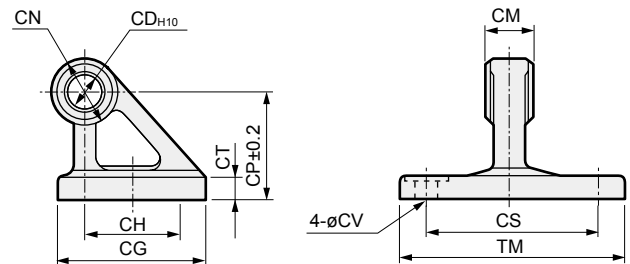
● Clevis bracket (B2)
SCM-B2- $\phi 20$ to $\phi 63$

Material: Steel
Chromate
treatment



● Eye 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	CV	CW	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	11	-	-	110	1000
SCM-B1-100	100	22	93	60	32 ^{-0.1} _{-0.3}	50	65	-	100	12	13.5	-	-	130	1735

SCP*3
CMK2
CMA2



Round shaped cylinder
Single acting/push

SCM-X Series

● Bore size: $\phi 20/\phi 25/\phi 32/\phi 40$

JIS symbol



SCM

Specifications

SCG

SCA2

SCS2

CKV2

CAV2/
COVPIN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

Item	SCM-X			
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation	Single acting/push			
Working fluid	Compressed air			
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)			
Min. working pressure MPa	0.2 (≈ 29 psi, 2 bar)			
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)			
Ambient temperature $^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing)			
Port size	Rc1/8			
Stroke tolerance mm	+2.0			
	0			
Working piston speed mm/s	50 to 1000 (Operate within the allowable absorbed energy.)			
Cushion	Rubber cushion			
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)			
Allowable absorbed energy J	0.1	0.2	0.5	0.9

Note: Do not leave the single acting cylinder pressurized for a long time. If it is left pressurized for long periods, the piston rod may not return due to spring load when the pressure is released.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75 100, 125 150, 200	200	5
$\phi 25$			
$\phi 32$			
$\phi 40$			

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

Spring load

(Unit: N)

Bore size (mm)	At stroke length of 0 mm	At full stroke length operation
$\phi 20$	11.8	38
$\phi 25$	12.5	40.2
$\phi 32$	24.3	54.9
$\phi 40$	28.4	100

STK

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

● Switch mounting method: Rail

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\phi 20$	10				25				50	70	70	55	55	70	70	55	75	110	110	90
$\phi 25$	10				25				50	70	70	55	55	70	70	55	75	110	110	90
$\phi 32$	10				25				50	70	70	55	55	70	70	55	75	110	110	90
$\phi 40$	10				25				50	70	70	55	55	70	70	55	75	110	110	90

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33	1 m:18	1 m:33	1 m:18	1 m:18		1 m:33	1 m:18	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272	
	3 m:87	3 m:49	3 m:87	3 m:49	3 m:49		3 m:87	3 m:49								
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80		5 m:142	5 m:80								

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

● Stroke length: 5 to 50

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
	Basic	Axial foot	Flange	Clevis	Trunnion				
Ø20	0.15	0.26	0.18	0.20	0.16	Refer to the weight in the switch specifications.	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 length: 51 to 100

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
	Basic	Axial foot	Flange	Clevis	Trunnion				
Ø20	0.19	0.30	0.22	0.24	0.20	Refer to the weight in the switch specifications.	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 length: 101 to 150

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
	Basic	Axial foot	Flange	Clevis	Trunnion				
Ø20	0.24	0.35	0.27	0.29	0.25	Refer to the weight in the switch specifications.	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 length: 151 to 200

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
	Basic	Axial foot	Flange	Clevis	Trunnion				
Ø20	0.29	0.40	0.32	0.34	0.30	Refer to the weight in the switch specifications.	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 when S = 0 mm 0.98 kg
 Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ kg
 Weight of 2 switches 0.036 kg
 Product weight 0.98 kg + 0.32 kg + 0.036 kg = 1.336 kg

How to order

Without switch (built-in magnet for switch)

SCM-X - LB - 40 - D - 100 - J - I

With switch (built-in magnet for switch)

SCM-X - LB - 40 - D - 100 - T0H - D - J - I

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
*3
*4

G Switch quantity
*5

H Switch mounting

I Option
*5, *7

J Accessory
*8

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.

*2 : Refer to page 254 for the number of installed switches and the min. stroke length.

*3 : Switches other than F Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.

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

*5 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.

*6 : Refer to Ending Page 85 for custom specifications of rod end form.

*7 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

*8 : "I" and "Y" cannot be selected together.

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

[Example of model No.]

SCM-X-LB-40D-100-T0H-D-JI

Model: Round shaped cylinder, single acting/push

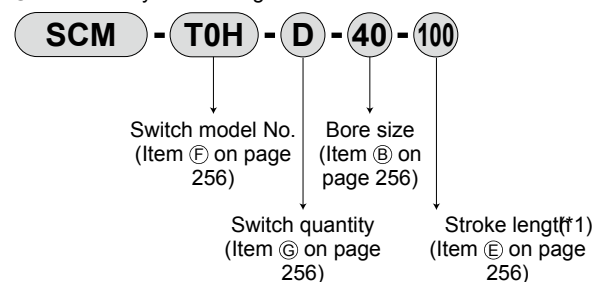
- A Mounting : Axial foot
- B Bore size : ø40 mm
- C Port thread : Rc thread
- D Cushion : With two-sided rubber cushion
- E Stroke length : 100 mm
- F Switch model No. : Proximity T0H switch, lead wire 1 m
- G Switch quantity : 2
- H Switch mounting : Rail
- I Option : Bellows material/max. ambient temperature 100°C
- J Accessory : Rod eye

Code		Description					
A Mounting							
00	Basic						
LB	Axial foot						
FA	Rod side flange						
FB	Head side flange						
CA	Eye bracket						
TA	Rod side trunnion						
TB	Head side trunnion						
B Bore size (mm)							
20	ø20						
25	ø25						
32	ø32						
40	ø40						
C Port thread							
Blank	Rc thread						
N	NPT thread (made-to-order product)						
G	G thread (made-to-order product)						
D Cushion							
D	With two-sided rubber cushion						
E Stroke length (mm)							
Bore size		Stroke length *2		Custom stroke length			
ø20 to ø40		5 to 200		In 1 mm increments			
F Switch model No.							
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire	
			AC	DC			
T0H*	T0V*	Reed	●	●	1-color display	2-wire	
T5H*	T5V*		●	●	Without indicator lamp		
T8H*	T8V*		●	●	1-color display		
T1H*	T1V*	Proximity	●		1-color display	2-wire	
T2H*	T2V*			●		1-color display	3-wire
T3H*	T3V*			●			
T3PH*	T3PV*				1-color display	2-wire	
T2WH*	T2WV*			●	2-color display		
T2YH*	T2YV*			●			
T3WH*	T3WY*			●		3-wire	
T3YH*	T3YV*			●			
T2YD*	-			●	2-color display AC magnetic field	2-wire	
T2YDT*	-			●			
T2JH*	T2JV*			●	1-color display off-delay	2-wire	
* Lead wire length							
Blank	1 m (standard)						
3	3 m (option)						
5	5 m (option)						
G Switch quantity							
R	1 on rod side						
H	1 on head side						
D	2						
T	3						
4	4 (when there are more than 4 switches, indicate switch quantity.)						
H Switch mounting							
Blank	Rail method						
Z	Band method						
I Option							
			Max. ambient temperature	Instantaneous max. temp.			
J	Bellows material		100°C	200°C			
L	Bellows material		250°C	400°C			
Q	Switch rail included at shipment						
M	Piston rod material (stainless steel)						
P6	Copper and PTFE free						
J Accessory							
I	Rod eye						
Y	Rod clevis (pin and snap ring included)						
B2	Clevis bracket						

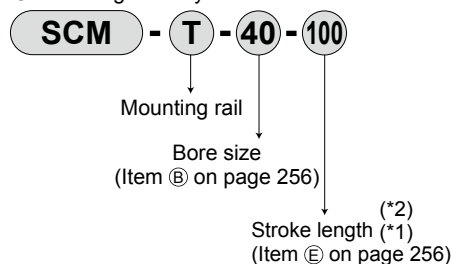
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



● Mounting rail only



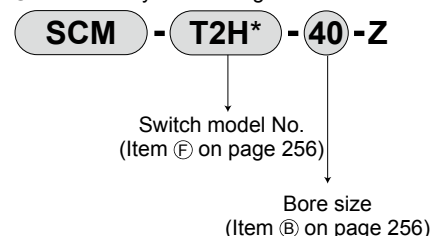
*1: Indicate X if the stroke length exceeds 300 mm.

If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

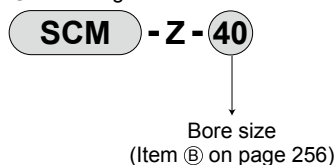
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

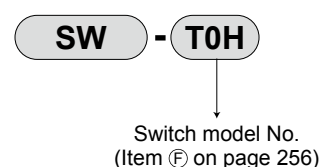
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



How to order mounting bracket

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
Eye bracket (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: All mounting brackets are supplied with mounting bolts.

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

Theoretical thrust table

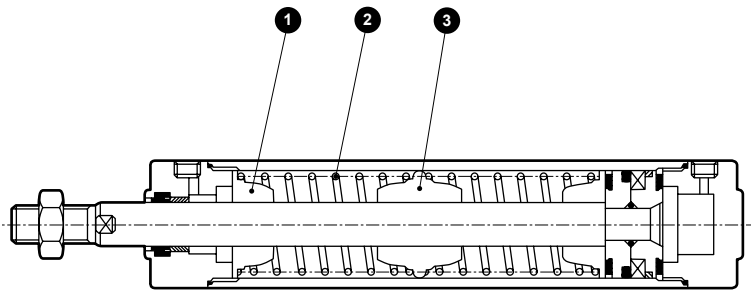
(Unit: N)

Bore size (mm)	Working 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.

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

Internal structure and parts list



Repair parts list

Numbering of repair parts follows that in the internal structure of the SCM Series (page 236).

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-X-20DK	3 6 8 10 13
ø25	SCM-X-25DK	
ø32	SCM-X-32DK	
ø40	SCM-X-40DK	

No.	Part name	Material	Remarks
1	Spring holder A	Aluminum alloy	
2	Coil spring	Piano wire	Electrodeposition
3	Spring holder B	Aluminum alloy	

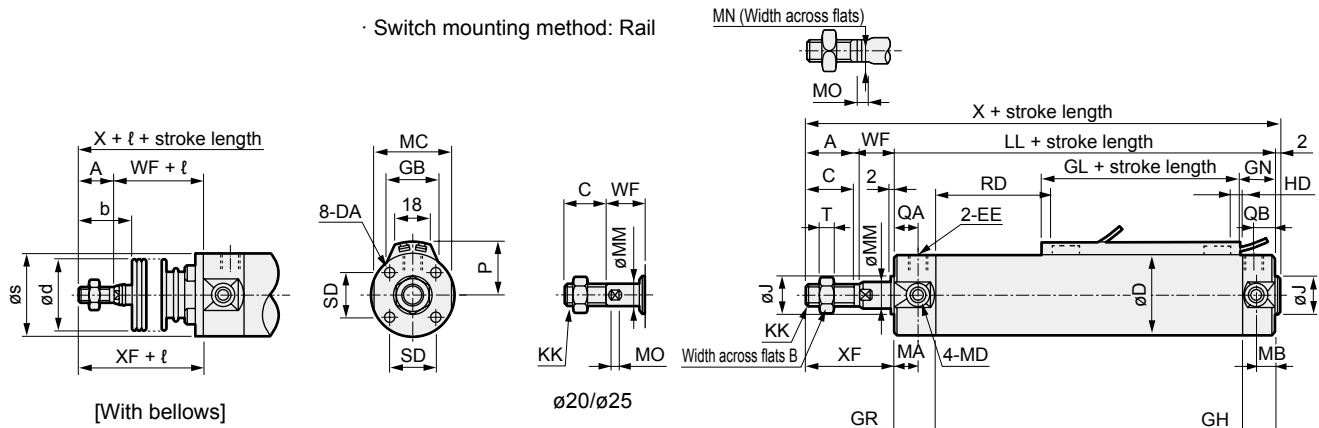
Parts other than the above are the same as the double acting.

Dimensions

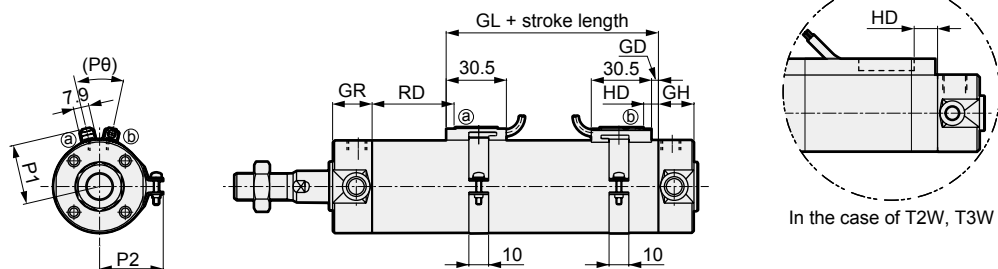


● Single acting push

· Switch mounting method: Rail



· Switch mounting: Band



*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions										LL																		
Bore size (mm)	A	B	C	D	DA	EE	GR	GH	J	KK	5 to 50 ST	51 to 100	101 to 150	151 to 200	MA	MB	MC	MD	MM	MN	MO	QA	QB	SD	T	WF			
ø20	-	13	16	26	M4 depth 6.5	Rc1/8	19	17	12	M8	96	123	150	177	11	11	24	M5	8	6	4	12	10	14	5	19			
ø25	-	17	20	31	M5 depth 6.5	Rc1/8	19	17	14	M10×1.25	99	129	159	189	11	11	29	M6	10	8	5	12	10	16.5	6	20			
ø32	22	17	20	38	M5 depth 7.5	Rc1/8	19	17	18	M10×1.25	101	131	161	191	11	10	36	M8	12	10	5.5	12	10	20	6	18			
ø40	30	22	27	47	M6 depth 12	Rc1/8	20	19	25	M14×1.5	108	138	168	198	12	10	44	M10	16	14	6	13	12	26	8	20			
Code	X					With bellows					Switch mounting: Rail																		
Bore size (mm)	5 to 50 ST	51 to 100	101 to 150	151 to 200	XF	b	d	s	ℓ	P	GB	GN	GL	HD			RD												
														T0/ T5	T2 T3	T2W T3W	T0/T5				T2, T3								
																	5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200	5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200					
ø20	133	160	187	214	35	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	18.5	30	4	7	9.5	33.5	60.5	87.5	114.5	34.5	61.5	88.5	115.5					
ø25	141	171	201	231	40	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	18.5	30	3	6	8.5	37.5	67.5	97.5	127.5	38.5	68.5	98.5	128.5					
ø32	143	173	203	233	40	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	18.5	32	4	7	9.5	38.5	68.5	98.5	128.5	39.5	69.5	99.5	129.5					
ø40	160	190	220	250	50	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	20.5	36	6	9	11.5	40.5	70.5	100.5	130.5	41.5	71.5	101.5	131.5					
Code						Switch mounting: Band																							
Bore size (mm)						GL		HD			RD														GD	P1	P2	P3	Pø
	T2W, T3W				T0, T5	T2, T3 T2W, T3W	T0/ T5	T2 T3	T2W T3W	T0/T5				T2, T3				T2W, T3W											
	5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200						5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200	5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200	5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200								
ø20	35.5	62.5	89.5	116.5	30.5	29.5	5.5	6.5	9.5	33.5	60.5	87.5	14.5	34.5	61.5	88.5	115.5	35.5	62.5	89.5	116.5	1.5	19.6	21.5	14	(38°)			
ø25	39.5	69.5	99.5	129.5	29.5	28.5	4.5	5.5	8.5	37.5	67.5	97.5	127.5	38.5	68.5	98.5	128.5	39.5	69.5	99.5	129.5	0.5	22.1	23.9	14	(34°)			
ø32	40.5	70.5	100.5	130.5	30.5	29.5	5.5	6.5	9.5	38.5	68.5	98.5	128.5	39.5	69.5	99.5	129.5	40.5	70.5	100.5	130.5	1.5	25.6	27.6	16	(30°)			
ø40	42.5	72.5	102.5	132.5	32.5	31.5	7.5	8.5	11.5	40.5	70.5	100.5	130.5	41.5	71.5	101.5	131.5	42.5	72.5	102.5	132.5	3.5	30.2	32.1	16	(26°)			

* Installation dimensions other than X and LL of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

SCP*3
CMK2
CMA2



Round shaped cylinder
Single acting/pull

SCM-Y Series

● Bore size: ø20/ø25/ø32/ø40

JIS symbol



SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2

Specifications

Item	SCM-Y			
Bore size mm	ø20	ø25	ø32	ø40
Actuation	Single acting/pull			
Working fluid	Compressed air			
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)			
Min. working pressure MPa	0.2 (≈29 psi, 2 bar)			
Proof pressure MPa	1.6 (≈230 psi, 16 bar)			
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)			
Port size	Rc1/8			
Stroke tolerance mm	+2.0			
	0			
Working piston speed mm/s	50 to 1000 (Operate within the allowable absorbed energy.)			
Cushion	Rubber cushion			
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)			
Allowable absorbed energy J	0.1	0.2	0.5	0.9

Note: Do not leave the single acting cylinder pressurized for a long time. If it is left pressurized for long periods, the piston rod may not return due to spring load when the pressure is released.

MVC
SMG
MSD/
MSDG
FC*

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25, 50, 75 100, 125 150, 200	200	5
ø25			
ø32			
ø40			

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

Spring load

(Unit: N)

Bore size (mm)	When stroke length = 0	At full stroke length operation
ø20	11.8	38
ø25	12.5	40.2
ø32	24.3	54.9
ø40	28.4	100

STK
SRL3
SRG3
SRM3
SRT3
MRL2

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

● Switch mounting method: Rail

Switch quantity	1				2				3				4				5			
	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø40	10				25				50	70	70	55	55	70	70	55	75	110	110	90

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

FK
Spd
Contr
Ending

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V		T8H/T8V		T2YD (*4) T2YDT		
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay	For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller		
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	≤50 mA	≤20 mA	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Without indicator lamp	LED (Lit when ON)				Red/green LED (Lit when ON)	
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33	1 m:18	1 m:33	1 m:18	1 m:18		1 m:33	1 m:18	1 m:18 3 m:49 5 m:80				1 m:33		1 m:61	
	3 m:87	3 m:49	3 m:87	3 m:49	3 m:49		3 m:87	3 m:49					3 m:87		3 m:166	
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80		5 m:142	5 m:80					5 m:142		5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

● Stroke length 5 to 50

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
Bore size	Basic	Axial foot	Flange	Clevis	Trunnion				
ø20	0.14	0.25	0.17	0.19	0.15	Refer to the weight in the switch specifications.	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 length 51 to 100

(Unit: kg)

Product weight when stroke length (S) = 0 mm						Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch	
Item/mounting	Bore size	Basic	Axial foot	Flange	Clevis					Trunnion
	ø20	0.17	0.28	0.20	0.22	0.18	Refer to the weight in the switch specifications.	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 length 101 to 150

(Unit: kg)

Stroke length 101 to 150						Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
Item/mounting	Product weight when stroke length (S) = 0 mm								
Bore size	Basic	Axial foot	Flange	Clevis	Trunnion				
ø20	0.21	0.32	0.24	0.26	0.22	Refer to the weight in the switch specifications.	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 length 151 to 200

(Unit: kg)

Stroke length 151 to 200						(mm)			
Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
Bore size	Basic	Axial foot	Flange	Clevis	Trunnion				
ø20	0.24	0.35	0.27	0.29	0.25	Refer to the weight in the switch specifications.	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 when S = 0 mm	0.89 kg
Additional weight when S = 100 mm	$0.032 \times \frac{100}{10} = 0.32 \text{ kg}$
Weight of 2 switches	0.036 kg
Product weight	$0.89 \text{ kg} + 0.32 \text{ kg} + 0.036 \text{ kg} = 1.246 \text{ kg}$

How to order

Without switch (built-in magnet for switch)

SCM-Y - LB - 40 - D - 100 - J - I

With switch (built-in magnet for switch)

SCM-Y - LB - 40 - D - 100 - T0H - D - J - I

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
*3
*4

Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.

*2 : Refer to page 260 for the number of installed switches and the min. stroke length.

*3 : Switches other than F Switch model No. are also available. (Made to order)

Refer to Ending Page 1 for details.

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

*5 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.

*6 : Refer to Ending Page 85 for custom specifications of rod end form.

*7 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

*8 : "I" and "Y" cannot be selected together.

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

[Example of model No.]

SCM-Y-LB-40D-100-T0H-D-JI

Model: Round shaped cylinder, single acting/pull

- A Mounting : Axial foot
- B Bore size : ø40 mm
- C Port thread : Rc thread
- D Cushion : With two-sided rubber cushion
- E Stroke length : 100 mm
- F Switch model No. : Reed T0H switch, lead wire 1 m
- G Switch quantity : 2
- H Switch mounting : Rail
- I Option : Bellows material/max. ambient temperature 100°C
- J Accessory : Rod eye

How to order mounting bracket

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
Eye bracket (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: All mounting brackets are supplied with mounting bolts.

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

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
TA	Rod side trunnion
TB	Head side trunnion

B Bore size (mm)	
20	ø20
25	ø25
32	ø32
40	ø40

C Port thread	
Blank	Rc thread
N	NPT thread (made-to-order product)
G	G thread (made-to-order product)

D Cushion	
D	With two-sided rubber cushion

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø20 to ø40	5 to 200	In 1 mm increments

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

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

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

H Switch mounting	
Blank	Rail method
Z	Band method

I Option			
		Max. ambient temp.	Instantaneous max. temp.
J	Bellows material	100°C	200°C
L	Bellows material	250°C	400°C
Q	Switch rail included at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

J Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring included)
B2	Clevis bracket

G Switch quantity

H Switch mounting

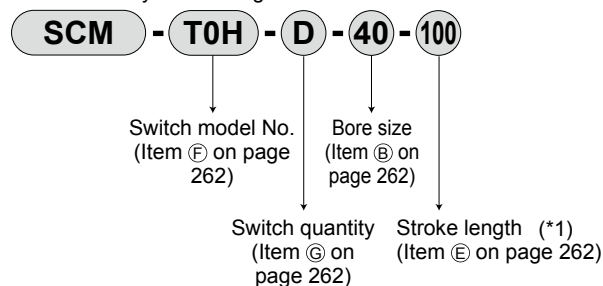
I Option
*5, *7

J Accessory
*8

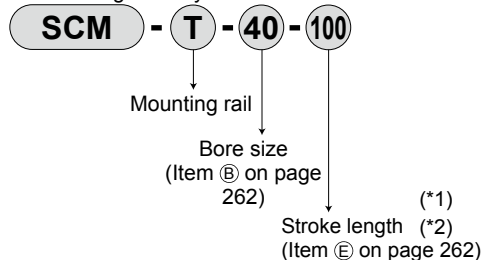
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



● Mounting rail only

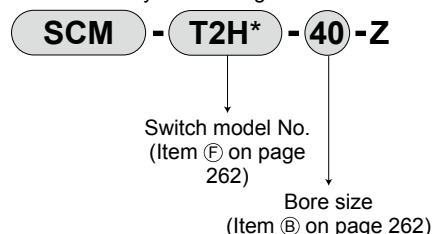


*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

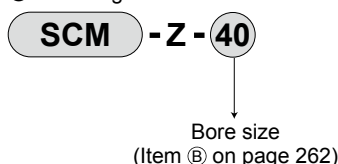
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

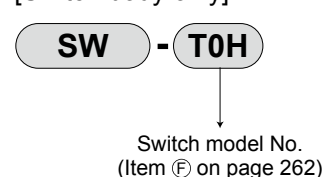
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



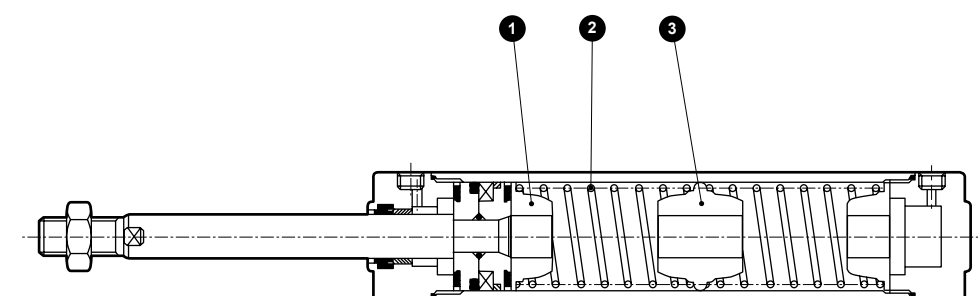
Theoretical thrust table

(Unit: N)

Bore size (mm)	Working 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 indicates thrust excluding the spring force at the pull end.

Internal structure and parts list



Repair parts list

Numbering of repair parts follows that in the internal structure of the SCM Series (page 236).

No.	Part name	Material	Remarks
1	Spring holder A	Aluminum alloy	
2	Coil spring	Piano wire	Electrodeposition
3	Spring holder B	Aluminum alloy	

Parts other than the above are the same as the double acting.

