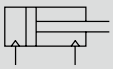
Round shaped cylinder Double acting/single rod

SCM Series

● Bore size: φ20/φ25/φ32/φ40/ φ50/φ63/φ80/φ100

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM							
Bore size mm		φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)							
Min. working pressure MPa		0.1 (≈15 psi, 1 bar)				0.05 (≈7.3 psi, 0.5 bar)			
Proof pressure MPa		1.6 (≈230 psi, 16 bar)							
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)							
Port size	With rubber cushion	Rc1/8				Rc1/4		Rc3/8	Rc1/2
	With air cushion	M5		Rc1/8		Rc1/4		Rc3/8	Rc1/2
Stroke tolerance mm	With rubber cushion	+1.4 0 (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 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"→ 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)
φ 20	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10
φ 25			
φ 32			
φ 40		1500	
φ 50			
φ 63			
φ 80			
φ100			

*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	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
φ20	10				25			50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25			50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25			50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25			50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25			50	65	65	55	55	65	65	55	75	110	110	90
φ63	10				25			50	65	65	55	55	65	65	55	75	110	110	90
φ80	10				25			50	65	65	55	55	65	65	55	75	110	110	90
φ100	10				25			50	65	65	55	55	65	65	55	75	110	110	90

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

● Switch mounting: Band

Switch quantity	1				2				3				4				5			
Bore size (mm)	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T0, T5 T2, T3	T2W, T3W	T*Y*		T0, T5 T2, T3	T2W, T3W	T*Y*		T0, T5 T2, T3	T2W, T3W	T*Y*		T0, T5 T2, T3	T2W, T3W	T*Y*	
φ20	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
φ63	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
φ83	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95
φ100	10				25	30	35	25	50	55	55	50	70	75	80	70	95	100	100	95

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	For 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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / 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 switch rail)	Band weight per switch
	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TB)				
φ 20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.01	0.012	0.007
φ 25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
φ 32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
φ 40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
φ 50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
φ 63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
φ 80	2.04	3.00	2.75	2.75	-		0.07	0.072	0.010
φ100	3.17	4.92	4.52	4.45	-		0.098	0.10	0.010

(Example) Product weight of SCM-LB-40B-100-T2H-D
- Product weight when S = 0 mm.....0.63 kg
- Additional weight when S = 100 mm .....0.032 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

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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

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

Ⓐ Mounting *1

Ⓑ Bore size

Ⓒ Port thread

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model No. *4 *5

Ⓖ Switch quantity

Ⓗ Switch mounting

Ⓘ Option *2 *6 *8

Ⓙ Accessory *9

Code	Content								
Ⓐ Mounting									
	Bore size (φ)	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	●	●	●	●	●	●		

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

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

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

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

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage 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***			●		3-wire
T3H*	**T3V***			●		
T3PH*	**T3PV***			●	1-color display (custom order)	
T2WH*	**T2WV***			●	2-color display	2-wire
T2YH*	**T2YV***			●		
T3WH*	**T3WV***			●		3-wire
T3YH*	**T3YV***			●		
T2YD*	**-**			●	2-color display for 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)

Ⓖ 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.)

Ⓗ Switch mounting	
Blank	Rail method
Z	Band method

Ⓘ Option

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

Ⓙ Accessory

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

Precautions for model No. selection

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

[Example of model No.]

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

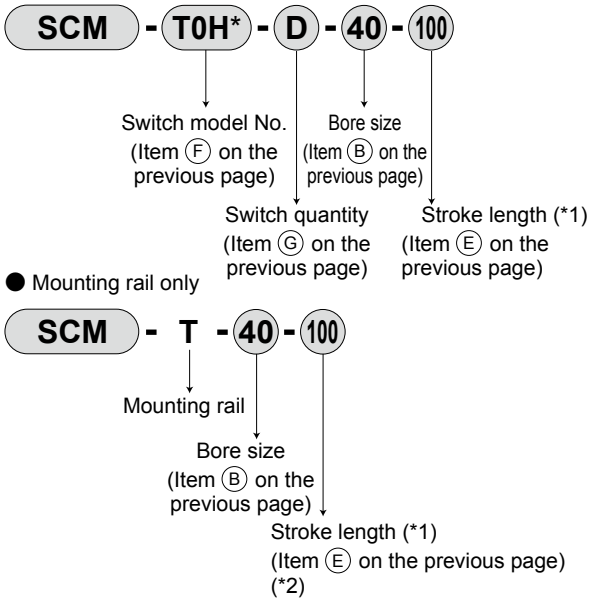
Model: Round shaped cylinder, double acting

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

How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set

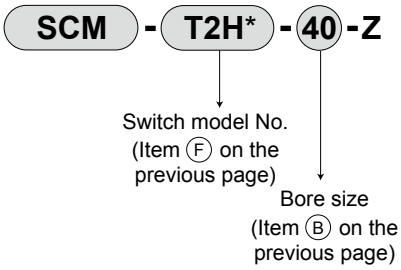


● Mounting rail only

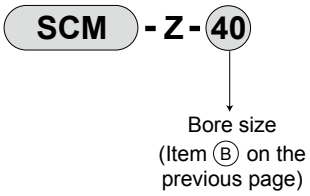
*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

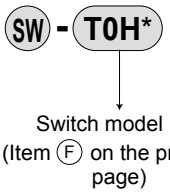
● Switch body + mounting bracket set + band



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

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

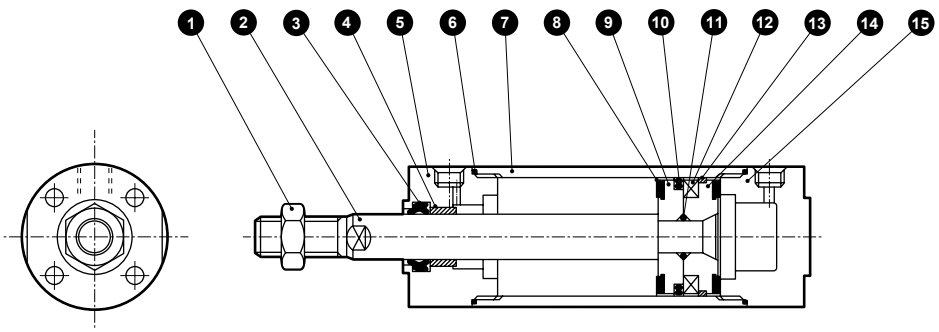
Material of mounting bracket

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

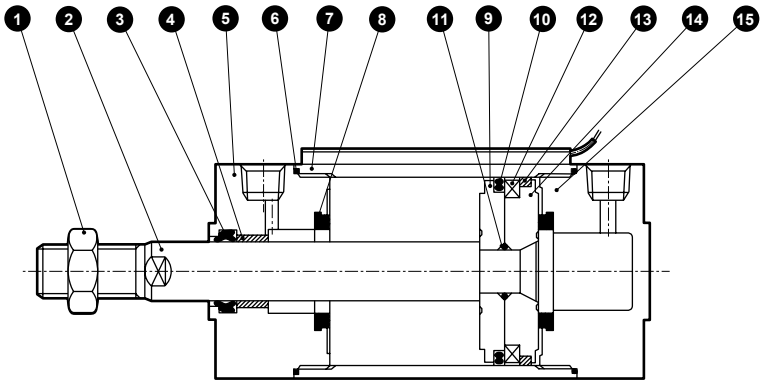
Note: Mounting bracket will be shipped with the product.
However, it will be attached to the product if the product is the type with bellows and LB, FA, or TA mounting bracket, SCM-P with LB, FB or TB mounting bracket, or SCM-R with LB, FB or TB mounting bracket.

Internal structure and parts list (with rubber cushion)

● φ20 to φ40



● φ50 to φ100



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

*1: Oil-impregnated cast iron bearing for copper and PTFE free.
*2: Aluminum alloy die-casting for φ50 and φ63.

Repair parts list

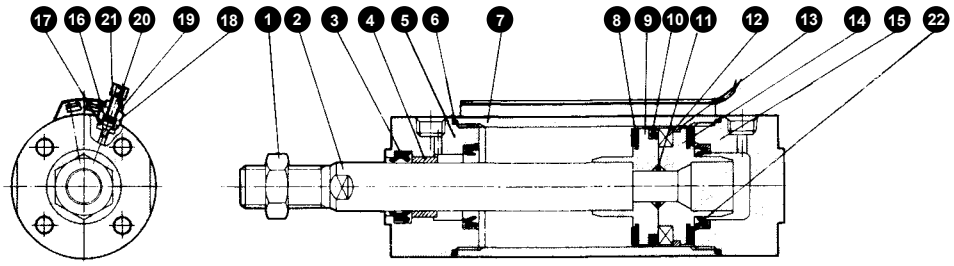
With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
φ 20	SCM-20DK	❸ ❻ ❽ ❿ ⓭
φ 25	SCM-25DK	
φ 32	SCM-32DK	
φ 40	SCM-40DK	
φ 50	SCM-50DK	
φ 63	SCM-63DK	
φ 80	SCM-80DK	
φ100	SCM-100DK	

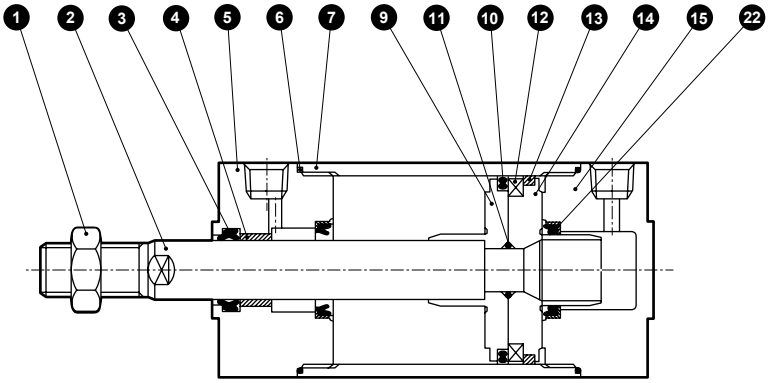
*1: Specify the kit No. when placing an order.

Internal structure and parts list (with air cushion)

● φ20 to φ40



● φ50 to φ100



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

*1: Oil-impregnated cast iron bearing for copper and PTFE free.
*2: Aluminum alloy die-casting for φ50 and φ63.

Repair parts list

With air cushion

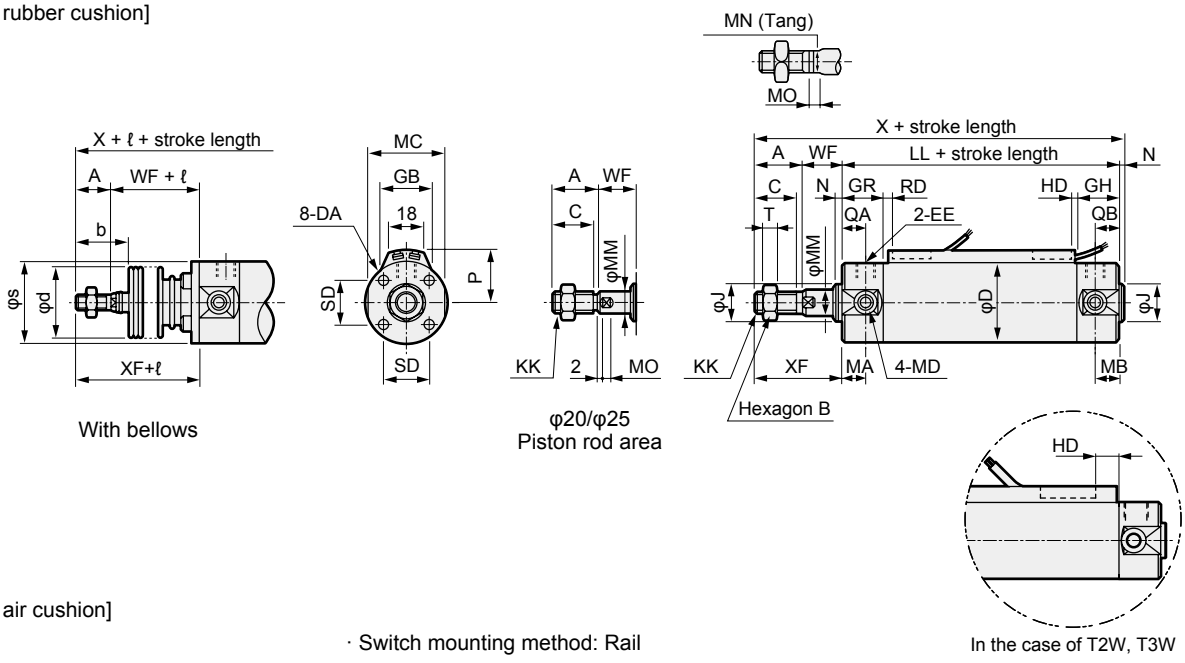
Bore size (mm)	Kit No.	Repair parts No.
φ 20	SCM-20BK	*2 3 6 8 10 13 16 17 22
φ 25	SCM-25BK	
φ 32	SCM-32BK	
φ 40	SCM-40BK	
φ 50	SCM-50BK	
φ 63	SCM-63BK	
φ 80	SCM-80BK	
φ100	SCM-100BK	

*1: Specify the kit No. when placing an order.
*2: 8 is not supplied with φ50 to φ100.

Dimensions CAD

● Basic (00) φ20 to φ100
[With rubber cushion]

· Switch mounting method: Rail



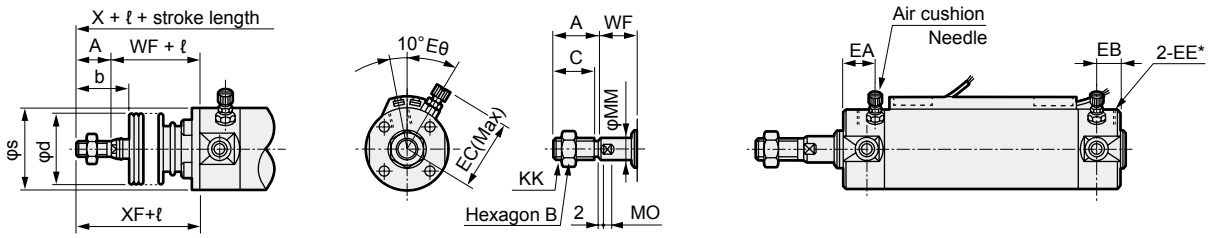
With bellows

φ20/φ25
Piston rod area

In the case of T2W, T3W

[With air cushion]

· Switch mounting method: Rail



With bellows

φ20/φ25
Piston rod area

1 : Piping port (EE) of φ20 and φ25 is different. Refer to the dimensions (EE) of the type with air cushion.
*2 : Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3 : For the dimensions of the accessories, refer to pages 238 and 239.

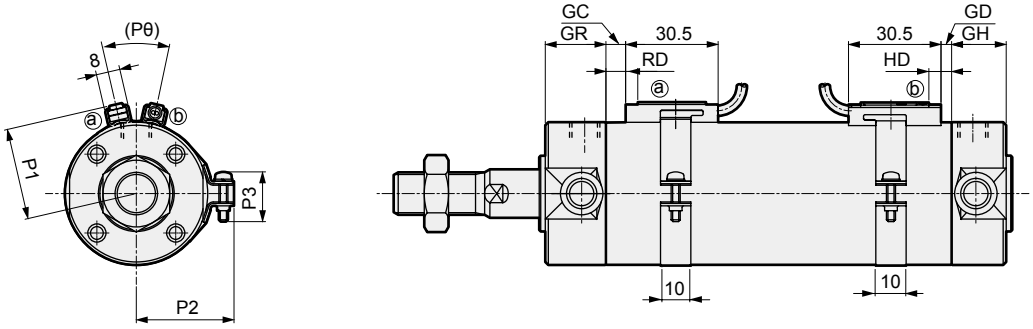
Code	Basic (00) basic dimensions																				
Bore size (mm)	A	B	C	D	DA	EE (Note)	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	N	QA	QB	SD
φ 20	18	13	16	26	M4 depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	8	6	4	2	12	10	14
φ 25	22	17	20	31	M5 depth 6.5	Rc1/8	17	19	14	M10×1.25	69	11	11	29	M6	10	8	5	2	12	10	16.5
φ 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
φ 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
φ 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
φ 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
φ 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
φ100	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
φ 20	5	17	106	35	30	30	25.7	(Stroke length/3) + 18.5	14	12	27	M5	30°	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
φ 25	6	18	111	40	35	30	30.7	(Stroke length/3) + 20.5	14	12	29.5	M5	30°	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
φ 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
φ 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
φ 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
φ 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
φ 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
φ100	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

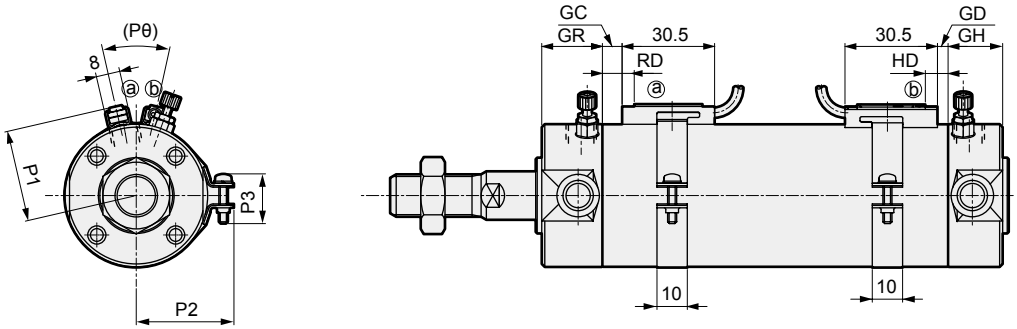
● Basic (00) φ20 to φ100
[With rubber cushion]

· Switch mounting: Band



[With air cushion]

· Switch mounting: Band



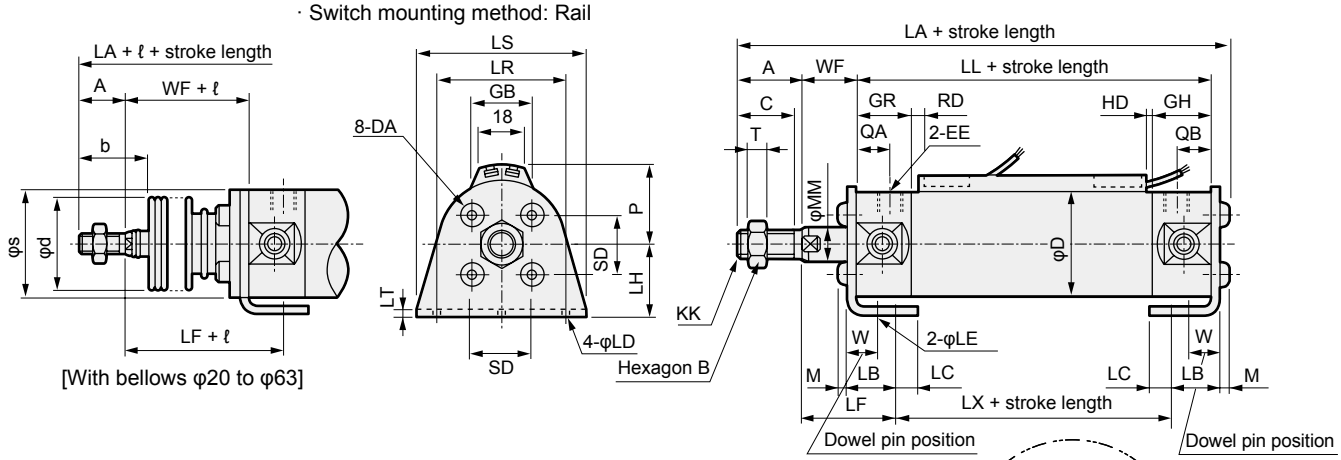
*1: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*2: For the dimensions of the accessories, refer to pages 238 and 239.

Code	Switch mounting: Band																	
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				
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ100	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°)

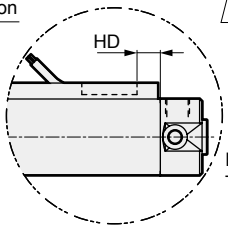
Dimensions CAD

● Axial foot (LB)

· Switch mounting method: Rail

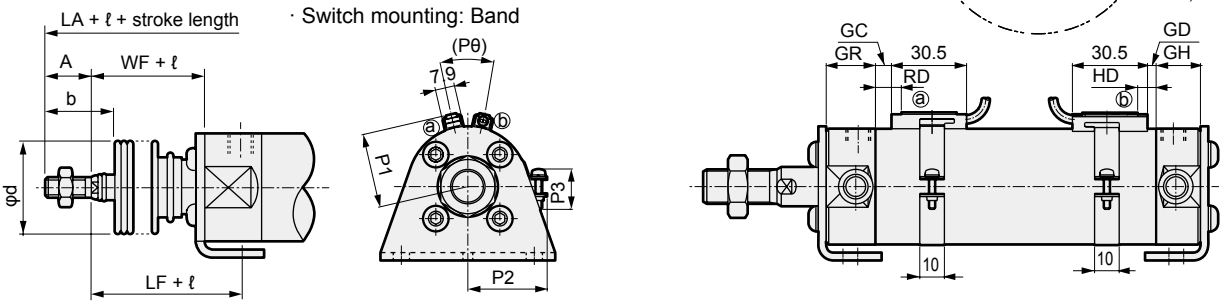


[With bellows φ20 to φ63]



In the case of T2W, T3W

· Switch mounting: Band



[With bellows φ80/φ100]

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	LT	LX	M	MM
φ 20	18	13	15.5	26	M4	Rc1/8	17	19	M8	109.8	15.1	7.1	5.7	4	28.9	20	69	32	44	3.2	45.2	2.6	8
φ 25	22	17	19.5	31	M5	Rc1/8	17	19	M10×1.25	115.6	15.1	7.1	5.7	4	29.9	22	69	36	49	3.2	45.2	3.4	10
φ 32	22	17	19.5	38	M5	Rc1/8	17	19	M10×1.25	117.6	16.1	8.1	6.8	4	30.9	25	71	44	58	3.2	45.2	3.4	12
φ 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	3.2	51.2	4	16
φ 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	4.5	55	5	20
φ 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	4.5	55	5	20
φ 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	4.5	60	6	25
φ100	40	41	37	110	M12	Rc1/2	28	28	M26×1.5	192	30	16	14	6	55	65	108	120	150	6	60	7	30

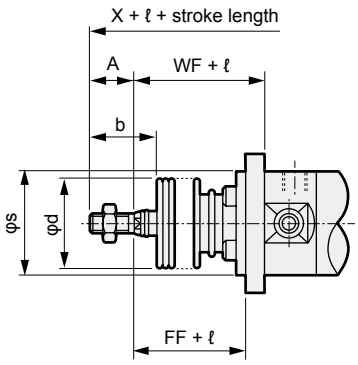
Code							With bellows				Switch mounting: Rail									Switch mounting: Band					
Bore size (mm)	QA	QB	SD	T	W	WF	b	d	s	ℓ	P	GB	HD			RD			GD			GC		
													T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W
φ 20	12	10	14	5	10	17	30	30	25.7	(Stroke length/3) + 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
φ 25	12	10	16.5	6	10	18	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
φ 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
φ 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
φ 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
φ 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
φ 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
φ100	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										
Bore size (mm)	HD			RD			P1	P2	P3	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ 20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
φ 25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
φ 32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
φ 40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
φ 50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
φ 63	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)
φ 80	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
φ100	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 page 224. (Those of φ20/φ25 are different from the basic.)
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

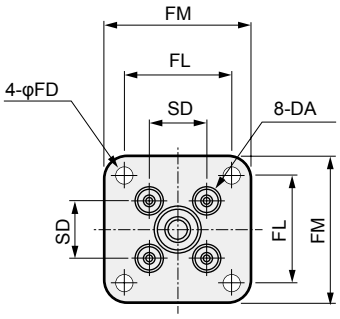
Dimensions CAD

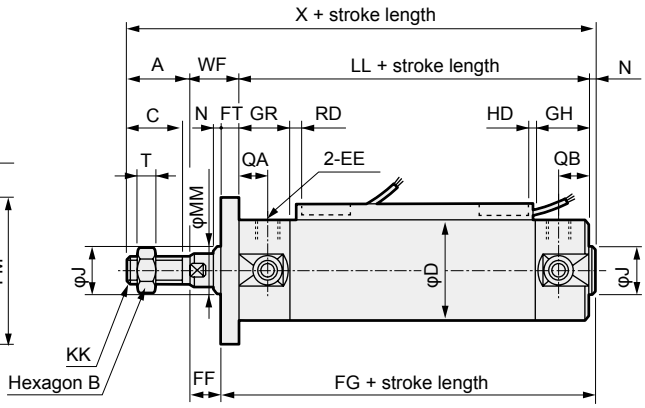
● Rod side flange (FA)

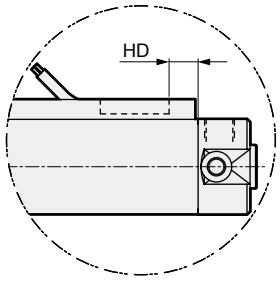


[With bellows φ20 to φ63]

· Switch mounting method: Rail

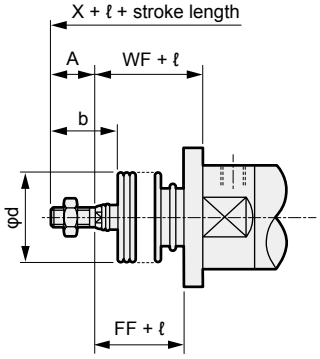




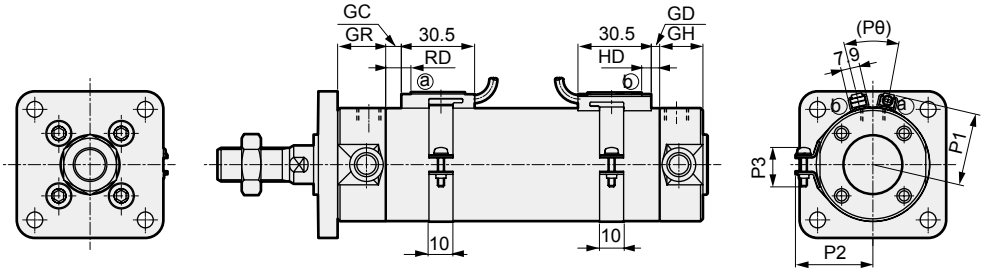


In the case of T2W, T3W

· Switch mounting: Band



[With bellows φ80/φ100]



*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to page 224. (Those of φ20/φ25 are different from the basic.)
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

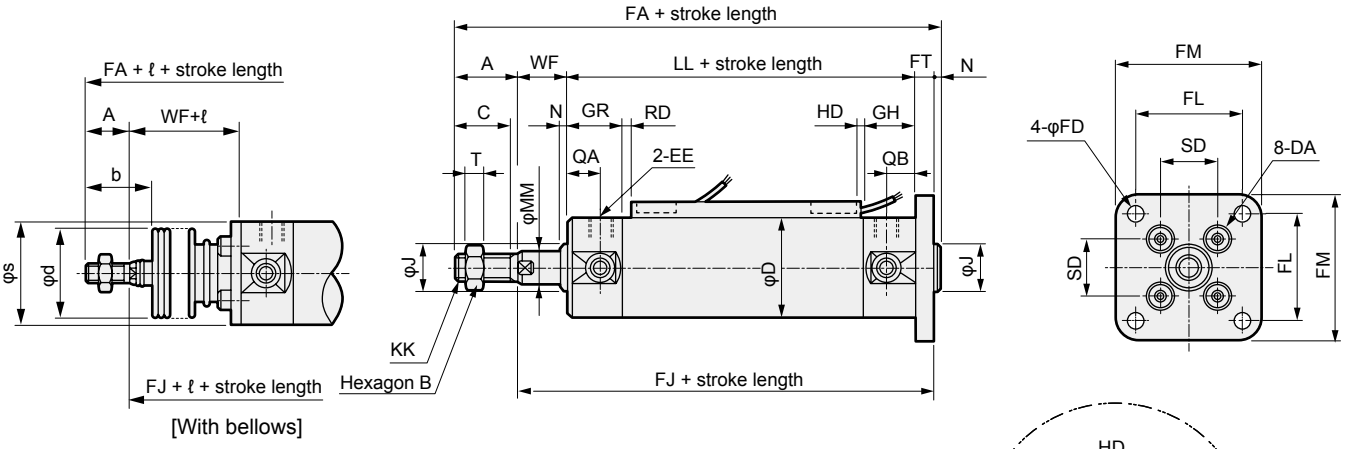
Code	Rod side flange (FA) basic dimensions																							
Bore size (mm)	A	B	C	D	DA	EE (*1)	FD	FF	FG	FL	FM	FT	GH	GR	J	KK	LL	MM	N	QA	QB	SD	T	WF	X
φ 20	18	13	15.5	26	M4	Rc1/8	5.5	11	77	28	40	6	17	19	12	M8	69	8	2	12	10	14	5	17	106
φ 25	22	17	19.5	31	M5	Rc1/8	5.5	11	78	32	44	7	17	19	14	M10×1.25	69	10	2	12	10	16.5	6	18	111
φ 32	22	17	19.5	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
φ 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
φ 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
φ 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
φ 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
φ100	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

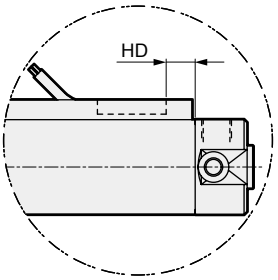
Code	With bellows				Switch mounting: Rail						Switch mounting: Band																	
Bore size (mm)	b	d	s	ℓ	HD			RD			GD			GC			HD			RD			P1	P2	P3	Pθ
					T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ100	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 CAD

● Head side flange (FB)

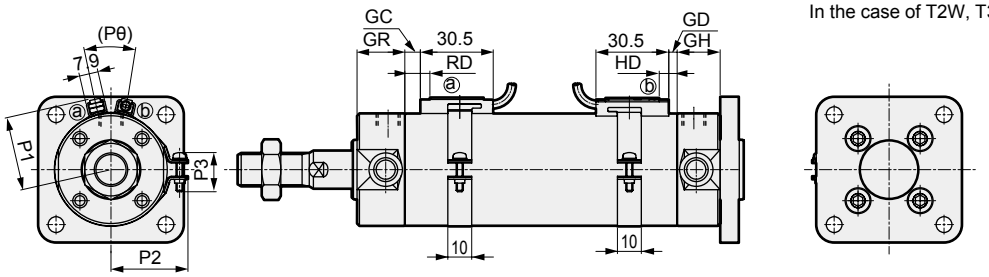
· Switch mounting method: Rail





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 page 224. (Those of φ20/φ25 are different from the basic.)
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

Code	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
φ 20	18	13	15.5	26	M4	Rc1/8	112	5.5	92	28	40	6	17	19	12	M8	69	8	2	12	10	14	5	17	30
φ 25	22	17	19.5	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	18	35
φ 32	22	17	19.5	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
φ 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
φ 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
φ 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
φ 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
φ100	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

