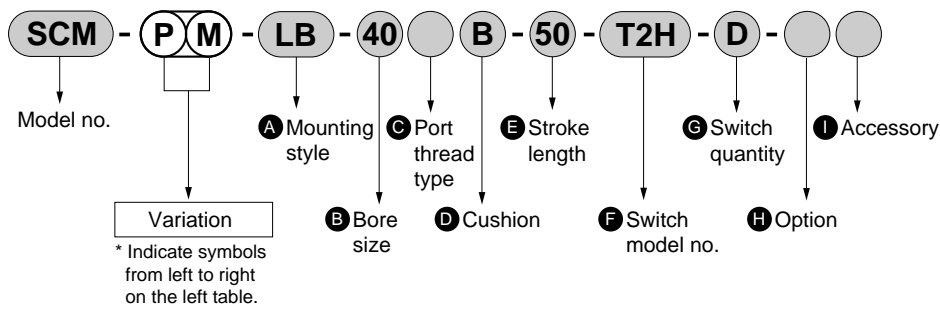






### <Example of model number>



Model no.: Round shaped medium bore size cylinder

● Variation: Adjustable stroke, non-rotating type

- A** Mounting style : Axial foot type
- B** Bore size :  $\phi$  40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides air cushioned
- E** Stroke length : 50 mm
- F** Switch model no. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Option : None
- I** Accessory : None

Note 1: The back to back type has two cylinders. Use the method below to instruct the variation for each cylinder.

When variations are added only to S1, insert the variation symbol before the S1 stroke.

Example: SCM-B-32-025-50: Only S1 is low speed type.

When variations are added only to S2, insert the variation symbol before the S2 stroke.

Example: SCM-B-32-25-050: Only S2 is low speed type.

When the same variations are added to both S1 and S2, insert the variation symbol before the port size.

Example: SCM-B0-32-25-50: Both S1 and S2 are low speed type.

SCP*2
CMK2
CMA2
<b>SCM</b>
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type



# Safety precautions

Always read this section before starting use.

Refer to Intro 71 for general details on the cylinder, and to 78 for details on the cylinder.

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

## Round shaped medium bore size cylinder SCM Series

### Design & Selection

#### 1. Common

##### CAUTION

■ Either a rubber or air cushion type cushion mechanism is assembled in the cylinder. The air cushion absorbs kinetic energy the piston acquires using air compression, and prevents the piston and cover from colliding at stroke end. The cushion is not used to decelerate the piston near stroke end. The table below shows kinetic energy absorbed by the cushion. If kinetic energy exceeds these values or bouncing by air compression is to be avoided, consider using another shock absorber.

Bore size (mm)	Rubber cushion	Air cushion	
	Allowable energy absorption J	Valid cushion length (mm)	Allowable energy absorption J
φ 20	0.1	8.1	0.8
φ 25	0.2	8.1	1.2
φ 32	0.5	8.6	2.5
φ 40	0.9	8.6	3.7
φ 50	1.6	13.4	8.0
φ 63	1.6	13.4	14.4
φ 80	3.3	15.4	25.4
φ 100	5.8	15.4	45.6

Kinetic energy (J) =

$$\frac{1}{2} \times \text{weight (kg)} \times \{\text{speed (m/s)}\}^2$$

(Note) Calculating kinetic energy:

Cylinder average speed is obtained with  $V_a = \frac{L}{T}$ .

$V_a$  : Average speed (m/s)

$L$  : Cylinder stroke (m)

$T$  : Operation time (s)

Cylinder speed just before rush into cushion is obtained with the following simple expression:

$$V_m = \frac{L}{T} \times (1 + 1.5 \times \frac{\omega}{100})$$

$V_m$ : Speed just before rush-into the cushion (m/s)

$\omega$  : Cylinder load factor (%)

Use this  $V_m$  value as speed to calculate kinetic energy.

#### 2. Fine speed type SCM-F

##### CAUTION

■ Use this product without lubrication.

Lubrication may change characteristics.

■ Install a flow control valve close to a cylinder.

If this is installed away from a cylinder, adjustment will be unstable. Use flow control valves such as SC-M3/M5, SC3W, SCD-M3/M5, C3WU Series.

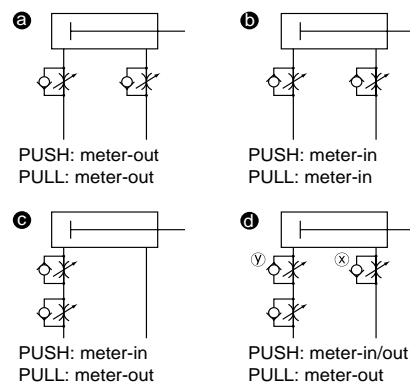
■ In general, higher air pressure and smaller load factor results in more stable operation.

Load factor should be 50% or less.

■ The speed is stable if controlled in a meter-out circuit.

When driving the single rod cylinder at fine speed with the operation direction set to PUSH, popping-out may occur if operation is started when load resistance is small. Install (b), (c), or (d) circuit to prevent this.

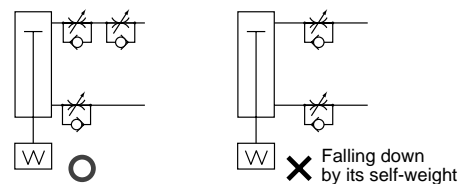
The (d) circuit results in the most stable operation.



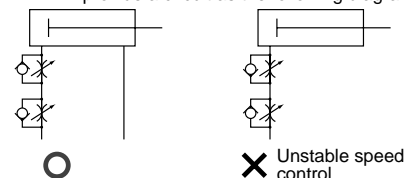
- ④ Speed adjustment method of PUSH operation of circuit:
1. Speed adjustment by flow control valve x.
  2. Lower the flow rate w/ly flow control valve until popping out no longer occurs.
  3. Reconfirm the speed.

(Note 1) As comparing (b), (c) and (d), Circuit (d) is the most stable.

(Note 2) When installed vertically, the unit will drop naturally if the meter-in circuit is used. Use the meter-out circuit in this case.



(Note 3) For serial connection of flow control valve, provide a circuit as the following diagram.



## Design & Selection

### (Cause of popping out phenomenon)

Reduce the flow rate to reach a fine speed at the exhaust side in a meter-out circuit. This results in the same pressure level on the both sides immediately after valve switched. The thrust caused by the differential of pressurized area of piston is applied to the PUSH direction and a popping-out of piston rod occurs. When the piston moves, the exhaust pressure rises, causing the piston to decelerate, after which it reaches the set pressure.

### (Reference of popping out occurrence)

When piston rod area X air pressure > load resistance, this occurs.

#### ■ Do not apply lateral load to the cylinder.

Install sliding guide to avoid twist or biting.

The presence of load or resistance variation may result in unstable operations. Large differential between static friction and dynamic friction of guide results in unstable operation.

#### ■ Avoid use in the place subject to vibration.

The product will be adversely affected by vibration and operation will become unstable.

### 3. Low friction type SCM-U

#### ⚠ WARNING

#### ■ Durability differs based on working conditions and model features.

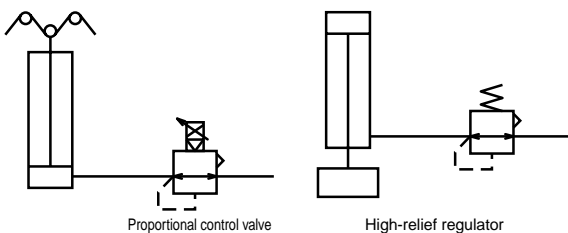
This cylinder is the cylinder which has internal leakage. Refer to the specification on page 290 for the internal leakage volume.

#### ⚠ CAUTION

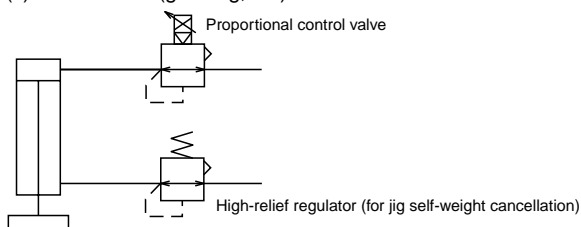
#### ■ Install a flow control valve on the cylinder.

Install a flow control valve on the cylinder. Use within the applicable piston speed range for each cylinder. When a balancer, etc., is used, a flow control valve should not be installed if supply and exhaust efficiency are impaired. Use of circuits (a) to (c) below is recommended based on the application.

(a) Tension control (winder, etc) (b) Balancer (finishing machine Z axis, etc)



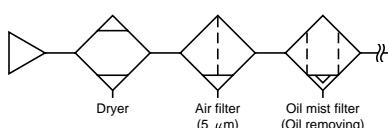
(c) Load control (grinding, etc)



\* Maximize piping volume to improve supply and exhaust.

#### ■ Do not lubricate this product, or features will be adversely affected.

#### ■ Poor air quality worsens features and adversely affects durability. Always use clean air with the following piping.



#### ■ Install a flow control valve close to a cylinder.

If this is installed away from a cylinder, adjustment will be unstable.

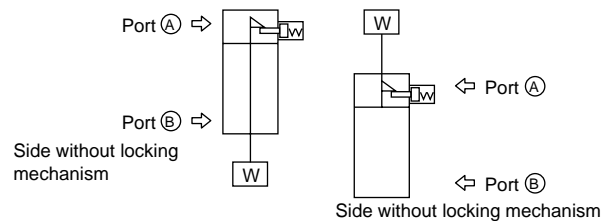
#### ■ In general, higher air pressure and smaller load factor results in more stable operation.

Use by 50 % or less.

### 4. Position locking type SCM-Q

#### ⚠ WARNING

■ If pressure is supplied to port (A) in the locked state with neither port pressurized, locks may not be releasable or may be released suddenly, causing the piston rod to pop out, which is extremely dangerous. When releasing the locking mechanism, supply pressure to port (B) and check that no load is applied to the locking mechanism.



■ If a quick exhaust valve is installed to increase the drop speed, this may result in a failure to unlock because the speed of cylinder piston is faster than the speed of lock pin release. Do not use a quick exhaust valve with the cylinder with position locking.

#### ■ Do not use a 3-position valve.

Do not use this together with 3-position solenoid valve (especially with closed center metal seal type). This kind of use closes the pressure at the locking mechanism side, and is unable to lock the position. Even if locked once, air leakage from the valve may enter the cylinder, then the lock may be released over time.

#### ⚠ CAUTION

#### ■ Cylinder load factor must be 50 % or less.

If the load factor is high, the lock may not be released or the lock section could be damaged.

■ If back pressure is applied to the locking mechanism, the lock may be released. Use the solenoid valve as a discrete unit, or use an independently exhausted manifold.

#### ■ Do not operate cylinders synchronously.

Do not use more than two cylinders with position locking mechanism simultaneously to move 1 pc. of work. One of the cylinder's locks may not be released.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type



Installation & Adjustment

1. Common

**CAUTION**

Switch rails are glued with industrial adhesive tape. If used in an atmosphere containing inorganic or organic solvents or water vapor, rails may peel off.  
 Main inorganic and organic solvent  
 Inorganic solvent: Sodium hydroxide, hydrochloric acid etc.  
 Organic solvent: Toluene, ethanol, hexane, gasoline, kerosene etc.

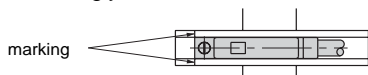
Remove all oil, water and dust from the surface of main unit (tube) before laying adhesive tape for switch rails. (Refer to precautions enclosed with the product before starting.)

Precautions for product with air cushion  
 Piping joints used with  $\phi 20$  and  $\phi 25$  types are limited. Refer to the following table when selecting joints:

Descriptions	Port size	Applicable joints	Inapplicable joints
$\phi 20$	M5	SC3W-M5-4/6	GWL6-M5
		SC3R-M5	
GWS4-M5 GWS4-M5-S			
GWS6-M5 GWS6-M5-S			
GWL4-M5 GWL4-M5-45			
$\phi 25$	GWL4-M5-T GWL6-M5-T		

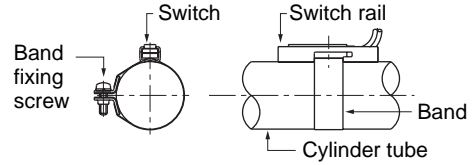
Precautions for switch installation method: band method

- Moving the switch position in the stroke direction  
 The 1-color indicator switch can be finely adjusted  $\pm 3$  mm from the default installation position. If the adjustment range exceeds 3 mm, or when adjusting the 2-color indicator switch, move the band position. Loosen the switch fixing screw, move the switch along the rail, and tighten at the required position. When using the T2, T3, T0, or T5 switch, use a flat-tip screwdriver with 5 to 6 mm grip, 2.4 mm or smaller tip width, and 0.3 mm or thinner (clock screwdriver, precision screwdriver, etc.), and tighten with a tightening torque of 0.1 to 0.2 N-m. When using T\*C, T2J, T2Y, T3Y, T2YF, T3YF, T2YM, or T3YM, tighten with a tightening torque 0.5 to 0.7 N-m. The switch rail has a mark at 4 mm from the rail end. Use this as a guide to the mounting position when replacing the switch.
- Switch rail markings are set to the default switch maximum sensitivity position.
- The maximum sensitivity position will change when the switch type is changed or when the switch bracket is moved. Adjust the position accordingly.



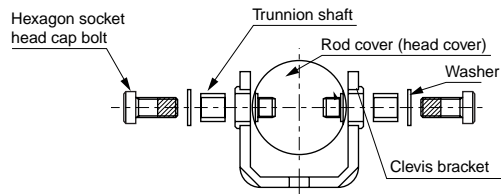
- Shifting the switch position in the circumference direction  
 Loosen the band fixing screw, shift the switch rail in the circumference direction, and tighten at the specified position. Tightening torque is 0.6 to 0.8 N-m.

- Shifting the band position  
 Loosen the band fixing screw, shift the switch rail and band along the cylinder tube, and tighten at the specified position. Tightening torque is 0.6 to 0.8 N-m.



- When using trunion mounting, assemble as shown below and tighten with the following tightening torque.

Bore size	Tightening torque (N-m)
$\phi 20$	6
$\phi 25$	11
$\phi 32$	18
$\phi 40$	27
$\phi 50$	38
$\phi 63$	51



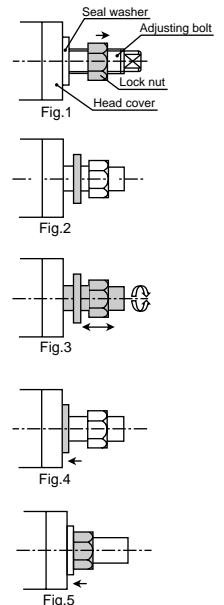
2. Stroke adjustable type SCM-R

**CAUTION**

- Securely lock the bolt for stroke adjustment with the lock nut.
- When adjusting stroke, follow the procedures from (1) to (5). Failure to observe this adjusting method may lead to breakage of washer after one or two adjustment.

[Procedure for stroke adjustment]

- First, loosen the lock nut as shown in Fig. 1.
- Next, manually remove the seal washer from the adaptor as shown in Fig. 2.
- Turn the stopper bolt, lock nut, and seal washer simultaneously as shown in Fig.3 and adjust stroke. Check that the seal washer rubber does not bite into threads.
- After adjusting stroke, manually move the seal washer toward the adaptor as shown in Fig. 4.
- Securely tighten with the lock nut as shown in Fig. 5. Check that the seal washer rubber is not bit into threads.



After adjusting stroke, securely tighten the lock nut. Loose lock nuts could cause external leakage during use.

- The seal washer is used as the stopper bolt seal and cannot be repeatedly adjusted.
- The cushion has no effect when stroke is adjusted.
- Strokes are adjusted for 25 mm and 50 mm.
- When using axial foot mounting style, the axial dimension is the standard type.

### 3. Position locking type SCM-Q

#### ⚠ CAUTION

■ When using the axial foot type (mounting style: LB), fixing the mounting bracket on the frame, etc., while mounted on the cylinder will cause the bolt and stopper cover to interfere and prevent fixing. Fix the position locking mounting bracket on the frame, etc., before mounting the cylinder.

■ The lock functions at the stroke end. If the stopper is applied with an external stopper in the middle of the stroke, the lock may not function and result in dropping. Before setting the load, check that the locking mechanism functions correctly.

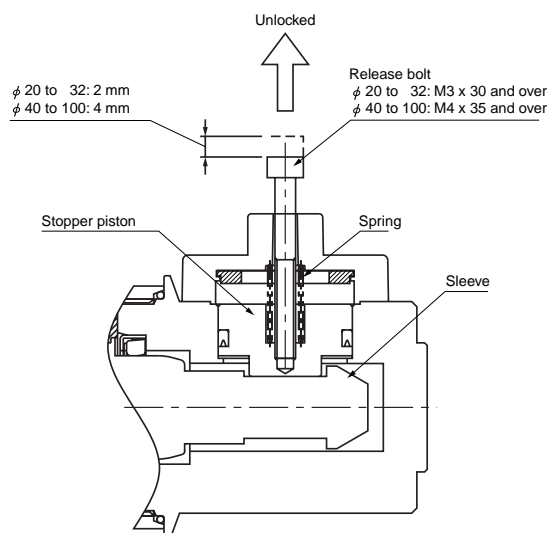
■ Supply a pressure higher than the minimum working pressure to the port having the locking mechanism.

■ If piping on the side with the lock is thin and long, or if the speed controller is separated from the cylinder port, exhaust may slow, taking time for the lock to function. This may also occur if the silencer on the valve's EXH. port is clogged.

#### ■ Manually releasing the lock

The stopper piston moves and the lock is released when a bolt ( $\phi$  20 to 32: M3 x 30,  $\phi$  40 to 100: M4 x 35 or more) is screwed into the stopper piston and the bolt is pulled up (2 mm:  $\phi$  20 to 32 or 4 mm:  $\phi$  40 to 100) with a force of 20 N or more.

When the hand is released, if the stopper piston returns by the internal spring and enters the piston rod groove, the piston is locked.



### 4. Fine speed type SCM-F

#### ⚠ CAUTION

■ Align the cylinder so that no horizontal load is applied.

Adjust so that the cylinder does not twist in relation to the sliding guide.

- Variation of load or resistance may result in unstable operations.
- Large differential between static friction and dynamic friction of guide results in unstable operation.

### 5. Low friction cylinder SCM-U

#### ⚠ CAUTION

■ Do not apply lateral load to the cylinder. Adjust so that the cylinder does not twist in relation to the sliding guide.

- Variation of load or resistance may result in unstable operations.
- Speed could be unstable depending on the self-weight of the piston rod for long stroke. Install and use the guide.
- Large differential between static friction and dynamic friction of guide results in unstable operation.

■ Avoid use in the place subject to vibration.

- The product will be adversely affected by vibration and operation will be unstable.

### 6. Non-rotating type SCM-M

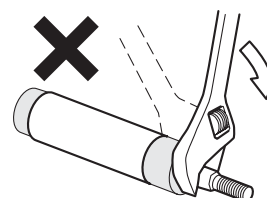
#### ⚠ CAUTION

■ Avoid applications such as a rotation torque is applied to piston rod.

Failure to observe this will cause deforming of rotating prevention bush and lead to remarkably shortening service life.

■ Use this cylinder always in the state that the load is applied to an axial direction of piston rod.

■ When fixing a work piece on the end of piston rod, retract the piston rod until the stroke end, use a spanner putting on the section across flat of piston rod which projects from the cylinder tube. When tightening, do not apply a tightening torque to the cylinder body.



■ For a non-rotating cylinder, rotation torque applied to the piston rod when fixing a workpiece onto the end of the piston rod is shown below.

If rotating torque exceeding this is applied to the piston rod, the piston rod will spin.

Allowable torque	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63
N·m	0.2	0.25	0.25	0.45	0.45	0.45

SCP*2
CMK2
CMA2
<b>SCM</b>
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC

Ending

Round shaped cylinder  
Standard type

## During Use & Maintenance

### 1. Common

#### ⚠ CAUTION

- When disassembling the cylinder, hold the across flats section of the head cover or rod cover with a vise, etc., and use a wrench or an adjustable spanner on the across flats section of the other cover. Loosen and remove the cover. When retightening, retighten from the position set before disassembly.
- Large torque is required to disassemble and assemble  $\phi$  80 and  $\phi$  100 types. Details are given in disassembly/assembly procedures, so contact with CKD sales representative.

### 2. Single acting SCM-X/Y

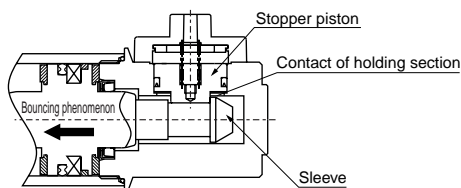
#### ⚠ CAUTION

- Do not leave the single acting cylinder pressurized. If left pressurized state, the piston rod may not return with spring force when pressure is released.

### 3. Position locking type SCM-Q

#### ⚠ WARNING

- For safety purposes, prevent the load from dropping under its own weight during maintenance.
- When using the cylinder with air cushion, if the air cushion needle on the lock mechanism side is tightened too tight, the piston could bounce at the stroke end causing the sleeve and stopper piston to collide and damage the locking mechanism. If the air cushion needle is opened too far, the piston could spring back at the stroke end and cause similar damage. Adjust the needle so the piston does not bounce.



When stopping with an external shock absorber, etc., adjust in the same way to prevent bouncing. Regularly (once/twice a year) check that the holding section is not damaged by this symptom.

#### ⚠ CAUTION

- After operating locking mechanism manually, always return the manual override to the original position. Do not use a manual override except during adjustment, because this may be dangerous.
- Release the lock when installing or adjusting the cylinder. The lock could be damaged if the cylinder is installed while the lock is applied.
- Use the flow control valve with meter-out control. Locks may not be released during meter-in control.
- On the side of locking mechanism, the piston rod must reach the stroke limit. If the cylinder's piston does not reach the stroke end, the lock may not be applied or may not be released.

### 4. Fine speed type SCM-F

#### ⚠ WARNING

- Fluorine-based grease is used. If personnel light cigarettes, etc., with fluorine-based grease on their hands, toxic gases that could cause bodily harm are generated.

### 5. Low friction type SCM-U

#### ⚠ CAUTION

- Do not disassemble this product. The performance may be compromised. This product cannot be purchased as a repair part.

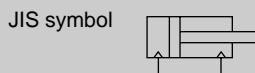
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending



Round shaped cylinder double acting single rod type

# SCM Series

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



## Specifications

Descriptions		SCM							
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure	MPa	1.0							
Min. working pressure	MPa	0.1				0.05			
Withstanding pressure	MPa	1.6							
Ambient temperature	°C	-10 to 60 (no freezing)							
Port size	Rubber cushioned	Rc1/8				Rc1/4		Rc3/8	Rc1/2
	Air cushioned	M5		Rc1/8		Rc1/4		Rc3/8	Rc1/2
Stroke tolerance	Rubber cushioned	+1.4 0 (up to 1000)		+1.4 0 (up to 1500)		+2.3 0 (up to 1000),		+2.7 0 (up to 1500)	
	Air cushioned	+1.4 0 (up to 1000)		+1.4 0 (up to 1500)		+1.4 0 (up to 1000),		+1.8 0 (up to 1500)	
Working piston speed	mm/s	30 to 1000 (Use within the allowable energy absorption.)							
Cushion		Selection of rubber cushion and air cushion possible							
Effective air cushion length	mm	8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)							
Allowable energy absorption	Rubber cushioned	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
	Air cushioned	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	No cushion	-	-	-	-	0.057	0.057	0.112	0.153

Note 1: If "No cushion" is selected for the allowable absorption energy, when the air cushion symbol "R" is selected, the head has no cushion, and the indicated allowable absorption energy is applied. When the air cushion symbol "H" is selected, the rod has no cushion, and the indicated allowable absorption energy is applied.

Note 2: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed, so an external shock absorber should be used.

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

## Switch quantity and min. stroke length (mm)

- Switch installation method: Rail method

Switch quantity	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85
$\phi 83$	10		25		40	50	55		75	85
$\phi 100$	10		25		40	50	55		75	85

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for the installation position.

- Switch installation method: Band method

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

### Switch specifications

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

- 1 color/2 color indicator

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/ T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light) serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V	
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay	
Output method	NPN output							
Light	Red/Green LED (ON lighting)							
	Preventive maintenance output		-		Yellow LED (ON lighting)			
Regular output	Power voltage		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
	Leakage current		10 μA or less		1.2 mA or less		10 μA or less	
Preventive maintenance output	30 VDC or less							
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	
	10 μA or less							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

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

(Eg.) Product weight of SCM-LB-40B-100-T2H-D	<ul style="list-style-type: none"> <li>Product weight when S = 0 mm ..... 0.63 kg</li> <li>Additional weight when S = 100 mm .. 0.032 x <math>\frac{100}{10}</math> = 0.32 kg</li> <li>Weight of 2 switches ..... 0.018 x 2 = 0.036 kg</li> <li>Product weight ..... 0.63 + 0.32 + 0.036 = 0.986 kg</li> </ul>
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### Clean room specifications (Catalog No. CB-033SA)

- Dust generation preventing structure for use in cleanrooms

SCM ..... P7\*

SCM ..... P5\*

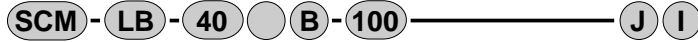
SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC

Ending  
Round shaped cylinder  
Standard type

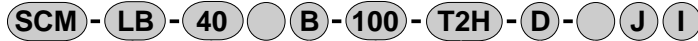
- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

## How to order

Without switch



With switch



**A** Mounting style  
Note 1

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length

**F** Switch model no.  
Note 3

**G** Switch quantity

**H** Switch installation method

**I** Option  
Note 4  
Note 6

**J** Accessory  
Note 7

### Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2: Refer to page 224 for switch quantity and min. stroke length.

Note 3: Switches other than switch model no. "F" are available. (Custom order)  
Refer to Ending 1 for details.

Note 4: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.

Note 5: Refer to Ending 89 about custom specifications of rod end form.

Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

Note 7: "I" and "Y" can not be selected at the same time.

<Example of model number>

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

Model: Round shaped cylinder double acting

- A** Mounting style : Axial foot type
- B** Bore size :  $\phi$  40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides air cushioned
- E** Stroke length : 100 mm
- F** Switch model no. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Switch installation method : Rail method
- I** Option : Bellows material / max. ambient temperature 60 °C
- J** Accessory : Rod eye

Symbol	Descriptions								
<b>A Mounting style</b>									
	Bore size ( $\phi$ )	20	25	32	40	50	63	80	100
<b>00</b>	Basic type	●	●	●	●	●	●	●	●
<b>LB</b>	Axial foot type	●	●	●	●	●	●	●	●
<b>FA</b>	Rod end flange type	●	●	●	●	●	●	●	●
<b>FB</b>	Head end flange type	●	●	●	●	●	●	●	●
<b>CA</b>	Eye bracket type	●	●	●	●	●	●	●	●
<b>CB</b>	Clevis bracket type (pin and snap ring attached)							●	●
<b>TA</b>	Rod end trunnion type	●	●	●	●	●	●	●	●
<b>TB</b>	Head end trunnion type	●	●	●	●	●	●	●	●

<b>B Bore size (mm)</b>	
<b>20</b>	$\phi$ 20
<b>25</b>	$\phi$ 25
<b>32</b>	$\phi$ 32
<b>40</b>	$\phi$ 40
<b>50</b>	$\phi$ 50
<b>63</b>	$\phi$ 63
<b>80</b>	$\phi$ 80
<b>100</b>	$\phi$ 100

<b>C Port thread type</b>	
<b>Blank</b>	Rc thread
<b>N</b>	NPT threads (custom order) air cushioned is $\phi$ 32 or more
<b>G</b>	G thread (custom order) air cushioned is $\phi$ 32 or more.

<b>D Cushion</b>	
<b>B</b>	Both sides air cushioned
<b>R</b>	Rod end air cushioned
<b>H</b>	Head end air cushioned
<b>D</b>	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
$\phi$ 20 to $\phi$ 32	<b>10 to 1000</b>	Per 1 mm
$\phi$ 40 to $\phi$ 100	<b>10 to 1500</b>	

<b>F Switch model no.</b>				
Lead wire straight	Lead wire L type	Contact	Indicator	Lead wire
<b>T0H*</b>	<b>T0V*</b>	Reed	1 color indicator type	2-wire
<b>T5H*</b>	<b>T5V*</b>		without light	
<b>T8H*</b>	<b>T8V*</b>		1 color indicator type	
<b>T1H*</b>	<b>T1V*</b>	Proximity	1 color indicator type	2-wire
<b>T2H*</b>	<b>T2V*</b>		1 color indicator type (custom order)	3-wire
<b>T3H*</b>	<b>T3V*</b>			2 color indicator type
<b>T3PH*</b>	<b>T3PV*</b>		2 color indicator type	3-wire
<b>T2YH*</b>	<b>T2YV*</b>		2 color indicator type (W/o light for preventive maintenance output)	4-wire
<b>T3YH*</b>	<b>T3YV*</b>		2 color indicator type (W/light for preventive maintenance output (1 color))	3-wire
<b>T2YFH*</b>	<b>T2YFV*</b>		2 color indicator type	3-wire
<b>T3YFH*</b>	<b>T3YFV*</b>		2 color indicator type	4-wire
<b>T2YMH*</b>	<b>T2YMV*</b>		2 color indicator type	3-wire
<b>T3YMH*</b>	<b>T3YMV*</b>		2 color indicator type	4-wire
<b>T2YD*</b>	-	Strong magnetic field proof switch	Strong magnetic field proof switch	2-wire
<b>T2YDT*</b>	-		Off-delay type	2-wire
<b>T2JH*</b>	<b>T2JV*</b>		Off-delay type	2-wire

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

<b>G Switch quantity</b>	
<b>R</b>	One on rod end
<b>H</b>	One on head end
<b>D</b>	Two
<b>T</b>	Three
<b>4</b>	4 switches (When more than 4 switches, indicate switch quantity.)

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

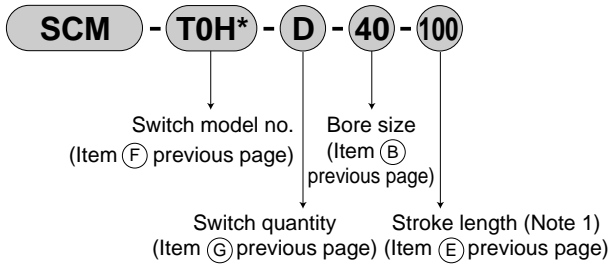
<b>I Option</b>			
		Max. ambient temperature	Max. instantaneous
<b>J</b>	Bellows	60 °C	100 °C
<b>K</b>	Bellows	100 °C	200 °C
<b>L</b>	Bellows	250 °C	400 °C
<b>Q</b>	Switch rail attached at shipment		
<b>M</b>	Piston rod material (stainless steel)		
<b>P6</b>	Copper and PTFE free		

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

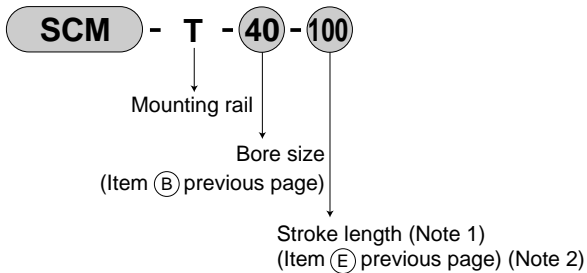
### How to order switch

(switch installation method: rail method)

- Switch body + mounting rail set



- Only mounting rail

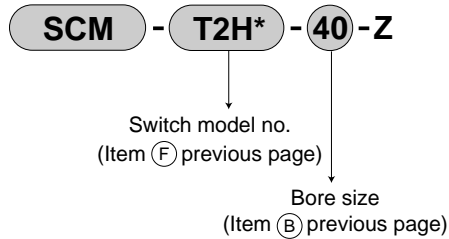


Note 1: Indicate "X", when more than 300 mm stroke. A short rail (100 mm switch adjustment distance) is provided per switch.

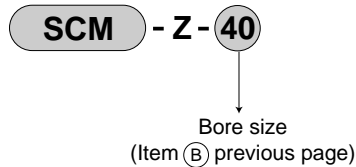
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

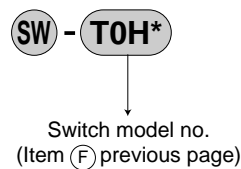
- Switch body + mounting rail + band



- Mounting rail + band



(only switch body)



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

### How to order mounting bracket

Bore size (mm)	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket								
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Eye (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis (CB)	-	-	-	-	-	-	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

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

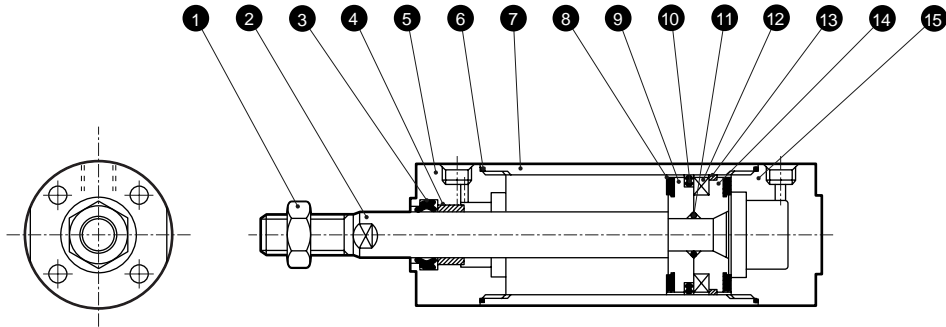
Note 2: 2 piece/set is applied for a foot type mounting bracket.

Round shaped cylinder  
Standard type

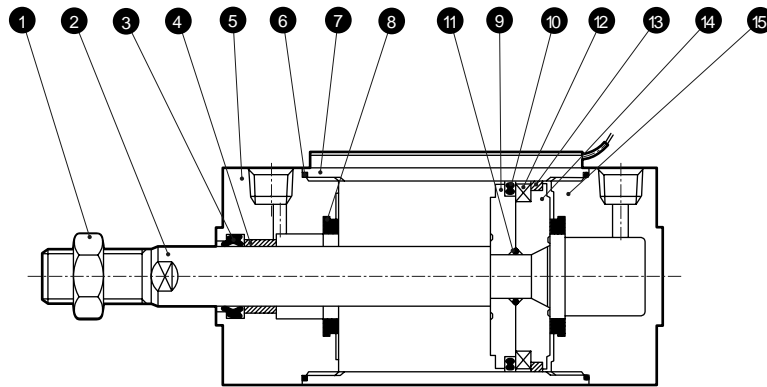
## Internal structure and parts list (rubber cushioned)

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

●  $\phi$  20 to  $\phi$  40



●  $\phi$  50 to  $\phi$  100



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	9	Piston R	$\phi$ 20 to $\phi$ 40: aluminum alloy $\phi$ 50 to $\phi$ 100: aluminum alloy die-casting	
2	Piston rod	$\phi$ 20, $\phi$ 25: stainless steel $\phi$ 32 to $\phi$ 100: steel	Industrial chrome plating	10	Piston packing seal	Nitrile rubber	
3	Rod packing seal	Nitrile rubber		11	Piston gasket	Nitrile rubber	
4	Bush	Oil impregnated bearing alloy <sup>Note 1</sup>		12	Magnet	Plastic	
5	Rod cover	Aluminum alloy <sup>Note 2</sup>	Paint	13	Wear ring	Polyacetal resin	
6	Cylinder gasket	Nitrile rubber		14	Piston H	$\phi$ 20 to $\phi$ 40: aluminum alloy $\phi$ 50 to $\phi$ 100: aluminum alloy die-casting	
7	Cylinder tube	Aluminum alloy	Hard alumite	15	Head cover	Aluminum alloy <sup>Note 2</sup>	Paint
8	Cushion rubber	Urethane rubber					

Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free.

Note 2:  $\phi$ 50 and  $\phi$ 63 are made of aluminum alloy die-casting.

### Repair parts list

With rubber cushion

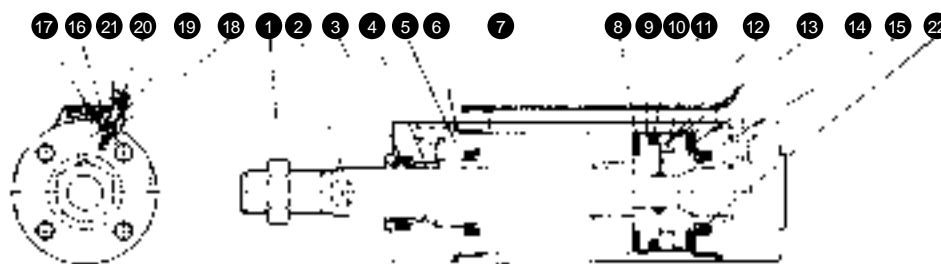
Bore size (mm)	Kit No.	Repair parts number
$\phi$ 20	SCM-20DK	
$\phi$ 25	SCM-25DK	
$\phi$ 32	SCM-32DK	
$\phi$ 40	SCM-40DK	3 6 8 10 13
$\phi$ 50	SCM-50DK	
$\phi$ 63	SCM-63DK	
$\phi$ 80	SCM-80DK	
$\phi$ 100	SCM-100DK	

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

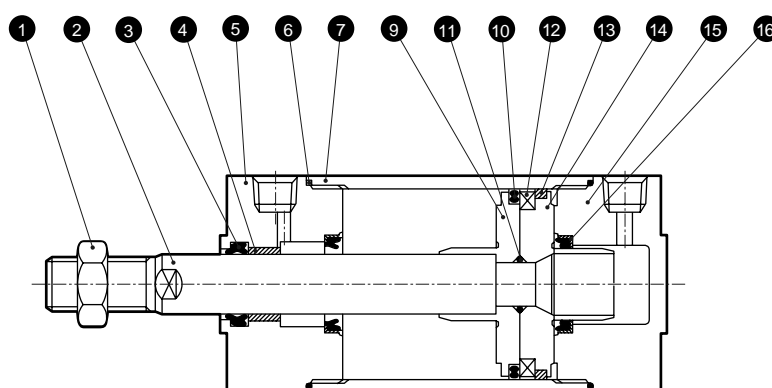


### Internal structure and parts list (air cushioned)

●  $\phi$  20 to  $\phi$  40



●  $\phi$  50 to  $\phi$  100



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	12	Magnet	Plastic	
2	Piston rod	$\phi$ 20, $\phi$ 25: stainless steel $\phi$ 32 to $\phi$ 100: steel	Industrial chrome plating	13	Wear ring	Polyacetal resin	
3	Rod packing seal	Nitrile rubber		14	Piston H	$\phi$ 20 to $\phi$ 40: aluminum alloy $\phi$ 50 to $\phi$ 100: aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy <sup>Note 1</sup>		15	Head cover	Aluminum alloy <sup>Note 2</sup>	Paint
5	Rod cover	Aluminum alloy <sup>Note 2</sup>	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	$\phi$ 20 to $\phi$ 40: aluminum alloy $\phi$ 50 to $\phi$ 100: aluminum alloy die-casting		20	Needle	Stainless steel	
10	Piston packing seal	Nitrile rubber		21	Dial	Aluminum alloy	
11	Piston gasket	Nitrile rubber		22	Cushion packing seal	Nitrile rubber and steel	

Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free.