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-Y-20DK	3 6 8 10 13
ø25	SCM-Y-25DK	
ø32	SCM-Y-32DK	
ø40	SCM-Y-40DK	

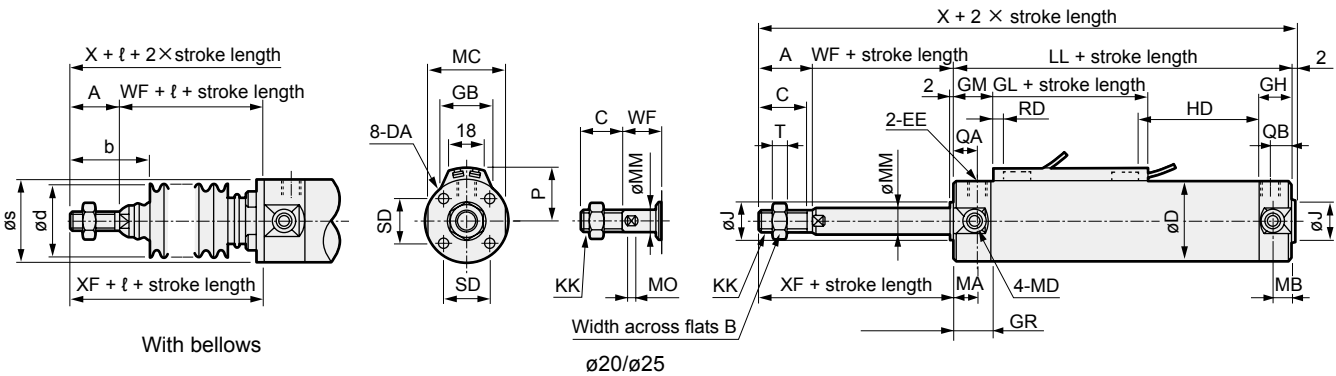
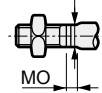
Dimensions



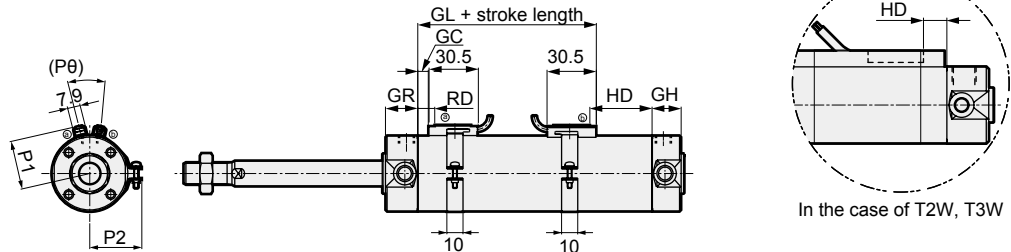
● Single acting pull (00)

· Switch mounting method: Rail

MN (Width across flats)



· Switch mounting: Band



*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions											LL											
Bore size (mm)	A	B	C	D	DA	EE	GR	GH	J	KK	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	MA	MB	MC	MD	MM	MN			
ø20	-	13	16	26	M4 depth 6.5	Rc1/8	19	17	12	M8	96	123	150	177	11	11	24	M5	8	6			
ø25	-	17	20	31	M5 depth 6.5	Rc1/8	19	17	14	M10×1.25	99	129	159	189	11	11	29	M6	10	8			
ø32	22	17	20	38	M5 depth 7.5	Rc1/8	19	17	18	M10×1.25	101	131	161	191	11	10	36	M8	12	10			
ø40	30	22	27	47	M6 depth 12	Rc1/8	20	19	25	M14×1.5	108	138	168	198	12	10	44	M10	16	14			
Code												With bellows					Switch mounting: Rail						
Bore size (mm)	MO	QA	QB	SD	T	WF	X				XF	b	d	s	ℓ	GM	GL	P	GB				
							5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200													
ø20	4	12	10	14	5	19	133	160	187	214	35	30	30	25.7	(Stroke length/3) + 18.5	20.5	30	19.5	23				
ø25	5	12	10	16.5	6	20	141	171	201	231	40	35	30	30.7	(Stroke length/3) + 20.5	20.5	30	22	24.4				
ø32	5.5	12	10	20	6	18	143	173	203	233	40	31.5	35	37.7	(Stroke length/3) + 19	20.5	32	25.5	25				
ø40	6	13	12	26	8	20	160	190	220	250	50	40	35	46.7	(Stroke length/3) + 18.5	21.5	36	30	25.7				
Code																Switch mounting: Band							
Bore size (mm)	HD												RD			HD							
	T0/T5				T2, T3				T2W, T3W				T0/T5	T2 T3	T2W T3W	T0/T5							
	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	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200	T5	T3	T3W	5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200				
ø20	31.0	58.0	85.0	112.0	34.0	61.0	88.0	115.0	36.5	63.5	90.5	117.5	5	6	7	32.5	59.5	86.5	113.5				
ø25	33.0	63.0	93.0	123.0	36.0	66.0	96.0	126.0	38.5	68.5	98.5	128.5	6	7	8	34.5	64.5	94.5	124.5				
ø32	34.0	64.0	94.0	124.0	37.0	67.0	97.0	127.0	39.5	69.5	99.5	129.5	7	8	9	35.5	65.5	95.5	125.5				
ø40	36.0	66.0	96.0	126.0	39.0	69.0	99.0	129.0	41.5	71.5	101.5	131.5	9	10	11	37.5	67.5	97.5	127.5				
Code																							
Bore size (mm)									RD														
	T2, T3				T2W, T3W				T0/T5	T2 T3	T2W T3W	GC	P1	P2	P3	Pθ							
	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	T5	T3	T3W												
ø20	33.5	60.5	87.5	114.5	36.5	63.5	90.5	117.5	6.5	7.5	7	2.5	19.6	21.5	14	(38°)							
ø25	35.5	65.5	95.5	125.5	38.5	68.5	98.5	128.5	7.5	8.5	8	3.5	22.1	23.9	14	(34°)							
ø32	36.5	66.5	96.5	126.5	39.5	69.5	99.5	129.5	8.5	9.5	9	4.5	25.6	27.6	16	(30°)							
ø40	38.5	68.5	98.5	128.5	41.5	71.5	101.5	131.5	10.5	11.5	11	6.5	30.2	32.1	16	(26°)							

* Installation dimensions other than X and LL of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

MEMO

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending



Round shaped cylinder/
Double acting/stroke adjustable/push

SCM-P Series

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

JIS symbol



Specifications

Item	SCM-P					
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting/stroke adjustable (push)					
Working fluid	Compressed air					
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure MPa	0.15 (≈22 psi, 1.5 bar)				0.1 (≈15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size	Rc1/8				Rc1/4	
Stroke tolerance mm	+1.4				+2.3	
	0				0	
Working piston speed mm/s	30 to 1000 (Operate within the allowable absorbed energy.)					
Cushion	Rubber cushion					
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)					
Adjustable stroke range mm	25, 50					
Allowable absorbed energy J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75 100, 125, 150 200, 250, 300	600	10
$\phi 25$			
$\phi 32$			
$\phi 40$			
$\phi 50$			
$\phi 63$			

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

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

● Switch mounting method: Rail

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

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 50$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 63$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33	1 m:18	1 m:33	1 m:18	1 m:18		1 m:33	1 m:18	1 m:18 3 m:49 5 m:80				1 m:33		1 m:61	
	3 m:87	3 m:49	3 m:87	3 m:49	3 m:49		3 m:87	3 m:49					3 m:87		3 m:166	
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80		5 m:142	5 m:80					5 m:142		5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting Bore size (mm)	Adjustable stroke range	Product weight when stroke length (S) = 0 mm				Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
		Basic	Axial foot	Flange	Trunnion				
ø20	25	0.18	0.29	0.26	0.19	Refer to the weight in the switch specifications.	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 when S = 0 mm..... 1.22 kg Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ kg Weight of 2 switches..... 0.036 kg Product weight..... 1.22 kg + 0.32 kg + 0.036 kg=1.576 kg
--	--	---

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

How to order

Without switch (built-in magnet for switch)

SCM-P - **LB** - **40** - **D** - **100** - **25** - **J** - **I**

With switch (built-in magnet for switch)

SCM-P - **LB** - **40** - **D** - **100** - **25** - **T0H** - **D** - **J** - **I**

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Adjustable stroke range

G Switch model No.

*3

*4

H Switch quantity

I Switch mounting

J Option

*5, *7

K Accessory

*8

⚠ Precautions for model No. selection

*1 : A mounting bracket will be shipped with the product if LB, FB or TB is selected. FA/TA is shipped with the product.

*2 : Refer to page 266 for the number of installed switches and the min. stroke length.

*3 : Switches other than **G** Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.

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

*5 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.

*6 : Refer to Ending Page 85 for custom specifications of rod end form.

*7 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

*8 : "I" and "Y" cannot be selected together.

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

[Example of model No.]

SCM-P-LB-40D-100-25-T0H-D-JI

Model: Round shaped cylinder, double acting/stroke adjustable (push)

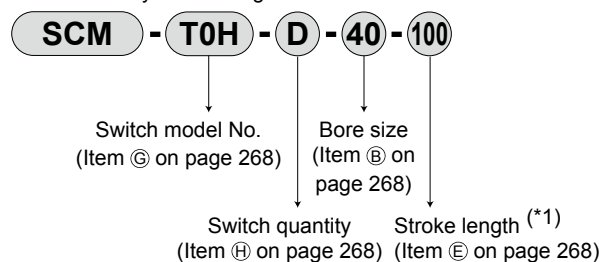
- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided rubber cushion
- E** Stroke length : 100 mm
- F** Adjustable stroke range : 25 mm
- G** Switch model No. : Reed T0H switch, lead wire 1m
- H** Switch quantity : 2
- I** Switch mounting : Rail method
- J** Option : Bellows material for max. ambient temperature 100°C
- K** Accessory : Rod eye

Code	Description				
A Mounting					
00	Basic				
LB	Axial foot				
FA	Rod side flange				
TA	Rod side trunnion				
TB	Head side trunnion				
B Bore size (mm)					
20	ø20				
25	ø25				
32	ø32				
40	ø40				
50	ø50				
63	ø63				
C Port thread					
Blank	Rc thread				
N	NPT thread (made-to-order product)				
G	G thread (made-to-order product)				
D Cushion					
D	With two-sided rubber cushion				
E Stroke length (mm)					
Bore size	Stroke length *2	Custom stroke length			
ø20 to ø63	10 to 600	In 1 mm increments			
F Adjustable stroke range (mm)					
25	25				
50	50				
G Switch model No.					
Axial lead wire	Radial lead wire	Contact	Voltage AC DC	Display	Lead wire
T0H*	T0V*	Reed	● ●	1-color display	2-wire
T5H*	T5V*		● ●	Without indicator lamp	
T8H*	T8V*		● ●	1-color display	
T1H*	T1V*		●	1-color display	
T2H*	T2V*	●			
T3H*	T3V*	●			
T3PH*	T3PV*	●	1-color display		3-wire
T2WH*	T2WV*	Proximity	●	2-color display	2-wire
T2YH*	T2YV*		●		
T3WH*	T3WV*		●		
T3YH*	T3YV*		●		
T2YD*	-		●	2-color display	2-wire
T2YDT*	-		●	AC magnetic field	
T2JH*	T2JV*		●	1-color display off-delay	
* Lead wire length					
Blank	1 m (standard)				
3	3 m (option)				
5	5 m (option)				
H Switch quantity					
R	1 on rod side				
H	1 on head side				
D	2				
T	3				
4	4 (when there are more than 4 switches, indicate switch quantity.)				
I Switch mounting					
Blank	Rail method				
Z	Band method				
J Option					
		Max. ambient temp.	Instantaneous max. temp.		
J	Bellows	100°C	200°C		
L	Bellows	250°C	400°C		
Q	Switch rail included at shipment				
M	Piston rod material (stainless steel)				
P6	Copper and PTFE free				
K Accessory					
I	Rod eye				
Y	Rod clevis (pin and snap ring included)				
B2	Clevis bracket				

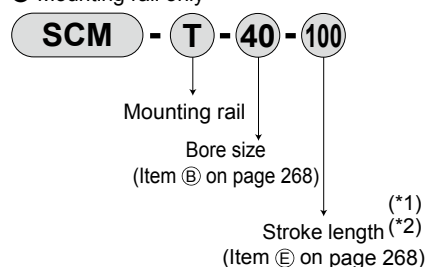
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



- Mounting rail only

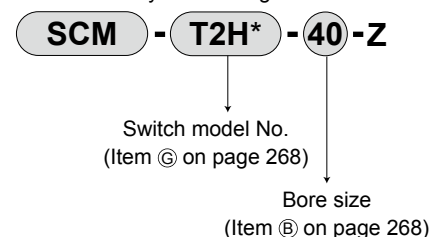


*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

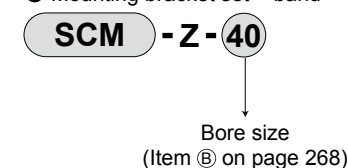
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

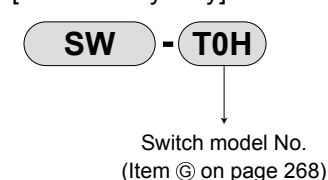
- Switch body + mounting bracket set + band



- Mounting bracket set + band



[Switch body only]



How to order mounting bracket

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

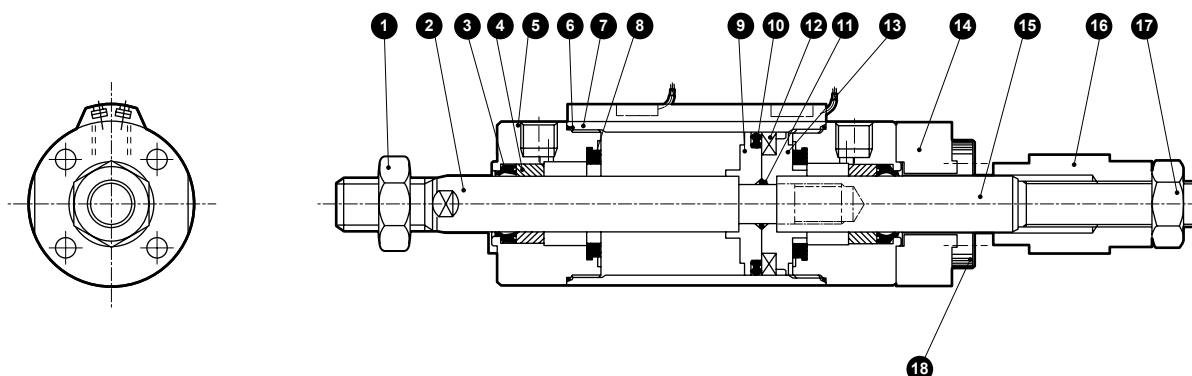
*1: All mounting brackets are supplied with mounting bolts.

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

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

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

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	10	Piston packing	Nitrile rubber	
2	Piston rod R	ø20, ø25: Stainless steel ø32 to ø63: Steel	Industrial chrome plating	11	Piston gasket	Nitrile rubber	
3	Rod packing	Nitrile rubber		12	Magnet	Plastic	
4	Bush	Oil impregnated bearing alloy *1		13	Piston H	ø20 to ø40: Aluminum alloy ø50, ø63: Aluminum alloy die-casting	
5	Rod cover	Aluminum alloy	Hard alumite	14	Cover	Steel	Zinc chromate
6	Cylinder gasket	Nitrile rubber		15	Piston rod H	Steel	Industrial chrome plating
7	Cylinder tube	Aluminum alloy	Hard alumite	16	Stopper	Steel	Zinc chromate
8	Cushion rubber	Urethane rubber		17	Hexagon nut	Steel	Nickeling
9	Piston R	ø20 to ø40: Aluminum alloy ø50, ø63: Aluminum alloy die-casting		18	Hex socket screw	Alloy steel	Black finish

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

Repair parts list

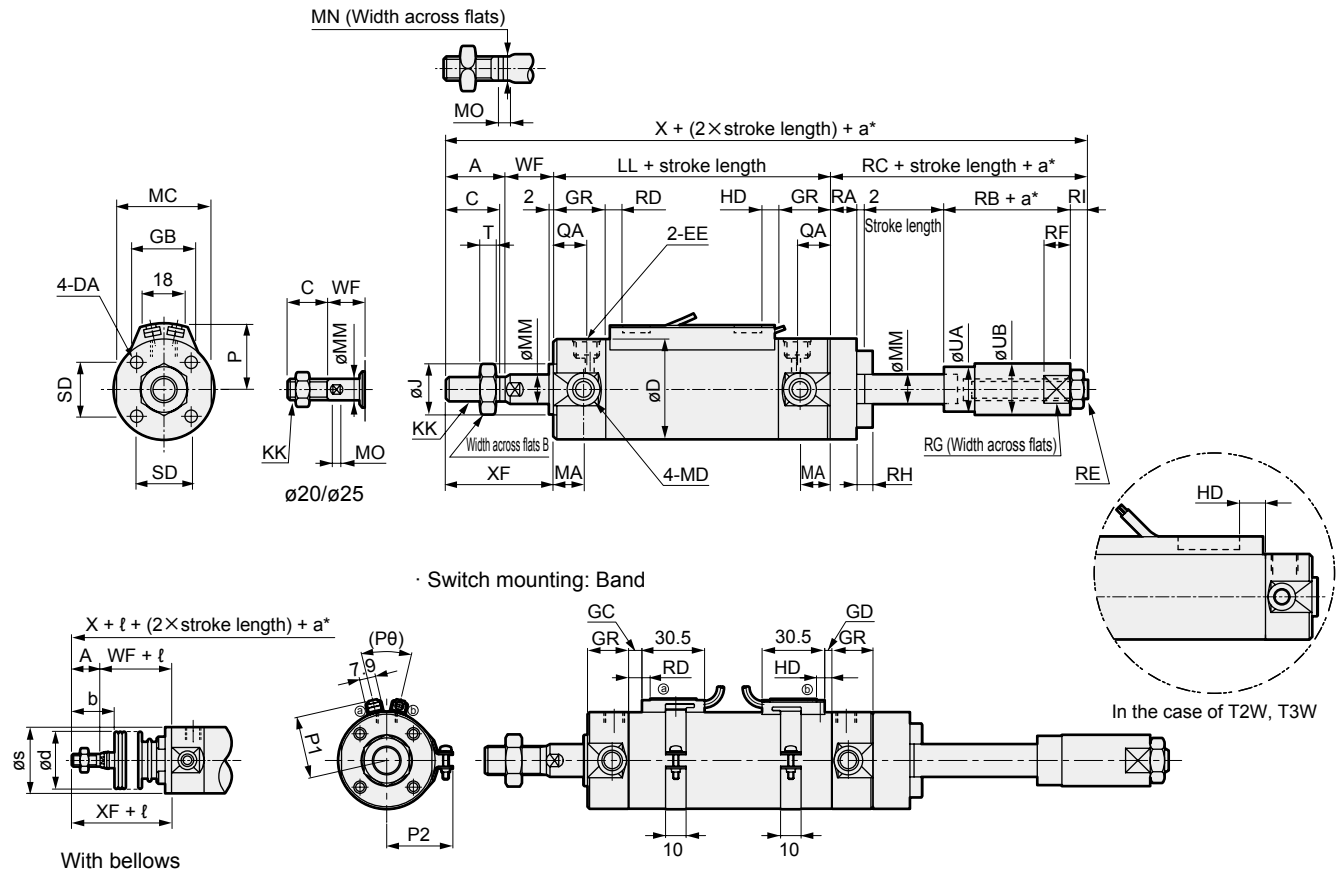
Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-D-20DK	3 6 8 10
ø25	SCM-D-25DK	
ø32	SCM-D-32DK	
ø40	SCM-D-40DK	
ø50	SCM-D-50DK	
ø63	SCM-D-63DK	

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

Dimensions



- Double acting/stroke adjustable (push)
- Switch mounting method: Rail



* a: Adjustable stroke length.

*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions																					
Bore size (mm)	A	B	C	D	DA	EE	GR	J	KK	LL	MA	MC	MD	MM	MN	MO	QA	SD	T	WF	X	XF
ø20	-	13	16	26	M4 depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	12	14	5	19	141	35
ø25	-	17	20	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	71	11	29	M6	10	8	5	12	16.5	6	20	152	40
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	20	6	18	154	40
ø40	30	22	27	47	M6 depth 12	Rc1/8	20	25	M14×1.5	79	12	44	M10	16	14	6	13	26	8	20	188	50
ø50	35	27	32	58	M8 depth 16	Rc1/4	25	30	M18×1.5	93	13	55	M12	20	17	8	15	32	11	23	217	58
ø63	35	27	32	72	M10 depth 16	Rc1/4	25	32	M18×1.5	93	13	69	M14	20	17	8	15	38	11	23	217	58
Code												With bellows				Switch mounting: Rail						
Bore size (mm)	RA	RB	RC	RE	RI	RF	RG	RH	UA	UB	b	d	s	ℓ	P	GB	HD			RD		
																	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5		
ø20	8	19	35	M6	6	7	10	4	11.5	12	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5		
ø25	10	22	41	M8	7	9	14	5	13.5	16	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5		
ø32	10	22	41	M8	7	10	17	5	17.5	20	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5		
ø40	18	30	59	M12×1.5	9	12	22	6	24	25	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5		
ø50	20	32	66	M16×1.5	12	15	30	8	29	35	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0		
ø63	20	32	66	M16×1.5	12	15	30	10	29	35	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0		
Code				Switch mounting: Band																		
Bore size (mm)	RD		GD			GC			HD			RD			P1	P2	P3	Pø				
	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W								
ø20	7.5	9.5	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)				
ø25	8.5	10.5	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)				
ø32	9.5	11.5	2.5	2.5	4.5	5.5	5.5	7.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)				
ø40	11.5	13.5	4.5	4.5	6.5	7.5	7.5	9.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)				
ø50	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)				
ø63	13.0	15.0	7.0	7.0	9.0	9.0	9.0	11.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)				

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVPIN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

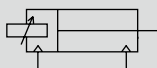


Round shaped cylinder/
Double acting/stroke adjustable/pull

SCM-R Series

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

JIS symbol



Specifications

Item	SCM-R					
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting/stroke adjustable (pull)					
Working fluid	Compressed air					
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure MPa	0.1 (≈15 psi, 1 bar)				0.05 (≈7.3 psi, 0.5 bar)	
Proof pressure MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size	Rc1/8				Rc1/4	
Stroke tolerance mm	+1.4 0 (to 1000)			+1.4 0 (to 1500)	+2.3 0 (to 1000), +2.7 0 (to 1500)	
Working piston speed mm/s	30 to 1000 (Operate within the allowable absorbed energy.)					
Cushion	Rubber cushion					
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)					
Adjustable stroke range mm	25, 50					
Allowable absorbed energy J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25, 50, 75 100, 125, 150 200, 250, 300	1000	10
ø25			
ø32		1500	
ø40			
ø50			
ø63			

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

*2: Stroke length of more than 600 mm will be made to order. Contact CKD for details.

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

● Switch mounting method: Rail

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

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 50$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 63$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33	1 m:18	1 m:33	1 m:18	1 m:18		1 m:33	1 m:18	1 m:18 3 m:49 5 m:80			1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272		
	3 m:87	3 m:49	3 m:87	3 m:49	3 m:49		3 m:87	3 m:49								
	5 m:142	5 m:80	5 m:142	5 m:80	5 m:80		5 m:142	5 m:80								

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Adjustable stroke range	Product weight when stroke length (S) = 0 mm				Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
		Basic	Axial foot	Flange	Trunnion				
ø20	25	0.14	0.25	0.17	0.15	Refer to the weight in the switch specifications.	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 when S = 0 mm..... 0.89 kg Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ kg Weight of 2 switches..... 0.036 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	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

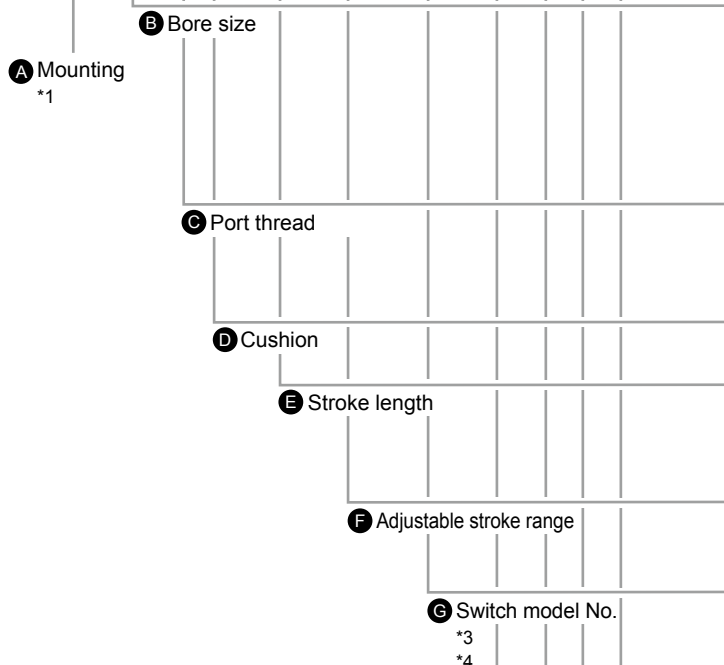
How to order

Without switch (built-in magnet for switch)

SCM-R - LB - 40 - D - 100 - 25 - J - I

With switch (built-in magnet for switch)

SCM-R - LB - 40 - D - 100 - 25 - T0H - D - J - I



⚠ Precautions for model No. selection

*1 : A mounting bracket will be shipped with the product if LB, FB or TB is selected. FA/TA is shipped with the product.

*2 : Refer to page 272 for the number of installed switches and the min. stroke length.

*3 : Switches other than G Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.

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

*5 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.

*6 : Refer to Ending Page 85 for custom specifications of rod end form.

*7 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

*8 : "I" and "Y" cannot be selected together.

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

[Example of model No.]

SCM-R-LB-40D-100-25-T0H-D-JI

Model: Round shaped cylinder, double acting/stroke adjustable (pull)

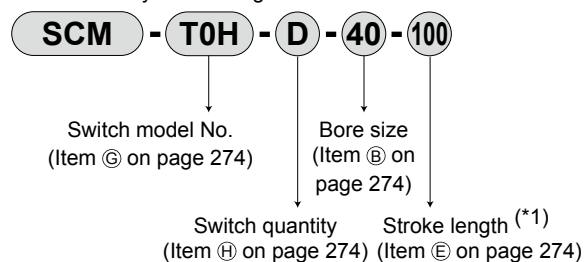
A	Mounting	: Axial foot
B	Bore size	: ø40 mm
C	Port thread	: Rc thread
D	Cushion	: With two-sided rubber cushion
E	Stroke length	: 100 mm
F	Adjustable stroke range	: 25 mm
G	Switch model No.	: Reed T0H switch, lead wire 1 m
H	Switch quantity	: 2
I	Switch mounting	: Rail method
J	Option	: Bellows material for max. ambient temperature 100°C
K	Accessory	: Rod eye

Code	Description				
A Mounting					
00	Basic				
LB	Axial foot				
FA	Rod side flange				
TA	Rod side trunnion				
TB	Head side trunnion				
B Bore size (mm)					
20	ø20				
25	ø25				
32	ø32				
40	ø40				
50	ø50				
63	ø63				
C Port thread					
Blank	Rc thread				
N	NPT thread (made-to-order product)				
G	G thread (made-to-order product)				
D Cushion					
D	With two-sided rubber cushion				
E Stroke length (mm)					
Bore size	Stroke length *2	Custom stroke length			
ø20 to ø32	10 to 1000	In 1 mm increments			
ø40 to ø63	10 to 1500				
F Adjustable stroke range (mm)					
25	25				
50	50				
G Switch model No.					
Axial lead wire	Radial lead wire	Contact	Voltage AC DC	Display	Lead wire
T0H*	T0V*	Reed	● ●	1-color display	2-wire
T5H*	T5V*		● ●	Without indicator lamp	
T8H*	T8V*		● ●	1-color display	
T1H*	T1V*		●		2-wire
T2H*	T2V*	Proximity		●	
T3H*	T3V*			●	3-wire
T3PH*	T3PV*			●	
T2WH*	T2WV*			●	3-wire
T2YH*	T2YV*			●	
T3WH*	T3WV*			●	3-wire
T3YH*	T3YV*			●	
T2YD*	-			●	2-wire
T2YDT*	-			●	
T2JH*	T2JV*			●	1-color display off-delay
* Lead wire length					
Blank	1 m (standard)				
3	3 m (option)				
5	5 m (option)				
H Switch quantity					
R	1 on rod side				
H	1 on head side				
D	2				
T	3				
4	4 (when there are more than 4 switches, indicate switch quantity.)				
I Switch mounting					
Blank	Rail method				
Z	Band method				
J Option					
		Max. ambient temp.	Instantaneous max. temp.		
J	Bellows	100°C	200°C		
L	Bellows	250°C	400°C		
Q	Switch rail included at shipment				
M	Piston rod material (stainless steel)				
P6	Copper and PTFE free				
K Accessory					
I	Rod eye				
Y	Rod clevis (pin and snap ring included)				
B2	Clevis bracket				

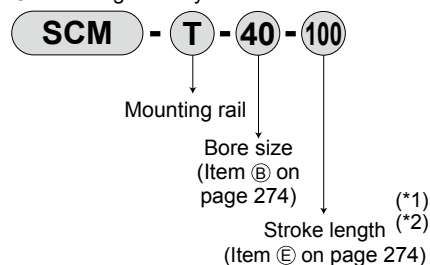
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



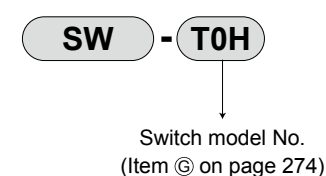
- Mounting rail only



*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

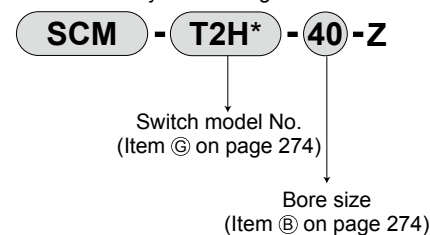
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch body only]

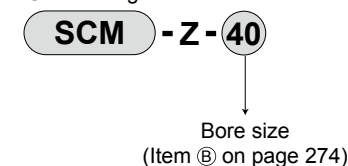


[Switch mounting: Band]

- Switch body + mounting bracket set + band



- Mounting bracket set + band



How to order mounting bracket

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

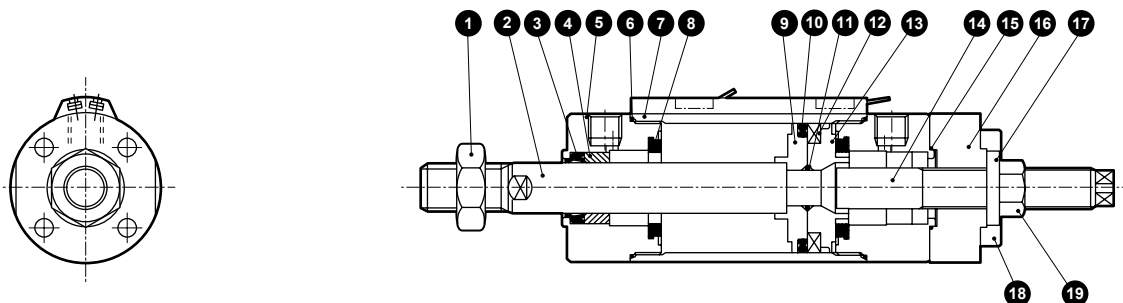
*1: All mounting brackets are supplied with mounting bolts.

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

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/ COVP/IN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/ MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

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

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	10	Piston packing	Nitrile rubber	
2	Piston rod	Steel	Industrial chrome plating	11	Piston gasket	Nitrile rubber	
3	Rod packing	Nitrile rubber		12	Magnet	Plastic	
4	Bush	Oil impregnated bearing alloy *1		13	Piston H	ø20 to ø40: Aluminum alloy ø50, ø63: Aluminum alloy die-casting	
5	Rod cover	Aluminum alloy	Hard alumite	14	Bolt	Steel	Zinc chromate
6	Cylinder gasket	Nitrile rubber		15	Gasket	Nitrile rubber	
7	Cylinder tube	Aluminum alloy	Hard alumite	16	Cover	Steel	Zinc chromate
8	Cushion rubber	Urethane rubber		17	Die thread	Steel + nitrile rubber	
9	Piston R	ø20 to ø40: Aluminum alloy ø50, ø63: Aluminum alloy die-casting		18	Hex socket screw	Alloy steel	Black finish
				19	Hexagon nut	Steel	Nickeling

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

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-R-20DK	3 6 10 15 17
ø25	SCM-R-25DK	
ø32	SCM-R-32DK	
ø40	SCM-R-40DK	
ø50	SCM-R-50DK	
ø63	SCM-R-63DK	

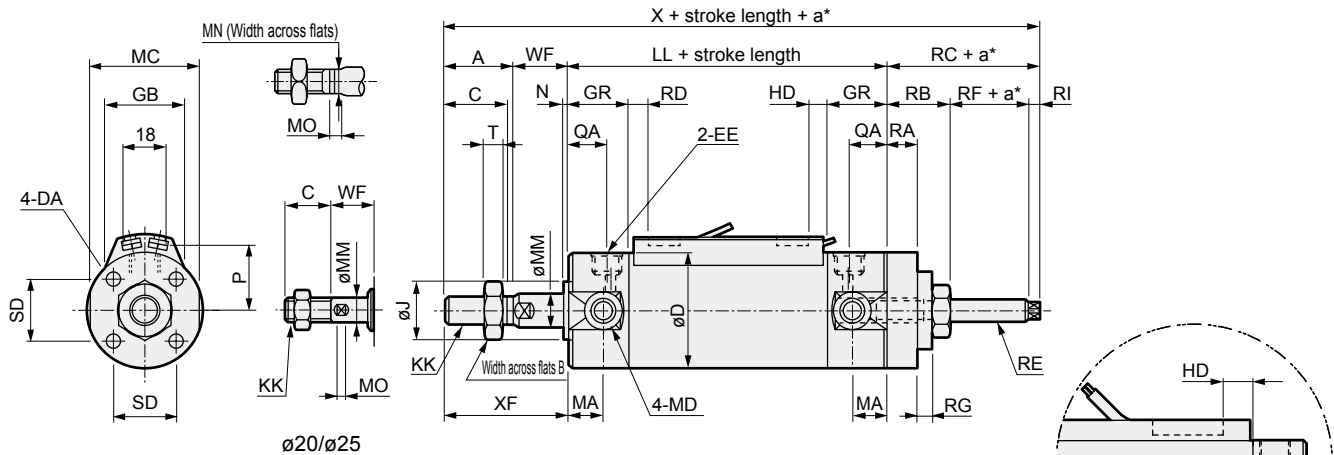
*1: Specify the kit No. when placing an order.