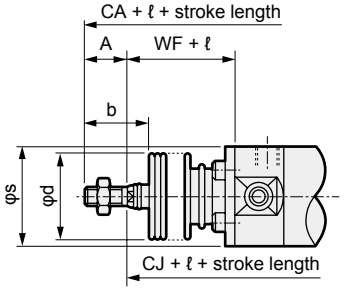
Code	With bellows			Switch mounting: Rail						Switch mounting: Band															
Bore size (mm)	d	s	ℓ	HD			RD			GD			GC			HD			RD			P1	P2	P3	Pθ
				T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ 20	30	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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ 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°)
φ100	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°)

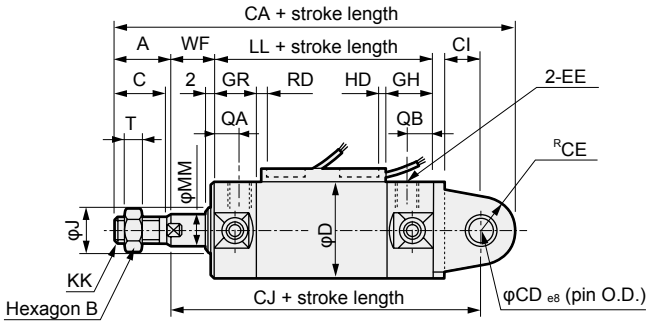
MEMO

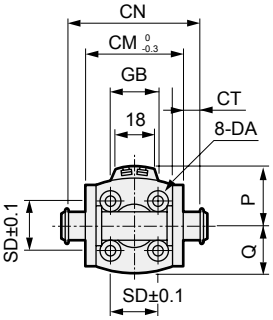
Dimensions (φ20 to φ63) CAD

● Eye bracket (CA)

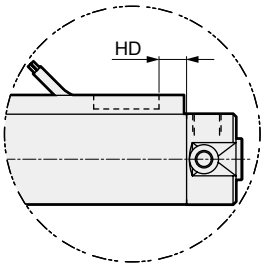
· Switch mounting method: Rail





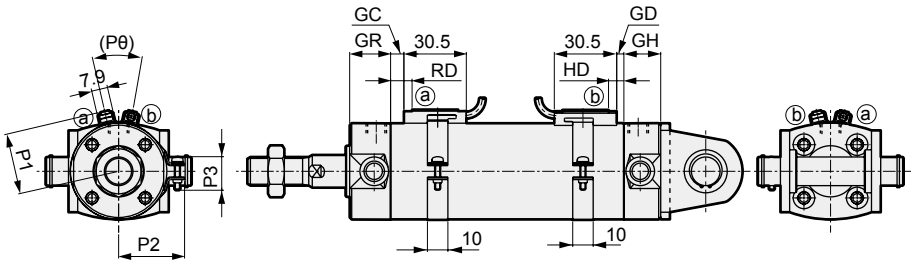


[With bellows]



In the case of T2W, T3W

· Switch mounting: Band



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
φ20	18	13	15.5	129	8	11	3.2	10.8	100	29	38.6	26	M4	Rc1/8	17	19	12	M8	69	8	13
φ25	22	17	19.5	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
φ32	22	17	19.5	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
φ40	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
φ50	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
φ63	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		
												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
φ20	12	10	14	5	17	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
φ25	12	10	16.5	6	18	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
φ32	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
φ40	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
φ50	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
φ63	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

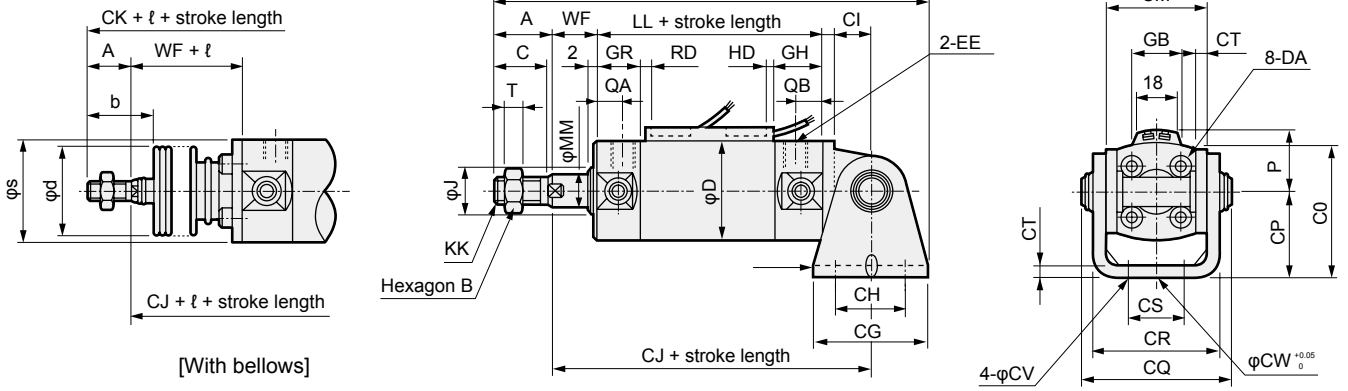
Code	Switch mounting: Band									
Bore size (mm)	HD			RD			P1	P2	P3	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
φ25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
φ32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
φ40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
φ50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
φ63	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)

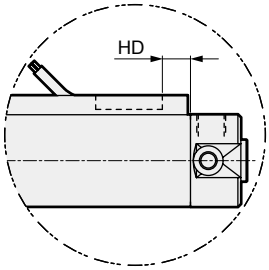
*1: Needle relational dimensions and port sizes of the type with air cushion are the same as those of the basic. Refer to page 224. (Those of φ20/φ25 are different from the basic.)
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

Dimensions (φ20 to φ63) CAD

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

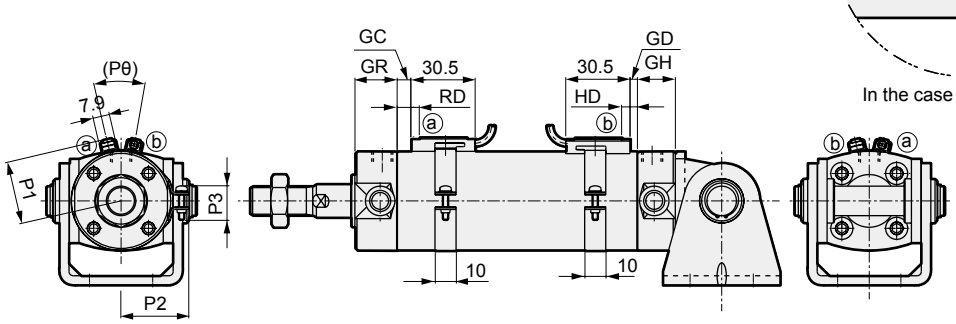
· Switch mounting method: Rail





In the case of T2W, T3W

· 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
φ20	18	13	15.5	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
φ25	22	17	19.5	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
φ32	22	17	19.5	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
φ40	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
φ50	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
φ63	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
φ20	69	8	12	10	5	17	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
φ25	69	10	12	10	6	18	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
φ32	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
φ40	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
φ50	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
φ63	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

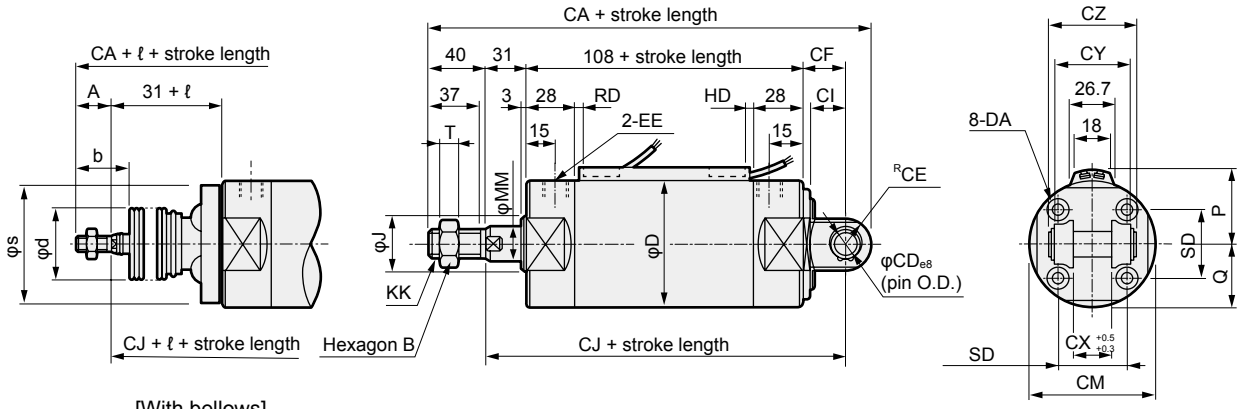
Code	Switch mounting: Band									
Bore size (mm)	HD			RD			P1	P2	P3	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
φ25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
φ32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
φ40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
φ50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
φ63	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 page 224. (Those of φ20/φ25 are different from the basic.)
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

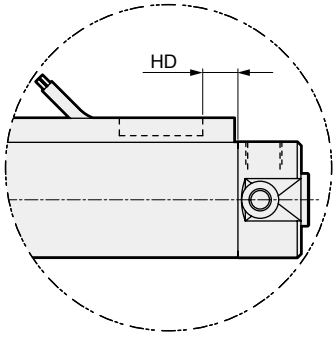
Dimensions (φ80 to φ100)

● Clevis bracket (CB)

· Switch mounting method: Rail

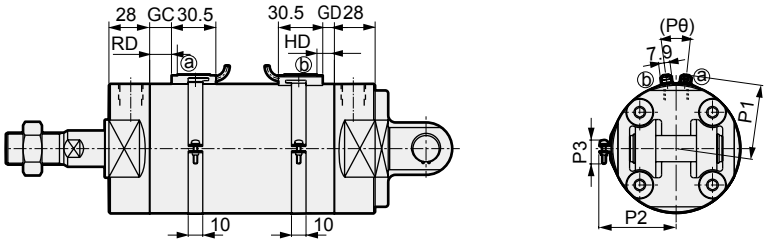


[With bellows]



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 page 224.
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

Code	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
φ80	32	232	18	18	35	25	174	80	28	56	64	89	M10	Rc3/8	40	M22×1.5	25	44.5	50	13
φ100	41	244	22	22	43	31	182	100	32	64	72	110	M12	Rc1/2	50	M26×1.5	30	55	60	16

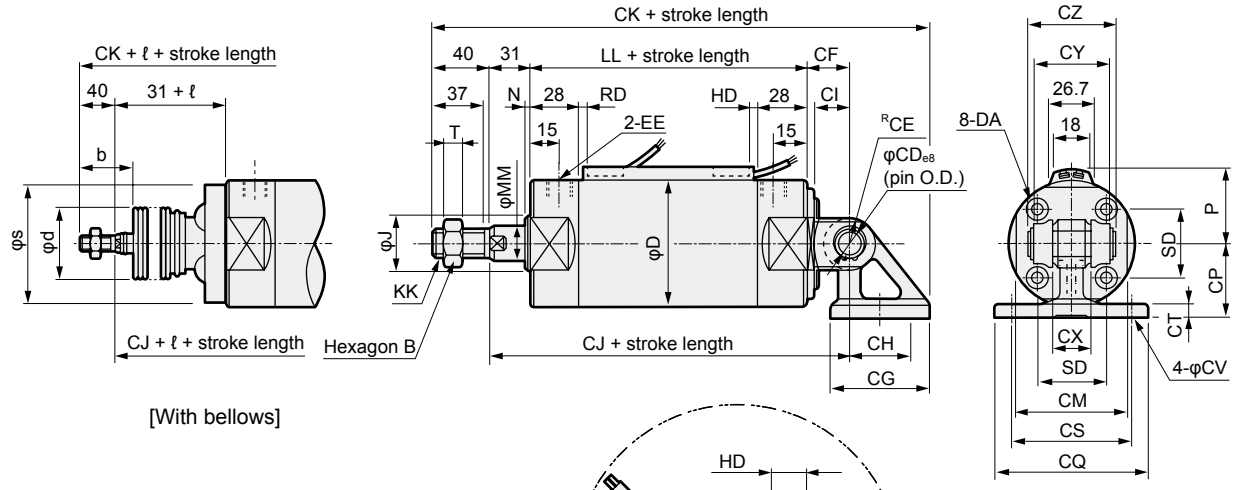
Code	With bellows				Switch mounting: Rail							Switch mounting: Band					
Bore size (mm)	b	d	s	ℓ	P	HD			RD			GD			GC		
						T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W
φ80	55	50	88.7	(Stroke length/4.3) + 14.5	51	9.5	13.0	15.0	20.0	20.0	22.0	9.0	9.0	11.0	16.0	16.0	18.0
φ100	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	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ80	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
φ100	13.5	13.5	15.5	19.5	19.5	21.5	61.7	63.5	16	(16°)

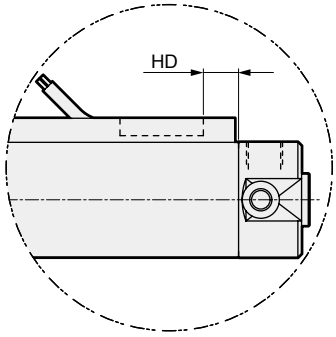
Dimensions (φ80 to φ100)

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

· Switch mounting method: Rail

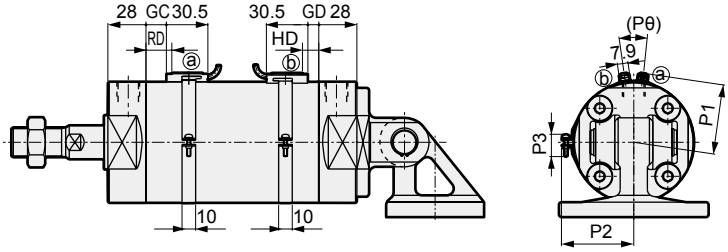


[With bellows]



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 page 224.
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

Code	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
φ80	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
φ100	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

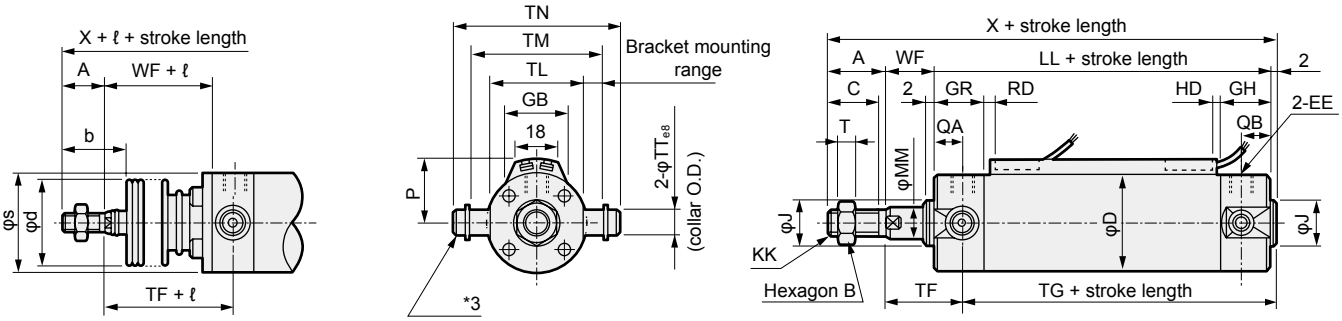
Code						With bellows					Switch mounting: Rail								Switch mounting: Band		
Bore size (mm)	LL	MM	N	SD	T	b	d	s	ℓ	P	HD			RD			GD		
											T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W
φ80	108	25	3	50	13	55	50	88.7	(Stroke length/4.3) + 14.5	51	9.5	13.0	15.0	20.0	20.0	22.0	9.0	9.0	11.0
φ100	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	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ80	16.0	16.0	18.0	13.0	13.0	15.0	20.0	20.0	22.0	51.2	53.0	16	(16°)
φ100	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 (φ20 to φ63) CAD

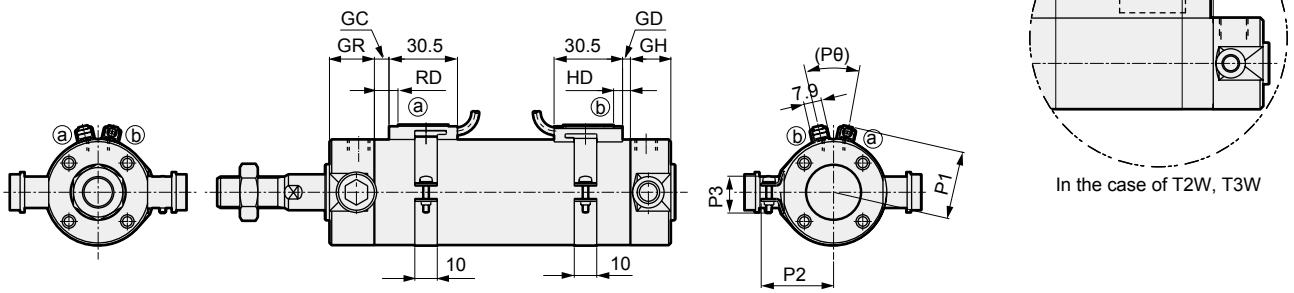
● Rod side trunnion (TA)

· Switch mounting method: Rail



[With bellows]

· 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 page 224. (Those of φ20/φ25 are different from the basic.)
*2 : Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3 : Composed of a collar, plain washer and hexagon socket head cap screw.
*4 : For the dimensions of the accessories, refer to pages 238 and 239.

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
φ20	18	13	15.5	26	Rc1/8	17	19	12	M8	69	8	12	10	5	28	60	28
φ25	22	17	19.5	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10	6	29	60	33
φ32	22	17	19.5	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10	6	29	62	40
φ40	30	22	27	47	Rc1/8	19	20	25	M14×1.5	78	16	13	12	8	32	68	49
φ50	35	27	32	58	Rc1/4	22	25	30	M18×1.5	90	20	15	12	11	36	79	60
φ63	35	27	32	72	Rc1/4	22	25	32	M18×1.5	90	20	15	12	11	36	79	74

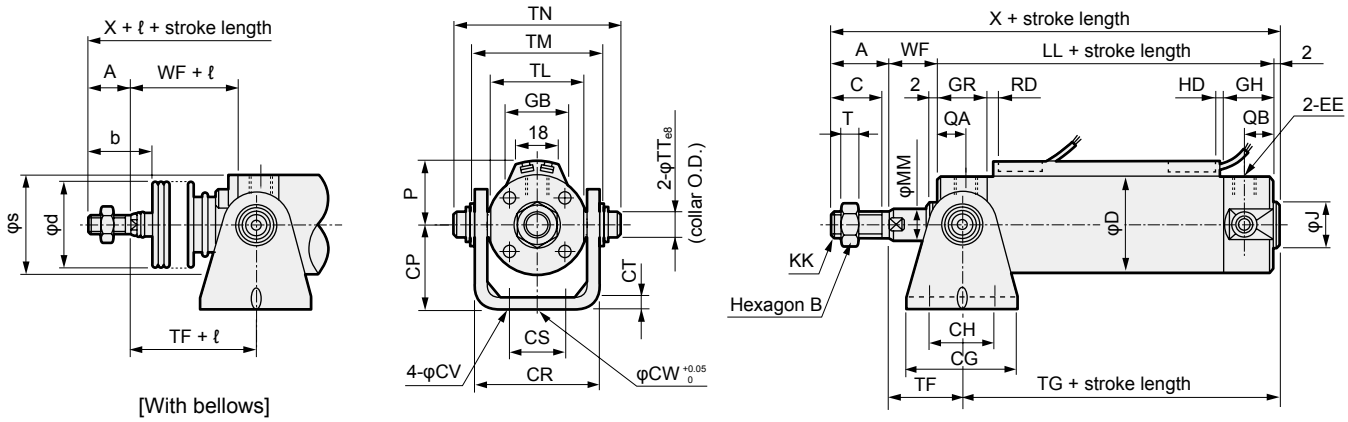
Code						With bellows				Switch mounting: Rail							
Bore size (mm)	TM	TN	TT	WF	X	b	d	s	ℓ	P	GB	HD			RD		
												T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
φ20	39	47.6	8	17	106	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
φ25	43	53	10	18	111	35	30	30.7	(Stroke length/3) + 20.5	22	24.4	2.0	5.5	7.5	8.5	8.5	10.5
φ32	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
φ40	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
φ50	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
φ63	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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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°)

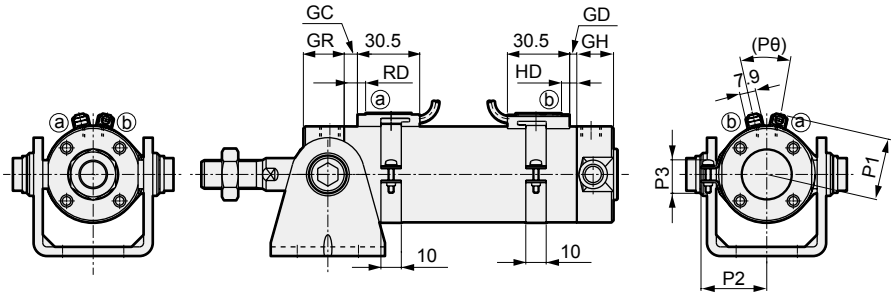
Dimensions (φ20 to φ63)

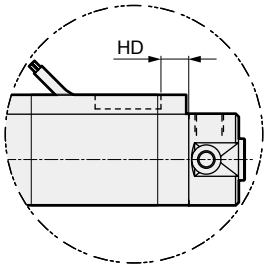
● Rod side trunnion (TA) with bracket (option code B2)

· 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 page 224. (Those of φ20/φ25 are different from the basic.)
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

Code	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
φ20	18	13	15.5	42	28	25	35.8	16	3.2	5.5	10	26	Rc1/8	17	19	12	M8	69	8	12	10
φ25	22	17	19.5	42	28	30	39.8	20	3.2	5.5	10	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10
φ32	22	17	19.5	48	28	35	49.4	22	4.5	6.6	10	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10
φ40	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
φ50	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
φ63	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

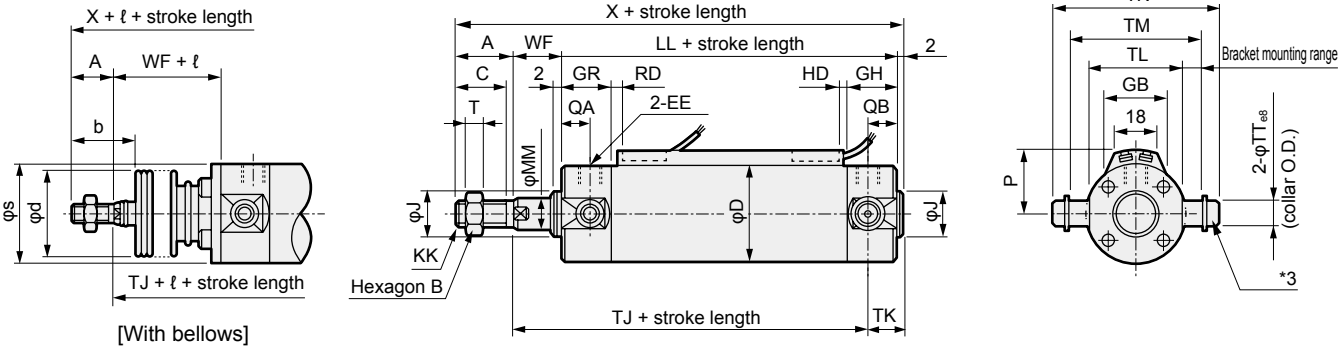
Code										With bellows				Switch mounting: Rail							
Bore size (mm)	T	TF	TG	TL	TM	TN	TT	WF	X	b	d	s	ℓ	P	GB	HD			RD		
																T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
φ20	5	28	60	28	39	47.6	8	17	106	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5
φ25	6	29	60	33	43	53	10	18	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
φ32	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
φ40	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
φ50	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
φ63	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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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°)

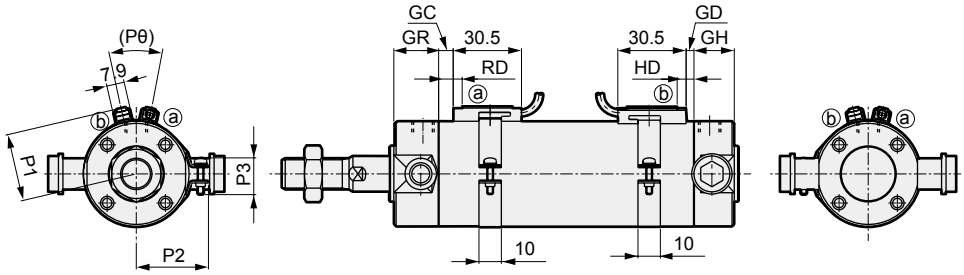
Dimensions (φ20 to φ63) CAD

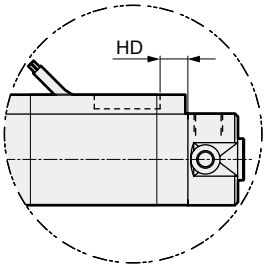
● Head side trunnion (TB)

· 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 page 224. (Those of φ20/φ25 are different from the basic.)
*2 : Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3 : Composed of a collar, plain washer and hexagon socket head cap screw.
*4 : For the dimensions of the accessories, refer to pages 238 and 239.

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
φ20	18	13	15.5	26	Rc1/8	17	19	12	M8	69	8	12	10	5	75	13	28	39	47.6	8	17	106
φ25	22	17	19.5	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10	6	76	13	33	43	53	10	18	111
φ32	22	17	19.5	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10	6	79	12	40	54.5	67.7	12	18	113
φ40	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
φ50	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
φ63	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

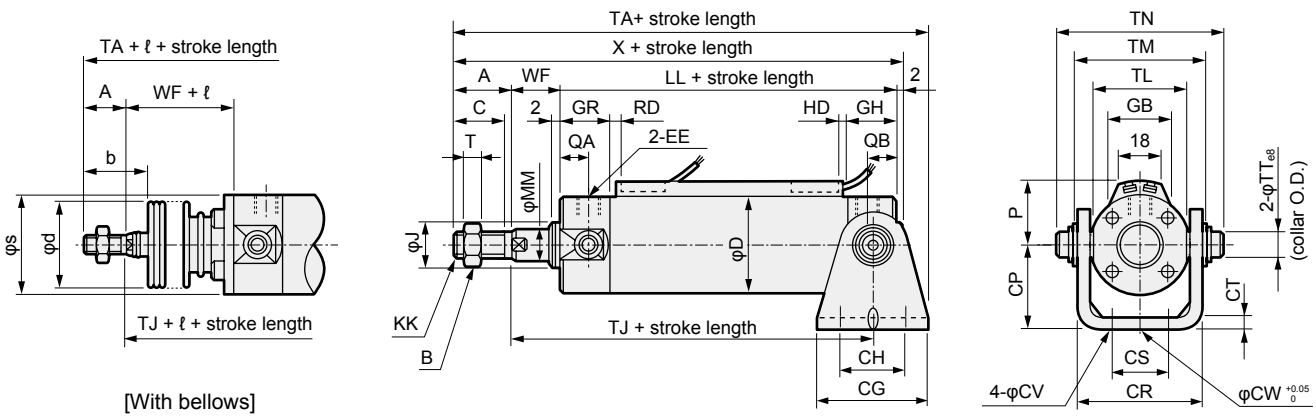
Code	With bellows				Switch mounting: Rail									Switch mounting: Band					
Bore size (mm)	b	d	s	ℓ	P	GB	HD			RD				GD			GC		
							T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W		T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W
φ20	30	30	25.7	(Stroke length/3) + 18.5	19.5	23	3.0	6.5	8.5	7.5	7.5	9.5		2.5	2.5	4.5	3.5	3.5	5.5
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
φ25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
φ32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)
φ40	8.5	8.5	10.5	11.5	11.5	13.5	30.2	32.1	16	(26°)
φ50	11.0	11.0	13.0	13.0	13.0	15.0	35.7	37.4	16	(22°)
φ63	11.0	11.0	13.0	13.0	13.0	15.0	42.7	44.4	16	(20°)

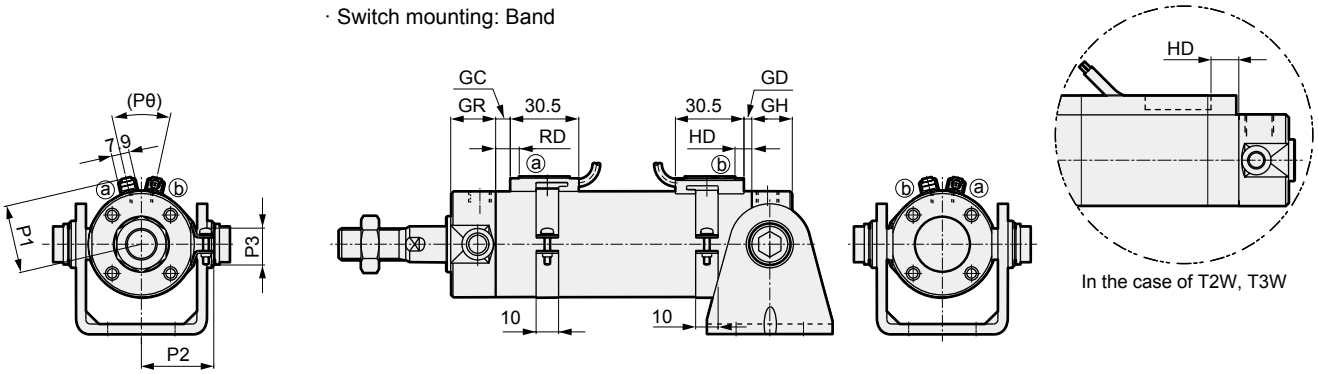
Dimensions (φ20 to φ63)

● 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 page 224. (Those of φ20/φ25 are different from the basic.)
*2: Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.
*3: For the dimensions of the accessories, refer to pages 238 and 239.