Note 2:  $\phi$  50 and  $\phi$  63 are made of aluminum alloy die-casting.

### Repair parts list

With air cushion

Bore size (mm)	Kit No.	Repair parts number
$\phi$ 20	SCM-20BK	
$\phi$ 25	SCM-25BK	
$\phi$ 32	SCM-32BK	
$\phi$ 40	SCM-40BK	
$\phi$ 50	SCM-50BK	● 3 ● 6 ● 8 ● 10 ● 13 ● 17 ● 22
$\phi$ 63	SCM-63BK	
$\phi$ 80	SCM-80BK	
$\phi$ 100	SCM-100BK	

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

Note 2: "8" is not available for  $\phi$  50 to  $\phi$  100.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

Ending

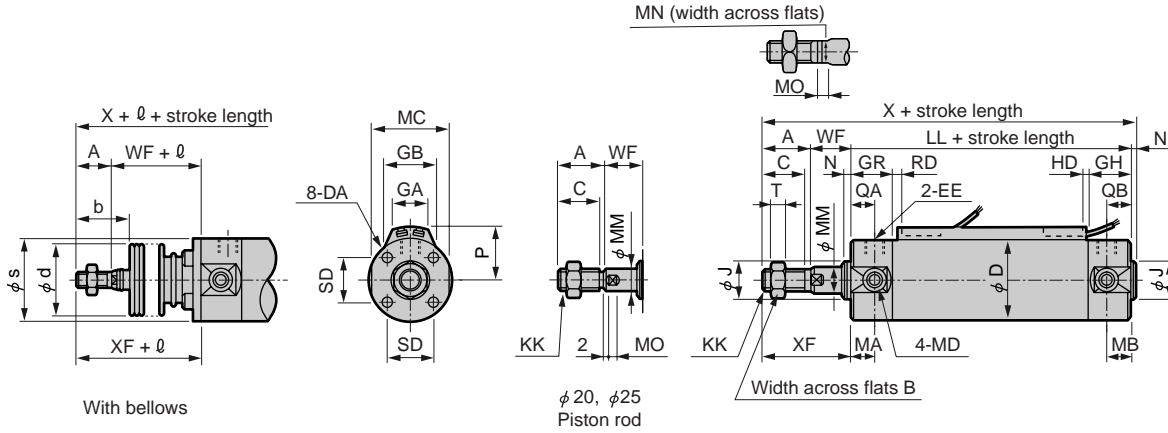
Round shaped cylinder  
Standard type



## Dimensions

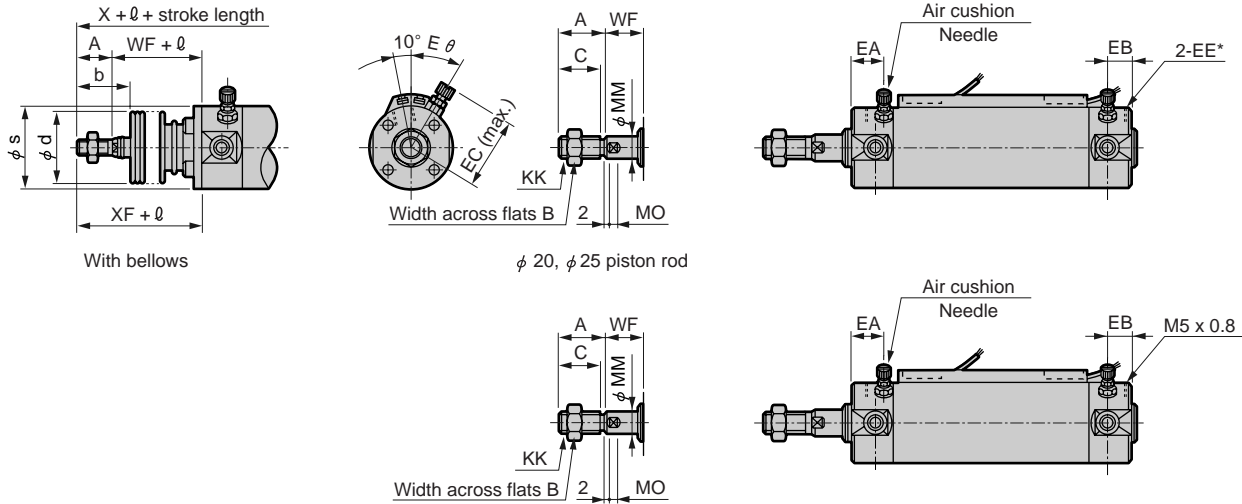
● Basic type (00)  $\phi 20$  to  $\phi 100$   
 <Rubber cushioned>

· Switch installation method: rail method



<Air cushioned>

(Note): For 20, 25 mm bore cylinder, piping method (EE) are different. · Switch installation method: rail method  
 Refer to air cushioned dimensions table (EE\*).



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions																					
	A	B	C	D	DA	EE (note)	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	MO	N	QA	QB	
SM-25	$\phi 20$	18	13	15.5	26	M4 depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	8	6	4	2	12	10
CAC3	$\phi 25$	22	17	19.5	31	M5 depth 6.5	Rc1/8	17	19	14	M10 x 1.25	69	11	11	29	M6	10	8	5	2	12	10
UCAC	$\phi 32$	22	17	19.5	38	M5 depth 7.5	Rc1/8	17	19	18	M10 x 1.25	71	11	10	36	M8	12	10	5.5	2	12	10
RCC2	$\phi 40$	30	22	27	47	M6 depth 12	Rc1/8	19	20	25	M14 x 1.5	78	12	10	44	M10	16	14	6	2	13	12
MFC	$\phi 50$	35	27	32	58	M8 depth 16	Rc1/4	22	25	30	M18 x 1.5	90	13	12	55	M12	20	17	8	2	15	12
SHC	$\phi 63$	35	27	32	72	M10 depth 16	Rc1/4	22	25	32	M18 x 1.5	90	13	12	69	M14	20	17	8	2	15	12
GLC	$\phi 80$	40	32	37	89	M10 depth 22	Rc3/8	28	28	40	M22 x 1.5	108	-	-	80	-	25	22	11	3	15	15
Ending	$\phi 100$	40	41	37	110	M12 depth 22	Rc1/2	28	28	50	M26 x 1.5	108	-	-	100	-	30	27	13	3	15	15

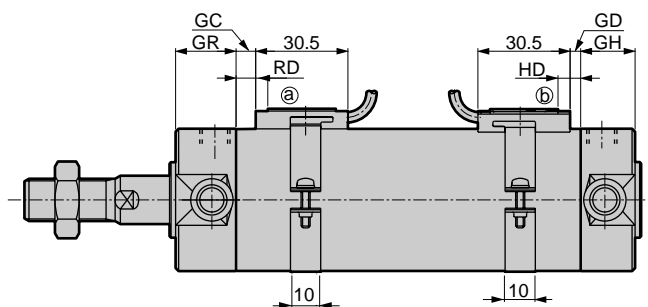
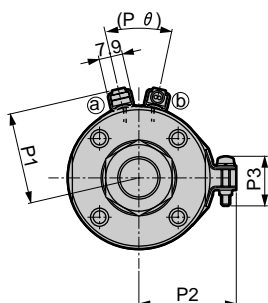
Symbol	With bellows										Air cushioned					Switch installation method: rail method						
	SD	T	WF	X	XF	b	d	s	$l$		EA	EB	EC	EE*	E $\theta$	P	GA	GB	HD		RD	
									(stroke length/3) + 18.5										T0, T5	T2, T3	T0, T5	T2, T3
$\phi 20$	14	5	17	106	35	30	30	25.7	(stroke length/3) + 18.5		14	12	27	M5	30°	19.5	18	23	4.0	7.0	7.0	7.5
$\phi 25$	16.5	6	18	111	40	35	30	30.7	(stroke length/3) + 20.5		14	12	29.5	M5	30°	22	18	24.4	3.0	6.0	8.0	8.5
$\phi 32$	20	6	18	113	40	31.5	35	37.7	(stroke length/3) + 19		14	12	32.8	Rc1/8	25°	25.5	18	25	4.0	7.0	9.0	9.5
$\phi 40$	26	8	20	130	50	40	35	46.7	(stroke length/3) + 18.5		15	13	36.6	Rc1/8	20°	30	18	25.7	6.0	9.0	11.0	11.5
$\phi 50$	32	11	23	150	58	46	40	57.7	(stroke length/3.6) + 18.5		18.5	15.5	43	Rc1/4	20°	35.5	18	26.2	8.0	11.5	12.0	13.0
$\phi 63$	38	11	23	150	58	46	40	71.7	(stroke length/3.6) + 18.5		18.5	15.5	50	Rc1/4	20°	42.5	18	26.5	8.0	11.5	12.0	13.0
$\phi 80$	50	13	31	182	71	55	50	88.7	(stroke length/4.3) + 14.5		20	20	58.5	Rc3/8	20°	51	18	26.7	10.5	13.0	19.0	20.0
$\phi 100$	60	16	31	182	71	56	60	109.7	(stroke length/4.5) + 21		20	20	69	Rc1/2	20°	61.5	18	26.7	11.0	13.5	18.5	19.5

### Dimensions



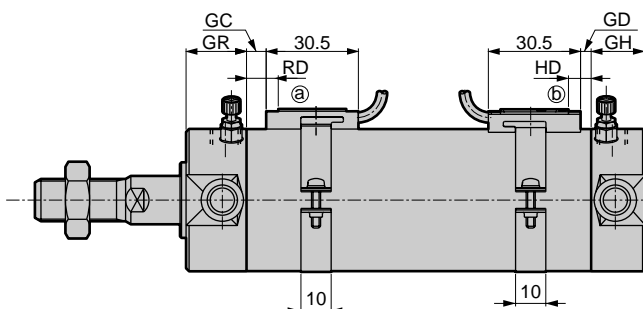
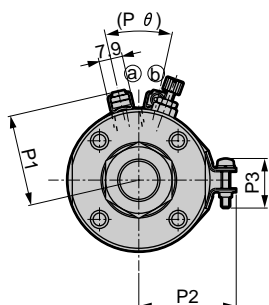
● Basic type (00)  $\phi$  20 to  $\phi$  100  
<Rubber cushioned>

· Switch installation method: band method



<Air cushioned>

· Switch installation method: band method



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Switch installation method: band method								
	GD	GC	GH	GR	HD	RD	P1	P2	P $\theta$
	T0, T2, T3, T5				T0, T2, T3, T5				
$\phi$ 20	3.5	2.5	17	19	7.5	6.5	19.6	21.5	(38°)
$\phi$ 25	4.5	1.5	17	19	8.5	5.5	22.1	23.9	(34°)
$\phi$ 32	5.5	2.5	17	19	9.5	6.5	25.6	27.6	(30°)
$\phi$ 40	7.5	4.5	19	20	11.5	8.5	30.2	32.1	(26°)
$\phi$ 50	9.0	7.0	22	25	13.0	11.0	35.7	37.4	(22°)
$\phi$ 63	9.0	7.0	22	25	13.0	11.0	42.7	44.4	(20°)
$\phi$ 80	16.0	9.0	28	28	20.0	13.0	51.2	53.0	(16°)
$\phi$ 100	15.5	9.5	28	28	19.5	13.5	61.7	63.5	(16°)

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

Ending

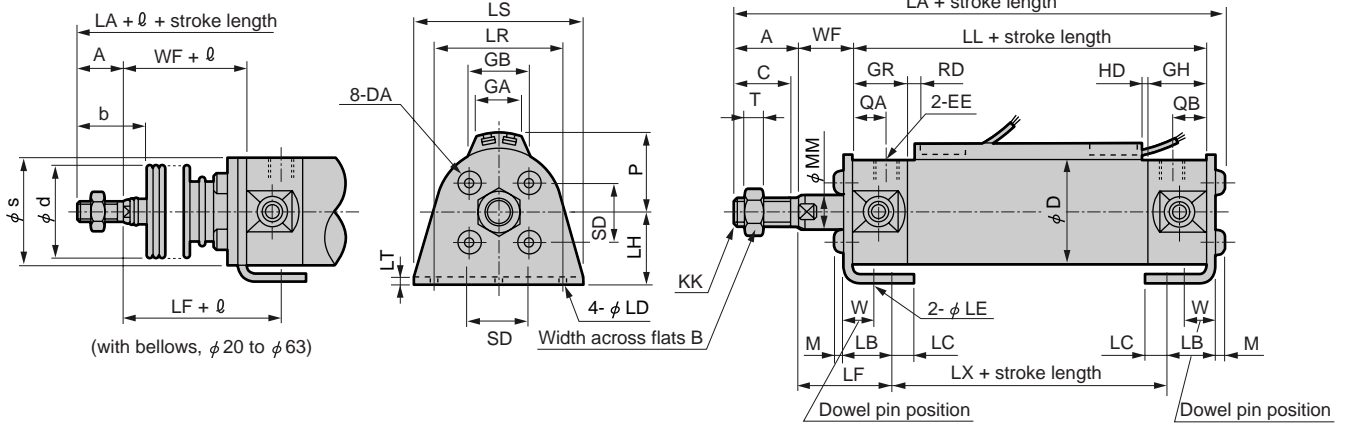
Round shaped cylinder  
Standard type

## Dimensions

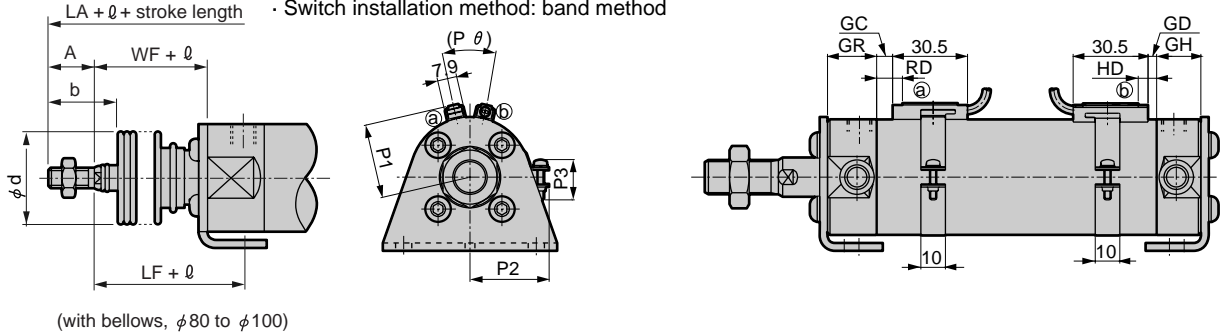


### ● Axial foot type (LB)

· Switch installation method: rail method



· Switch installation method: band method



(with bellows,  $\phi 80$  to  $\phi 100$ )

Symbol	Axial foot type (LB) basic dimensions																					
	A	B	C	D	DA	EE (Note 1)	GH	GR	KK	LA	LB	LC	LD	LE	LF	LH	LL	LR	LS	LT	LX	M
$\phi 20$	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
$\phi 25$	22	17	19.5	31	M5	Rc1/8	17	19	M10 x 1.25	115.6	15.1	7.1	5.7	4	29.9	22	69	36	49	3.2	45.2	3.4
$\phi 32$	22	17	19.5	38	M5	Rc1/8	17	19	M10 x 1.25	117.6	16.1	8.1	6.8	4	30.9	25	71	44	58	3.2	45.2	3.4
$\phi 40$	30	22	27	47	M6	Rc1/8	19	20	M14 x 1.5	135.2	16.6	9.1	6.8	4	33.4	30	78	54	71	3.2	51.2	4
$\phi 50$	35	27	32	58	M8	Rc1/4	22	25	M18 x 1.5	157.5	22	11	9	5	40.5	40	90	66	86	4.5	55	5
$\phi 63$	35	27	32	72	M10	Rc1/4	22	25	M18 x 1.5	157.5	22	13	11	5	40.5	45	90	82	106	4.5	55	5
$\phi 80$	40	32	37	89	M10	Rc3/8	28	28	M22 x 1.5	189.5	28.5	14	11	6	55	55	108	100	125	4.5	60	6
$\phi 100$	40	41	37	110	M12	Rc1/2	28	28	M26 x 1.5	192	30	16	14	6	55	65	108	120	150	6	60	7

Symbol	With bellows										Switch installation method: rail method						Switch installation method: band method				
	MM	QA	QB	SD	T	W	WF	b	d	s	$l$	P	GA	GB	HD		RD		GD		GC
Bore size (mm)															T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5		
$\phi 20$	8	12	10	14	5	10	17	30	30	25.7	Stroke length/3 + 18.5	19.5	18	23	4.0	7.0	7.0	7.5	3.5		2.5
$\phi 25$	10	12	10	16.5	6	10	18	35	30	30.7	(stroke length/3) + 20.5	22	18	24.4	3.0	6.0	8.0	8.5	4.5		1.5
$\phi 32$	12	12	10	20	6	10	18	31.5	35	37.7	(stroke length/3) + 19	25.5	18	25	4.0	7.0	9.0	9.5	5.5		2.5
$\phi 40$	16	13	12	26	8	10	20	40	35	46.7	(stroke length/3) + 18.5	30	18	25.7	6.0	9.0	11.0	11.5	7.5		4.5
$\phi 50$	20	15	12	32	11	17.5	23	46	40	57.7	(stroke length/3.6) + 18.5	35.5	18	26.2	8.0	11.5	12.0	13.0	9.0		7.0
$\phi 63$	20	15	12	38	11	17.5	23	46	40	71.7	(stroke length/3.6) + 18.5	42.5	18	26.5	8.0	11.5	12.0	13.0	9.0		7.0
$\phi 80$	25	15	15	50	13	20	31	55	50	-	(stroke length/4.3) + 14.5	51	18	26.7	10.5	13.0	19.0	20.0	16.0		9.0
$\phi 100$	30	15	15	60	16	20	31	56	60	-	(stroke length/4.5) + 21	61.5	18	26.7	11.0	13.5	18.5	19.5	15.5		9.5

Symbol	With bellows				
	HD	RD	P1	P2	$P\theta$
Bore size (mm)	T0, T2, T3, T5				
$\phi 20$	7.5	6.5	19.6	21.5	(38°)
$\phi 25$	8.5	5.5	22.1	23.9	(34°)
$\phi 32$	9.5	6.5	25.6	27.6	(30°)
$\phi 40$	11.5	8.5	30.2	32.1	(26°)
$\phi 50$	13.0	11.0	35.7	37.4	(22°)
$\phi 63$	13.0	11.0	42.7	44.4	(20°)
$\phi 80$	20.0	13.0	51.2	53.0	(16°)
$\phi 100$	19.5	13.5	61.7	63.5	(16°)

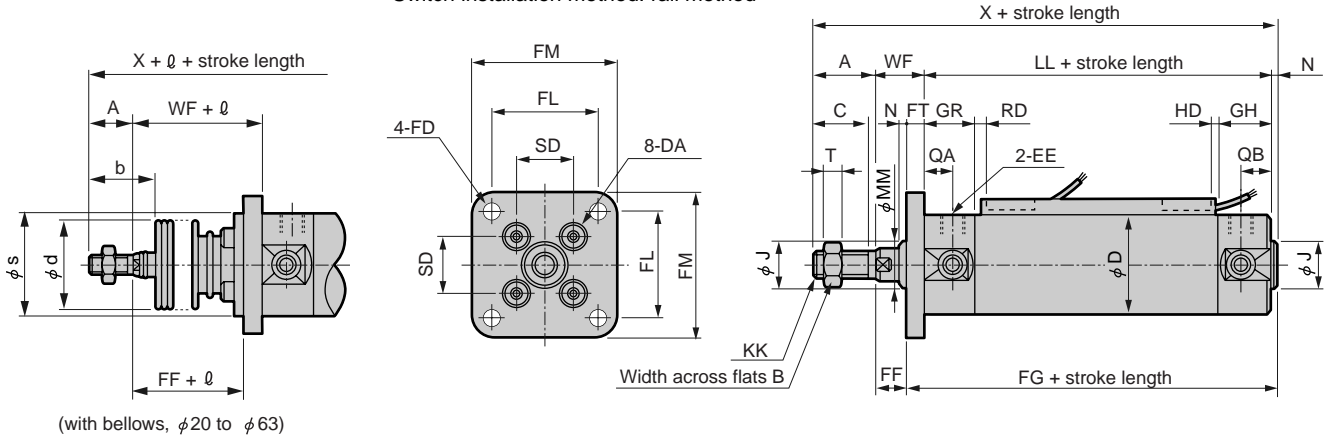
Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)  
 Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 3: Refer to page 334 and 335 for accessory dimensions.

### Dimensions



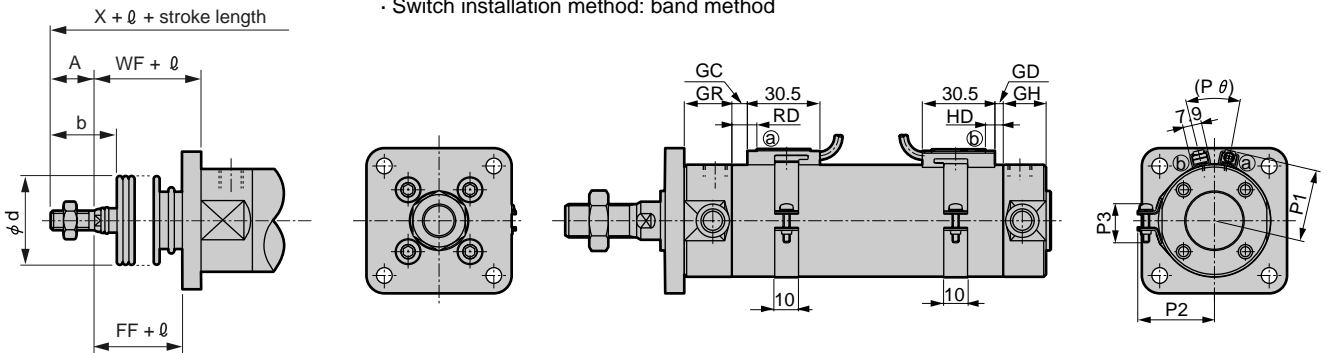
#### ● Rod end flange type (FA)

· Switch installation method: rail method



(with bellows, φ20 to φ63)

· Switch installation method: band method



(with bellows, φ80 to φ100)

Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Rod end flange type (FA) basic dimensions																							
Bore size (mm)	A	B	C	D	DA	EE (Note 1)	FD	FF	FG	FL	FM	FT	GH	GR	J	KK	LL	MM	N	QA	QB	SD	T	WF
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
φ 25	22	17	19.5	31	M5	Rc1/8	5.5	11	78	32	44	7	17	19	14	M10 x 1.25	69	10	2	12	10	16.5	6	18
φ 32	22	17	19.5	38	M5	Rc1/8	6.6	11	80	38	53	7	17	19	18	M10 x 1.25	71	12	2	12	10	20	6	18
φ 40	30	22	27	47	M6	Rc1/8	6.6	12	88	46	61	8	19	20	25	M14 x 1.5	78	16	2	13	12	26	8	20
φ 50	35	27	32	58	M8	Rc1/4	9	14	101	58	76	9	22	25	30	M18 x 1.5	90	20	2	15	12	32	11	23
φ 63	35	27	32	72	M10	Rc1/4	11	14	101	70	92	9	22	25	32	M18 x 1.5	90	20	2	15	12	38	11	23
φ 80	40	32	37	89	M10	Rc3/8	11	20	122	82	104	11	28	28	40	M22 x 1.5	108	25	3	15	15	50	13	31
φ 100	40	41	37	110	M12	Rc1/2	13	17	125	100	128	14	28	28	50	M26 x 1.5	108	30	3	15	15	60	16	31

Symbol	With bellows					Switch installation : rail method								Switch installation method: band method						
	X	b	d	s	ℓ	HD		RD		GD		GC		HD		RD		P1	P2	Pθ
						T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5							
φ 20	106	30	30	25.7	(stroke length/3) + 18.5	4.0	7.0	7.0	7.5	3.5	2.5	7.5	6.5	19.6	21.5	(38°)				
φ 25	111	35	30	30.7	(stroke length/3) + 20.5	3.0	6.0	8.0	8.5	4.5	1.5	8.5	5.5	22.1	23.9	(34°)				
φ 32	113	31.5	35	37.7	(stroke length/3) + 19	4.0	7.0	9.0	9.5	5.5	2.5	9.5	6.5	25.6	27.6	(30°)				
φ 40	130	40	35	46.7	(stroke length/3) + 18.5	6.0	9.0	11.0	11.5	7.5	4.5	11.5	8.5	30.2	32.1	(26°)				
φ 50	150	46	40	57.7	(stroke length/3.6) + 18.5	8.0	11.5	12.0	13.0	9.0	7.0	13.0	11.0	35.7	37.4	(22°)				
φ 63	150	46	40	71.7	(stroke length/3.6) + 18.5	8.0	11.5	12.0	13.0	9.0	7.0	13.0	11.0	42.7	44.4	(20°)				
φ 80	182	55	50	-	(stroke length/4.3) + 14.5	10.5	13.0	19.0	20.0	16.0	9.0	20.0	13.0	51.2	53.0	(16°)				
φ 100	182	56	60	-	(stroke length/4.5) + 21	11.0	13.5	18.5	19.5	15.5	9.5	19.5	13.5	61.7	63.5	(16°)				

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

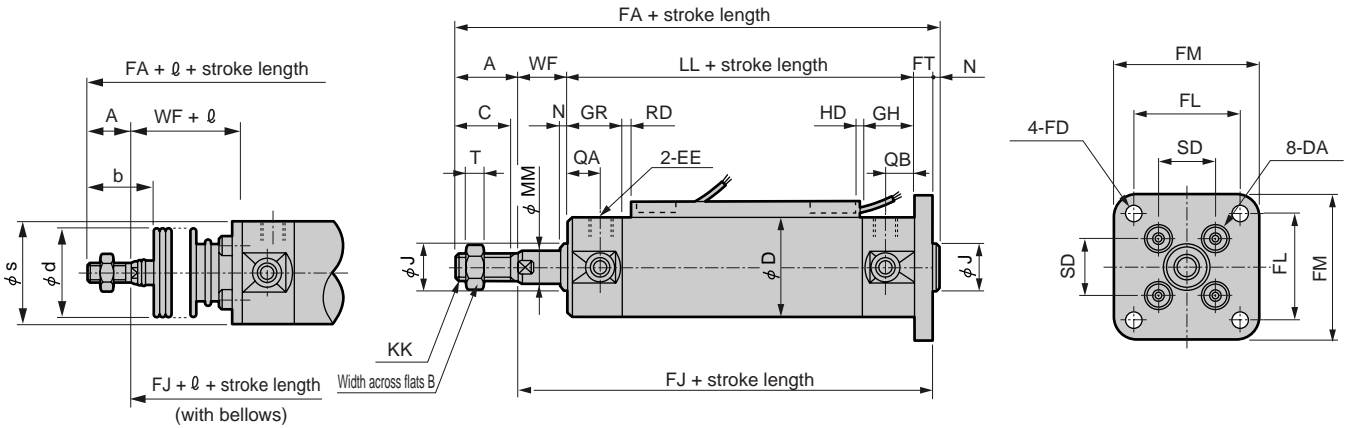


## Dimensions

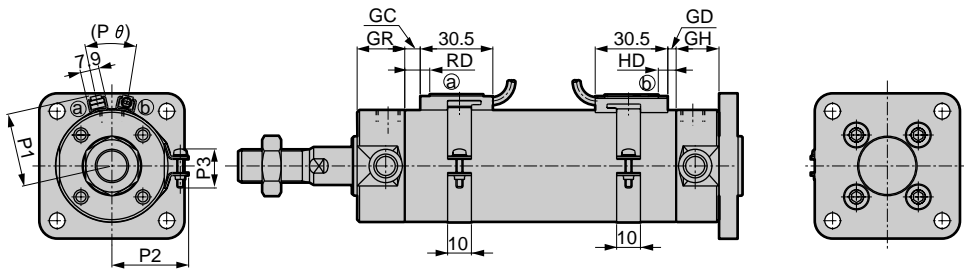


### ● Head end flange type (FB)

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type.

Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Refer to page 334 and 335 for accessory dimensions.

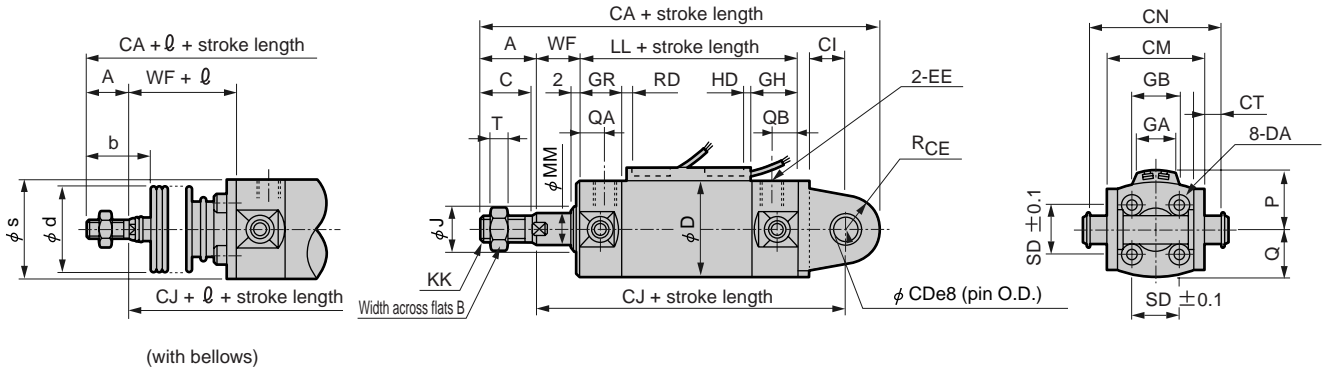
Symbol	Rod end flange type (FB) basic dimensions																							
	A	B	C	D	DA	EE (Note 1)	FA	FD	FJ	FL	FM	FT	GH	GR	J	KK	LL	MM	N	QA	QB	SD	T	WF
SCP*2	18	13	15.5	26	M4	Rc1/8	112	5.5	92	28	40	6	17	19	12	M8	69	8	2	12	10	14	5	17
CMK2	22	17	19.5	31	M5	Rc1/8	118	5.5	94	32	44	7	17	19	14	M10 x 1.25	69	10	2	12	10	16.5	6	18
CMA2	22	17	19.5	38	M5	Rc1/8	120	6.6	96	38	53	7	17	19	18	M10 x 1.25	71	12	2	12	10	20	6	18
SCM	30	22	27	47	M6	Rc1/8	138	6.6	106	46	61	8	19	20	25	M14 x 1.5	78	16	2	13	12	26	8	20
SCG	35	27	32	58	M8	Rc1/4	159	9	122	58	76	9	22	25	30	M18 x 1.5	90	20	2	15	12	32	11	23
SCA2	35	27	32	72	M10	Rc1/4	159	11	122	70	92	9	22	25	32	M18 x 1.5	90	20	2	15	12	38	11	23
SCS	40	32	37	89	M10	Rc3/8	193	11	150	82	104	11	28	28	40	M22 x 1.5	108	25	3	15	15	50	13	31
CKV2	40	41	37	110	M12	Rc1/2	196	13	153	100	128	14	28	28	50	M26 x 1.5	108	30	3	15	15	60	16	31
Symbol	With bellows				Switch installation: rail method								Switch installation method: band method											
	Bore size (mm)	b	d	s	l	HD		RD		GD	GC	HD	RD	P1	P2	Pθ								
						T0, T5	T2, T3	T0, T5	T2, T3								T0, T2, T3, T5	T0, T2, T3, T5						
φ 20	30	30	25.7	(stroke length/3) + 18.5	4.0	7.0	7.0	7.5	3.5	2.5	7.5	6.5	19.6	21.5	(38°)									
φ 25	35	30	30.7	(stroke length/3) + 20.5	3.0	6.0	8.0	8.5	4.5	1.5	8.5	5.5	22.1	23.9	(34°)									
φ 32	31.5	35	37.7	(stroke length/3) + 19	4.0	7.0	9.0	9.5	5.5	2.5	9.5	6.5	25.6	27.6	(30°)									
φ 40	40	35	46.7	(stroke length/3) + 18.5	6.0	9.0	11.0	11.5	7.5	4.5	11.5	8.5	30.2	32.1	(26°)									
φ 50	46	40	57.7	(stroke length/3.6) + 18.5	8.0	11.5	12.0	13.0	9.0	7.0	13.0	11.0	35.7	37.4	(22°)									
φ 63	46	40	71.7	(stroke length/3.6) + 18.5	8.0	11.5	12.0	13.0	9.0	7.0	13.0	11.0	42.7	44.4	(20°)									
φ 80	55	50	88.7	(stroke length/4.3) + 14.5	10.5	13.0	19.0	20.0	16.0	9.0	20.0	13.0	51.2	53.0	(16°)									
φ 100	56	60	109.7	(stroke length/4.5) + 21	11.0	13.5	18.5	19.5	15.5	9.5	19.5	13.5	61.7	63.5	(16°)									



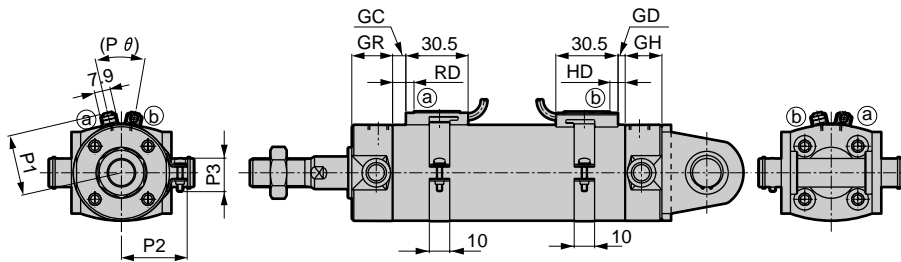
## Dimensions (φ 20 to φ 63)

● Eye bracket type (CA)

· Switch installation method: rail method



· Switch installation method: band method



Symbol	Eye bracket type (CA) basic dimensions																			
Bore size (mm)	A	B	C	CA	CD	CE	CT	CI	CJ	CM	CN	D	DA	EE (Note 1)	GH	GR	J	KK	LL	MM
φ 20	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
φ 25	22	17	19.5	138	10	13	3.2	12.8	103	33	42.6	31	M5	Rc1/8	17	19	14	M10 x 1.25	69	10
φ 32	22	17	19.5	145.5	12	15	4.5	15.5	108.5	40	54	38	M5	Rc1/8	17	19	18	M10 x 1.25	71	12
φ 40	30	22	27	167.5	14	18	4.5	17.5	119.5	49	65	47	M6	Rc1/8	19	20	25	M14 x 1.5	78	16
φ 50	35	27	32	192.5	16	20	6	19	137.5	60	79.6	58	M8	Rc1/4	22	25	30	M18 x 1.5	90	20
φ 63	35	27	32	199.5	18	22	8	22	142.5	74	97.8	72	M10	Rc1/4	22	25	32	M18 x 1.5	90	20

Symbol	With bellows						Switch installation method: rail method						Switch installation: band method						
Bore size (mm)	Q	QA	QB	SD	T	WF	b	d	s	l	P	GA	GB	HD	RD	GD	GC		
													T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5	GC	
φ 20	13	12	10	14	5	17	30	30	25.7	(stroke length/3) + 18.5	19.5	18	23	4.0	7.0	7.0	7.5	3.5	2.5
φ 25	15.5	12	10	16.5	6	18	35	30	30.7	(stroke length/3) + 20.5	22	18	24.4	3.0	6.0	8.0	8.5	4.5	1.5
φ 32	19	12	10	20	6	18	31.5	35	37.7	(stroke length/3) + 19	25.5	18	25	4.0	7.0	9.0	9.5	5.5	2.5
φ 40	23.5	13	12	26	8	20	40	35	46.7	(stroke length/3) + 18.5	30	18	25.7	6.0	9.0	11.0	11.5	7.5	4.5
φ 50	29	15	12	32	11	23	46	40	57.7	(stroke length/3.6) + 18.5	35.5	18	26.2	8.0	11.5	12.0	13.0	9.0	7.0
φ 63	36	15	12	38	11	23	46	40	71.7	(stroke length/3.6) + 18.5	42.5	18	26.5	8.0	11.5	12.0	13.0	9.0	7.0

Symbol	Switch installation method: band method						
Bore size (mm)	HD		RD		P1	P2	P θ
	T0, T2, T3, T5						
φ 20	7.5		6.5		19.6	21.5	(38°)
φ 25	8.5		5.5		22.1	23.9	(34°)
φ 32	9.5		6.5		25.6	27.6	(30°)
φ 40	11.5		8.5		30.2	32.1	(26°)
φ 50	13.0		11.0		35.7	37.4	(22°)
φ 63	13.0		11.0		42.7	44.4	(20°)

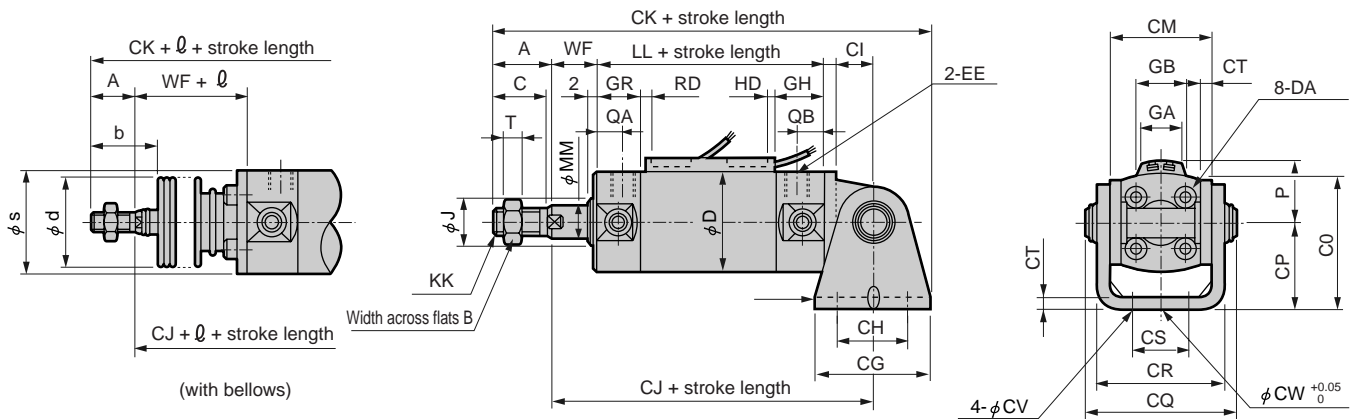
Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)  
 Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 3: Refer to page 334 and 335 for accessory dimensions.