Dimensions

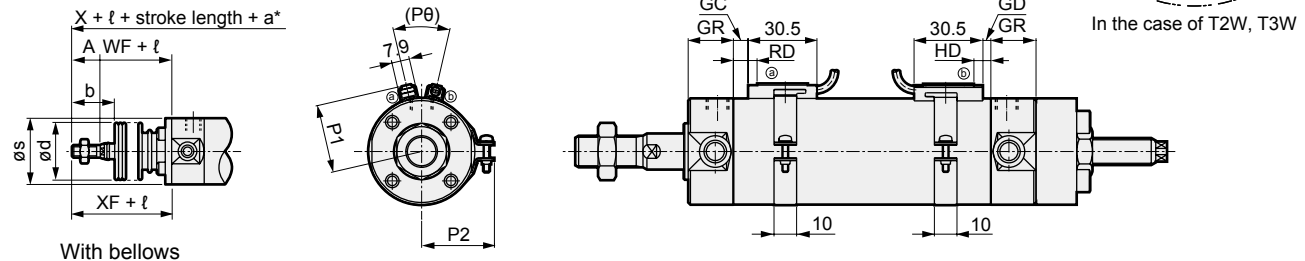


● Double acting/stroke adjustable (pull)

· Switch mounting method: Rail



· Switch mounting: Band



*: a indicates adjustable stroke length

*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code		Basic (00) basic dimensions																					
Bore size (mm)		A	B	C	D	DA	EE	GR	J	KK	LL	MA	MC	MD	MM	MN	MO	N	QA	SD	T	WF	X
ø20		-	13	16	26	M4 depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	2	12	14	5	19	128.5
ø25		-	17	20	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	71	11	29	M6	10	8	5	2	12	16.5	6	20	141
ø32		22	17	20	38	M5 depth 7.5	Rc1/8	19	18	M10×1.25	73	11	36	M8	12	10	5.5	2	12	20	6	18	140
ø40		30	22	27	47	M6 depth 12	Rc1/8	20	25	M14×1.5	79	12	44	M10	16	14	6	2	13	26	8	20	169
ø50		35	27	32	58	M8 depth 16	Rc1/4	25	30	M18×1.5	93	13	55	M12	20	17	8	2	15	32	11	23	198
ø63		35	27	32	72	M10 depth 16	Rc1/4	25	32	M18×1.5	93	13	69	M14	20	17	8	2	15	38	11	23	198
Code												With bellows				Switch mounting: Rail							
Bore size (mm)		XF	RA	RB	RC	RE	RI	RF	RG	b	d	s	ℓ	P	GB	HD			RD				
																T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W		
ø20		35	8	16	22.5	M6	4	2.5	4	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5		
ø25		40	10	20	30	M8	4	6	5	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5		
ø32		40	10	20	27	M8	4	3	5	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5		
ø40		50	18	32	40	M12×1.5	5	3	6	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5		
ø50		58	20	37	47	M16×1.5	7	3	8	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0		
ø63		58	20	37	47	M16×1.5	7	3	10	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0		
Code		Switch mounting: Band																					
Bore size (mm)		GC			GD			HD			RD			P1	P2	P3	P0						
		T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W										
ø20		3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)						
ø25		4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)						
ø32		5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)						
ø40		7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)						
ø50		9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)						
ø63		9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)						

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

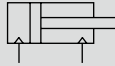


Round shaped cylinder Double acting/heat resistant

SCM-T Series

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

JIS symbol



Specifications

Item		SCM-T								
Bore size		mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation			Double acting/heat resistant							
Working fluid			Compressed air							
Max. working pressure		MPa	1.0 (≈150 psi, 10 bar)							
Min. working pressure		MPa	0.1 (≈15 psi, 1 bar)				0.05 (≈7.3 psi, 0.5 bar)			
Proof pressure		MPa	1.6 (≈230 psi, 16 bar)							
Ambient temperature		°C	5 (41°F) to 120 (248°F)							
Port size			Rc1/8				Rc1/4	Rc3/8	Rc1/2	
Stroke tolerance		mm	+1.8 0 (to 1000)			+1.8 0 (to 1500)	+1.4 0 (to 1000),		+1.8 0 (to 1500)	
Working piston speed		mm/s	30 to 1000 (Operate within the allowable absorbed energy.)							
Cushion			Rubber cushion				Air cushion			
Lubrication		*1	Not available							
Allowable absorbed energy	With rubber cushion	J	0.1	0.2	0.5	0.9	—	—	—	—
	With air cushion		—	—	—	—	8.0	14.4	25.4	45.6
	Without cushion		—	—	—	—	0.057	0.057	0.112	0.153

*1 : Periodically apply additional heat-resistant grease.

*2 : For absorbed energy of the type without cushion, refer to Ending Page 68.

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

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

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25, 50, 75 100, 125, 150 200, 250, 300	1000	10
ø25			
ø32		1500	
ø40			
ø50			
ø63			
ø80			
ø100			

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

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Additional weight
Bore size	Basic	Axial foot	Flange	Clevis	Trunnion	per S = 10 mm
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 when S = 0 mm..... 0.62 kg
 Additional weight when S = 100 mm $0.030 \times \frac{100}{10} = 0.30$ kg
 Product weight..... 0.62 kg + 0.30 kg
 =0.92 kg

Theoretical thrust table

(Unit: N)

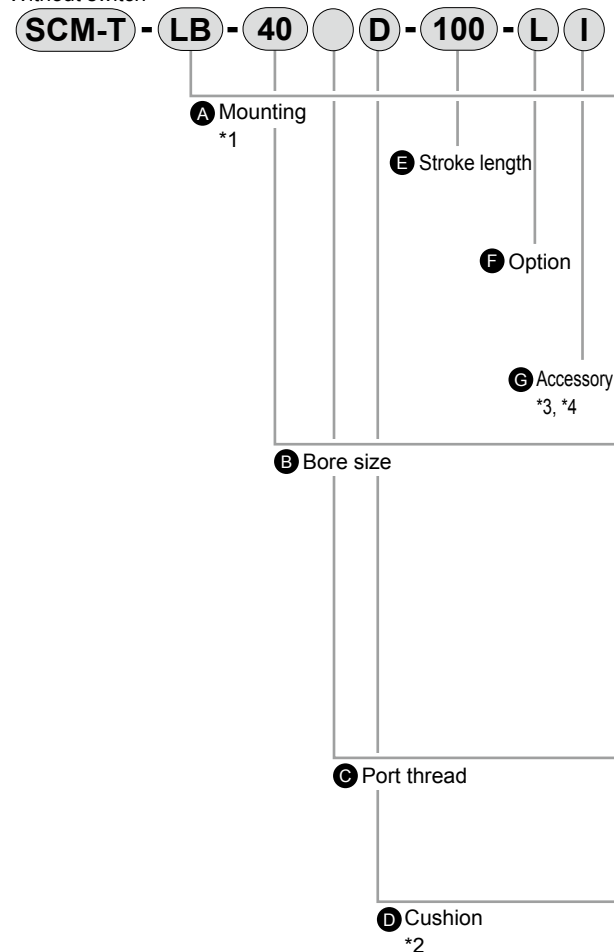
Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	-	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Pull	-	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2	2.11×10^2	2.38×10^2	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

Dimensions

The same dimensions as those of the standard single rod. Refer to pages 238 to 251.

How to order

Without switch



⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.

*2 : B/R/H are not available for ø20 to ø40.

Only D is available.

D is not available for ø50 to ø100.

Only B/R/H are available.

*3 : Refer to Ending Page 85 for custom specifications of rod end form.

*4 : "I" and "Y" cannot be selected together.

[Example of model No.]

SCM-T-LB-40D-100-LI

Model: Round shaped cylinder, double acting/heat resistant

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided rubber cushion
- E** Stroke length : 100 mm
- F** Option : Bellows material for max. ambient temperature 250°C
- G** Accessory : Rod eye

Code	Description								
A Mounting									
Bore size (ø)		20	25	32	40	50	63	80	100
00	Basic	●	●	●	●	●	●	●	●
LB	Axial foot	●	●	●	●	●	●	●	●
FA	Rod side flange	●	●	●	●	●	●	●	●
FB	Head side flange	●	●	●	●	●	●	●	●
CA	Eye bracket	●	●	●	●	●	●		
CB	Clevis bracket (pin and snap ring included)							●	●
TA	Rod side trunnion	●	●	●	●	●	●		
TB	Head side trunnion	●	●	●	●	●	●		
B Bore size (mm)									
20	ø20								
25	ø25								
32	ø32								
40	ø40								
50	ø50								
63	ø63								
80	ø80								
100	ø100								
C Port thread									
Blank	Rc thread								
N	NPT thread (made-to-order product) With air cushion: ø32 and over								
G	G thread (made-to-order product) With air cushion: ø32 and over								
D Cushion									
Bore size (ø)		20	25	32	40	50	63	80	100
B	With two-sided air cushion					●	●	●	●
R	Rod side air cushioned					●	●	●	●
H	Head side air cushioned					●	●	●	●
D	With two-sided rubber cushion	●	●	●	●				
E Stroke length (mm)									
Bore size		Stroke length			Custom stroke length				
ø20 to ø32		10 to 1000			In 1 mm increments				
ø40 to ø100		10 to 1500							
F Option									
						Max. ambient temp.		Instantaneous max. temp.	
L	Bellows material: Silicone rubber glass cloth					250°C		400°C	
M	Piston rod material (stainless steel)								
G Accessory									
Bore size (ø)		20	25	32	40	50	63	80	100
I	Rod eye	●	●	●	●	●	●	●	●
Y	Rod clevis (pin and snap ring included)	●	●	●	●	●	●	●	●
B1	Eye bracket							●	●
B2	Clevis bracket	●	●	●	●	●	●		

How to order mounting bracket

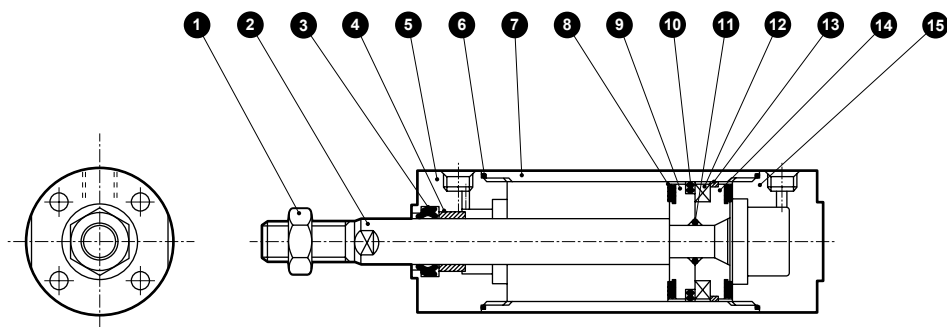
Bore size (mm)	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket								
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32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

*1: All mounting brackets are supplied with mounting bolts.

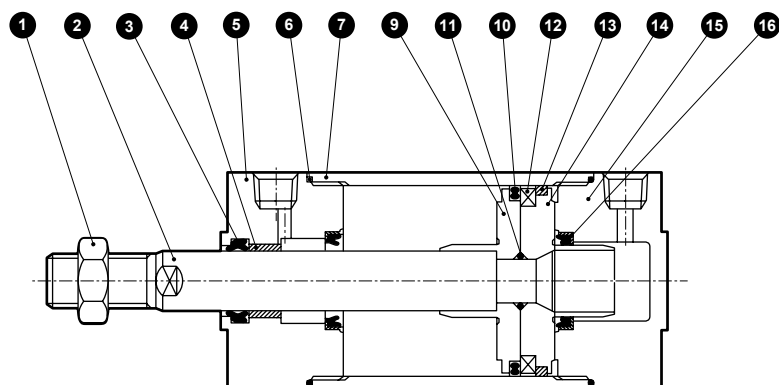
*2: The foot mounting bracket is provided as 2 pcs./set.

Internal structure and parts list

● $\phi 20$ to $\phi 40$ (with rubber cushion)



● $\phi 50$ to $\phi 100$ (with air cushion)



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	10	Piston packing	Fluoro rubber	
2	Piston rod	$\phi 20, \phi 25$: Stainless steel $\phi 32$ to $\phi 100$: Steel	Industrial chrome plating	11	Piston gasket	Fluoro rubber	
3	Rod packing	Fluoro rubber		12	Piston ring	$\phi 20$ to $\phi 32$: Aluminum alloy $\phi 40$ to $\phi 100$: Steel	$\phi 40$ to $\phi 100$: Zinc chromate
4	Bush	Oil impregnated bearing alloy		13	Wear ring	Special resin	
5	Rod cover	Aluminum alloy	Hard alumite	14	Piston H	$\phi 20$ to $\phi 40$: Aluminum alloy $\phi 50$ to $\phi 100$: Aluminum alloy die-casting	
6	Cylinder gasket	Fluoro rubber		15	Head cover	Aluminum alloy	Hard alumite
7	Cylinder tube	Aluminum alloy	Hard alumite	16	Cushion packing	Fluoro rubber/steel	
8	Cushion rubber	Fluoro rubber					
9	Piston R	$\phi 20$ to $\phi 40$: Aluminum alloy $\phi 50$ to $\phi 100$: Aluminum alloy die-casting					

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
$\phi 20$	SCM-T-20K	3 6 8 10 13
$\phi 25$	SCM-T-25K	
$\phi 32$	SCM-T-32K	
$\phi 40$	SCM-T-40K	
$\phi 50$	SCM-T-50K	
$\phi 63$	SCM-T-63K	3 6 10 13 16
$\phi 80$	SCM-T-80K	
$\phi 100$	SCM-T-100K	

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

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

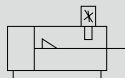
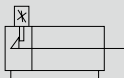


Round shaped cylinder Double acting/position locking

SCM-Q Series

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

JIS symbol



Specifications

Item		SCM-Q							
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting/position locking							
Working fluid		Compressed air							
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)							
Min. working pressure MPa		0.15 (≈22 psi, 1.5 bar)				0.1 (≈15 psi, 1 bar)			
Proof pressure MPa		1.6 (≈230 psi, 16 bar)							
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)							
Port size		M5		Rc1/8		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)	
Working piston speed mm/s		30 to 500 (Operate within the allowable absorbed energy.)							
Cushion		Air cushion							
Effective air cushion length mm		8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)							
Position locking mechanism		Head side or rod side							
Holding force N		Max. thrust x 0.7							
Allowable	Cushioned	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
absorbed energy J Without cushion		-	-	-	-	0.057	0.057	0.112	0.153

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

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

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25/50/75/ 100/125/150/ 200/250/300	1000	10
ø25			
ø32		1500	
ø40			
ø50			
ø63			
ø80			
ø100			

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

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

- Switch mounting method: Rail

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

- Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 50$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 63$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 83$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 100$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire		Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V	T8H/T8V		T2YD (*4) T2YDT				
Applications	For programmable controller, relay, compact solenoid valve		Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay	For programmable controller, relay (no lamp), serial		For programmable controller, relay		For programmable controller		
Output method	-				NPN output	PNP output	NPN output	NPN output	-								
Pwr. supp. V.	-				10 to 28 VDC				-								
Load voltage	85 to 265 VAC		10 to 30 VDC		24 VDC ±10%		30 VDC or less		12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%	
Load current	5 to 100 mA		5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Without indicator lamp	LED (Lit when ON)		Red/green LED (Lit when ON)				
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC		1 mA or less			10 µA or less			0 mA						1 mA or less		
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80			1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272			

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

● With rod side position locking (R)

(Unit: kg)

Item/mounting Bore size (mm)	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
	Basic	Axial foot	Flange	Clevis	Trunnion				
ø20	0.15	0.26	0.18	0.20	0.16	Refer to the weight in the switch specifications.	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 position locking (H)

(Unit: kg)

Item/mounting Bore size (mm)	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
	Basic	Axial foot	Flange	Clevis	Trunnion				
ø20	0.15	0.26	0.18	0.20	0.16	Refer to the weight in the switch specifications.	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 when S = 0 mm.....	0.86 kg
	Additional weight when S = 100 mm.....	$0.032 \times \frac{100}{10} = 0.32$ 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	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

▲ Be sure to read "Safety precautions" (3. Position locking SCM-Q) (pages 347, 349 and 350) before use.

How to order

Without switch (built-in magnet for switch)

SCM-Q - LB - 40 - B - 100 - R - Q - I

With switch (built-in magnet for switch)

SCM-Q - LB - 40 - B - 100 - R - T2H - D - Q - I

A Mounting
*1, *2

B Bore size

C Port thread

D Cushion

E Stroke length

F Position locking mechanism

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.

*2 : When the mounting is LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. Refer to Safety precautions for details.

*3 : Refer to page 282 for the number of installed switches and the min. stroke length.

*4 : Switches other than **G** Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.

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

*6 : Refer to Ending Page 85 for custom specifications of rod end form.

*7 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

*8 : "I" and "Y" cannot be selected together.

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

G Switch model No.

*4

*5

H Switch quantity

[Example of model No.]

SCM-Q-LB-40B-100-R-T2H-D-QI

Model: Round shaped cylinder, position locking

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided air cushion
- E** Stroke length : 100 mm
- F** Position locking mechanism : With rod side position locking
- G** Switch model No. : Proximity T2H switch, lead wire 1 m
- H** Switch quantity : 2
- I** Switch mounting : Rail
- J** Option : Switch rail included at shipment
- K** Accessory : Rod eye

I Switch
Installation method

J Option
*7

K Accessory
*8

Code	Description
A Mounting	
	Bore size (ø)
20	20
25	25
32	32
40	40
50	50
63	63
80	80
100	100
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and snap ring incl.)
TA	Rod side trunnion (Rod side position locking N/A)
TB	Head side trunnion (head side position locking N/A)

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

C Port thread	
Blank	Rc thread
N	NPT thread (made-to-order product) ø32 and over
G	G thread (made-to-order product) ø32 and over

D Cushion	
B	With two-sided air cushion
R	Rod side air cushioned
H	Head side air cushioned

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø20 to ø32	10 to 1000	In 1 mm increments
ø40 to ø100	10 to 1500	

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

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

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

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

I Switch mounting	
Blank	Rail method
Z	Band method

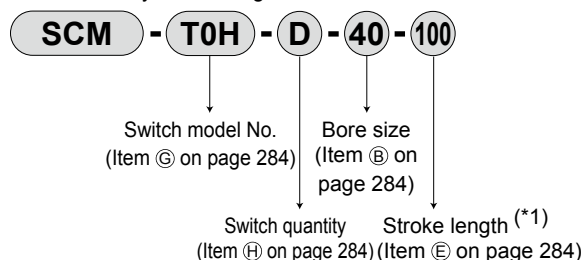
J Option	
Q	Switch rail included at shipment
P6	Copper and PTFE free (made-to-order product)

K Accessory	
	Bore size (ø)
20	20
25	25
32	32
40	40
50	50
63	63
80	80
100	100
I	Rod eye
Y	Rod clevis (pin and snap ring included)
B1	Eye bracket
B2	Clevis bracket

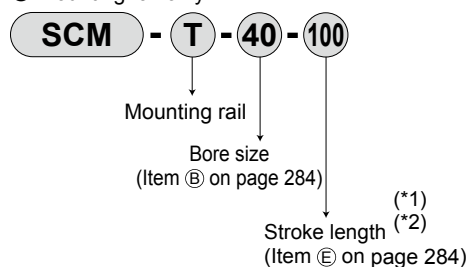
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



- Mounting rail only

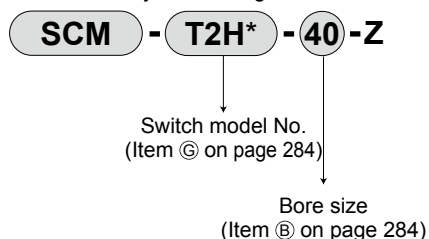


*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

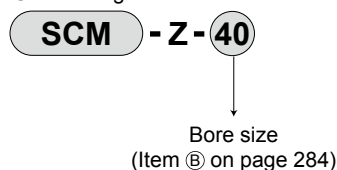
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

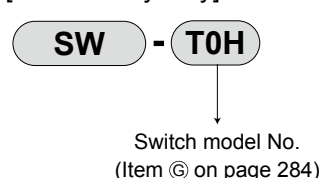
- Switch body + mounting bracket set + band



- Mounting bracket set + band



[Switch body only]



How to order mounting bracket

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
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	—	—
Clevis bracket (CB)	—	—	—	—	—	—	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	—	—

*1: All mounting brackets are supplied with mounting bolts.

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

Clean-room specifications

(Catalog No. CB-033SA)

- Anti-dust generation structure for use in cleanrooms

SCM-Q.....- P7*

SCM-Q.....- P5*

Specifications for rechargeable battery

(Catalog No. CC-1226A)

- Design compatible with rechargeable battery manufacturing process

SCM-Q-...- P4*

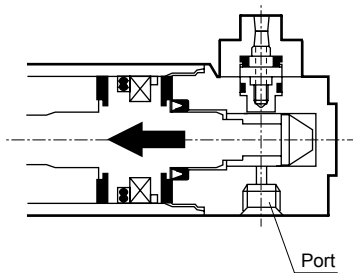
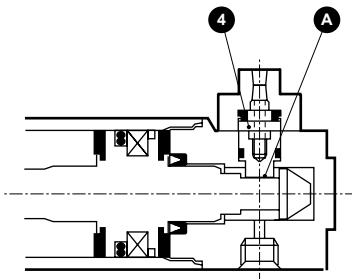
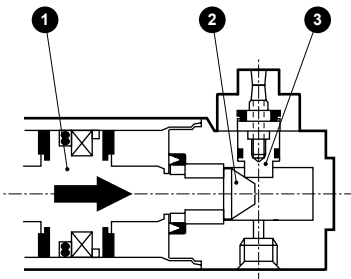
* Contact CKD for details.

Operational explanation

● When locked
When the piston ① of the cylinder moves toward the stroke end, the stopper piston ③ is pushed up along the slope of the sleeve ②.

When the cylinder piston comes to the stroke end and the sleeve groove ④ reaches the stopper piston position, the stopper piston is pushed down by the spring ④ and fits into the groove, completing the lock action.

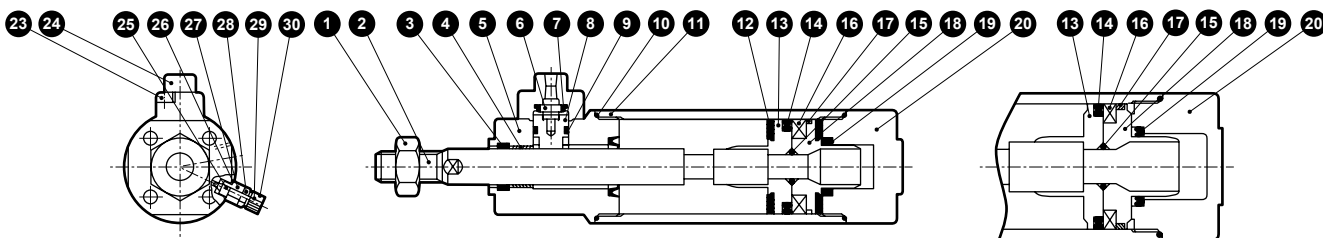
● When unlocked
When pressure is supplied to the port, the stopper piston pushes up the spring and slips out of the sleeve groove, releasing the lock.



Internal structure and parts list

● SCM-Q (rod side position locking)

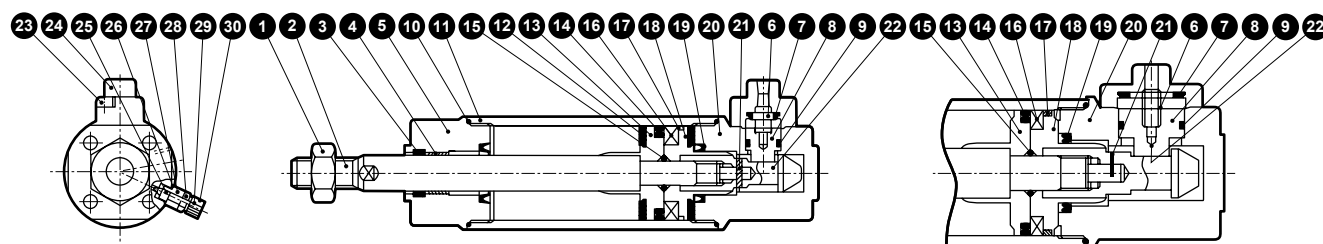
ø20 to ø40



ø50 to ø100

● SCM-Q (head side position locking)

ø20 to ø40



ø50 to ø100

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	16	Magnet	Plastic	
2	Piston rod	ø20, ø25: Stainless steel ø32 to ø100: Steel	Industrial chrome plating	17	Wear ring	Polyacetal resin	
3	Rod packing	Nitrile rubber		18	Piston H	ø20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy		19	Cushion packing	Nitrile rubber/steel	
5	Rod cover	Aluminum alloy	Hard alumite	20	Head cover	Aluminum alloy	Hard alumite
6	Spring	Steel		21	Spring pin	Steel	
7	Cushion rubber (B)	Urethane rubber		22	Sleeve	Steel	Nitriding
8	Stopper piston	Steel	Nitriding	23	Hex socket screw	Alloy steel	Black finish
9	Piston packing (B)	Nitrile rubber		24	Stopper cover	Aluminum alloy	Chromate
10	Cylinder gasket	Nitrile rubber		25	Needle gasket	Nitrile rubber	
11	Cylinder tube	Aluminum alloy	Hard alumite	26	Holder gasket	Nitrile rubber	
12	Cushion rubber (A)	Urethane rubber		27	Needle holder	Aluminum alloy	
13	Piston R	ø20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		28	Lock nut	Steel	Nickeling
14	Piston packing (A)	Nitrile rubber		29	Needle	Stainless steel	
15	Piston gasket	Nitrile rubber		30	Knob	Aluminum alloy	Chromate

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-Q-20BK	3 7 9 10 12 14 17 19 25 26
ø25	SCM-Q-25BK	
ø32	SCM-Q-32BK	
ø40	SCM-Q-40BK	
ø50	SCM-Q-50BK	
ø63	SCM-Q-63BK	
ø80	SCM-Q-80BK	
ø100	SCM-Q-100BK	

Note: Specify the kit No. when placing an order.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

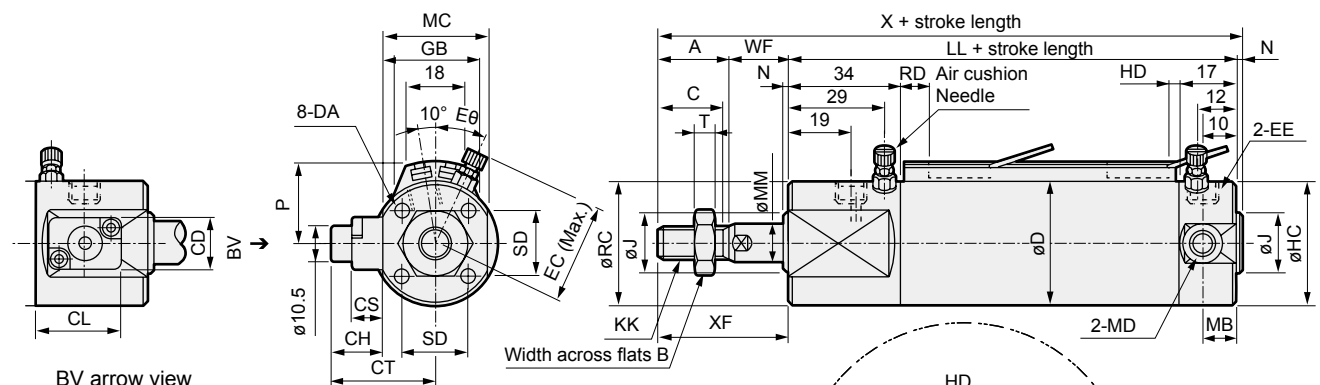


Dimensions (ø20 to ø32)

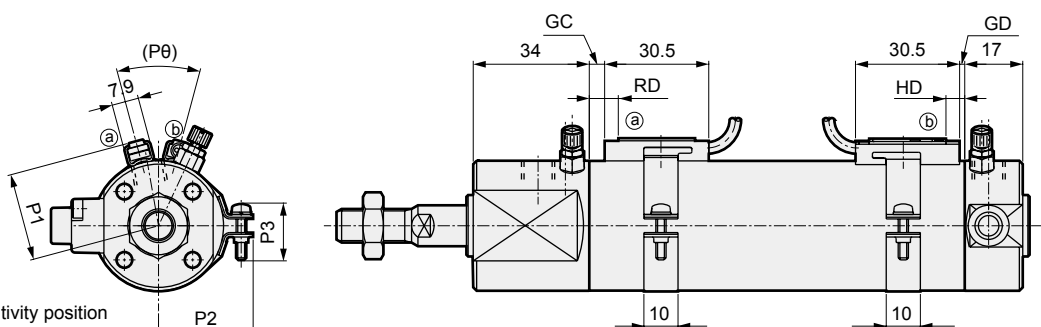
● Basic (00)

(With rod side position locking)

· Switch mounting method: Rail
MN (Width across flats)



· Switch mounting: Band



RD: Rod side max. sensitivity position
HD: Head side max. sensitivity position

*1 : When the mounting is LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. Refer to Safety precautions for details.