Code	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
φ20	18	13	15.5	42	28	25	35.4	16	3.2	5.5	10	26	Rc1/8	17	19	12	M8	69	8	12	10
φ25	22	17	19.5	42	28	30	39.4	20	3.2	5.5	10	31	Rc1/8	17	19	14	M10×1.25	69	10	12	10
φ32	22	17	19.2	48	28	35	49	22	4.5	6.6	10	38	Rc1/8	17	19	18	M10×1.25	71	12	12	10
φ40	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
φ50	35	27	32	64	36	50	72	36	6	9	20	58	Rc1/4	22	25	30	M18×1.5	90	20	15	12
φ63	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
φ20	5	114	75	28	39	47.6	8	17	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
φ25	6	119	76	33	43	53	10	18	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
φ32	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
φ40	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
φ50	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
φ63	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

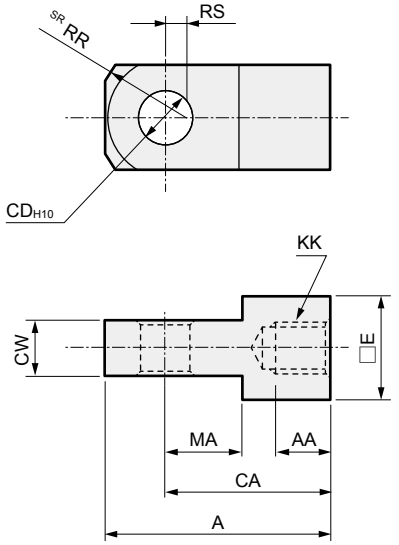
Code	Switch mounting: Band															
Bore size (mm)	GD			GC			HD			RD			P1	P2	P3	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ20	2.5	2.5	4.5	3.5	3.5	5.5	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
φ25	1.5	1.5	3.5	4.5	4.5	6.5	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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

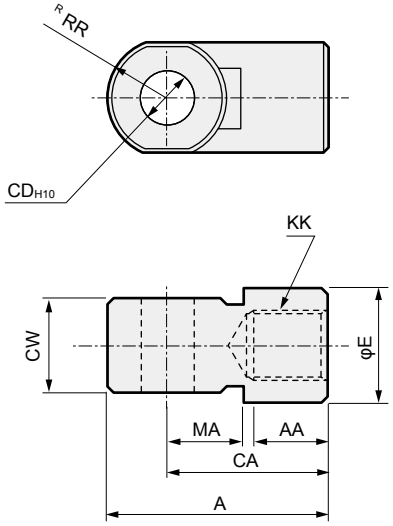
● SCM-I-φ20 to φ32

Material: Steel
Chromate treatment



● SCM-I-φ40 to φ100

Material: Cast iron
Painting

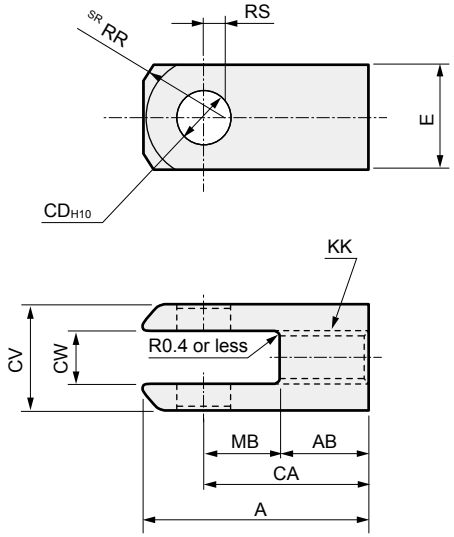


Model No.	Applicable bore size (mm)	A	AA	CA	CD	CW	E	KK	MA	RR	RS	Weight (g)
SCM-I-20	20	34	8.5	25	8	$8^{-0.2}_{-0.4}$	16	M8	11.5	13.4	3.1	39
SCM-I-25	25, 32	41	10.5	30	10	$10^{-0.2}_{-0.4}$	20	M10×1.25	14	17.1	4.5	72
SCM-I-40	40	42	14	30	10	$18^{-0.3}_{-0.5}$	22	M14×1.5	14	12	-	152
SCM-I-50	50, 63	56	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

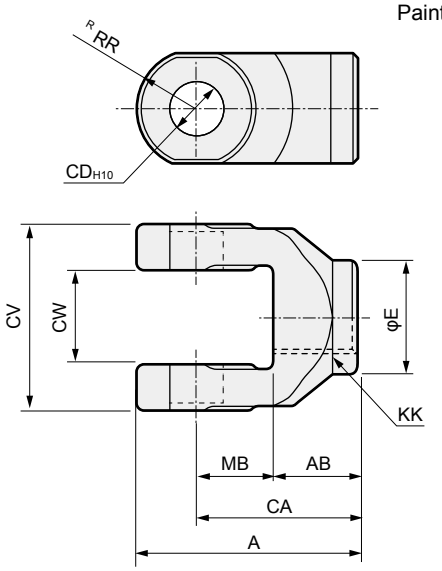
● SCM-Y-φ20 to φ32

Material: Steel
Chromate treatment



● SCM-Y-φ40 to φ100

Material: Cast iron
Painting



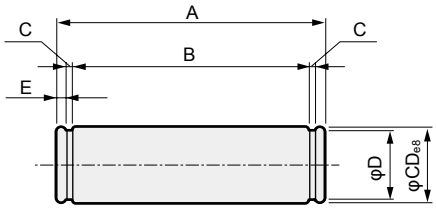
Model No.	Applicable bore size (mm)	A	AB	CA	CD	CV	CW	E	KK	MB	RR	RS	Applicable pin No.	Weight (g)
SCM-Y-20	20	34	13.5	25	8	16	$8^{+0.4}_{+0.2}$	16	M8	11.5	13.4	3.1	SCM-P-20	46
SCM-Y-25	25, 32	41	16	30	10	20	$10^{+0.4}_{+0.2}$	20	M10×1.25	14	17.1	4.5	SCM-P-25	85
SCM-Y-40	40	42	16	30	10	36	$18^{+0.5}_{+0.3}$	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 attached.

Accessory dimensions

● Pin for clevis CAD

Material: Steel
Chromate treatment

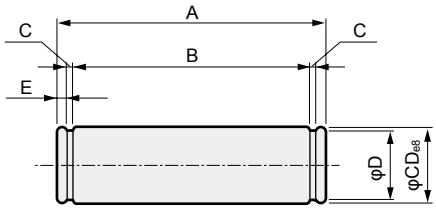


Model No.	Bore size (mm)	A	B	C	CD	D	E	Shaft snap ring	Weight (g)
SCM-P1-20	20	43.4	38.6	0.9	8	7.6	1.5	C for shaft 8	17
SCM-P1-25	25	48	42.6	1.15	10	9.6	1.6	C for shaft 10	30
SCM-P1-32	32	59.4	54	1.15	12	11.5	1.6	C for shaft 12	52
SCM-P1-40	40	71.4	65	1.15	14	13.4	2.1	C for shaft 14	85
SCM-P1-50	50	86	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 φ80 and φ100, the dimension is the same as the pin for rod eye.

● Rod eye pin CAD

Material: Steel
Chromate treatment



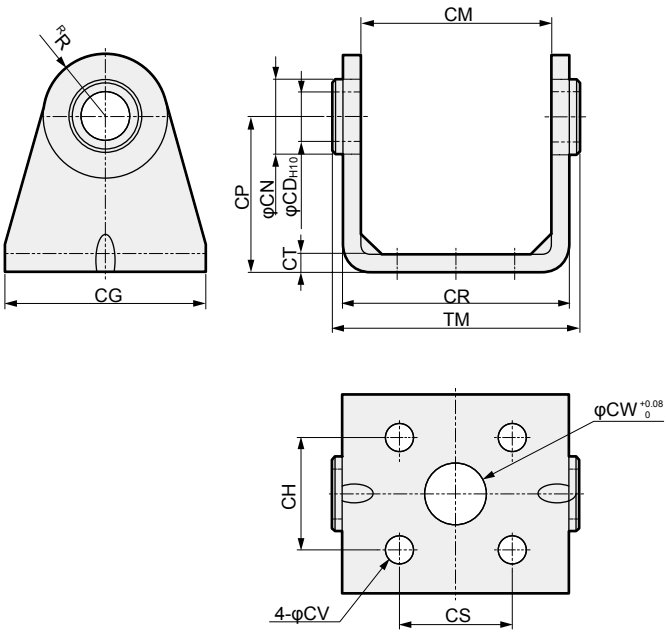
Model No.	Bore size (mm)	A	B	C	CD	D	E	Shaft snap ring	Weight (g)
SCM-P-20	20	21	16.2	0.9	8	7.6	1.5	C for shaft 8	9
SCM-P-25	25, 32	25.6	20.2	1.15	10	9.6	1.6	C for shaft 10	16
SCM-P-40	40	41.6	36.2	1.15	10	9.6	1.6	C for shaft 10	26
SCM-P-50	50, 63	50.6	44.2	1.15	14	13.4	2.1	C for shaft 14	60
SCM-P-80	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 attached with the rod clevis.

● No.2 bracket CAD

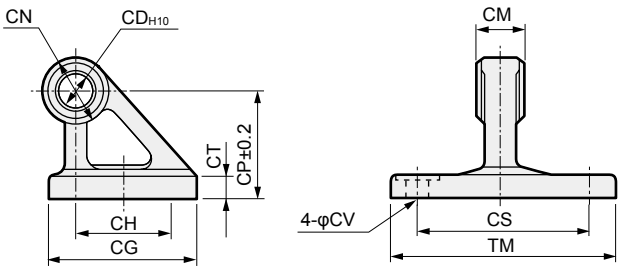
● Clevis bracket (B2)
SCM-B2-φ20 to φ63

Material: Steel
Chromate treatment



● Eye bracket (B1)
SCM-B1-φ80 to φ100

Material: Cast iron
Painting



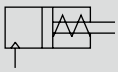
Model No.	Applicable bore size (mm)	CD	CG	CH	CM	CN	CP	CR	CS	CT	CV	CW	R	TM	Weight (g)
SCM-B2-20	20	8	42	28	$29^{+0.4}_{+0.1}$	13	25	35.8	16	3.2	5.5	10	11	38	72
SCM-B2-25	25	10	42	28	$33^{+0.4}_{+0.1}$	15	30	39.8	20	3.2	5.5	10	13	42	90
SCM-B2-32	32	12	48	28	$40^{+0.5}_{+0.1}$	17	35	49.4	22	4.5	6.6	10	15	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

Round shaped cylinder
Single acting/push

SCM-X Series

● Bore size: φ20/φ25/φ32/φ40

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM-X			
Bore size	mm	φ20	φ25	φ32	φ40
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	°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.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
φ20	25, 50, 75 100, 125 150, 200	200	5
φ25			
φ32			
φ40			

*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
φ20	11.8	38
φ25	12.5	40.2
φ32	24.3	54.9
φ40	28.4	100

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

● Switch mounting method: Rail

Switch quantity / Bore size (mm)	1				2			3				4				5			
	Proximity			Reed	Proximity		Reed	Proximity			Reed	Proximity			Reed	Proximity			Reed
	T2, T3	T2W, T3W	T*Y*		T2, T3	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*		T2, T3	T2W, T3W	T*Y*	
φ20	10				25			50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25			50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25			50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25			50	70	70	55	55	70	70	55	75	110	110	90

● Switch mounting: Band

Switch quantity / Bore size (mm)	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	For 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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

● Stroke length: 5 to 50 (Unit: kg)

Item/mounting / Bore size	Product weight when stroke length (S) = 0 mm: Basic	Axial foot	Flange	Clevis	Trunnion	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
φ20	0.15	0.26	0.18	0.20	0.16	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.24	0.37	0.28	0.32	0.26		0.014	0.016	0.007
φ32	0.36	0.52	0.42	0.51	0.39		0.018	0.020	0.007
φ40	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 / Bore size	Product weight when stroke length (S) = 0 mm: Basic	Axial foot	Flange	Clevis	Trunnion	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
φ20	0.19	0.30	0.22	0.24	0.20	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.32	0.45	0.36	0.40	0.34		0.014	0.016	0.007
φ32	0.46	0.62	0.52	0.61	0.49		0.018	0.020	0.007
φ40	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 / Bore size	Product weight when stroke length (S) = 0 mm: Basic	Axial foot	Flange	Clevis	Trunnion	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
φ20	0.24	0.35	0.27	0.29	0.25	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.39	0.52	0.43	0.47	0.41		0.014	0.016	0.007
φ32	0.55	0.71	0.61	0.70	0.58		0.018	0.020	0.007
φ40	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 / Bore size	Product weight when stroke length (S) = 0 mm: Basic	Axial foot	Flange	Clevis	Trunnion	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
φ20	0.29	0.40	0.32	0.34	0.30	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.46	0.59	0.50	0.54	0.48		0.014	0.016	0.007
φ32	0.65	0.81	0.71	0.80	0.68		0.018	0.020	0.007
φ40	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 × $\frac{100}{10}$ =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

Ⓐ Mounting *1

Ⓑ Bore size

Ⓒ Port thread

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model No. *3 *4

Ⓖ Switch quantity *5

Ⓗ Switch mounting

Ⓘ Option *5, *7

Ⓙ Accessory *8

Code	Content
Ⓐ 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

Ⓑ Bore size (mm)	
20	φ20
25	φ25
32	φ32
40	φ40

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion	
D	With two-sided rubber cushion

Ⓔ Stroke length (mm)		
Bore size	**Stroke length *2**	**Custom stroke length**
φ20 to φ40	**5 to 200**	**In 1 mm increments**

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color display	2-wire
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display (custom order)	3-wire
T2WH*	**T2WV***	Proximity		●	2-color display	2-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3WH*	**T3WY***	Proximity		●	2-color display	3-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	**-**	Proximity		●	2-color display AC magnetic field	2-wire
T2YDT*	**-**	Proximity		●	2-color display AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-wire

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

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

Ⓗ Switch mounting	
Blank	Rail method
Z	Band method

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

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

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
*2 : Refer to page 240 for the number of installed switches and the min. stroke length.
*3 : Switches other than Ⓕ Switch model No. are also available. (Custom 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

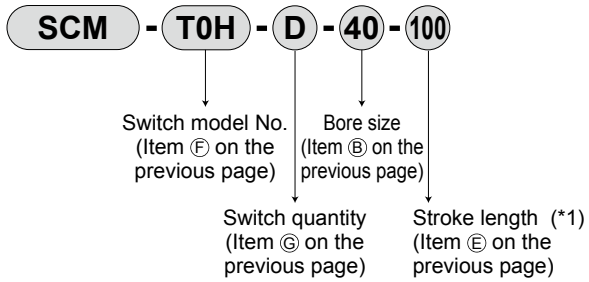
Model: Round shaped cylinder, single acting/push

Ⓐ	Mounting	: Axial foot
Ⓑ	Bore size	: φ40 mm
Ⓒ	Port thread	: Rc thread
Ⓓ	Cushion	: With two-sided rubber cushion
Ⓔ	Stroke length	:100 mm
Ⓕ	Switch model No.	: Proximity T0H switch, lead wire 1 m
Ⓖ	Switch quantity	: 2
Ⓗ	Switch mounting	: Rail
Ⓘ	Option	: Bellows material/max. ambient temperature 60°C
Ⓙ	Accessory	: Rod eye

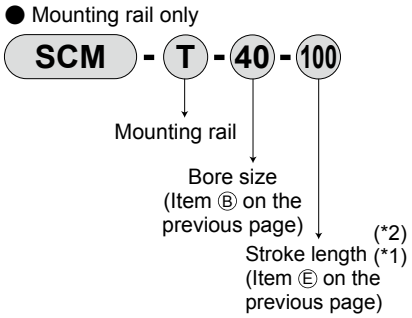
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



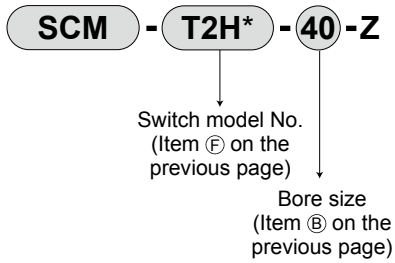
● Mounting rail only



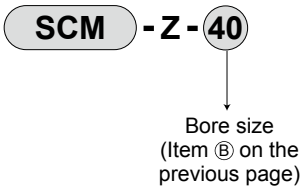
*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

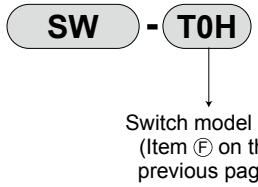
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40
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

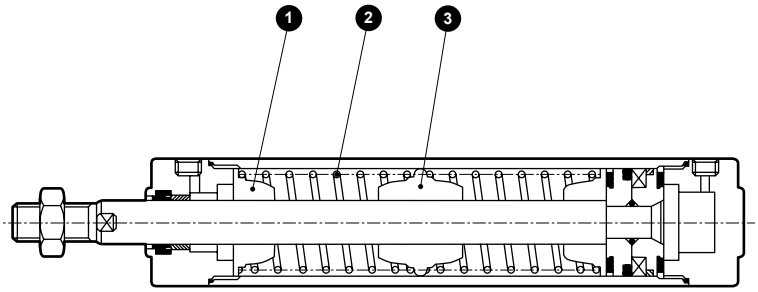
*1: All mounting brackets are supplied with mounting bolts.
*2: The foot mounting bracket is provided as 2 pcs./set.

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa 0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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

Internal structure and parts list



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.

Repair parts list

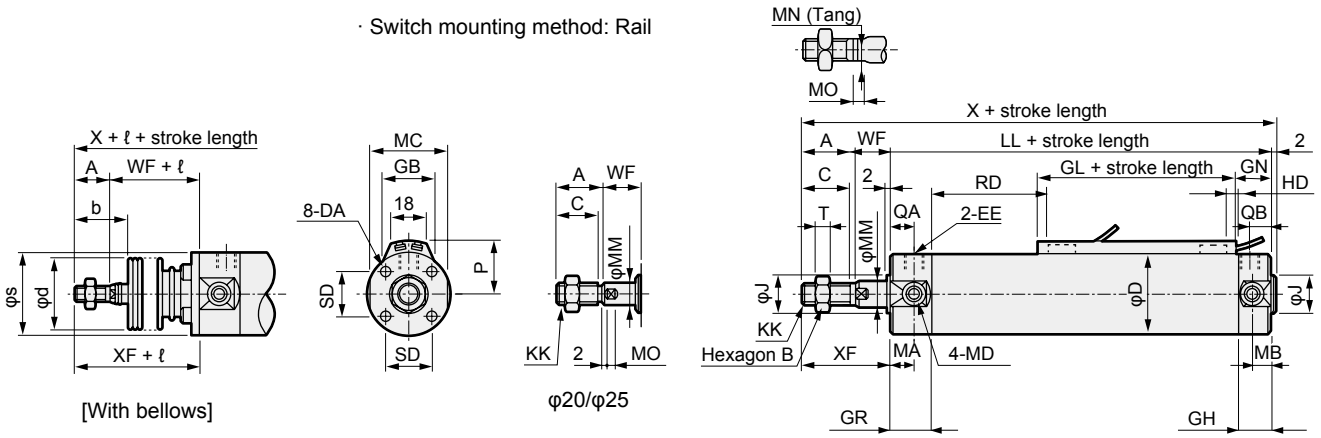
Numbering of repair parts follows that in the internal structure of the SCM Series (page 222).

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-X-20DK	③ ⑥ ⑧ ⑩ ⑬
φ25	SCM-X-25DK	
φ32	SCM-X-32DK	
φ40	SCM-X-40DK	

Dimensions

● Single acting push

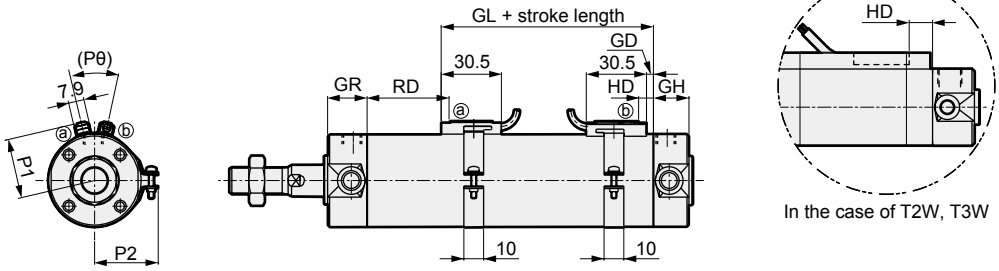
· Switch mounting method: Rail



[With bellows]

φ20/φ25

· Switch mounting: Band



In the case of T2W, T3W

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

Code	Basic (00) basic dimensions										LL															
Bore size (mm)	A	B	C	D	DA	EE	GR	GH	J	KK	5 to 50ST	51 to 100	101 to 150	151 to 200	MA	MB	MC	MD	MM	MN	MO	QA	QB	SD	T	WF
φ20	18	13	15.5	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	17
φ25	22	17	19.5	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	18
φ32	22	17	19.5	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
φ40	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																
															HD			RD								
																		T0/T5				T2, T3				
Bore size (mm)	5 to 50ST	51 to 100	101 to 150	151 to 200	XF	b	d	s	ℓ	P	GB	GN	GL	T0/ T5	T2 T3	T2W T3W	5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200	5 to 50	51 ≤ 100	101 ≤ 150	151 ≤ 200
φ20	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
φ25	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
φ32	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
φ40	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																							
					GL		HD			RD																		
	T2W, T3W				T0, T5	T2, T3 T2W, T3W	T0/ T5	T2 T3	T2W T3W	T0/T5				T2, T3				T2W, T3W				GD	P1	P2	P3	Pθ
Bore size (mm)	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					
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)

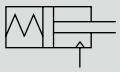
* Installation dimensions other than X and LL of the mounting are the same as those of SCM (double acting). Refer to pages 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

Round shaped cylinder
Single acting/pull

SCM-Y Series

● Bore size: φ20/φ25/φ32/φ40

JIS symbol



RoHS CAD

Specifications

Descriptions	SCM-Y			
Bore size mm	φ20	φ25	φ32	φ40
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.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
φ20	25, 50, 75 100, 125 150, 200	200	5
φ25			
φ32			
φ40			

*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
φ20	11.8	38
φ25	12.5	40.2
φ32	24.3	54.9
φ40	28.4	100

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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire				Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V	T8H/T8V		T2YD
Applications	For 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 (*2)			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 other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5: Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

● Stroke length 5 to 50 (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 rail)	per switch
φ20	0.14	0.25	0.17	0.19	0.15	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.22	0.35	0.26	0.30	0.24		0.014	0.016	0.007
φ32	0.33	0.49	0.39	0.48	0.36		0.018	0.020	0.007
φ40	0.54	0.76	0.62	0.77	0.59		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	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 rail)	per switch
φ20	0.17	0.28	0.20	0.22	0.18	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.28	0.41	0.32	0.36	0.30		0.014	0.016	0.007
φ32	0.40	0.56	0.46	0.55	0.43		0.018	0.020	0.007
φ40	0.67	0.89	0.75	0.90	0.72		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	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 rail)	per switch
φ20	0.21	0.32	0.24	0.26	0.22	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.33	0.46	0.37	0.41	0.35		0.014	0.016	0.007
φ32	0.47	0.63	0.53	0.62	0.50		0.018	0.020	0.007
φ40	0.80	1.02	0.88	1.03	0.85		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	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 rail)	per switch
φ20	0.24	0.35	0.27	0.29	0.25	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.39	0.52	0.43	0.47	0.41		0.014	0.016	0.007
φ32	0.54	0.70	0.60	0.69	0.57		0.018	0.020	0.007
φ40	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 ····· $0.032 \times \frac{100}{10} = 0.32$ kg
- Weight of 2 switches ····· 0.036 kg
- Product weight ····· 0.89 kg + 0.32 kg + 0.036 kg=1.246 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

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

Code	Content
Ⓐ 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

Ⓑ Bore size (mm)	
20	φ20
25	φ25
32	φ32
40	φ40

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion	
D	With two-sided rubber cushion

Ⓔ Stroke length (mm)		
Bore size	**Stroke length *2**	**Custom stroke length**
φ20 to φ40	**5 to 200**	**In 1 mm increments**

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color display	2-wire
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display (custom)	3-wire
T2WH*	**T2WV***	Proximity		●	2-color display	2-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3WH*	**T3WV***	Proximity		●	2-color display	3-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	**-**	Proximity		●	2-color display for AC magnetic field	2-wire
T2YDT*	**-**	Proximity		●	2-color display for AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-wire

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

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

Ⓗ Switch mounting	
Blank	Rail method
Z	Band method

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

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

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
*2 : Refer to page 246 for the number of installed switches and the min. stroke length.
*3 : Switches other than Ⓕ Switch model No. are also available. (Custom 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

Ⓐ Mounting	: Axial foot
Ⓑ Bore size	: φ40 mm
Ⓒ Port thread	: Rc thread
Ⓓ Cushion	: With two-sided rubber cushion
Ⓔ Stroke length	:100 mm
Ⓕ Switch model No.	: Reed T0H switch, lead wire 1 m
Ⓖ Switch quantity	: 2
Ⓗ Switch mounting	: Rail
Ⓘ Option	: Bellows material/max. ambient temperature 60°C
Ⓙ Accessory	: Rod eye

How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40
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.

How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set

SCM - T0H - D - 40 - 100

- T0H: Switch model No. (Item Ⓕ on the previous page)
- D: Switch quantity (Item Ⓖ on the previous page)
- 40: Bore size (Item Ⓑ on the previous page)
- 100: Stroke length (*1) (Item Ⓔ on the previous page)

● Mounting rail only

SCM - T - 40 - 100

- T: Mounting rail
- 40: Bore size (Item Ⓑ on the previous page)
- 100: Stroke length (*1) (*2) (Item Ⓔ on the previous page)

*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

SCM - T2H* - 40 - Z

- T2H*: Switch model No. (Item Ⓕ on the previous page)
- 40: Bore size (Item Ⓑ on the previous page)

● Mounting bracket set + band

SCM - Z - 40

- 40: Bore size (Item Ⓑ on the previous page)

[Switch body only]

SW - T0H

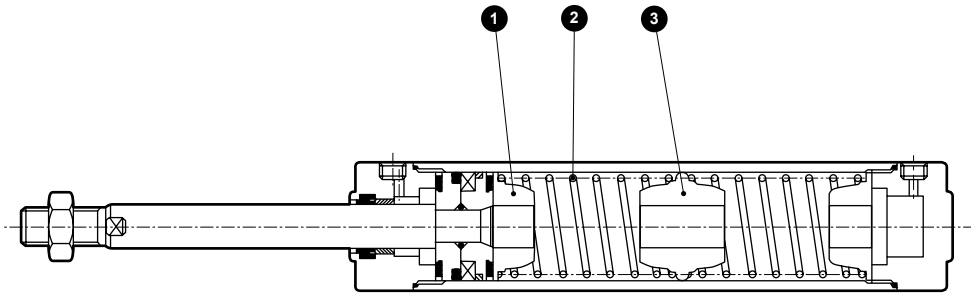
- T0H: Switch model No. (Item Ⓕ on the previous page)

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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

Internal structure and parts list



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.

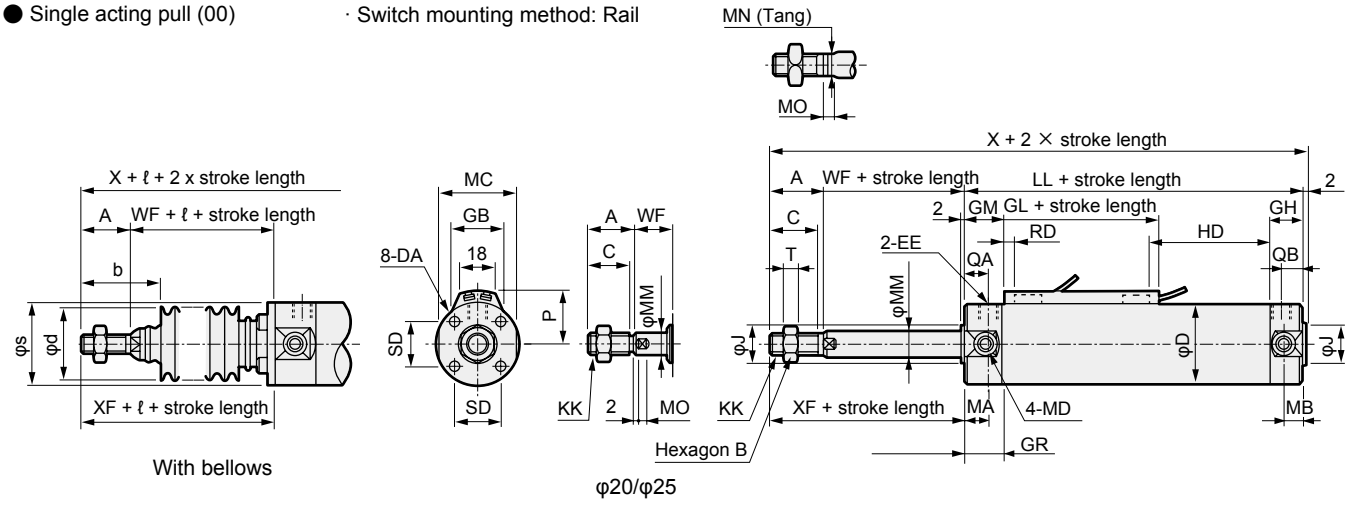
Repair parts list

Numbering of repair parts follows that in the internal structure of the SCM Series (page 222).