### Dimensions (φ20 to φ63)

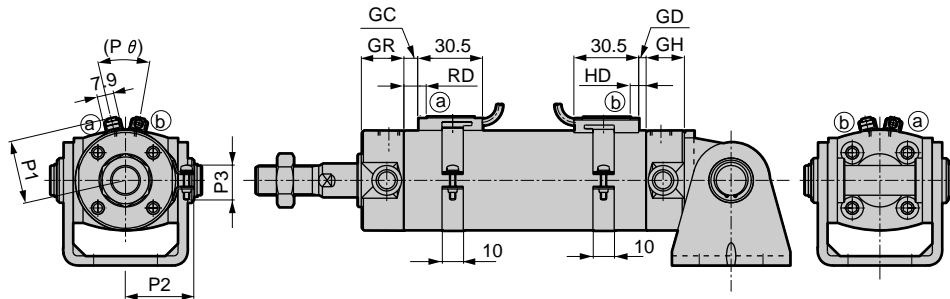


- Eye bracket type (CA) with bracket (option symbol B2)

· Switch installation method: rail method



· Switch installation method: band method



Symbol	Eye bracket type (CA) with bracket (option symbol 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 (Note 1)	GH	GR	J
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
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
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
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
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
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

Symbol	With bellows										Switch installation method: rail method					Switch installation: band method				
Bore size (mm)	KK	LL	MM	QA	QB	T	WF	b	d	s	ℓ	P	GA	GB	HD	RD	GD	GC		
															T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5	
φ20	M8	69	8	12	10	5	17	30	30	25.7	(stroke length/3) + 18.5	19.5	18	23	4.0	7.0	7.0	7.5	3.5	2.5
φ25	M10 x 1.25	69	10	12	10	6	18	35	30	30.7	(stroke length/3) + 20.5	22	18	24.4	3.0	6.0	8.0	8.5	4.5	1.5
φ32	M10 x 1.25	71	12	12	10	6	18	31.5	35	37.7	(stroke length/3) + 19	25.5	18	25	4.0	7.0	9.0	9.5	5.5	2.5
φ40	M14 x 1.5	78	16	13	12	8	20	40	35	46.7	(stroke length/3) + 18.5	30	18	25.7	6.0	9.0	11.0	11.5	7.5	4.5
φ50	M18 x 1.5	90	20	15	12	11	23	46	40	57.7	(stroke length/3.6) + 18.5	35.5	18	26.2	8.0	11.5	12.0	13.0	9.0	7.0
φ63	M18 x 1.5	90	20	15	12	11	23	46	40	71.7	(stroke length/3.6) + 18.5	42.5	18	26.5	8.0	11.5	12.0	13.0	9.0	7.0

Symbol	Switch installation method: band method				
Bore size (mm)	HD	RD	P1	P2	Pθ
	T0, T2, T3, T5				
φ20	7.5	6.5	19.6	21.5	(38°)
φ25	8.5	5.5	22.1	23.9	(34°)
φ32	9.5	6.5	25.6	27.6	(30°)
φ40	11.5	8.5	30.2	32.1	(26°)
φ50	13.0	11.0	35.7	37.4	(22°)
φ63	13.0	11.0	42.7	44.4	(20°)

Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)  
 Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 3: Refer to page 334 and 335 for accessory dimensions.

SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending

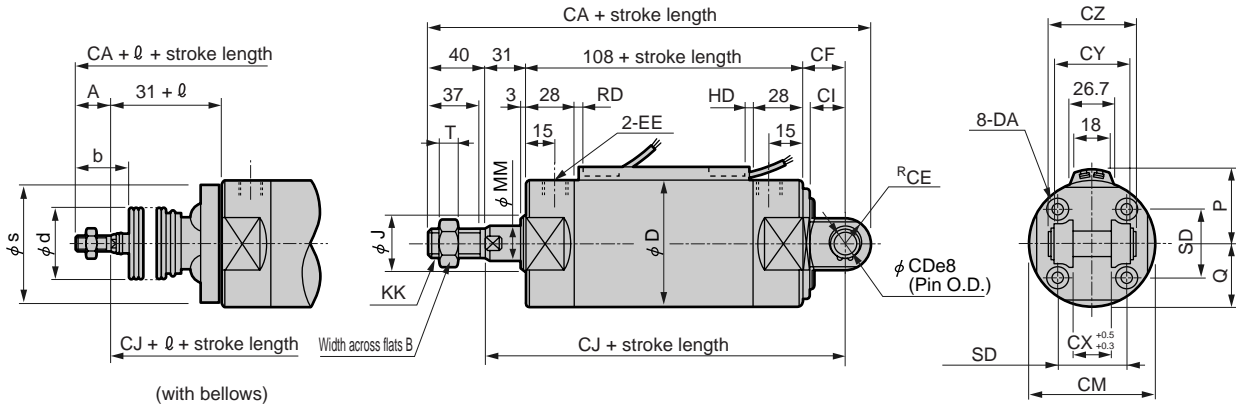
Round shaped cylinder  
 Standard type



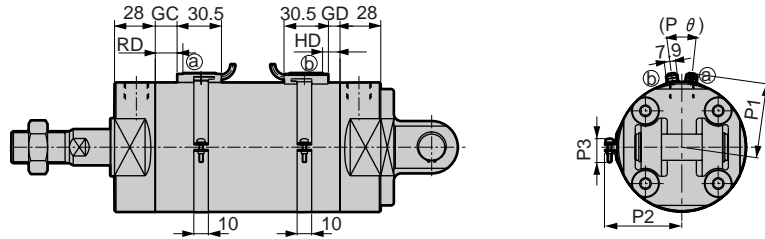
## Dimensions (φ 80 to φ 100)

● Clevis bracket type (CB)

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 230.

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Clevis bracket type (CB) basic dimensions																			
Bore size (mm)	B	CA	CD	CE	CF	CI	CJ	CM	CX	CY	CZ	D	DA	EE (Note 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 x 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 x 1.5	30	55	60	16

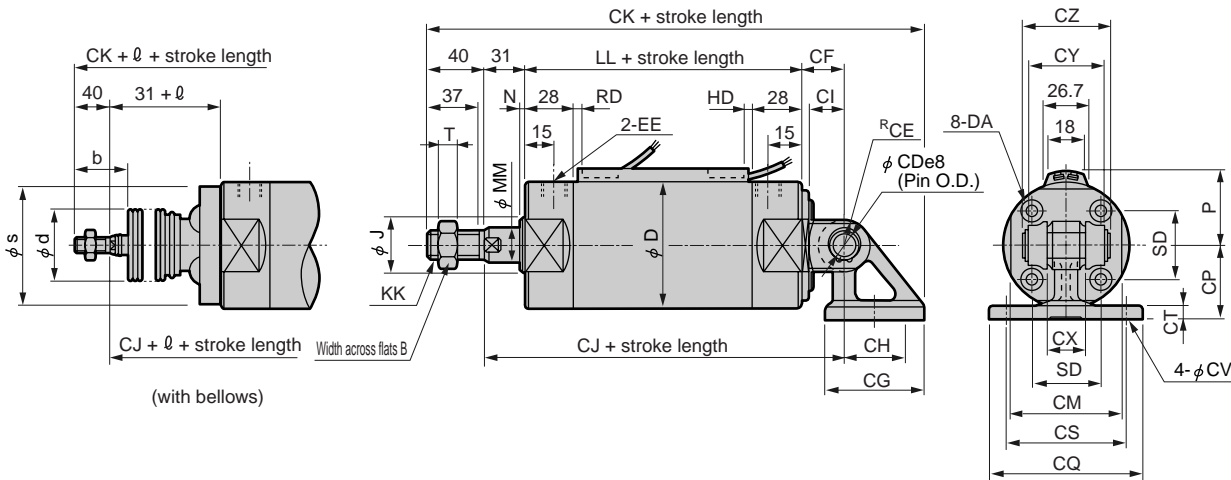
Symbol	With bellows				Switch installation method: rail method								Switch installation method: band method				
	b	d	s	l	P	HD		RD		GD	GC	HD	RD	P1	P2	P θ	
						T0, T5	T2, T3	T0, T5	T2, T3								T0, T2, T3, T5
φ80	55	50	88.7	(stroke length/4.3) + 14.5	51	10.5	13.0	19.0	20.0	16.0	9.0	20.0	13.0	51.2	53.0	(16°)	
φ100	56	60	109.7	(stroke length/4.5) + 21	61.5	11.0	13.5	18.5	19.5	15.5	9.5	19.5	13.5	61.7	63.5	(16°)	

### Dimensions (φ 80 to φ 100)

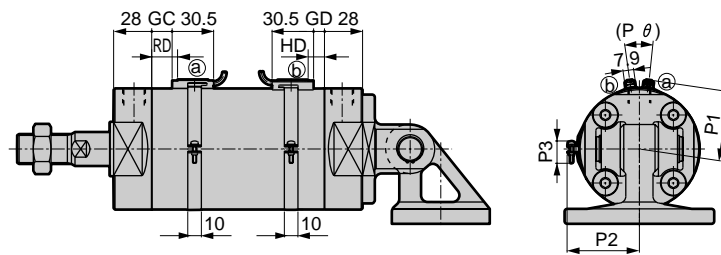


- Clevis bracket type (CB) with bracket (option symbol B1)

- Switch installation method: rail method



- Switch installation method: band method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type.

Refer to page 230.

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type,

preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Clevis bracket type (CB) with bracket (option symbol B2) 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 (Note 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 x 1.5			
φ100	41	22	22	43	93	60	31	182	298.5	100	65	130	100	12	13.5	32	64	72	100	M12	Rc1/2	50	M26 x 1.5			
Symbol	With bellows					Switch installation method: rail method					Switch installation method: band method															
Bore size (mm)	LL	MM	N	SD	T	b	d	s	ℓ	P	HD		RD		GD			GC		HD			RD		P1	P2
φ80	108	25	3	50	13	55	50	88.7	(Stroke length/4.3) + 14.5	51	T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	P1	P2	51.2	53.0				
φ100	108	30	3	60	16	56	60	109.7	(Stroke length/4.5) + 21	61.5	11.0	13.5	18.5	19.5	15.5	9.5	19.5	13.5	61.7	63.5						
Symbol	P θ																									
Bore size (mm)	φ80	(16°)																								
φ100	(16°)																									

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

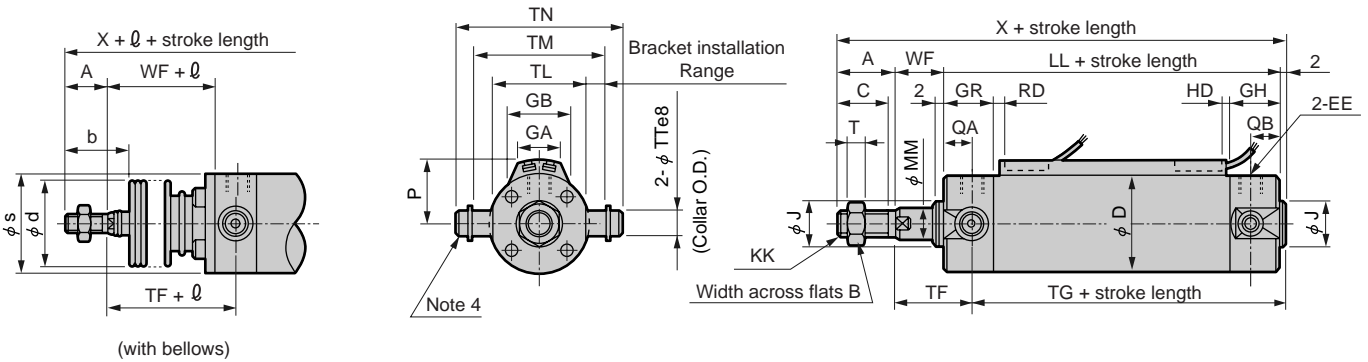


## Dimensions ( 20 to 63)

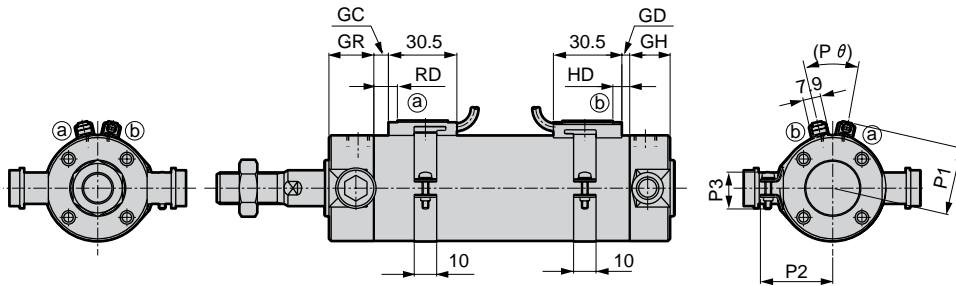


● Rod end trunnion type (TA)

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Configuration is made from a collar, plain washer and hexagon socket head cap bolt.

Note 4: Refer to page 334 and 335 for accessory dimensions.

Symbol	Rod end trunnion type (TA) basic dimensions																
Bore size (mm)	A	B	C	D	EE (Note 1)	GH	GR	J	KK	LL	MM	QA	QB	T	TF	TG	TL
φ 20	18	13	15.5	26	Rc1/8	17	19	12	M8	69	8	12	10	5	28	60	28
φ 25	22	17	19.5	31	Rc1/8	17	19	14	M10 x 1.25	69	10	12	10	6	29	60	33
φ 32	22	17	19.5	38	Rc1/8	17	19	18	M10 x 1.25	71	12	12	10	6	29	62	40
φ 40	30	22	27	47	Rc1/8	19	20	25	M14 x 1.5	78	16	13	12	8	32	68	49
φ 50	35	27	32	58	Rc1/4	22	25	30	M18 x 1.5	90	20	15	12	11	36	79	60
φ 63	35	27	32	72	Rc1/4	22	25	32	M18 x 1.5	90	20	15	12	11	36	79	74

Symbol	With bellows								Switch installation method: rail method							
Bore size (mm)	TM	TN	TT	WF	X	b	d	s	ℓ	P	GA	GB	HD		RD	
													T0, T5	T2, T3	T0, T5	T2, T3
φ 20	39	47.6	8	17	106	30	30	25.7	(stroke length/3) + 18.5	19.5	18	23	4.0	7.0	7.0	7.5
φ 25	43	53	10	18	111	35	30	30.7	(stroke length/3) + 20.5	22	18	24.4	3.0	6.0	8.0	8.5
φ 32	54.5	67.7	12	18	113	31.5	35	37.7	(stroke length/3) + 19	25.5	18	25	4.0	7.0	9.0	9.5
φ 40	65.9	81.1	14	20	130	40	35	46.7	(stroke length/3) + 18.5	30	18	25.7	6.0	9.0	11.0	11.5
φ 50	80	98.6	16	23	150	46	40	57.7	(stroke length/3.6) + 18.5	35.5	18	26.2	8.0	11.5	12.0	13.0
φ 63	98	119.2	18	23	150	46	40	71.7	(stroke length/3.6) + 18.5	42.5	18	26.5	8.0	11.5	12.0	13.0

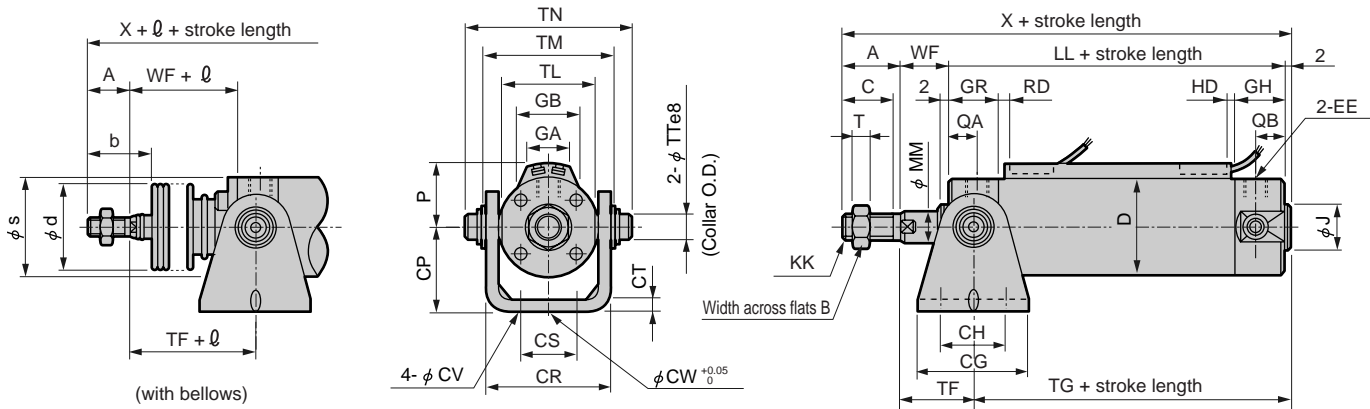
Symbol	Switch installation method: band method							
Bore size (mm)	GD		GC	HD	RD	P1	P2	Pθ
	T0, T2, T3, T5			T0, T2, T3, T5				
φ 20	3.5		2.5	7.5	6.5	19.6	21.5	(38°)
φ 25	4.5		1.5	8.5	5.5	22.1	23.9	(34°)
φ 32	5.5		2.5	9.5	6.5	25.6	27.6	(30°)
φ 40	7.5		4.5	11.5	8.5	30.2	32.1	(26°)
φ 50	9.0		7.0	13.0	11.0	35.7	37.4	(22°)
φ 63	9.0		7.0	13.0	11.0	42.7	44.4	(20°)

### Dimensions ( 20 to 63)

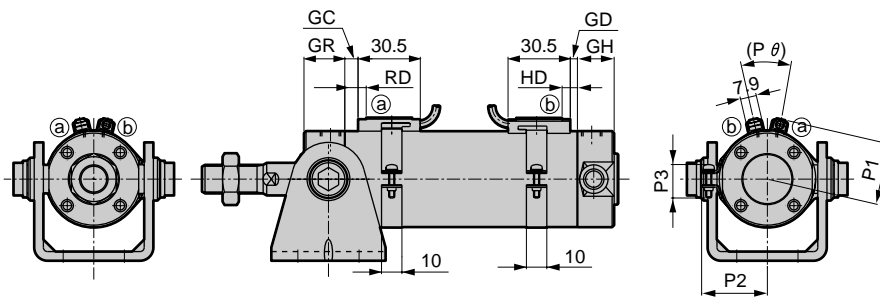


● Rod end trunnion type (TA) with bracket (option symbol: B2)

- Switch installation method: rail method



- Switch installation method: band method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type.

Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Rod end trunnion type (TA) with bracket (option symbol B2) basic dimensions																				
Bore size (mm)	A	B	C	CG	CH	CP	CR	CS	CT	CV	CW	D	EE (Note 1)	GH	GR	J	KK	LL	MM	QA	QB
φ 20	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
φ 25	22	17	19.5	42	28	30	39.8	20	3.2	5.5	10	31	Rc1/8	17	19	14	M10 x 1.25	69	10	12	10
φ 32	22	17	19.5	48	28	35	49.4	22	4.5	6.6	10	38	Rc1/8	17	19	18	M10 x 1.25	71	12	12	10
φ 40	30	22	27	56	30	40	58.4	30	4.5	6.6	10	47	Rc1/8	19	20	25	M14 x 1.5	78	16	13	12
φ 50	35	27	32	64	36	50	72.4	36	6	9	20	58	Rc1/4	22	25	30	M18 x 1.5	90	20	15	12
φ 63	35	27	32	74	46	60	90.4	46	8	11	20	72	Rc1/4	22	25	32	M18 x 1.5	90	20	15	12

Symbol	With bellows										Switch installation method: rail method											
Bore size (mm)	T	TF	TG	TL	TM	TN	TT	WF	X	b	d	s	l			P	GA	GB	HD		RD	
																			T0, T5	T2, T3	T0, T5	T2, T3
φ 20	5	28	60	28	39	47.6	8	17	106	30	30	25.7	(stroke length/3) + 18.5			19.5	18	23	4.0	7.0	7.0	7.5
φ 25	6	29	60	33	43	53	10	18	111	35	30	30.7	(stroke length/3) + 20.5			22	18	24.4	3.0	6.0	8.0	8.5
φ 32	6	29	62	40	54.5	67.7	12	18	113	31.5	35	37.7	(stroke length/3) + 19			25.5	18	25	4.0	7.0	9.0	9.5
φ 40	8	32	68	49	65.9	81.1	14	20	130	40	35	46.7	(stroke length/3) + 18.5			30	18	25.7	6.0	9.0	11.0	11.5
φ 50	11	36	79	60	80	98.6	16	23	150	46	40	57.7	(stroke length/3.6) + 18.5			35.5	18	26.2	8.0	11.5	12.0	13.0
φ 63	11	36	79	74	98	119.2	18	23	150	46	40	71.7	(stroke length/3.6) + 18.5			42.5	18	26.5	8.0	11.5	12.0	13.0

Symbol	Switch installation method: band method						
Bore size (mm)	GD	GC	HD	RD	P1	P2	P
	T0, T2, T3, T5		T0, T2, T3, T5				
φ 20	3.5	2.5	7.5	6.5	19.6	21.5	(38°)
φ 25	4.5	1.5	8.5	5.5	22.1	23.9	(34°)
φ 32	5.5	2.5	9.5	6.5	25.6	27.6	(30°)
φ 40	7.5	4.5	11.5	8.5	30.2	32.1	(26°)
φ 50	9.0	7.0	13.0	11.0	35.7	37.4	(22°)
φ 63	9.0	7.0	13.0	11.0	42.7	44.4	(20°)

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

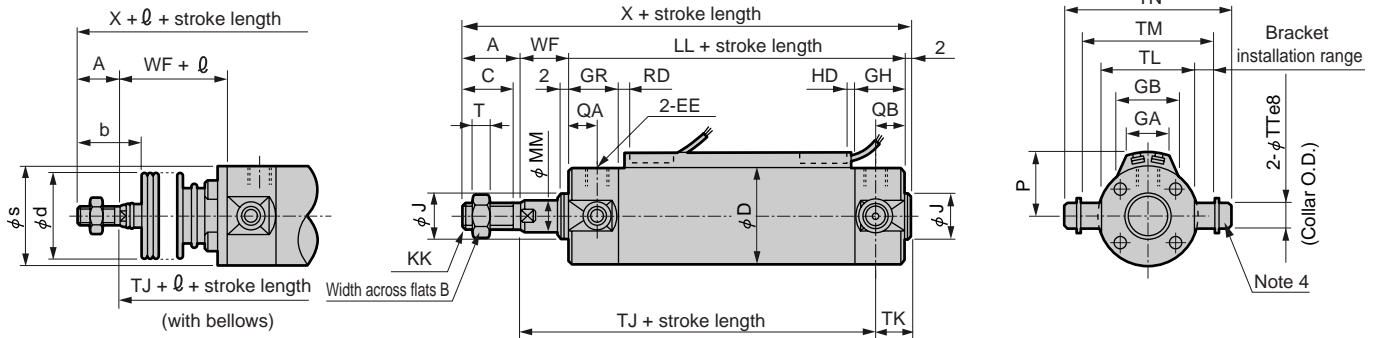
Round shaped cylinder  
Standard type



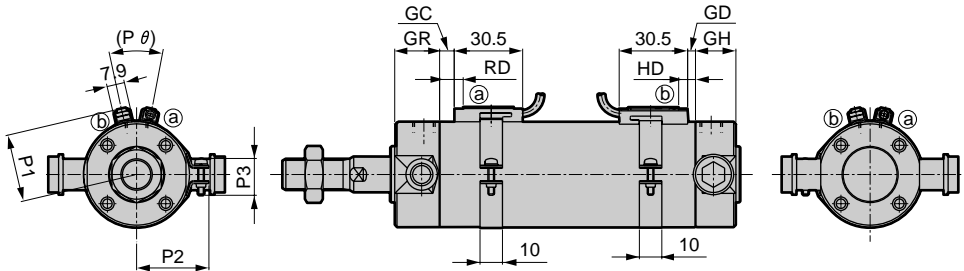
## Dimensions (φ 20 to φ 63)

● Head end trunnion type (TB)

· Switch installation method: rail method



· Switch installation method: band method



- Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)
- Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.
- Note 3: Configuration is made from a collar, plain washer and hexagon socket head cap bolt.
- Note 4: Refer to page 334 and 335 for accessory dimensions.

Symbol	Head end trunnion type (TB) basic dimensions																					
Bore size (mm)	A	B	C	D	EE (Note 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 x 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 x 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 x 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 x 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 x 1.5	90	20	15	12	11	101	14	74	98	119.2	18	23	150

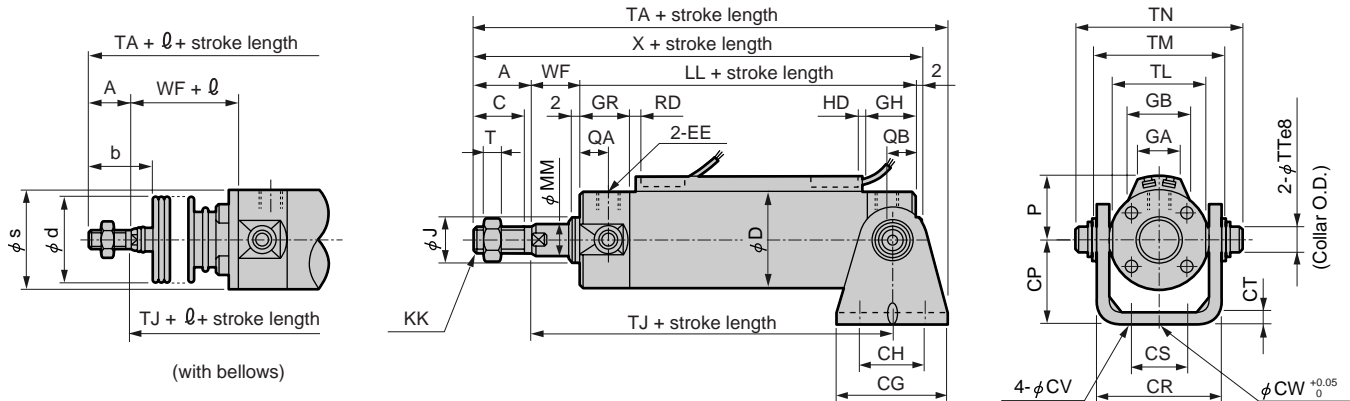
Symbol	With bellows					Switch installation method: rail method								Switch installation method: band method							
Bore size (mm)	b	d	s	ℓ		P	GA	GB	HD		RD		GD	GC	HD		RD		P1	P2	Pθ
									T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5					
φ20	30	30	25.7	(stroke length/3) + 18.5		19.5	18	23	4.0	7.0	7.0	7.5	3.5	2.5	7.5	6.5	19.6	21.5			(38°)
φ25	35	30	30.7	(stroke length/3) + 20.5		22	18	24.4	3.0	6.0	8.0	8.5	4.5	1.5	8.5	5.5	22.1	23.9			(34°)
φ32	31.5	35	37.7	(stroke length/3) + 19		25.5	18	25	4.0	7.0	9.0	9.5	5.5	2.5	9.5	6.5	25.6	27.6			(30°)
φ40	40	35	46.7	(stroke length/3) + 18.5		30	18	25.7	6.0	9.0	11.0	11.5	7.5	4.5	11.5	8.5	30.2	32.1			(26°)
φ50	46	40	57.7	(stroke length/3.6) + 18.5		35.5	18	26.2	8.0	11.5	12.0	13.0	9.0	7.0	13.0	11.0	35.7	37.4			(22°)
φ63	46	40	71.7	(stroke length/3.6) + 18.5		42.5	18	26.5	8.0	11.5	12.0	13.0	9.0	7.0	13.0	11.0	42.7	44.4			(20°)

### Dimensions (φ 20 to φ 63)

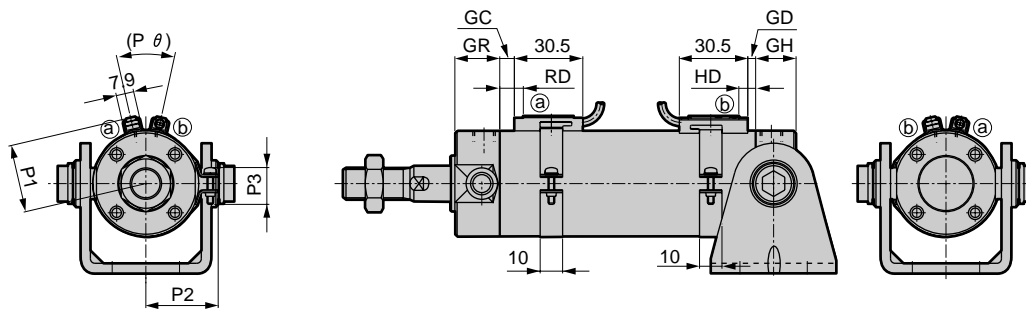


● Head end trunnion type (TB) with bracket (option symbol: B2)

- Switch installation method: rail method



- Switch installation method: band method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type.

Refer to page 230. (20 and 25 mm bore cylinders are different from basic type.)

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Head end trunnion type (TB) with bracket (option symbol B2) basic dimensions																				
Bore size (mm)	A	B	C	CG	CH	CP	CR	CS	CT	CV	CW	D	EE (Note 1)	GH	GR	J	KK	LL	MM	QA	QB
φ 20	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
φ 25	22	17	19.5	42	28	30	39.4	20	3.2	5.5	10	31	Rc1/8	17	19	14	M10 x 1.25	69	10	12	10
φ 32	22	17	19.2	48	28	35	49	22	4.5	6.6	10	38	Rc1/8	17	19	18	M10 x 1.25	71	12	12	10
φ 40	30	22	27	56	30	40	58	30	4.5	6.6	10	47	Rc1/8	19	20	25	M14 x 1.5	78	16	13	12
φ 50	35	27	32	64	36	50	72	36	6	9	20	58	Rc1/4	22	25	30	M18 x 1.5	90	20	15	12
φ 63	35	27	32	74	46	60	90	46	8	11	20	72	Rc1/4	22	25	32	M18 x 1.5	90	20	15	12

Symbol	With bellows										Switch installation method: rail method												
Bore size (mm)	T	TA	TJ	TL	TM	TN	TT	WF	X	b	d	s	ℓ				P	GA	GB	HD		RD	
													T0, T5	T2, T3	T0, T5	T2, T3				T0, T5	T2, T3	T0, T5	T2, T3
φ 20	5	114	75	28	39	47.6	8	17	106	30	30	25.7	(stroke length/3) + 18.5	19.5	18	23	4.0	7.0	7.0	7.5			
φ 25	6	119	76	33	43	53	10	18	111	35	30	30.7	(stroke length/3) + 20.5	22	18	24.4	3.0	6.0	8.0	8.5			
φ 32	6	125	79	40	54.5	67.7	12	18	113	31.5	35	37.7	(stroke length/3) + 19	25.5	18	25	4.0	7.0	9.0	9.5			
φ 40	8	146	88	49	65.9	81.1	14	20	130	40	35	46.7	(stroke length/3) + 18.5	30	18	25.7	6.0	9.0	11.0	11.5			
φ 50	11	168	101	60	80	98.6	16	23	150	46	40	57.7	(stroke length/3.6) + 18.5	35.5	18	26.2	8.0	11.5	12.0	13.0			
φ 63	11	173	101	74	98	119.2	18	23	150	46	40	71.7	(stroke length/3.6) + 18.5	42.5	18	26.5	8.0	11.5	12.0	13.0			

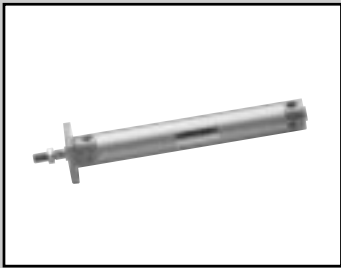
  

Symbol	Switch installation method: band method					
Bore size (mm)	GD		GC	HD		RD
	T0, T2, T3, T5			T0, T2, T3, T5		
					P1	P2
					Pθ	
φ 20	3.5		2.5		19.6	21.5 (38°)
φ 25	4.5		1.5		22.1	23.9 (34°)
φ 32	5.5		2.5		25.6	27.6 (30°)
φ 40	7.5		4.5		30.2	32.1 (26°)
φ 50	9.0		7.0		35.7	37.4 (22°)
φ 63	9.0		7.0		42.7	44.4 (20°)

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

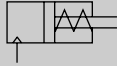


Round shaped medium bore size cylinder  
Single acting extend type

# SCM-X Series

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

JIS symbol



## Specifications

Descriptions		SCM-X			
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation		Single acting/extend type			
Working fluid		Compressed air			
Max. working pressure	MPa	1.0			
Min. working pressure	MPa	0.2			
Withstanding pressure	MPa	1.6			
Ambient temperature	°C	-10 to 60 (no freezing)			
Port size		Rc1/8			
Stroke tolerance	mm	+2.0			
		0			
Working piston speed	mm/s	500 to 1000 (use within the allowable energy absorption. )			
Cushion		Rubber cushion			
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)			
Allowable energy absorption	J	0.1	0.2	0.5	0.9

Note: Do not leave a single acting cylinder at pressurized state. When release a pressure, piston rod may not return by spring force after leaving under elevated pressure.

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.



### Switch specifications

- 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	T2YFH/V	T2YMH/V	T3YFH/V	T3YMH/V	T2YMH/V	T3YMH/V	T2YMH/V	T3YMH/V
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay	
Output method	NPN output							
Light	Installation position adjustment				Red/Green LED (ON lighting)			
	Preventive maintenance output				Yellow LED (ON lighting)			
Regular output	Power voltage		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
	Leakage current		1 mA or less		10 μA or less		1.2 mA or less	
Preventive maintenance output	Load voltage							
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	
	Leakage current							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Spring load

(Unit: N)

Bore size (mm)	Stroke length 0 mm	Full stroke length during operation
φ 20	11.8	38
φ 25	12.5	40.2
φ 32	24.3	54.9
φ 40	28.4	100

### Cylinder weight (stroke length: 5 to 50)

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Port size	Basic type	Axial foot type	Flange type	Clevis type				
φ 20	0.15	0.26	0.18	0.20	0.16	0.018	0.010	0.012	0.007
φ 25	0.24	0.37	0.28	0.32	0.26	0.018	0.014	0.016	0.007
φ 32	0.36	0.52	0.42	0.51	0.39	0.018	0.018	0.020	0.007
φ 40	0.59	0.81	0.67	0.82	0.64	0.018	0.030	0.032	0.007

### Cylinder weight (stroke length: 51 to 100)

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Port size	Basic type	Axial foot type	Flange type	Clevis type				
φ 20	0.19	0.30	0.22	0.24	0.20	0.018	0.010	0.012	0.007
φ 25	0.32	0.45	0.36	0.40	0.34	0.018	0.014	0.016	0.007
φ 32	0.46	0.62	0.52	0.61	0.49	0.018	0.018	0.020	0.007
φ 40	0.76	0.98	0.84	0.99	0.81	0.018	0.030	0.032	0.007

### Cylinder weight (stroke length: 101 to 150)

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Port size	Basic type	Axial foot type	Flange type	Clevis type				
φ 20	0.24	0.35	0.27	0.29	0.25	0.018	0.010	0.012	0.007
φ 25	0.39	0.52	0.43	0.47	0.41	0.018	0.014	0.016	0.007
φ 32	0.55	0.71	0.61	0.70	0.58	0.018	0.018	0.020	0.007
φ 40	0.94	1.16	1.02	1.17	0.99	0.018	0.030	0.032	0.007

### Cylinder weight (stroke length: 151 to 200)

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Port size	Basic type	Axial foot type	Flange type	Clevis type				
φ 20	0.29	0.40	0.32	0.34	0.30	0.018	0.010	0.012	0.007
φ 25	0.46	0.59	0.50	0.54	0.48	0.018	0.014	0.016	0.007
φ 32	0.65	0.81	0.71	0.80	0.68	0.018	0.018	0.020	0.007
φ 40	1.11	1.33	1.19	1.34	1.16	0.018	0.030	0.032	0.007

(E.g.) Product weight of SCM-X-LB-40D-100-T2H-D

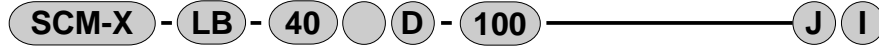
- Product weight when S = 0 mm ..... 0.98 kg
- Additional weight when S = 100 mm .....  $0.032 \times \frac{100}{10} = 0.32$  kg
- Weight of 2 switches ..... 0.036 kg
- Product weight ..... 0.98 kg + 0.32 kg + 0.036 kg = 1.336 kg

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC

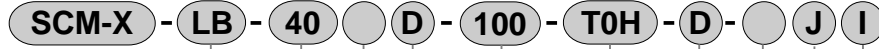
Ending  
Round shaped cylinder  
Standard type

## How to order

Without switch



With switch



**A** Mounting style  
Note 1

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length

**F** Switch model no.  
Note 3

**G** Switch quantity  
Note 4

**H** Switch installation method

**I** Option  
Note 4,  
Note 6

**J** Accessory  
Note 7

Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
TA	Rod end trunnion type
TB	Head end trunnion type

<b>B Bore size (mm)</b>	
20	φ 20
25	φ 25
32	φ 32
40	φ 40

<b>C Port thread type</b>	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)

<b>D Cushion</b>	
D	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
φ 20 to φ 40	5 to 200	Per 1 mm

<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		without light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*			
T3H*	T3V*		1 color indicator type (custom order)	3-wire
T3PH*	T3PV*			
T2YH*	T2YV*		2 color indicator type	2-wire
T3YH*	T3YV*			
T2YFH*	T2YFV*		2 color indicator type (W/o light for preventive maintenance output)	3-wire
T3YFH*	T3YFV*			
T2YMH*	T2YMV*		2 color indicator type (W/ light for preventive maintenance output (1 color))	3-wire
T3YMH*	T3YMV*			
T2YD*	-	Strong magnetic field proof switch	2-wire	
T2YDT*	-			
T2JH*	T2JV*	Off-delay type	2-wire	

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

<b>G Switch quantity</b>	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

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

<b>I Option</b>			
		Max. ambient	Max. instantaneous
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		

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

## Note on model no. selection

- Note 1: The mounting bracket is shipped with the product.  
 Note 2: Refer to page 244 for switch quantity and min. stroke length.  
 Note 3: Switches other than switch model no. "F" are available. (Custom order)  
 Refer to Ending 1 for details.  
 Note 4: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.  
 Note 5: Refer to Ending 89 about custom specifications of rod end form.  
 Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.  
 Note 7: "I" and "Y" can not be selected at the same time.