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions																					
Bore size (mm)	A	B	C	CD	CH	CL	CS	CT	D	DA	EC	EE	Eθ	HC	J	KK	LL	MB	MC	MD	MM	MO
ø20	-	13	16	16	15.5	22	9.5	28	26	M4 depth 6.5	27	M5	30°	26	12	M8	84	11	25	M5	8	4
ø25	-	17	20	16	15.5	22	9.5	31	31	M5 depth 6.5	29.5	M5	30°	31	14	M10×1.25	84	11	31	M6	10	5
ø32	22	17	20	16	15.5	22	9.5	31.5	38	M5 depth 7.5	32.8	Rc1/8	25°	38	18	M10×1.25	86	10	32	M8	12	5.5

Code											Switch mounting: Rail						Switch mounting: Band					
Bore size (mm)	MN	N	RC	SD	T	WF	X	XF	P	GB	HD			RD			GC			GD		
											T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W
ø20	6	2	30	14	5	19	121	35	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	3.5	3.5	5.5	2.5	2.5	4.5
ø25	8	2	35	16.5	6	20	126	40	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	4.5	4.5	6.5	1.5	1.5	3.5
ø32	10	2	38	20	6	18	128	40	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	5.5	5.5	7.5	2.5	2.5	4.5

Code										
Bore size (mm)	HD			RD			P1	P2	P3	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

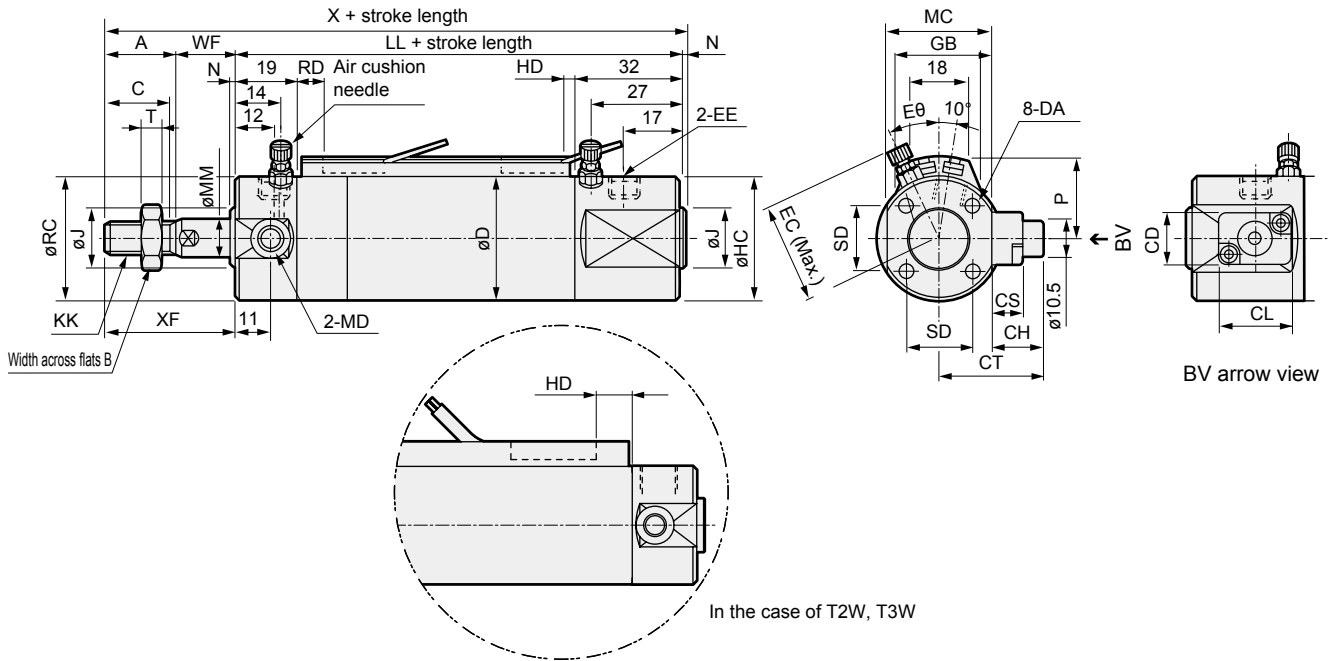
* For the dimensions of the accessories, refer to pages 252 and 253.

Dimensions (ø20 to ø32)

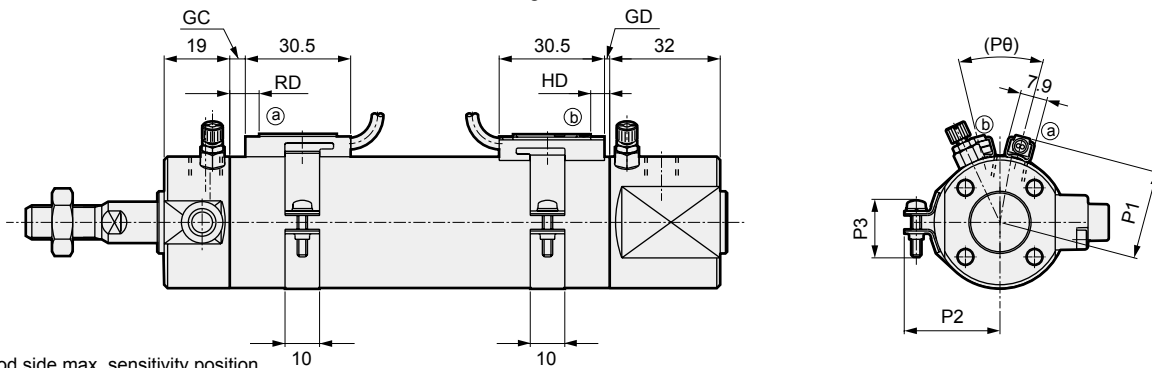


- Basic (00)
(With head side position locking)

· Switch mounting method: Rail



· Switch mounting: Band



RD: Rod side max. sensitivity position
HD: Head side max. sensitivity position

- *1 : When the mounting is LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. Refer to Safety precautions for details.
- *2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code		Basic (00) basic dimensions																						
Bore size (mm)		A	B	C	CD	CH	CL	CS	CT	D	DA		EC	EE	Eθ	HC	J	KK	LL	MC	MD	MM	MO	MN
ø20		-	13	16	16	15.5	22	9.5	28	26	M4 depth 6.5		27	M5	30°	30	12	M8	84	25	M5	8	4	6
ø25		-	17	20	16	15.5	22	9.5	31	31	M5 depth 6.5		29.5	M5	30°	35	14	M10×1.25	84	31	M6	10	5	8
ø32		22	17	20	16	15.5	22	9.5	31.5	38	M5 depth 7.5		32.8	Rc1/8	25°	38	18	M10×1.25	86	32	M8	12	5.5	10

Code		Switch mounting: Rail										Switch mounting: Band										
Bore size (mm)		N	RC	SD	T	WF	X	XF	P	GB	HD			RD			GC			GD		
											T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W
ø20		2	26	14	5	19	121	35	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5	3.5	3.5	5.5	2.5	2.5	4.5
ø25		2	31	16.5	6	20	126	40	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5	4.5	4.5	6.5	1.5	1.5	3.5
ø32		2	38	20	6	18	128	40	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5	5.5	5.5	7.5	2.5	2.5	4.5

Code		Switch mounting: Band									
Bore size (mm)		HD			RD			P1	P2	P3	Pθ
		T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø20		6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø25		5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø32		6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.



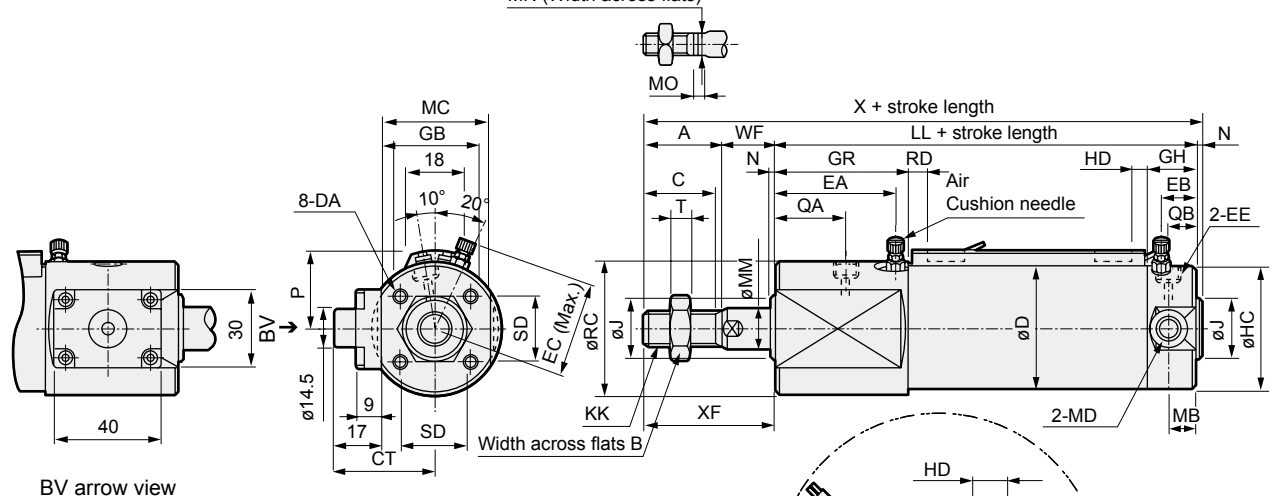
Dimensions (ø40 to ø100)

● Basic (00)

(With rod side position locking)

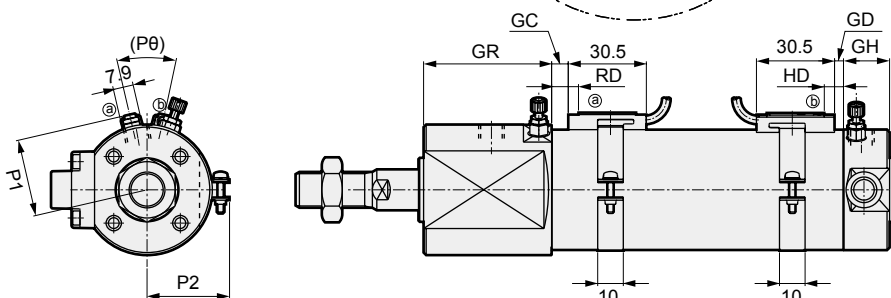
· Switch mounting method: Rail

MN (Width across flats)



BV arrow view

· Switch mounting: Band



*1 : When the mounting is LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. Refer to Safety precautions for details.

*2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions																				
Bore size (mm)	A	B	C	CT	D	DA	EA	EB	EC	EE	GH	GR	HC	J	KK	LL	MA	MB	MC	MD	
ø40	30	22	27	37.5	47	M6 depth 12	45	13	36.6	Rc1/8	19	50	47	25	M14×1.5	108	12	10	41	M10	
ø50	35	27	32	43.5	58	M8 depth 16	48.5	15.5	43	Rc1/4	22	55	58	30	M18×1.5	120	13	12	53	M12	
ø63	35	27	32	49.5	72	M10 depth 16	48.5	15.5	50	Rc1/4	22	55	72	32	M18×1.5	120	13	12	65	M14	
ø80	40	32	37	57.5	89	M10 depth 22	50	20	58.5	Rc3/8	28	58	89	40	M22×1.5	138	-	-	81	-	
ø100	40	41	37	68.5	110	M12 depth 22	50	20	69	Rc1/2	28	58	110	50	M26×1.5	138	-	-	103	-	
Code															Switch mounting: Rail						
Bore size (mm)	MM	MO	MN	N	QA	QB	RC	SD	T	WF	X	XF	P	GB	HD						
															T0/T5	T2/T2R T3/T3P	T2W T3W				
ø40	16	6	14	2	26.5	12	51	26	8	20	160	50	30	25.7	5.0	8.5	8.5				
ø50	20	8	17	2	30	12	61	32	11	23	180	58	35.5	26.2	7.5	11.0	7.5				
ø63	20	8	17	2	30	12	72	38	11	23	180	58	42.5	26.5	7.5	11.0	8.5				
ø80	25	11	22	3	31.5	15	89	50	13	31	212	71	51	26.7	9.5	13.0	10.5				
ø100	30	13	27	3	31.5	15	110	60	16	31	212	71	61.5	26.7	10.0	13.5	13.0				
Code						Switch mounting: Band															
Bore size (mm)	RD			GC			GD			HD			RD			P1	P2	P3	P0		
	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W						
ø40	11.5	11.5	9.5	7.5	7.5	5.5	4.5	4.5	4.5	8.5	8.5	8.5	11.5	11.5	9.5	30.2	32.1	14	(26°)		
ø50	13.0	13.0	10.5	9.0	9.0	6.5	7.0	7.0	3.5	11.0	11.0	7.5	13.0	13.0	10.5	35.7	37.4	14	(22°)		
ø63	13.0	13.0	11.5	9.0	9.0	7.5	7.0	7.0	4.5	11.0	11.0	8.5	13.0	13.0	11.5	42.7	44.4	16	(20°)		
ø80	20.0	20.0	13.5	16.0	16.0	9.5	9.0	9.0	6.5	13.0	13.0	10.5	20.0	20.0	13.5	51.2	53.0	16	(16°)		
ø100	19.5	19.5	15.0	15.5	15.5	11.0	9.5	9.5	9.0	13.5	13.5	13.0	19.5	19.5	15.0	61.7	63.5	16	(16°)		

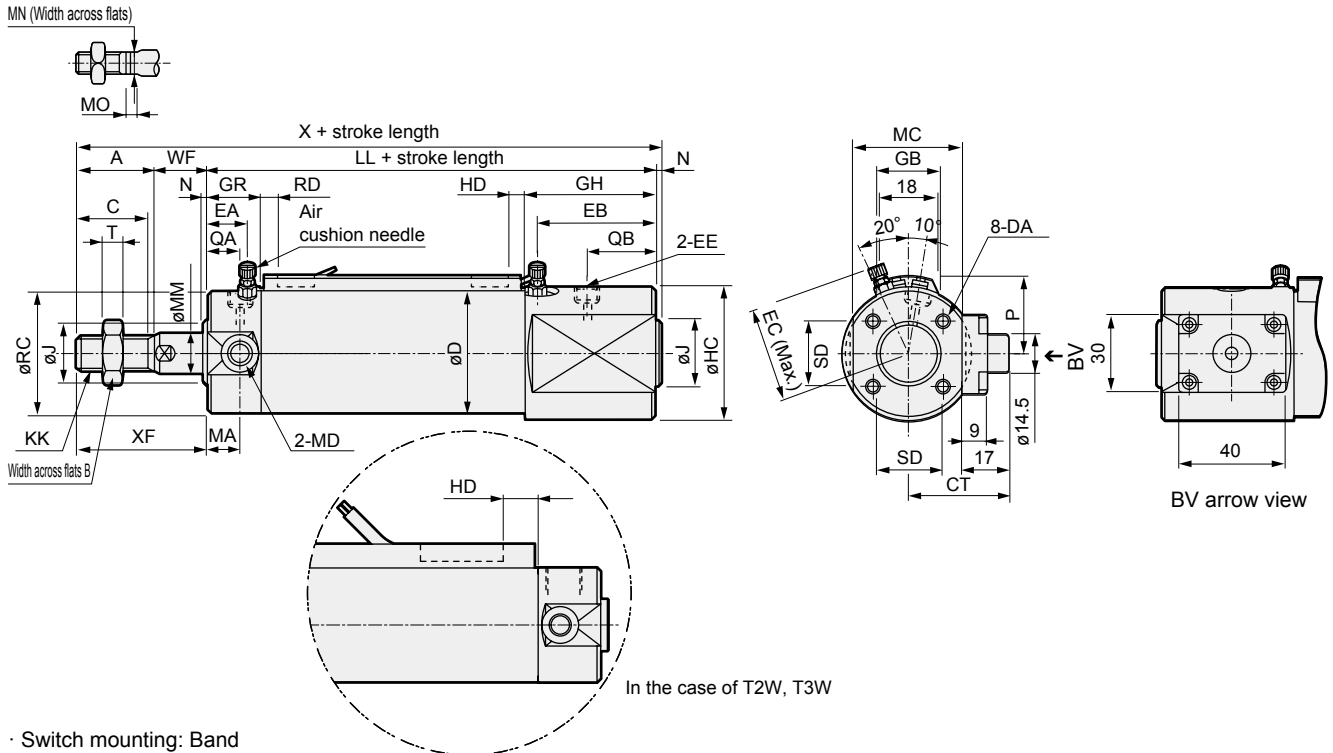
* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

Dimensions (ø40 to ø100)



- Basic (00)
(With head side position locking)
- Switch mounting method: Rail



- Switch mounting: Band

- *1 : When the mounting is LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. Refer to Safety precautions for details.
- *2: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions																			
Bore size (mm)	A	B	C	CT	D	DA	EA	EB	EC	EE	GH	GR	HC	J	KK	LL	MA	MB	MC	MD
ø40	30	22	27	37.5	47	M6 depth 12	15	44	36.6	Rc1/8	49	20	51	25	M14×1.5	108	12	10	41	M10
ø50	35	27	32	43.5	58	M8 depth 16	18.5	45.5	43	Rc1/4	52	25	61	30	M18×1.5	120	13	12	53	M12
ø63	35	27	32	49.5	72	M10 depth 16	18.5	45.5	50	Rc1/4	52	25	72	32	M18×1.5	120	13	12	65	M14
ø80	40	32	37	57.5	89	M10 depth 22	20	50	58.5	Rc3/8	58	28	89	40	M22×1.5	138	-	-	81	-
ø100	40	41	37	68.5	110	M12 depth 22	20	50	69	Rc1/2	58	28	110	50	M26×1.5	138	-	-	103	-

Code														Switch mounting: Rail						
Bore size (mm)	MM	MO	MN	N	QA	QB	RC	SD	T	WF	X	XF	P	GB	HD			RD		
															T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø40	16	6	14	2	13	25.5	47	26	8	20	160	50	30	25.7	5.0	8.5	8.5	11.5	11.5	9.5
ø50	20	8	17	2	15	27	58	32	11	23	180	58	35.5	26.2	7.5	11.0	7.5	13.0	13.0	10.5
ø63	20	8	17	2	15	27	72	38	11	23	180	58	42.5	26.5	7.5	11.0	8.5	13.0	13.0	11.5
ø80	25	11	22	3	15	31.5	89	50	13	31	212	71	51	26.7	9.5	13.0	10.5	20.0	20.0	13.5
ø100	30	13	27	3	15	31.5	110	60	16	31	212	71	61.5	26.7	10.0	13.5	13.0	19.5	19.5	15.0

Code	Switch mounting: Band															
Bore size (mm)	GC			GD			HD			RD			P1	P2	P3	P0
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø40	7.5	7.5	5.5	4.5	4.5	4.5	8.5	8.5	8.5	11.5	11.5	9.5	30.2	32.1	14	(26°)
ø50	9.0	9.0	6.5	7.0	7.0	3.5	11.0	11.0	7.5	13.0	13.0	10.5	35.7	37.4	14	(22°)
ø63	9.0	9.0	7.5	7.0	7.0	4.5	11.0	11.0	8.5	13.0	13.0	11.5	42.7	44.4	16	(20°)
ø80	16.0	16.0	9.5	9.0	9.0	6.5	13.0	13.0	10.5	20.0	20.0	13.5	51.2	53.0	16	(16°)
ø100	15.5	15.5	11.0	9.5	9.5	9.0	13.5	13.5	13.0	19.5	19.5	15.0	61.7	63.5	16	(16°)

- * Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.
- * For the dimensions of the accessories, refer to pages 252 and 253.



Round shaped cylinder Double acting/fine speed

SCM-F Series

● Bore size: $\phi 20/\phi 25/\phi 32/\phi 40$



Specifications

Item	SCM			
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation	Double acting/fine speed			
Working fluid	Compressed air			
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)			
Min. working pressure MPa	0.1 (≈ 15 psi, 1 bar)			
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)			
Ambient temperature $^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)			
Port size	Rc1/8			
Stroke tolerance mm	+1.4 0			
Working piston speed mm/s	1 to 200 (Operate within the allowable absorbed energy.)			
Cushion	Rubber cushion			
Lubrication	Not available			
Allowable absorbed energy J	0.1	0.2	0.5	0.9

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75, 100, 125, 150, 200, 250, 300	500	10
$\phi 25$			
$\phi 32$			
$\phi 40$			

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

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

● Switch mounting: Rail

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity				Proximity				Proximity				Proximity				Proximity			
	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed
$\phi 20$	10				25				50	70	70	55	55	70	70	55	75	110	110	90
$\phi 25$	10				25				50	70	70	55	55	70	70	55	75	110	110	90
$\phi 32$	10				25				50	70	70	55	55	70	70	55	75	110	110	90
$\phi 40$	10				25				50	70	70	55	55	70	70	55	75	110	110	90

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity				Proximity				Proximity				Proximity				Proximity			
	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

Switch specifications

- 1-color/2-color display

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD (*4) T2YDT
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay			Dedicated for programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TB)				
ø 20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.01	0.012	0.007
ø 25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
ø 32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
ø 40	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 weight when S = 0 mm 0.63 kg
- Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ kg
- Weight of 2 switches $0.018 \times 2 = 0.036$ kg
- Product weight $0.63 \text{ kg} + 0.32 \text{ kg} + 0.036 \text{ kg} = 0.986 \text{ kg}$

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

Dimensions

Same as SCM Series (double acting/single rod). Refer to pages 240 to 251.

How to order

Without switch (built-in magnet for switch)

SCM-F-LB-40-D-100-M-I

With switch (built-in magnet for switch)

SCM-F-LB-40-D-100-T2H-D-Z-M-I

Model No. **A** Mounting
*1

I Option

J Accessory
*6

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
*3
*4

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.

*2 : Refer to page 292 for the number of installed switches and the min. stroke length.

*3 : Switches other than **F** Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.

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

*5 : Refer to Ending Page 85 for custom specifications of rod end form.

*6 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

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

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

[Example of model No.]

SCM-F-LB-40D-100-T2H-D-ZMI

Model: Round shaped cylinder, double acting

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided rubber cushion
- E** Stroke length : 100 mm
- F** Switch model No. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Switch mounting : Band
- I** Option : Piston rod material (stainless steel)
- J** Accessory : Rod eye

G Switch quantity

H Switch mounting
*6

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
TA	Rod side trunnion
TB	Head side trunnion

B Bore size (mm)	
20	ø20
25	ø25
32	ø32
40	ø40

C Port thread	
Blank	Rc thread
N	NPT thread (made-to-order product)
G	G thread (made-to-order product)

D Cushion	
D	With two-sided rubber cushion

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø20 to ø40	10 to 500	In 1 mm increments

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

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

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

H Switch mounting	
Blank	Rail method
Z	Band method

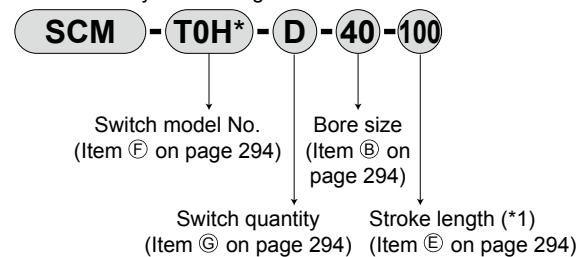
I Option	
Q	Switch rail included at shipment
M	Piston rod material (stainless steel)

J Accessory	
I	Rod eye
Y	Rod clevis
B2	Clevis bracket

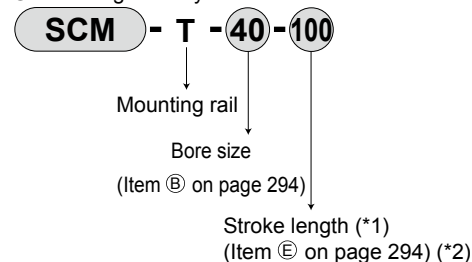
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



- Mounting rail only



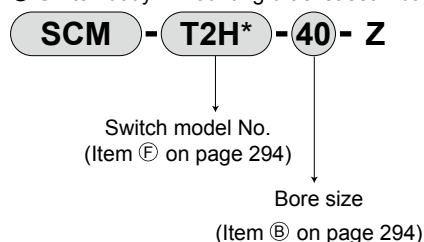
*1: Indicate X if the stroke length exceeds 300 mm.

If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

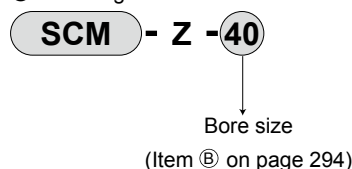
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

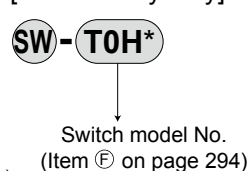
- Switch body + mounting bracket set + band



- Mounting bracket set + band



[Switch body only]



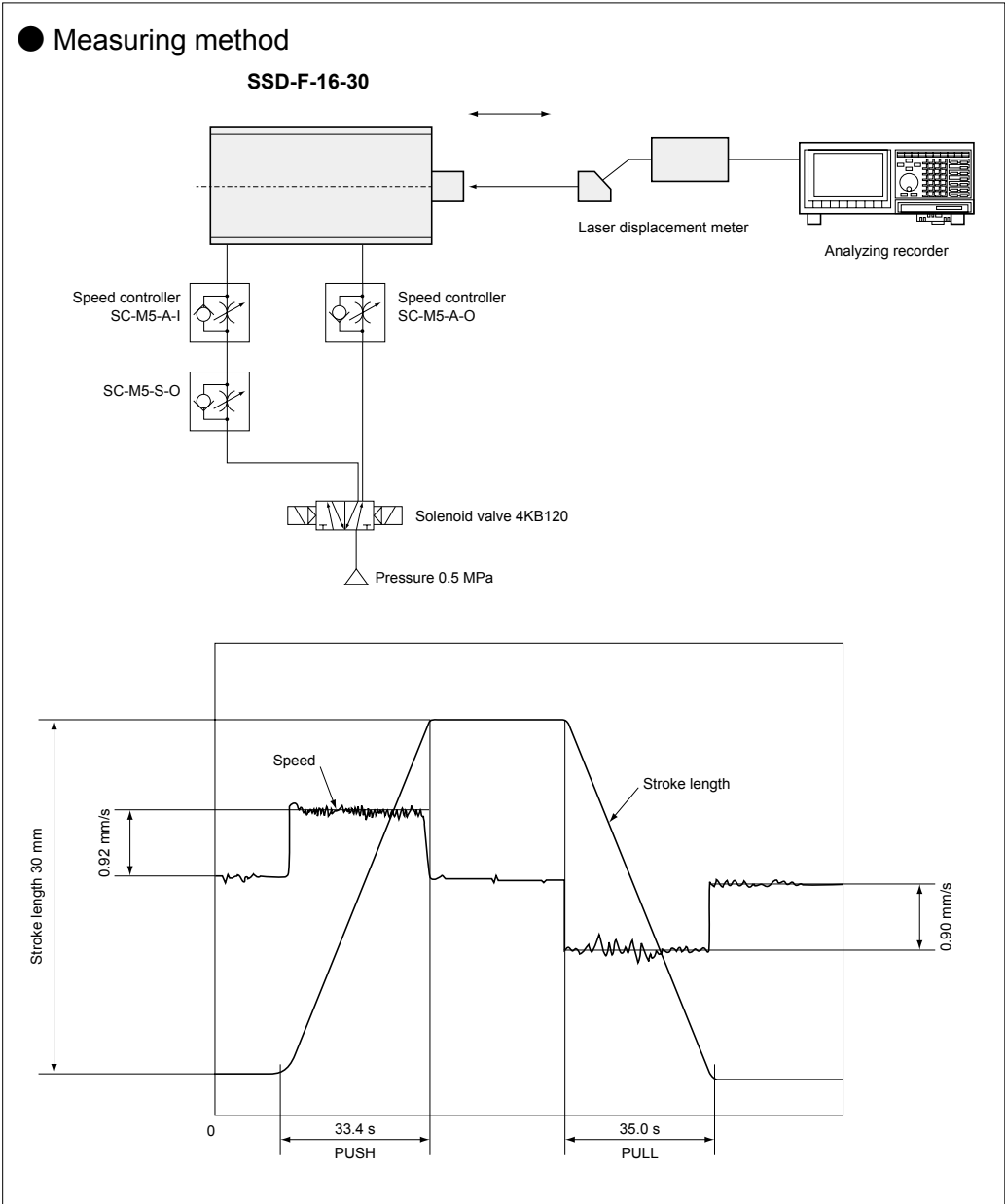
How to order mounting bracket

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
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40
Clevis bracket (CB)	-	-	-	-
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40

*1: All mounting brackets are supplied with mounting bolts.