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-Y-20DK	❸ ❻ ❽ ❿ ⓭
φ25	SCM-Y-25DK	
φ32	SCM-Y-32DK	
φ40	SCM-Y-40DK	

Dimensions CAD

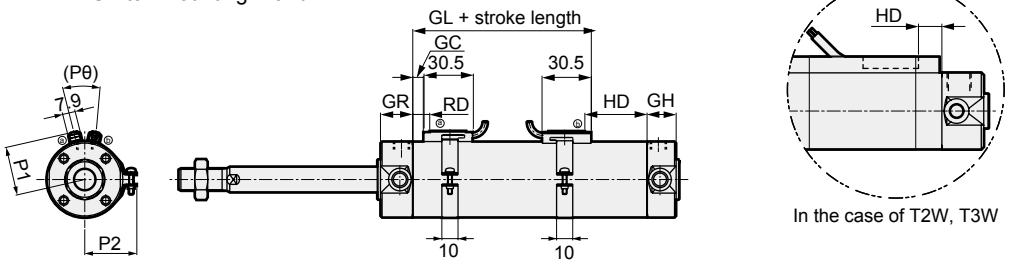
● Single acting pull (00) · Switch mounting method: Rail



With bellows

φ20/φ25

· Switch mounting: Band



In the case of T2W, T3W

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

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	
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	19	17	12	M8	96	123	150	177	11	11	24	M5	8	6	
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	19	17	14	M10×1.25	99	129	159	189	11	11	29	M6	10	8	
φ32	22	17	19.5	38	M5 depth 7.5	Rc1/8	19	17	18	M10×1.25	101	131	161	191	11	10	36	M8	12	10	
φ40	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	

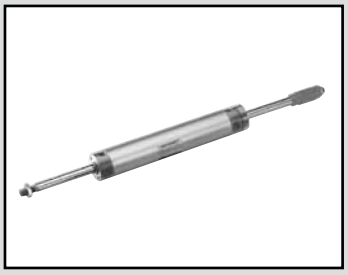
Code												With bellows				Switch mounting: Rail			
Bore size (mm)	MO	QA	QB	SD	T	WF	X 5 to 50	X Over 50 to 100	X Over 100 to 150	X Over 150 to 200	XF	b	d	s	ℓ	GM	GL	P	GB
φ20	4	12	10	14	5	17	133	160	187	214	35	30	30	25.7	(Stroke length/3) + 18.5	20.5	30	19.5	23
φ25	5	12	10	16.5	6	18	141	171	201	231	40	35	30	30.7	(Stroke length/3) + 20.5	20.5	30	22	24.4
φ32	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
φ40	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						5 to 50	Over 50 to 100	Over 100 to 150	Over 150 to 200		
φ20	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		
φ25	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		
φ32	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		
φ40	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)	T2, T3				T2W, T3W				RD T0/ T5	RD T2 T3	RD 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											
φ20	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°)			
φ25	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°)			
φ32	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°)			
φ40	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 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

MEMO

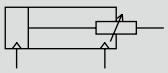


Round shaped cylinder/
Double acting/stroke adjustable/push

SCM-P Series

● Bore size:φ20/φ25/φ32/φ40/φ50/φ63

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM-P					
Bore size	mm	φ20	φ25	φ32	φ40	φ50	φ63
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 0				+2.3 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)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	600	10
φ25			
φ32			
φ40			
φ50			
φ63			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	For 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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C.
(5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / Bore size (mm)	Adjustable stroke range	Product weight when stroke length (S) = 0 mm: Basic	Axial foot	Flange	Trunnion	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Added weight /S = 10 mm (with rail)	Band weight per switch
φ20	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				
φ25	25	0.33	0.44	0.43	0.35		0.014	0.016	0.007
	50	0.37	0.48	0.47	0.39				
φ32	25	0.50	0.64	0.64	0.53		0.018	0.020	0.007
	50	0.56	0.71	0.70	0.59				
φ40	25	0.93	1.12	1.13	0.98		0.030	0.032	0.007
	50	1.03	1.22	1.23	1.08				
φ50	25	1.71	2.12	2.05	1.85		0.044	0.046	0.008
	50	1.90	2.31	2.24	2.04				
φ63	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
φ20	Push/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
φ25	Push/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
φ32	Push/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
φ40	Push/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
φ50	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
φ63	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

Ⓐ Mounting *1
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Cushion
Ⓔ Stroke length
Ⓕ Adjustable stroke range
Ⓖ Switch model No. *3 *4
Ⓗ Switch quantity
Ⓘ Switch mounting
Ⓙ Option *5, *7
Ⓚ 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 252 for the number of installed switches and the min. stroke length.
*3 : Switches other than Ⓖ Switch model No. are also available. (Custom order)
Refer to Ending Page 1 for details.
*4 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 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)

Ⓐ Mounting	: Axial foot
Ⓑ Bore size	: φ40 mm
Ⓒ Port thread	: Rc thread
Ⓓ Cushion	: With two-sided rubber cushion
Ⓔ Stroke length	: 100 mm
Ⓕ Adjustable stroke range	: 25 mm
Ⓖ Switch model No.	: Reed T0H switch, lead wire 1m
Ⓗ Switch quantity	: 2
Ⓘ Switch mounting	: Rail method
Ⓙ Option	: Bellows material for max. ambient temperature 60°C
Ⓚ Accessory	: Rod eye

Code	Content
Ⓐ Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
TA	Rod side trunnion
TB	Head side trunnion

Ⓑ Bore size (mm)	
20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion	
D	With two-sided rubber cushion

Ⓔ Stroke length (mm)		
Bore size	**Stroke length *2**	**Custom stroke length**
φ20 to φ63	**10 to 600**	**In 1 mm increments**

Ⓕ Adjustable stroke range (mm)	
25	25
50	50

Ⓖ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color display	2-wire
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display (custom)	3-wire
T2WH*	**T2WV***	Proximity		●	2-color display	2-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3WH*	**T3WV***	Proximity		●	2-color display	3-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	**-**	Proximity		●	2-color display	2-wire
T2YDT*	**-**	Proximity		●	AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-wire

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

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

Ⓘ Switch mounting	
Blank	Rail method
Z	Band method

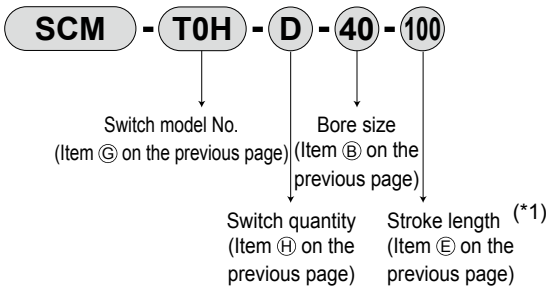
Ⓙ Option		Max. ambient temp.	Instantaneous max. temp.
J	Bellows	60°C	100°C
K	Bellows	100°C	200°C
L	Bellows	250°C	400°C
Q	Switch rail attached at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

Ⓚ Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B2	Clevis bracket

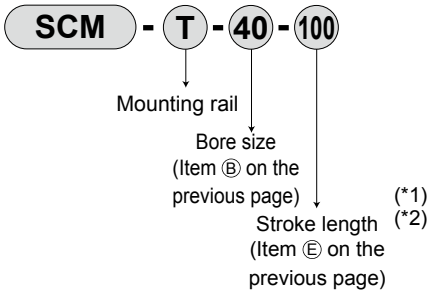
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



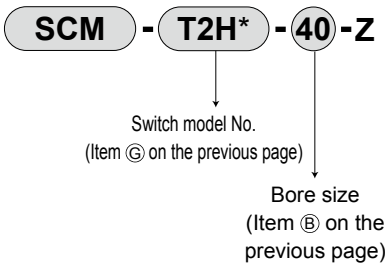
● Mounting rail only



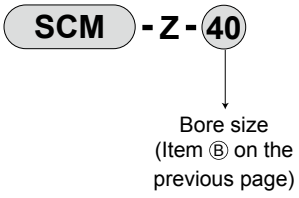
*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

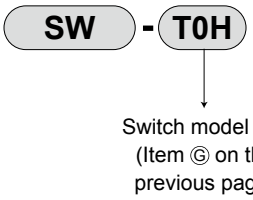
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]

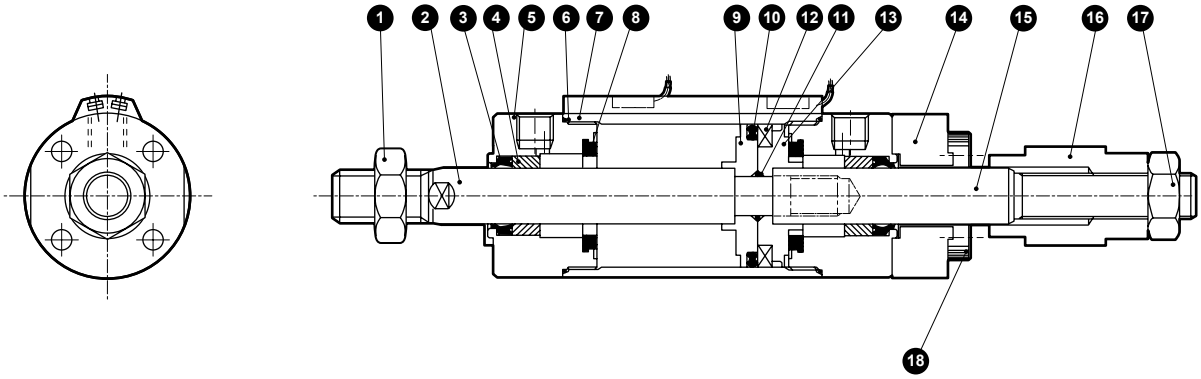


How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40	φ50	φ63
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.

Internal structure and parts list



No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling
2	Piston rod R	φ20, φ25: Stainless steel φ32 to φ63: Steel	Industrial chrome plating
3	Rod packing	Nitrile rubber	
4	Bush	Oil impregnated bearing alloy *1	
5	Rod cover	φ20 to φ40: Aluminum alloy φ50, φ63: Aluminum alloy die-casting	Paint
6	Cylinder gasket	Nitrile rubber	
7	Cylinder tube	Aluminum alloy	Hard alumite
8	Cushion rubber	Urethane rubber	
9	Piston R	φ20 to φ40: Aluminum alloy φ50, φ63: Aluminum alloy die-casting	

No.	Part name	Material	Remarks
10	Piston packing	Nitrile rubber	
11	Piston gasket	Nitrile rubber	
12	Magnet	Plastic	
13	Piston H	φ20 to φ40: Aluminum alloy φ50, φ63: Aluminum alloy die-casting	
14	Cover	Steel	Zinc chromate
15	Piston rod H	Steel	Industrial chrome plating
16	Stopper	Steel	Zinc chromate
17	Hexagon nut	Steel	Nickeling
18	Hex socket screw	Alloy steel	Black finish

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

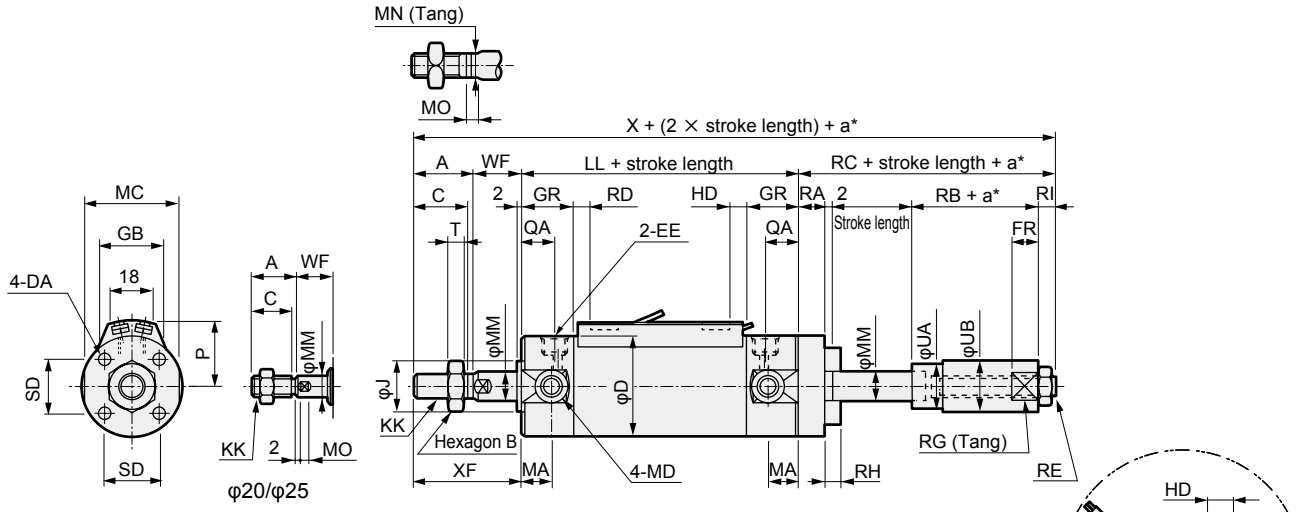
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-D-20DK	③ ⑥ ⑧ ⑩
φ25	SCM-D-25DK	
φ32	SCM-D-32DK	
φ40	SCM-D-40DK	
φ50	SCM-D-50DK	
φ63	SCM-D-63DK	

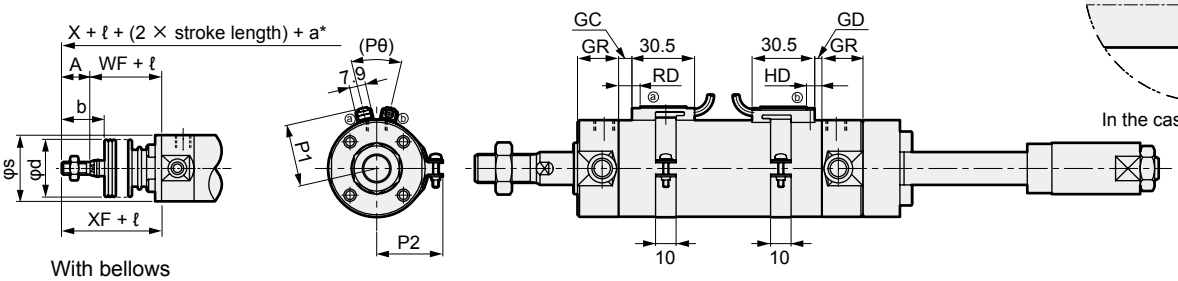
*1: Specify the kit No. when placing an order.

Dimensions

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



· Switch mounting: Band



With bellows

* a: Adjustable stroke length.

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

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
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	12	14	5	17	141	35
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	71	11	29	M6	10	8	5	12	16.5	6	18	152	40
φ32	22	17	19.5	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
φ40	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
φ50	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
φ63	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
φ20	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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	Pθ
	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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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 226 to 237.

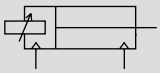
* For the dimensions of the accessories, refer to pages 238 and 239.

Round shaped cylinder/
Double acting/stroke adjustable/pull

SCM-R Series

● Bore size:φ20/φ25/φ32/φ40/φ50/φ63

JIS symbol



RoHS CAD

Specifications

Descriptions	SCM-R					
Bore size mm	φ20	φ25	φ32	φ40	φ50	φ63
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)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	1000	10
φ25			
φ32			
φ40		1500	
φ50			
φ63			

*1: The custom stroke length is available in 1 mm increments.
*2: Stroke length of more than 600 mm will be custom 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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	For 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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C.
(5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / 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				
φ20	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				
φ25	25	0.25	0.36	0.29	0.27		0.014	0.016	0.007
	50	0.26	0.37	0.30	0.28				
φ32	25	0.37	0.52	0.43	0.40		0.018	0.020	0.007
	50	0.38	0.52	0.44	0.41				
φ40	25	0.70	0.89	0.78	0.75		0.030	0.032	0.007
	50	0.72	0.91	0.80	0.77				
φ50	25	1.30	1.71	1.64	1.44		0.044	0.046	0.008
	50	1.33	1.75	1.67	1.47				
φ63	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										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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

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

Ⓐ Mounting *1

Ⓑ Bore size

Ⓒ Port thread

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Adjustable stroke range

Ⓖ Switch model No. *3 *4

Ⓗ Switch quantity

Ⓘ Switch mounting

Ⓙ Option *5 *7

Ⓚ Accessory *8

Code	Content
Ⓐ Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
TA	Rod side trunnion
TB	Head side trunnion

Ⓑ Bore size (mm)	
20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion	
D	With two-sided rubber cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length *2	Custom stroke length
φ20 to φ32	**10 to 1000**	**In 1 mm increments**
φ40 to φ63	**10 to 1500**	

Ⓕ Adjustable stroke range (mm)	
25	25
50	50

Ⓖ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage 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***			●		3-wire
T3PH*	**T3PV***			●	1-color display (custom)	
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)

Ⓗ 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.)

Ⓘ Switch mounting	
Blank	Rail method
Z	Band method

Ⓙ Option

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

Ⓚ Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B2	Clevis bracket

⚠ 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 258 for the number of installed switches and the min. stroke length.

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

*4 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 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

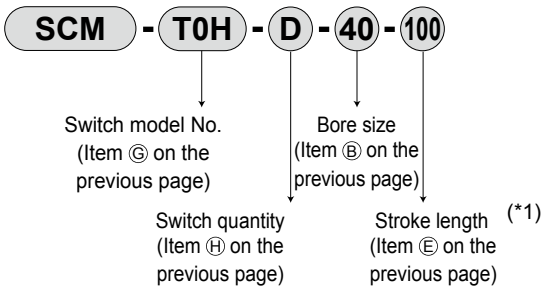
Model: Round shaped cylinder, double acting/stroke adjustable (pull)

Ⓐ Mounting	: Axial foot
Ⓑ Bore size	: φ40 mm
Ⓒ Port thread	: Rc thread
Ⓓ Cushion	: With two-sided rubber cushion
Ⓔ Stroke length	:100 mm
Ⓕ Adjustable stroke range	: 25 mm
Ⓖ Switch model No.	: Reed T0H switch, lead wire 1 m
Ⓗ Switch quantity	: 2
Ⓘ Switch mounting	: Rail method
Ⓙ Option	: Bellows material for max. ambient temperature 60°C
Ⓚ Accessory	: Rod eye

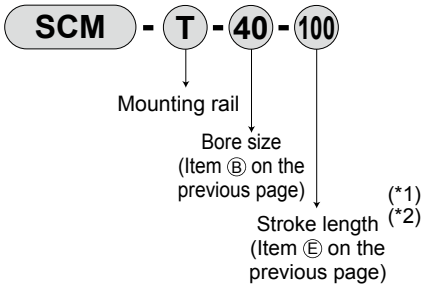
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



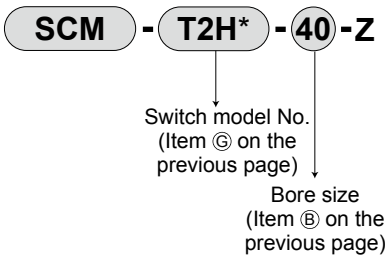
● Mounting rail only



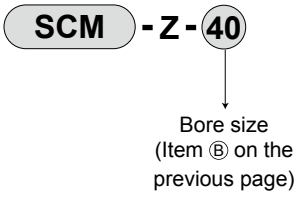
*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

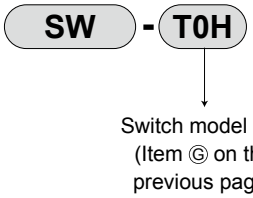
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]

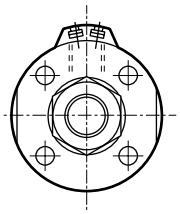


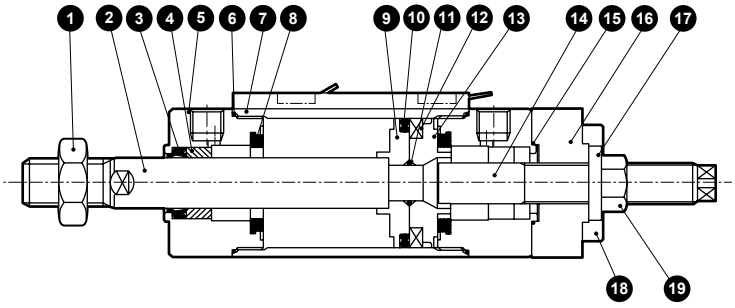
How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40	φ50	φ63
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.

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	φ20 to φ40: Aluminum alloy φ50, φ63: Aluminum alloy die-casting	
5	Rod cover	φ20 to φ40: Aluminum alloy φ50, φ63: Aluminum alloy die-casting	Paint	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	φ20 to φ40: Aluminum alloy φ50, φ63: 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.

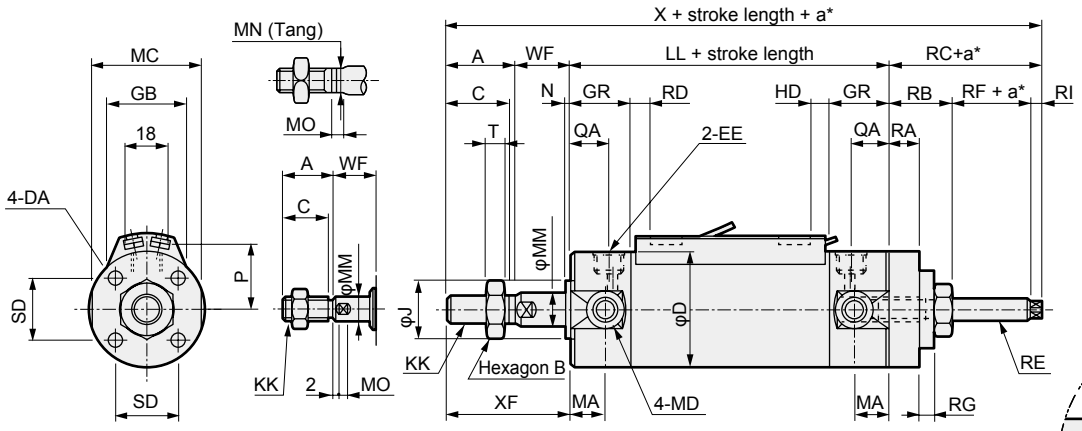
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-R-20DK	③ ⑥ ⑩ ⑮ ⑰
φ25	SCM-R-25DK	
φ32	SCM-R-32DK	
φ40	SCM-R-40DK	
φ50	SCM-R-50DK	
φ63	SCM-R-63DK	

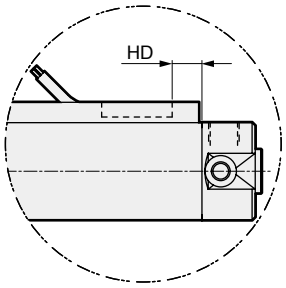
*1: Specify the kit No. when placing an order.

Dimensions

● Double acting/stroke adjustable (pull) · Switch mounting method: Rail

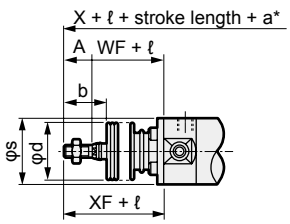


φ20/φ25

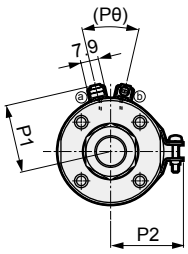


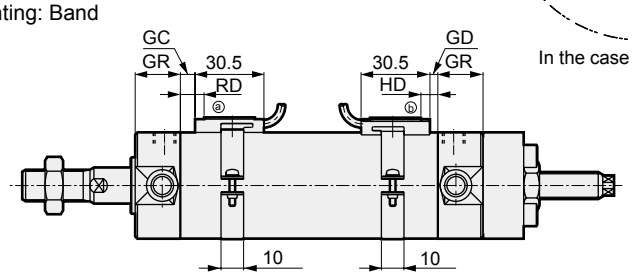
In the case of T2W, T3W

· Switch mounting: Band



With bellows





*: a indicates adjustable stroke length

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

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
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	2	12	14	5	17	128.5
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	71	11	29	M6	10	8	5	2	12	16.5	6	18	141
φ32	22	17	19.5	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
φ40	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
φ50	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
φ63	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
φ20	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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	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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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°)

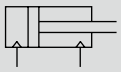
* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

Round shaped cylinder Double acting/heat resistant

SCM-T Series

● Bore size: φ20/φ25/φ32/φ40
φ50/φ63/φ80/φ100

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM-T							
Bore size mm		φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
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 J	With rubber cushion	0.1	0.2	0.5	0.9	—	—	—	—
	With air cushion	—	—	—	—	8.0	14.4	25.4	45.6
	Without cushion	—	—	—	—	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)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	1000	10
φ25			
φ32			
φ40		1500	
φ50			
φ63			
φ80			
φ100			

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

Cylinder weight

(Unit: kg)

Item/mounting / Bore size	Product weight when stroke length (S) = 0 mm					Additional weight per S = 10 mm
	Basic	Axial foot	Flange	Clevis	Trunnion	
φ20	0.10	0.21	0.13	0.15	0.11	0.010
φ25	0.17	0.30	0.21	0.25	0.19	0.014
φ32	0.25	0.41	0.31	0.40	0.28	0.018
φ40	0.40	0.62	0.48	0.63	0.45	0.030
φ50	0.75	1.23	1.09	1.15	0.89	0.044
φ63	1.05	1.77	1.55	1.73	1.19	0.052
φ80	2.02	2.98	2.73	2.73	-	0.070
φ100	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										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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

Dimensions

The same dimensions as those of the standard single rod. Refer to pages 226 to 237.

How to order

Without switch

SCM-T - LB - 40 ( ) D - 100 - L I

- Ⓐ Mounting *1
- Ⓑ Bore size
- Ⓒ Port thread
- Ⓓ Cushion *2
- Ⓔ Stroke length
- Ⓕ Option
- Ⓖ Accessory *3, *4

Code	Content

Ⓐ Mounting

Code	Content	Bore size (φ) 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 attached)							●	●
TA	Rod side trunnion	●	●	●	●	●	●		
TB	Head side trunnion	●	●	●	●	●	●		

Ⓑ Bore size (mm)

20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63
80	φ80
100	φ100

Ⓒ Port thread

Blank	Rc thread
N	NPT thread (custom order product) With air cushion: φ32 and over
G	G thread (custom order product) With air cushion: φ32 and over

Ⓓ Cushion

Code	Content	Bore size (φ) 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	●	●	●	●				

Ⓔ Stroke length (mm)

Bore size	Stroke length	Custom stroke length
φ20 to φ32	**10 to 1000**	**In 1 mm increments**
φ40 to φ100	**10 to 1500**	

Ⓕ Option

		Max. ambient temp.	Instantaneous max. temp.
L	Bellows material: Silicone rubber glass cloth	250°C	400°C
M	Piston rod material (stainless steel)		

Ⓖ Accessory

Code	Content	Bore size (φ) 20	25	32	40	50	63	80	100
I	Rod eye	●	●	●	●	●	●	●	●
Y	Rod clevis (pin and snap ring attached)	●	●	●	●	●	●	●	●
B1	Eye bracket							●	●
B2	Clevis bracket	●	●	●	●	●	●		

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
*2 : B/R/H are not available for φ20 to φ40.
Only D is available.
D is not available for φ50 to φ100.
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

- Ⓐ Mounting : Axial foot
- Ⓑ Bore size : φ40 mm
- Ⓒ Port thread : Rc thread
- Ⓓ Cushion : With two-sided rubber cushion
- Ⓔ Stroke length :100 mm
- Ⓕ Option : Bellows material for max. ambient temperature 250°C
- Ⓖ Accessory : Rod eye

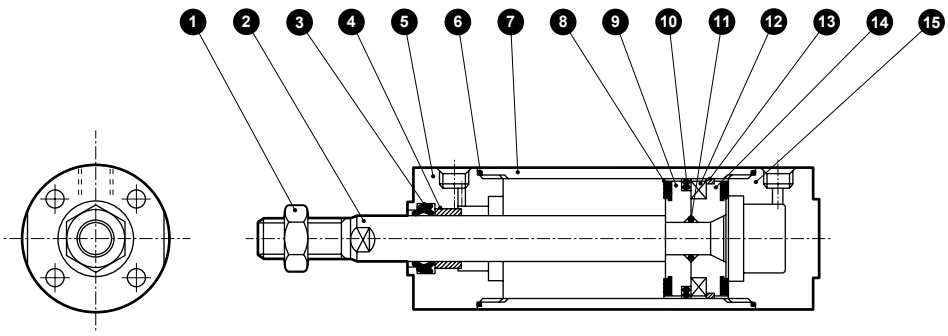
How to order mounting bracket

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

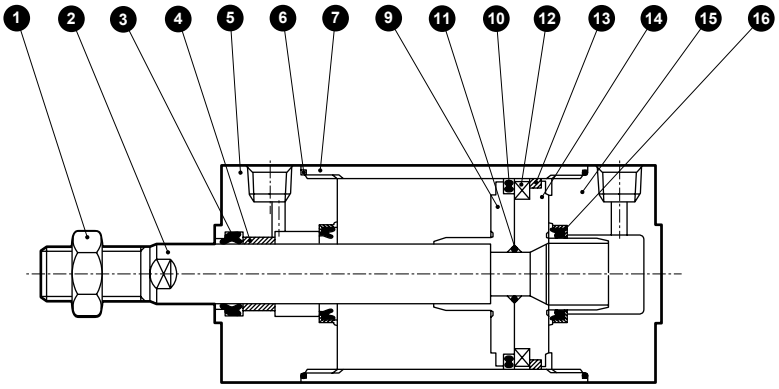
*1: All mounting brackets are supplied with mounting bolts.
*2: The foot mounting bracket is provided as 2 pcs./set.

Internal structure and parts list

● φ20 to φ40 (with rubber cushion)



● φ50 to φ100 (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	φ20, φ25: Stainless steel φ32 to φ100: Steel	Industrial chrome plating	11	Piston gasket	Fluoro rubber	
3	Rod packing	Fluoro rubber		12	Piston ring	φ20 to φ32: Aluminum alloy φ40 to φ100: Steel	φ40 to φ100: Zinc chromate
4	Bush	Oil impregnated bearing alloy		13	Wear ring	Special resin	
5	Rod cover	Aluminum alloy *1	Paint	14	Piston H	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting	
6	Cylinder gasket	Fluoro rubber					
7	Cylinder tube	Aluminum alloy	Hard alumite	15	Head cover	Aluminum alloy *1	Paint
8	Cushion rubber	Fluoro rubber		16	Cushion packing	Fluoro rubber/steel	
9	Piston R	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting					

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

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-T-20K	③ ⑥ ⑧ ⑩ ⑬
φ25	SCM-T-25K	
φ32	SCM-T-32K	
φ40	SCM-T-40K	
φ50	SCM-T-50K	③ ⑥ ⑩ ⑬ ⑯
φ63	SCM-T-63K	
φ80	SCM-T-80K	
φ100	SCM-T-100K	

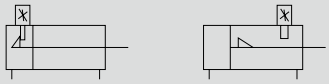
*1: Specify the kit No. when placing an order.

Round shaped cylinder Double acting/position locking

SCM-Q Series

● Bore size: φ20/φ25/φ32/φ40
φ50/φ63/φ80/φ100

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM-Q							
Bore size mm		φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
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 absorbed energy J	Cushioned	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)
φ20	25/50/75/100/125/150/200/250/300	1000	10
φ25			
φ32			
φ40		1500	
φ50			
φ63			
φ80			
φ100			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ80	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ100	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ83	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ100	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	For 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			For programmable controller
Output method	-				NPN output	PNP output	NPN output	NPN output	-							
Pwr. supp. V.	-				10 to 28 VDC				-							
Load voltage	85 to 265 VAC	10 to 30 VDC		24 VDC ±10%	30 VDC or less				12/24 VDC	100/110 VAC	5/12/24 VDC	100/110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C.
(5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

● With rod side position locking (R)

(Unit: kg)

Item/mounting / Bore size (mm)	Product weight when stroke length (S) = 0 mm: Basic	Axial foot	Flange	Clevis	Trunnion	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
φ20	0.15	0.26	0.18	0.20	0.16	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.24	0.37	0.28	0.32	0.26		0.014	0.016	0.007
φ32	0.32	0.48	0.38	0.47	0.35		0.018	0.020	0.007
φ40	0.64	0.86	0.72	0.87	0.69		0.030	0.032	0.007
φ50	1.09	1.57	1.43	1.49	1.23		0.044	0.046	0.008
φ63	1.49	2.21	1.99	2.17	1.63		0.052	0.054	0.009
φ80	2.67	3.63	3.38	3.38	-		0.070	0.072	0.010
φ100	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: Basic	Axial foot	Flange	Clevis	Trunnion	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
φ20	0.15	0.26	0.18	0.20	0.16	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.24	0.37	0.28	0.32	0.26		0.014	0.016	0.007
φ32	0.35	0.51	0.41	0.50	0.38		0.018	0.020	0.007
φ40	0.69	0.91	0.77	0.92	0.74		0.030	0.032	0.007
φ50	1.19	1.67	1.53	1.59	1.33		0.044	0.046	0.008
φ63	1.60	2.32	2.10	2.28	1.74		0.052	0.054	0.009
φ80	2.86	3.82	3.57	3.57	-		0.070	0.072	0.010
φ100	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
φ20	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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 331, 333 and 334) 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

Ⓐ Mounting *1, *2

Ⓑ Bore size

Ⓒ Port thread

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Position locking mechanism

Ⓖ Switch model No. *4 *5

Ⓗ Switch quantity

Ⓘ Switch Installation method

Ⓙ Option *7

Ⓚ Accessory *8

Code	Content								
Ⓐ Mounting									
Bore size (φ)		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 (Rod side position locking N/A)	●	●	●	●	●	●		
TB	Head side trunnion (head side position locking N/A)	●	●	●	●	●	●		

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

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product) φ32 and over
G	G thread (custom order product) φ32 and over

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

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

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

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

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

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

Ⓘ Switch mounting	
Blank	Rail method
Z	Band method

Ⓙ Option	
Q	Switch rail attached at shipment
P6	Copper and PTFE free (custom order product)

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

⚠ 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 268 for the number of installed switches and the min. stroke length.
*4 : Switches other than Ⓖ Switch model No. are also available. (Custom order) Refer to Ending Page 1 for details.
*5 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 and the switch mounting style is the rail.
*6 : 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-Q-LB-40B-100-R-T2H-D-QI

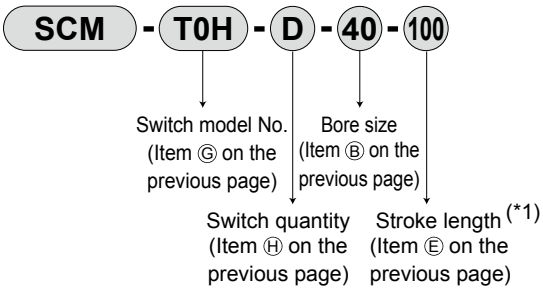
Model: Round shaped cylinder, position locking

Ⓐ Mounting	: Axial foot
Ⓑ Bore size	: φ40 mm
Ⓒ Port thread	: Rc thread
Ⓓ Cushion	: With two-sided air cushion
Ⓔ Stroke length	:100 mm
Ⓕ Position locking mechanism	: With rod side position locking
Ⓖ Switch model No.	: Proximity T2H switch, lead wire 1 m
Ⓗ Switch quantity	: 2
Ⓘ Switch mounting	: Rail
Ⓙ Option	: Switch rail attached at shipment
Ⓚ Accessory	: Rod eye

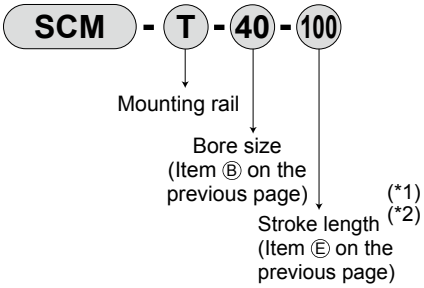
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set

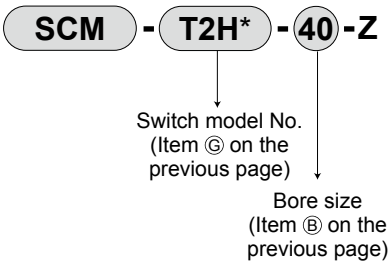


● Mounting rail only

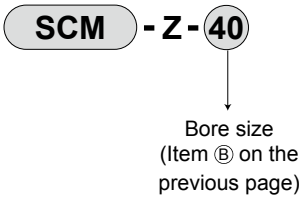


[Switch mounting: Band]

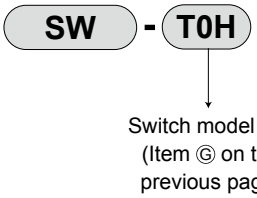
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body 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.