## <Example of model number>

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

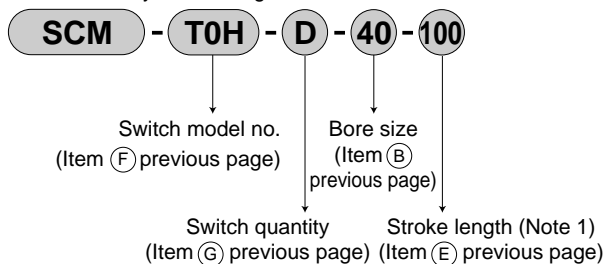
Model: Round shaped cylinder single acting extend type

- A** Mounting style : Axial foot type
- B** Bore size : φ 40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides rubber cushioned
- E** Stroke length : 100 mm
- F** Switch model no. : Proximity T0H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Switch installation method : Rail method
- I** Option : Bellows material/max. ambient temperature 60 °C
- J** Accessory : Rod eye

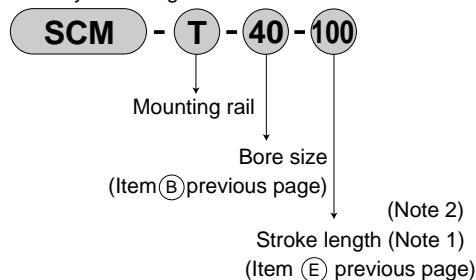
### How to order switch

(switch installation method: rail method)

- Switch body + mounting rail set



- Only mounting rail

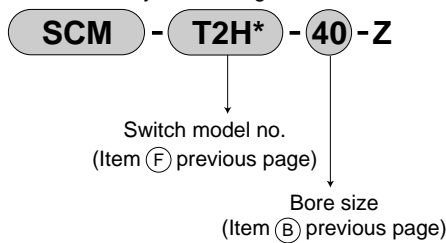


Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

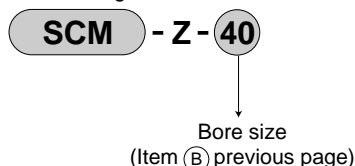
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

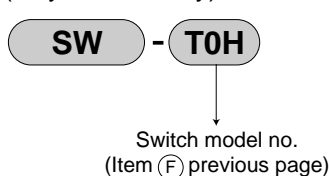
- Switch body + mounting rail + band



- Mounting rail + band



(only switch body)



### How to order mounting bracket

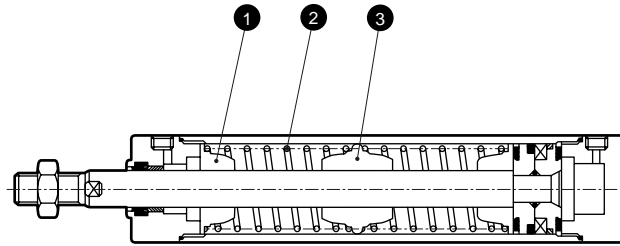
Bore size (mm)	φ 20	φ 25	φ 32	φ 40
Mounting bracket				
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40
Eye (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40

Note 1: Mounting bolts are attached to each mounting bracket.  
Note 2: 2 piece/set is applied for a foot type mounting bracket.

SCP*2
CMK2
CMA2
<b>SCM</b>
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type

## Internal structure and parts list



No.	Parts name	Material	Remarks
1	Spring holder A	Aluminum alloy	
2	Coil spring	Piano wire	Electrode position coating
3	Spring holder B	Aluminum alloy	

### Repair parts list

Consumables part numbers follow the SCM series internal structure drawing (page 228).

Bore size (mm)	Kit No.	Repair parts number
$\phi$ 20	SCM-X-20DK	
$\phi$ 25	SCM-X-25DK	3 6 8 10 13
$\phi$ 32	SCM-X-32DK	
$\phi$ 40	SCM-X-40DK	

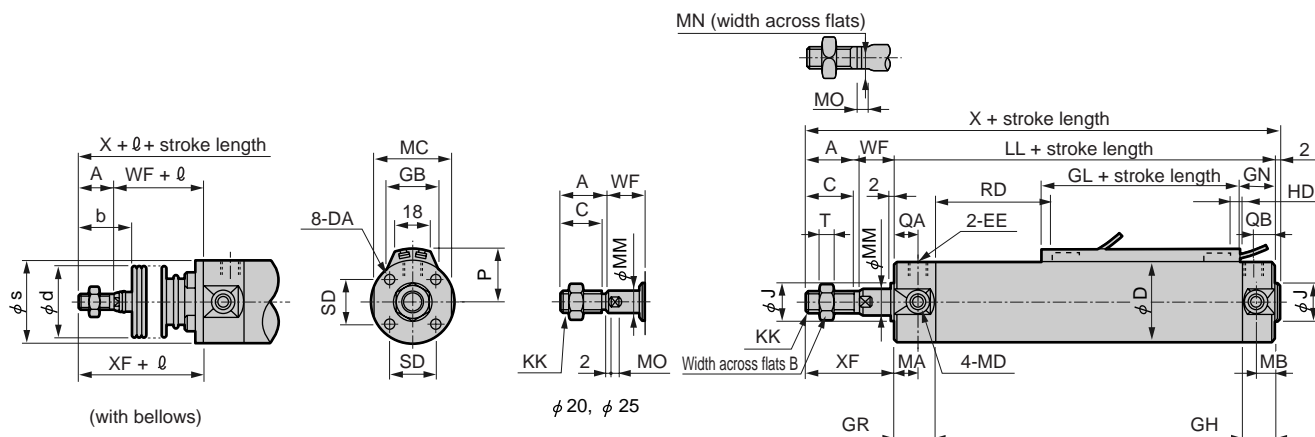
- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

### Dimensions

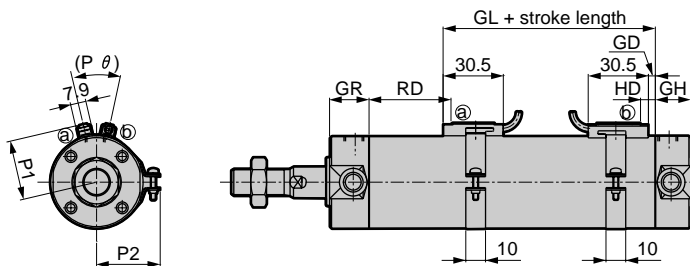


● Single acting extend type

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indication type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions											LL											
	A	B	C	D	DA	EE	GR	GH	J	KK	5 - 50st	51 - 100	101 - 150	151 - 200	MA	MB	MC	MD	MM	MN	MO	QA	QB
$\phi 20$	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
$\phi 25$	22	17	19.5	31	M5 depth 6.5	Rc1/8	19	17	14	M10 x 1.25	99	129	159	189	11	11	29	M6	10	8	5	12	10
$\phi 32$	22	17	19.5	38	M5 depth 7.5	Rc1/8	19	17	18	M10 x 1.25	101	131	161	191	11	10	36	M8	12	10	5.5	12	10
$\phi 40$	30	22	27	47	M6 depth 12	Rc1/8	20	19	25	M14 x 1.5	108	138	168	198	12	10	44	M10	16	14	6	13	12

Symbol	X							With bellows				Switch installation method: rail method										
	SD	T	WF	5 to 50st			XF	b	d	s	l	P	GB	GN	GL	HD			RD			
				T0, T5	T2, T3	T0, T5										T2, T3	T0, T5	T2, T3	P1	P2	P theta	
$\phi 20$	14	5	17	133	160	187	214	35	30	30	25.7	(stroke length/3) + 18.5	19.5	23	18.5	30	4	7	33.5	60.5	87.5	114.5
$\phi 25$	16.5	6	18	141	171	201	231	40	35	30	30.7	(stroke length/3) + 20.5	22	24.4	18.5	30	3	6	37.5	67.5	97.5	127.5
$\phi 32$	20	6	18	143	173	203	233	40	31.5	35	37.7	(stroke length/3) + 19	25.5	25	18.5	32	4	7	38.5	68.5	98.5	128.5
$\phi 40$	26	8	20	160	190	220	250	50	40	35	46.7	(stroke length/3) + 18.5	30	25.7	20.5	36	6	9	40.5	70.5	100.5	130.5

Symbol	Switch installation method: band method														P1	P2	P theta				
	RD				GD		GL		HD		RD										
	T2, 3				T0, T5	T2, T3	T0, T5	T2, T3	T0, T5	T2, T3	T0, T5		T2, T3								
$\phi 20$	34.5	61.5	88.5	115.5	1.5	2.5	30.5	29.5	5.5	6.5	33.5	60.5	87.5	114.5	34.5	61.5	88.5	115.5	19.6	21.5	(38°)
$\phi 25$	38.5	68.5	98.5	128.5	0.5	1.5	29.5	28.5	4.5	5.5	37.5	67.5	97.5	127.5	38.5	68.5	98.5	128.5	22.1	23.9	(34°)
$\phi 32$	39.5	69.5	99.5	129.5	1.5	2.5	30.5	29.5	5.5	6.5	38.5	68.5	98.5	128.5	39.5	69.5	99.5	129.5	25.6	27.6	(30°)
$\phi 40$	41.5	71.5	101.5	131.5	3.5	4.5	32.5	31.5	7.5	8.5	40.5	70.5	100.5	130.5	41.5	71.5	101.5	131.5	30.2	32.1	(26°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending



Round shaped medium bore size cylinder  
 Single acting retract type

# SCM-Y Series

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

JIS symbol



## Specifications

Descriptions		SCM-Y			
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation		Single acting/retract type			
Working fluid		Compressed air			
Max. working pressure	MPa	1.0			
Min. working pressure	MPa	0.2			
Withstanding pressure	MPa	1.6			
Ambient temperature	°C	-10 to 60 (no freezing)			
Port size		Rc1/8			
Stroke tolerance	mm	+2.0 0			
Working piston speed	mm/s	500 to 1000 (use within the allowable energy absorption. )			
Cushion		Rubber cushion			
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)			
Allowable energy absorption	J	0.1	0.2	0.5	0.9

Note: Do not leave a single acting cylinder at pressurized state. When release a pressure, piston rod may not return by spring force after leaving under elevated pressure.

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85

● Switch installation method: Band method

Switch quantity	1			2			3			4			5		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 20$		10		25	35	25	50	55	50	75	80	70	95	100	95
$\phi 25$		10		25	35	25	50	55	50	75	80	70	95	100	95
$\phi 32$		10		25	35	25	50	55	50	75	80	70	95	100	95
$\phi 40$		10		25	35	25	50	55	50	75	80	70	95	100	95

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.



### Switch specifications

- 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire						
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/ T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	T0H/T0V		T5H/T5V		T8H/T8V		
Applications	Programmable controller, relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-						
Power voltage	-			10 to 28 VDC			-						
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA						

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V	
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay	
Output method	NPN output							
Light	Red/Green LED (ON lighting)							
	Yellow LED (ON lighting)							
Regular output	Power voltage		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
	Leakage current		1 mA or less		10 μA or less		1.2 mA or less	
Preventive maintenance output	30 VDC or less							
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less	
	Leakage current		20 mA or less		50 mA or less		50 mA or less	

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25°C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25°C.  
(5 to 10mA at 60°C)

### Spring load

(Unit: N)

Bore size (mm)	Stroke length 0	Full stroke length during operation
φ 20	11.8	38
φ 25	12.5	40.2
φ 32	24.3	54.9
φ 40	28.4	100

### Cylinder weight (stroke length: 5 to 50)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type				
Port size φ 20	0.14	0.25	0.17	0.19	0.15	0.018	0.010	0.012	0.007
φ 25	0.22	0.35	0.26	0.30	0.24	0.018	0.014	0.016	0.007
φ 32	0.33	0.49	0.39	0.48	0.36	0.018	0.018	0.020	0.007
φ 40	0.54	0.76	0.62	0.77	0.59	0.018	0.030	0.032	0.007

### Cylinder weight (stroke length: 51 to 100)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type				
Port size φ 20	0.17	0.28	0.20	0.22	0.18	0.018	0.010	0.012	0.007
φ 25	0.28	0.41	0.32	0.36	0.30	0.018	0.014	0.016	0.007
φ 32	0.40	0.56	0.46	0.55	0.43	0.018	0.018	0.020	0.007
φ 40	0.67	0.89	0.75	0.90	0.72	0.018	0.030	0.032	0.007

### Cylinder weight (stroke length: 101 to 150)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type				
Port size φ 20	0.21	0.32	0.24	0.26	0.22	0.018	0.010	0.012	0.007
φ 25	0.33	0.46	0.37	0.41	0.35	0.018	0.014	0.016	0.007
φ 32	0.47	0.63	0.53	0.62	0.50	0.018	0.018	0.020	0.007
φ 40	0.80	1.02	0.88	1.03	0.85	0.018	0.030	0.032	0.007

### Cylinder weight (stroke length: 151 to 200)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type				
Port size φ 20	0.24	0.35	0.27	0.29	0.25	0.018	0.010	0.012	0.007
φ 25	0.39	0.52	0.43	0.47	0.41	0.018	0.014	0.016	0.007
φ 32	0.54	0.70	0.60	0.69	0.57	0.018	0.018	0.020	0.007
φ 40	0.92	1.14	1.00	1.15	0.97	0.018	0.030	0.032	0.007

(Eg.) 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 × $\frac{100}{10}$ = 0.32 kg Weight of 2 switches ..... 0.036 kg Product weight ..... 0.89 kg + 0.32kg + 0.036 kg = 1.246 kg
--	--

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type

## How to order

Without switch

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

With switch

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

**A** Mounting style  
Note 1

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length

**F** Switch model no.  
Note 3

**G** Switch quantity

**H** Switch installation method

**I** Option  
Note 4,  
Note 6

**J** Accessory  
Note 7

## Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2: Refer to page 250 for switch quantity and min. stroke length.

Note 3: Switches other than switch model no. "F" are available.

(Custom order)

Refer to Ending 1 for details.

Note 4: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.

Note 5: Refer to Ending 89 about custom specifications of rod end form.

Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

Note 7: "I" and "Y" can not be selected at the same time.

## <Example of model number>

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

Model: Round shaped cylinder single acting retract type

- A** Mounting style : Axial foot type
- B** Bore size :  $\phi$  40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides rubber cushioned
- E** Stroke length : 100 mm
- F** Switch model no. : Reed T0H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Switch installation method : Rail method
- I** Option : Bellows material/max. ambient temperature 60 °C
- J** Accessory : Rod eye

## How to order mounting bracket

Bore size (mm)	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40
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 (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

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

Note 2: 2 piece/set is applied for a foot type mounting bracket.

Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
TA	Rod end trunnion type
TB	Head end trunnion type

<b>B Bore size (mm)</b>	
20	$\phi$ 20
25	$\phi$ 25
32	$\phi$ 32
40	$\phi$ 40

<b>C Port thread type</b>	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)

<b>D Cushion</b>	
D	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
$\phi$ 20 to $\phi$ 40	5 to 200	Per 1 mm

<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		without light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*			
T3H*	T3V*		1 color indicator type (custom order)	3-wire
T3PH*	T3PV*			
T2YH*	T2YV*		2 color indicator type	2-wire
T3YH*	T3YV*			
T2YFH*	T2YFV*	2 color indicator type (W/o light for preventive maintenance output)	3-wire	
T3YFH*	T3YFV*			
T2YMH*	T2YMV*	2 color indicator type (W/ light for preventive maintenance output (1 color))	3-wire	
T3YMH*	T3YMV*			
T2YD*	-	Strong magnetic field proof switch	2-wire	
T2YDT*	-			
T2JH*	T2JV*	Off-delay type	2-wire	

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

<b>G Switch quantity</b>	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

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

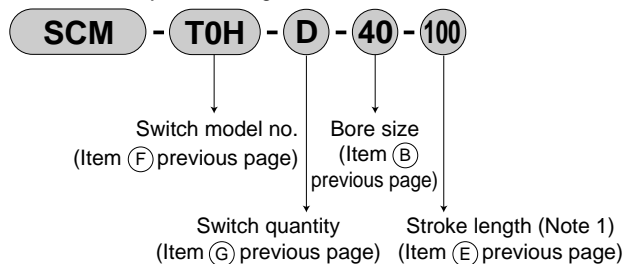
<b>I Option</b>			
		Max. ambient	Max. instantaneous
J	Bellows material	60 °C	100 °C
K	Bellows material	100 °C	200 °C
L	Bellows material	250 °C	400 °C
Q	Switch rail attached at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

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

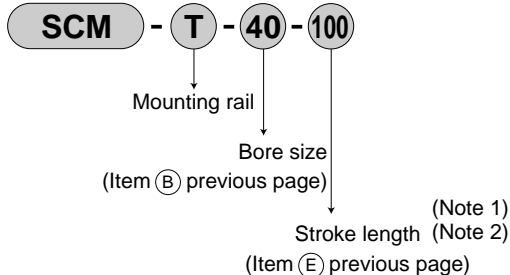
### How to order switch

(switch installation method: rail method)

- Switch body + mounting rail set



- Only mounting rail

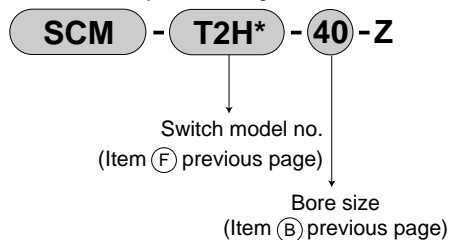


Note 1: When more than 300 mm stroke, indicate "X". When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

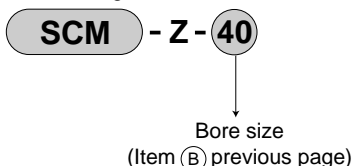
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

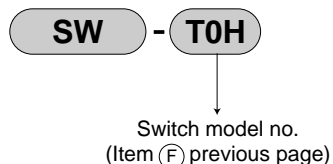
- Switch body + mounting rail + band



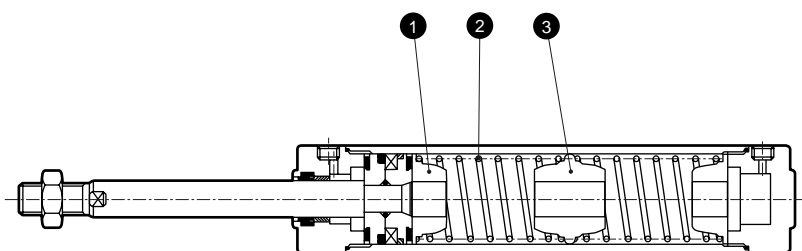
- Mounting rail + band



(only switch body)



### Internal structure and parts list



No.	Parts name	Material	Remarks
1	Spring holder A	Aluminum alloy	
2	Coil spring	Piano wire	Electrode position coating
3	Spring holder B	Aluminum alloy	

### Repair parts list

Consumables part numbers follow the SCM series internal structure drawing (page 228).

Bore size (mm)	Kit No.	Repair parts number
φ 20	SCM-Y-20DK	
φ 25	SCM-Y-25DK	
φ 32	SCM-Y-32DK	3 6 8 10 13
φ 40	SCM-Y-40DK	

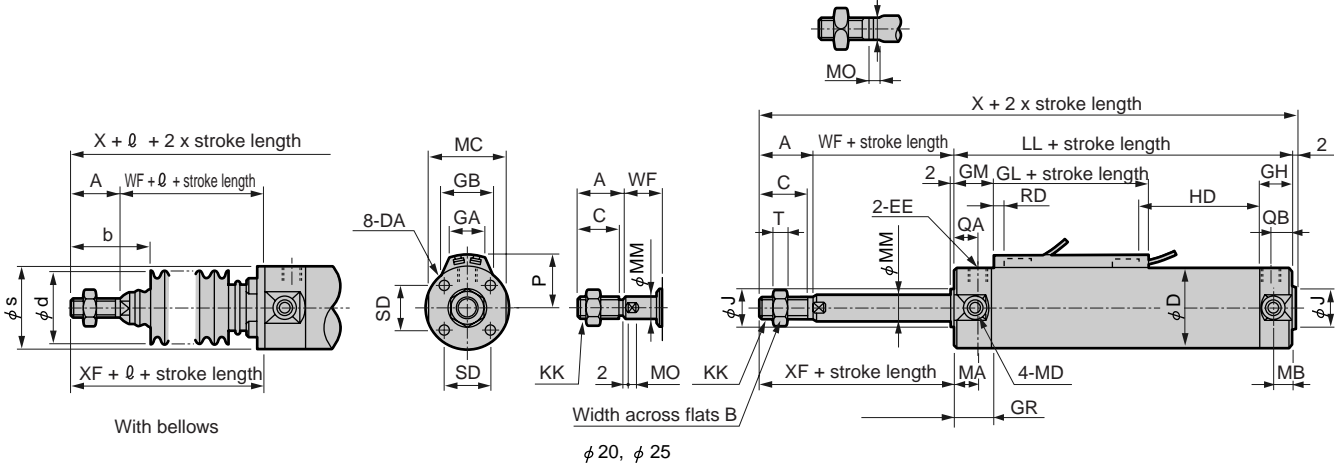
- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

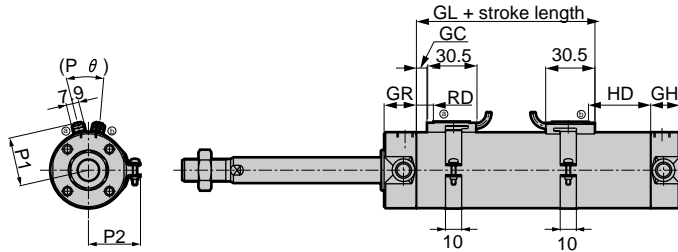
## Dimensions



● Single acting retract type (00) · Switch installation method: rail method MN (width across flats)



· Switch installation method: band method



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indication type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions											LL								
	A	B	C	D	DA	EE	GR	GH	J	KK	5 to 50	50 to 100	100 to 150	150 to 200	MA	MB	MC	MD	MM	MN
φ 20	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
φ 25	22	17	19.5	31	M5 depth 6.5	Rc1/8	19	17	14	M10 x 1.25	99	129	159	189	11	11	29	M6	10	8
φ 32	22	17	19.5	38	M5 depth 7.5	Rc1/8	19	17	18	M10 x 1.25	101	131	161	191	11	10	36	M8	12	10
φ 40	30	22	27	47	M6 depth 12	Rc1/8	20	19	25	M14 x 1.5	108	138	168	198	12	10	44	M10	16	14

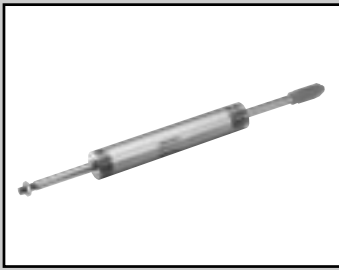
Symbol	With bellows											Switch installation method: rail method										
	MO	QA	QB	SD	T	WF	X				XF	b	d	s	l	GM	GL	P	GA	GB	RD	
Bore size (mm)							5 to 50	50 to 100	100 to 150	150 to 200											T0, 5	T2, 3
φ 20	4	12	10	14	5	17	133	160	187	214	35	30	30	25.7	(stroke length/3) + 18.5	20.5	30	19.5	18	23	5	6
φ 25	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	18	24.4	6	7
φ 32	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	18	25	7	8
φ 40	6	13	12	26	8	20	160	190	220	250	50	40	35	46.7	(stroke length/3) + 18.5	21.5	36	30	18	25.7	9	10

Symbol	Switch installation method: rail method								Switch installation method: band method																
	HD				GC				GL		HD				RD				P1	P2	P θ				
	T0, T5		T2, T3		T0, T5	T2, T3	T0, T5	T2, T3	T0, T5		T2, T3		T0, T5	T2, T3											
5 to 50	50 to 100	100 to 150	150 to 200	5 to 50	50 to 100	100 to 150	150 to 200	5 to 50	50 to 100	100 to 150	150 to 200	5 to 50	50 to 100	100 to 150	150 to 200	T0, T5	T2, T3								
φ 20	31	58	85	112	34	61	88	115	2.5	3.5	31.5	30.5	32.5	59.5	86.5	113.5	33.5	60.5	87.5	114.5	6.5	7.5	19.6	21.5	(38°)
φ 25	33	63	93	123	36	66	96	126	3.5	4.5	32.5	31.5	34.5	64.5	94.5	124.5	35.5	65.5	95.5	125.5	7.5	8.5	22.1	23.9	(34°)
φ 32	34	64	94	124	37	67	97	127	4.5	5.5	33.5	32.5	35.5	65.5	95.5	125.5	36.5	66.5	96.5	126.5	8.5	9.5	25.6	27.6	(30°)
φ 40	36	66	96	126	39	69	99	129	6.5	7.5	35.5	34.5	37.5	67.5	97.5	127.5	38.5	68.5	98.5	128.5	10.5	11.5	30.2	32.1	(26°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending

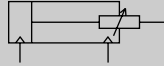


Round shaped medium bore size cylinder  
 Double acting stroke adjustable type (extend)

# SCM-P Series

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

JIS symbol



## Specifications

Descriptions		SCM-P					
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation		Double acting stroke adjustable type (extended)					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.15			0.1		
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (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 (Use within the allowable energy absorption. )					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)					
Adjustable stroke range	mm	25, 50					
Allowable energy absorption	J	0.1	0.2	0.5	0.9	1.6	1.6

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

Note 2: Strokes exceeding 600 mm are available as custom order parts. Contact CKD for details.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

● 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting) Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay		
Output method	NPN output								
Light	Red/Green LED (ON lighting)								
	Installation position adjustment		-		Yellow LED (ON lighting)				
Regular output	Preventive maintenance output		-		-				
	Power voltage		10 to 28 VDC		-		10 to 28 VDC		
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less		
	Load current		50 mA or less		5 to 20 mA		50 mA or less		
Preventive maintenance output	Leakage current		10 μA or less		1.2 mA or less		10 μA or less		
	Load voltage		30 VDC or less						
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less
Leakage current		10 μA or less							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style Bore size (mm)	Adjustable stroke range	Product weight when stroke length (S) = 0 mm				Switch weight Grommet	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
		Basic type	Axial foot type	Flange type	Trunnion type				
φ20	25	0.18	0.29	0.26	0.19	0.018	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	0.018	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	0.018	0.020	0.007
	50	0.56	0.71	0.70	0.59				
φ40	25	0.93	1.12	1.13	0.98	0.018	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	0.018	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	0.018	0.052	0.054	0.009
	50	2.44	3.06	2.94	2.58				

(Eg.) Producting 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 .....  $1.22 \text{ kg} + 0.32 \text{ kg} + 0.036 \text{ kg} = 1.576$  kg

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type



## How to order

Without switch

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

With switch

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

A Mounting style  
Note 1

B Bore size					
-------------	--	--	--	--	--

C Port thread type					
--------------------	--	--	--	--	--

D Cushion					
-----------	--	--	--	--	--

E Stroke length					
-----------------	--	--	--	--	--

F Adjustable stroke range					
---------------------------	--	--	--	--	--

G Switch model no.  
Note 3

--	--	--	--	--	--

H Switch quantity

--	--	--	--	--	--

I Switch installation method

--	--	--	--	--	--

J Option  
Note 4, Note 6

--	--	--	--	--	--

K Accessory  
Note 7

Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
TA	Rod end trunnion type
TB	Head end trunnion type

B Bore size (mm)	
20	φ 20
25	φ 25
32	φ 32
40	φ 40
50	φ 50
63	φ 63

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

D Cushion	
D	Both sides rubber cushioned

E Stroke length (mm)		
Bore size	Stroke length Note 2	Custom stroke length
φ20 to φ 63	10 to 600	Per 1 mm

F Adjustable stroke range (mm)	
25	25
50	50

G Switch model no.				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type without light	2-wire
T5H*	T5V*			
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*			
T3H*	T3V*			
T3PH*	T3PV*		1 color indicator type (custom order)	3-wire
T2YH*	T2YV*		2 color indicator type	2-wire
T3YH*	T3YV*		3-wire	3-wire
T2YFH*	T2YFV*		2 color indicator type (Without light for preventive maintenance output)	3-wire
T3YFH*	T3YFV*		4-wire	4-wire
T2YMH*	T2YMV*		2 color indicator type (With light for preventive maintenance output (1 color))	3-wire
T3YMH*	T3YMV*		4-wire	4-wire
T2YD*	-		Strong magnetic field proof switch	2-wire
T2YDT*	-			
T2JH*	T2JV*		Off-delay type	2-wire

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

H Switch quantity	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity)

I Switch installation method	
Blank	Rail method
Z	Band method

J Option			
		Max. ambient	Max. instantaneous
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		

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

### Note on model no. selection

- Note 1: The mounting bracket LB is shipped with the product. FA/TA/TB is shipped with the product.
- Note 2: Refer to page 256 for switch quantity and min. stroke length.
- Note 3: Switches other than switch model no. "G" are available. (Custom order) Refer to Ending 1 for details.
- Note 4: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.
- Note 5: Refer to Ending 89 about custom specifications of rod end form.
- Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.
- Note 7: "I" and "Y" can not be selected at the same time.

<Example of model number>

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

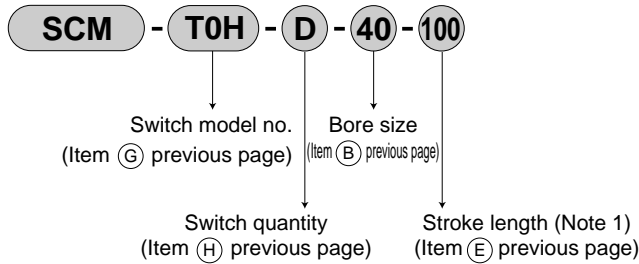
Model: Round shaped cylinder double acting stroke adjustment type (extended)

- A Mounting style : Axial foot type
- B Bore size : φ40 mm
- C Port thread type : Rc thread
- D Cushion : Both sides rubber cushioned
- E Stroke length : 100 mm
- F Adjustable stroke range : 25 mm
- G Switch model no. : Reed T0H switch, lead wire 1 m
- H Switch quantity : 2
- I Switch installation method : Rail method
- J Option : Bellows material / max. ambient temperature 60 °C
- K Accessory : Rod eye

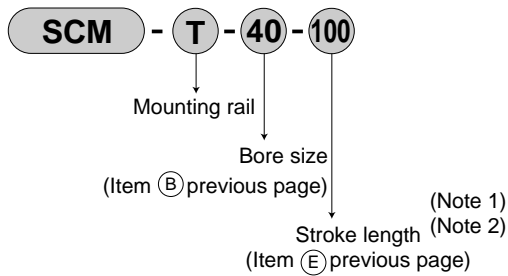
### How to order switch

(switch installation method: rail method)

● Switch body + mounting rail set



● Only mounting rail

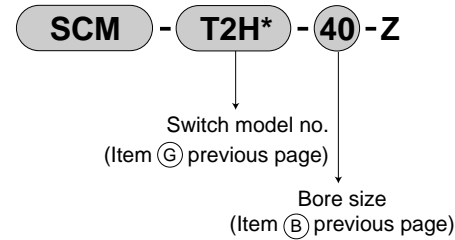


Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

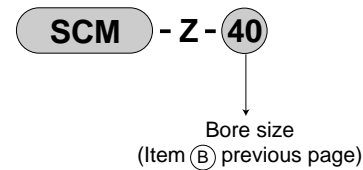
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

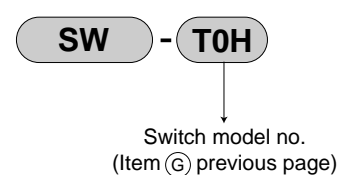
● Switch body + mounting rail + band



● Mounting rail + band



(only switch body)



### How to order mounting bracket

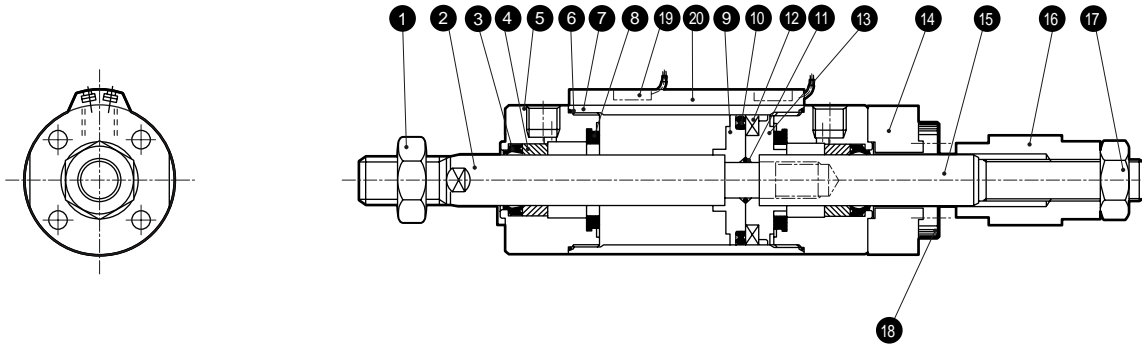
Bore size (mm)	φ20	φ25	φ32	φ40	φ50	φ63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

Note 1: Mounting bolts are attached to each mounting bracket.  
Note 2: 2 piece/set is applied for a foot type mounting bracket.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

## Internal structure and parts list



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	10	Piston packing seal	Nitrile rubber	
2	Piston rod R	$\phi 20, \phi 25$ : stainless steel $\phi 32$ to $\phi 63$ : steel	Industrial chrome plating	11	Piston gasket	Nitrile rubber	
3	Rod packing seal	Nitrile rubber		12	Magnet	Plastic	
4	Bush	Oil impregnated bearing alloy Note 1		13	Piston H	$\phi 20$ to $\phi 40$ : aluminum alloy $\phi 50, \phi 63$ : aluminum alloy die-casting	
5	Rod cover	$\phi 20$ to $\phi 40$ : aluminum alloy $\phi 50, \phi 63$ : aluminum alloy die-casting	Paint	14	Guard	Steel	Zinc chromate
6	Cylinder gasket	Nitrile rubber		15	Piston rod H	Steel	Industrial chrome plating
7	Cylinder tube	Aluminum alloy	Hard alumite	16	Stopper	Steel	Zinc chromate
8	Cushion rubber	Urethane rubber		17	Hexagon nut	Steel	Nickeling
9	Piston R	$\phi 20$ to $\phi 40$ : aluminum alloy $\phi 50, \phi 63$ : aluminum alloy die-casting		18	Hexagon socket head cap bolt	Alloy steel	Blackening
				19	Switch		
				20	Switch rail	Aluminum alloy	

Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free.

Note 2: The 19 switch and 20 switch rail are mounted only when the type with switch is selected.

## Repair parts list

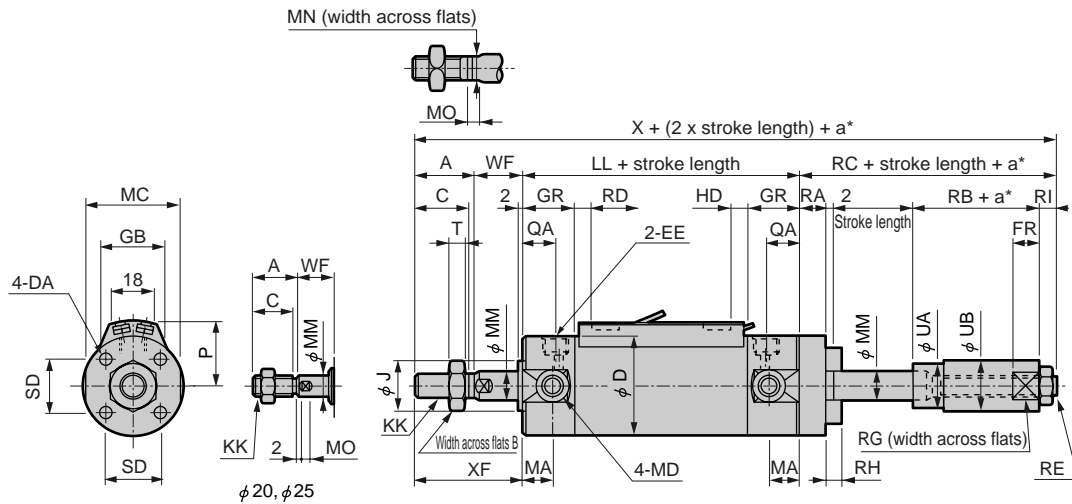
Bore size (mm)	Kit No.	Repair parts number
$\phi 20$	SCM-D-20DK	
$\phi 25$	SCM-D-25DK	
$\phi 32$	SCM-D-32DK	3 6 8 10
$\phi 40$	SCM-D-40DK	
$\phi 50$	SCM-D-50DK	
$\phi 63$	SCM-D-63DK	

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

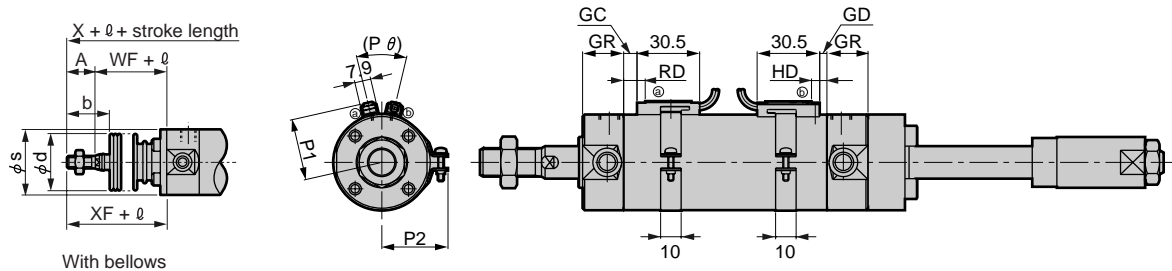
### Dimensions



● Double acting stroke adjustable type (extended) · Switch installation method: rail method



· Switch installation method: band method



a\*: adjustable stroke length.

Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (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 x 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 x 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 x 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 x 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 x 1.5	93	13	69	M14	20	17	8	15	38	11	23	217	58

Symbol	With bellows										Switch installation method: rail method									
	RA	RB	RC	RE	RI	RF	RG	RH	UA	UB	b	d	s	l	P	GB	HD		RD	
Bore size (mm)																	T0, T5	T2, T3	T0, T5	T2, T3
φ20	8	19	35	M6	6	7	10	4	11.5	12	30	30	25.7	(stroke length/3) + 18.5	19.5	23	4.0	7.0	7.0	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	3.0	6.0	8.0	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	4.0	7.0	9.0	9.5
φ40	18	30	59	M12 x 1.5	9	12	22	6	24	25	40	35	46.7	(stroke length/3) + 18.5	30	25.7	6.0	9.0	11.0	11.5
φ50	20	32	66	M16 x 1.5	12	15	30	8	29	35	46	40	57.7	(stroke length/3.6) + 18.5	35.5	26.2	8.0	11.5	12.0	13.0
φ63	20	32	66	M16 x 1.5	12	15	30	10	29	35	46	40	71.7	(stroke length/3.6) + 18.5	42.5	26.5	8.0	11.5	12.0	13.0

Symbol	Switch installation method: band method						
	GD	GC	HD	RD	P1	P2	Pθ
Bore size (mm)	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5			
φ20	3.5	2.5	7.5	6.5	19.6	21.5	(38°)
φ25	4.5	1.5	8.5	5.5	22.1	23.9	(34°)
φ32	5.5	2.5	9.5	6.5	25.6	27.6	(30°)
φ40	7.5	4.5	11.5	8.5	30.2	32.1	(26°)
φ50	9.0	7.0	13.0	11.0	35.7	37.4	(22°)
φ63	9.0	7.0	13.0	11.0	42.7	44.4	(20°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending

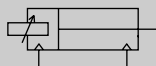


Round shaped medium bore size cylinder  
Double acting stroke adjustable type (retract)

# SCM-R Series

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

JIS symbol



## Specifications

Descriptions		SCM-R					
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation		Double acting stroke adjustable type (retracted)					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.1			0.05		
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		Rc1/8			Rc1/4		
Stroke tolerance	mm	$+1.4$ <sub>0</sub> (up to 1000)		$+1.4$ <sub>0</sub> (up to 1500)	$+2.3$ <sub>0</sub> (up to 1000),	$+2.7$ <sub>0</sub> (up to 1500)	
Working piston speed	mm/s	30 to 1000 (Use within the allowable energy absorption. )					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)					
Adjustable stroke range	mm	25, 50					
Allowable energy absorption	J	0.1	0.2	0.5	0.9	1.6	1.6

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

Note 2: Strokes exceeding 600 mm are available as custom order parts. Contact CKD for details.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

● 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire			
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V			
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay			
Output method	NPN output									
Light	Red/Green LED (ON lighting)									
	Installation position adjustment section		-						Yellow LED (ON lighting)	
Regular output	Preventive maintenance output		-						-	
	Power voltage		10 to 28 VDC		-		10 to 28 VDC			
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less			
	Load current		50 mA or less		5 to 20 mA		50 mA or less			
Preventive maintenance output	Leakage current		10 μA or less		1.2 mA or less		10 μA or less			
	Load voltage		30 VDC or less						-	
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
Leakage current		10 μA or less								

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Stroke length	Product weight when stroke length (S) = 0 mm				Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (With rail)	Band weight per 1 switch
		Basic type	Axial foot type	Flange type	Trunion type				
φ 20	Adjusting range								
	25	0.14	0.25	0.17	0.15	0.018	0.010	0.012	0.007
50	0.15	0.25	0.18	0.16					
φ 25	25	0.25	0.36	0.29	0.27	0.018	0.014	0.016	0.007
	50	0.26	0.37	0.30	0.28				
φ 32	25	0.37	0.52	0.43	0.40	0.018	0.018	0.020	0.007
	50	0.38	0.52	0.44	0.41				
φ 40	25	0.70	0.89	0.78	0.75	0.018	0.030	0.032	0.007
	50	0.72	0.91	0.80	0.77				
φ 50	25	1.30	1.71	1.64	1.44	0.018	0.044	0.046	0.008
	50	1.33	1.75	1.67	1.47				
φ 63	25	1.83	2.45	2.33	1.97	0.018	0.052	0.054	0.009
	50	1.86	2.48	2.36	2.00				

(Eg.) 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 + 0.32kg + 0.036 kg = 1.246 kg

SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending

Round shaped cylinder  
Standard type



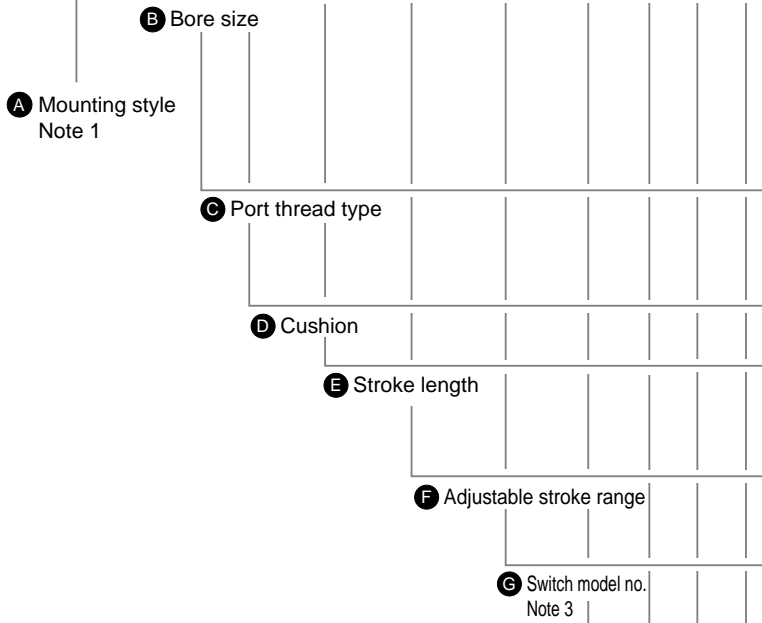
## How to order

Without switch

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

With switch

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



Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
TA	Rod end trunnion type
TB	Head end trunnion type

<b>B Bore size (mm)</b>	
20	φ 20
25	φ 25
32	φ 32
40	φ 40
50	φ 50
63	φ 63

<b>C Port thread type</b>	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)

<b>D Cushion</b>	
D	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
φ 20 to φ 32	10 to 1000	Per 1 mm
φ 40 to φ 63	10 to 1500	

<b>F Adjustable stroke range (mm)</b>	
25	25
50	50

<b>G Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		without light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*		1 color indicator type (custom order)	3-wire
T3H*	T3V*			
T3PH*	T3PV*		2 color indicator type	2-wire
T2YH*	T2YV*			3-wire
T3YH*	T3YV*		2 color indicator type (W/o light for preventive maintenance output)	3-wire
T2YFH*	T2YFV*			4-wire
T3YFH*	T3YFV*		2 color indicator type (W/ light for preventive maintenance output (1 color))	3-wire
T2YMH*	T2YMV*			4-wire
T3YMH*	T3YMV*		Strong magnetic field proof switch	Off-delay type
T2YD*	-			
T2YDT*	-			
T2JH*	T2JV*			2-wire

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

<b>H Switch quantity</b>	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

<b>I Switch installation method</b>	
Blank	Rail method
Z	Band method

<b>J Option</b>			
		Max. ambient	Max. instantaneous
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		

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

## Note on model no. selection

- Note 1: The mounting bracket LB is shipped with the product. FA/TA/TB is shipped with the product.
- Note 2: Refer to page 262 for switch quantity and min. stroke length.
- Note 3: Switches other than switch model no. "G" are available. (Custom order) Refer to Ending 1 for details.
- Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.
- Note 5: Refer to Ending 89 for custom specifications of rod end form
- Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.
- Note 7: "I" and "Y" can not be selected at the same time.

## <Example of model number>

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

Model: Round shaped cylinder double acting stroke adjustment type (retracted)

- A Mounting style : Axial foot type
- B Bore size : φ 40 mm
- C Port thread type : Rc thread
- D Cushion : Both sides rubber cushioned
- E Stroke length : 100 mm
- F Adjustable stroke range : 25 mm
- G Switch model no. : Reed T0H switch, lead wire 1 m
- H Switch quantity : 2
- I Switch installation method : Rail method
- J Option : Bellows material / max. ambient temperature 60 °C
- K Accessory : Rod eye

I Switch installation method

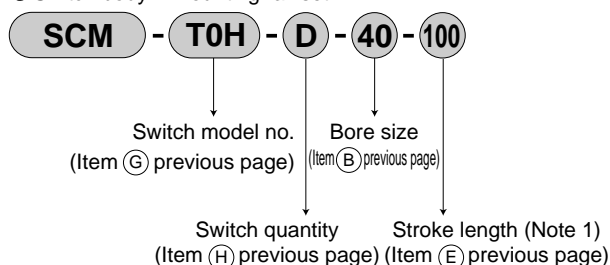
J Option Note 4 Note 6

K Accessory Note 7

### How to order switch

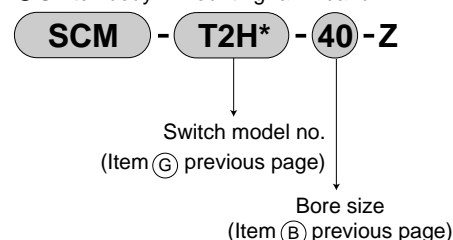
(switch installation method: rail method)

● Switch body + mounting rail set

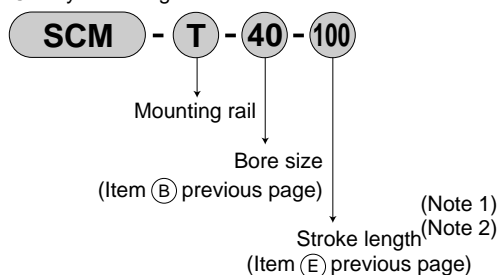


(switch installation method: band method)

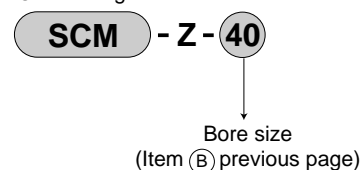
● Switch body + mounting rail + band



● Only mounting rail



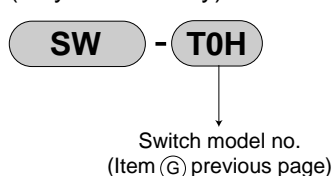
● Mounting rail + band



Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(only switch body)



### How to order mounting bracket

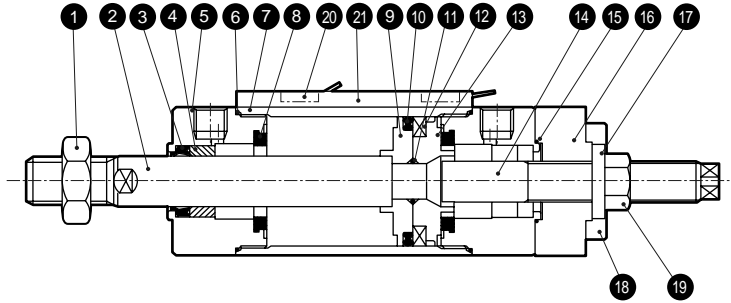
Bore size (mm)	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63

Note 1: Mounting bolts are attached to each mounting bracket.  
Note 2: 2 piece/set is applied for a foot type mounting bracket.

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

## Internal structure and parts list



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	11	Piston gasket	Nitrile rubber	
2	Piston rod	Steel	Industrial chrome plating	12	Magnet	Plastic	
3	Rod packing seal	Nitrile rubber		13	Piston H	φ20 to φ40: aluminum alloy φ50, φ63: aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy <sup>*1</sup>		14	Bolt	Steel	Zinc chromate
5	Rod cover	φ20 to φ40: aluminum alloy φ50, φ63: aluminum alloy die-casting	Paint	15	Gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		16	Guard	Steel	Zinc chromate
7	Cylinder tube	Aluminum alloy	Hard alumite	17	Die thread	Steel + nitrile rubber	
8	Cushion rubber	Urethane rubber		18	Hexagon socket head cap bolt	Alloy steel	Blackening
9	Piston R	φ20 to φ40: aluminum alloy φ50, φ63: aluminum alloy die-casting		19	Hexagon nut	Steel	Nickeling
10	Piston packing seal	Nitrile rubber		20	Switch		
				21	Switch rail	Aluminum alloy	

Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free.

Note 2: The 20 switch and 21 switch rail are mounted only when the type with switch is selected.

## Repair parts list

Bore size (mm)	Kit No.	Repair parts number
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	

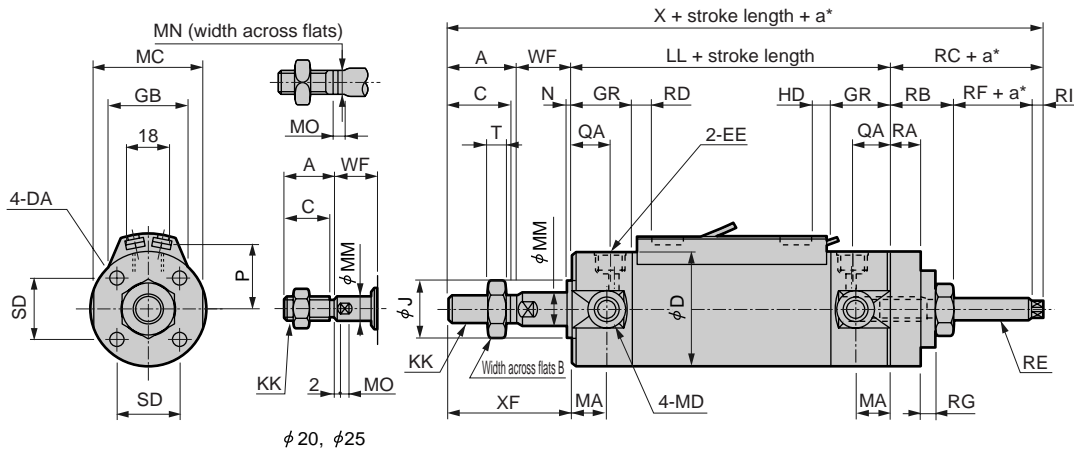
Note 1: Specify the kit No. when placing an order.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

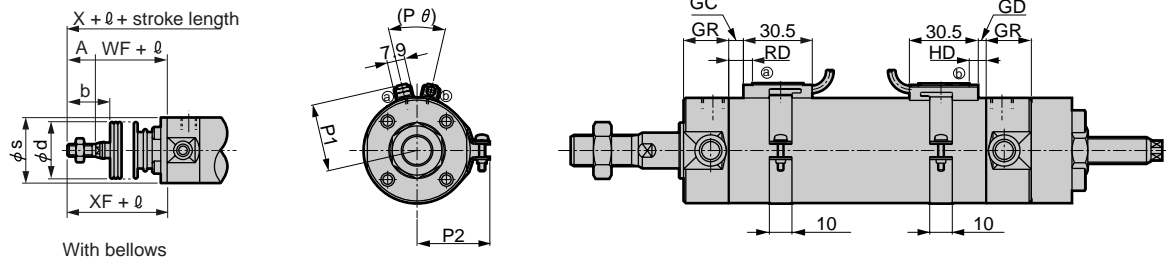
### Dimensions



- Double acting stroke adjustable type (retracted) · Switch installation method: rail method



- Switch installation method: band method



a\* : adjustable stroke length.

Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (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 x 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 x 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 x 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 x 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 x 1.5	93	13	69	M14	20	17	8	2	15	38	11	23	198

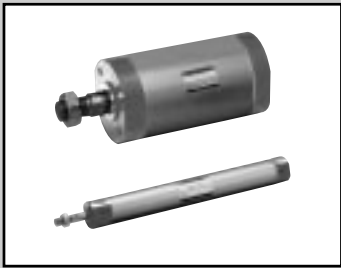
Symbol	With bellows											
Bore size (mm)	XF	RA	RB	RC	RE	RI	RF	RG	b	d	s	ℓ
φ20	35	8	16	22.5	M6	4	2.5	4	30	30	25.7	(stroke length/3) + 18.5
φ25	40	10	20	30	M8	4	6	5	35	30	30.7	(stroke length/3) + 20.5
φ32	40	10	20	27	M8	4	3	5	31.5	35	37.7	(stroke length/3) + 19
φ40	50	18	32	40	M12 x 1.5	5	3	6	40	35	46.7	(stroke length/3) + 18.5
φ50	58	20	37	47	M16 x 1.5	7	3	8	46	40	57.7	(stroke length/3.6) + 18.5
φ63	58	20	37	47	M16 x 1.5	7	3	10	46	40	71.7	(stroke length/3.6) + 18.5

Symbol	Switch installation method: rail method				Switch installation method: band method								
	P	GB	HD		RD		GC		GD		P1	P2	Pθ
			T0, T3	T2, T3	T0, T3	T2, T3	T0, T2, T3, T5	T0, T2, T3, T5					
φ20	19.5	23	4.0	7.0	7.0	7.5	2.5	3.5	7.5	6.5	19.6	21.5	(38°)
φ25	22	24.4	3.0	6.0	8.0	8.5	1.5	4.5	8.5	5.5	22.1	23.9	(34°)
φ32	25.5	25	4.0	7.0	9.0	9.5	2.5	5.5	9.5	6.5	25.6	27.6	(30°)
φ40	30	25.7	6.0	9.0	11.0	11.5	4.5	7.5	11.5	8.5	30.2	32.1	(26°)
φ50	35.5	26.2	8.0	11.5	12.0	13.0	7.0	9.0	13.0	11.0	35.7	37.4	(22°)
φ63	42.5	26.5	8.0	11.5	12.0	13.0	7.0	9.0	13.0	11.0	42.7	44.4	(20°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

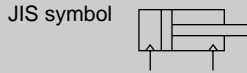
SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending



Round shaped cylinder double acting heat resistance type

# SCM-T Series

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



## Specifications

Descriptions		SCM-T							
Bore size	mm	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63	$\phi$ 80	$\phi$ 100
Actuation		Double acting heat resistance type							
Working fluid		Compressed air							
Max. working pressure	MPa	1.0							
Min. working pressure	MPa	0.1				0.05			
Withstanding pressure	MPa	1.6							
Ambient temperature	°C	5 to 120							
Port size		Rc1/8				Rc1/4	Rc3/8	Rc1/2	
Stroke tolerance	mm	+1.8 0 (up to 1000)		+1.8 0 (up to 1500)		+1.4 0 (up to 1000),		+1.8 0 (up to 1500)	
Working piston speed	mm/s	30 to 1000 (Use within the allowable energy absorption. )							
Cushion		Rubber cushion				Air cushion			
Lubrication	Note 1	Not available							
Allowable energy absorption J	Rubber cushioned	0.1	0.2	0.5	0.9	-	-	-	-
	Air cushioned	-	-	-	-	8.0	14.4	25.4	45.6
	No cushion	-	-	-	-	0.057	0.057	0.112	0.153

Note 1: Regularly apply heat-resistant grease.

Note 2: Refer to Ending 73 for the absorption energy of the type without cushion.

Note 3: If "No cushion" is selected for the allowable absorption energy, when the air cushion symbol "R" is selected, the head side has no cushion, and the indicated allowable absorption energy is applied. When the air cushion symbol "H" is selected, the rod side has no cushion, and the indicated allowable absorption energy is applied.

Note 4: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed. So an external shock absorber should be used.

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

## Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Additional weight per S = 10 mm
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type	
$\phi$ 20	0.10	0.21	0.13	0.15	0.11	0.010
$\phi$ 25	0.17	0.30	0.21	0.25	0.19	0.014
$\phi$ 32	0.25	0.41	0.31	0.40	0.28	0.018
$\phi$ 40	0.40	0.62	0.48	0.63	0.45	0.030
$\phi$ 50	0.75	1.23	1.09	1.15	0.89	0.044
$\phi$ 63	1.05	1.77	1.55	1.73	1.19	0.052
$\phi$ 80	2.02	2.98	2.73	2.73	-	0.070
$\phi$ 100	3.14	4.89	4.49	4.42	-	0.098

(Eg.) Product weight of SCM-T-LB-40-100

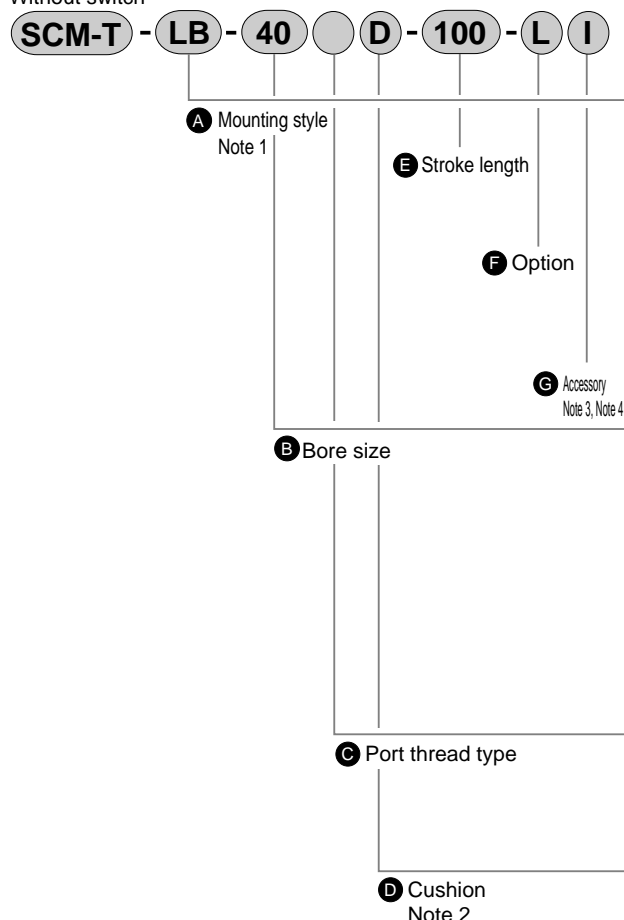
Product weight when S = 0 mm	.....	0.62 kg
Additional weight when S = 100 mm	.....	$0.030 \times \frac{100}{10} = 0.30$ kg
Product weight	.....	0.62 kg + 0.30 kg
		=0.92 kg

## Dimensions

The dimensions are the same as for the standard and single rod. Refer to pages 230 to 243.

### How to order

Without switch



### ⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2:  $\phi 20$  to  $\phi 40$  are not available for B/R/H.

Only D is available.

$\phi 50$  to  $\phi 100$  are not available for D.

Only B/R/H is available.

Note 3: Refer to Ending 89 about custom specifications of rod end form.

Note 4: "I" and "Y" can not be selected at the same time.

<Example of model number>

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

Model: Round shaped cylinder double acting heat resistance type

**A** Mounting style : Axial foot type

**B** Bore size :  $\phi 40$  mm

**C** Port thread type: Rc thread

**D** Cushion : Both sides rubber cushioned

**E** Stroke length : 100 mm

**F** Option : Bellows material, max. ambient temperature 250 °C

**G** Accessory : Rod eye

Symbol	Descriptions							
--------	--------------	--	--	--	--	--	--	--

A Mounting style									
Bore size ( $\phi$ )		20	25	32	40	50	63	80	100
<b>00</b>	Basic type	●	●	●	●	●	●	●	●
<b>LB</b>	Axial foot type	●	●	●	●	●	●	●	●
<b>FA</b>	Rod end flange type	●	●	●	●	●	●	●	●
<b>FB</b>	Head end flange type	●	●	●	●	●	●	●	●
<b>CA</b>	Eye bracket type	●	●	●	●	●	●		
<b>CB</b>	Clevis bracket type (pin and snap ring attached)							●	●
<b>TA</b>	Rod end trunnion type	●	●	●	●	●	●		
<b>TB</b>	Head end trunnion type	●	●	●	●	●	●		

B Bore size (mm)	
<b>20</b>	$\phi 20$
<b>25</b>	$\phi 25$
<b>32</b>	$\phi 32$
<b>40</b>	$\phi 40$
<b>50</b>	$\phi 50$
<b>63</b>	$\phi 63$
<b>80</b>	$\phi 80$
<b>100</b>	$\phi 100$

C Port thread type	
<b>Blank</b>	Rc thread
<b>N</b>	NPT thread (custom order) Air cushioned is $\phi 32$ and over.
<b>G</b>	G thread (custom order) Air cushioned is $\phi 32$ and over.

D Cushion									
Bore size ( $\phi$ )		20	25	32	40	50	63	80	100
<b>B</b>	Both sides air cushioned					●	●	●	●
<b>R</b>	Rod end air cushioned					●	●	●	●
<b>H</b>	Head end air cushioned					●	●	●	●
<b>D</b>	Both sides rubber cushioned	●	●	●	●				

E Stroke length (mm)		
Bore size	Stroke length	Custom stroke length
$\phi 20$ to $\phi 32$	<b>10 to 1000</b>	Per 1 mm
$\phi 40$ to $\phi 100$	<b>10 to 1500</b>	

F Option			
		Max. ambient	Max. instantaneous
<b>L</b>	Bellows material, silicone rubber glass cloth	250 °C	400 °C
<b>M</b>	Piston rod material (stainless steel)		

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

### How to order mounting bracket

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

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

Note 2: 2 piece/set is applied for a foot type mounting bracket.

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

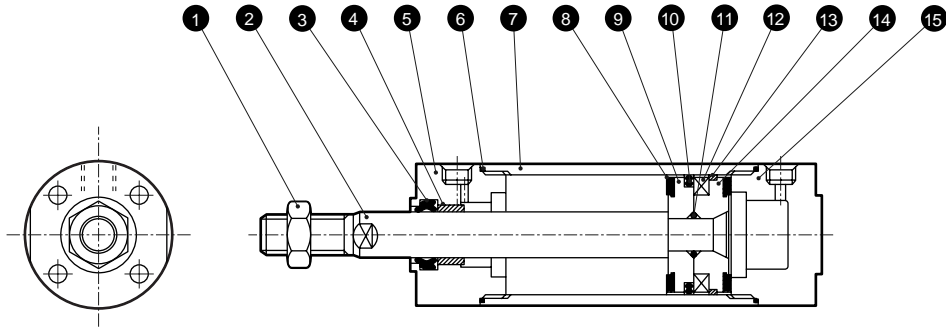
Round shaped cylinder  
Standard type



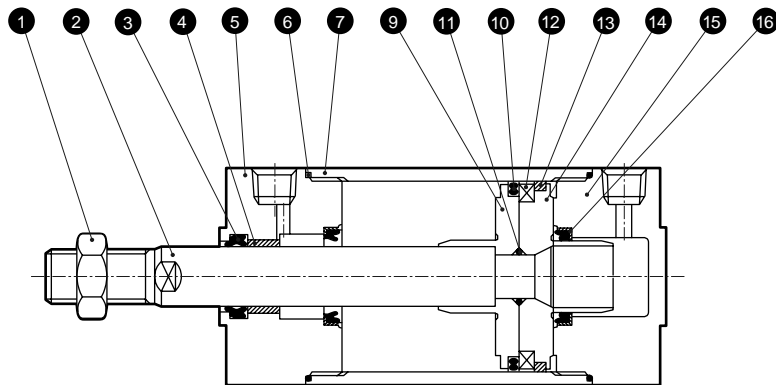
## Internal structure and parts list

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

●  $\phi$  20 to  $\phi$  40 (rubber cushioned)



●  $\phi$  50 to  $\phi$  100 (air cushioned)



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

Note 1: The  $\phi$  50 and  $\phi$  63 are made of aluminum alloy die-casting.

### Repair parts list

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

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

Round shaped cylinder Double acting position locking type

# SCM-Q Series

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

JIS symbol



## Specifications

Descriptions	SCM-Q								
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	
Actuation	Double acting position locking type								
Working fluid	Compressed air								
Max. working pressure MPa	1.0								
Min. working pressure MPa	0.15				0.1				
Withstanding pressure MPa	1.6								
Ambient temperature °C	-10 to 60 (no freezing)								
Port size	M5		Rc1/8		Rc1/4		Rc3/8	Rc1/2	
Stroke tolerance mm	+1.4 0 (up to 1000)		+1.4 0 (up to 1500)	+1.4 (up to 1000), 0 (up to 1500)		+1.8 (up to 1500)			
Working piston speed mm/s	30 to 500 (Use within the allowable energy absorption. )								
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 (when lubricating, use turbine oil ISO VG32.)								
Position locking mechanism	Head end or rod end								
Holding force N	Maximum thrust x 0.7								
Allowable energy absorption J	Cushioned	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	No cushion	-	-	-	-	0.057	0.057	0.112	0.153

Note 1: If "No cushion" is selected for the allowable absorption energy, when the air cushion symbol "R" is selected, the head has no cushion, and the indicated allowable absorption energy is applied. When the air cushion symbol "H" is selected, the rod has no cushion, and the indicated allowable absorption energy is applied.

Note 2: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed, so an external shock absorber should be used.

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10
$\phi 25$			
$\phi 32$			
$\phi 40$			
$\phi 50$			
$\phi 63$		1500	
$\phi 83$			
$\phi 100$			

Note 1: Custom stroke length is available by 1 mm increment.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85
$\phi 83$	10		25		40	50	55		75	85
$\phi 100$	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

\* The T0/T5 switch can be used with 220 VAC.  
Contact CKD for working conditions.

- 1 color/2 color indicator

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V	T5H/T5V	T8H/T8V					
Applications	Programmable controller, relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay				
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	without light		LED (ON lighting)				
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay		
Output method	NPN output								
Light	Installation position adjustment		Red/Green LED (ON lighting)				Yellow LED (ON lighting)		
	Preventive maintenance output		-				-		
Regular output	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20 mA		50 mA or less		5 to 20 mA		50 mA or less	
	Leakage current	1 mA or less		10 μA or less		1.2 mA or less		10 μA or less	
Preventive maintenance output	Load voltage	30 VDC or less							
	Load current	20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
	Leakage current	10 μA or less							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

- Rod end position locking (R)

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight	Band weight
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type	Grommet	per S = 10 mm	per S = 10 mm (with rail)	per 1 switch
φ 20	0.15	0.26	0.18	0.20	0.16	0.018	0.010	0.012	0.007
φ 25	0.24	0.37	0.28	0.32	0.26	0.018	0.014	0.016	0.007
φ 32	0.32	0.48	0.38	0.47	0.35	0.018	0.018	0.020	0.007
φ 40	0.64	0.86	0.72	0.87	0.69	0.018	0.030	0.032	0.007
φ 50	1.09	1.57	1.43	1.49	1.23	0.018	0.044	0.046	0.008
φ 63	1.49	2.21	1.99	2.17	1.63	0.018	0.052	0.054	0.009
φ 80	2.67	3.63	3.38	3.38	-	0.018	0.070	0.072	0.010
φ 100	4.15	5.90	5.50	5.43	-	0.018	0.098	0.100	0.010

- Head end position locking (H)

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight	Band weight
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type	Grommet	per S = 10 mm	per S = 10 mm (with rail)	per 1 switch
φ 20	0.15	0.26	0.18	0.20	0.16	0.018	0.010	0.012	0.007
φ 25	0.24	0.37	0.28	0.32	0.26	0.018	0.014	0.016	0.007
φ 32	0.35	0.51	0.41	0.50	0.38	0.018	0.018	0.020	0.007
φ 40	0.69	0.91	0.77	0.92	0.74	0.018	0.030	0.032	0.007
φ 50	1.19	1.67	1.53	1.59	1.33	0.018	0.044	0.046	0.008
φ 63	1.60	2.32	2.10	2.28	1.74	0.018	0.052	0.054	0.009
φ 80	2.86	3.82	3.57	3.57	-	0.018	0.070	0.072	0.010
φ 100	4.30	6.05	5.65	5.58	-	0.018	0.098	0.100	0.010

(Eg.) 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 .....  $0.86 \text{ kg} + 0.32 \text{ kg} + 0.036 \text{ kg} = 1.216$  kg

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

- Dust generation preventing structure for use in cleanrooms

SCM-Q ..... P7\*

SCM-Q ..... P5\*

- ▲ Read the "Safety precautions" (3. Position locking mechanism SCM-Q) section (pages 219, 221 and 222) before starting use.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

## How to order

Without switch

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

With switch

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

**A** Mounting style  
Note 1, Note 2

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length

**F** Position locking

**G** Switch model no.  
Note 4

**H** Switch quantity

**I** Switch mounting style

**J** Option  
Note 6

**K** Accessory  
Note 7

Symbol	Descriptions								
<b>A Mounting style</b>									
	Bore size (φ)	20	25	32	40	50	63	80	100
<b>00</b>	Basic type	●	●	●	●	●	●	●	●
<b>LB</b>	Axial foot type	●	●	●	●	●	●	●	●
<b>FA</b>	Rod end flange type	●	●	●	●	●	●	●	●
<b>FB</b>	Head end flange type	●	●	●	●	●	●	●	●
<b>CA</b>	Eye bracket type	●	●	●	●	●	●	●	●
<b>CB</b>	Clevis bracket type (pin and snap ring attached)							●	●
<b>TA</b>	Rod end trunnion type (Rod end position locking is not available)	●	●	●	●	●	●		
<b>TB</b>	Head end trunnion type (Head end position locking is not available)	●	●	●	●	●	●		

<b>B Bore size (mm)</b>	
<b>20</b>	φ 20
<b>25</b>	φ 25
<b>32</b>	φ 32
<b>40</b>	φ 40
<b>50</b>	φ 50
<b>63</b>	φ 63
<b>80</b>	φ 80
<b>100</b>	φ 100

<b>C Port thread type</b>	
<b>Blank</b>	Rc thread
<b>N</b>	NPT threads (custom order) air cushioned is φ 32 or more
<b>G</b>	G thread (custom order) air cushioned is φ 32 or more

<b>D Cushion</b>	
<b>B</b>	Both sides air cushioned
<b>R</b>	Rod end air cushioned
<b>H</b>	Head end air cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
φ 20 to φ 32	<b>10 to 1000</b>	Per 1 mm
φ 40 to φ 100	<b>10 to 1500</b>	

<b>F Position locking mechanism</b>	
<b>R</b>	Rod end position locking
<b>H</b>	Head end position locking

<b>G Switch model no.</b>					
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire	
<b>T0H*</b>	<b>T0V*</b>	Reed	1 color indicator type without light	2-wire	
<b>T5H*</b>	<b>T5V*</b>				
<b>T8H*</b>	<b>T8V*</b>				
<b>T1H*</b>	<b>T1V*</b>	Proximity	1 color indicator type	2-wire	
<b>T2H*</b>	<b>T2V*</b>				
<b>T3H*</b>	<b>T3V*</b>		1 color indicator type (custom order)	3-wire	
<b>T3PH*</b>	<b>T3PV*</b>				
<b>T2YH*</b>	<b>T2YV*</b>				
<b>T3YH*</b>	<b>T3YV*</b>		2 color indicator type (W/o light for preventive maintenance output)	2-wire	3-wire
<b>T2YFH*</b>	<b>T2YFV*</b>				
<b>T3YFH*</b>	<b>T3YFV*</b>	2 color indicator type (W/ light for preventive maintenance output (1 color))		3-wire	
<b>T2YMH*</b>	<b>T2YMV*</b>				
<b>T3YMH*</b>	<b>T3YMV*</b>	Strong magnetic field proof switch	2-wire		
<b>T2YD*</b>	-				
<b>T2YDT*</b>	-				
<b>T2JH*</b>	<b>T2JV*</b>	Off-delay type		2-wire	

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

<b>H Switch quantity</b>	
<b>R</b>	One on rod end
<b>H</b>	One on head end
<b>D</b>	Two
<b>T</b>	Three
<b>4</b>	4 switches (When more than 4 switches, indicate switch quantity.)

<b>I Switch installation method</b>	
<b>Blank</b>	Rail method
<b>Z</b>	Band method

<b>J Option</b>	
<b>Q</b>	Switch rail attached at shipment
<b>P6</b>	Copper and PTFE free (custom order)

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

## Note on model no. selection

- Note 1: The mounting bracket is shipped with the product.
- Note 2: When the mounting style "LB" is selected, the cylinder cannot be mounted on the bracket and mounted on the frame, etc. Refer to safety precautions for details.
- Note 3: Refer to page 272 for switch quantity and min. stroke length.
- Note 4: Switches other than switch model no. "G" are available. (Custom order) Refer to Ending 1 for details.
- Note 5: Refer to Ending 89 about custom specifications of rod end form.
- Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.
- Note 7: "I" and "Y" can not be selected at the same time.

## <Example of model number>

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

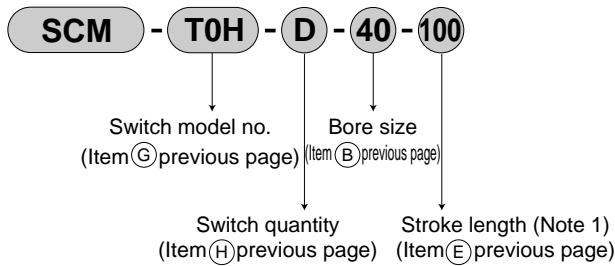
Model: Round shaped cylinder position locking type

- A** Mounting style : Axial foot type
- B** Bore size : φ 40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides air cushioned
- E** Stroke length : 100 mm
- F** Position locking mechanism : Rod end position locking
- G** Switch model no. : Proximity T2H switch, lead wire 1 m
- H** Switch quantity : 2
- I** Switch installation method : Rail method
- J** Option : Switch rail attached at shipment
- K** Accessory : Rod eye

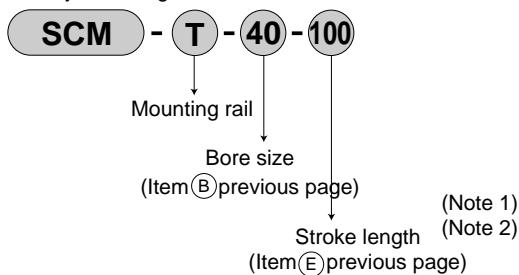
### How to order switch

(switch installation method: rail method)

● Switch body + mounting rail set



● Only mounting rail

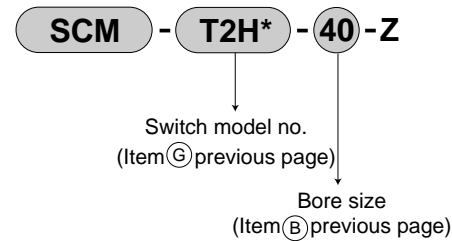


Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

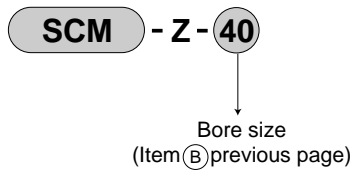
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

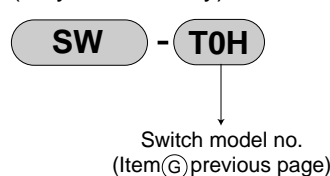
● Switch body + mounting rail + band



● Mounting rail + band



(only switch body)



### How to order mounting bracket

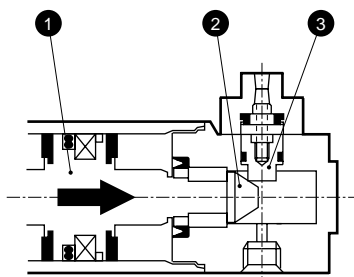
Bore size (mm)	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Eye (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis (CB)	-	-	-	-	-	-	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

Note 1: Mounting bolts are attached to each mounting bracket.  
Note 2: 2 piece/set is applied for a foot type mounting bracket.