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

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



MEMO

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending



Round shaped cylinder Double acting/low speed

SCM-O Series

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

JIS symbol



Specifications

Item		SCM-O							
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting/low speed							
Working fluid		Compressed air							
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)							
Min. working pressure MPa		0.1 (≈15 psi, 1 bar)				0.05 (≈7.3 psi, 0.5 bar)			
Proof pressure MPa		1.6 (≈230 psi, 16 bar)							
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)							
Port size		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)	
Working piston speed mm/s		10 to 200 (Operate within the 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 length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25, 50, 75 100, 125, 150 200, 250, 300	1000	10
ø25			
ø32		1500	
ø40			
ø50			
ø63			

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

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

● Switch mounting: Rail

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

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity		Reed		Proximity		Reed		Proximity		Reed		Proximity		Reed		Proximity		Reed	
	T2, T3	T2W, T3W			T2, T3	T2W, T3W			T2, T3	T2W, T3W			T2, T3	T2W, T3W			T2, T3	T2W, T3W		
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 50$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 63$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 83$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 100$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V	T8H/T8V			T2YD (*4) T2YDT		
Applications	For programmable controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay	For programmable controller, relay (no lamp), serial		For programmable controller, relay			Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%		30 VDC or less			12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Without indicator lamp	LED (Lit when ON)			Red/green LED (Lit when ON)		
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80			1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight per	Band weight
Bore size (mm)	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TB)	(per 1 pc)	per S = 10 mm	S = 10 mm (With switch rail)	per switch
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	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 weight when S = 0 mm 0.63 kg
Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ kg
Weight of 2 switches 0.036 kg
Product weight 0.63 kg + 0.32 kg + 0.036 = 0.986 kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

How to order

Without switch (built-in magnet for switch)

SCM-O-LB-40-D-100-J-I

With switch (built-in magnet for switch)

SCM-O-LB-40-D-100-T2H-D-J-I

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
*4
*5

G Switch quantity

H Switch mounting

I Option
*2
*6
*8

J Accessory
*9

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped with the product.
- *2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.
- *3 : Refer to page 298 for the number of installed switches and the min. stroke length.
- *4 : Switches other than F Switch model No. are also available. (Made to order)
- *5 : Refer to Ending Page 1 for details.
- *6 : T8H/V switches cannot be mounted when the bore size is from ø20 to ø40 and the switch mounting style is the rail.
- *7 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- *8 : Refer to Ending Page 85 for custom specifications of rod end form.
- *9 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
- *10 : "I" and "Y" cannot be selected together.
- *10 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

SCM-O-LB-40D-100-T2H-D-JI

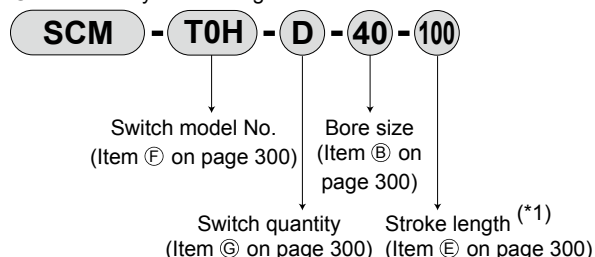
- A Mounting : Axial foot
- B Bore size : ø40 mm
- C Port thread : Rc thread
- D Cushion : With two-sided rubber cushion
- E Stroke length : 100 mm
- F Switch model No. : Proximity T2H switch, lead wire 1 m
- G Switch quantity : 2
- H Switch mounting : Rail
- I Option : Bellows material for max. ambient temperature 100°C
- J Accessory : Rod eye

Code	Description								
A Mounting									
Bore size (ø)		20	25	32	40	50	63	80	100
00	Basic	●	●	●	●	●	●	●	●
LB	Axial foot	●	●	●	●	●	●	●	●
FA	Rod side flange	●	●	●	●	●	●	●	●
FB	Head side flange	●	●	●	●	●	●	●	●
CA	Eye bracket	●	●	●	●	●	●		
CB	Clevis bracket (pin and snap ring incl.)							●	●
TA	Rod side trunnion	●	●	●	●	●	●		
TB	Head side trunnion	●	●	●	●	●	●		
B Bore size (mm)									
20	ø20								
25	ø25								
32	ø32								
40	ø40								
50	ø50								
63	ø63								
80	ø80								
100	ø100								
C Port thread									
Blank	Rc thread								
N	NPT thread (made-to-order product)								
G	G thread (made-to-order product)								
D Cushion									
D	With two-sided rubber cushion								
E Stroke length (mm)									
Bore size		Stroke length *2		Custom stroke length					
ø20 to ø32		10 to 1000		In 1 mm increments					
ø40 to ø100		10 to 1500							
F Switch model No.									
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire			
			AC	DC					
T0H*	T0V*	Reed	●	●	1-color display	2-wire			
T5H*	T5V*		●	●	Without indicator lamp				
T8H*	T8V*		●	●	1-color display				
T1H*	T1V*		Proximity	●		1-color display	2-wire		
T2H*	T2V*			●					
T3H*	T3V*			●	1-color display	3-wire			
T3PH*	T3PV*			●					
T2WH*	T2WV*			●	2-color display	2-wire			
T2YH*	T2YV*			●					
T3WH*	T3WV*			●		3-wire			
T3YH*	T3YV*			●					
T2YD*	-			●	2-color display AC magnetic field	2-wire			
T2YDT*	-			●					
T2JH*	T2JV*			●	1-color display off-delay	2-wire			
* Lead wire length									
Blank	1 m (standard)								
3	3 m (option)								
5	5 m (option)								
G Switch quantity									
R	1 on rod side								
H	1 on head side								
D	2								
T	3								
4	4 (when there are more than 4 switches, indicate switch quantity.)								
H Switch mounting									
Blank	Rail method								
Z	Band method								
I Option									
		Max. ambient temperature		Instantaneous max. temp.					
J	Bellows	100°C		200°C					
L	Bellows	250°C		400°C					
Q	Switch rail included at shipment								
M	Piston rod material (stainless steel)								
J Accessory									
Bore size (ø)		20	25	32	40	50	63	80	100
I	Rod eye	●	●	●	●	●	●	●	●
Y	Rod clevis (pin and snap ring included)	●	●	●	●	●	●	●	●
B1	Eye bracket							●	●
B2	Clevis bracket	●	●	●	●	●	●		

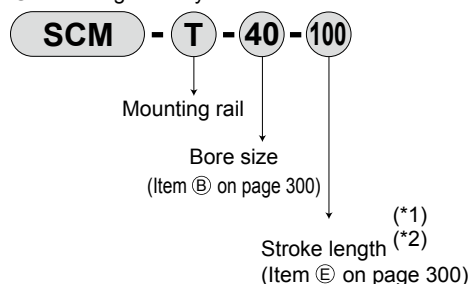
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



● Mounting rail only

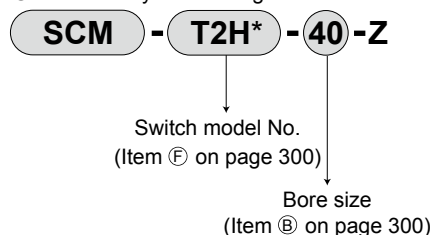


*1: Indicate X if the stroke length exceeds 300 mm. If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

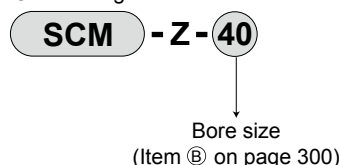
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

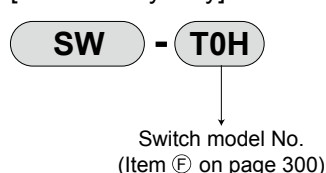
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



How to order mounting bracket

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
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis bracket (CB)	-	-	-	-	-	-	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

*1: All mounting brackets are supplied with mounting bolts.

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

Internal structure

Same as standard. Refer to page 236.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-O-20K	3 6 8 10 13
ø25	SCM-O-25K	
ø32	SCM-O-32K	
ø40	SCM-O-40K	
ø50	SCM-O-50K	
ø63	SCM-O-63K	
ø80	SCM-O-80K	
ø100	SCM-O-100K	

Dimensions

Same as standard. Refer to pages 238 to 251.

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



Round shaped cylinder Double acting/low friction

SCM-U Series

- Bore size: $\varnothing 20/\varnothing 25/\varnothing 32/\varnothing 40/\varnothing 50/\varnothing 63/\varnothing 80/\varnothing 100$

JIS symbol



Specifications

Item		SCM-U							
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting/low friction							
Working fluid		Compressed air							
Max. working pressure	MPa	0.7 (≈100 psi, 7 bar)							
Min. working pressure	MPa	0.03 (≈4.4 psi, 0.3 bar)							
Proof pressure	MPa	1.0 (≈150 psi, 10 bar)							
Ambient temperature	°C	5 (41°F) to 60 (140°F)							
Port size		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)		
Working piston speed	mm/s	10 to 1000 (Operate within the 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 rate	ℓ /min	5						8	

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	*1: The custom stroke length is available in 1 mm increments.
ø20	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10	
ø25				
ø32				
ø40		1500		
ø50				
ø63				
ø80				
ø100				

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

- Switch mounting: Rail

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

- Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\varnothing 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 50$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 63$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 83$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 100$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight per	Band weight
Bore size (mm)	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TB)	(per 1 pc)	per S = 10 mm	S = 10 mm (With switch rail)	per switch
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	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 weight when S = 0 mm	0.63 kg
		Additional weight when S = 100 mm	$0.032 \times \frac{100}{10} = 0.32$ kg
		Weight of 2 switches	0.036 kg
		Product weight	$0.63 \text{ kg} + 0.32 \text{ kg} + 0.036 = 0.986$ kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa								
		0.03	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø20	Push	9.4	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	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2
	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	15.1×10^2	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
	Pull	13.6×10^2	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
ø100	Push	23.6×10^2	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
	Pull	21.4×10^2	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

How to order

Without switch (built-in magnet for switch)

SCM-U-LB-40-D-100-M-I

With switch (built-in magnet for switch)

SCM-U-LB-40-D-100-T2H-D-M-I

A Mounting

Rubber cushion

B Bore size

C Port thread

D Stroke length

E Switch model No.

*3

*4

F Switch quantity

G Switch mounting

H Option

*6

I Accessory

*7

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.

*2 : Refer to page 302 for the number of installed switches and the min. stroke length.

*3 : Switches other than **E** Switch model No. are also available. (Made to order)

Refer to Ending Page 1 for details.

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

*5 : Refer to Ending Page 85 for custom specifications of rod end form.

*6 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

*7 : "I" and "Y" cannot be selected together.

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

[Example of model No.]

SCM-U-LB-40D-100-T2H-D-M-I

Model: Round shaped cylinder, double acting/low friction

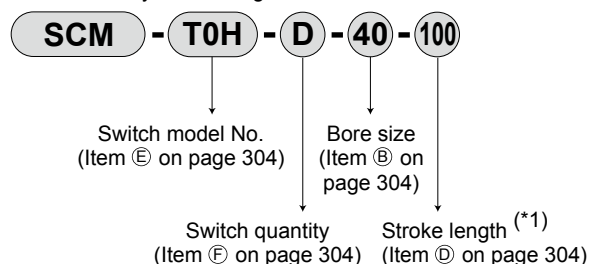
- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Stroke length : 100 mm
- E** Switch model No. : Proximity T2H switch, lead wire 1 m
- F** Switch quantity : 2
- G** Switch mounting : Rail
- H** Option : Piston rod material/stainless steel
- I** Accessory : Rod eye

Code	Description								
A Mounting									
Bore size (ø)		20	25	32	40	50	63	80	100
00	Basic	●	●	●	●	●	●	●	●
LB	Axial foot	●	●	●	●	●	●	●	●
FA	Rod side flange	●	●	●	●	●	●	●	●
FB	Head side flange	●	●	●	●	●	●	●	●
CA	Eye bracket	●	●	●	●	●	●		
CB	Clevis bracket (pin and snap ring incl.)							●	●
TA	Rod side trunnion	●	●	●	●	●	●		
TB	Head side trunnion	●	●	●	●	●	●		
B Bore size (mm)									
20	ø20								
25	ø25								
32	ø32								
40	ø40								
50	ø50								
63	ø63								
80	ø80								
100	ø100								
C Port thread									
Blank	Rc thread								
N	NPT thread (made-to-order product)								
G	G thread (made-to-order product)								
D Stroke length (mm)									
Bore size		Stroke length *2		Custom stroke length					
ø20 to ø32		10 to 1000		In 1 mm increments					
ø40 to ø100		10 to 1500							
E Switch model No.									
Axial lead wire	Radial lead wire	Contact	Voltage		Display		Lead wire		
			AC	DC					
T0H*	T0V*	Reed	●	●	1-color display		2-wire		
T5H*	T5V*		●	●	Without indicator lamp				
T8H*	T8V*		●	●	1-color display				
T1H*	T1V*	Proximity	●		1-color display		2-wire		
T2H*	T2V*			●					
T3H*	T3V*			●					
T3PH*	T3PV*			●	1-color display		3-wire		
T2WH*	T2WV*			●	2-color display				
T2YH*	T2YV*			●					
T3WH*	T3WV*			●					
T3YH*	T3YV*			●	2-color display		3-wire		
T2YD*	-			●					
T2YDT*	-			●					
T2JH*	T2JV*		●	2-color display for AC magnetic field		2-wire			
			●	1-color display off-delay					2-wire
* Lead wire length									
Blank	1 m (standard)								
3	3 m (option)								
5	5 m (option)								
F Switch quantity									
R	1 on rod side								
H	1 on head side								
D	2								
T	3								
4	4 (when there are more than 4 switches, indicate switch quantity.)								
G Switch mounting									
Blank	Rail method								
Z	Band method								
H Option									
Q	Switch rail included at shipment								
M	Piston rod material (stainless steel)								
I Accessory									
Bore size (ø)		20	25	32	40	50	63	80	100
I	Rod eye	●	●	●	●	●	●	●	●
Y	Rod clevis (pin and snap ring included)	●	●	●	●	●	●	●	●
B1	Eye bracket							●	●
B2	Clevis bracket	●	●	●	●	●	●		

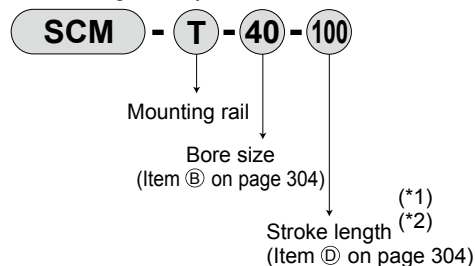
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set

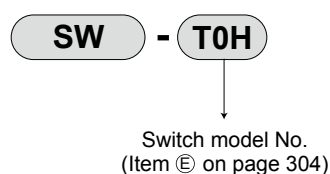


- Mounting rail only



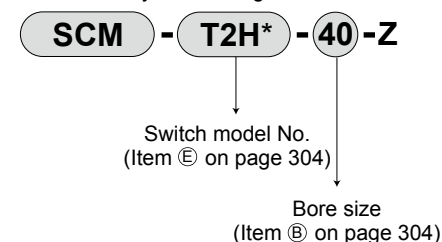
- *1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
- *2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch body only]

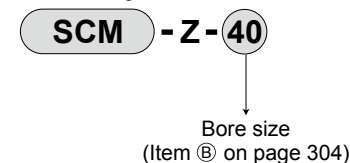


[Switch mounting: Band]

- Switch body + mounting bracket set + band



- Mounting bracket set + band



How to order mounting bracket

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
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis bracket (CB)	-	-	-	-	-	-	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

*1: All mounting brackets are supplied with mounting bolts.

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

Dimensions

Same as SCM Series (double acting/single rod). Refer to pages 238 to 251.

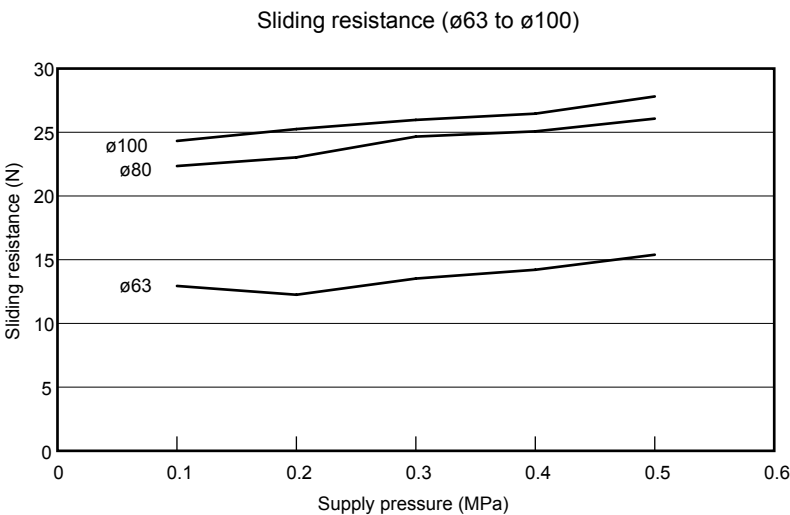
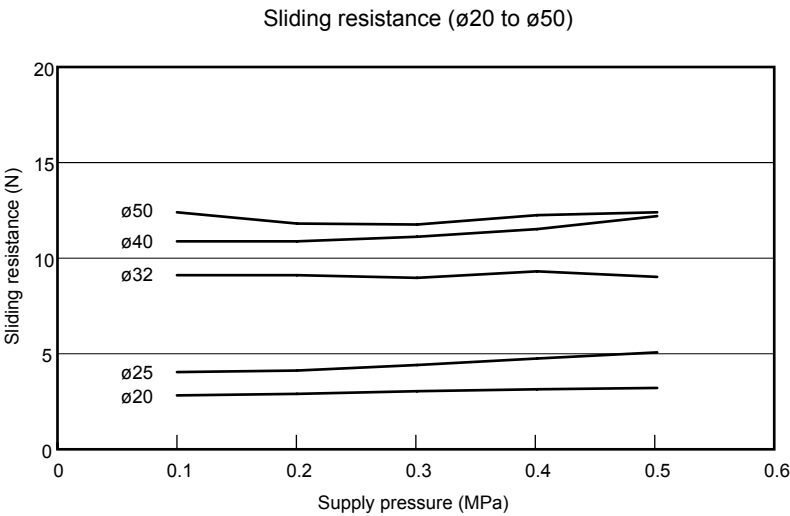
SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/ COVP/IN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/ MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

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

Sliding resistance

Values are measured under the following conditions. As the values vary with the installation method, pressurizing direction, etc., they are not guaranteed.

(Test conditions)	
Cylinder	SCM-U
Mounting direction of cylinder	Vertical
Cylinder speed	10 mm/min (driven by external motor)
Cylinder pressurizing direction	Head side (the rod end is open to atmosphere)



MEMO

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

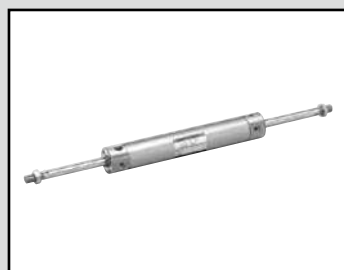
ShkAbs

FJ

FK

Spd
Contr

Ending



Round shaped cylinder Double acting/double rod

SCM-D Series

- Bore size: $\varnothing 20/\varnothing 25/\varnothing 32/\varnothing 40$
 $\varnothing 50/\varnothing 63/\varnothing 80/\varnothing 100$

JIS symbol

Double acting cylinder double rod



Specifications

Item		SCM-D							
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting/double rod							
Working fluid		Compressed air							
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)							
Min. working pressure MPa		0.15 (≈22 psi, 1.5 bar)				0.1 (≈15 psi, 1 bar)			
Proof pressure MPa		1.6 (≈230 psi, 16 bar)							
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)							
Port size	With rubber cushion	Rc1/8			Rc1/4		Rc8/3	Rc1/2	
	With air cushion	M5		Rc1/8		Rc1/4		Rc8/3	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)			
Working piston speed mm/s		30 to 1000 (Operate within the allowable absorbed energy.)							
Cushion		Either rubber cushion or air cushion can be selected.							
Effective air cushion length mm		8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)							
Allowable absorbed energy 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 allowable absorbed energy on the non-specified side when an air cushion is selected for the other side ("R" $\Rightarrow$ Head side, "H" $\Rightarrow$ Rod side).

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

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\varnothing 20$	25, 50, 75, 100, 125, 150, 200, 250, 300	600	10
$\varnothing 25$			
$\varnothing 32$			
$\varnothing 40$			
$\varnothing 50$			
$\varnothing 63$			
$\varnothing 80$			
$\varnothing 100$			

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

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

● Switch mounting: Rail

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

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
	Proximity				Proximity				Proximity				Proximity				Proximity			
	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed	T2, T3	T2W, T3W	T*Y*	Reed
Bore size (mm)																				
$\varnothing 20$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 25$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 32$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 40$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 50$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 63$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 83$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\varnothing 100$			10		25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%		30 VDC or less			12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm				Switch weight (per 1 pc.)	Per S = 10 mm	Per S = 10 mm
	Bore size (mm)	Basic (00)	Axial foot (LB)	Flange (FA)		Additional weight	Additional weight (With switch rail)
	ø20	0.12	0.23	0.20	Refer to the weight in the switch specifications.	0.014	0.016
	ø25	0.21	0.34	0.31		0.020	0.22
	ø32	0.32	0.48	0.46		0.026	0.028
	ø40	0.52	0.74	0.72		0.046	0.048
	ø50	0.96	1.44	1.30		0.068	0.070
	ø63	1.27	1.99	1.77		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 when S = 0 mm 0.74 kg Additional weight when S = 100 mm $0.048 \times \frac{100}{10} = 0.48$ kg Weight of 2 switches $0.018 \times 2 = 0.036$ kg Product weight $0.74 + 0.48 + 0.036 = 1.256$ kg
--	--	--

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

SCM-D Series

How to order

Without switch (built-in magnet for switch)

SCM-D-LB-40-B-100-J-I

With switch (built-in magnet for switch)

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

A Mounting

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

*4

*5

G Switch quantity

H Switch mounting

I Option

*2

*6

*8

J Accessory

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.

*2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.

*3 : Refer to page 308 for the number of installed switches and the min. stroke length.

*4 : Switches other than **F** Switch model No. are also available. (Made to order)

Refer to Ending Page 1 for details.

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

*6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.

*7 : Refer to Ending Page 85 for custom specifications of rod end form.

*8 : "Q" (switch rail included at shipment) is not available for the "Z" switch mounting.

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

[Example of model No.]

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

Model: Round shaped cylinder, double acting/double rod

A Mounting : Axial foot

B Bore size : ø40 mm

C Port thread : Rc thread

D Cushion : With two-sided air cushion

E Stroke length : 100 mm

F Switch model No. : Proximity T2H switch, lead wire 1 m

G Switch quantity : 2

H Switch mounting : Rail

I Option : Bellows material for max. ambient temperature 100°C

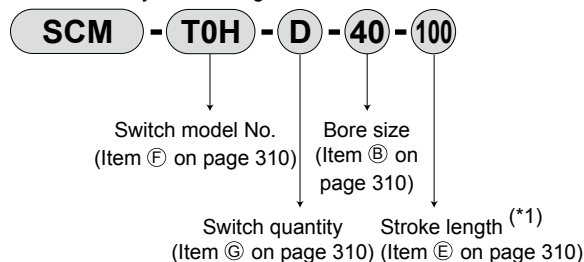
J Accessory : Rod eye

Code	Description							
A Mounting								
Bore size (ø)		20	25	32	40	50	63	80 100
00	Basic	●	●	●	●	●	●	●
LB	Axial foot	●	●	●	●	●	●	●
FA	Rod side flange	●	●	●	●	●	●	●
TA	Rod side trunnion	●	●	●	●	●		
B Bore size (mm)								
20	ø20							
25	ø25							
32	ø32							
40	ø40							
50	ø50							
63	ø63							
80	ø80							
100	ø100							
C Port thread								
Blank	Rc thread							
N	NPT thread (made-to-order product)							
G	G thread (made-to-order product)							
D Cushion								
B	With two-sided air cushion							
R	Rod side air cushioned							
H	Head side air cushioned							
D	With two-sided rubber cushion							
E Stroke length (mm)								
Bore size		Stroke length		Custom stroke length				
ø20 to ø100		10 to 600		In 1 mm increments				
F Switch model No.								
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire		
			AC	DC				
T0H*	T0V*	Reed	●	●	1-color display	2-wire		
T5H*	T5V*		●	●	Without indicator lamp			
T8H*	T8V*		●	●	1-color display			
T1H*	T1V*	Proximity	●	●	1-color display	2-wire		
T2H*	T2V*			●				
T3H*	T3V*			●	1-color display	3-wire		
T3PH*	T3PV*			●				
T2WH*	T2WV*			●	2-color display	2-wire		
T2YH*	T2YV*			●				
T3WH*	T3WV*			●				
T3YH*	T3YV*			●	2-color display	3-wire		
T2YD*	-			●				
T2YDT*	-			●	AC magnetic field	2-wire		
T2JH*	T2JV*			●	1-color display off-delay	2-wire		
* Lead wire length								
Blank	1 m (standard)							
3	3 m (option)							
5	5 m (option)							
G Switch quantity								
R	1 on rod side							
H	1 on head side							
D	2							
T	3							
4	4 (when there are more than 4 switches, indicate switch quantity.)							
H Switch mounting								
Blank	Rail method							
Z	Band method							
I Option								
		Max. ambient temperature			Instantaneous max. temperature			
J	Bellows	100°C			200°C			
L	Bellows	250°C			400°C			
Q	Switch rail included at shipment							
M	Piston rod material (stainless steel)							
P6	Copper and PTFE free							
J Accessory								
Bore size (ø)		20	25	32	40	50	63	80 100
I	Rod eye	●	●	●	●	●	●	●
Y	Rod clevis (pin and snap ring included)	●	●	●	●	●	●	●
B2	Clevis bracket	●	●	●	●	●		

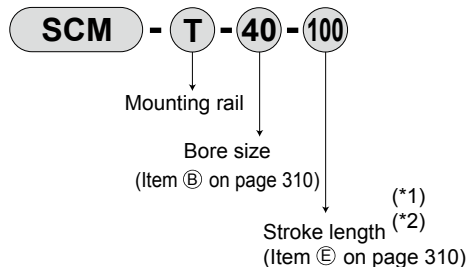
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



● Mounting rail only



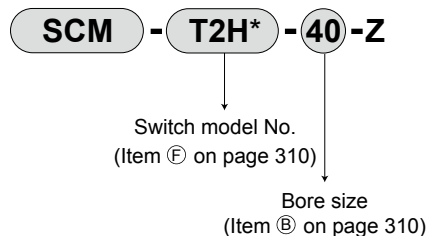
*1: Indicate X if the stroke length exceeds 300 mm.

If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

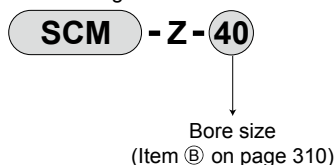
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

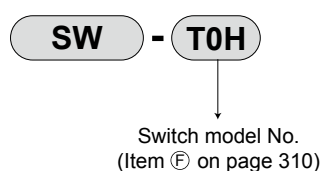
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



How to order mounting bracket

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: All mounting brackets are supplied with mounting bolts.