How to order mounting bracket

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

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

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)

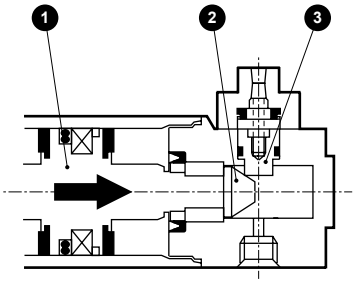
● Design compatible with rechargeable battery manufacturing process

SCM-Q-…- **P4***

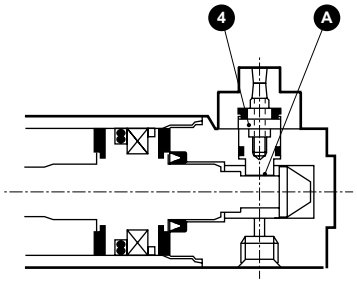
* Contact CKD for details.

Operational explanation

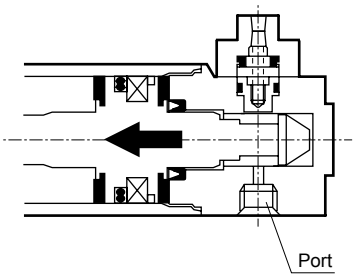
● When locked
When the piston ① of the cylinder moves toward the stroke end, the stopper piston ③ is pushed up along the slope of the sleeve ②.



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



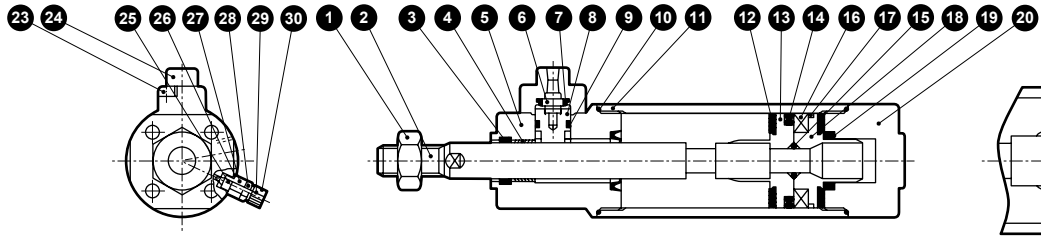
● When unlocked
When pressure is supplied to the port, the stopper piston pushes up the spring and slips out of the sleeve groove, releasing the lock.



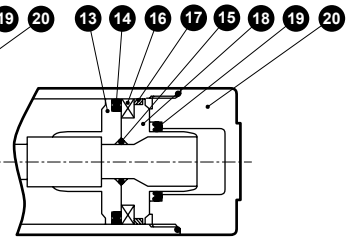
Internal structure and parts list

● SCM-Q (rod side position locking)

φ20 to φ40

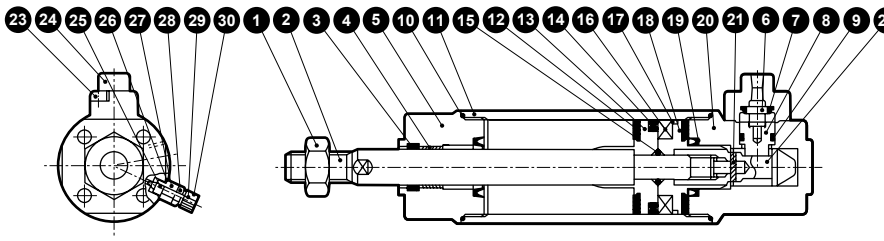


φ50 to φ100

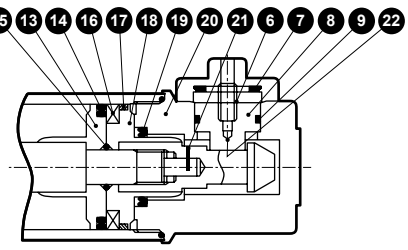


● SCM-Q (head side position locking)

φ20 to φ40



φ50 to φ100



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	16	Magnet	Plastic	
2	Piston rod	φ20, φ25: Stainless steel φ32 to φ100: Steel	Industrial chrome plating	17	Wear ring	Polyacetal resin	
3	Rod packing	Nitrile rubber		18	Piston H	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy		19	Cushion packing	Nitrile rubber/steel	
5	Rod cover	Aluminum alloy	Paint	20	Head cover	Aluminum alloy	Paint
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	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting		28	Lock nut	Steel	Nickeling
				29	Needle	Stainless steel	
14	Piston packing (A)	Nitrile rubber		30	Knob	Aluminum alloy	Chromate
15	Piston gasket	Nitrile rubber					

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-Q-20BK	
φ25	SCM-Q-25BK	
φ32	SCM-Q-32BK	
φ40	SCM-Q-40BK	③ ⑦ ⑨ ⑩ ⑫
φ50	SCM-Q-50BK	⑭ ⑰ ⑲ ㉕ ㉖
φ63	SCM-Q-63BK	
φ80	SCM-Q-80BK	
φ100	SCM-Q-100BK	

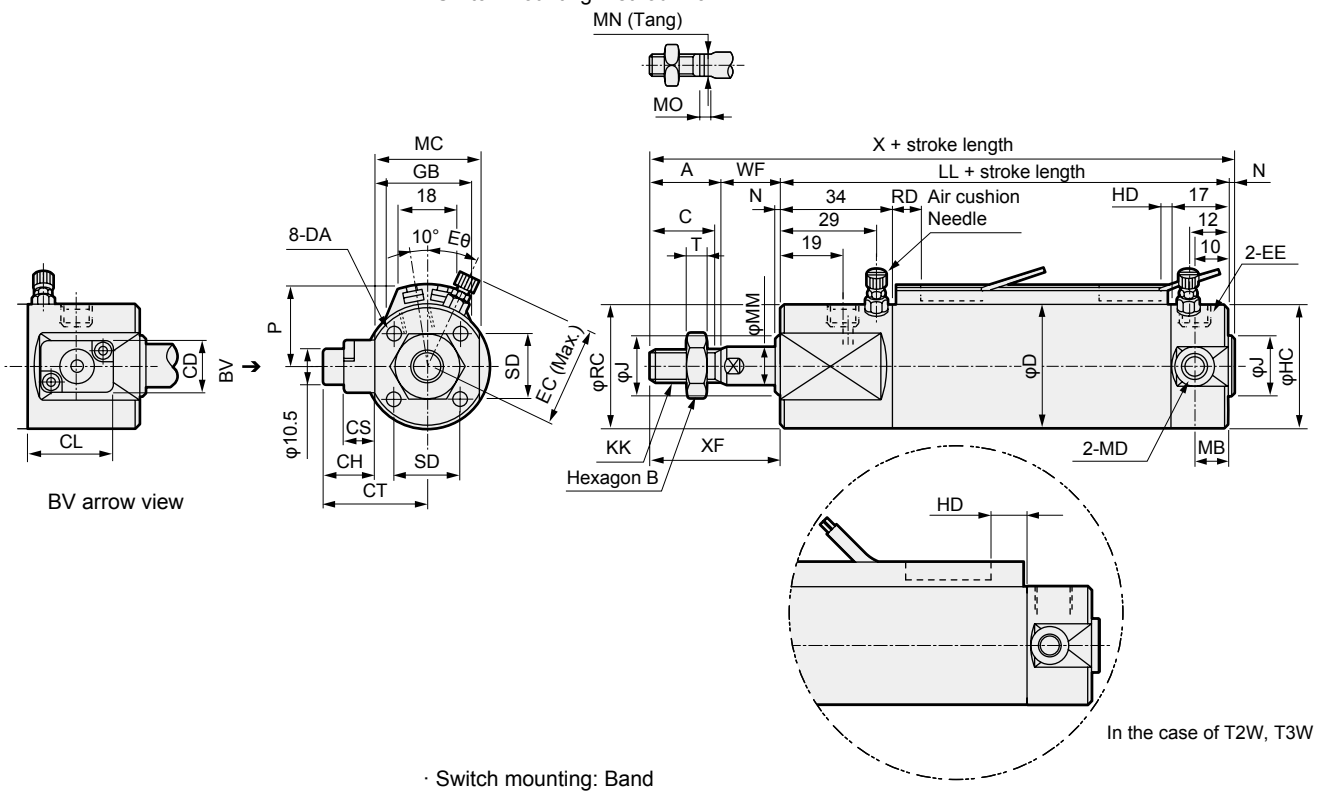
Note: Specify the kit No. when placing an order.

Dimensions (φ20 to φ32)

CAD

● Basic (00)
(With rod side position locking)

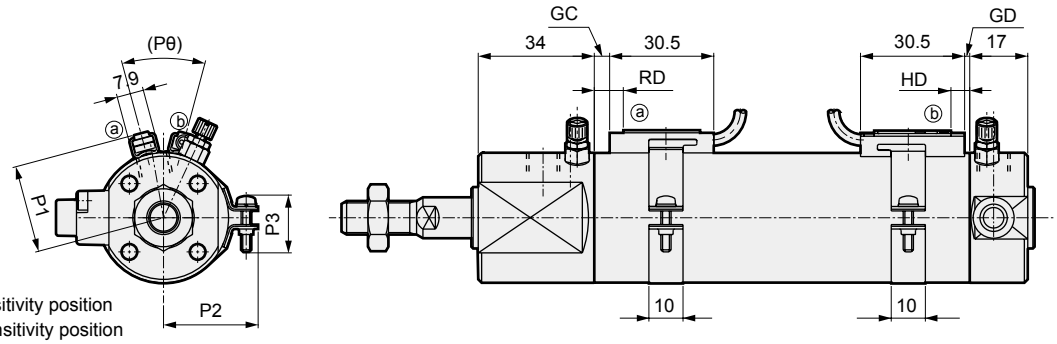
· Switch mounting method: Rail



BV arrow view

In the case of T2W, T3W

· 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 229 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
φ20	18	13	15.5	16	15.5	22	9.5	28	26	M4 depth 6.5	27	M5	30°	26	12	M8	84	11	25	M5	8	4
φ25	22	17	19.5	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
φ32	22	17	19.5	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
φ20	6	2	30	14	5	17	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
φ25	8	2	35	16.5	6	18	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
φ32	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

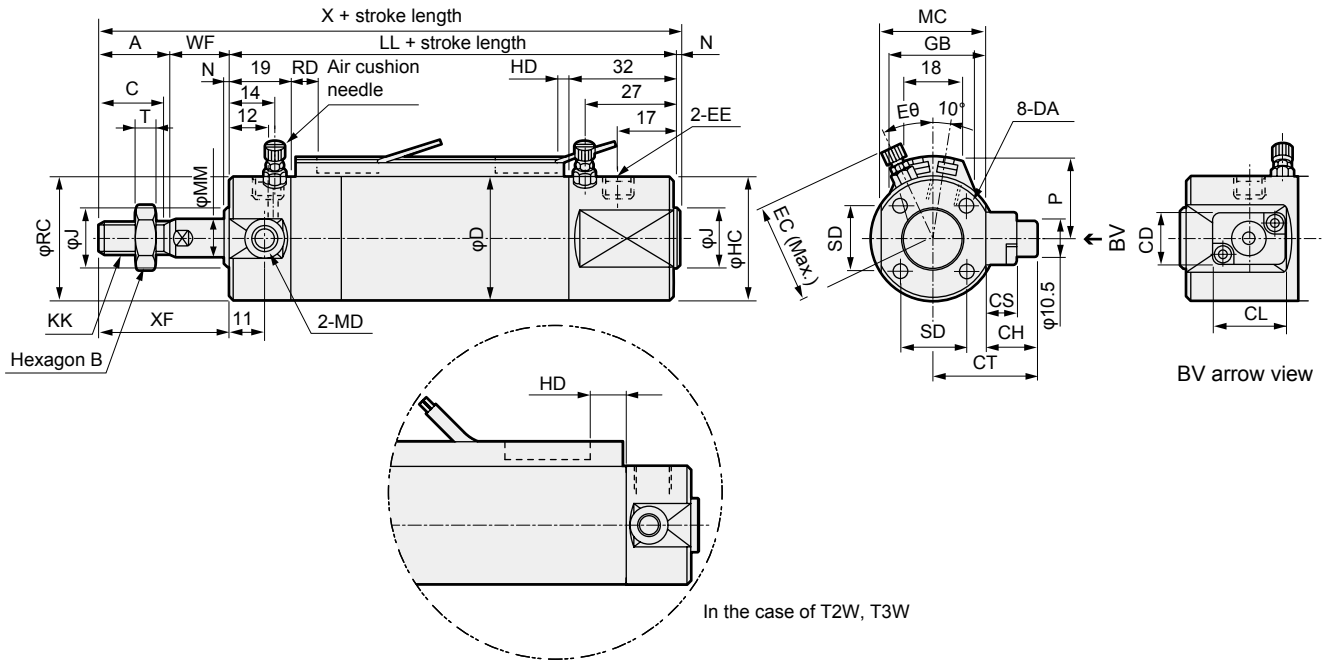
Code										
Bore size (mm)	HD			RD			P1	P2	P3	Pθ
	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
φ25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
φ32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)

* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

Dimensions (φ20 to φ32)

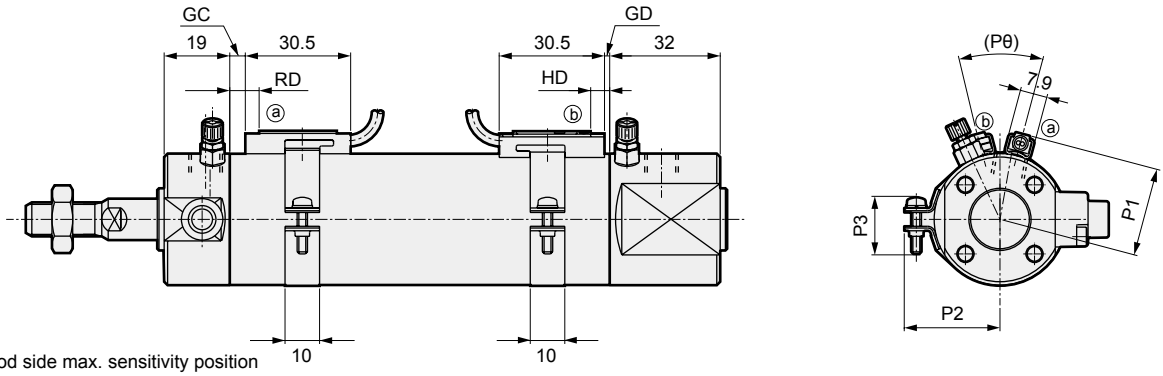
● Basic (00)
(With head side position locking)

· Switch mounting method: Rail



In the case of T2W, T3W

· 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 329 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
φ20	18	13	15.5	16	15.5	22	9.5	28	26	M4 depth 6.5	27	M5	30°	30	12	M8	84	25	M5	8	4	6
φ25	22	17	19.5	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
φ32	22	17	19.5	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					
										HD			RD			GC			GD		
Bore size (mm)	N	RC	SD	T	WF	X	XF	P	GB	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
φ20	2	26	14	5	17	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
φ25	2	31	16.5	6	18	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
φ32	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										
	HD			RD						
Bore size (mm)	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	P1	P2	P3	Pθ
φ20	6.5	6.5	8.5	7.5	7.5	9.5	19.6	21.5	14	(38°)
φ25	5.5	5.5	7.5	8.5	8.5	10.5	22.1	23.9	14	(34°)
φ32	6.5	6.5	8.5	9.5	9.5	11.5	25.6	27.6	16	(30°)

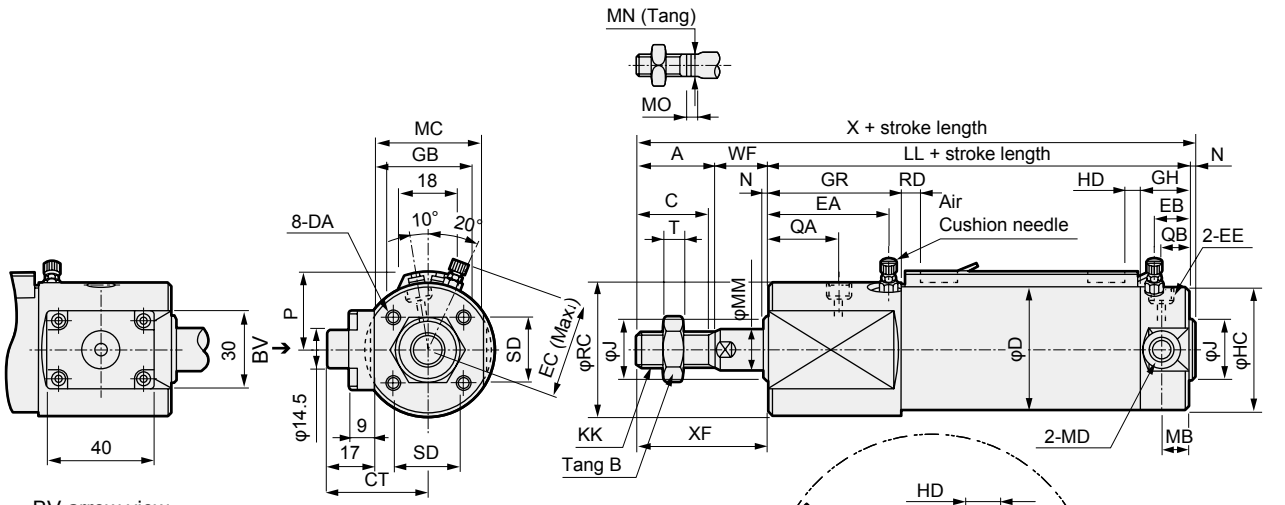
* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

Dimensions (φ40 to φ100)

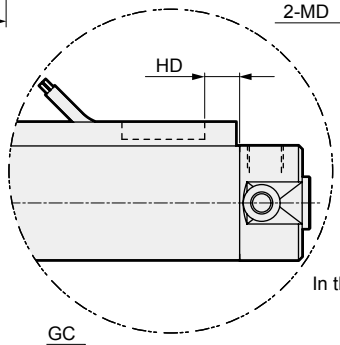
CAD

● Basic (00)
(With rod side position locking)

· Switch mounting method: Rail

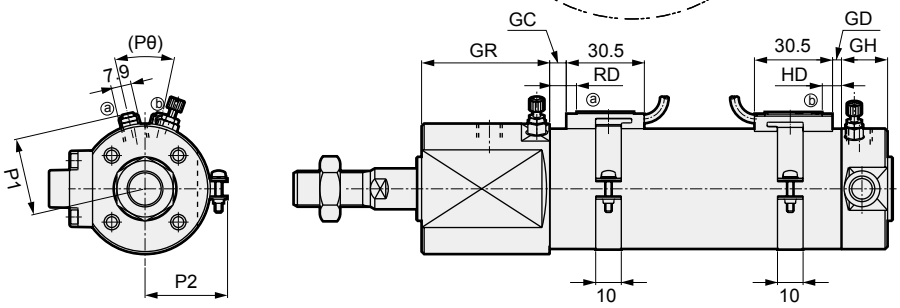


BV arrow view



In the case of T2W, T3W

· 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 329 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
φ40	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
φ50	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
φ63	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
φ80	40	32	37	57.5	89	M10 depth 22	50	20	58.5	Rc3/8	28	58	89	40	M22×1.5	138	-	-	81	-
φ100	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
φ40	16	6	14	2	26.5	12	51	26	8	20	160	50	30	25.7	5.0	8.5	8.5
φ50	20	8	17	2	30	12	61	32	11	23	180	58	35.5	26.2	7.5	11.0	7.5
φ63	20	8	17	2	30	12	72	38	11	23	180	58	42.5	26.5	7.5	11.0	8.5
φ80	25	11	22	3	31.5	15	89	50	13	31	212	71	51	26.7	9.5	13.0	10.5
φ100	30	13	27	3	31.5	15	110	60	16	31	212	71	61.5	26.7	10.0	13.5	13.0

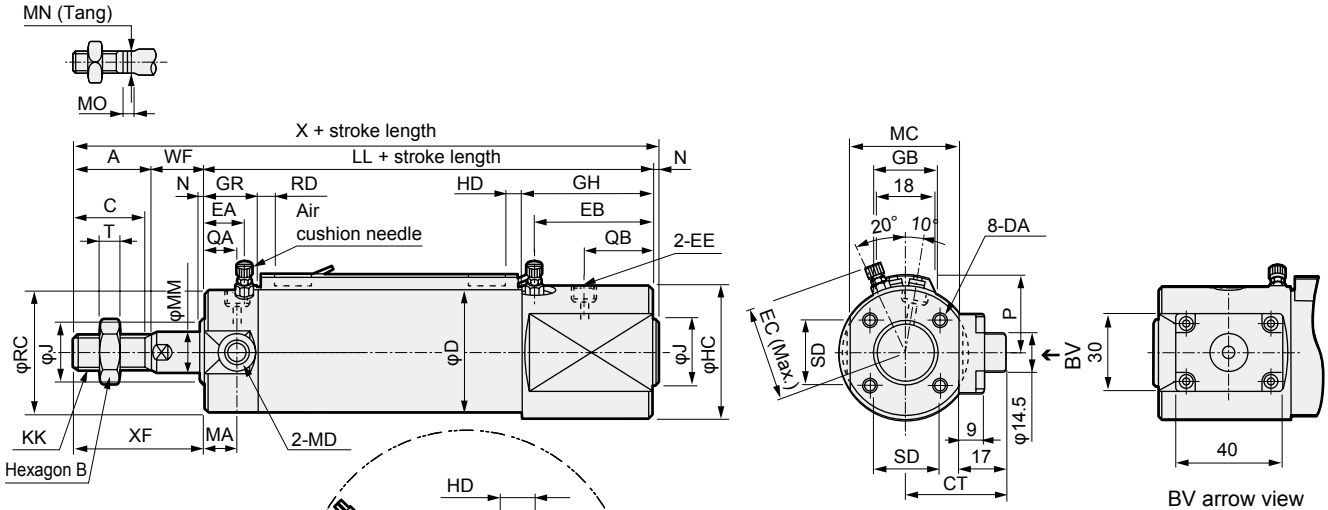
Code	Switch mounting: Band																		
Bore size (mm)	RD			GC			GD			HD			RD			P1	P2	P3	Pθ
	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W	T0/T5	T2, T3	T2W T3W				
φ40	11.5	11.5	9.5	7.5	7.5	5.5	4.5	4.5	4.5	8.5	8.5	8.5	11.5	11.5	9.5	30.2	32.1	14	(26°)
φ50	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°)
φ63	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°)
φ80	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°)
φ100	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°)

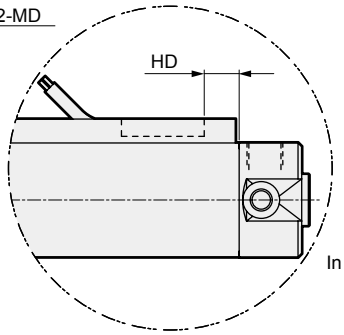
* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

Dimensions (φ40 to φ100)

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

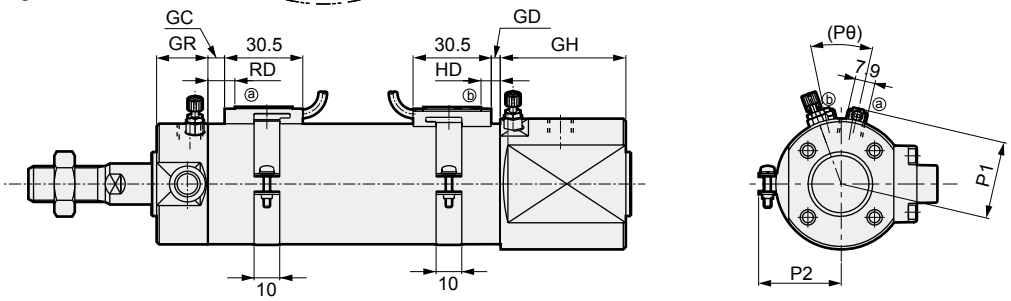
· Switch mounting method: Rail





In the case of T2W, T3W

· Switch mounting: Band



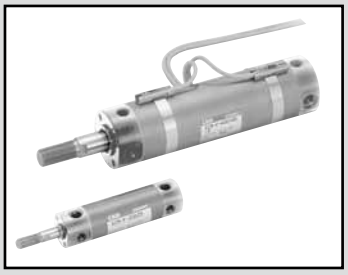
*1 : When the mounting is LB, the cylinder cannot be mounted on the frame if a bracket is already attached to the cylinder. Refer to Safety precautions for details.
*2 : Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code / Bore size (mm)	Basic (00) basic dimensions																			
	A	B	C	CT	D	DA	EA	EB	EC	EE	GH	GR	HC	J	KK	LL	MA	MB	MC	MD
φ40	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
φ50	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
φ63	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
φ80	40	32	37	57.5	89	M10 depth 22	20	50	58.5	Rc3/8	58	28	89	40	M22×1.5	138	-	-	81	-
φ100	40	41	37	68.5	110	M12 depth 22	20	50	69	Rc1/2	58	28	110	50	M26×1.5	138	-	-	103	-

Code / Bore size (mm)													Switch mounting: Rail							
	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)	Switch mounting: Band															
	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				
φ40	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°)
φ50	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°)
φ63	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°)
φ80	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°)
φ100	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°)

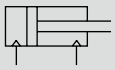
* Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.



Round shaped cylinder Double acting/fine speed

SCM-F Series

● Bore size: φ20/φ25/φ32/φ40

JIS symbol 

RoHS CAD

Specifications

Descriptions	SCM			
Bore size mm	φ20	φ25	φ32	φ40
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 °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)
φ20	25, 50, 75, 100, 125, 150, 200, 250, 300	500	10
φ25			
φ32			
φ40			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	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 329 for mounting position.

● 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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	For 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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5: Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight per	Band weight
Bore size (mm)	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TA)	(per 1 pc)	per S = 10 mm	S = 10 mm (With switch rail)	per switch
φ 20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.01	0.012	0.007
φ 25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
φ 32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
φ 40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007

(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 kg + 0.32 kg + 0.036 kg = 0.986 kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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 226 to 237.

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 | B Bore size | C Port thread | D Cushion | E Stroke length | F Switch model No. *3 *4 | G Switch quantity | H Switch mounting *6 | I Option | J Accessory *6

Code	Content
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	φ20
25	φ25
32	φ32
40	φ40
C Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)
D Cushion	
D	With two-sided rubber cushion

E Stroke length (mm)

Bore size	Stroke length *2	Custom stroke length
φ20 to φ40	**10 to 500**	**In 1 mm increments**

F Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage 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***			●		3-wire
T3PH*	**T3PV***			●	1-color display (custom order)	
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	
Q	Switch rail attached at shipment
M	Piston rod material (stainless steel)

J Accessory	
I	Rod eye
Y	Rod clevis
B2	Clevis bracket

Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
*2 : Refer to page 278 for the number of installed switches and the min. stroke length.
*3 : Switches other than F Switch model No. are also available. (Custom 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

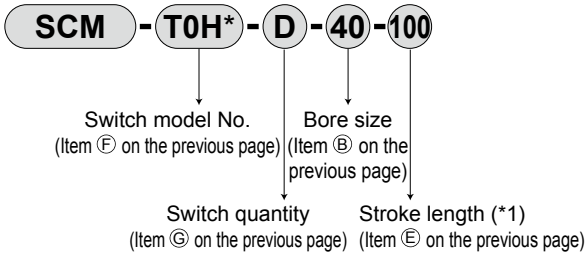
Model: Round shaped cylinder, double acting

A Mounting : Axial foot
B Bore size : φ40 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

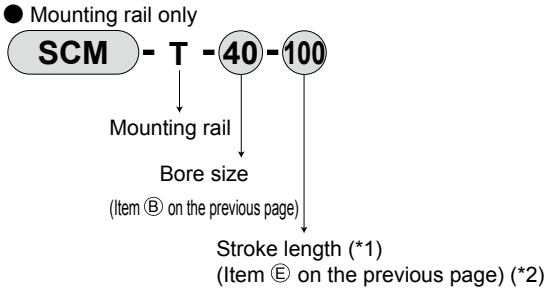
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set

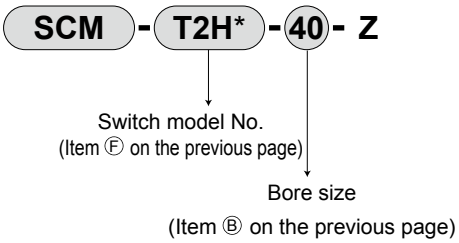


● Mounting rail only

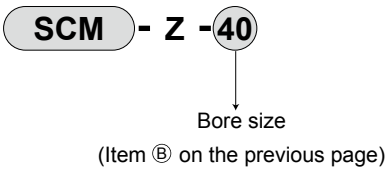


[Switch mounting: Band]

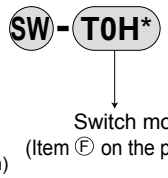
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body 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.