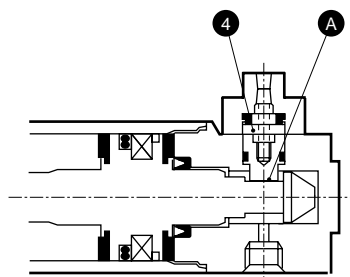
### Operational explanation

● Locked during operation

When Piston (1) of the cylinder approaches to the stroke end, Stopper piston (3) is lifted up along to the slope of Sleeve (2).

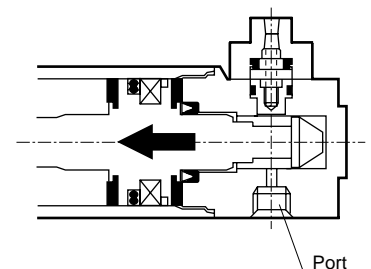


The cylinder piston approaches to the stroke end until Sleeve groove (A) reaches the position of stopper piston. The stopper piston pushed back by Spring (4) enters into the groove to lock completely.



● Unlocked during operation

Supplying pressure to the port results in pushing back the spring pin. The stopper piston comes off from the sleeve groove and releases locking.



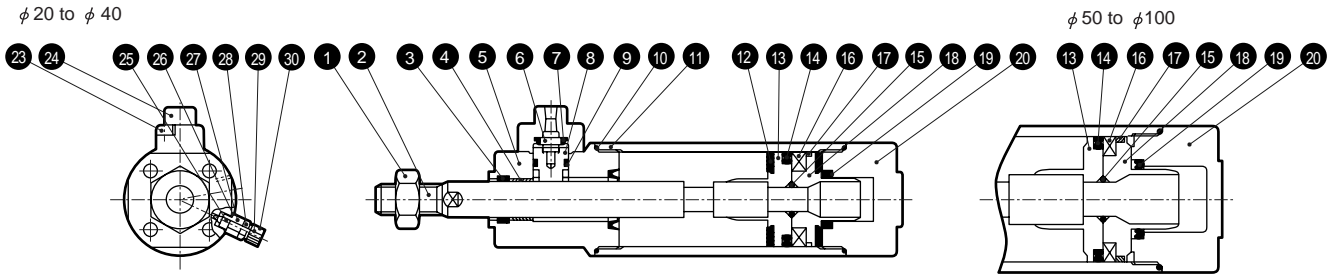
Ending

Round shaped cylinder Standard type

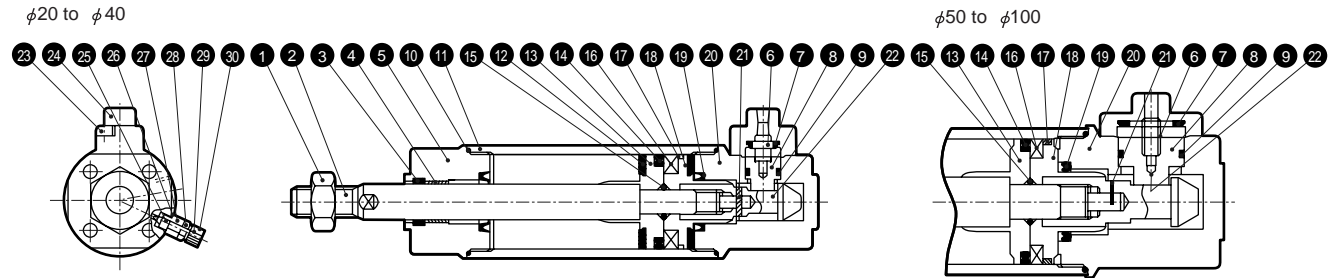
- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

## Internal structure and parts list

### ● SCM-Q (rod end position locking)



### ● SCM-Q (head end position locking)



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	16	Magnet	Plastic	
2	Piston rod	φ 20, φ 25: stainless steel φ 32 to φ 100: steel	Industrial chrome plating	17	Wear ring	Polyacetal resin	
3	Rod packing seal	Nitrile rubber		18	Piston H	φ 20 to φ 40: aluminum alloy φ 50 to φ 100: aluminum alloy die-casting	
4	Bush	Oil impregnated bearing alloy		19	Cushion packing seal	Nitrile rubber and 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	Hexagon socket head cap bolt	Alloy steel	Blackening
9	Piston packing seal (B)	Nitrile rubber		24	Stopper guard	Aluminum alloy	
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	φ 20 to φ 40: aluminum alloy φ 50 to φ 100: aluminum alloy die-casting		28	Lock nut	Steel	Nickeling
14	Piston packing seal (A)	Nitrile rubber		29	Needle	Stainless steel	
15	Piston gasket	Nitrile rubber		30	Dial	Aluminum alloy	

## Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 20	SCM-Q-20BK	
φ 25	SCM-Q-25BK	
φ 32	SCM-Q-32BK	
φ 40	SCM-Q-40BK	3 7 9 10 12
φ 50	SCM-Q-50BK	14 17 19
φ 63	SCM-Q-63BK	
φ 80	SCM-Q-80BK	
φ 100	SCM-Q-100BK	

Note: When placing an order, indicate kit number.

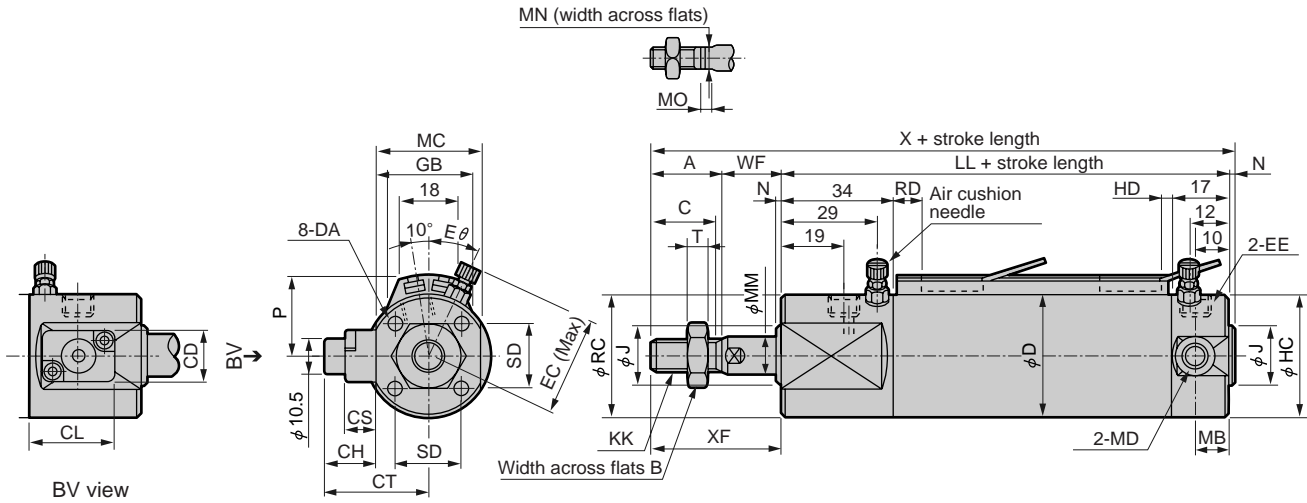




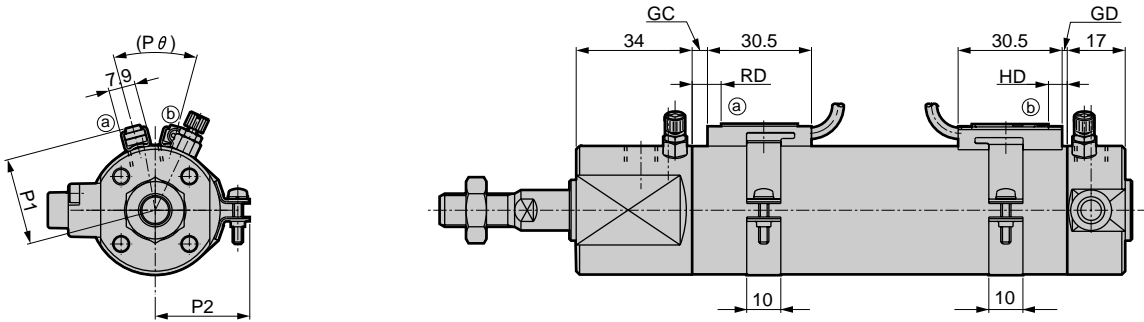
## Dimensions (φ 20 to φ 32)

- Basic type (00)  
(Rod end position locking)

· Switch installation method: rail method



· Switch installation method: band method



RD: rod end max. sensitive position  
HD: head end max. sensitive position

Note 1: For mounting style LB, this cannot be installed onto a stand if the bracket is installed. Refer to safety precautions for details.

Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indication type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions																					
Bore size (mm)	A	B	C	D	CD	CH	CL	CS	CT	DA	EC	EE	Eθ	HC	J	KK	LL	MB	MC	MD	MM	MO
φ 20	18	13	15.5	26	16	15.5	22	9.5	28	M4 depth 6.5	27	M5	30°	26	12	M8	84	11	25	M5	8	4
φ 25	22	17	19.5	31	16	15.5	22	9.5	31	M5 depth 6.5	29.5	M5	30°	31	14	M10 x 1.25	84	11	31	M6	10	5
φ 32	22	17	19.5	38	16	15.5	22	9.5	31.5	M5 depth 7.5	32.8	Rc1/8	25°	38	18	M10 x 1.25	86	10	32	M8	12	5.5

Symbol	Switch installation method: rail method										Switch installation method: band method											
Bore size (mm)	MN	N	RC	SD	T	WF	X	XF	P	GB	HD				RD		GC		GD		Pθ	
											T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5	T0, T2, T3, T5	P1	P2	Pθ			
φ 20	6	2	30	14	5	17	121	35	19.5	23	4.0	7.0	7.0	7.5	2.5	3.5	7.5	6.5	19.6	21.5	(38°)	
φ 25	8	2	35	16.5	6	18	126	40	22	24.4	3.0	6.0	8.0	8.5	1.5	4.5	8.5	5.5	22.1	23.9	(34°)	
φ 32	10	2	38	20	6	18	128	40	25.5	25	4.0	7.0	9.0	9.5	2.5	5.5	9.5	6.5	25.6	27.6	(30°)	

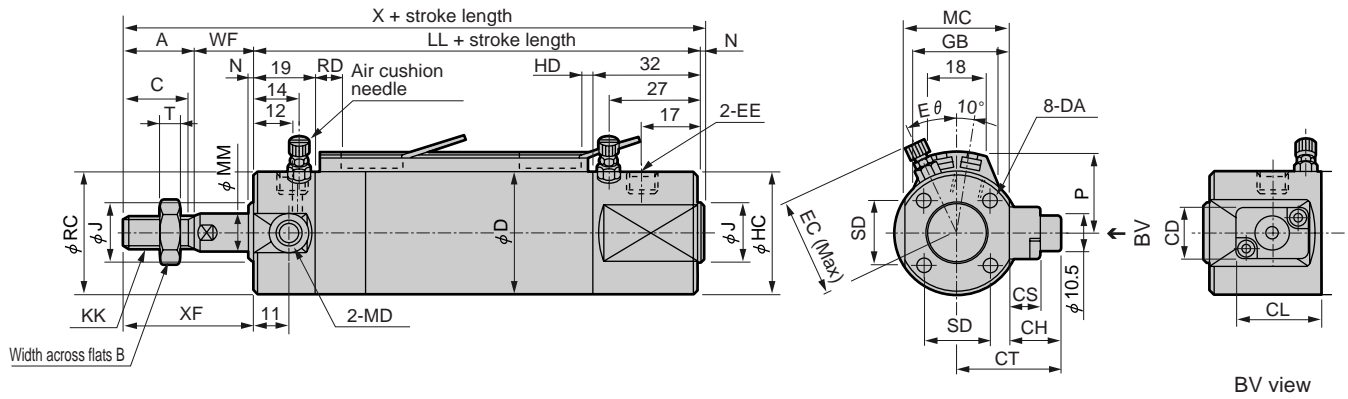
Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

### Dimensions ( φ 20 to φ 32)

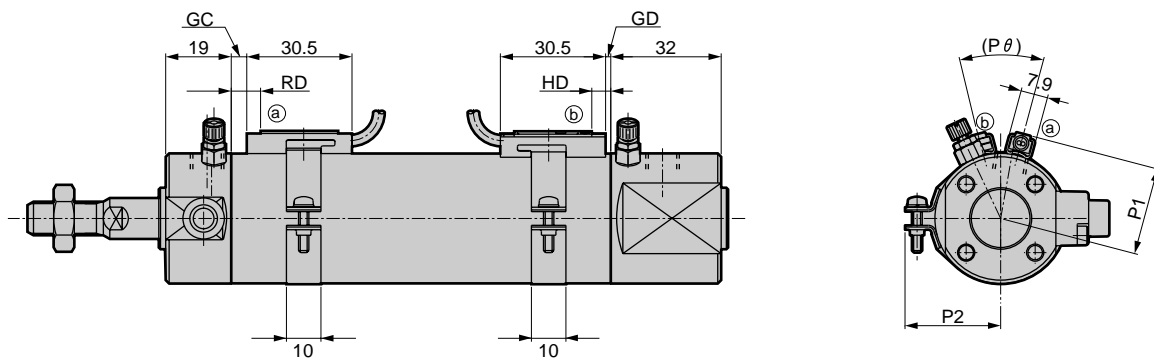


- Basic type (00)  
(head end position locking)

· Switch installation method: rail method



· Switch installation method: band method



RD: rod end max. sensitive position  
HD: head end max. sensitive position

Note 1: For mounting style LB, this cannot be installed onto a stand if the bracket is installed. Refer to safety precautions for details.  
Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indication type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions																					
	A	B	C	D	CD	CH	CL	CS	CT	DA	EC	EE	Eθ	HC	J	KK	LL	MC	MD	MM	MO	MN
φ 20	18	13	15.5	26	16	15.5	22	9.5	28	M4 depth 6.5	27	M5	30°	30	12	M8	84	25	M5	8	4	6
φ 25	22	17	19.5	31	16	15.5	22	9.5	31	M5 depth 6.5	29.5	M5	30°	35	14	M10 x 1.25	84	31	M6	10	5	8
φ 32	22	17	19.5	38	16	15.5	22	9.5	31.5	M5 depth 7.5	32.8	Rc1/8	25°	38	18	M10 x 1.25	86	32	M8	12	5.5	10

Symbol	Switch installation method: rail method														Switch installation method: band method					
	N	RC	SD	T	WF	X	XF	P	GB	HD		RD		GC	GD	HD	RD	P1	P2	Pθ
										T0, T5	T2, T3	T0, T5	T2, T3							
φ 20	2	26	14	5	17	121	35	19.5	23	4.0	7.0	7.0	7.5	2.5	3.5	7.5	6.5	19.6	21.5	(38°)
φ 25	2	31	16.5	6	18	126	40	22	24.4	3.0	6.0	8.0	8.5	1.5	4.5	8.5	5.5	22.1	23.9	(34°)
φ 32	2	38	20	6	18	128	40	25.5	25	4.0	7.0	9.0	9.5	2.5	5.5	9.5	6.5	25.6	27.6	(30°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

SCP*2
CMK2
CMA2
<b>SCM</b>
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC

Ending

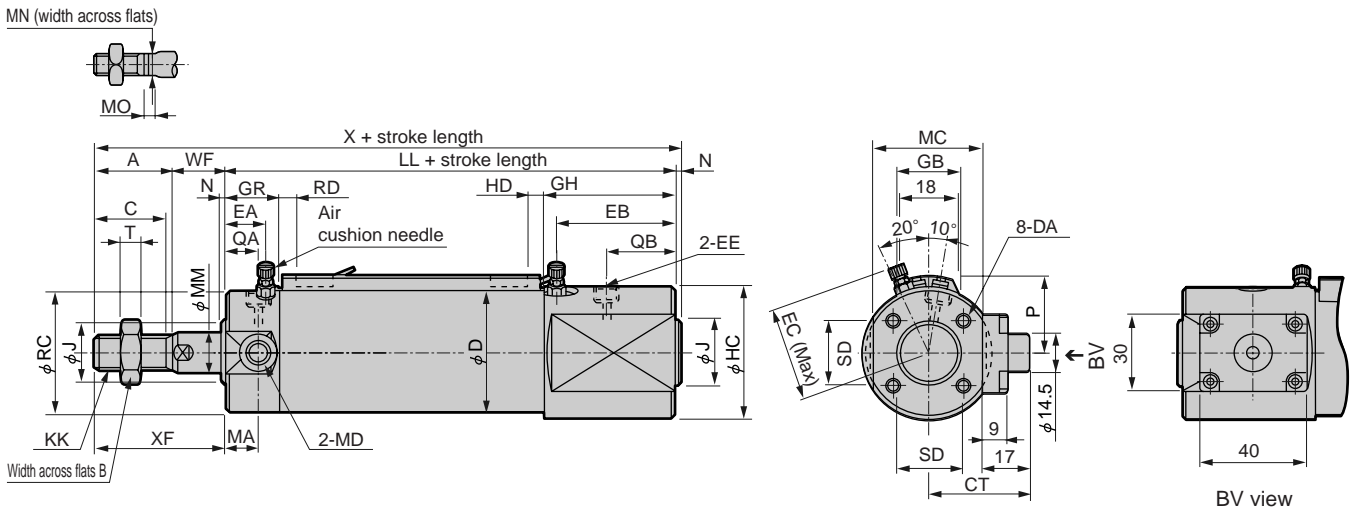
Round shaped cylinder  
Standard type



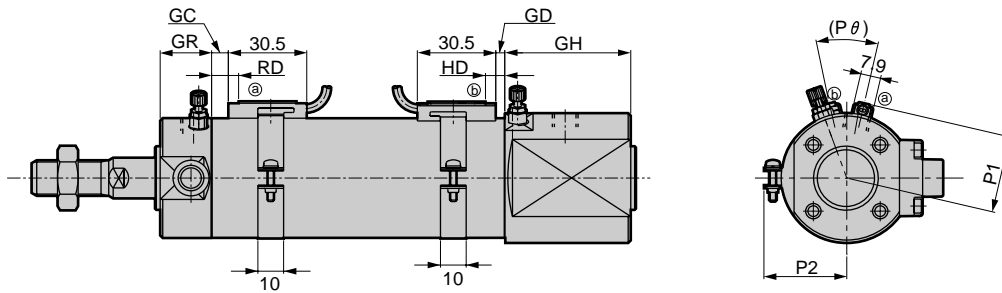
### Dimensions ( φ 40 to φ 100)



- Basic type (00)  
(head end position locking)
- Switch installation method: rail method



- Switch installation method: band method



Note 1: For mounting style LB, this cannot be installed onto a stand if the bracket is installed. Refer to safety precautions for details.  
 Note 2: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indication type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 3: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions																			
Bore size (mm)	A	B	C	D	CT	DA	EA	EB	EC	EE	GH	GR	HC	J	KK	LL	MA	MB	MC	MD
φ 40	30	22	27	47	37.5	M6 depth 12	15	44	36.6	Rc1/8	49	20	51	25	M14 x 1.5	108	12	10	41	M10
φ 50	35	27	32	58	43.5	M8 depth 16	18.5	45.5	43	Rc1/4	52	25	61	30	M18 x 1.5	120	13	12	53	M12
φ 63	35	27	32	72	49.5	M10 depth 16	18.5	45.5	50	Rc1/4	52	25	72	32	M18 x 1.5	120	13	12	65	M14
φ 80	40	32	37	89	57.5	M10 depth 22	20	50	58.5	Rc3/8	58	28	89	40	M22 x 1.5	138	-	-	81	-
φ 100	40	41	37	110	68.5	M12 depth 22	20	50	69	Rc1/2	58	28	110	50	M26 x 1.5	138	-	-	103	-

Symbol	Switch installation method: rail method																	
Bore size (mm)	MM	MO	MN	N	QA	QB	RC	SD	T	WF	X	XF	P	GB	HD		RD	
															T0, T5	T2, T3	T0, T5	T2, T3
φ 40	16	6	14	2	13	25.5	47	26	8	20	160	50	30	25.7	6.0	9.0	11.0	11.5
φ 50	20	8	17	2	15	27	58	32	11	23	180	58	35.5	26.2	8.0	11.5	12.0	13.0
φ 63	20	8	17	2	15	27	72	38	11	23	180	58	42.5	26.5	8.0	11.5	12.0	13.0
φ 80	25	11	22	3	15	31.5	89	50	13	31	212	71	51	26.7	10.5	13.0	19.0	20.0
φ 100	30	13	27	3	15	31.5	110	60	16	31	212	71	61.5	26.7	11.0	13.5	18.5	19.5

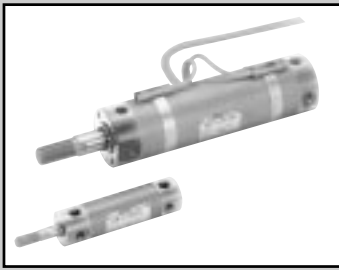
  

Symbol	Switch installation method: band method						
Bore size (mm)	GC	GD	HD	RD	P1	P2	Pθ
	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5			
φ 40	4.5	7.5	11.5	8.5	30.2	32.1	(26°)
φ 50	7.0	9.0	13.0	11.0	35.7	37.4	(22°)
φ 63	7.0	9.0	13.0	11.0	42.7	44.4	(20°)
φ 80	9.0	16.0	20.0	13.0	51.2	53.0	(16°)
φ 100	9.5	15.5	19.5	13.5	61.7	63.5	(16°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending  
 Round shaped cylinder  
 Standard type

SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending



Round shaped cylinder double acting fine speed type

# SCM-F Series

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

JIS symbol



## Specifications

Descriptions		SCM			
Bore size	mm	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40
Actuation		Double acting			
Working fluid		Compressed air			
Max. working pressure	MPa	1.0			
Min. working pressure	MPa	0.1			
Withstanding pressure	MPa	1.6			
Ambient temperature	°C	-10 to 60 (no freezing)			
Port size		Rc1/8			
Stroke tolerance	mm	+1.4 0			
Working piston speed	mm/s	1 to 200 (Use within the allowable energy absorption. )			
Cushion		Rubber cushion			
Lubrication		Not available			
Allowable energy absorption	J	0.1	0.2	0.5	0.9

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi$ 20	10		25		40	50	55		75	85
$\phi$ 25	10		25		40	50	55		75	85
$\phi$ 32	10		25		40	50	55		75	85
$\phi$ 40	10		25		40	50	55		75	85

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for the installation position.

● Switch installation method: Band method

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

### Switch specifications

\* The T0/T5 switch can be used with 220 VAC.  
Contact CKD for working conditions.

● 1 color/2 color indicator

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay		
Output method	NPN output								
Light	Red/Green LED (ON lighting)								
	Installation position adjustment		-		Yellow LED (ON lighting)				
Regular output	Preventive maintenance output		-		Yellow LED (ON lighting)				
	Power voltage		10 to 28 VDC		-		10 to 28 VDC		
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less		
	Load current		50 mA or less		5 to 20 mA		50 mA or less		
Preventive maintenance output	Leakage current		10 μA or less		1.2 mA or less		10 μA or less		
	Load voltage		30 VDC or less						
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less
Leakage current		10 μA or less							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight per	Band weight
	Basic type (00)	Axial foot type (LB)	Flange type (FA/FB)	Clevis type	Trunnion type (TA/TB)	Grommet	per S = 10 mm	S = 10 mm ( $\frac{W_{switch}}{rail}$ )	per 1 switch
φ 20	0.10	0.21	0.13	0.15	0.11	0.018	0.01	0.012	0.007
φ 25	0.17	0.30	0.21	0.25	0.19	0.018	0.014	0.016	0.007
φ 32	0.26	0.42	0.32	0.41	0.29	0.018	0.018	0.02	0.007
φ 40	0.41	0.63	0.49	0.64	0.46	0.018	0.03	0.032	0.007

(Eg.) Product weight of SCM-F-LB-40B-100-T2H-D	<ul style="list-style-type: none"> <li>Product weight when S = 0 mm ..... 0.63 kg</li> <li>Additional weight when S = 100 mm ... <math>0.032 \times \frac{100}{10} = 0.32</math> kg</li> <li>Weight of 2 switches ..... <math>0.018 \times 2 = 0.036</math> kg</li> <li>Product weight ..... <math>0.63 \text{ kg} + 0.32 \text{ kg} + 0.036 \text{ kg} = 0.986 \text{ kg}</math></li> </ul>
--	--

### Dimensions

It is the same as the double acting single rod type SCM Series. Refer to pages 230 to 243.

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type



## How to order

Without switch

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

With switch

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

Model no.

A Mounting style  
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length

F Switch model no.  
Note 3

G Switch quantity

H Switch installation method  
Note 5

I Accessory  
Note 6

Symbol	Descriptions			
<b>A Mounting style</b>				
00	Basic type			
LB	Axial foot type			
FA	Rod end flange type			
FB	Head end flange type			
CA	Eye bracket type			
TA	Rod end trunnion type			
TB	Head end trunnion type			
<b>B Bore size (mm)</b>				
20	φ20			
25	φ25			
32	φ32			
40	φ40			
<b>C Port thread type</b>				
Blank	Rc thread			
N	NPT thread (custom order)			
G	G thread (custom order)			
<b>D Cushion</b>				
D	Both sides rubber cushioned			
<b>E Stroke length (mm)</b>				
Bore size	Stroke length Note 2	Custom stroke length		
φ20 to φ40	10 to 500	Per 1 mm		
<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type without light	2-wire
T5H*	T5V*			
T8H*	T8V*	Proximity	1 color indicator type	2-wire
T1H*	T1V*			
T2H*	T2V*		1 color indicator type (custom order)	3-wire
T3H*	T3V*			
T3PH*	T3PV*		2 color indicator type	3-wire
T2YH*	T2YV*			
T3YH*	T3YV*		2 color indicator type (Without light for preventive maintenance output)	4-wire
T2YFH*	T2YFV*			
T3YFH*	T3YFV*	2 color indicator type (With light for preventive maintenance output (1 color))	3-wire	
T2YMH*	T2YMV*			
T3YMH*	T3YMV*	Off-delay type	4-wire	
T2JH*	T2JV*			
<b>*Lead wire length</b>				
Blank	1 m (standard)			
3	3 m (option)			
5	5 m (option)			
<b>G Switch quantity</b>				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			
4	4 switches (When more than 4 switches, indicate switch quantity.)			
<b>H Switch installation method</b>				
Blank	Rail method			
Z	Band method			
<b>I Option</b>				
Q	Switch rail attached at shipment			
M	Piston rod material (stainless steel)			
<b>J Accessory</b>				
I	Rod eye			
Y	Rod clevis			
B2	Clevis bracket			

### ⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2: Refer to page 282 for switch quantity and min. stroke length.

Note 3: Switches other than switch model no. "G" are available. (Custom order)

Refer to Ending 1 for the details.

Note 4: Refer to Ending 89 about custom specifications of rod end form.

Note 5: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

Note 6: "I" and "Y" can not be selected at the same time.

### <Example of model number>

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

Model: Round shaped cylinder double acting

A Mounting style: Axial foot type

B Bore size: φ40 mm

C Port thread type: Rc thread

D Cushion: Both sides rubber cushioned

E Stroke length: 100 mm

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

G Switch quantity: Two

H Switch installation method: Band method

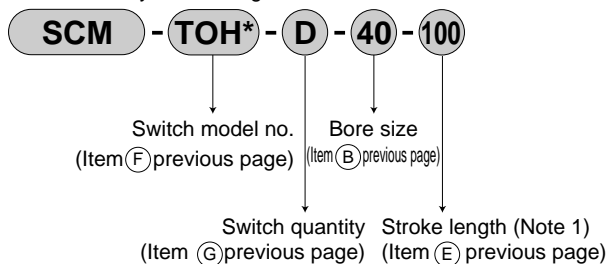
I Option: Piston rod material (stainless steel)

J Accessory: Rod eye

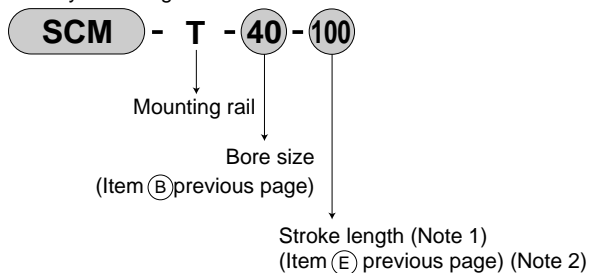
### How to order switch

(switch installation method: rail method)

- Switch body + mounting rail set



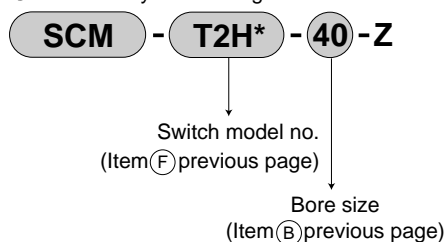
- Only mounting rail



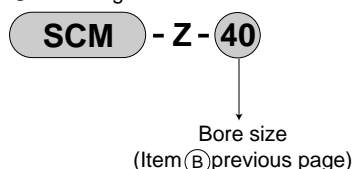
- Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.
- Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

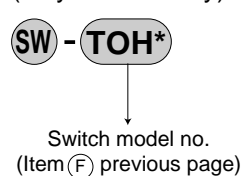
- Switch body + mounting rail + band



- Mounting rail + band



(only switch body)



### How to order mounting bracket

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

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

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type



Round shaped cylinder double acting low speed type

# SCM-O Series

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

JIS symbol



## Specifications

Descriptions	SCM-O							
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation	Double acting low speed type							
Working fluid	Compressed air							
Max. working pressure MPa	1.0							
Min. working pressure MPa	0.1				0.05			
Withstanding pressure MPa	1.6							
Ambient temperature °C	-10 to 60 (no freezing)							
Port size	Rc1/8			Rc1/4		Rc3/8	Rc1/2	
Stroke tolerance mm	+1.4 0 (up to 1000)		+1.4 0 (up to 1500)	+2.3 0 (up to 1000),		+2.7 0 (up to 1500)		
Working piston speed mm/s	10 to 200 (Use within the allowable energy absorption. )							
Cushion	Rubber cushion							
Lubrication	Not available							
Allowable energy absorption 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)
$\phi 20$	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10
$\phi 25$			
$\phi 32$			
$\phi 40$	1500		
$\phi 50$			
$\phi 63$			

Note 1: Custom stroke length is available per 1 mm increment.

## Switch quantity and min. stroke length (mm)

- Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85
$\phi 83$	10		25		40	50	55		75	85
$\phi 100$	10		25		40	50	55		75	85

- Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

- 1 color/2 color indicator

\* The TO/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting) Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V	
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay	
Output method	NPN output							
Light	Red/Green LED (ON lighting)							
	Installation position adjustment		-		Yellow LED (ON lighting)			
Regular output	Preventive maintenance output		-		-			
	Power voltage		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Leakage current		10 μA or less		1.2 mA or less		10 μA or less	
	Load voltage							
	30 VDC or less							
Preventive maintenance output	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	
	Leakage current							
10 μA or less								

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

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

(Eg.) 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	$0.63 \text{ kg} + 0.32 \text{ kg} + 0.036 = 0.986$ kg

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type

## How to order

Without switch

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

With switch

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

**A** Mounting style  
Note 1

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length

**F** Switch model no.  
Note 3

**G** Switch quantity

**H** Switch installation method

**I** Option  
Note 4  
Note 6

**J** Accessory  
Note 7

### ⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2: Refer to page 286 for switch quantity and min. stroke length.

Note 3: Switches other than switch model no. "F" are available.  
(Custom order)

Refer to Ending 1 for details.

Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.

Note 5: Refer to Ending 89 about custom specifications of rod end form.

Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

Note 7: "I" and "Y" can not be selected at the same time.

### <Example of model number>

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

- A** Mounting style : Axial foot type
- B** Bore size :  $\phi$  40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides rubber cushioned
- E** Stroke length : 100 mm
- F** Switch model no. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Switch installation method : Rail method
- I** Option : Bellows material / max. ambient temperature 60 °C
- J** Accessory : Rod eye

Symbol	Descriptions								
<b>A Mounting style</b>									
	Bore size ( $\phi$ )	20	25	32	40	50	63	80	100
<b>00</b>	Basic type	●	●	●	●	●	●	●	●
<b>LB</b>	Axial foot type	●	●	●	●	●	●	●	●
<b>FA</b>	Rod end flange type	●	●	●	●	●	●	●	●
<b>FB</b>	Head end flange type	●	●	●	●	●	●	●	●
<b>CA</b>	Eye bracket type	●	●	●	●	●	●	●	●
<b>CB</b>	Clevis bracket type (pin and snap ring attached)							●	●
<b>TA</b>	Rod end trunnion type	●	●	●	●	●	●	●	●
<b>TB</b>	Head end trunnion type	●	●	●	●	●	●	●	●

<b>B Bore size (mm)</b>	
<b>20</b>	$\phi$ 20
<b>25</b>	$\phi$ 25
<b>32</b>	$\phi$ 32
<b>40</b>	$\phi$ 40
<b>50</b>	$\phi$ 50
<b>63</b>	$\phi$ 63
<b>80</b>	$\phi$ 80
<b>100</b>	$\phi$ 100

<b>C Port thread type</b>	
<b>Blank</b>	Rc thread
<b>N</b>	NPT thread (custom order)
<b>G</b>	G thread (custom order)

<b>D Cushion</b>	
<b>D</b>	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
$\phi$ 20 to $\phi$ 32	10 to 1000	Per 1 mm
$\phi$ 40 to $\phi$ 100	10 to 1500	

<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
<b>T0H*</b>	<b>T0V*</b>	Reed	1 color indicator type	2-wire
<b>T5H*</b>	<b>T5V*</b>		without light	
<b>T8H*</b>	<b>T8V*</b>		1 color indicator type	
<b>T1H*</b>	<b>T1V*</b>	Proximity	1 color indicator type	2-wire
<b>T2H*</b>	<b>T2V*</b>		1 color indicator type (custom order)	3-wire
<b>T3H*</b>	<b>T3V*</b>			
<b>T3PH*</b>	<b>T3PV*</b>			
<b>T2YH*</b>	<b>T2YV*</b>		2 color indicator type	2-wire
<b>T3YH*</b>	<b>T3YV*</b>		2 color indicator type (W/o light for preventive maintenance output)	3-wire
<b>T2YFH*</b>	<b>T2YFV*</b>			4-wire
<b>T3YFH*</b>	<b>T3YFV*</b>		2 color indicator type (W/ light for preventive maintenance output (1 color))	3-wire
<b>T2YMH*</b>	<b>T2YMV*</b>			4-wire
<b>T3YMH*</b>	<b>T3YMV*</b>		Strong magnetic field proof switch	2-wire
<b>T2YD*</b>	-			
<b>T2YDT*</b>	-			
<b>T2JH*</b>	<b>T2JV*</b>	Off-delay type	2-wire	

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

<b>G Switch quantity</b>	
<b>R</b>	One on rod end
<b>H</b>	One on head end
<b>D</b>	Two
<b>T</b>	Three
<b>4</b>	4 switches (When more than 4 switches, indicate switch quantity.)

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

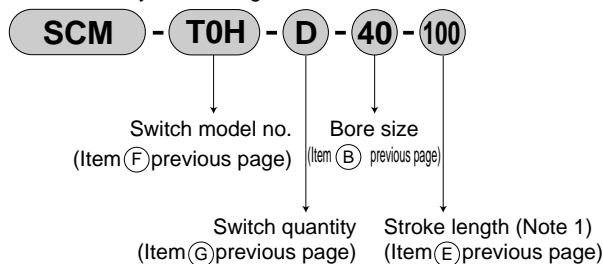
<b>I Option</b>			
	Max. ambient	Max. instantaneous	
<b>J</b>	Bellows	60 °C	100 °C
<b>K</b>	Bellows	100 °C	200 °C
<b>L</b>	Bellows	250 °C	400 °C
<b>Q</b>	Switch rail attached at shipment		
<b>M</b>	Piston rod material (stainless steel)		

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

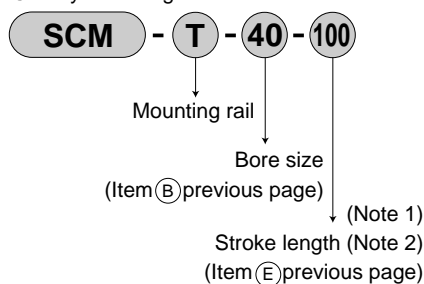
### How to order switch

(switch installation method: rail method)

● Switch body + mounting rail set



● Only mounting rail

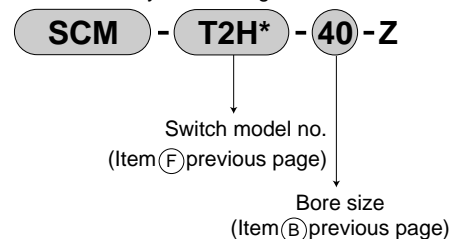


Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

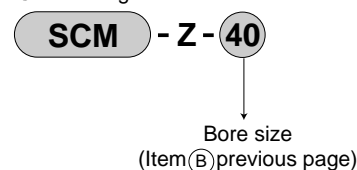
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

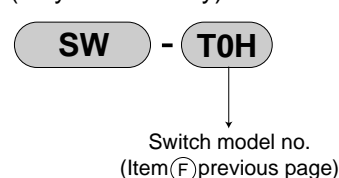
● Switch body + mounting rail + band



● Mounting rail + band



(only switch body)



### How to order mounting bracket

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

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

Note 2: 2 piece/set is applied for a foot type mounting bracket.

### Internal structure drawing

It is same as standard type. Refer to page 228.

### Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 20	SCM-O-20K	
φ 25	SCM-O-25K	
φ 32	SCM-O-32K	
φ 40	SCM-O-40K	3 6 8 10 13
φ 50	SCM-O-50K	
φ 63	SCM-O-63K	
φ 80	SCM-O-80K	
φ 100	SCM-O-100K	

### Dimensions

It is same as standard type. Refer to pages 230 to 243.