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

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

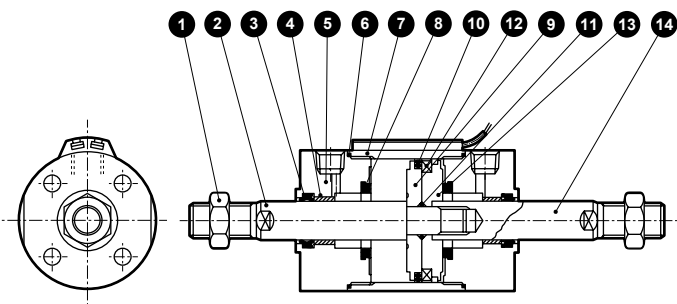
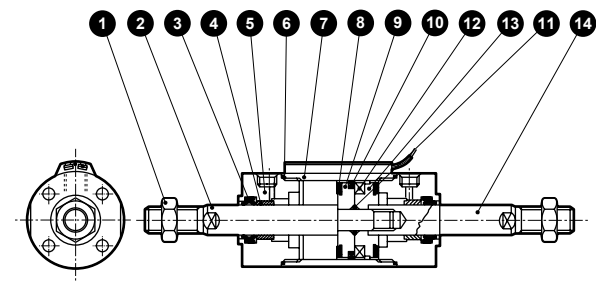
Spd
Contr

Ending

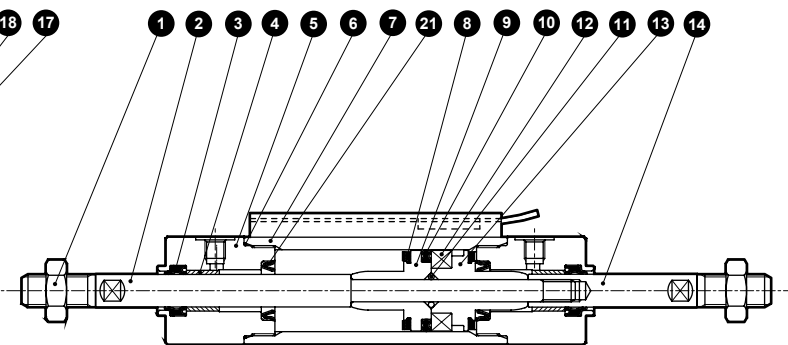
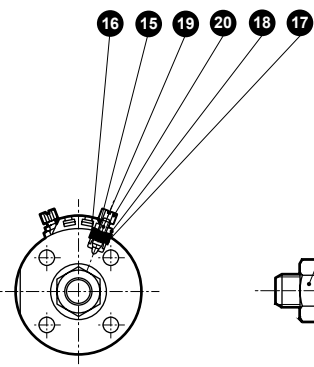
Internal structure and parts list

● With rubber cushion
ø20 to ø40

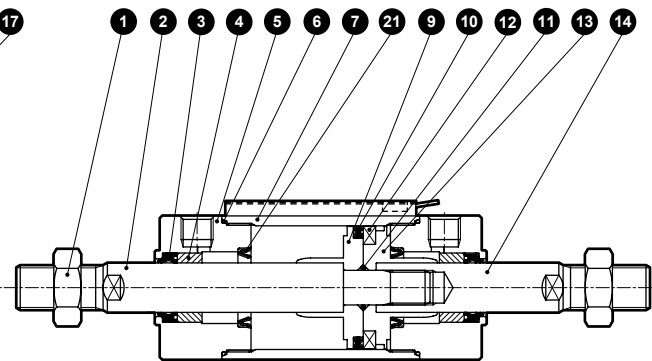
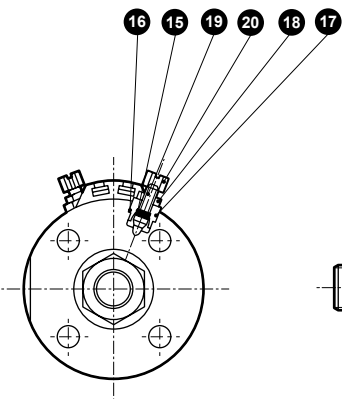
ø50 to ø100



● With air cushion
ø20 to ø40



ø50 to ø100



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	12	Magnet	Plastic	
2	Piston rod A	ø20, ø25: Stainless steel ø32 to ø100: Steel	Industrial chrome plating	13	Piston H	ø20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
3	Rod packing	Nitrile rubber		14	Piston rod B	ø20, ø25: Stainless steel ø32 to ø100: Steel	Industrial chrome plating
4	Bush	Oil impregnated bearing alloy *1		With air cushion			
5	Rod cover	Aluminum alloy	Hard alumite	15	Needle gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		16	Holder gasket	Nitrile rubber	
7	Cylinder tube	Aluminum alloy	Hard alumite	17	Needle holder	Aluminum alloy	
8	Cushion rubber	Urethane rubber		18	Lock nut	Steel	Nickeling
9	Piston R	ø20 to ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		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	

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

Repair parts list

Note: Specify the kit No. when placing an order.

With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-D-20DK	3 6 8 10
ø25	SCM-D-25DK	
ø32	SCM-D-32DK	
ø40	SCM-D-40DK	
ø50	SCM-D-50DK	
ø63	SCM-D-63DK	
ø80	SCM-D-80DK	
ø100	SCM-D-100DK	

With air cushion

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-D-20BK	3 6 8 10 15 16 21
ø25	SCM-D-25BK	
ø32	SCM-D-32BK	
ø40	SCM-D-40BK	
ø50	SCM-D-50BK	
ø63	SCM-D-63BK	
ø80	SCM-D-80BK	
ø100	SCM-D-100BK	

*1: 3, 6 and 10 are the same as those of the type with rubber cushion.

*2: 8 is not supplied with ø50 to ø100.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

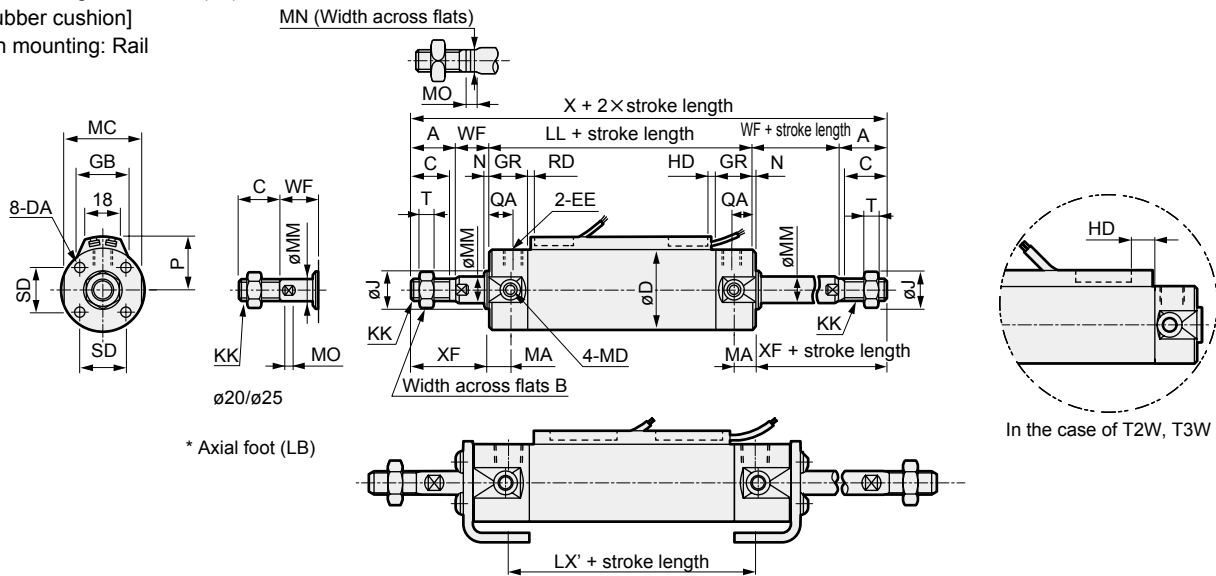
Ending

SCM-D Series

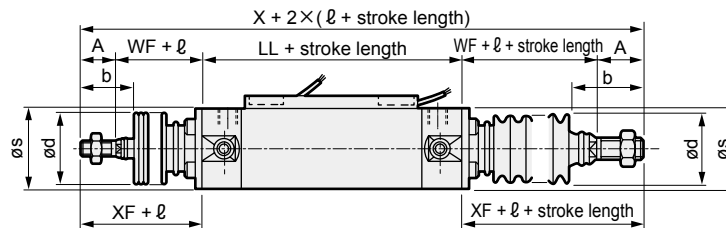
Dimensions



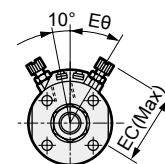
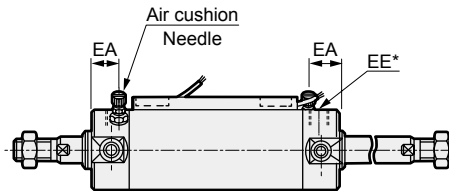
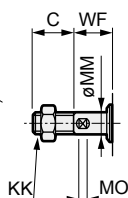
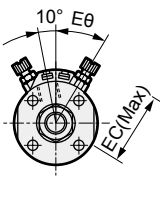
- Double acting double rod (00)
- [With rubber cushion]
- Switch mounting: Rail



With bellows on both sides



- [With air cushion]
- Switch mounting: Rail



1 : Piping port (EE) of ø20 and ø25 is different. Refer to the dimensions (EE) of the type with air cushion.

*2 : Needle relational dimensions of the type with air cushion are the same as those of the double acting. Refer to pages 238 and 239.

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

*4 : Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*5 : For the dimensions of the accessories, refer to pages 252 and 253.

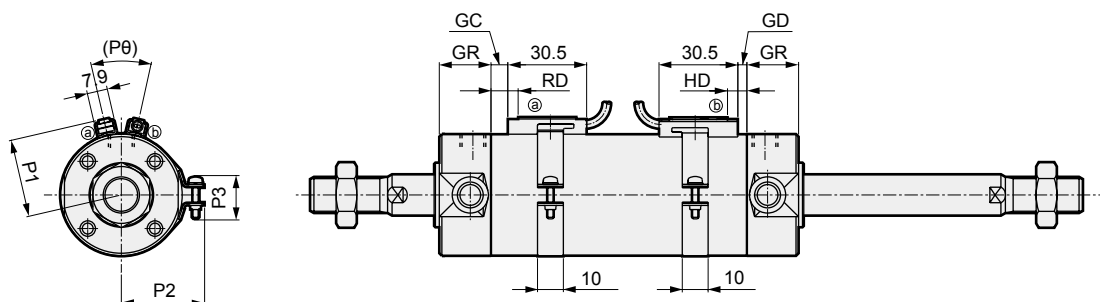
Code	Basic (00) basic dimensions																				
Bore size (mm)	A	B	C	D	DA	EE (Note)	GR	J	KK	LL	MA	MC	MD	MM	MN	MO	N	QA	SD		
ø20	–	13	16	26	M4 depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	2	12	14		
ø25	–	17	20	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	71	11	29	M6	10	8	5	2	12	16.5		
ø32	22	17	20	38	M5 depth 7.5	Rc1/8	19	18	M10×1.25	73	11	36	M8	12	10	5.5	2	12	20		
ø40	30	22	27	47	M6 depth 12	Rc1/8	20	25	M14×1.5	79	12	44	M10	16	14	6	2	13	26		
ø50	35	27	32	58	M8 depth 16	Rc1/4	25	30	M18×1.5	93	13	55	M12	20	17	8	2	15	32		
ø63	35	27	32	72	M10 depth 16	Rc1/4	25	32	M18×1.5	93	13	69	M14	20	17	8	2	15	38		
ø80	40	32	37	89	M10 depth 22	Rc3/8	28	40	M22×1.5	108	-	80	-	25	22	11	3	15	50		
ø100	40	41	37	110	M12 depth 22	Rc1/2	28	50	M26×1.5	108	-	100	-	30	27	13	3	15	60		
Code						With bellows				With air cushion				Switch mounting: Rail							
Bore size (mm)	T	WF	X	XF	LX'	b	d	s	ℓ	EA	EC	EE*	Eθ	P	GB	HD			RD		
																T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø20	5	19	141	35	47.2	30	30	25.7	(Stroke length/3) + 18.5	14	27	M5	30°	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
ø25	6	20	151	40	47.2	35	30	30.7	(Stroke length/3) + 20.5	14	29.5	M5	30°	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø32	6	18	153	40	47.2	31.5	35	37.7	(Stroke length/3) + 19	14	32.8	Rc1/8	25°	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5
ø40	8	20	179	50	52.2	40	35	46.7	(Stroke length/3) + 18.5	15	36.6	Rc1/8	20°	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø50	11	23	209	58	58	46	40	57.7	(Stroke length/3.6) + 18.5	18.5	43	Rc1/4	20°	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø63	11	23	209	58	58	46	40	71.7	(Stroke length/3.6) + 18.5	18.5	50	Rc1/4	20°	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0
ø80	13	31	250	71	60	55	50	88.7	(Stroke length/4.3) + 14.5	20	58.5	Rc3/8	20°	51	26.7	9.5	13.0	15.0	20.0	20.0	22.0
ø100	16	31	250	71	60	56	60	109.7	(Stroke length/4.5) + 21	20	69	Rc1/2	20°	61.5	26.7	10.0	13.5	15.5	19.5	19.5	21.5

Note: Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251. For axial foot (LB), refer to the figure above.

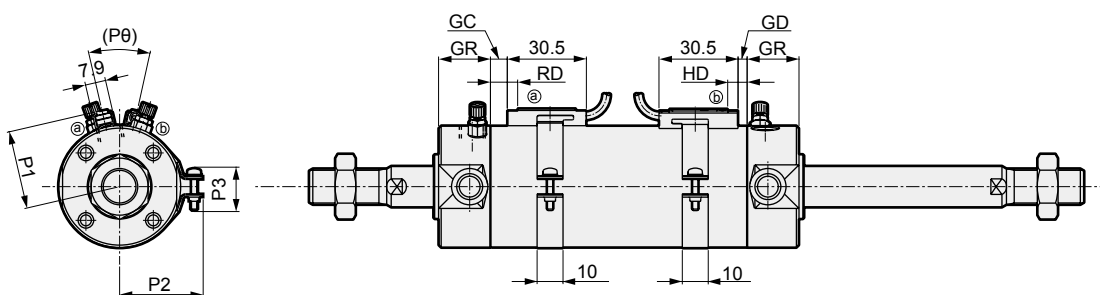
Dimensions



- Double acting double rod
- [With rubber cushion]
- Switch mounting: Band



- [With air cushion]
- Switch mounting: Band



*1: Needle relational dimensions of the type with air cushion are the same as those of the double acting. Refer to pages 238 and 239.
 *2: The positions for the left and right widths across flats are unspecified.

*3: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Switch mounting: Band																
Bore size (mm)	GC			GD			GR	HD			RD			P1	P2	P3	P0
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W		T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø20	3.5	3.5	5.5	2.5	2.5	4.5	19	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø25	4.5	4.5	6.5	1.5	1.5	3.5	19	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø32	5.5	5.5	7.5	2.5	2.5	4.5	19	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
ø40	7.5	7.5	9.5	4.5	4.5	6.5	20	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
ø50	9.0	9.0	11.0	7.0	7.0	9.0	25	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
ø63	9.0	9.0	11.0	7.0	7.0	9.0	25	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)
ø80	16.0	16.0	18.0	9.0	9.0	11.0	28	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
ø100	15.5	15.5	17.5	9.5	9.5	11.5	28	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)

* For the dimensions of the accessories, refer to pages 252 and 253.

SCP*3
CMK2
CMA2



Round shaped cylinder
Double acting/back to back

SCM-B Series

● Bore size:ø20/ø25/ø32/ø40/ø50/ø63

JIS symbol



SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT

Specifications

Item	SCM-B					
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting/back to back					
Working fluid	Compressed air					
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure MPa	0.1 (≈15 psi, 1 bar)				0.05 (≈7.3 psi, 0.5 bar)	
Proof pressure MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size	Rc1/8				Rc1/4	
Stroke tolerance mm	+1.4 0 (to 500)			+1.4 0 (to 750)		+2.3 0 (to 750)
Working piston speed mm/s	30 to 1000 (Operate within the allowable absorbed energy.)					
Cushion	Rubber cushion					
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)					
Allowable absorbed energy J	0.1	0.2	0.5	0.9	1.6	1.6

MDC2
MVC
SMG
MSD/
MSDG
FC*

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25, 50, 75 100, 125, 150 200, 250, 300	500	10
ø25			
ø32			
ø40			
ø50	200, 250, 300	750	10
ø63			

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

STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2

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

● Switch mounting: Rail

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø63	10				25				50	65	65	55	55	65	65	55	75	110	110	90

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

- 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Weight when stroke (S) = 0 mm	Additional weight					Switch weight	Additional weight	Additional weight per	Band weight
Bore size (mm)	Basic (00)	Basic	Axial foot	Flange	Trunnion		(per 1 pc)	per S = 10 mm	S = 10 mm (With switch rail)	per switch
ø20	0.10	0.00	0.11	0.03	0.01	Refer to the weight in the switch specifications.		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 when S = 0 mm 0.41 kg

Additional weight when S = 25mm $0.032 \times \frac{25}{10} = 0.08$ 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 when S = 0 mm 0.41 kg

Additional weight when S = 50mm $0.032 \times \frac{25}{10} = 0.16$ kg

Weight of 1 switches 0.018 kg

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

Product weight (S1 weight + S2 weight + additional weight) 0.526 kg + 0.588 kg + 0.27 kg = 1.384 kg

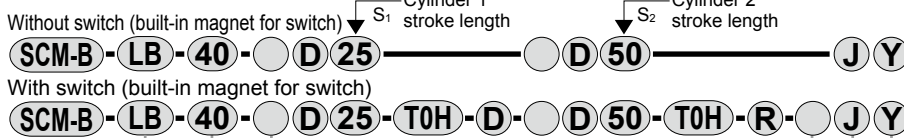
Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

SCM-B Series

How to order



A Mounting *1

B Bore size

C Port thread

D Cushion **D** Cushion

E Stroke length =S1 **E** Stroke length =S2

F Switch model No. *4 **F** Switch model No. *3

Cylinder 1 stroke length 25 mm (S1)
+ Cylinder 2 stroke length 50 mm (S2)
Total stroke length 75 mm S1 + S2

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped with the product.
- *2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.
- *3 : Refer to page 316 for the number of installed switches and the min. stroke length.
- *4 : Switches other than **F** Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.
- *5 : T8H/V switches cannot be mounted when the bore size is from ø20 to ø40 and the switch mounting style is the rail.
- *6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- *7 : Refer to Ending Page 85 for custom specifications of rod end form.
- *8 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
- *9 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

SCM-B-LB-40-D25-T0H-D-D50-T0H-R-J-Y

Model: Round shaped cylinder, double acting/back to back

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided rubber cushion } Cylinder 1
- E** Stroke length : S1=25 mm
- D** Cushion : With two-sided rubber cushion } Cylinder 2
- E** Stroke length : S2=50 mm
- F** Switch model No. : Reed T0H switch, Lead wire 1 m
- G** Switch quantity : Cylinder 1; 2 pieces included, Cylinder 2; 1 on rod side
- H** Switch mounting : Rail
- I** Option : Bellows material for max. ambient temperature 100°C
- J** Accessory : Rod clevis

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Cylinder 1 side flange
FB	Cylinder 2 side flange
TA	Cylinder 1 side trunnion
TB	Cylinder 2 side trunnion

B Bore size (mm)	
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50
63	ø63

C Port thread	
Blank	Rc thread
N	NPT thread (made-to-order product)
G	G thread (made-to-order product)

D Cushion	
D	With two-sided rubber cushion

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø20 to ø32	10 to 500	In 1 mm
ø40 to ø63	10 to 750	increments

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

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3
4	4 (If > 4 switches, indicate switch quantity.)

H Switch mounting	
Blank	Rail method
Z	Band method

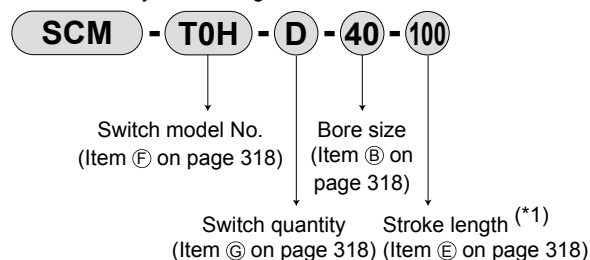
I Option			
		Max. ambient temp.	Instantaneous max. temp.
J	Bellows	100°C	200°C
L	Bellows	250°C	400°C
Q	Switch rail included at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

J Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring included)
B2	Clevis bracket

How to order switch

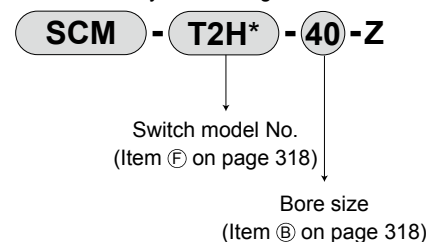
[Switch mounting: Rail]

- Switch body + mounting rail set

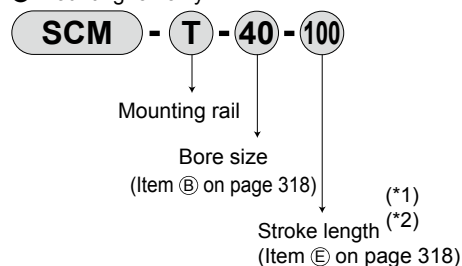


[Switch mounting: Band]

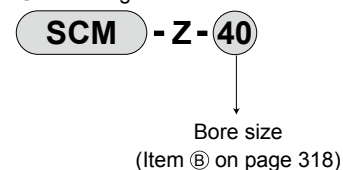
- Switch body + mounting bracket set + band



- Mounting rail only



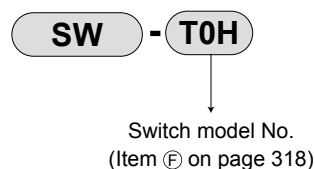
- Mounting bracket set + band



*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch body only]



How to order mounting bracket

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

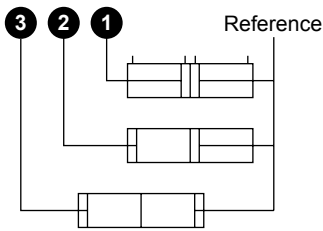
*1: All mounting brackets are supplied with mounting bolts.

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

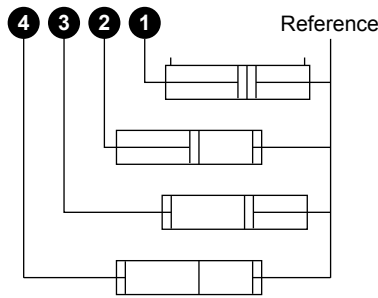
SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/ COVP/N2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/ MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

Applications

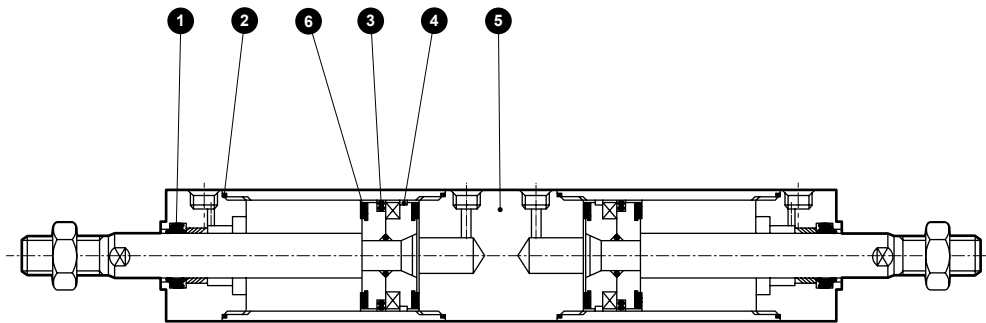
When the same stroke lengths are combined,
3 positions possible.



When different stroke lengths are combined,
4 positions possible.



Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing	Nitrile rubber		4	Wear ring	Polyacetal resin	
2	Cylinder gasket	Nitrile rubber		5	Intermediate cover	Aluminum alloy	Hard alumite
3	Piston packing	Nitrile rubber		6	Cushion rubber	Urethane rubber	

Parts other than the above are the same as the double acting.

Repair parts list

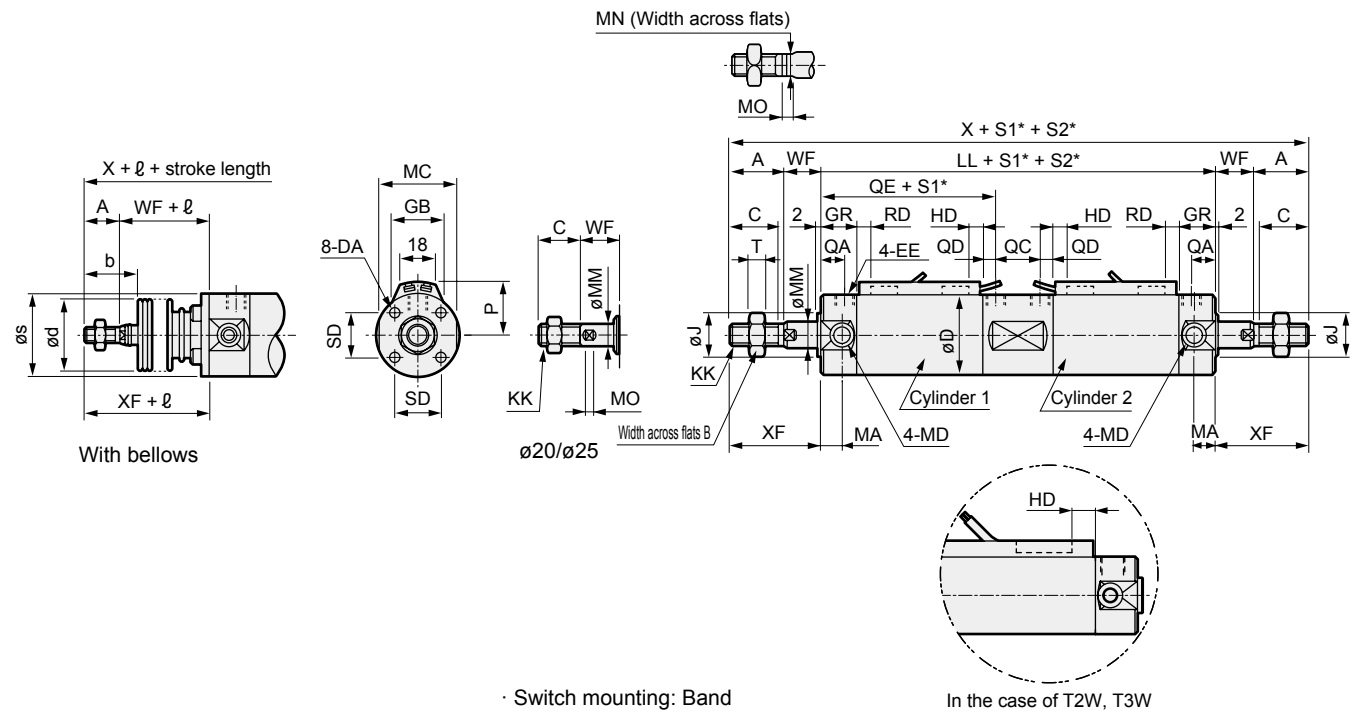
Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-B-20DK	1 2 3 4 6
ø25	SCM-B-25DK	
ø32	SCM-B-32DK	
ø40	SCM-B-40DK	
ø50	SCM-B-50DK	
ø63	SCM-B-63DK	

Dimensions



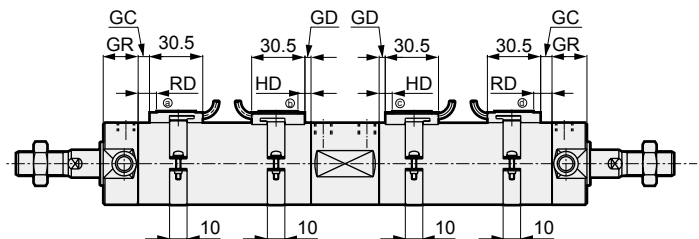
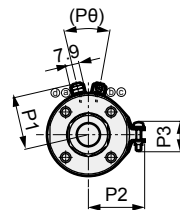
● Double acting back to back

· Switch mounting: Rail



· Switch mounting: Band

In the case of T2W, T3W



*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

*: S1 = Cylinder 1 stroke length, S2 = Cylinder 2 stroke length

Code	Basic (00) basic dimensions																		
Bore size (mm)	A	B	C	D	DA	EE	GR	J	KK	LL	MA	MC	MD	MM	MN	MO	QA	QC	
ø20	–	13	16	26	M4 depth 6.5	Rc1/8	19	12	M8	137	11	24	M5	8	6	4	12	19	
ø25	–	17	20	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	137	11	29	M6	10	8	5	12	19	
ø32	22	17	20	38	M5 depth 7.5	Rc1/8	19	18	M10×1.25	143	11	36	M8	12	10	5.5	12	21	
ø40	30	22	27	47	M6 depth 12	Rc1/8	20	25	M14×1.5	157	12	44	M10	16	14	6	13	25	
ø50	35	27	32	58	M8 depth 16	Rc1/4	25	30	M18×1.5	184	13	55	M12	20	17	8	15	28	
ø63	35	27	32	72	M10 depth 16	Rc1/4	25	32	M18×1.5	184	13	69	M14	20	17	8	15	28	
Code											Switch mounting: Rail								
Bore size (mm)	QD	QE	SD	T	WF	X	XF	b	d	s	ℓ	P	GB	HD			RD		
														T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø20	7	59	14	5	19	207	35	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
ø25	7	59	16.5	6	20	217	40	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø32	7	61	20	6	18	223	40	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5
ø40	7	66	26	8	20	257	50	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø50	10	78	32	11	23	300	58	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø63	10	78	38	11	23	300	58	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0
Code	Switch mounting: Band																		
Bore size (mm)	GC			GD			HD			RD			P1	P2	P3	P0			
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W							
ø20	3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)			
ø25	4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)			
ø32	5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)			
ø40	7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)			
ø50	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)			
ø63	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)			

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

SCP*3
CMK2
CMA2



Round shaped cylinder
Double acting/two-stage

SCM-W Series

● Bore size:ø20/ø25/ø32/ø40/ø50/ø63



SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT

Specifications

Item		SCM-W					
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation		Double acting/two-stage					
Working fluid		Compressed air					
Max. working pressure MPa		1.0 (≈150 psi, 10 bar) (*1)					
Min. working pressure MPa		0.2 (≈29 psi, 2 bar)				0.1 (≈15 psi, 1 bar)	
Proof pressure MPa		1.6 (≈230 psi, 16 bar)					
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)					
Port size		Rc1/8				Rc1/4	
Stroke tolerance mm	S1	±1.4				±2.3	
	S2	+1.4				+2.3	
		0				0	
Working piston speed mm/s		50 to 1000 (Operate within the allowable absorbed energy.)					
Cushion		Rubber cushion					
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)					
Allowable absorbed energy J		0.1	0.2	0.5	0.9	1.6	1.6

*1: Max. working pressure is 0.5 MPa when S1 and S2 are the same value.