How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40
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

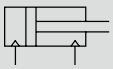
*1: All mounting brackets are supplied with mounting bolts.

Round shaped cylinder Double acting/low speed

SCM-O Series

● Bore size: φ20/φ25/φ32/φ40
φ50/φ63/φ80/φ100

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM-O							
Bore size	mm	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
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)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	1000	10
φ25			
φ32			
φ40		1500	
φ50			
φ63			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ80	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ100	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ83	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ100	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / Bore size (mm)	Product weight when stroke length (S) = 0 mm: Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TB)	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
φ20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.01	0.012	0.007
φ25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
φ32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
φ40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
φ50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
φ63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
φ80	2.04	3.00	2.75	2.75	-		0.07	0.072	0.010
φ100	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: 0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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

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

Ⓐ Mounting *1

Ⓑ Bore size

Ⓒ Port thread

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model No. *4 *5

Ⓖ Switch quantity

Ⓗ Switch mounting

Ⓘ Option *2 *6 *8

Ⓙ Accessory *9

Code	Content								
Ⓐ Mounting									
	Bore size (φ)	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	●	●	●	●	●	●		

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

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion	
D	With two-sided rubber cushion

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

Ⓕ Switch model No.						
Axial lead wire	**Radial lead wire**	**Contact**	**Voltage AC**	**Voltage 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***			●		3-wire
T3PH*	**T3PV***			●	1-color display (custom order)	
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)

Ⓖ 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.)

Ⓗ Switch mounting	
Blank	Rail method
Z	Band method

Ⓘ Option			
		Max. ambient temperature	**Instantaneous max. temp.**
J	Bellows	60°C	100°C
K	Bellows	100°C	200°C
L	Bellows	250°C	400°C
Q	Switch rail attached at shipment		
M	Piston rod material (stainless steel)		

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

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

[Example of model No.]

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

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

How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set

SCM - T0H - D - 40 - 100

- T0H: Switch model No. (Item Ⓕ on the previous page)
- D: Switch quantity (Item Ⓖ on the previous page)
- 40: Bore size (Item Ⓑ on the previous page)
- 100: Stroke length (*1) (Item Ⓔ on the previous page)

[Switch mounting: Band]

● Switch body + mounting bracket set + band

SCM - T2H* - 40 - Z

- T2H*: Switch model No. (Item Ⓕ on the previous page)
- 40: Bore size (Item Ⓑ on the previous page)

● Mounting rail only

SCM - T - 40 - 100

- T: Mounting rail
- 40: Bore size (Item Ⓑ on the previous page)
- 100: Stroke length (*1) (*2) (Item Ⓔ on the previous page)

● Mounting bracket set + band

SCM - Z - 40

- 40: Bore size (Item Ⓑ on the previous page)

[Switch body only]

SW - T0H

- T0H: Switch model No. (Item Ⓕ on the previous page)

*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.

How to order mounting bracket

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

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

Internal structure

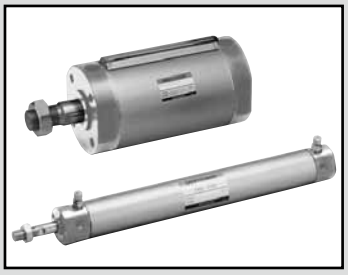
Same as standard. Refer to page 222.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-O-20K	❸ ❻ ❽ ❿ ⓭
φ25	SCM-O-25K	
φ32	SCM-O-32K	
φ40	SCM-O-40K	
φ50	SCM-O-50K	
φ63	SCM-O-63K	
φ80	SCM-O-80K	
φ100	SCM-O-100K	

Dimensions

Same as standard. Refer to pages 224 to 237.

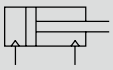


Round shaped cylinder Double acting/low friction

SCM-U Series

● Bore size: φ20/φ25/φ32/φ40/ φ50/φ63/φ80/φ100

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM-U							
Bore size	mm	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
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)
φ20	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10
φ25			
φ32			
φ40		1500	
φ50			
φ63			
φ80			
φ100			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ80	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ100	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ83	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ100	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire	Proximity 2-wire			Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	For 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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / Bore size (mm)	Product weight when stroke length (S) = 0 mm: Basic (00)	Axial foot (LB)	Flange (FA/FB)	Clevis	Trunnion (TA/TB)	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With switch rail)	Band weight per switch
φ20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.01	0.012	0.007
φ25	0.17	0.30	0.21	0.25	0.19		0.014	0.016	0.007
φ32	0.26	0.42	0.32	0.41	0.29		0.018	0.02	0.007
φ40	0.41	0.63	0.49	0.64	0.46		0.03	0.032	0.007
φ50	0.77	1.25	1.11	1.17	0.91		0.044	0.046	0.008
φ63	1.07	1.79	1.57	1.75	1.21		0.052	0.054	0.009
φ80	2.04	3.00	2.75	2.75	-		0.07	0.072	0.010
φ100	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 kg+0.32 kg+0.036=0.986 kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa: 0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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

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

Ⓐ Mounting
Rubber cushion
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Stroke length
Ⓔ Switch model No. *3 *4
Ⓕ Switch quantity
Ⓖ Switch mounting
Ⓗ Option *6
Ⓘ Accessory *7

Code	Content								
Ⓐ Mounting									
	Bore size (φ)	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	●	●	●	●	●	●		

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

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Stroke length (mm)		
Bore size	**Stroke length *2**	**Custom stroke length**
φ20 to φ32	**10 to 1000**	**In 1 mm increments**
φ40 to φ100	**10 to 1500**	

Ⓔ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color display	2-wire
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display (custom order)	3-wire
T2WH*	**T2WV***	Proximity		●	2-color display	2-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3WH*	**T3WV***	Proximity		●	2-color display	3-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	**-**	Proximity		●	2-color display for AC magnetic field	2-wire
T2YDT*	**-**	Proximity		●	2-color display for AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-wire

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

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

Ⓖ Switch mounting	
Blank	Rail method
Z	Band method

Ⓗ Option	
Q	Switch rail attached at shipment
M	Piston rod material (stainless steel)

Ⓘ Accessory

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

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
*2 : Refer to page 286 for the number of installed switches and the min. stroke length.
*3 : Switches other than Ⓔ Switch model No. are also available. (Custom order)
Refer to Ending Page 1 for details.
*4 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 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-MI

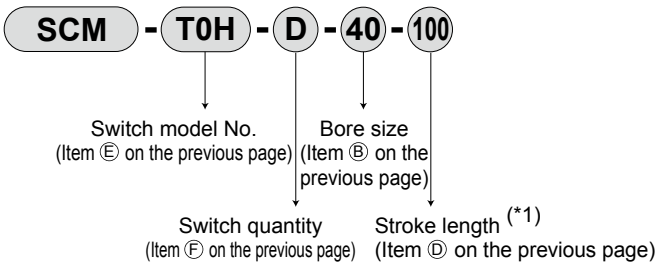
Model: Round shaped cylinder, double acting/low friction

Ⓐ Mounting : Axial foot
Ⓑ Bore size : φ40 mm
Ⓒ Port thread : Rc thread
Ⓓ Stroke length : 100 mm
Ⓔ Switch model No. : Proximity T2H switch, lead wire 1 m
Ⓕ Switch quantity : 2
Ⓖ Switch mounting : Rail
Ⓗ Option : Piston rod material/stainless steel
Ⓘ Accessory : Rod eye

How to order switch

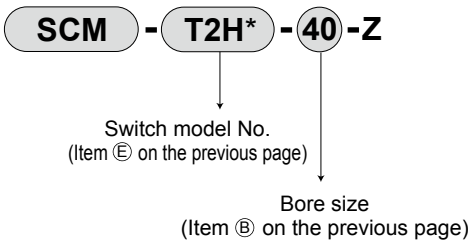
[Switch mounting: Rail]

● Switch body + mounting rail set

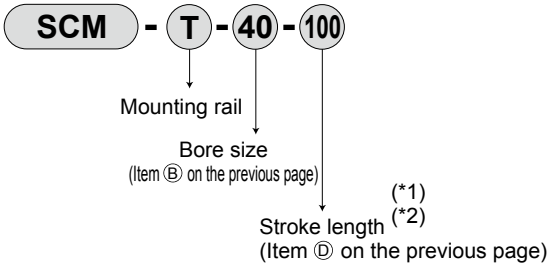


[Switch mounting: Band]

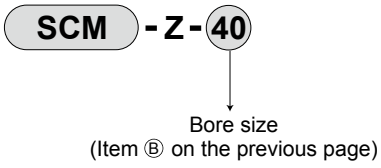
● Switch body + mounting bracket set + band



● Mounting rail only

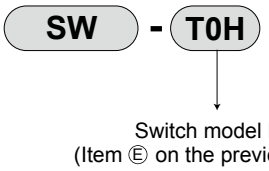


● Mounting bracket set + band



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

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

Dimensions

Same as SCM Series (double acting/single rod). Refer to pages 224 to 237.

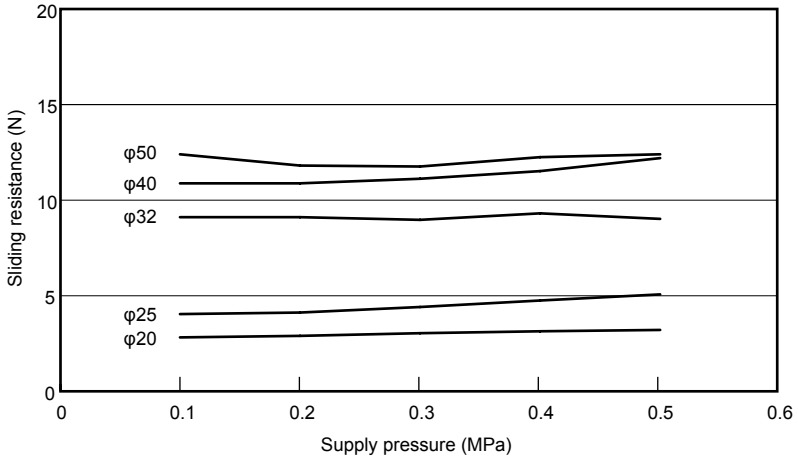
Sliding resistance

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

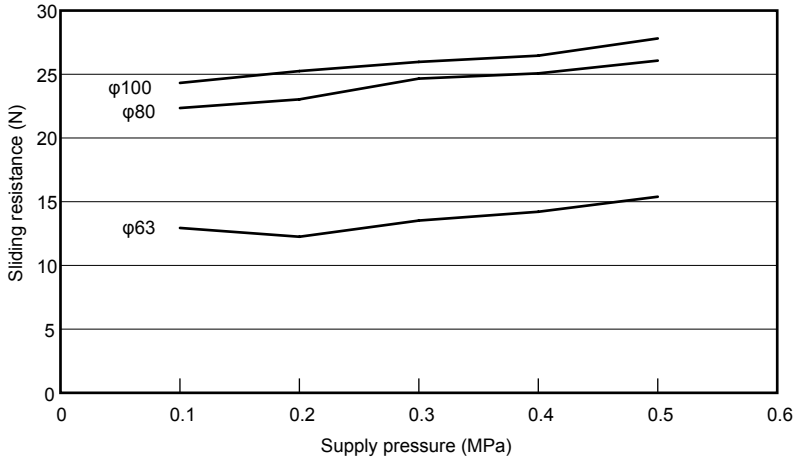
(Test conditions)

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)

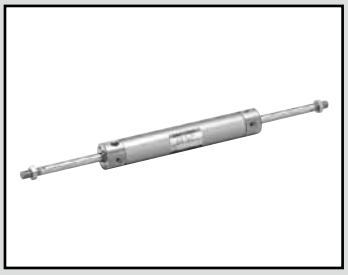
Sliding resistance (φ20 to φ50)



Sliding resistance (φ63 to φ100)



MEMO

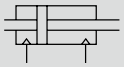


Round shaped cylinder Double acting/double rod

SCM-D Series

● Bore size: φ20/φ25/φ32/φ40
φ50/φ63/φ80/φ100

JIS symbol Double acting cylinder double rod



RoHS CAD

Specifications

Descriptions		SCM-D							
Bore size mm		φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
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" ⇒ 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)
φ20	25, 50, 75, 100, 125, 150, 200, 250, 300	600	10
φ25			
φ32			
φ40			
φ50			
φ63			
φ80			
φ100			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ80	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ100	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ83	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ100	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire								Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V				T2YD
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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA		5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)				Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA								1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142				1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / Bore size (mm)	Product weight when stroke length (S) = 0 mm				Switch weight (per 1 pc.)	Per S = 10 mm	Per S = 10 mm
	Basic (00)	Axial foot (LB)	Flange (FA)	Trunnion (TA)		Additional weight	Additional weight (With switch rail)
φ20	0.12	0.23	0.20	0.13	Refer to the weight in the switch specifications.	0.014	0.016
φ25	0.21	0.34	0.31	0.23		0.020	0.22
φ32	0.32	0.48	0.46	0.35		0.026	0.028
φ40	0.52	0.74	0.72	0.57		0.046	0.048
φ50	0.96	1.44	1.30	1.10		0.068	0.070
φ63	1.27	1.99	1.77	1.41		0.076	0.078
φ80	2.41	3.37	3.12	-		0.108	0.110
φ100	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 km
- Additional weight when S = 100 mm ····· $0.048 \times \frac{100}{10} = 0.48$ kg
- Weight of 2 switches ····· 0.018 x 2 = 0.036 kg
- Product weight ····· 0.74 + 0.48 + 0.036 = 1.256kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push/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
φ25	Push/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
φ32	Push/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
φ40	Push/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
φ50	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
φ63	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
φ80	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
φ100	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

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

Ⓐ Mounting
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Cushion
Ⓔ Stroke length
Ⓕ Switch model No. *4 *5
Ⓖ Switch quantity
Ⓗ Switch mounting
Ⓘ Option *2 *6 *8
Ⓙ Accessory

Code	Content

Ⓐ Mounting

Code	Bore size (φ)	20	25	32	40	50	63	80	100
00	Basic	●	●	●	●	●	●	●	●
LB	Axial foot	●	●	●	●	●	●	●	●
FA	Rod side flange	●	●	●	●	●	●	●	●
TA	Rod side trunnion	●	●	●	●	●	●		

Ⓑ Bore size (mm)

20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63
80	φ80
100	φ100

Ⓒ Port thread

Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion

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

Ⓔ Stroke length (mm)

Bore size	Stroke length	Custom stroke length
φ20 to φ100	**10 to 600**	**In 1 mm increments**

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*	Reed	●	●	Without indicator lamp	2-wire
T8H*	T8V*	Reed	●	●	1-color display	2-wire
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*	Proximity		●	1-color display	3-wire
T3PH*	T3PV*	Proximity		●	1-color display (custom order)	3-wire
T2WH*	T2WV*	Proximity		●	2-color display	2-wire
T2YH*	T2YV*	Proximity		●	2-color display	2-wire
T3WH*	T3WV*	Proximity		●	2-color display	3-wire
T3YH*	T3YV*	Proximity		●	2-color display	3-wire
T2YD*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2YDT*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2JH*	T2JV*	Proximity		●	1-color display off-delay	2-wire

*** Lead wire length**

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

Ⓖ Switch quantity

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

Ⓗ Switch mounting

Blank	Rail method
Z	Band method

Ⓘ Option

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

Ⓙ Accessory

Code	Bore size (φ)	20	25	32	40	50	63	80	100
I	Rod eye	●	●	●	●	●	●	●	●
Y	Rod clevis (pin and snap ring attached)	●	●	●	●	●	●	●	●
B2	Clevis bracket	●	●	●	●	●	●		

⚠ 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 292 for the number of installed switches and the min. stroke length.
*4 : Switches other than Ⓕ Switch model No. are also available. (Custom order)
Refer to Ending Page 1 for details.
*5 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 and the switch mounting style is the rail.
*6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
*7 : Refer to Ending Page 85 for custom specifications of rod end form.
*8 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
*9 : 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

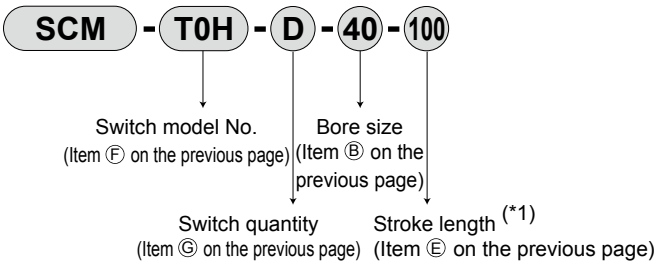
Model: Round shaped cylinder, double acting/double rod

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

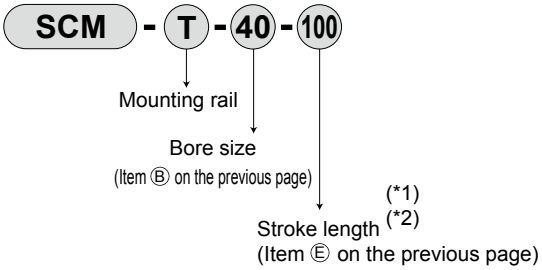
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



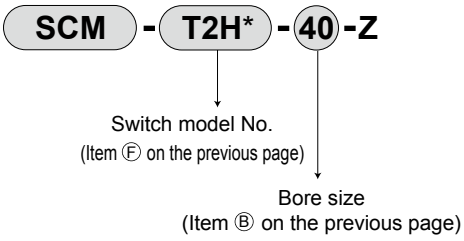
● Mounting rail only



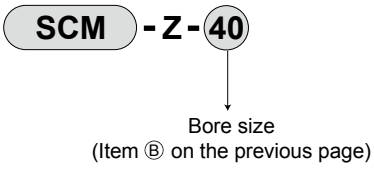
*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

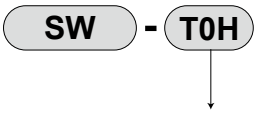
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



How to order mounting bracket

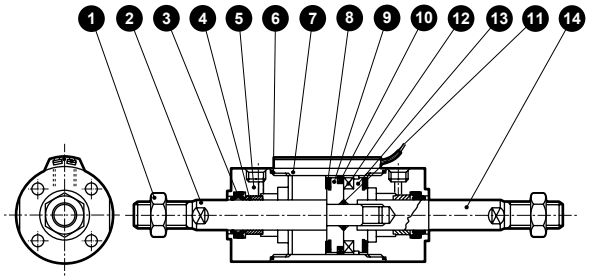
Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40	φ50	φ63	φ80	φ100
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Trunnion (TA)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	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.

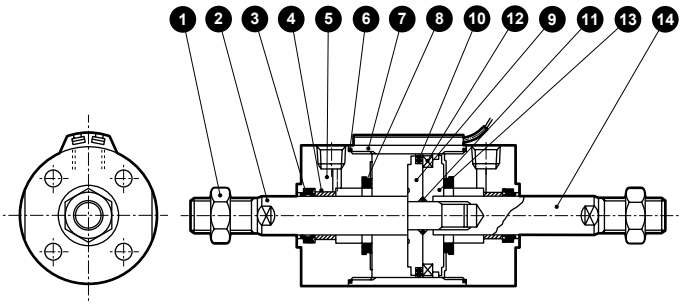
Internal structure and parts list

● With rubber cushion

φ20 to φ40

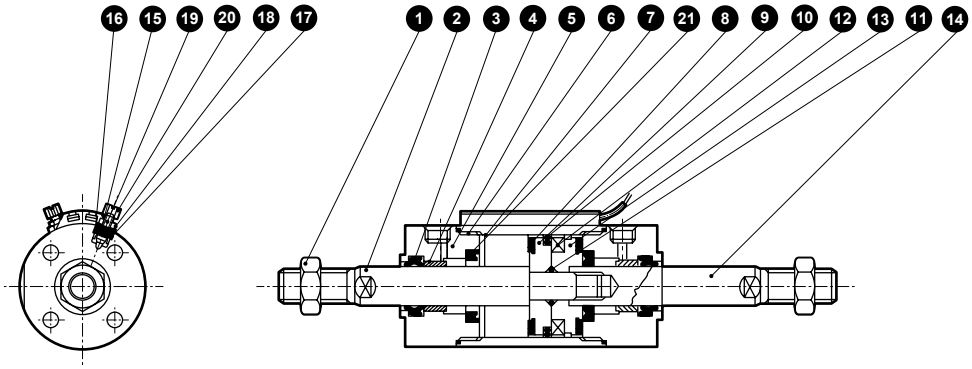


φ50 to φ100

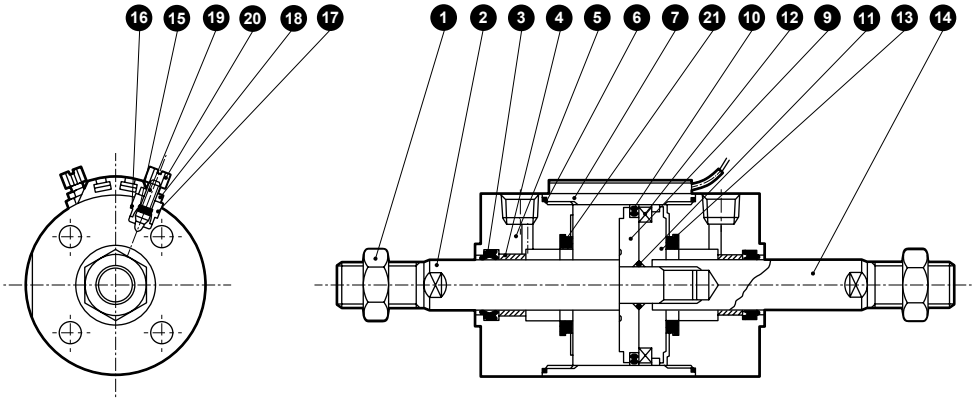


● With air cushion

φ20 to φ40



φ50 to φ100



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	12	Magnet	Plastic	
2	Piston rod A	φ20, φ25: Stainless steel φ32 to φ100: Steel	Industrial chrome plating	13	Piston H	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting	
3	Rod packing	Nitrile rubber		14	Piston rod B	φ20, φ25: Stainless steel φ32 to φ100: Steel	Industrial chrome plating
4	Bush	Oil impregnated bearing alloy *1					
5	Rod cover	Aluminum alloy *2	Paint	With air cushion			
6	Cylinder gasket	Nitrile rubber		15	Needle gasket	Nitrile rubber	
7	Cylinder tube	Aluminum alloy	Hard alumite	16	Holder gasket	Nitrile rubber	
8	Cushion rubber	Urethane rubber		17	Needle holder	Aluminum alloy	
9	Piston R	φ20 to φ40: Aluminum alloy φ50 to φ100: Aluminum alloy die-casting		18	Lock nut	Steel	Nickeling
				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.
*2: φ50 and φ63 are aluminum alloy die-casting with the surface painted.

Repair parts list

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

With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-D-20DK	❸ ❻ ❽ ❿
φ25	SCM-D-25DK	
φ32	SCM-D-32DK	
φ40	SCM-D-40DK	
φ50	SCM-D-50DK	
φ63	SCM-D-63DK	
φ80	SCM-D-80DK	
φ100	SCM-D-100DK	

With air cushion

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-D-20BK	❸ ❻ ❽ *2 ❿ ⓯ ⓰ ㉑
φ25	SCM-D-25BK	
φ32	SCM-D-32BK	
φ40	SCM-D-40BK	
φ50	SCM-D-50BK	
φ63	SCM-D-63BK	
φ80	SCM-D-80BK	
φ100	SCM-D-100BK	

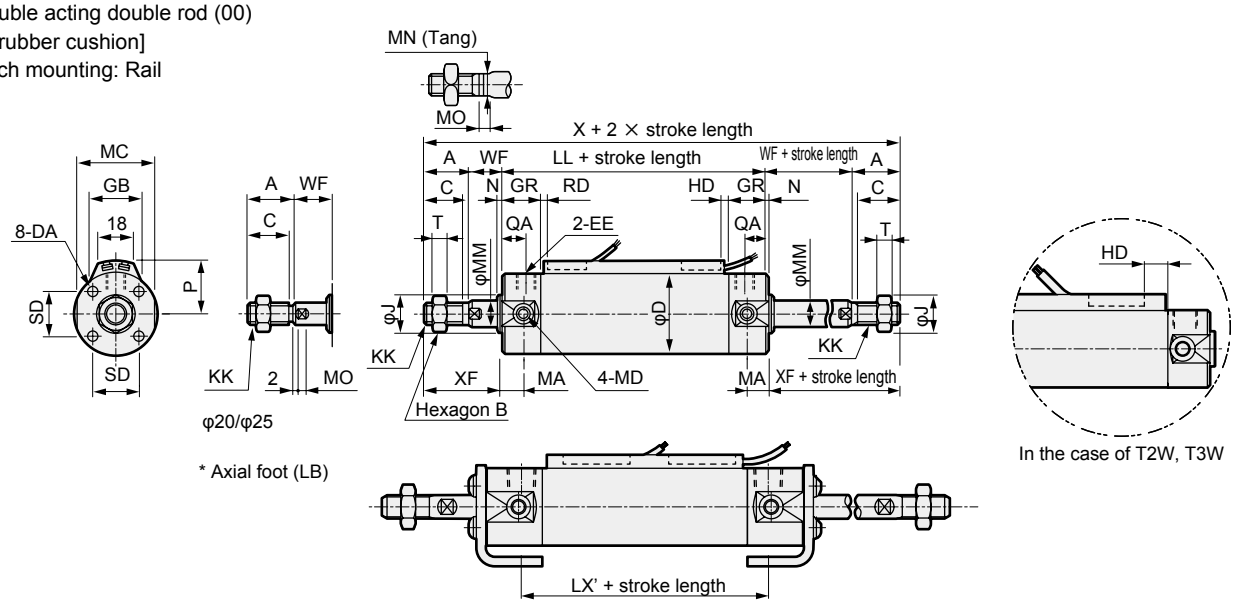
*1: ❸, ❻ and ❿ are the same as those of the type with rubber cushion.
*2: ❽ is not supplied with φ50 to φ100.

Dimensions CAD

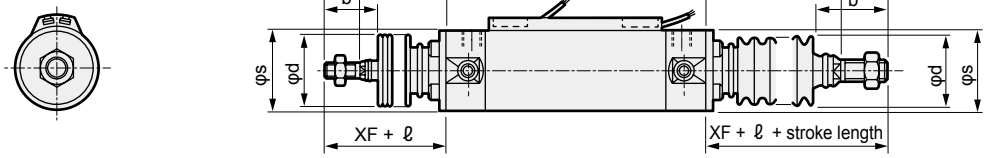
● Double acting double rod (00)

[With rubber cushion]

· Switch mounting: Rail

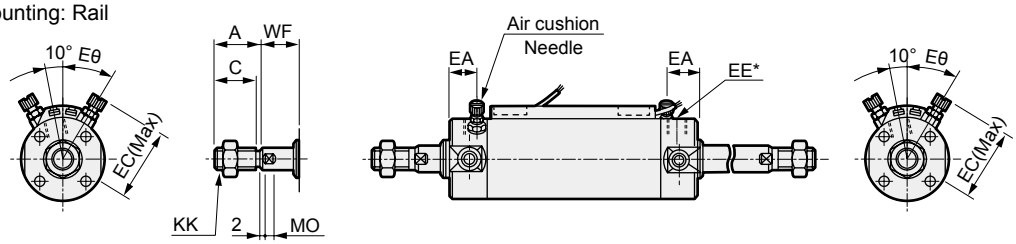


With bellows on both sides



[With air cushion]

· Switch mounting: Rail



1 : Piping port (EE) of φ20 and φ25 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 page 224.

*3 : The positions for the left and right tangs are unspecified.

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

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

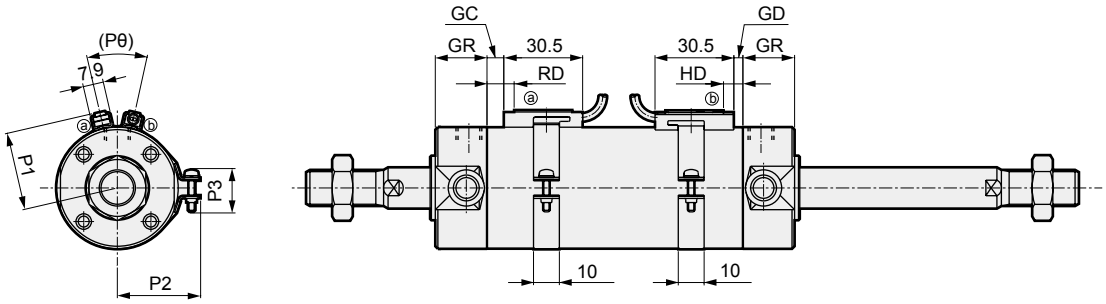
Code	Basic (00) basic dimensions																		
Bore size (mm)	A	B	C	D	DA	EE (Note)	GR	J	KK	LL	MA	MC	MD	MM	MN	MO	N	QA	SD
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	19	12	M8	71	11	24	M5	8	6	4	2	12	14
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	71	11	29	M6	10	8	5	2	12	16.5
φ32	22	17	19.5	38	M5 depth 7.5	Rc1/8	19	18	M10×1.25	73	11	36	M8	12	10	5.5	2	12	20
φ40	30	22	27	47	M6 depth 12	Rc1/8	20	25	M14×1.5	79	12	44	M10	16	14	6	2	13	26
φ50	35	27	32	58	M8 depth 16	Rc1/4	25	30	M18×1.5	93	13	55	M12	20	17	8	2	15	32
φ63	35	27	32	72	M10 depth 16	Rc1/4	25	32	M18×1.5	93	13	69	M14	20	17	8	2	15	38
φ80	40	32	37	89	M10 depth 22	Rc3/8	28	40	M22×1.5	108	-	80	-	25	22	11	3	15	50
φ100	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								
																HD			RD			
Bore size (mm)	T	WF	X	XF	LX'	b	d	s	ℓ	EA	EC	EE*	Eθ	P	GB	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
φ20	5	17	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
φ25	6	18	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
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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

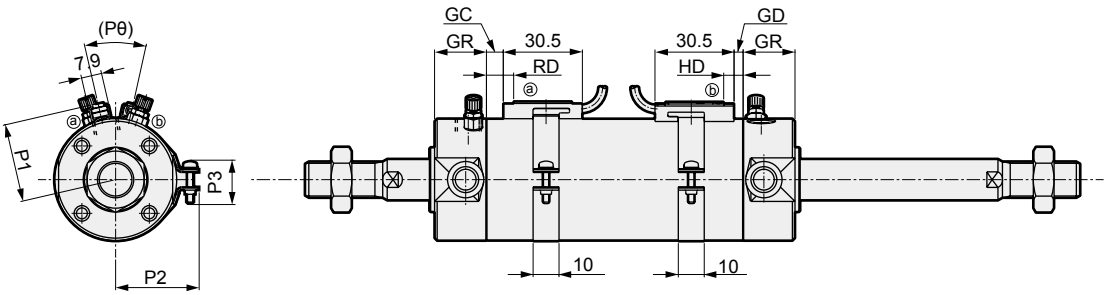
Note: Installation dimensions of the mounting are the same as those of SCM (double acting). Refer to pages 226 to 237. For axial foot (LB), refer to the figure above.