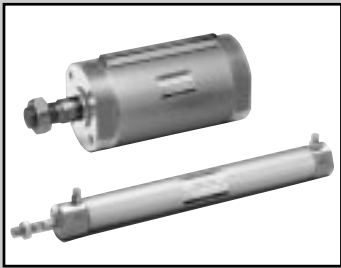
- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC

Ending

Round shaped cylinder  
Standard type



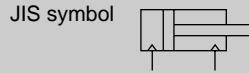
SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending



Round shaped cylinder double acting low friction type

# SCM-U Series

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



## Specifications

Descriptions	SCM-U							
	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Bore size mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation	Double acting low friction type							
Working fluid	Compressed air							
Max. working pressure MPa	0.7							
Min. working pressure MPa	0.03							
Withstanding pressure MPa	1.0							
Ambient temperature $^{\circ}\text{C}$	5 to 60							
Port size	Rc1/8			Rc1/4		Rc3/8	Rc1/2	
Stroke tolerance mm	$^{+1.4}_0$ (up to 1000)			$^{+1.4}_0$ (up to 1500)		$^{+2.3}_0$ (up to 1000), $^{+2.7}_0$ (up to 1500)		
Working piston speed mm/s	10 to 1000 (Use within the allowable energy absorption. )							
Cushion	Rubber cushion							
Lubrication	Not available							
Allowable energy absorption J	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
Internal leakage volume $\ell/\text{min.}$	5						8	

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Note 1: Custom stroke length is available per 1 mm increment.
$\phi 20$	25, 50, 75, 100, 125, 150, 200, 250, 300	1000	10	
$\phi 25$				
$\phi 32$				
$\phi 40$		1500		
$\phi 50$				
$\phi 63$				
$\phi 80$				
$\phi 100$				

## Switch quantity and min. stroke length (mm)

- Switch installation method: Rail method

Switch quantity	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85
$\phi 83$	10		25		40	50	55		75	85
$\phi 100$	10		25		40	50	55		75	85

- Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

● 1 color/2 color indicator

\* The TO/T5 switch can be used with 220 VAC.  
Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV	T5H/T5V		T8H/T8V				
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay				
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	without light		LED (ON lighting)				
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay		
Output method	NPN output								
Light	Red/Green LED (ON lighting)								
	Installation position adjustment		-		Yellow LED (ON lighting)				
Regular output	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20 mA		50 mA or less		5 to 20 mA		50 mA or less	
	Leakage current	1 mA or less		10 μA or less		1.2 mA or less		10 μA or less	
Preventive maintenance output	30 VDC or less								
	Load voltage	20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
	Leakage current	10 μA or less							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C.  
(5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm <sup>(W/switch rail)</sup>	Band weight per 1 switch
	Bore size (mm)	Basic type (00)	Axial foot type (LB)	Flange type (FA/FB)	Clevis type	Trunnion type (TA/TB)			
φ20	0.10	0.21	0.13	0.15	0.11	0.018	0.01	0.012	0.007
φ25	0.17	0.30	0.21	0.25	0.19	0.018	0.014	0.016	0.007
φ32	0.26	0.42	0.32	0.41	0.29	0.018	0.018	0.02	0.007
φ40	0.41	0.63	0.49	0.64	0.46	0.018	0.03	0.032	0.007
φ50	0.77	1.25	1.11	1.17	0.91	0.018	0.044	0.046	0.008
φ63	1.07	1.79	1.57	1.75	1.21	0.018	0.052	0.054	0.009
φ80	2.04	3.00	2.75	2.75	-	0.018	0.07	0.072	0.010
φ100	3.17	4.92	4.52	4.45	-	0.018	0.098	0.10	0.010

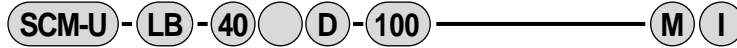
(Eg.) product weight of SCM-U-LB-40D-100-T2H-D	$\left\{ \begin{array}{l} \text{Product weight when } S = 0 \text{ mm} \cdots \cdots \cdots 0.63 \text{ kg} \\ \text{Additional weight when } S = 100 \text{ mm} \cdots \cdots \cdots 0.032 \times \frac{100}{10} = 0.32 \text{ kg} \\ \text{Weight of 2 switches} \cdots \cdots \cdots 0.036 \text{ kg} \\ \text{Product weight} \cdots \cdots \cdots 0.63 \text{ kg} + 0.32 \text{ kg} + 0.036 = 0.986 \text{ kg} \end{array} \right.$
--	--

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

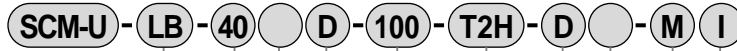
Round shaped cylinder  
Standard type

## How to order

Without switch



With switch



**A** Mounting style

Rubber cushion

**B** Bore size

**C** Port thread type

**D** Stroke length

**E** Switch model no.

Note 3

**F** Switch quantity

**G** Switch installation method

**H** Option

Note 5

**I** Accessory

Note 6

### Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2: Refer to page 290 for switch quantity and min. stroke length.

Note 3: Switches other than switch model no. "E" are available. (Custom order)

Refer to page Ending 1 for details.

Note 4: Refer to Ending 89 about custom specifications of rod end form. Refer to Page Ending 89.

Note 5: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

Note 6: "I" and "Y" can not be selected at the same time.

### <Example of model number>

#### SCM-U-LB-40D-100-T2H-D-MI

Model: Round shaped cylinder double acting low friction type

**A** Mounting style : Axial foot type

**B** Bore size :  $\phi$  40 mm

**C** Port thread type : Rc thread

**D** Stroke length : 100 mm

**E** Switch model no.: Proximity T2H switch, lead wire 1 m

**F** Switch quantity : 2

**G** Switch installation method : Rail method

**H** Option : Piston rod material, stainless steel

**I** Accessory : Rod eye

Symbol	Descriptions								
<b>A Mounting style</b>									
	Bore size ( $\phi$ )	20	25	32	40	50	63	80	100
00	Basic type	●	●	●	●	●	●	●	●
LB	Axial foot type	●	●	●	●	●	●	●	●
FA	Rod end flange type	●	●	●	●	●	●	●	●
FB	Head end flange type	●	●	●	●	●	●	●	●
CA	Eye bracket type	●	●	●	●	●	●	●	●
CB	Clevis bracket type (pin and snap ring attached)							●	●
TA	Rod end trunnion type	●	●	●	●	●	●		
TB	Head end trunnion type	●	●	●	●	●	●		

<b>B Bore size (mm)</b>	
20	$\phi$ 20
25	$\phi$ 25
32	$\phi$ 32
40	$\phi$ 40
50	$\phi$ 50
63	$\phi$ 63
80	$\phi$ 80
100	$\phi$ 100

<b>C Port thread type</b>	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)

<b>D Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
$\phi$ 20 to $\phi$ 32	10 to 1000	Per 1 mm
$\phi$ 40 to $\phi$ 100	10 to 1500	

<b>E Switch model no.</b>				
Lead wire straight	Lead wire L type	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		without light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*		1 color indicator type (custom order)	3-wire
T3H*	T3V*			
T3PH*	T3PV*		2 color indicator type	2-wire
T2YH*	T2YV*		2 color indicator type (W/o light for preventive maintenance output)	3-wire
T3YH*	T3YV*			4-wire
T2YFH*	T2YFV*	2 color indicator type (w/ light for preventive maintenance output (1 color))	3-wire	
T3YFH*	T3YFV*		4-wire	
T2YMH*	T2YMV*	Strong magnetic field proof switch	3-wire	
T3YMH*	T3YMV*		4-wire	
T2YD*	-	Off-delay type	2-wire	
T2YDT*	-			
T2JH*	T2JV*		2-wire	

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

<b>F Switch quantity</b>	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

<b>G Switch installation method</b>	
Blank	Rail method
Z	Band method

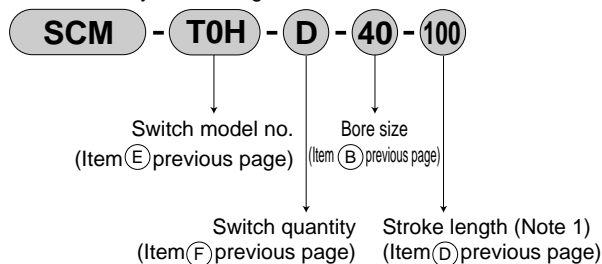
<b>H Option</b>	
Q	Switch rail attached at shipment
M	Piston rod material (stainless steel)

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

### How to order switch

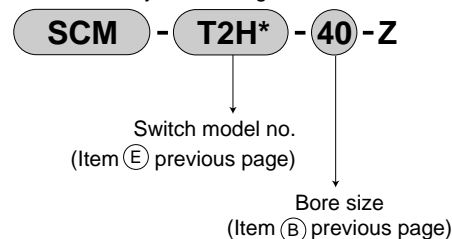
(switch installation method: rail method)

- Switch body + mounting rail set

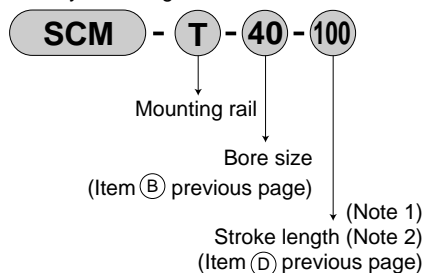


(switch installation method: band method)

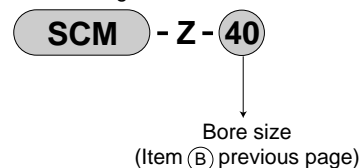
- Switch body + mounting rail + band



- Only mounting rail



- Mounting rail + band

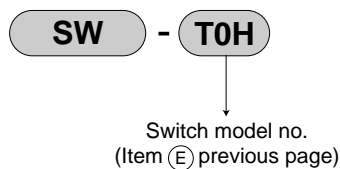


Note 1: When more than 300 mm stroke, indicate "X".

When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(only switch body)



### How to order mounting bracket

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

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

Note 2: 2 piece/set is applied for a foot type mounting bracket.

### Dimensions

It is the same as the double acting single rod type SCM Series. Refer to pages 230 to 243.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

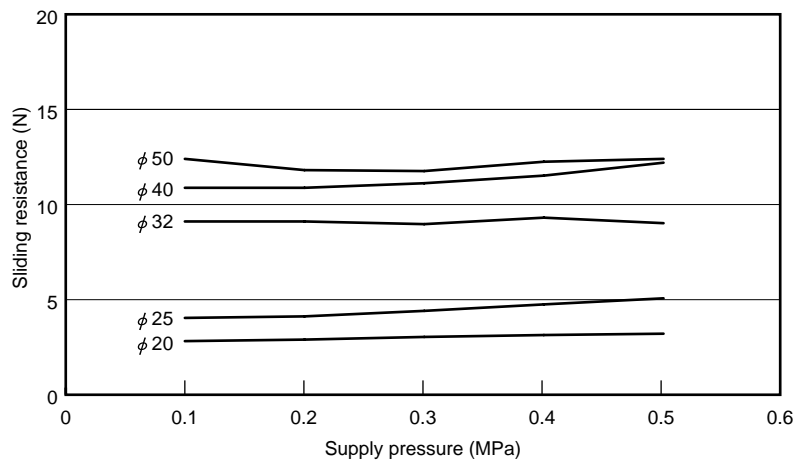
## Sliding resistance

This data is the measurement values under the following conditions: These are not guaranteed values because values vary with the installation method and pressurizing direction.

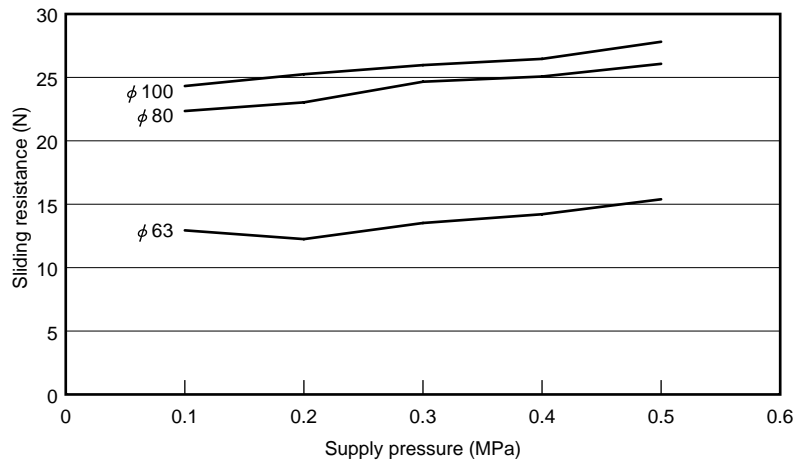
(Test conditions)

Cylinder type	SCM-U
Cylinder installation	Vertical attitude
Cylinder speed	10 mm/min. (drive with external motor)
Cylinder pressure direction	Head end (rod end is atmospheric release.)

Sliding resistance (φ 20 to φ 50)



Sliding resistance (φ 63 to φ 100)

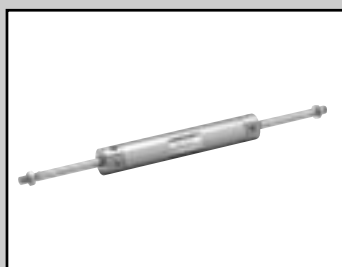


Round shaped cylinder double acting double rod type

# SCM-D Series

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

JIS symbol Double acting cylinder double rod type



## Specifications

Descriptions		SCM-D							
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting double rod type							
Working fluid		Compressed air							
Max. working pressure	MPa	1.0							
Min. working pressure	MPa	0.15				0.1			
Withstanding pressure	MPa	1.6							
Ambient temperature	°C	-10 to 60 (no freezing)							
Port size	Rubber cushioned	Rc1/8			Rc1/4		Rc8/3	Rc1/2	
	Air cushioned	M5	Rc1/8		Rc1/4		Rc8/3	Rc1/2	
Stroke tolerance	Rubber cushioned	+1.4 0			+2.3 0 (to 1000)				
	Air cushioned	+1.4 0			+1.4 0 (up to 1000)				
Working piston speed	mm/s	30 to 1000 (Use within the allowable energy absorption. )							
Cushion		Selection of rubber cushion and air cushion possible							
Effective air cushion length	mm	8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)							
Allowable energy absorption	Rubber cushioned	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
	Air cushioned	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	No cushion	-	-	-	-	0.057	0.057	0.112	0.153

Note 1: If "No cushion" is selected for the allowable absorption energy, when the air cushion symbol "R" is selected, the head side has no cushion, and the indicated allowable absorption energy is applied. When the air cushion symbol "H" is selected, the rod side has no cushion, and the indicated allowable absorption energy is applied.

Note 2: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed, so an external shock absorber should be used.

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

Note 2: Strokes exceeding 600 mm are available as custom order parts. Contact CKD for details.

## Switch quantity and min. stroke length (mm)

- Switch installation method: Rail method

Switch quantity	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85
$\phi 83$	10		25		40	50	55		75	85
$\phi 100$	10		25		40	50	55		75	85

- Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.



### Switch specifications

● 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less		10 μA or less			0 mA						

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay		
Output method	NPN output								
Light	Red/Green LED (ON lighting)								
	Installation position adjustment	-			Yellow LED (ON lighting)				
Regular output	Preventive maintenance output	-							
	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20 mA		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Leakage current	1 mA or less		10 μA or less		1.2 mA or less		10 μA or less	
	Load voltage	30 VDC or less							
	Load current	20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
Leakage current	10 μA or less								

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm				Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm <sup>(W<sub>switch</sub>/rail)</sup>
	Bore size (mm)	Basic type (00)	Axial foot type (LB)	Flange type (FA)	Trunnion type (TA)		
φ20	0.12	0.23	0.20	0.13	0.018	0.014	0.016
φ25	0.21	0.34	0.31	0.23	0.018	0.020	0.22
φ32	0.32	0.48	0.46	0.35	0.018	0.026	0.028
φ40	0.52	0.74	0.72	0.57	0.018	0.046	0.048
φ50	0.96	1.44	1.30	1.10	0.018	0.068	0.070
φ63	1.27	1.99	1.77	1.41	0.018	0.076	0.078
φ80	2.41	3.37	3.12	-	0.018	0.108	0.110
φ100	3.73	5.48	5.08	-	0.018	0.154	0.156

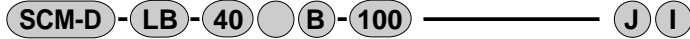
(Eg.) Product weight of SCM-D-LB-40B-100-T2H-D	$\left\{ \begin{array}{l} \text{Product weight when S = 0 mm} : 0.74 \text{ kg} \\ \text{Additional weight when S = 100 mm} : 0.048 \times \frac{100}{10} = 0.48 \text{ kg} \\ \text{Weight of 2 switches} : 0.018 \times 2 = 0.036 \text{ kg} \\ \text{Product weight} : 0.74 + 0.48 + 0.036 = 1.256 \text{ kg} \end{array} \right.$
--	---

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

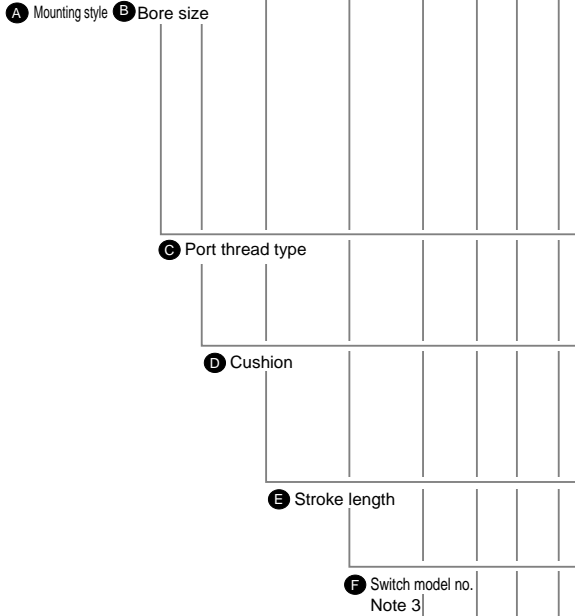
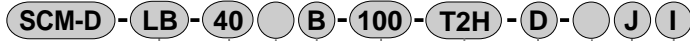
Round shaped cylinder  
Standard type

## How to order

Without switch



With switch



### Note on model no. selection

- Note 1: The mounting bracket is shipped with the product.
- Note 2: Refer to page 296 for switch quantity and min. stroke length.
- Note 3: Switches other than switch model no. "F" are available. (Custom order)  
Refer to Ending 1 for details.
- Note 4: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.
- Note 5: Refer to Ending 89 about custom specifications of rod end form.
- Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

<Example of model number>

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

Model: Round shaped cylinder double acting double rod type

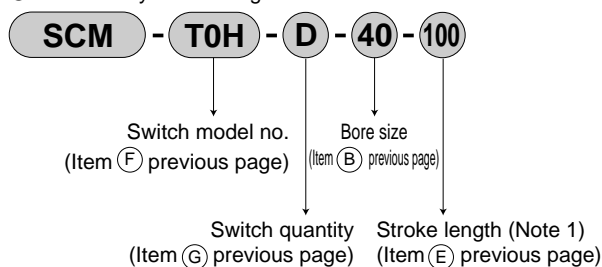
- A** Mounting style : Axial foot type
- B** Bore size :  $\phi$  40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides air cushioned
- E** Stroke length : 100 mm
- F** Switch model no. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Switch installation method : Rail method
- I** Option : Bellows material / max. ambient temperature 60 °C
- J** Accessory : Rod eye

Symbol	Descriptions								
<b>A Mounting style</b>									
	Bore size ( $\phi$ )	20	25	32	40	50	63	80	100
<b>00</b>	Basic type	●	●	●	●	●	●	●	●
<b>LB</b>	Axial foot type	●	●	●	●	●	●	●	●
<b>FA</b>	Rod end flange type	●	●	●	●	●	●	●	●
<b>TA</b>	Rod end trunnion type	●	●	●	●	●	●	●	●
<b>B Bore size (mm)</b>									
<b>20</b>	$\phi$ 20								
<b>25</b>	$\phi$ 25								
<b>32</b>	$\phi$ 32								
<b>40</b>	$\phi$ 40								
<b>50</b>	$\phi$ 50								
<b>63</b>	$\phi$ 63								
<b>80</b>	$\phi$ 80								
<b>100</b>	$\phi$ 100								
<b>C Port thread type</b>									
<b>Blank</b>	Rc thread								
<b>N</b>	NPT thread (custom order)								
<b>G</b>	G thread (custom order)								
<b>D Cushion</b>									
<b>B</b>	Both sides air cushioned								
<b>R</b>	Rod end air cushioned								
<b>H</b>	Head end air cushioned								
<b>D</b>	Both sides rubber cushioned								
<b>E Stroke length (mm)</b>									
	Bore size	Stroke length			Custom stroke length				
	$\phi$ 20 to $\phi$ 100	10 to 600			Per 1 mm				
<b>F Switch model no.</b>									
	Axial lead wire	Radial lead wire	Contact	Indicator			Lead wire		
	<b>T0H*</b>	<b>T0V*</b>	Reed	1 color indicator type			2-wire		
	<b>T5H*</b>	<b>T5V*</b>		without light					
	<b>T8H*</b>	<b>T8V*</b>		1 color indicator type					
	<b>T1H*</b>	<b>T1V*</b>	Proximity	1 color indicator type			2-wire		
	<b>T2H*</b>	<b>T2V*</b>		1 color indicator type (custom order)			3-wire		
	<b>T3H*</b>	<b>T3V*</b>							
	<b>T3PH*</b>	<b>T3PV*</b>		2 color indicator type			2-wire		
	<b>T2YH*</b>	<b>T2YV*</b>		2 color indicator type (W/o light for preventive maintenance output)			3-wire		
	<b>T3YH*</b>	<b>T3YV*</b>							
	<b>T2YFH*</b>	<b>T2YFV*</b>		2 color indicator type (W/ light for preventive maintenance output (1 color))			3-wire		
	<b>T3YFH*</b>	<b>T3YFV*</b>							
	<b>T2YMH*</b>	<b>T2YMV*</b>		2 color indicator type (W/ light for preventive maintenance output (1 color))			3-wire		
	<b>T3YMH*</b>	<b>T3YMV*</b>							
	<b>T2YD*</b>	-	Strong magnetic field proof switch			2-wire			
	<b>T2YDT*</b>	-							
	<b>T2JH*</b>	<b>T2JV*</b>	Off-delay type			2-wire			
<b>*Lead wire length</b>									
<b>Blank</b>	1 m (standard)								
<b>3</b>	3 m (option)								
<b>5</b>	5 m (option)								
<b>G Switch quantity</b>									
<b>R</b>	One on rod end								
<b>H</b>	One on head end								
<b>D</b>	Two								
<b>T</b>	Three								
<b>4</b>	4 switches (When more than 4 switches, indicate switch quantity.)								
<b>H Switch installation method</b>									
<b>Blank</b>	Rail method								
<b>Z</b>	Band method								
<b>I Option</b>									
		Max. ambient	Max. instantaneous						
<b>J</b>	Bellows	60 °C	100 °C						
<b>K</b>	Bellows	100 °C	200 °C						
<b>L</b>	Bellows	250 °C	400 °C						
<b>Q</b>	Switch rail attached at shipment								
<b>M</b>	Piston rod material (stainless steel)								
<b>P6</b>	Copper and PTFE free								
<b>J Accessory</b>									
	Bore size ( $\phi$ )	20	25	32	40	50	63	80	100
<b>I</b>	Rod eye	●	●	●	●	●	●	●	●
<b>Y</b>	Rod clevis (pin and snap ring attached)	●	●	●	●	●	●	●	●
<b>B2</b>	Clevis bracket	●	●	●	●	●	●	●	●

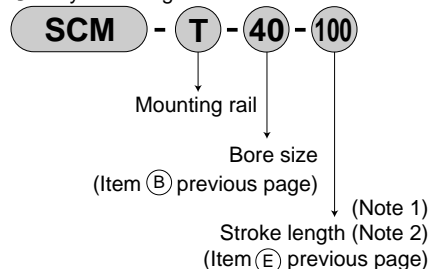
### How to order switch

(switch installation method: rail method)

- Switch body + mounting rail set



- Only mounting rail

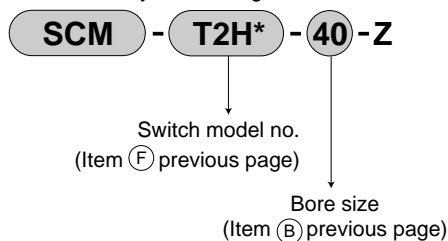


Note 1: When more than 300 mm stroke, indicate "X". When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

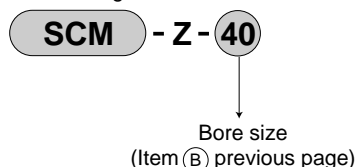
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(switch installation method: band method)

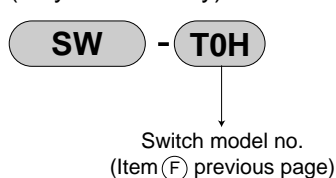
- Switch body + mounting rail + band



- Mounting rail + band



(only switch body)



### How to order mounting bracket

Bore size (mm)	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket								
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Trunnion (TA)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

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

Note 2: 2 piece/set is applied for a foot type mounting bracket.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

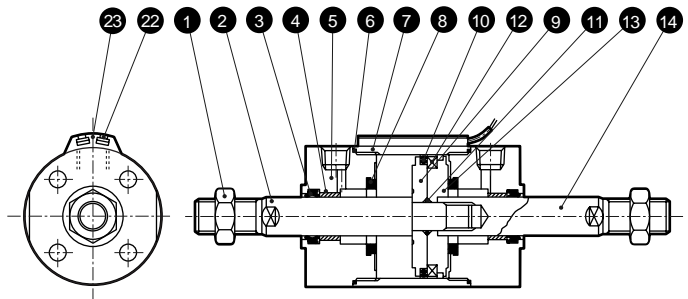
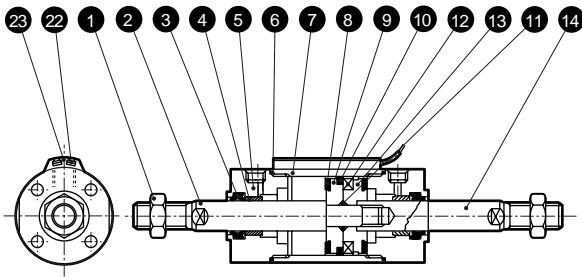
Round shaped cylinder  
Standard type

## Internal structure and parts list

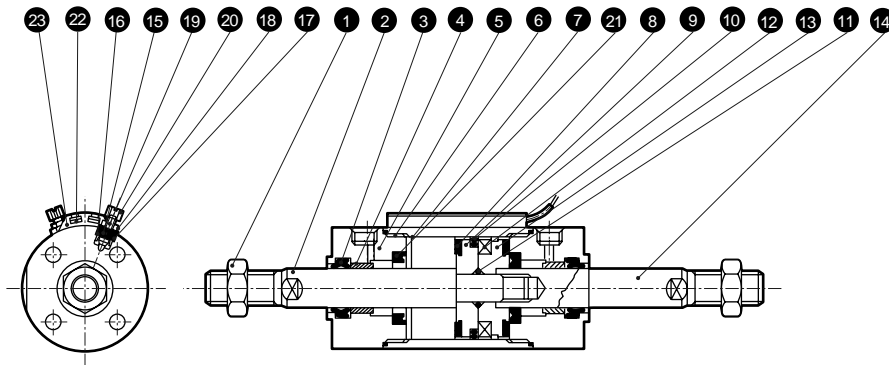
- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

● Rubber cushioned  
φ 20 to φ 40

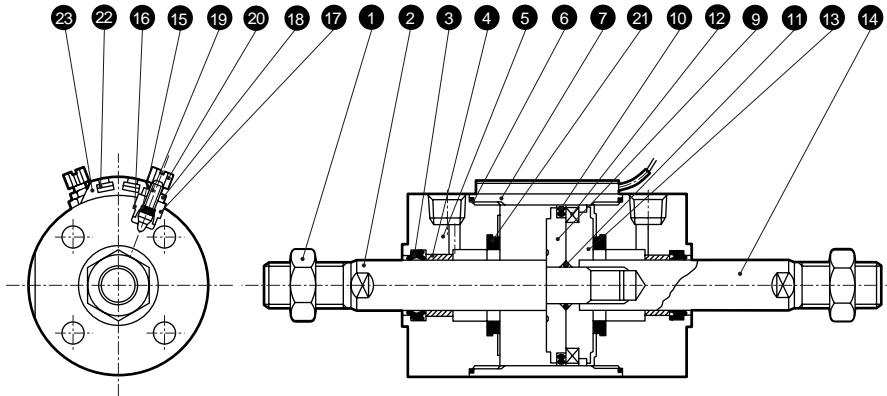
φ 50 to φ 100



● Air cushioned  
φ 20 to φ 40



φ 50 to φ 100



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	13	Piston H	φ20 to φ40: aluminum alloy φ50 to φ100: aluminum alloy die-casting	
2	Piston rod A	φ 20, φ 25: stainless steel φ 32 to φ100: steel	Industrial chrome plating	14	Piston rod B	φ20, φ25: stainless steel φ32 to φ100: steel	Industrial chrome plating
3	Rod packing seal	Nitrile rubber		Air cushioned			
4	Bush	Oil impregnated bearing alloy <sup>*1</sup>		15	Needle gasket	Nitrile rubber	
5	Rod cover	Aluminum alloy <sup>Note 2</sup>	Paint	16	Holder gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		17	Needle holder	Aluminum alloy	
7	Cylinder tube	Aluminum alloy	Hard alumite	18	Lock nut	Steel	Nickeling
8	Cushion rubber	Urethane rubber		19	Needle	Stainless steel	
9	Piston R	φ20 to φ40: aluminum alloy φ50 to φ100: aluminum alloy die-casting		20	Dial	Aluminum alloy	
10	Piston packing seal	Nitrile rubber		21	Cushion packing seal	Nitrile rubber and steel	
11	Piston gasket	Nitrile rubber		With switch			
12	Magnet	Plastic		22	Switch		
				23	Switch rail	Aluminum alloy	

Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free. Note 2: For 50 and 63 mm bore cylinders, aluminum alloy die casting is used, and its surface is painted. Note 3: The (22) switch and (23) switch rail are mounted only when the type with switch is selected.

### Repair parts list

Note: When placing an order, indicate kit number.

#### With rubber cushion

Tube Inner diameter (mm)	Kit No.	Repair parts number
φ 20	SCM-D-20DK	
φ 25	SCM-D-25DK	
φ 32	SCM-D-32DK	
φ 40	SCM-D-40DK	3 6 8 10
φ 50	SCM-D-50DK	
φ 63	SCM-D-63DK	
φ 80	SCM-D-80DK	
φ 100	SCM-D-100DK	

#### With air cushion

Tube Inner diameter (mm)	Kit No.	Repair parts number
φ 20	SCM-D-20BK	
φ 25	SCM-D-25BK	
φ 32	SCM-D-32BK	
φ 40	SCM-D-40BK	3 6 8
φ 50	SCM-D-50BK	10 21
φ 63	SCM-D-63BK	
φ 80	SCM-D-80BK	
φ 100	SCM-D-100BK	

Note 1: 3, 6 and 10 are the same as the rubber cushioned.

Note 2: (8) is not attached to φ 50 to φ 100 cylinder.

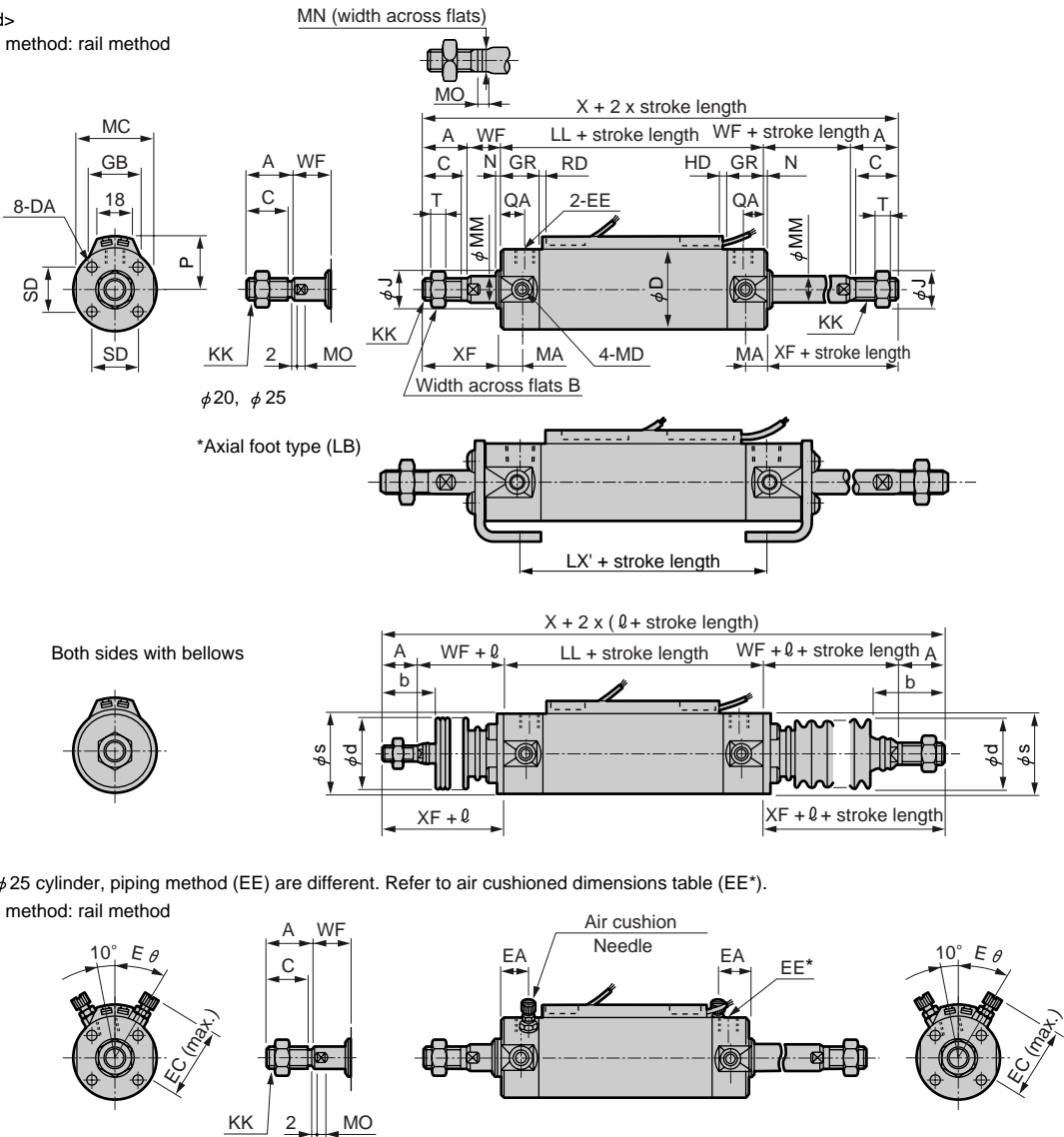
SCP*2
CMK2
CMA2
<b>SCM</b>
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type

## Dimensions



- Double acting double rod type (00)
- <Rubber cushioned>
- Switch installation method: rail method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 231.

Note 2: The position of the across flat for catching the wrench on the left and right is not specified.

Note 3: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 4: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions																		
	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 x 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 x 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 x 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 x 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 x 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 x 1.5	108	-	80	-	25	22	11	3	15	50
φ100	40	41	37	110	M12 depth 22	Rc1/2	28	50	M26 x 1.5	108	-	100	-	30	27	13	3	15	60

Symbol	With bellows					Air cushioned				Switch installation method: rail method									
	T	WF	X	XF	LX'	b	d	s	ℓ	EA	EC	EE*	E θ	P	GB	HD		RD	
Bore size (mm)																T0, T5	T2, T3	T0, T5	T2, T3
φ20	5	17	141	35	47.2	30	30	25.7	(stroke length/3) + 18.5	14	27	M5	30°	19.5	23	4.0	7.0	7.0	7.5
φ25	6	18	151	40	47.2	35	30	30.7	(stroke length/3) + 20.5	14	29.5	M5	30°	22	24.4	3.0	6.0	8.0	8.5
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	4.0	7.0	9.0	9.5
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	6.0	9.0	11.0	11.5
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	8.0	11.5	12.0	13.0
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	8.0	11.5	12.0	13.0
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	10.5	13.0	19.0	20.0
φ100	16	31	250	71	60	56	60	109.7	(stroke length/4.5) + 21	20	69	Rc1/2	20°	61.5	26.7	11.0	13.5	18.5	19.5

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243. Refer to the above drawing for the radial direction foot type (LB).



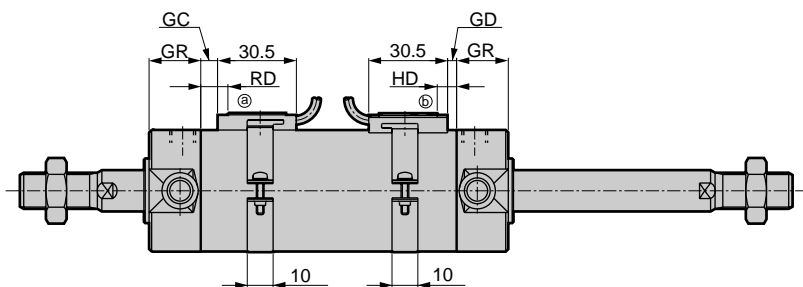
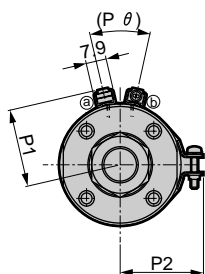
### Dimensions



● Double acting double rod type

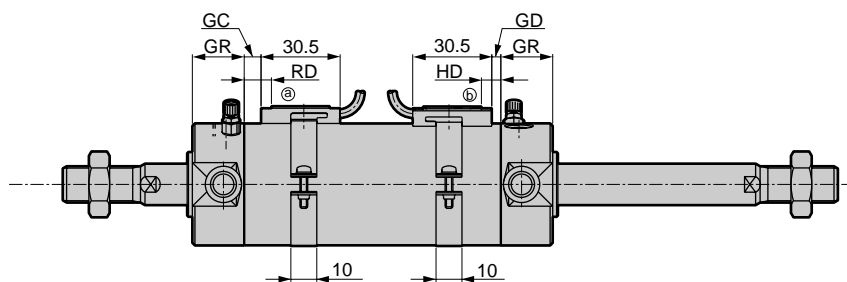
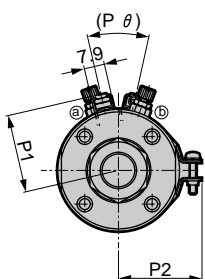
<Rubber cushioned>

· Switch installation method: band method



<Air cushioned>

· Switch installation method: band method



Note 1: Needle relevant dimensions and port size of air cushioned types are same as basic type. Refer to page 231.