MDC2
MVC
SMG
MSD/
MSDG
FC*

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25, 50, 75 100, 125, 150 200, 250, 300	600	10
ø25			
ø32			
ø40			
ø50			
ø63			

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

*2: The max. stroke length of S2 is 200 mm.

STK
SRL3

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

● Switch mounting: Rail

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø63	10				25				50	65	65	55	55	65	65	55	75	110	110	90

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Ending

Switch specifications

- 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V	T8H/T8V			T2YD (*4) T2YDT		
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay	For programmable controller, relay (no lamp), serial		For programmable controller, relay			Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Without indicator lamp	LED (Lit when ON)			Red/green LED (Lit when ON)		
Leakage current	≤1 mA at 100 VAC, ≤2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80			1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Weight when stroke (S) = 0 mm	Additional weight					Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
Bore size (mm)	Basic (00)	Basic	Axial foot	Flange	Clevis	Trunnion				
ø20	0.10	-0.01	0.10	0.02	0.04	0.00	Refer to the weight in the switch specifications.	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 weight when S = 0 mm 0.41 kg

Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ 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 weight when S = 0 mm 0.41 kg

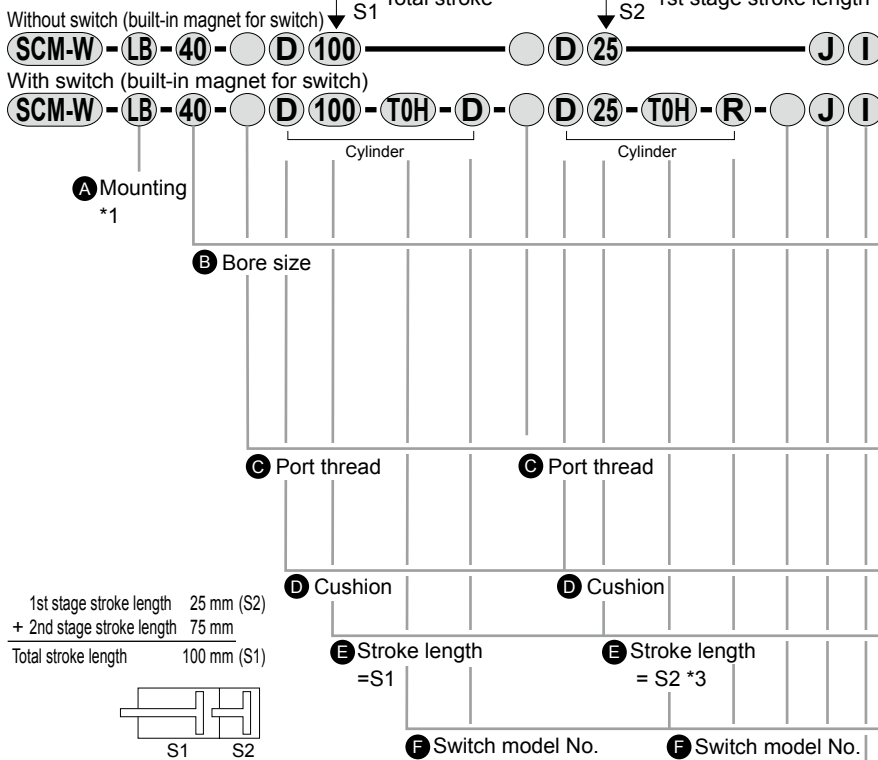
Additional weight when S = 25mm $0.032 \times \frac{25}{10} = 0.08$ kg

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

How to order



⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped with the product.
- *2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.
- *3 : The max. stroke length of S2 (1st stage) is 200 mm.
- *4 : Refer to page 322 for the number of installed switches and the min. stroke length.
- *5 : Switches other than **F** Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.
- *6 : T8H/V switches cannot be mounted when the bore size is from $\phi 20$ to $\phi 40$ and the switch mounting style is the rail.
- *7 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- *8 : Refer to Ending Page 85 for custom specifications of rod end form.
- *9 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
- *10 : "I" and "Y" cannot be selected together.
- *11 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

SCM-W-LB-40-D100-T0H-D-D25-T0H-R-JI

Model: Round shaped cylinder, double acting/two-stage

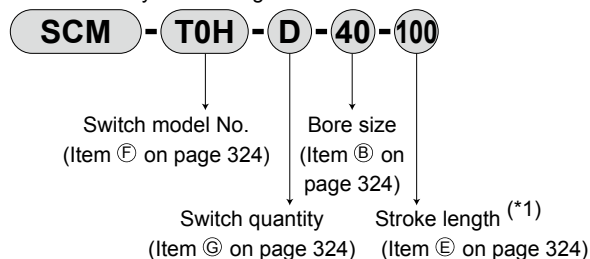
- A** Mounting : Axial foot
- B** Bore size : $\phi 40$ mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided rubber cushion
- E** Stroke length : S1=100 mm
- D** Cushion : With two-sided rubber cushion
- E** Stroke length : S2=25 mm
- F** Switch model No. : Reed T0H switch,
Lead wire 1 m
- G** Switch quantity : Cylinder 1; 2 pieces included,
Cylinder 2; 1 on rod side
- H** Switch mounting : Rail
- I** Option : Bellows material for max. ambient temperature at 100°C
- J** Accessory : Rod eye

Code	Description						
A Mounting							
00	Basic						
LB	Axial foot						
FA	Rod side flange						
FB	Head side flange						
CA	Eye bracket						
TA	Rod side trunnion						
TB	Head side trunnion						
B Bore size (mm)							
20	ø20						
25	ø25						
32	ø32						
40	ø40						
50	ø50						
63	ø63						
C Port thread							
Blank	Rc thread						
N	NPT thread (made-to-order product)						
G	G thread (made-to-order product)						
D Cushion							
D	With two-sided rubber cushion						
E Stroke length (mm)							
Bore size	Stroke length *3	Custom stroke length					
ø20 to ø63	10 to 600	In 1 mm increments					
F Switch model No.							
Axial lead wire	Radial lead wire	Contact	Voltage	Display	Lead wire		
			AC	DC			
T0H*	T0V*	Reed	●	●	1-color display	2-wire	
T5H*	T5V*		●	●	Without indicator lamp		
T8H*	T8V*		●	●	1-color display		
T1H*	T1V*	Proximity	●	●	1-color display	2-wire	
T2H*	T2V*			●	1-color display	2-wire	
T3H*	T3V*			●	1-color display	3-wire	
T3PH*	T3PV*			●	1-color display	3-wire	
T2WH*	T2WV*			●	2-color display	2-wire	
T2YH*	T2YV*			●		2-wire	
T3WH*	T3WV*			●		3-wire	
T3YH*	T3YV*			●	2-color display	2-wire	
T2YD*	-			●		for AC magnetic field	2-wire
T2YDT*	-			●		1-color display off-delay	2-wire
T2JH*	T2JV*			●	1-color display off-delay	2-wire	
* Lead wire length							
Blank	1 m (standard)						
3	3 m (option)						
5	5 m (option)						
G Switch quantity							
R	1 on rod side						
H	1 on head side						
D	2						
T	3						
4	4 (when there are more than 4 switches, indicate switch quantity.)						
H Switch mounting							
Blank	Rail method						
Z	Band method						
I Option							
		Max. ambient temp.		Instantaneous max. temp.			
J	Bellows	100°C		200°C			
L	Bellows	250°C		400°C			
Q	Switch rail included at shipment						
M	Piston rod material (stainless steel)						
P6	Copper and PTFE free						
J Accessory							
I	Rod eye						
Y	Rod clevis (pin and snap ring included)						
B2	Clevis bracket						

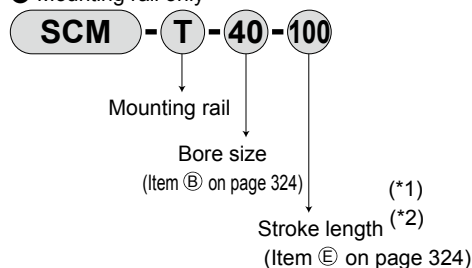
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



- Mounting rail only

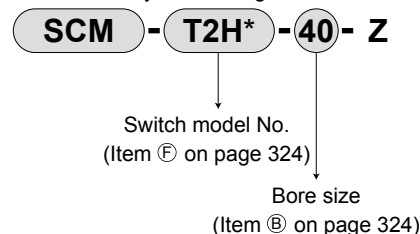


*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

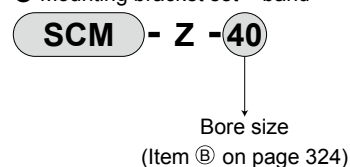
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

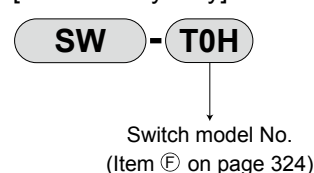
- Switch body + mounting bracket set + band



- Mounting bracket set + band



[Switch body only]



How to order mounting bracket

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
Eye bracket (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: All mounting brackets are supplied with mounting bolts.

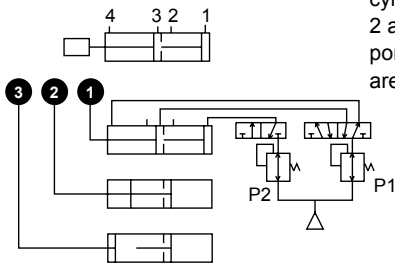
*2: The foot mounting bracket is provided as 2 pcs./set.

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

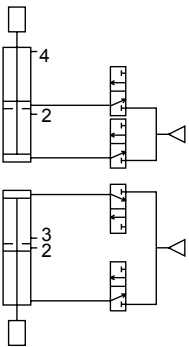
Applications

Pressure setting: P2 > P1

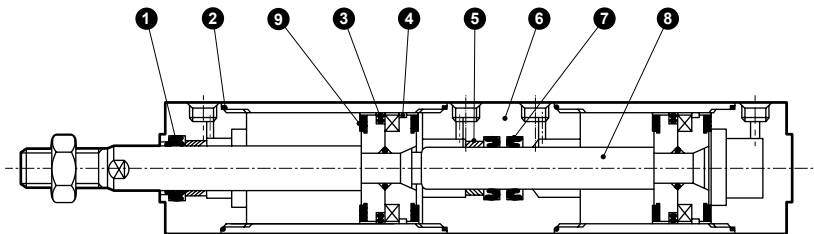
- 1st stage push
Keeping port 4 pressurized,
pressurize port 1.
- 2nd stage push
Keeping port 1 pressurized,
pressurize port 3.



P2 = P1 is allowed
depending on the load direction.
When using a single acting
cylinder with free fall load, ports
2 and 4 in the upper figure and
ports 2 and 3 in the lower figure
are breathing holes.



Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing	Nitrile rubber		6	Intermediate cover	Aluminum alloy	Hard alumite
2	Cylinder gasket	Nitrile rubber		7	Rod packing	Nitrile rubber	
3	Piston packing	Nitrile rubber		8	Piston rod	ø20 to ø25: Stainless steel ø32 to ø63: Steel	Industrial chrome plating
4	Wear ring	Polyacetal resin		9	Cushion rubber	Urethane rubber	
5	Bush	Oil impregnated bearing alloy					

Parts other than the above are the same as the double acting.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-W-20DK	1 2 3 4 7 9
ø25	SCM-W-25DK	
ø32	SCM-W-32DK	
ø40	SCM-W-40DK	
ø50	SCM-W-50DK	
ø63	SCM-W-63DK	

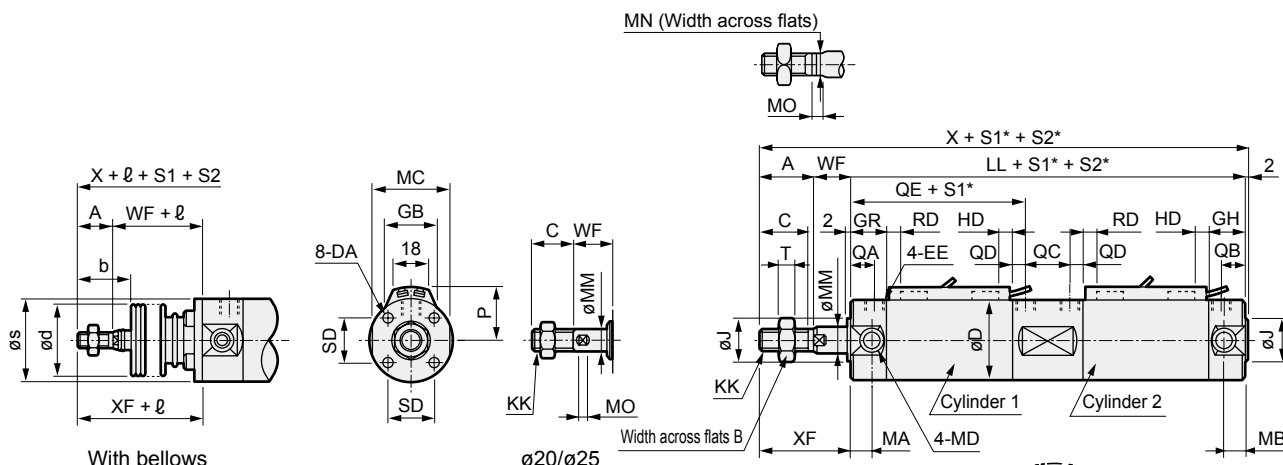
*1: Specify the kit No. when placing an order.

Dimensions

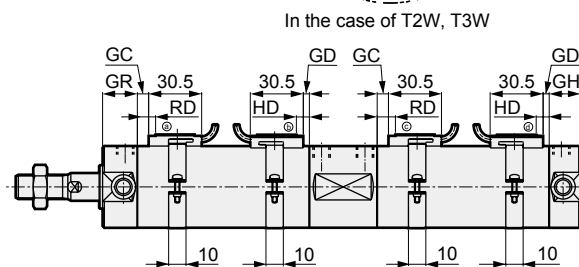
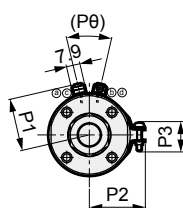


● Double acting two-stage

· Switch mounting: Rail



· Switch mounting: Band



*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

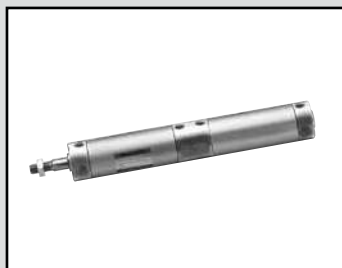
*: S1 = Total stroke length, S2 = Cylinder 2 stroke length

Code	Basic (00) basic dimensions																			
Bore size (mm)	A	B	C	D	DA	EE	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	QA	QB
ø20	–	13	16	26	M4 depth 6.5	Rc1/8	17	19	12	M8	135	11	11	24	M5	8	6	4	12	10
ø25	–	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				Switch mounting: Rail							
Bore size (mm)	QC	QD	QE	SD	T	WF	X	XF	b	d	s	ℓ	P	GB	HD			RD		
															T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø20	19	7	59	14	5	19	172	35	30	30	25.7	(S1/3)+18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
ø25	19	7	59	16.5	6	20	177	40	35	30	30.7	(S1/3)+20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø32	21	7	61	20	6	18	183	40	31.5	35	37.7	(S1/3)+19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5
ø40	25	7	66	26	8	20	208	50	40	35	46.7	(S1/3)+18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø50	28	10	78	32	11	23	241	58	46	40	57.7	(S1/3.6)+18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø63	28	10	78	38	11	23	241	58	46	40	71.7	(S1/3.6)+18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0
Code	Switch mounting: Band																			
Bore size (mm)	GC			GD			HD			RD			P1	P2	P3	P0				
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W								
ø20	3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)				
ø25	4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)				
ø32	5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)				
ø40	7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)				
ø50	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)				
ø63	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)				

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

SCP*3
CMK2
CMA2



Round shaped cylinder
Double acting/tandem

SCM-W4 Series

● Bore size:ø20/ø25/ø32/ø40/ø50/ø63



SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT

Specifications

Item	SCM-W4					
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting/tandem					
Working fluid	Compressed air					
Max. working pressure MPa	0.5 (≈73 psi, 5 bar)					
Min. working pressure MPa	0.2 (≈29 psi, 2 bar)				0.1 (≈15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size	Rc1/8				Rc1/4	
Stroke tolerance mm	+1.4				+2.3	
	-1.0				-1.0	
Working piston speed mm/s	50 to 1000 (Operate within the allowable absorbed energy.)					
Cushion	Rubber cushion					
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)					
Allowable absorbed energy J	0.1	0.2	0.5	0.9	1.6	1.6

MDC2
MVC
SMG
MSD/
MSDG
FC*

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø20	25, 50, 75 100, 125, 150 200, 250, 300	600	10
ø25			
ø32			
ø40			
ø50			
ø63			

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

STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2

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

● Switch mounting: Rail

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
ø50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
ø63	10				25				50	65	65	55	55	65	65	55	75	110	110	90

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
ø20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
ø63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

- 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve		Dedicated for programmable controller		For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC	24 VDC ±10%		30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC		1 mA or less		10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Weight when stroke (S) = 0 mm	Additional weight					Switch weight (per 1 pc.)	Added weight /S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
Bore size (mm)	Basic (00)	Basic	Axial foot	Flange	Clevis	Trunnion	Refer to the weight in the switch specifications.			
ø20	0.10	0.00	0.11	0.03	0.05	0.01		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 weight when S = 0 mm 0.41 kg (2) Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ kg (3) Weight of 2 switches 0.036 kg (4) (1) + (2) + (3) should be added 0.41 kg + 0.32 kg + 0.036 kg = 0.766 kg Product weight (Double (4) and add additional weight) .. 0.766 kg × 2 + 0.21 kg = 1.742 kg
---	--	---

SCM-W4 Series

How to order

Without switch (built-in magnet for switch)

SCM-W4 - LB - 40 - D - 100 - J - I

With switch (built-in magnet for switch)

SCM-W4 - LB - 40 - D - 100 - T0H - D - J - I

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
*4
*5

G Switch quantity

H Switch mounting

I Option

*2

*6

*8

J Accessory

*9

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped with the product.
- *2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.
- *3 : Refer to page 328 for the number of installed switches and the min. stroke length.
- *4 : Switches other than F Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.
- *5 : T8H/V switches cannot be mounted when the bore size is from ø20 to ø40 and the switch mounting style is the rail.
- *6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- *7 : Refer to Ending Page 85 for custom specifications of rod end form.
- *8 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
- *9 : "I" and "Y" cannot be selected together.
- *10 : Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

SCM-W4-LB-40D-100-T0H-D-JI

Model: Round shaped cylinder, double acting/tandem

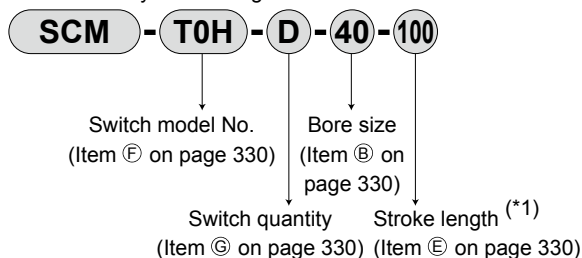
- A Mounting : Axial foot
- B Bore size : ø40 mm
- C Port thread : Rc thread
- D Cushion : With two-sided rubber cushion
- E Stroke length : 100 mm
- F Switch model No. : Reed T0H switch, lead wire 1 m
- G Switch quantity : 2
- H Switch mounting : Rail
- I Option : Bellows material for max. ambient temperature 100°C
- J Accessory : Rod eye

Code		Description				
A Mounting						
00	Basic					
LB	Axial foot					
FA	Rod side flange					
FB	Head side flange					
CA	Eye bracket					
TA	Rod side trunnion					
TB	Head side trunnion					
B Bore size (mm)						
20	ø20					
25	ø25					
32	ø32					
40	ø40					
50	ø50					
63	ø63					
C Port thread						
Blank	Rc thread					
N	NPT thread (made-to-order product)					
G	G thread (made-to-order product)					
D Cushion						
D	With two-sided rubber cushion					
E Stroke length (mm)						
Bore size	Stroke length *3	Custom stroke length				
ø20 to ø63	10 to 600	In 1 mm increments				
F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage	Display	Lead wire	
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●	1-color display	3-wire
T3PH*	T3PV*			●		
T2WH*	T2WV*			●	2-color display	2-wire
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		
T3YH*	T3YV*			●	2-color display	3-wire
T2YD*	-			●		
T2YDT*	-			●	AC magnetic field	2-wire
T2JH*	T2JV*			●	1-color display off-delay	
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
G Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
T	3					
4	4 (when there are more than 4 switches, indicate switch quantity.)					
H Switch mounting						
Blank	Rail method					
Z	Band method					
I Option						
			Max. ambient temp.	Instantaneous max. temp.		
J	Bellows		100°C	200°C		
L	Bellows		250°C	400°C		
Q	Switch rail included at shipment					
M	Piston rod material (stainless steel)					
P6	Copper and PTFE free					
J Accessory						
I	Rod eye					
Y	Rod clevis (pin and snap ring included)					
B2	Clevis bracket					

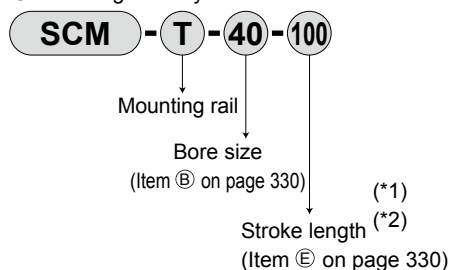
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



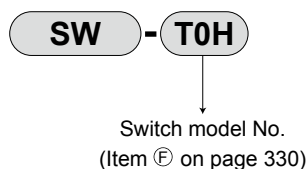
- Mounting rail only



*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

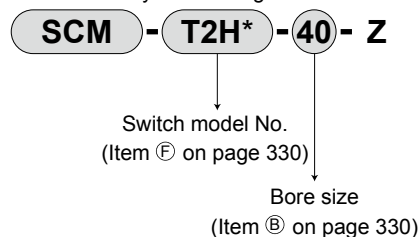
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch body only]

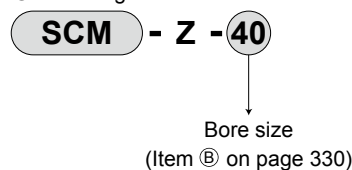


[Switch mounting: Band]

- Switch body + mounting bracket set + band



- Mounting bracket set + band



How to order mounting bracket

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
Eye bracket (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: All mounting brackets are supplied with mounting bolts.

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

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/IN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

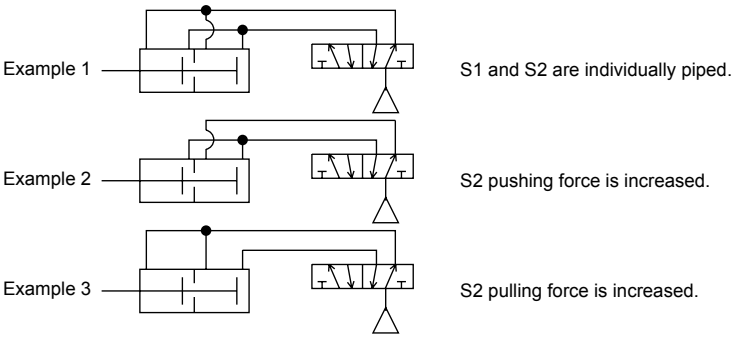
FJ

FK

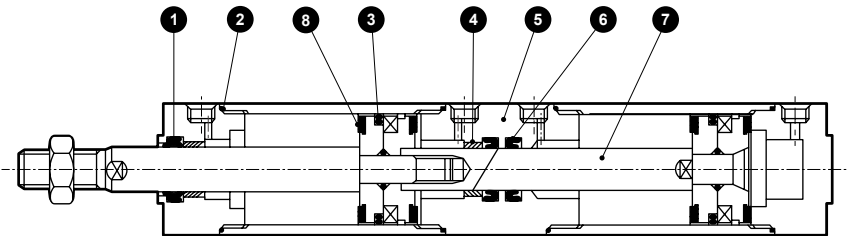
Spd
Contr

Ending

Applications



Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod packing	Nitrile rubber		5	Intermediate cover	Aluminum alloy	Hard alumite
2	Cylinder gasket	Nitrile rubber		6	Rod packing	Nitrile rubber	
3	Piston packing	Nitrile rubber		7	Piston rod	ø20 to ø25: Stainless steel ø32 to ø63: Steel	Industrial chrome plating
4	Bush	Oil impregnated bearing alloy		8	Cushion rubber	Urethane rubber	

Parts other than the above are the same as the double acting.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-W4-20DK	1 2 3 8
ø25	SCM-W4-25DK	
ø32	SCM-W4-32DK	
ø40	SCM-W4-40DK	
ø50	SCM-W4-50DK	
ø63	SCM-W4-63DK	

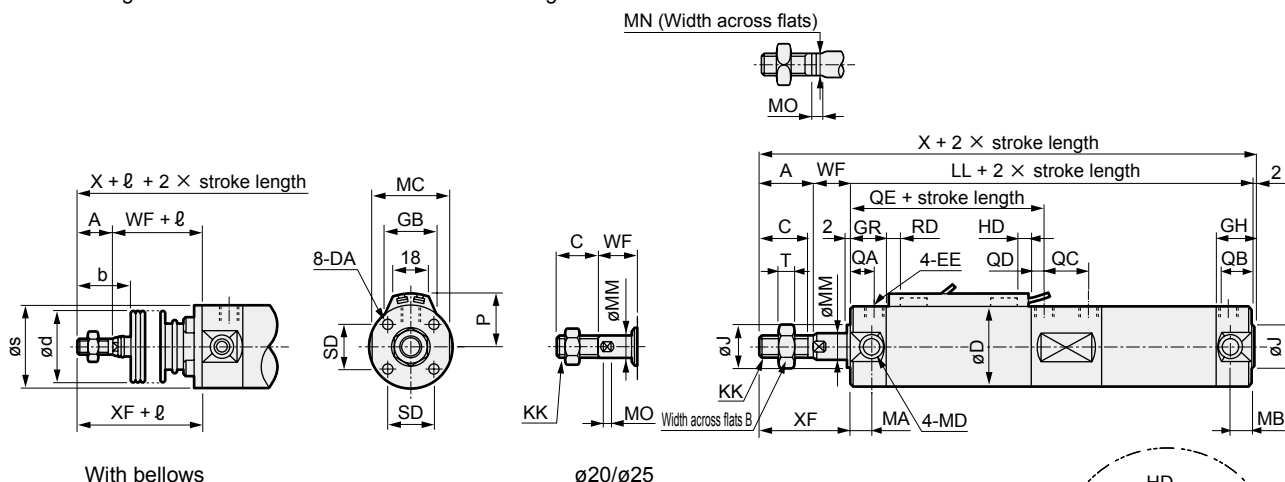
*1: Specify the kit No. when placing an order.
*2: 1 Rod packing is not included in the repair parts kit since it is not replaceable.
Two 8 cushion rubbers are included in the repair parts kit since only two of the four cushion rubbers are replaceable.