Dimensions CAD

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



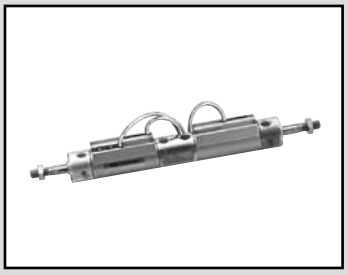
[With air cushion]
· Switch mounting: Band



*1 : Needle relational dimensions of the type with air cushion are the same as those of the double acting. Refer to page 224.
*2 : The positions for the left and right tangs are unspecified.
*3 : Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

Code	Switch mounting: Band																
Bore size (mm)	GC			GD			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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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°)
φ80	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°)
φ100	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 238 and 239.

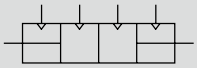


Round shaped cylinder
Double acting/back to back

SCM-B Series

● Bore size:φ20/φ25/φ32/φ40/φ50/φ63

JIS symbol



RoHS CAD

Specifications

Descriptions	SCM-B					
Bore size mm	φ20	φ25	φ32	φ40	φ50	φ63
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

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	500	10
φ25			
φ32			
φ40		750	
φ50			
φ63			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / Bore size (mm)	Weight when stroke (S) = 0 mm	Additional weight				Switch weight	Additional weight	Additional weight per	Band weight
	Basic (00)	Basic	Axial foot	Flange	Trunnion	(per 1 pc)	per S = 10 mm	S = 10 mm (With switch rail)	per switch
φ20	0.10	0.00	0.11	0.03	0.01	Refer to the weight in the switch specifications.	0.01	0.012	0.007
φ25	0.17	0.00	0.13	0.04	0.02		0.014	0.016	0.007
φ32	0.26	0.02	0.18	0.08	0.05		0.018	0.02	0.007
φ40	0.41	0.05	0.27	0.13	0.10		0.03	0.032	0.007
φ50	0.77	0.07	0.55	0.41	0.21		0.044	0.046	0.008
φ63	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										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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

How to order

Without switch (built-in magnet for switch)

SCM-B - LB - 40 - ○ D 25 ——— ○ D 50 ——— J Y

(S_1 Cylinder 1 stroke length; S_2 Cylinder 2 stroke length)

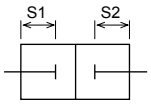
With switch (built-in magnet for switch)

SCM-B - LB - 40 - ○ D 25 - T0H - D - ○ D 50 - T0H - R - ○ J Y

Cylinder 1 | Cylinder 2

Ⓐ Mounting *1
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Cushion
Ⓔ Stroke length =S1
Ⓓ Cushion
Ⓔ Stroke length =S2
Ⓕ Switch model No. *4 *3
Ⓕ Switch model No.
Ⓖ Switch quantity
Ⓖ Switch quantity
Ⓗ Switch mounting
Ⓘ Option *2 *6 *8
Ⓙ Accessory

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 300 for the number of installed switches and the min. stroke length.
*4 : Switches other than Ⓕ Switch model No. are also available. (Custom order)
Refer to Ending Page 1 for details.
*5 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 and the switch mounting style is the rail.
*6 : The instantaneous max. temperature is the temperature when sparks, cutting chips, etc., instantaneously contact the bellows.
*7 : Refer to Ending Page 85 for custom specifications of rod end form.
*8 : "Q" (switch rail enclosed at shipment) is not available for the "Z" switch mounting.
*9 : 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-JY

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

Ⓐ Mounting : Axial foot
Ⓑ Bore size : φ40 mm
Ⓒ Port thread : Rc thread
Ⓓ Cushion : With two-sided rubber cushion
Ⓔ Stroke length : S1=25 mm
(Cylinder 1)
Ⓓ Cushion : With two-sided rubber cushion
Ⓔ Stroke length : S2=50 mm
(Cylinder 2)
Ⓕ Switch model No. : Reed T0H switch, Lead wire 1 m
Ⓖ Switch quantity : Cylinder 1; 2 pieces included, Cylinder 2; 1 on rod side
Ⓗ Switch mounting : Rail
Ⓘ Option : Bellows material for max. ambient temperature 60°C
Ⓙ Accessory : Rod clevis

Code	Content
Ⓐ 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

Ⓑ Bore size (mm)

20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63

Ⓒ Port thread

Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion

D	With two-sided rubber cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length *2	Custom stroke length
φ20 to φ32	10 to 500	In 1 mm increments
φ40 to φ63	10 to 750	

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*	Reed	●	●	Without indicator lamp	2-wire
T8H*	T8V*	Reed	●	●	1-color display	2-wire
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*	Proximity		●	1-color display	3-wire
T3PH*	T3PV*	Proximity		●	1-color display (custom)	3-wire
T2WH*	T2WV*	Proximity		●	2-color display	2-wire
T2YH*	T2YV*	Proximity		●	2-color display	2-wire
T3WH*	T3WV*	Proximity		●	2-color display	3-wire
T3YH*	T3YV*	Proximity		●	2-color display	3-wire
T2YD*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2YDT*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2JH*	T2JV*	Proximity		●	1-color display off-delay	2-wire

*** Lead wire length**

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

Ⓖ Switch quantity

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

Ⓗ Switch mounting

Blank	Rail method
Z	Band method

Ⓘ Option

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

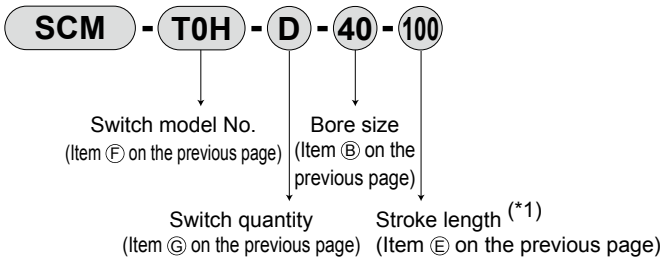
Ⓙ Accessory

I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B2	Clevis bracket

How to order switch

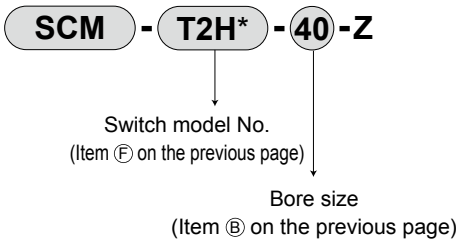
[Switch mounting: Rail]

● Switch body + mounting rail set

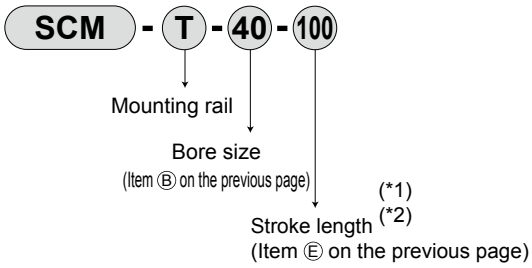


[Switch mounting: Band]

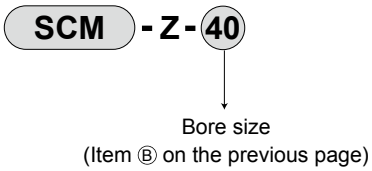
● Switch body + mounting bracket set + band



● Mounting rail only

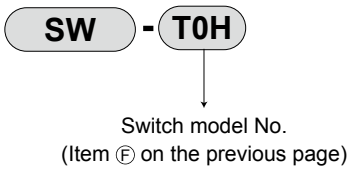


● Mounting bracket set + band



*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]



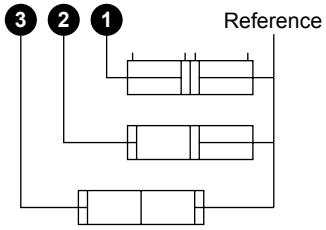
How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40	φ50	φ63
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

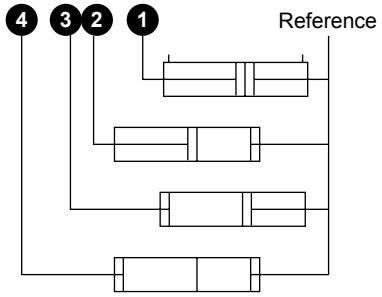
*1: All mounting brackets are supplied with mounting bolts.
*2: The foot mounting bracket is provided as 2 pcs./set.

Applications

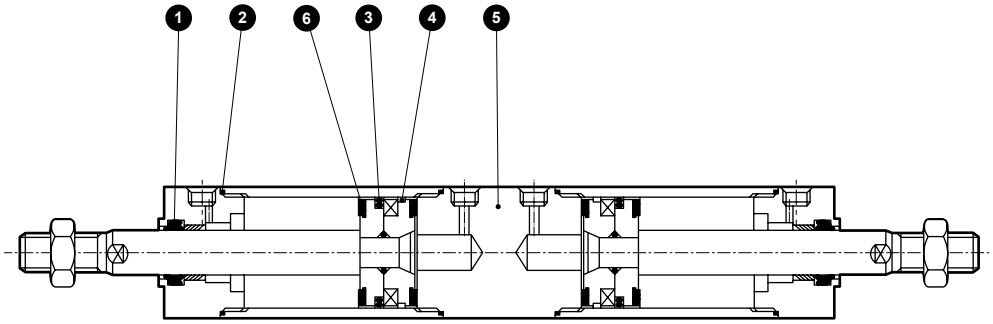
When the same stroke lengths are combined,
3 positions possible.



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	Paint
3	Piston packing	Nitrile rubber		6	Cushion rubber	Urethane rubber	

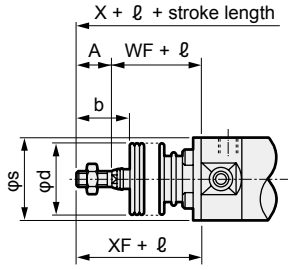
Parts other than the above are the same as the double acting.

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-B-20DK	❶❷❸❹❻
φ25	SCM-B-25DK	
φ32	SCM-B-32DK	
φ40	SCM-B-40DK	
φ50	SCM-B-50DK	
φ63	SCM-B-63DK	

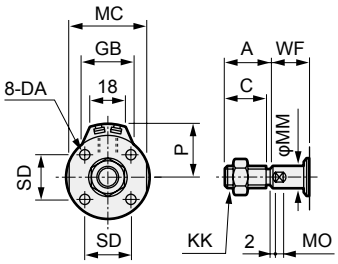
Dimensions CAD

● Double acting back to back

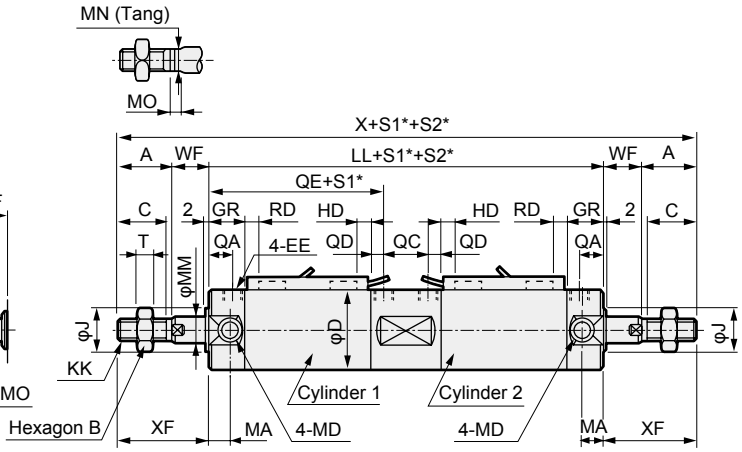


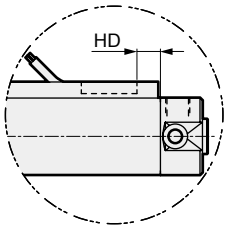
With bellows

· Switch mounting: Rail



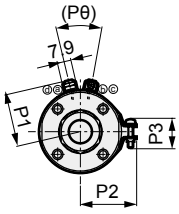
φ20/φ25

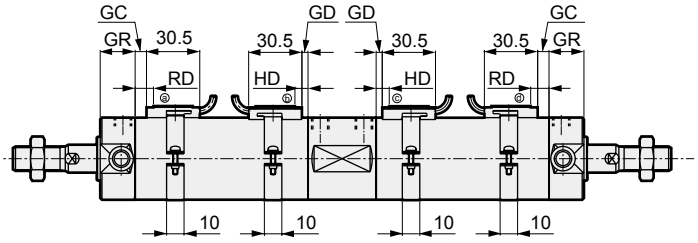




In the case of T2W, T3W

· Switch mounting: Band





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

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

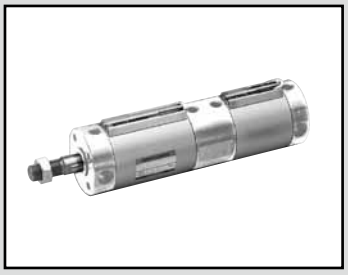
Code	Basic (00) basic dimensions																	
Bore size (mm)	A	B	C	D	DA	EE	GR	J	KK	LL	MA	MC	MD	MM	MN	MO	QA	QC
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	19	12	M8	137	11	24	M5	8	6	4	12	19
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	19	14	M10×1.25	137	11	29	M6	10	8	5	12	19
φ32	22	17	19.5	38	M5 depth 7.5	Rc1/8	19	18	M10×1.25	143	11	36	M8	12	10	5.5	12	21
φ40	30	22	27	47	M6 depth 12	Rc1/8	20	25	M14×1.5	157	12	44	M10	16	14	6	13	25
φ50	35	27	32	58	M8 depth 16	Rc1/4	25	30	M18×1.5	184	13	55	M12	20	17	8	15	28
φ63	35	27	32	72	M10 depth 16	Rc1/4	25	32	M18×1.5	184	13	69	M14	20	17	8	15	28

Code								With bellows				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
φ20	7	59	14	5	17	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
φ25	7	59	16.5	6	18	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
φ32	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
φ40	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
φ50	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
φ63	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	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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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 226 to 237.

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



Round shaped cylinder
Double acting/two-stage

SCM-W Series

● Bore size:φ20/φ25/φ32/φ40/φ50/φ63

RoHS CAD

Specifications

Descriptions		SCM-W					
Bore size mm		φ20	φ25	φ32	φ40	φ50	φ63
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 0				+2.3 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.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	600	10
φ25			
φ32			
φ40			
φ50			
φ63			

*1: The custom stroke length is available in 1 mm increments.
*2: The max. stroke length of S2 is 200 mm.

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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire								Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V				T2YD
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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA		5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)				Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA								1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142				1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting	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	Clevis	Trunnion	(per 1 pc)	per S = 10 mm	S = 10 mm (With switch rail)	per switch
φ20	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
φ25	0.17	-0.02	0.11	0.02	0.06	0.00		0.014	0.016	0.007
φ32	0.26	-0.01	0.15	0.05	0.14	0.02		0.018	0.02	0.007
φ40	0.41	-0.03	0.19	0.05	0.20	0.02		0.03	0.032	0.007
φ50	0.77	-0.06	0.42	0.28	0.34	0.08		0.044	0.046	0.008
φ63	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

Without switch (built-in magnet for switch)

SCM-W - LB - 40 - ◯ D 100 ——— ◯ D 25 ——— J I

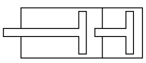
With switch (built-in magnet for switch)

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

S1 Total stroke; S2 1st stage stroke length; Cylinder; Cylinder

Ⓐ Mounting *1
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Cushion
Ⓔ Stroke length =S1
Ⓔ Stroke length = S2 *3
Ⓕ Switch model No. *5 *6
Ⓖ Switch quantity
Ⓗ Switch mounting
Ⓘ Option *2 *7 *9
Ⓙ Accessory *10

1st stage stroke length		25 mm (S2)
+ 2nd stage stroke length		75 mm
Total stroke length		100 mm (S1)



⚠ 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 306 for the number of installed switches and the min. stroke length.
*5 : Switches other than Ⓕ Switch model No. are also available. (Custom order) Refer to Ending Page 1 for details.
*6 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 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

Ⓐ Mounting	:	Axial foot
Ⓑ Bore size	:	φ40 mm
Ⓒ Port thread	:	Rc thread
Ⓓ Cushion	:	With two-sided rubber cushion
Ⓔ Stroke length	:	S1=100 mm
Ⓓ Cushion	:	With two-sided rubber cushion
Ⓔ Stroke length	:	S2=25 mm
Ⓕ Switch model No.	:	Reed T0H switch, Lead wire 1 m
Ⓖ Switch quantity	:	Cylinder 1; 2 pieces included, Cylinder 2; 1 on rod side
Ⓗ Switch mounting	:	Rail
Ⓘ Option	:	Bellows material for max. ambient temperature at 60°C
Ⓙ Accessory	:	Rod eye

Code	Content
Ⓐ 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
Ⓑ Bore size (mm)	
20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63
Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)
Ⓓ Cushion	
D	With two-sided rubber cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length *3	Custom stroke length
φ20 to φ63	10 to 600	In 1 mm increments

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*	Reed	●	●	Without indicator lamp	2-wire
T8H*	T8V*	Reed	●	●	1-color display	2-wire
T1H*	T1V*	Proximity	●		1-color display	2-wire
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*	Proximity		●	1-color display	3-wire
T3PH*	T3PV*	Proximity		●	1-color display (custom)	3-wire
T2WH*	T2WV*	Proximity		●	2-color display	2-wire
T2YH*	T2YV*	Proximity		●	2-color display	2-wire
T3WH*	T3WV*	Proximity		●	2-color display	3-wire
T3YH*	T3YV*	Proximity		●	2-color display	3-wire
T2YD*	-	Proximity		●	2-color display for AC magnetic field	2-wire
T2YDT*	-	Proximity		●	2-color display for AC magnetic field	2-wire
T2JH*	T2JV*	Proximity		●	1-color display off-delay	2-wire

Code	Content
*** Lead wire length**	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)
Ⓖ Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3
4	4 (when there are more than 4 switches, indicate switch quantity.)
Ⓗ Switch mounting	
Blank	Rail method
Z	Band method

Ⓘ Option

Code	Content	Max. ambient temp.	Instantaneous max. temp.
J	Bellows	60°C	100°C
K	Bellows	100°C	200°C
L	Bellows	250°C	400°C
Q	Switch rail attached at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

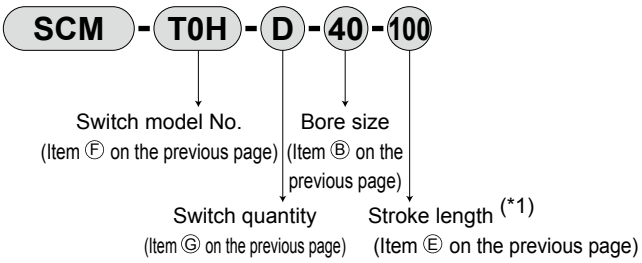
Ⓙ Accessory

Code	Content
I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B2	Clevis bracket

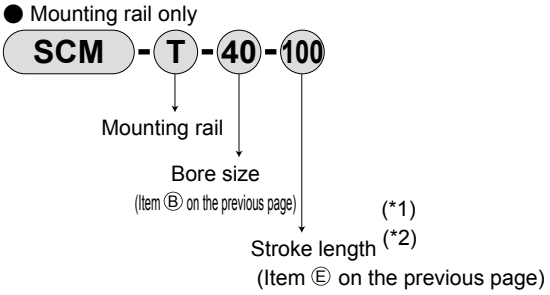
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



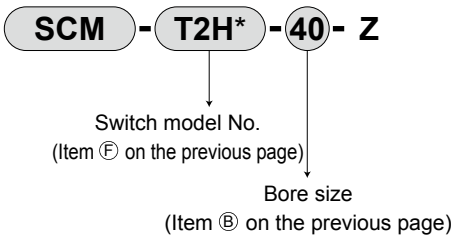
● Mounting rail only



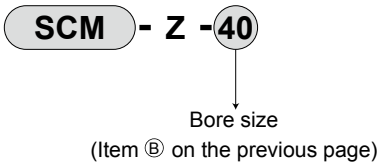
*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

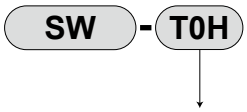
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



How to order mounting bracket

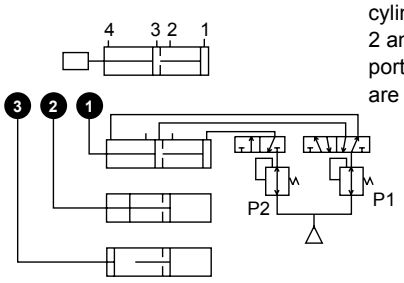
Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40	φ50	φ63
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63
Trunnion (TA/TB)	SCM-TA-20	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.

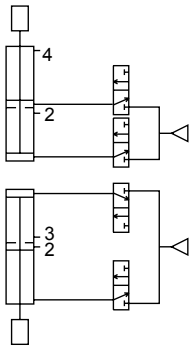
Applications

Pressure setting: P2 > P1

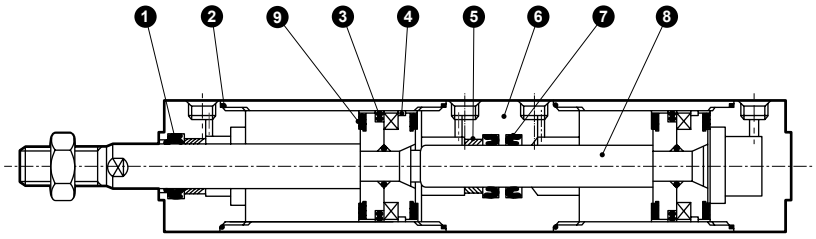
- 1st stage push
  Keeping port 4 pressurized, pressurize port 1.
- 2nd stage push
  Keeping port 1 pressurized, pressurize port 3.



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	Paint
2	Cylinder gasket	Nitrile rubber		7	Rod packing	Nitrile rubber	
3	Piston packing	Nitrile rubber		8	Piston rod	φ20 to φ25: Stainless steel φ32 to φ63: Steel	Industrial chrome plating
4	Wear ring	Polyacetal resin					
5	Bush	Oil impregnated bearing alloy		9	Cushion rubber	Urethane rubber	

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

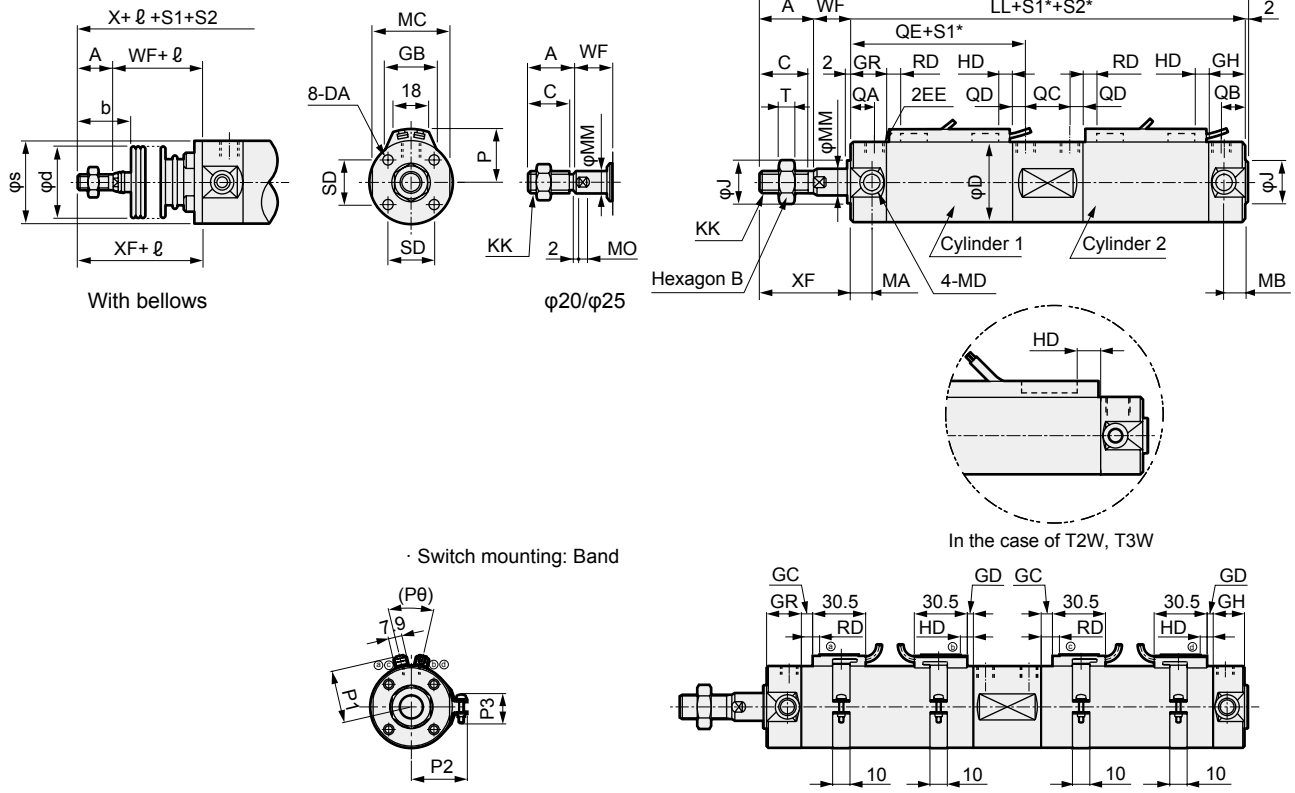
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-W-20DK	❶ ❷ ❸ ❹ ❼ ❾
φ25	SCM-W-25DK	
φ32	SCM-W-32DK	
φ40	SCM-W-40DK	
φ50	SCM-W-50DK	
φ63	SCM-W-63DK	

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

Dimensions CAD

● Double acting two-stage · Switch mounting: Rail



· Switch mounting: Band

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

*: 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
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	17	19	12	M8	135	11	11	24	M5	8	6	4	12	10
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	17	19	14	M10×1.25	135	11	11	29	M6	10	8	5	12	10
φ32	22	17	19.5	38	M5 depth 7.5	Rc1/8	17	19	18	M10×1.25	141	11	10	36	M8	12	10	5.5	12	10
φ40	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
φ50	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
φ63	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
φ20	19	7	59	14	5	17	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
φ25	19	7	59	16.5	6	18	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
φ32	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
φ40	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
φ50	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
φ63	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	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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

Round shaped cylinder
Double acting/tandem

SCM-W4 Series

● Bore size:φ20/φ25/φ32/φ40/φ50/φ63

RoHS CAD

Specifications

Descriptions	SCM-W4					
Bore size mm	φ20	φ25	φ32	φ40	φ50	φ63
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 -1.0				+2.3 -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

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	600	10
φ25			
φ32			
φ40			
φ50			
φ63			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire								Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V				T2YD
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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA		5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)				Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA								1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142				1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting	Weight when stroke (S) = 0 mm	Additional weight					Switch weight	Added weight	Additional weight per	Band weight
Bore size (mm)	Basic (00)	Basic	Axial foot	Flange	Clevis	Trunnion	(per 1 pc.)	/S = 10 mm	S = 10 mm (With switch rail)	per switch
φ20	0.10	0.00	0.11	0.03	0.05	0.01	Refer to the weight in the switch specifications.	0.01	0.012	0.007
φ25	0.17	-0.01	0.12	0.03	0.07	0.01		0.014	0.016	0.007
φ32	0.26	0.00	0.16	0.06	0.15	0.03		0.018	0.02	0.007
φ40	0.41	-0.01	0.21	0.07	0.22	0.04		0.03	0.032	0.007
φ50	0.77	-0.01	0.47	0.33	0.39	0.13		0.044	0.046	0.008
φ63	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

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

Ⓐ Mounting *1

Ⓑ Bore size

Ⓒ Port thread

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model No. *4 *5

Ⓖ Switch quantity

Ⓗ Switch mounting

Ⓘ Option *2 *6 *8

Ⓙ Accessory *9

Code	Content
Ⓐ 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

Ⓑ Bore size (mm)	
20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63

Ⓒ Port thread	
Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion	
D	With two-sided rubber cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length *3	Custom stroke length
φ20 to φ63	**10 to 600**	**In 1 mm increments**

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color display	2-wire
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display (custom)	3-wire
T2WH*	**T2WV***	Proximity		●	2-color display	2-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3WH*	**T3WV***	Proximity		●	2-color display	3-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2YDT*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-wire

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

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

Ⓗ Switch mounting	
Blank	Rail method
Z	Band method

Ⓘ Option

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

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

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

[Example of model No.]

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

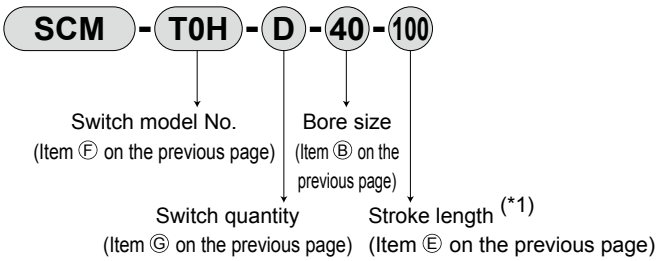
Model: Round shaped cylinder, double acting/tandem

Ⓐ Mounting : Axial foot
Ⓑ Bore size : φ40 mm
Ⓒ Port thread : Rc thread
Ⓓ Cushion : With two-sided rubber cushion
Ⓔ Stroke length : 100 mm
Ⓕ Switch model No. : Reed T0H switch, lead wire 1 m
Ⓖ Switch quantity : 2
Ⓗ Switch mounting : Rail
Ⓘ Option : Bellows material for max. ambient temperature 60°C
Ⓙ Accessory : Rod eye

How to order switch

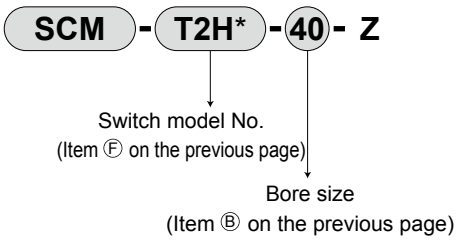
[Switch mounting: Rail]

● Switch body + mounting rail set

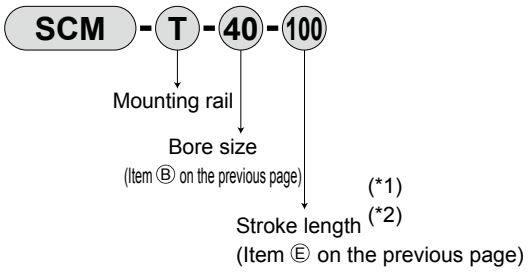


[Switch mounting: Band]

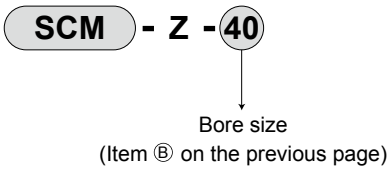
● Switch body + mounting bracket set + band



● Mounting rail only

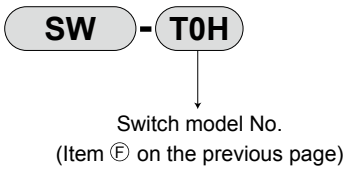


● Mounting bracket set + band



*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]

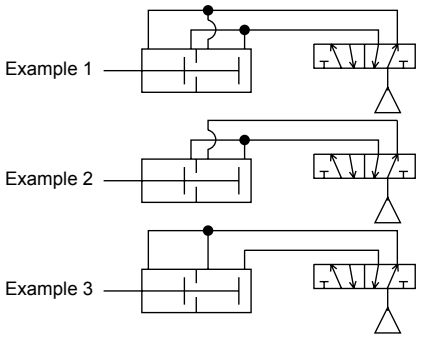


How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40	φ50	φ63
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.