Dimensions



● Double acting tandem

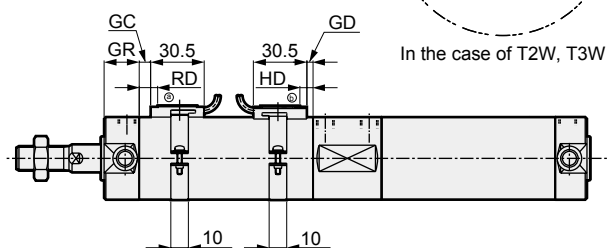
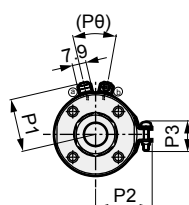
· Switch mounting: Rail



With bellows

ø20/ø25

· Switch mounting: Band



*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions																			
Bore size (mm)	A	B	C	D	DA	EE	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	QA	QB
ø20	–	13	16	26	M4 depth 6.5	Rc1/8	17	19	12	M8	135	11	11	24	M5	8	6	4	12	10
ø25	–	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				Switch mounting: Rail							
	QC	QD	QE	SD	T	WF	X	XF	b	d	s	ℓ	P	GB	HD			RD		
Bore size (mm)															T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
ø20	19	7	59	14	5	19	172	35	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
ø25	19	7	59	16.5	6	20	177	40	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
ø32	21	7	61	20	6	18	183	40	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5
ø40	25	7	66	26	8	20	208	50	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5
ø50	28	10	78	32	11	23	241	58	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0
ø63	28	10	78	38	11	23	241	58	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0
Code	Switch mounting: Band																			
	GC			GD			HD			RD			P1	P2	P3	P0				
Bore size (mm)	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W								
ø20	3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)				
ø25	4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)				
ø32	5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)				
ø40	7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)				
ø50	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)				
ø63	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)				

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

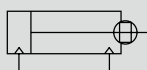


Round shaped cylinder
Double acting/rotation-stop

SCM-M Series

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

JIS symbol



Specifications

1 MPa = 10 bar

Item	SCM-M					
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting/rotation-stop					
Working fluid	Compressed air					
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure MPa	0.1 (≈15 psi, 1 bar)					0.05 (≈7.3 psi)
Proof pressure MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size	Rc1/8				Rc1/4	
Stroke tolerance mm	+1.4				+2.3	
	0				0	
Working piston speed mm/s	30 to 1000 (Operate within the allowable absorbed energy.)					
Cushion	Rubber cushion					
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)					
Non-rotating accuracy °	±1					
Allowable absorbed energy J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75 100, 125, 150 200, 250, 300	600	10
$\phi 25$			
$\phi 32$			
$\phi 40$			
$\phi 50$			
$\phi 63$			

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

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

● Switch mounting: Rail

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

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 50$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 63$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80					1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight per	Band weight
Bore size	Basic	Axial foot	Flange	Clevis	Trunnion	(per 1 pc)	per S = 10 mm	S = 10 mm ^(With switch rail)	per switch
ø20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	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 weight when S = 0 mm0.66 kg Additional weight when S = 100 mm0.032 × $\frac{100}{10}$ =0.32 kg Weight of 2 switches0.036 kg Product weight.....0.66 kg+0.32 kg+0.036 kg=1.016 kg									

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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	-	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
	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

How to order

Without switch (built-in magnet for switch)

SCM-M - LB - 40 - D - 100 - J - I

With switch (built-in magnet for switch)

SCM-M - LB - 40 - D - 100 - T0H - D - J - I

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.
*4
*5

G Switch quantity

H Switch mounting

I Option

*2

*6

*7

J Accessory

*9

Precautions for model No. selection

- *1 : Mounting bracket will be shipped with the product.
- *2 : If the product is supplied with bellows and the mounting bracket is LB, FA, or TA, it will be shipped assembled.
- *3 : Refer to page 334 for the number of installed switches and the min. stroke length.
- *4 : Switches other than F Switch model No. are also available. (Made to order)
Refer to Ending Page 1 for details.
- *5 : T8H/V switches cannot be mounted when the bore size is from ø20 to ø40 and the switch mounting style is the rail.
- *6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
- *7 : Refer to Ending Page 85 for custom specifications of rod end form.
- *8 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
- *9 : "I" and "Y" cannot be selected together.
- *10: Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

[Example of model No.]

SCM-M-LB-40D-100-T0H-D-JI

Model: Round shaped cylinder, double acting/rotation-stop

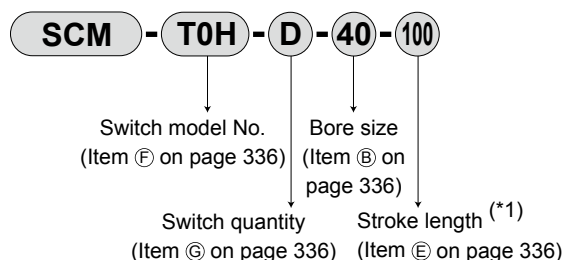
- A Mounting : Axial foot
- B Bore size : ø40 mm
- C Port thread : Rc thread
- D Cushion : With two-sided rubber cushion
- E Stroke length : 100 mm
- F Switch model No. : Reed T0H switch, lead wire 1 m
- G Switch quantity : 2
- H Switch mounting : Rail
- I Option : Bellows material for max. ambient temperature 100°C
- J Accessory : Rod eye

Code	Description					
A Mounting						
00	Basic					
LB	Axial foot					
FA	Rod side flange					
FB	Head side flange					
CA	Eye bracket					
TA	Rod side trunnion					
TB	Head side trunnion					
B Bore size (mm)						
20	ø20					
25	ø25					
32	ø32					
40	ø40					
50	ø50					
63	ø63					
C Port thread						
Blank	Rc thread					
N	NPT thread (made-to-order product)					
G	G thread (made-to-order product)					
D Cushion						
D	With two-sided rubber cushion					
E Stroke length (mm)						
Bore size	Stroke length *2	Custom stroke length				
ø20 to ø63	10 to 600	In 1 mm increments				
F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage	Display	Lead wire	
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●	1-color display	3-wire
T3PH*	T3PV*			●		
T2WH*	T2WV*			●	2-color display	2-wire
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		
T3YH*	T3YV*			●	2-color display	3-wire
T2YD*	-			●		
T2YDT*	-			●		
T2JH*	T2JV*			●	AC magnetic field	2-wire
				●	1-color display off-delay	
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
G Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
T	3					
4	4 (when there are more than 4 switches, indicate switch quantity.)					
H Switch mounting						
Blank	Rail method					
Z	Band method					
I Option						
			Max. ambient temp.	Instantaneous max. temp.		
J	Bellows		100°C	200°C		
L	Bellows		250°C	400°C		
Q	Switch rail included at shipment					
J Accessory						
I	Rod eye					
Y	Rod clevis (pin and snap ring included)					
B2	Clevis bracket					

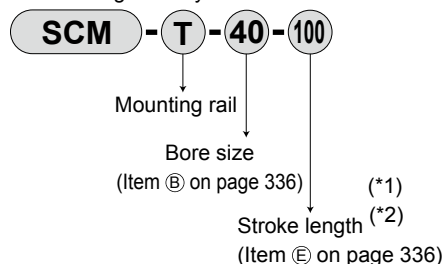
How to order switch

[Switch mounting: Rail]

- Switch body + mounting rail set



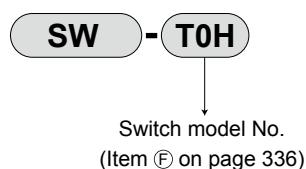
- Mounting rail only



*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

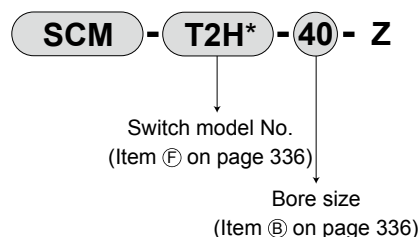
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch body only]

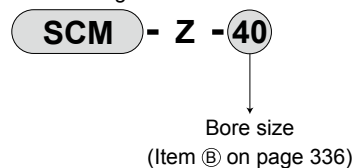


[Switch mounting: Band]

- Switch body + mounting bracket set + band



- Mounting bracket set + band



How to order mounting bracket

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
Eye bracket (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: All mounting brackets are supplied with mounting bolts.

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

Internal structure

Same as standard. Refer to page 236.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø20	SCM-M-20K	3 6 8 10 13
ø25	SCM-M-25K	
ø32	SCM-M-32K	
ø40	SCM-M-40K	
ø50	SCM-M-50K	
ø63	SCM-M-63K	

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/IN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

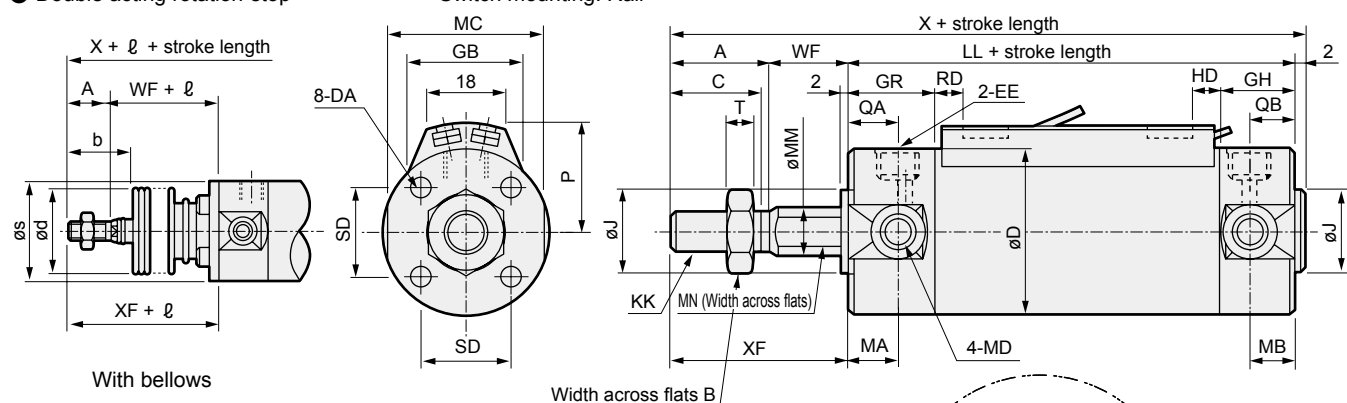
Spd
Contr

Ending

Dimensions

● Double acting rotation-stop

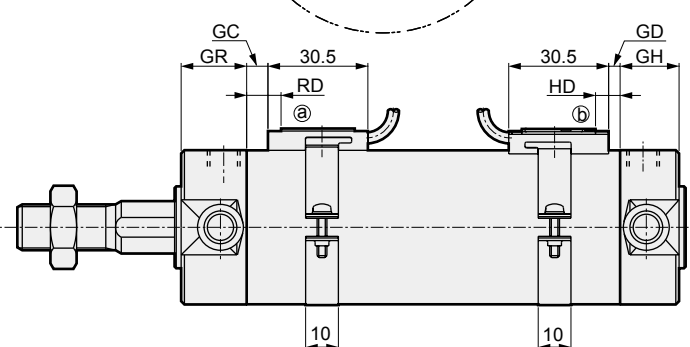
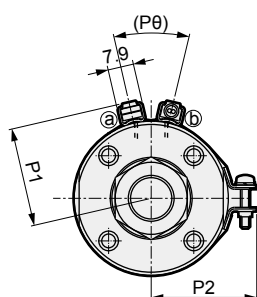
· Switch mounting: Rail



With bellows

Width across flats B

· Switch mounting: Band



In the case of T2W, T3W

*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) basic dimensions																		
Bore size (mm)	A	B	C	D	DA	EE	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	QA	QB
ø20	18	13	16	26	M4 depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	10	8	12	10
ø25	22	17	20	31	M5 depth 6.5	Rc1/8	17	19	14	M10×1.25	69	11	11	29	M6	12	10	12	10
ø32	22	17	20	38	M5 depth 7.5	Rc1/8	17	19	18	M10×1.25	71	11	10	36	M8	12	10	12	10
ø40	30	22	27	47	M6 depth 12	Rc1/8	19	20	25	M14×1.5	78	12	10	44	M10	16	14	13	12
ø50	35	27	32	58	M8 depth 16	Rc1/4	22	25	30	M18×1.5	90	13	12	55	M12	20	18	15	12
ø63	35	27	32	72	M10 depth 16	Rc1/4	22	25	32	M18×1.5	90	13	12	69	M14	20	18	15	12
Code	With bellows									Switch mounting: Rail									
Bore size (mm)	SD	T	WF	X	XF	b	d	s	ℓ	P	GB	HD			RD				
												T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W		
ø20	14	5	17	106	35	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5		
ø25	16.5	6	18	111	40	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5		
ø32	20	6	18	113	40	31.5	35	37.7	(Stroke length/3) + 19	25.5	25	3.0	6.5	8.5	9.5	9.5	11.5		
ø40	26	8	20	130	50	40	35	46.7	(Stroke length/3) + 18.5	30	25.7	5.0	8.5	10.5	11.5	11.5	13.5		
ø50	32	11	23	150	58	46	40	57.7	(Stroke length/3.6) + 18.5	35.5	26.2	7.5	11.0	13.0	13.0	13.0	15.0		
ø63	38	11	23	150	58	46	40	71.7	(Stroke length/3.6) + 18.5	42.5	26.5	7.5	11.0	13.0	13.0	13.0	15.0		
Code	Switch mounting: Band																		
Bore size (mm)	GC			GD			HD			RD			P1	P2	P3	Pθ			
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W							
ø20	3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)			
ø25	4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)			
ø32	5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)			
ø40	7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)			
ø50	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)			
ø63	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)			

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 240 to 251.

* For the dimensions of the accessories, refer to pages 252 and 253.

MEMO

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending



Round shaped cylinder
Double acting/direct mounting foot

SCM-LD Series

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

JIS symbol



Specifications

Item	SCM-LD					
Bore size mm	ø20	ø25	ø32	ø40	ø50	ø63
Actuation	Double acting/direct mounting foot					
Working fluid	Compressed air					
Max. working pressure MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure MPa	0.1 (≈15 psi, 1 bar)				0.05 (≈7.3 psi, 0.5 bar)	
Proof pressure MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size	Rc1/8				Rc1/4	
Stroke tolerance mm	+1.4				+2.3	
	0				0	
Working piston speed mm/s	30 to 1000 (Operate within the allowable absorbed energy.)					
Cushion	Rubber cushion					
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)					
J Allowable absorbed energy J	0.1	0.2	0.5	0.9	1.6	1.6

Stroke length

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

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

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

● Switch mounting: Rail

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

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
$\phi 20$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 25$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 32$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 40$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 50$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
$\phi 63$	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

*1: For types with one switch, when the stroke length is between 10 and 24 mm, the trunnion mounting is not available since the switch rail mounting position is different. Refer to page 345 for mounting position.

Switch specifications

- 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire						Proximity 2-wire	
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V		T2YD (*4) T2YDT	
Applications	For programming controller, relay, compact solenoid valve	Dedicated for programmable controller			For programmable controller, relay				For programmable controller, relay		For programmable controller, relay (no lamp), serial		For programmable controller, relay		Dedicated for programmable controller	
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*3)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)		Red/green LED (Lit when ON)	
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 µA or less				0 mA						1 mA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142		1 m:61 3 m:166 5 m:272	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

*4: Switch for AC magnetic field (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

(Unit: kg)

Item/mounting	Weight when stroke (S) = 0 mm	Switch weight	Additional weight	Additional weight	Band weight
Bore size (mm)	Basic	(per 1 pc)	per S = 10 mm	per S = 10 mm (with rail)	per switch
ø20	0.14	Refer to the weight in the switch specifications.	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 weight when S = 0 mm 0.56 kg Additional weight when 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	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
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

How to order

Without switch (built-in magnet for switch)

SCM-LD - **40** - **D** - **100** - **M** **I**

With switch (built-in magnet for switch)

SCM-LD - **40** - **D** - **100** - **T0H** - **D** - **M** **I**

A Mounting

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

*2

*3

G Switch quantity

H Switch mounting

I Option

*5

J Accessory

*6

⚠ Precautions for model No. selection

*1: Refer to page 340 for the min. stroke length with switch.

*2: Switches other than **F** Switch model No. are also available. (Made to order)

Refer to Ending Page 1 for details.

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

*4: Refer to Ending Page 85 for custom specifications of rod end form.

*5: "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.

*6: "I" and "Y" cannot be selected together.

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

[Example of model No.]

SCM-LD-40D-100-T0H-D-MI

Model: Round shaped cylinder double acting/direct mounting foot

A Mounting : Direct mounting foot

B Bore size : ø40 mm

C Port thread : Rc thread

D Cushion : With two-sided rubber cushion

E Stroke length : 100 mm

F Switch model No. : Reed T0H switch, lead wire 1 m

G Switch quantity : 2

H Switch mounting : Rail

I Option : Piston rod material (stainless steel)

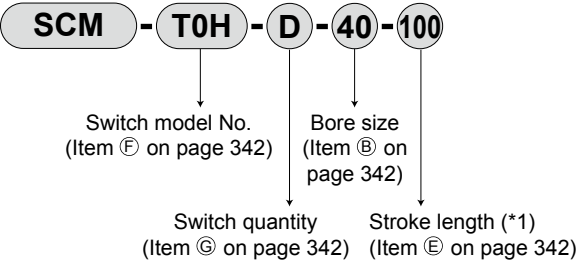
J Accessory : Rod eye

Code	Description					
A Mounting						
LD	Direct mounting foot					
B Bore size (mm)						
20	ø20					
25	ø25					
32	ø32					
40	ø40					
50	ø50					
63	ø63					
C Port thread						
Blank	Rc thread					
N	NPT thread (made-to-order product)					
G	G thread (made-to-order product)					
D Cushion						
D	With two-sided rubber cushion					
E Stroke length (mm)						
Bore size	Stroke length *1	Custom stroke length				
ø20 to ø63	10 to 300	In 1 mm increments				
F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage	Display	Lead wire	
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T8H*	T8V*		●	●	1-color display	
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●		
T3PH*	T3PV*			●	1-color display	3-wire
T2WH*	T2WV*			●	2-color display	
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		
T3YH*	T3YV*			●	2-color display	3-wire
T2YD*	-			●		
T2YDT*	-			●	AC magnetic field	
T2JH*	T2JV*		●	1-color display off-delay		
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
G Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
T	3					
4	4 (when there are more than 4 switches, indicate switch quantity)					
H Switch mounting						
Blank	Rail method					
Z	Band method					
I Option						
Q	Switch rail included at shipment					
M	Piston rod material (stainless steel)					
P6	Copper and PTFE free (made-to-order product)					
J Accessory						
I	Rod eye					
Y	Rod clevis (pin and snap ring included)					

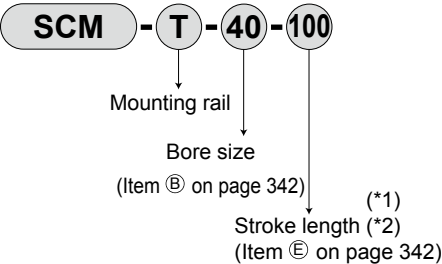
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



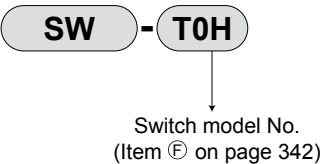
● Mounting rail only



*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.

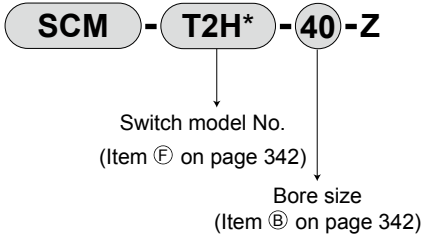
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch body only]

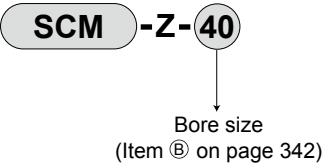


[Switch mounting: Band]

● Switch body + mounting bracket set + band



● Mounting bracket set + band



Internal structure

Same as standard. Refer to page 236.

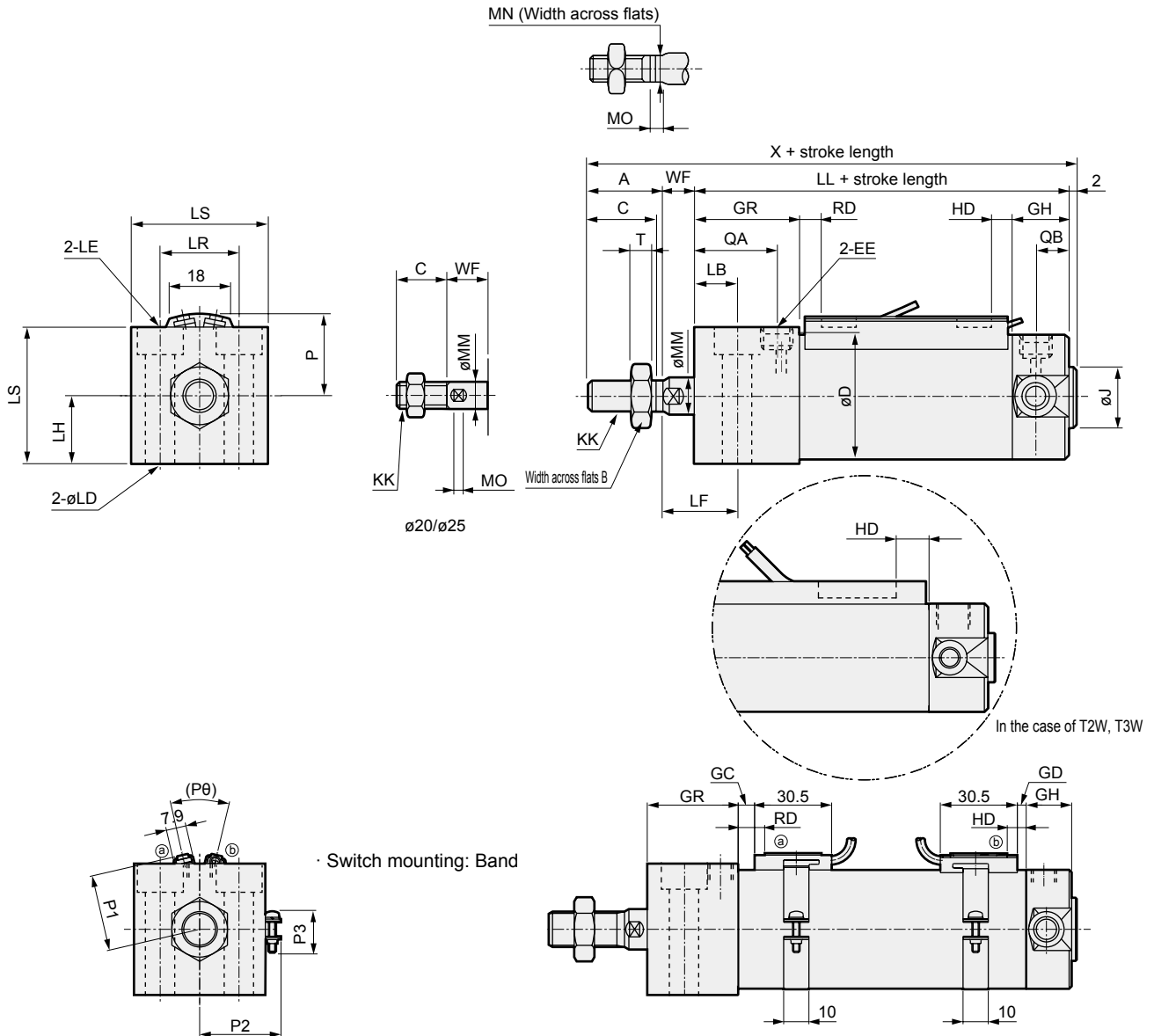
SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/ COVP/N2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/ MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

Dimensions



● Double acting/direct foot

· Switch mounting: Rail



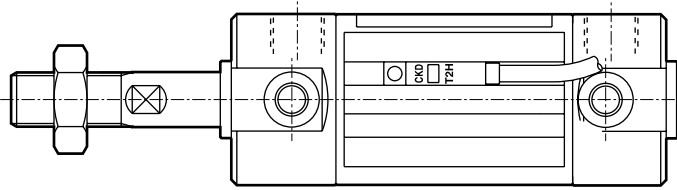
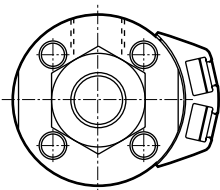
*1: Refer to page 345 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Basic (00) 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
ø20	-	13	16	26	Rc1/8	17	27	12	M8	77	8	6	4	20	10	5	11	106	11	5.5	9.5 spot face depth 5.4	20	15	18
ø25	-	17	20	31	Rc1/8	17	27	14	M10×1.25	77	10	8	5	20	10	6	12	111	12	6.6	11 spot face depth 6.5	22	18	22
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 spot face depth 8.6	23	21	24
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 spot face depth 10.8	25	26	32
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 spot face depth 13	27	32	41
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 spot face depth 17.5	29	38	46

Code	Switch mounting: Rail								Switch mounting: Band															
Bore size (mm)	LS	P	HD			RD			GC			GD			HD			RD			P1	P2	P3	P0
			T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
ø20	30	19.5	3.0	6.5	8.5	7.5	7.5	9.5	3.5	3.5	5.5	2.5	2.5	4.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
ø25	36	22	2.0	5.5	7.5	8.5	8.5	10.5	4.5	4.5	6.5	1.5	1.5	3.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
ø32	42	25.5	3.0	6.5	8.5	9.5	9.5	11.5	5.5	5.5	7.5	2.5	2.5	4.5	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
ø40	52	30	5.0	8.5	10.5	11.5	11.5	13.5	7.5	7.5	9.5	4.5	4.5	6.5	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
ø50	64	35.5	7.5	11.0	13.0	13.0	13.0	15.0	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
ø63	76	42.5	7.5	11.0	13.0	13.0	13.0	15.0	9.0	9.0	11.0	7.0	7.0	9.0	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)

* For the dimensions of the accessories, refer to pages 252 and 253.

Switch rail installation position (rail installation position for stroke length of 10 mm and over and less than 25 mm with 1 switch)

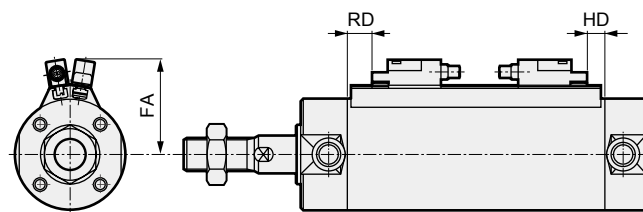
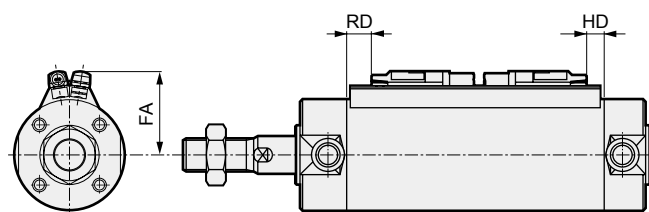


1. The switch rail is mounted at the position inclined by 90° from the standard position.
2. Trunnion mounting is not available because the switch rail and the bracket interfere with each other.
3. When combining one cylinder with stroke length of 10 and over and less than 25 and the other one with stroke length of 25 and over for variations B and W, the installation position of the switch rail is as shown in the figure above such that the cylinders 1 and 2 are placed at 90° to each other.

Switch mounting: Rail 2-color display, AC magnetic field, off-delay, T1^{H/V}, T8^{H/V} switches mounted, dimensions of protruding section

● SCM-* T2Y^{H/V}, T3Y^{H/V}, T2J^{H/V}, T8^{H/V}

● SCM-* T2YD*, T1^{H/V}

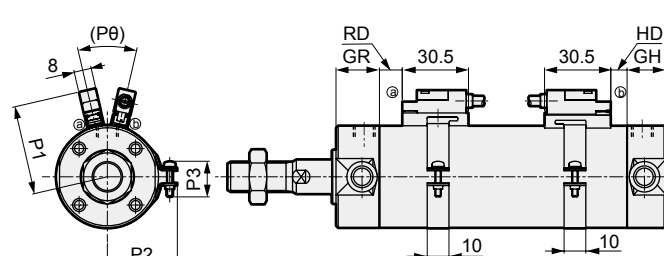
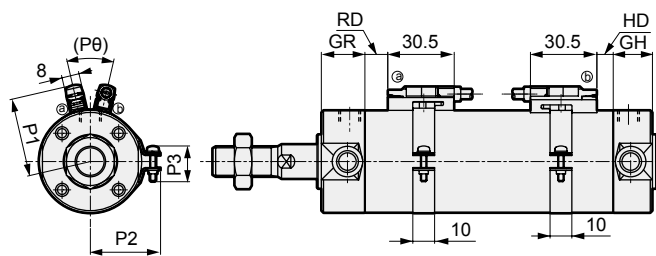


Bore size (mm)	FA				RD		HD	
	T*YH, T8H T2JH	T*YV, T8V T2JV	T2YD*, T1H	T1V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V
ø20	24	27	29.5	32.5	6.5	1.5	5.5	0.5
ø25	26.5	29.5	32	35	7.5	2.5	4.5	0
ø32	30	33	35.5	38.5	8.5	3.5	5.5	0.5
ø40	34.5	37.5	40	43	10.5	5.5	7.5	2.5
ø50	40	43	45.5	48.5	12	7	10	5
ø63	47	50	52.5	55.5	12	7	10	5
ø80	55.5	58.5	61	64	19	14	12	7
ø100	66	69	71.5	74.5	18.5	13.5	12.5	7.5

Switch mounting: Band 2-color display switches mounted, AC magnetic field, off-delay, T1^{H/V}, T8^{H/V} switches, dimensions of protruding section

● SCM-* T2Y^{H/V}, T3Y^{H/V}, T2Y^{H/V}, T8^{H/V}

● SCM-* T2YD*, T1^{H/V}



Bore size (mm)	P1				RD		HD	
	T*YH, T8H T2JH	T*YV, T8V T2JV	T2YD*, T1H	T1V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V
ø20	25.4	28.4	30.4	33.4	6.5	1.5	5.5	0.5
ø25	27.9	30.9	32.9	35.9	7.5	2.5	4.5	0
ø32	31.4	34.4	36.4	39.4	8.5	3.5	5.5	0.5
ø40	36	39	41	44	10.5	5.5	7.5	2.5
ø50	41.5	44.5	46.5	49.5	12	7	10	5
ø63	48.5	51.5	53.5	56.5	12	7	10	5
ø80	57	60	62	65	19	14	12	7
ø100	67.5	70.5	72.5	75.5	18.5	13.5	12.5	7.5