Applications

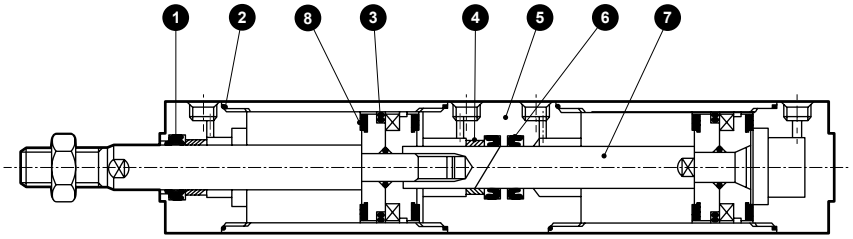


S1 and S2 are individually piped.

S2 pushing force is increased.

S2 pulling force is increased.

Internal structure and parts list



No.	Part name	Material	Remarks
1	Rod packing	Nitrile rubber	
2	Cylinder gasket	Nitrile rubber	
3	Piston packing	Nitrile rubber	
4	Bush	Oil impregnated bearing alloy	

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

No.	Part name	Material	Remarks
5	Intermediate cover	Aluminum alloy	Paint
6	Rod packing	Nitrile rubber	
7	Piston rod	φ20 to φ25: Stainless steel φ32 to φ63: Steel	Industrial chrome plating
8	Cushion rubber	Urethane rubber	

Repair parts list

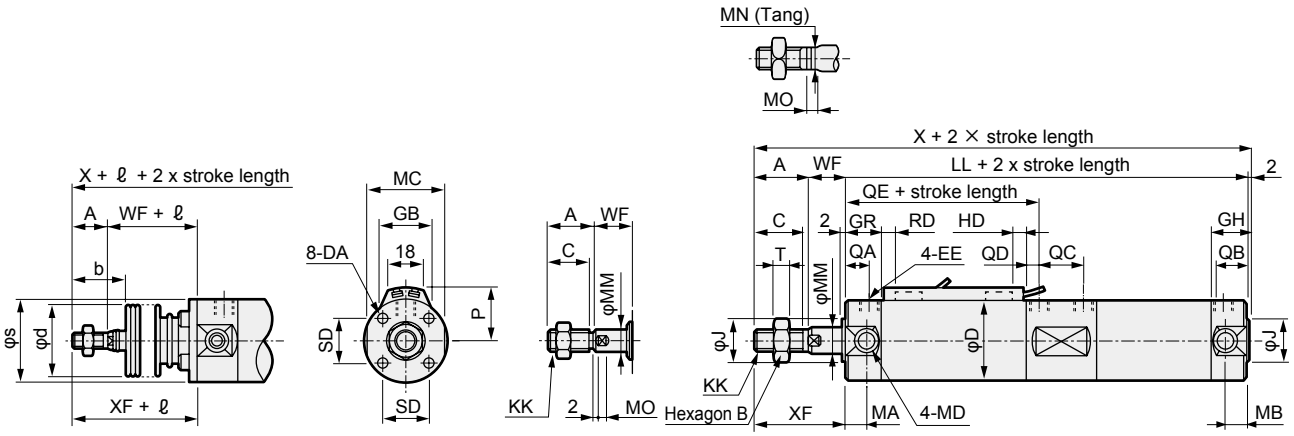
Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-W4-20DK	❶❷❸❽
φ25	SCM-W4-25DK	
φ32	SCM-W4-32DK	
φ40	SCM-W4-40DK	
φ50	SCM-W4-50DK	
φ63	SCM-W4-63DK	

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

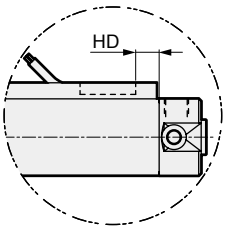
Dimensions CAD

● Double acting tandem

· Switch mounting: Rail

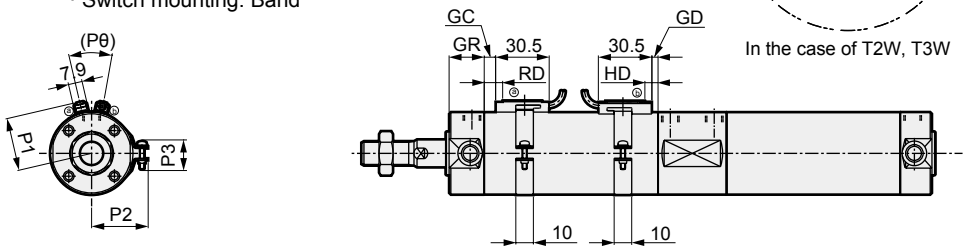


With bellows



In the case of T2W, T3W

· Switch mounting: Band



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

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
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	17	19	12	M8	135	11	11	24	M5	8	6	4	12	10
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	17	19	14	M10×1.25	135	11	11	29	M6	10	8	5	12	10
φ32	22	17	19.5	38	M5 depth 7.5	Rc1/8	17	19	18	M10×1.25	141	11	10	36	M8	12	10	5.5	12	10
φ40	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
φ50	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
φ63	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							
															HD			RD		
Bore size (mm)	QC	QD	QE	SD	T	WF	X	XF	b	d	s	ℓ	P	GB	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
φ20	19	7	59	14	5	17	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
φ25	19	7	59	16.5	6	18	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
φ32	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
φ40	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
φ50	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
φ63	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	Pθ
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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

Round shaped cylinder
Double acting/rotation-stop

SCM-M Series

● Bore size:φ20/φ25/φ32/φ40/φ50/φ63

JIS symbol

RoHS CAD

Specifications

1 MPa = 10 bar

Descriptions	SCM-M					
Bore size mm	φ20	φ25	φ32	φ40	φ50	φ63
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 0				+2.3 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)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	600	10
φ25			
φ32			
φ40			
φ50			
φ63			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V	T5H/T5V		T8H/T8V				T2YD
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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Without indicator lamp		LED (Lit when ON)				Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80			1 m:33 3 m:87 5 m:142				1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / Bore size	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	Axial foot	Flange	Clevis	Trunnion				
φ20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.18	0.31	0.22	0.26	0.20		0.014	0.016	0.007
φ32	0.27	0.43	0.33	0.42	0.30		0.018	0.020	0.007
φ40	0.44	0.66	0.52	0.67	0.49		0.030	0.032	0.007
φ50	0.85	1.33	1.19	1.25	0.99		0.044	0.046	0.008
φ63	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 mm ····· 0.66 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 ····· 0.66 kg+0.32 kg+0.036 kg=1.016 kg

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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

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

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

Code	Content
Ⓐ 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

Ⓑ Bore size (mm)

20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63

Ⓒ Port thread

Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion

D	With two-sided rubber cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length *2	Custom stroke length
φ20 to φ63	**10 to 600**	**In 1 mm increments**

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color display	2-wire
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display (custom)	3-wire
T2WH*	**T2WV***	Proximity		●	2-color display	2-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3WH*	**T3WV***	Proximity		●	2-color display	3-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2YDT*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-wire

*** Lead wire length**

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

Ⓖ Switch quantity

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

Ⓗ Switch mounting

Blank	Rail method
Z	Band method

Ⓘ Option

		Max. ambient temp.	Instantaneous max. temp.
J	Bellows	60°C	100°C
K	Bellows	100°C	200°C
L	Bellows	250°C	400°C
Q	Switch rail attached at shipment		

Ⓙ Accessory

I	Rod eye
Y	Rod clevis (pin and snap ring attached)
B2	Clevis bracket

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

[Example of model No.]

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

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

Ⓐ Mounting : Axial foot
Ⓑ Bore size : φ40 mm
Ⓒ Port thread : Rc thread
Ⓓ Cushion : With two-sided rubber cushion
Ⓔ Stroke length : 100 mm
Ⓕ Switch model No. : Reed T0H switch, lead wire 1 m
Ⓖ Switch quantity : 2
Ⓗ Switch mounting : Rail
Ⓘ Option : Bellows material for max. ambient temperature 60°C
Ⓙ Accessory : Rod eye

How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set

SCM - T0H - D - 40 - 100

- T0H: Switch model No. (Item Ⓕ on the previous page)
- D: Switch quantity (Item Ⓖ on the previous page)
- 40: Bore size (Item Ⓑ on the previous page)
- 100: Stroke length (*1) (Item Ⓔ on the previous page)

● Mounting rail only

SCM - T - 40 - 100

- T: Mounting rail
- 40: Bore size (Item Ⓑ on the previous page)
- 100: Stroke length (*1) (*2) (Item Ⓔ on the previous page)

*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

SCM - T2H* - 40 - Z

- T2H*: Switch model No. (Item Ⓕ on the previous page)
- 40: Bore size (Item Ⓑ on the previous page)

● Mounting bracket set + band

SCM - Z - 40

- 40: Bore size (Item Ⓑ on the previous page)

[Switch body only]

SW - T0H

- T0H: Switch model No. (Item Ⓕ on the previous page)

How to order mounting bracket

Bore size (mm) / Mounting bracket	φ20	φ25	φ32	φ40	φ50	φ63
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 222.

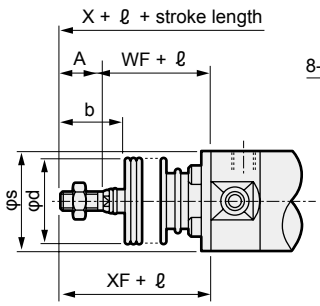
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
φ20	SCM-M-20K	❸ ❻ ❽ ❿ ⓭
φ25	SCM-M-25K	
φ32	SCM-M-32K	
φ40	SCM-M-40K	
φ50	SCM-M-50K	
φ63	SCM-M-63K	

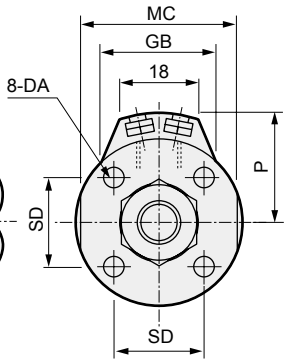
Dimensions

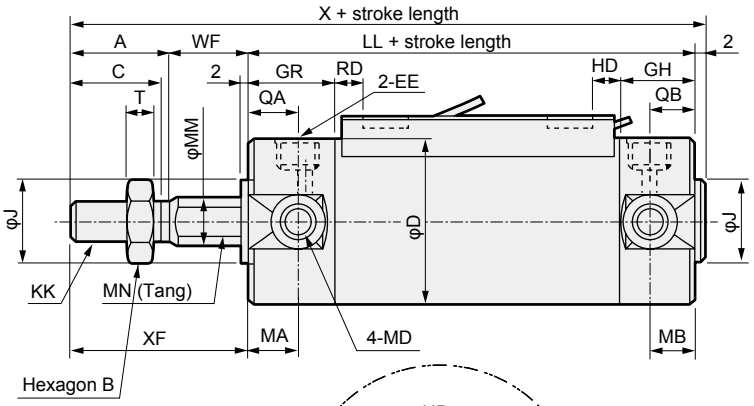
● Double acting rotation-stop

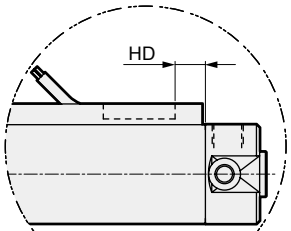
With bellows



· Switch mounting: Rail

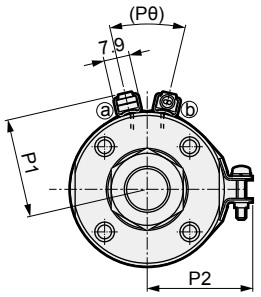


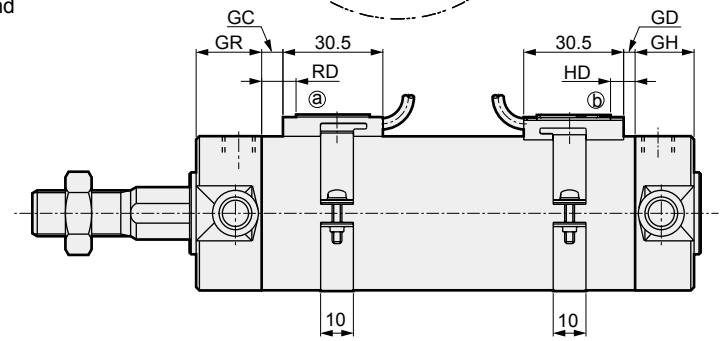




In the case of T2W, T3W

· Switch mounting: Band





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

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
φ20	18	13	15.5	26	M4 depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	10	8	12	10
φ25	22	17	19.5	31	M5 depth 6.5	Rc1/8	17	19	14	M10×1.25	69	11	11	29	M6	12	10	12	10
φ32	22	17	19.5	38	M5 depth 7.5	Rc1/8	17	19	18	M10×1.25	71	11	10	36	M8	12	10	12	10
φ40	30	22	27	47	M6 depth 12	Rc1/8	19	20	25	M14×1.5	78	12	10	44	M10	16	14	13	12
φ50	35	27	32	58	M8 depth 16	Rc1/4	22	25	30	M18×1.5	90	13	12	55	M12	20	17	15	12
φ63	35	27	32	72	M10 depth 16	Rc1/4	22	25	32	M18×1.5	90	13	12	69	M14	20	17	15	12

Code	With bellows									Switch mounting: Rail							
												HD			RD		
Bore size (mm)	SD	T	WF	X	XF	b	d	s	ℓ	P	GB	T0/T5	T2/T2R T3/T3P	T2W T3W	T0/T5	T2/T2R T3/T3P	T2W T3W
φ20	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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																
	GC			GD			HD			RD			P1	P2	P3	Pθ	
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					
φ20	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°)	
φ25	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°)	
φ32	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°)	
φ40	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°)	
φ50	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°)	
φ63	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 226 to 237.
* For the dimensions of the accessories, refer to pages 238 and 239.

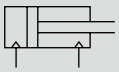
MEMO

Round shaped cylinder
Double acting/direct mounting foot

SCM-LD Series

● Bore size:φ20/φ25/φ32/φ40/φ50/φ63

JIS symbol



RoHS CAD

Specifications

Descriptions	SCM-LD					
Bore size mm	φ20	φ25	φ32	φ40	φ50	φ63
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 0				+2.3 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)
φ20	25, 50, 75 100, 125, 150 200, 250, 300	300	10
φ25			
φ32			
φ40			
φ50			
φ63			

*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*	
φ20	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ25	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ32	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ40	10				25				50	70	70	55	55	70	70	55	75	110	110	90
φ50	10				25				50	65	65	55	55	65	65	55	75	110	110	90
φ63	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*	
φ20	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ25	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ32	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ40	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ50	10				25	30	35	25	50	55	55	50	75	75	80	70	95	100	100	95
φ63	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 329 for mounting position.

Switch specifications

● 1-color/2-color display

Descriptions	Proximity 2-wire				Proximity 3-wire				Reed 2-wire							Proximity 2-wire
	T1H/ T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T2WH/ T2WV	T3H/ T3V	T3PH/T3PV (custom)	T3YH/ T3YV	T3WH/ T3WV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
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 (*2)			100 mA or less		50 mA or less		5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Indicator lamp	LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)			Red/green LED (Lit when ON)
Leakage current	≤ 1 mA at 100 VAC, ≤ 2 mA at 200 VAC	1 mA or less			10 μA or less				0 mA							1 mA or less
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80		1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80				1 m:33 3 m:87 5 m:142			1 m:61 3 m:166 5 m:272

*1 : Refer to Ending Page 1 for other switch specifications.
*2 : The above max. load current is 20 mA at 25°C. The current will be lower than 20 mA when operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)
*3 : The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.
*4 : Switch for AC magnetic field (T2YD) cannot be used in DC magnetic field.
*5 : Dimensions depend on switch model No. Refer to Ending Page 18 for details.

Cylinder weight

(Unit: kg)

Item/mounting / Bore size (mm)	Weight when stroke (S) = 0 mm Basic	Switch weight (per 1 pc)	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per switch
φ20	0.14	Refer to the weight in the switch specifications.	0.010	0.012	0.007
φ25	0.22		0.014	0.016	0.007
φ32	0.34		0.018	0.020	0.007
φ40	0.56		0.030	0.032	0.007
φ50	1.04		0.044	0.046	0.008
φ63	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 0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
φ20	Push	31.4	47.1	62.8	94.2	1.26×10^2	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
φ25	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
φ32	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
φ40	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
φ50	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
φ63	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

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

Ⓐ Mounting
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Cushion
Ⓔ Stroke length
Ⓕ Switch model No. *2 *3
Ⓖ Switch quantity
Ⓗ Switch mounting
Ⓘ Option *5
Ⓙ Accessory *6

Code	Content
Ⓐ Mounting	
LD	Direct mounting foot

Ⓑ Bore size (mm)

20	φ20
25	φ25
32	φ32
40	φ40
50	φ50
63	φ63

Ⓒ Port thread

Blank	Rc thread
N	NPT thread (custom order product)
G	G thread (custom order product)

Ⓓ Cushion

D	With two-sided rubber cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length *1	Custom stroke length
φ20 to φ63	**10 to 300**	**In 1 mm increments**

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T8H*	**T8V***	Reed	●	●	1-color display	2-wire
T1H*	**T1V***	Proximity	●		1-color display	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display (custom)	3-wire
T2WH*	**T2WV***	Proximity		●	2-color display	2-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3WH*	**T3WV***	Proximity		●	2-color display	3-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	**-**	Proximity		●	2-color display AC magnetic field	2-wire
T2YDT*	**-**	Proximity		●	2-color display AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-wire

*** Lead wire length**

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

Ⓖ Switch quantity

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

Ⓗ Switch mounting

Blank	Rail method
Z	Band method

Ⓘ Option

Q	Switch rail attached at shipment
M	Piston rod material (stainless steel)
P6	Copper and PTFE free (custom order product)

Ⓙ Accessory

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

⚠ Precautions for model No. selection

*1 : Refer to page 324 for the min. stroke length with switch.
*2 : Switches other than Ⓕ Switch model No. are also available. (Custom order)
Refer to Ending Page 1 for details.
*3 : T8H/V switches cannot be mounted when the bore size is from φ20 to φ40 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

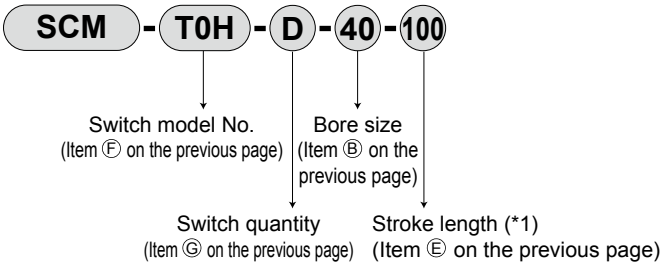
Model: Round shaped cylinder double acting/direct mounting foot

Ⓐ Mounting : Direct mounting foot
Ⓑ Bore size : φ40 mm
Ⓒ Port thread : Rc thread
Ⓓ Cushion : With two-sided rubber cushion
Ⓔ Stroke length : 100 mm
Ⓕ Switch model No. : Reed T0H switch, lead wire 1 m
Ⓖ Switch quantity : 2
Ⓗ Switch mounting : Rail
Ⓘ Option : Piston rod material (stainless steel)
Ⓙ Accessory : Rod eye

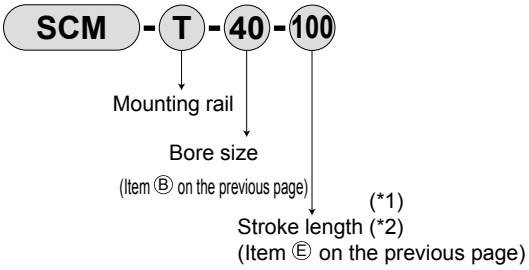
How to order switch

[Switch mounting: Rail]

● Switch body + mounting rail set



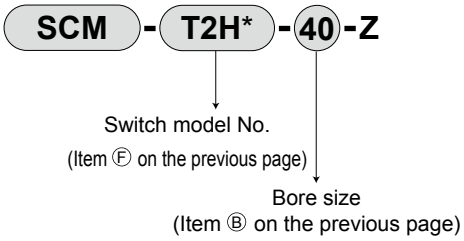
● Mounting rail only



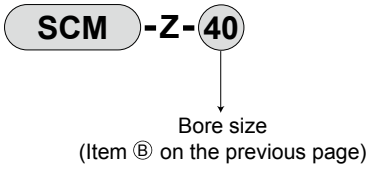
*1: Indicate X if the stroke length exceeds 300 mm.
If exceeding 300 mm, a short rail (with 100 mm switch adjustment length) will be included per switch.
*2: If indicating X when ordering mounting rails only, order the same number of rails as that of applicable switches.

[Switch mounting: Band]

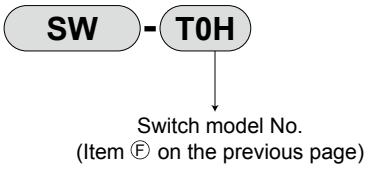
● Switch body + mounting bracket set + band



● Mounting bracket set + band



[Switch body only]



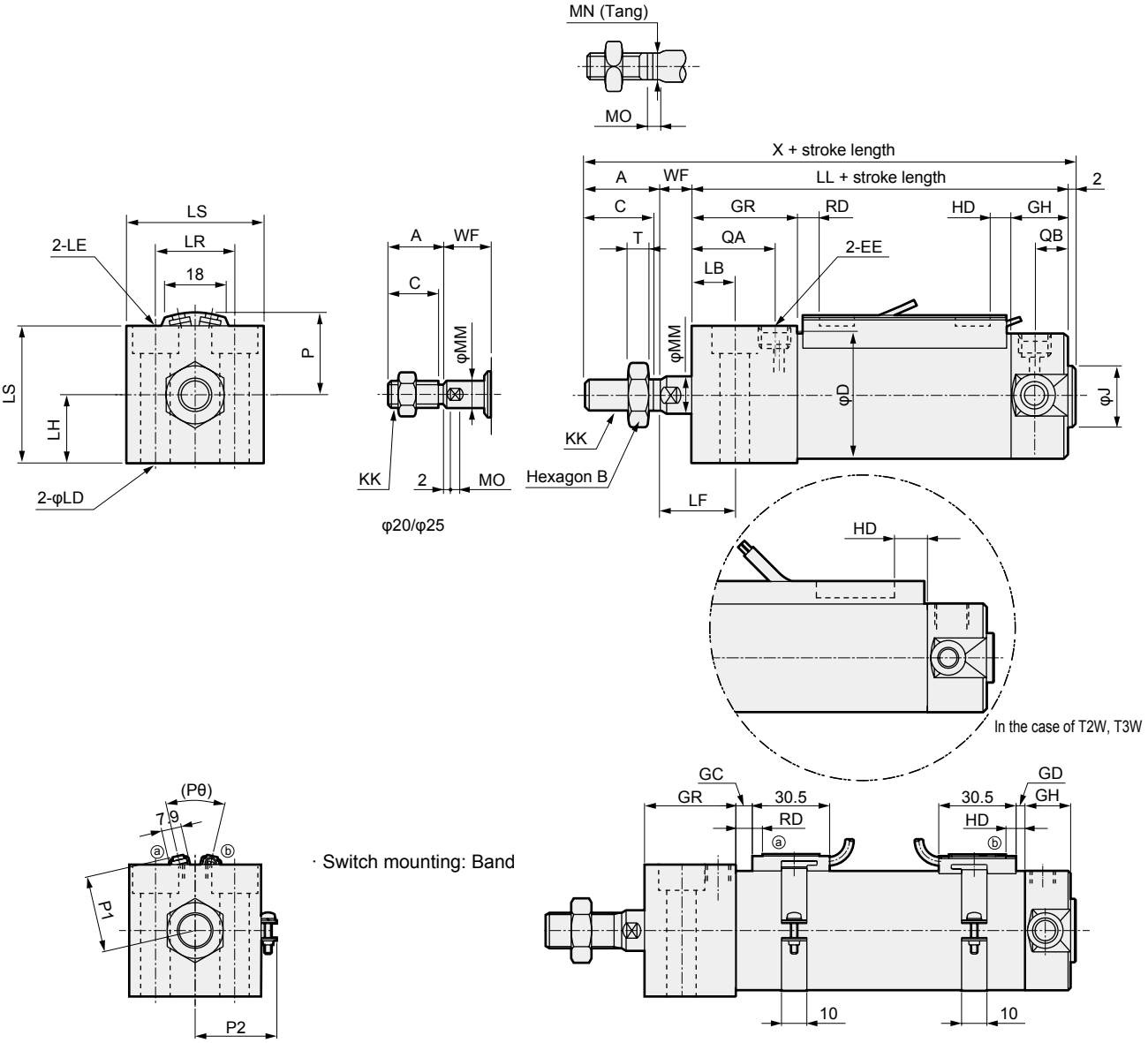
Internal structure

Same as standard. Refer to page 222.

Dimensions CAD

● Double acting/direct foot

· Switch mounting: Rail



· Switch mounting: Band

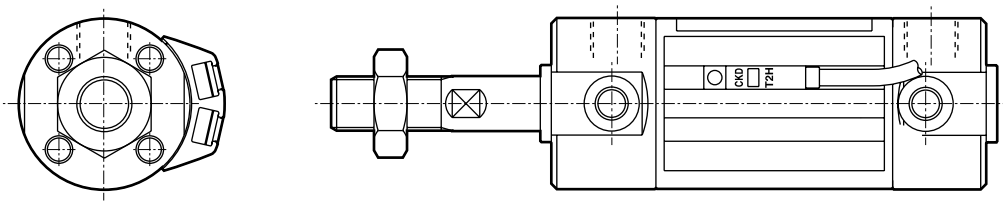
*1:Refer to page 329 for RD, HD and protruding dimensions of the 2-color display, off-delay, AC magnetic field proof, T1H/V and T8H/V switches.

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
φ20	18	13	15.5	26	Rc1/8	17	27	12	M8	77	8	6	4	20	10	5	9	106	11	5.5	9.5 spot face depth 5.4	20	15	18
φ25	22	17	19.5	31	Rc1/8	17	27	14	M10×1.25	77	10	8	5	20	10	6	10	111	12	6.6	11 spot face depth 6.5	22	18	22
φ32	22	17	19.5	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
φ40	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
φ50	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
φ63	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	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				
φ20	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°)
φ25	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°)
φ32	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°)
φ40	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°)
φ50	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°)
φ63	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 238 and 239.

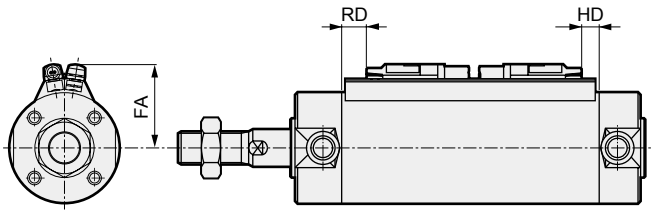
Switch rail installation position (rail installation position for stroke length of 10 mm and over and less than 25 mm with 1 switch)



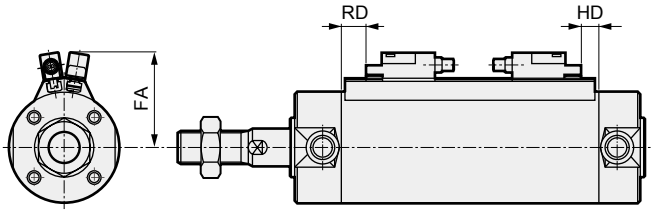
1. The switch rail is mounted at the position inclined by 90˚ from the standard position.
2. Trunnion mounting is not available because the switch rail and the bracket interfere with each other.
3. When combining one cylinder with stroke length of 10 and over and less than 25 and the other one with stroke 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, T1H/v, T8H/v switches mounted, dimensions of protruding section

● SCM-* T2YH/v, T3YH/v, T2JH/v, T8H/v



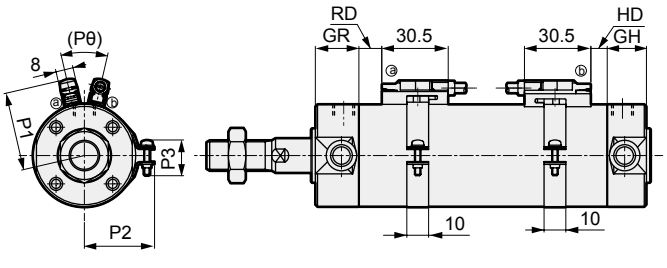
● SCM-* T2YD*, T1H/v



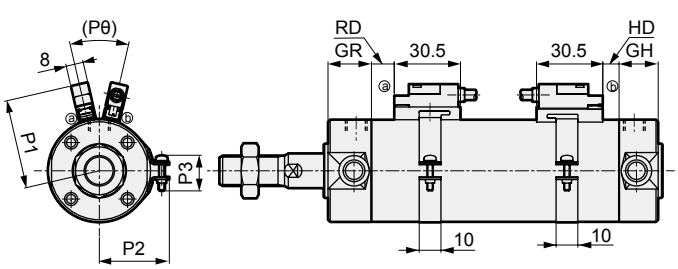
Bore size (mm)	FA				RD		HD	
	T*YH, T8H T2JH	T*YV, T8V T2JV	T2YD*, T1H	T1V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V	T*YH/V, T1H/V, T2JH/V, T2YD*	T8H/V
φ20	24	27	29.5	32.5	6.5	1.5	5.5	0.5
φ25	26.5	29.5	32	35	7.5	2.5	4.5	0
φ32	30	33	35.5	38.5	8.5	3.5	5.5	0.5
φ40	34.5	37.5	40	43	10.5	5.5	7.5	2.5
φ50	40	43	45.5	48.5	12	7	10	5
φ63	47	50	52.5	55.5	12	7	10	5
φ80	55.5	58.5	61	64	19	14	12	7
φ100	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, T1H/v, T8H/v switches, dimensions of protruding section

● SCM-* T2YH/v, T3YH/v, T2YH/v, T8H/v



● SCM-* T2YD*, T1H/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
φ20	25.4	28.4	30.4	33.4	6.5	1.5	5.5	0.5
φ25	27.9	30.9	32.9	35.9	7.5	2.5	4.5	0
φ32	31.4	34.4	36.4	39.4	8.5	3.5	5.5	0.5
φ40	36	39	41	44	10.5	5.5	7.5	2.5
φ50	41.5	44.5	46.5	49.5	12	7	10	5
φ63	48.5	51.5	53.5	56.5	12	7	10	5
φ80	57	60	62	65	19	14	12	7
φ100	67.5	70.5	72.5	75.5	18.5	13.5	12.5	7.5