Note 3: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.

Note 2: The position of the across flat for catching the wrench on the left and right is not specified.

Note 4: Refer to page 334 and 335 for accessory dimensions.

Symbol	Switch installation method: band method							
	GC	GD	GR	HD	RD	P1	P2	Pθ
Bore size (mm)	T0, T2, T3, T5			T0, T2, T3, T5				
φ20	2.5	3.5	19	7.5	6.5	19.6	21.5	(38°)
φ25	1.5	4.5	19	8.5	5.5	22.1	23.9	(34°)
φ32	2.5	5.5	19	9.5	6.5	25.6	27.6	(30°)
φ40	4.5	7.5	20	11.5	8.5	30.2	32.1	(26°)
φ50	7.0	9.0	25	13.0	11.0	35.7	37.4	(22°)
φ63	7.0	9.0	25	13.0	11.0	42.7	44.4	(20°)
φ80	9.0	16.0	28	20.0	13.0	51.2	53.0	(16°)
φ100	9.5	15.5	28	19.5	13.5	61.7	63.5	(16°)

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

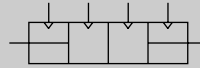


Round shaped medium bore size cylinder  
Double acting back to back type

# SCM-B Series

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

JIS symbol



## Specifications

Descriptions		SCM-B					
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
Actuation		Double acting back to back type					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.1			0.05		
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		Rc1/8			Rc1/4		
Stroke tolerance	mm	$+1.4$ <sub>0</sub> (Up to 500)		$+1.4$ <sub>0</sub> (Up to 750)	$+2.3$ <sub>0</sub> (Up to 750)		
Working piston speed	mm/s	30 to 1000 (Use within the allowable energy absorption. )					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)					
Allowable energy absorption	J	0.1	0.2	0.5	0.9	1.6	1.6

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75, 100, 125, 150, 200, 250, 300	500	10
$\phi 25$			
$\phi 32$			
$\phi 40$	750		
$\phi 50$			
$\phi 63$			

Note 1: Custom stroke length is available by 1 mm increment.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi 20$	10		25		40	50	55		75	85
$\phi 25$	10		25		40	50	55		75	85
$\phi 32$	10		25		40	50	55		75	85
$\phi 40$	10		25		40	50	55		75	85
$\phi 50$	10		25		40	50	55		75	85
$\phi 63$	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

● 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay		
Output method	NPN output								
Light	Red/Green LED (ON lighting)								
	Installation position adjustment		-		Yellow LED (ON lighting)				
Regular output	Preventive maintenance output		-		-				
	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20 mA		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Leakage current	1 mA or less		10 μA or less		1.2 mA or less		10 μA or less	
	Load voltage	30 VDC or less							
	Load current	20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
Leakage current	10 μA or less								

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm	Additional weight				Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (W <sub>switch</sub> /rail)	Band weight per 1 switch
		Basic type	Axial foot type	Flange type	Trunnion type				
Bore size (mm)	Basic type (00)	Basic type	Axial foot type	Flange type	Trunnion type	Grommet			
φ20	0.10	0.00	0.11	0.03	0.01	0.018	0.01	0.012	0.007
φ25	0.17	0.00	0.13	0.04	0.02	0.018	0.014	0.016	0.007
φ32	0.26	0.02	0.18	0.08	0.05	0.018	0.018	0.02	0.007
φ40	0.41	0.05	0.27	0.13	0.10	0.018	0.03	0.032	0.007
φ50	0.77	0.07	0.55	0.41	0.21	0.018	0.044	0.046	0.008
φ63	1.07	0.11	0.83	0.61	0.25	0.018	0.052	0.054	0.009

(Eg.) Product weight of

SCM-B-LB-40D-25-T2H-D-D50-T2H-R

(weight of S1)

Product weight when S = 0 mm ..... 0.41 kg

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

Weight of 2 switches ..... 0.036 kg

Weight of S1 .....  $0.41 \text{ kg} + 0.08 \text{ kg} + 0.036 \text{ kg} = 0.526 \text{ kg}$

(weight of S2)

Product weight when S = 0 mm ..... 0.41 kg

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

Weight of 1 switch ..... 0.018 kg

Weight of S2 .....  $0.63 \text{ kg} + 0.16 \text{ kg} + 0.018 \text{ kg} = 0.588 \text{ kg}$

Product weight (weight of S1 + weight of S2 + additional weight) .....  $0.526 \text{ kg} + 0.588 \text{ kg} + 0.27 \text{ kg} = 1.384 \text{ kg}$

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

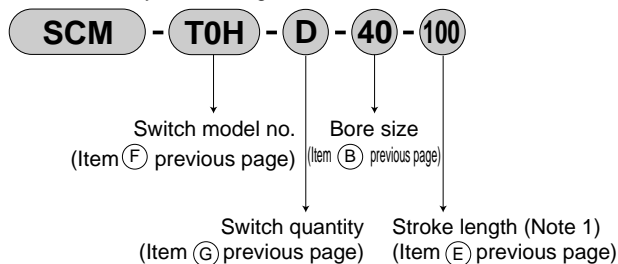
Round shaped cylinder  
Standard type



### How to order switch

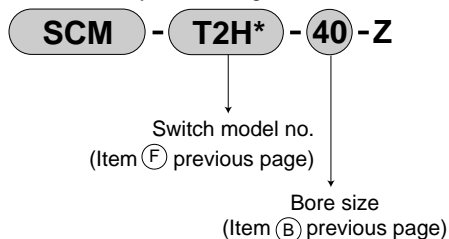
(switch installation method: rail method)

- Switch body + mounting rail set

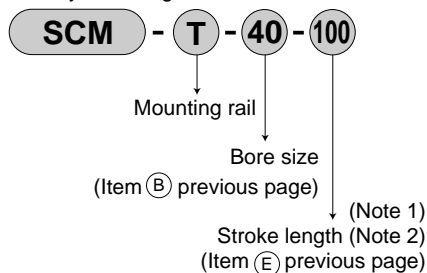


(switch installation method: band method)

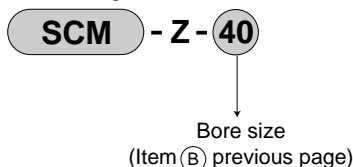
- Switch body + mounting rail + band



- Only mounting rail



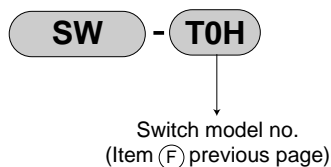
- Mounting rail + band



Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(only switch body)



### How to order mounting bracket

Bore size (mm)	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

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

Note 2: 2 piece/set is applied for a foot type mounting bracket.

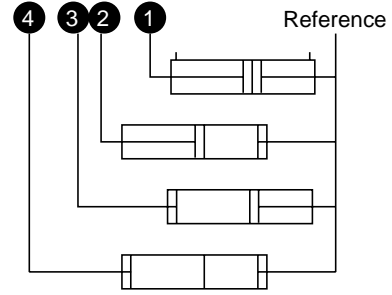
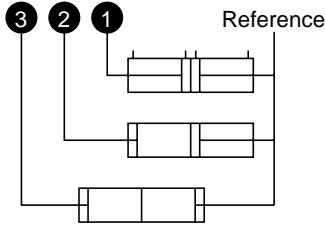
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type

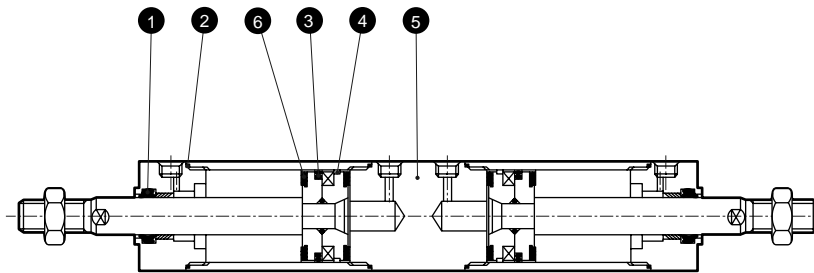
## Applications

Three positions are available when the same stroke is combined.

Four positions are available when different strokes are combined.



## Internal structure and parts list



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod packing seal	Nitrile rubber		4	Wear ring	Polyacetal resin	
2	Cylinder gasket	Nitrile rubber		5	Intermediate guard	Aluminum alloy	Paint
3	Piston packing seal	Nitrile rubber		6	Cushion rubber	Urethane rubber	

## Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 20	SCM-B-20DK	① ② ③ ④ ⑥
φ 25	SCM-B-25DK	
φ 32	SCM-B-32DK	
φ 40	SCM-B-40DK	
φ 50	SCM-B-50DK	
φ 63	SCM-B-63DK	

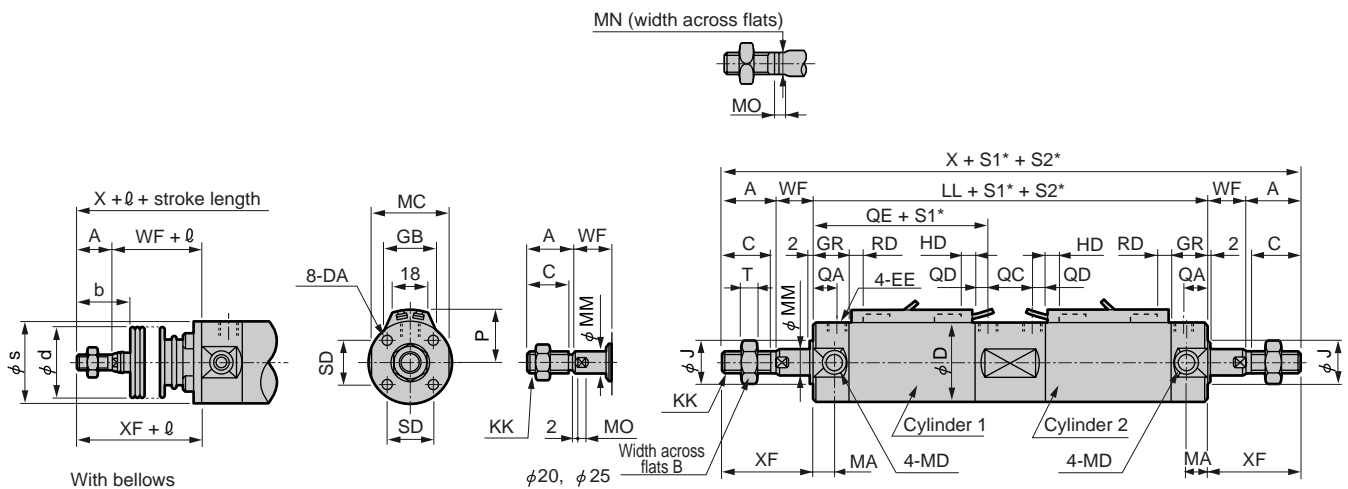
- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending



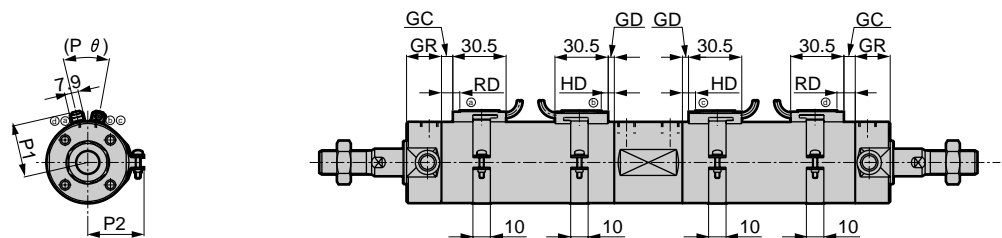
### Dimensions

● Double acting back to back type

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indication type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 2: Refer to page 334 and 335 for accessory dimensions.

\*: S1 = Stroke length of cylinder 1, S2 = Stroke length of cylinder 2

Symbol	Basic type (00) basic dimensions																	
	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 x 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 x 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 x 1.5	157	12	44	M10	16	14	6	13	25
φ50	35	27	32	58	M8 depth 16	Rc1/4	25	30	M18 x 1.5	184	13	55	M12	20	17	8	15	28
φ63	35	27	32	72	M10 depth 16	Rc1/4	25	32	M18 x 1.5	184	13	69	M14	20	17	8	15	28

Symbol	With bellows										Switch installation method: rail method						Switch installation method: band method				
	QD	QE	SD	T	WF	X	XF	b	d	s	l	P	GB	HD			RD			GC	GD
														T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5			
φ20	7	59	14	5	17	207	35	30	30	25.7	(stroke length/3) + 18.5	19.5	23	4.0	7.0	7.0	7.5	2.5	3.5		
φ25	7	59	16.5	6	18	217	40	35	30	30.7	(stroke length/3) + 20.5	22	24.4	3.0	6.0	8.0	8.5	1.5	4.5		
φ32	7	61	20	6	18	223	40	31.5	35	37.7	(stroke length/3) + 19	25.5	25	4.0	7.0	9.0	9.5	2.5	5.5		
φ40	7	66	26	8	20	257	50	40	35	46.7	(stroke length/3) + 18.5	30	25.7	6.0	9.0	11.0	11.5	4.5	7.5		
φ50	10	78	32	11	23	300	58	46	40	57.7	(stroke length/3.6) + 18.5	35.5	26.2	8.0	11.5	12.0	13.0	7.0	9.0		
φ63	10	78	38	11	23	300	58	46	40	71.7	(stroke length/3.6) + 18.5	42.5	26.5	8.0	11.5	12.0	13.0	7.0	9.0		

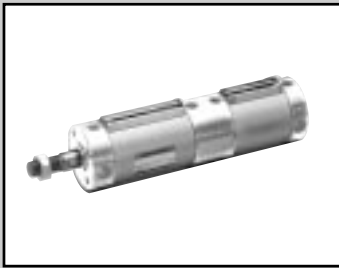
  

Symbol	Switch installation method: band method				
	HD	RD	P1	P2	P θ
φ20	7.5	6.5	19.6	21.5	(38°)
φ25	8.5	5.5	22.1	23.9	(34°)
φ32	9.5	6.5	25.6	27.6	(30°)
φ40	11.5	8.5	30.2	32.1	(26°)
φ50	13.0	11.0	35.7	37.4	(22°)
φ63	13.0	11.0	42.7	44.4	(20°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

SCP\*2  
CMK2  
CMA2  
**SCM**  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending



Round shaped medium bore size cylinder  
Double acting two stage type

# SCM-W Series

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



## Specifications

Descriptions		SCM-W					
Bore size	mm	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63
Actuation		Double acting two stage type					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0 (Note 1)					
Min. working pressure	MPa	0.2			0.1		
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		Rc1/8			Rc1/4		
Stroke tolerance	mm	±1.4			±2.3		
	S1	+1.4			+2.3		
	S2	0			0		
Working piston speed	mm/s	50 to 1000 (Use within the allowable energy absorption. )					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)					
Allowable energy absorption	J	0.1	0.2	0.5	0.9	1.6	1.6

Note 1: If S1 and S2 are the same, the maximum working pressure must be 0.5 MPa.

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.  
Note 2: Max. stroke length of S2 is 200 mm.  
Note 3: Strokes exceeding 600 mm are available as custom order parts. Contact CKD for details.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity	1		2		3		4		5		
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	
$\phi$ 20	10		25		40		55		75		85
$\phi$ 25	10		25		40		55		75		85
$\phi$ 32	10		25		40		55		75		85
$\phi$ 40	10		25		40		55		75		85
$\phi$ 50	10		25		40		55		75		85
$\phi$ 63	10		25		40		55		75		85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

- 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V	T5H/T5V	T8H/T8V					
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay				
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	without light		LED (ON lighting)				
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire			
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V			
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay			
Output method	NPN output									
Light	Red/Green LED (ON lighting)									
	Installation position adjustment		-						Yellow LED (ON lighting)	
Regular output	Preventive maintenance output		-						-	
	Power voltage		-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current		5 to 20 mA		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Leakage current		1 mA or less		10 μA or less		1.2 mA or less		10 μA or less	
	Load voltage		30 VDC or less							
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
Leakage current		10 μA or less								

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm	Additional weight					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (W/switch rail)	Band weight per 1 switch
		Basic type	Axial foot type	Flange type	Clevis type	Trunnion type				
φ20	0.10	-0.01	0.10	0.02	0.04	0.00	0.018	0.01	0.012	0.007
φ25	0.17	-0.02	0.11	0.02	0.06	0.00	0.018	0.014	0.016	0.007
φ32	0.26	-0.01	0.15	0.05	0.14	0.02	0.018	0.018	0.02	0.007
φ40	0.41	-0.03	0.19	0.05	0.20	0.02	0.018	0.03	0.032	0.007
φ50	0.77	-0.06	0.42	0.28	0.34	0.08	0.018	0.044	0.046	0.008
φ63	1.07	-0.02	0.70	0.48	0.66	0.12	0.018	0.052	0.054	0.009

(Eg.) Product weight of

SCM-W-LB-40-D100-T2H-D-D25-T2H-R

(weight of S1)

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

Weight of S1 .....  $0.41 \text{ kg} + 0.32 \text{ kg} + 0.036 \text{ kg} = 0.766$  kg

(weight of S2)

Product weight when S = 0 mm ..... 0.41 kg

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

Weight of 1 switch ..... 0.018 kg

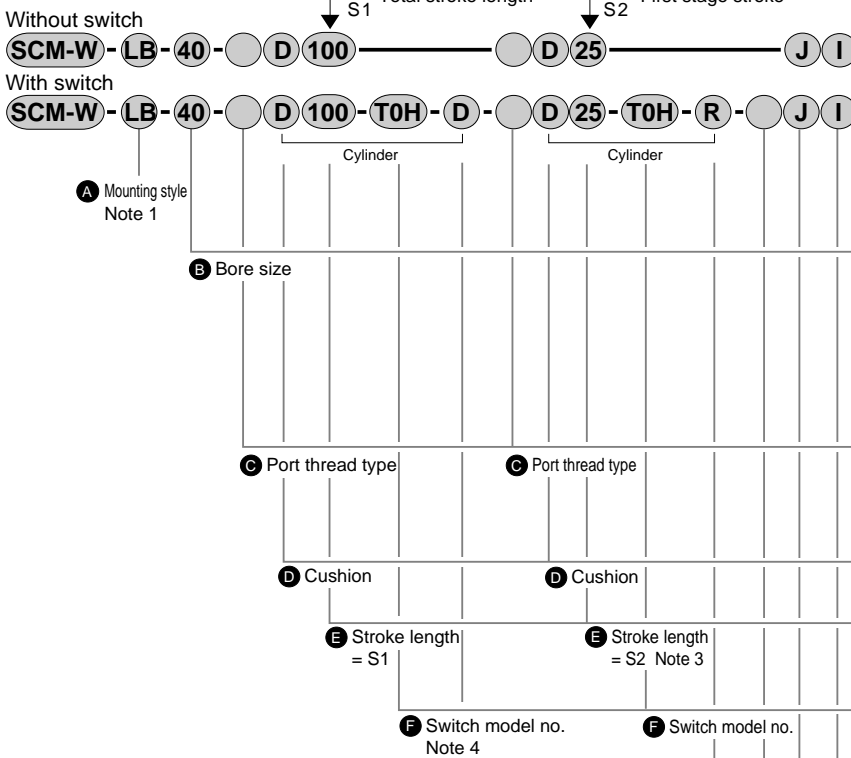
Weight of S2 .....  $0.41 \text{ kg} + 0.08 \text{ kg} + 0.018 \text{ kg} = 0.508$  kg

Product weight (weight of S1 + weight of S2 + additional weight) ...  $0.766 \text{ kg} + 0.508 \text{ kg} + 0.19 \text{ kg} = 1.464$  kg

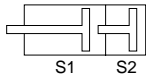
SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type

## How to order



First step stroke 25 mm, indicated by S2  
 + Second step stroke 75 mm,  
 Total stroke length 100 mm, indicated by S1



### Note on model no. selection

- Note 1: The mounting bracket is shipped with the product.
- Note 2: Max. stroke length of S2 (first stage) is 200 mm.
- Note 3: Refer to page 310 for switch quantity and min. stroke length.
- Note 4: Switches other than switch model no. "F" are also available. (Custom order) Refer to Ending 1 for details.
- Note 5: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.
- Note 6: Refer to Ending 89 about custom specifications of rod end form.
- Note 7: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.
- Note 8: "I" and "Y" can not be selected at the same time.

### <Example of model number>

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

Model: Round shaped cylinder double acting two stage type

- A** Mounting style : Axial foot type
- B** Bore size :  $\phi$  40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides rubber cushioned
- E** Stroke length : S1 = 100 mm
- D** Cushion : both sides rubber cushioned
- E** Stroke length : S2 = 25 mm
- F** Switch model no. : Reed T0H switch, lead wire 1 m
- G** Switch quantity : Cylinder 1; 2 pcs., Cylinder 2; 1 pc. on rod end
- H** Switch installation method : Rail method
- I** Option : Bellows material, maximum outside periphery Temperature 60 °C
- J** Accessory : Rod eye

Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
TA	Rod end trunnion type
TB	Head end trunnion type

<b>B Bore size (mm)</b>	
20	$\phi$ 20
25	$\phi$ 25
32	$\phi$ 32
40	$\phi$ 40
50	$\phi$ 50
63	$\phi$ 63

<b>C Port thread type</b>	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)

<b>D Cushion</b>	
D	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 3	Custom stroke length
$\phi$ 20 to $\phi$ 63	10 to 600	Per 1 mm

<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type without light	2-wire
T5H*	T5V*			
T8H*	T8V*	Proximity	1 color indicator type	2-wire
T1H*	T1V*			
T2H*	T2V*	Proximity	1 color indicator type (custom)	3-wire
T3H*	T3V*			
T3PH*	T3PV*	Proximity	2 color indicator type	2-wire
T2YH*	T2YV*			
T3YH*	T3YV*	Proximity	2 color indicator type (W/ light for preventive maintenance output)	3-wire
T2YFH*	T2YFV*			
T3YFH*	T3YFV*	Proximity	2 color indicator type (W/ light for preventive maintenance output (1 color))	3-wire
T2YMH*	T2YMV*			
T3YMH*	T3YMV*	Proximity	Switch for magnetic field	2-wire
T2YD*	-			
T2YDT*	-	Proximity	Off-delay type	2-wire
T2JH*	T2JV*			

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

<b>G Switch quantity</b>	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

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

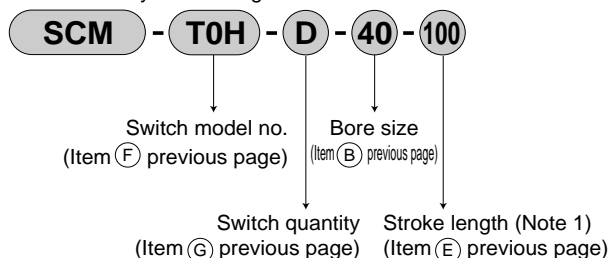
<b>I Option</b>			
		Max. ambient	Max. instantaneous
J	Bellows	60 °C	100 °C
K	Bellows	100 °C	200 °C
L	Bellows	250 °C	400 °C
Q	Switch rail attached at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

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

### How to order switch

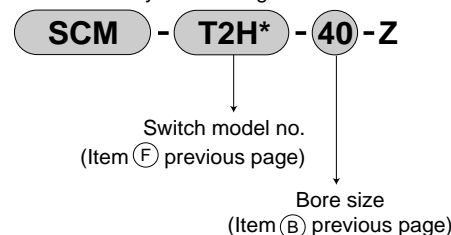
(switch installation method: rail method)

● Switch body + mounting rail set

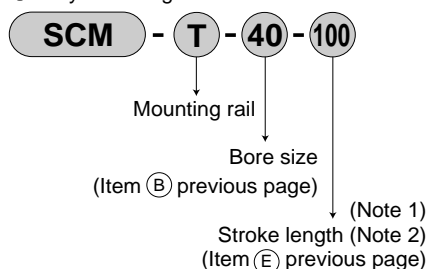


(switch installation method: band method)

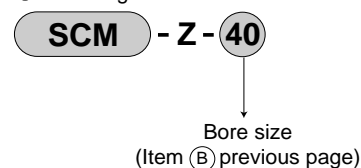
● Switch body + mounting rail + band



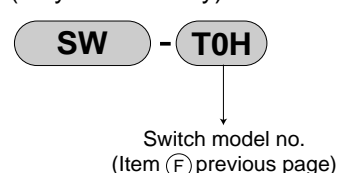
● Only mounting rail



● Mounting rail + band



(only switch body)



Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

### How to order mounting bracket

Bore size (mm)	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 (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

Note 1: Mounting bolts are attached to each mounting bracket.  
Note 2: 2 piece/set is applied for a foot type mounting bracket.

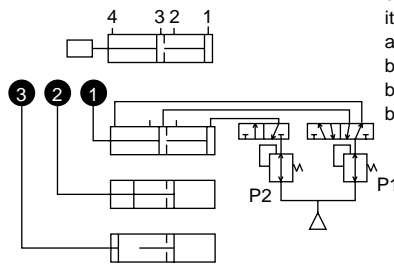
- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

## Applications

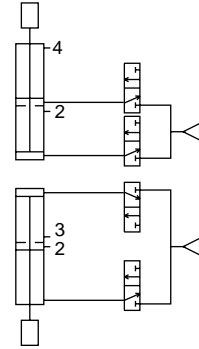
Pressure setting is  $P2 > P1$ .

- First stage: push-out with supplying pressure to Port 4, supply pressure to Port 1.
- Second stage: push-out with supplying pressure to Port 1, supply pressure to Port 4.

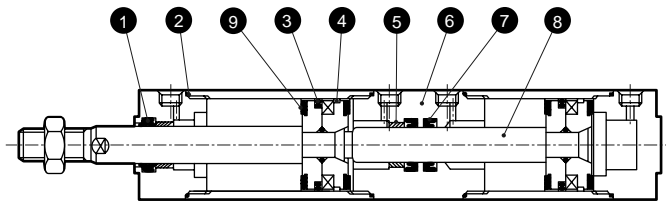


$P2 = P1$  is acceptable depending on load direction.

When using a single acting cylinder with a load which drops by its own weight, for the drawing above, Port 2 and 4 are used as bleed holes, while for the drawing below, Port 2 and 3 are used as bleed holes.



## Internal structure and parts list



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod packing seal	Nitrile rubber		6	Intermediate guard	Aluminum alloy	Paint
2	Cylinder gasket	Nitrile rubber		7	Rod packing seal	Nitrile rubber	
3	Piston packing seal	Nitrile rubber		8	Piston rod	$\phi 20$ to $\phi 25$ : stainless steel $\phi 32$ to $\phi 63$ : steel	Industrial chrome plating
4	Wear ring	Polyacetal resin		9	Cushion rubber	Urethane rubber	
5	Bush	Oil impregnated bearing alloy					

## Repair parts list

Bore size (mm)	Kit No.	Repair parts number
$\phi 20$	SCM-W-20DK	
$\phi 25$	SCM-W-25DK	1 2 3
$\phi 32$	SCM-W-32DK	
$\phi 40$	SCM-W-40DK	4 7 9
$\phi 50$	SCM-W-50DK	
$\phi 63$	SCM-W-63DK	

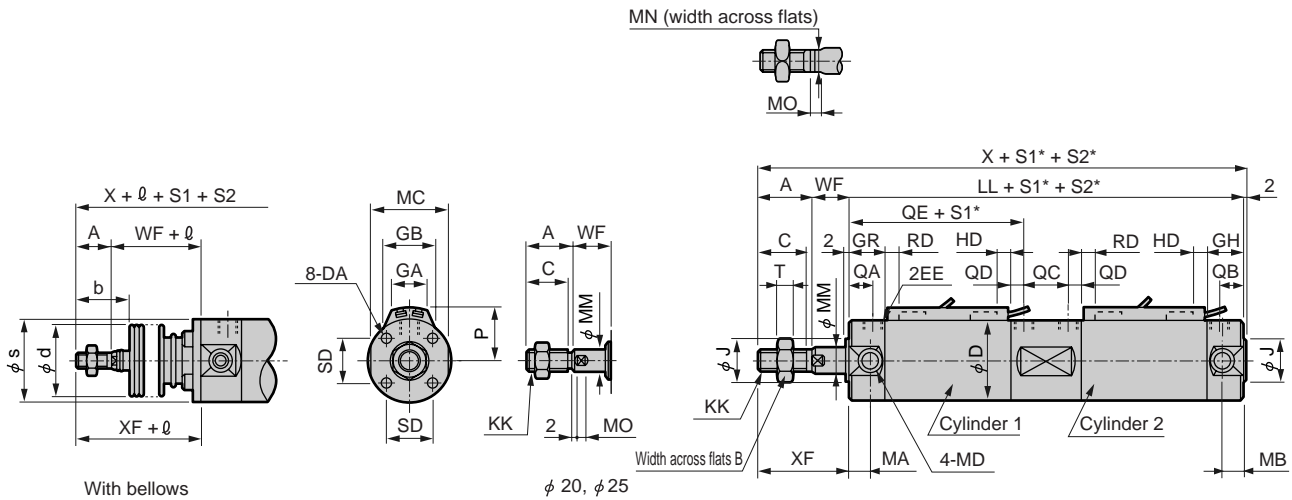
Note 1: Specify the kit No. when placing an order.



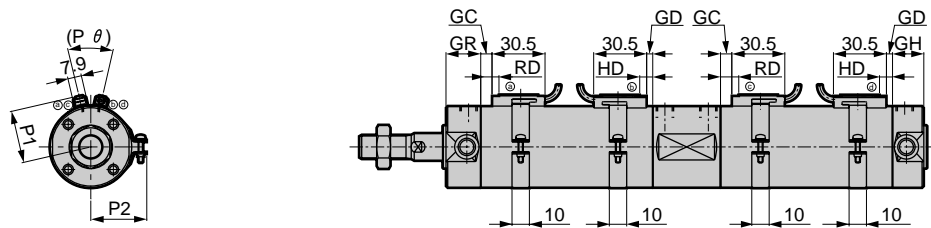
### Dimensions

● Double acting two stage type

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indication type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1HV, T8HV switch.  
 Note 2: Refer to page 334 and 335 for accessory dimensions.

\*: S1 = Total stroke, S2 = stroke length of cylinder 2

Symbol	Basic type (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 x 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 x 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 x 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 x 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 x 1.5	181	13	12	69	M14	20	17	8	15	12

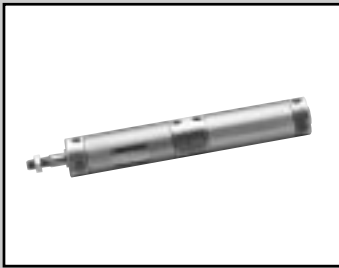
Symbol	Bore size (mm)	With bellows											Switch installation method: rail method							
		QC	QD	QE	SD	T	WF	X	XF	b	d	s	l	P	GA	GB	HD		RD	
		T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5		
φ20	19	7	59	14	5	17	172	35	30	30	25.7	(S1/3) + 18.5	19.5	18	23	4.0	7.0	7.0	7.5	
φ25	19	7	59	16.5	6	18	177	40	35	30	30.7	(S1/3) + 20.5	22	18	24.4	3.0	6.0	8.0	8.5	
φ32	21	7	61	20	6	18	183	40	31.5	35	37.7	(S1/3) + 19	25.5	18	25	4.0	7.0	9.0	9.5	
φ40	25	7	66	26	8	20	208	50	40	35	46.7	(S1/3) + 18.5	30	18	25.7	6.0	9.0	11.0	11.5	
φ50	28	10	78	32	11	23	241	58	46	40	57.7	(S1/3.6) + 18.5	35.5	18	26.2	8.0	11.5	12.0	13.0	
φ63	28	10	78	38	11	23	241	58	46	40	71.7	(S1/3.6) + 18.5	42.5	18	26.5	8.0	11.5	12.0	13.0	

Symbol	Bore size (mm)	Switch installation method: band method						
		GC	GD	HD	RD	P1	P2	Pθ
		T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5	T0, T2, T3, T5
φ20	2.5	3.5	7.5	6.5	19.6	21.5	(38°)	
φ25	1.5	4.5	8.5	5.5	22.1	23.9	(34°)	
φ32	2.5	5.5	9.5	6.5	25.6	27.6	(30°)	
φ40	4.5	7.5	11.5	8.5	30.2	32.1	(26°)	
φ50	7.0	9.0	13.0	11.0	35.7	37.4	(22°)	
φ63	7.0	9.0	13.0	11.0	42.7	44.4	(20°)	

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

SCP\*2  
CMK2  
CMA2  
**SCM**  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending



Round shaped medium bore size cylinder  
Double acting tandem type

# SCM-W4 Series

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



## Specifications

Descriptions		SCM-W4					
Bore size	mm	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63
Actuation		Double acting tandem type					
Working fluid		Compressed air					
Max. working pressure	MPa	0.5					
Min. working pressure	MPa	0.2			0.1		
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (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 (Use within the allowable energy absorption.)					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)					
Allowable energy absorption	J	0.1	0.2	0.5	0.9	1.6	1.6

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

Note 2: Strokes exceeding 600 mm are available as custom order parts. Contact CKD for details.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi$ 20	10		25		40	50	55		75	85
$\phi$ 25	10		25		40	50	55		75	85
$\phi$ 32	10		25		40	50	55		75	85
$\phi$ 40	10		25		40	50	55		75	85
$\phi$ 50	10		25		40	50	55		75	85
$\phi$ 63	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

● 1 color/2 color indicator

\* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light) serial connection		Programmable controller, relay				
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	without light		LED (ON lighting)				
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V		
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay		
Output method	NPN output								
Light	Red/Green LED (ON lighting)								
	Installation position adjustment				Yellow LED (ON lighting)				
Regular output	Preventive maintenance output								
	-		-		-		-		
	Power voltage		10 to 28 VDC		-		10 to 28 VDC		
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less		
Preventive maintenance output	Load current		50 mA or less		5 to 20 mA		50 mA or less		
	Leakage current		10 μA or less		1.2 mA or less		10 μA or less		
	Load voltage		30 VDC or less						
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less
Leakage current		10 μA or less							

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm	Additional weight					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (W <sub>switch rail</sub> )	Band weight per 1 switch
		Basic type (00)	Basic type	Axial foot type	Flange type	Clevis type				
φ20	0.10	0.00	0.11	0.03	0.05	0.01	0.018	0.01	0.012	0.007
φ25	0.17	-0.01	0.12	0.03	0.07	0.01	0.018	0.014	0.016	0.007
φ32	0.26	0.00	0.16	0.06	0.15	0.03	0.018	0.018	0.02	0.007
φ40	0.41	-0.01	0.21	0.07	0.22	0.04	0.018	0.03	0.032	0.007
φ50	0.77	-0.01	0.47	0.33	0.39	0.13	0.018	0.044	0.046	0.008
φ63	1.07	0.02	0.74	0.52	0.70	0.16	0.018	0.052	0.054	0.009

(Eg.) Product weight of SCM-W4-LB-40D-100-T2H-D	<ul style="list-style-type: none"> <li>(1) Product weight when S = 0 mm ..... 0.41 kg</li> <li>(2) Additional weight when S = 100 mm ... 0.032 x <math>\frac{100}{10}</math> = 0.32 kg</li> <li>(3) Weight of 2 switches ..... 0.036 kg</li> <li>(4) Calculate total of (1) + (2) + (3) ..... 0.41 kg + 0.32 kg + 0.036 kg = 0.766 kg</li> <li>Product weight (double (4)) and add to additional weight) ... 0.766 kg x 2 + 0.21 kg = 1.742 kg</li> </ul>
---	---

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type

## How to order

Without switch

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

With switch

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

**A** Mounting style  
Note 1

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length

**F** Switch model no.  
Note 3

**G** Switch quantity

**H** Switch installation method

**I** Option  
Note 4  
Note 6

**J** Accessory  
Note 7

Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
TA	Rod end trunnion type
TB	Head end trunnion type

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

<b>C Port thread type</b>	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)

<b>D Cushion</b>	
D	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
φ20 to φ63	10 to 600	Per 1 mm

<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		without light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*		1 color indicator type (custom)	3-wire
T3PH*	T3PV*			3-wire
T2YH*	T2YV*	2 color indicator type	2-wire	2-wire
T3YH*	T3YV*		3-wire	
T2YFH*	T2YFV*	2 color indicator type (W/o light for preventive maintenance output)	3-wire	3-wire
T3YFH*	T3YFV*		4-wire	
T2YMH*	T2YMV*	2 color indicator type (W/ light for preventive maintenance output (1 color))	3-wire	3-wire
T3YMH*	T3YMV*		4-wire	
T2YD*	-	Strong magnetic field proof switch	Off-delay type	2-wire
T2YDT*	-			
T2JH*	T2JV*			2-wire

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

<b>G Switch quantity</b>	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

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

<b>I Option</b>			
		Max. ambient	Max. instantaneous
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		

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

### ⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2: Refer to page 316 for switch quantity and min. stroke length.

Note 3: Switches other than switch model no. "F" are also available. (Custom order)  
Refer to an Ending 1 for the details.

Note 4: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.

Note 5: Refer to Ending 89 about custom specifications of rod end form.

Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

Note 7: "I" and "Y" can not be selected at the same time.

### <Example of model number>

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

Model: Round shaped cylinder double acting tandem type

**A** Mounting style : Axial foot type

**B** Bore size : φ 40 mm

**C** Port thread type : Rc thread

**D** Cushion : Both sides rubber cushioned

**E** Stroke length : 100 mm

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

**G** Switch quantity : 2

**H** Switch installation method: Rail method

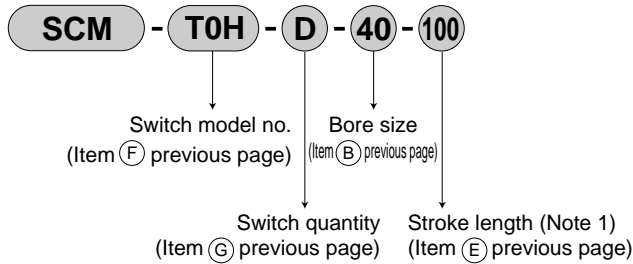
**I** Option : Bellows material / max. ambient temperature 60 °C

**J** Accessory : Rod eye

### How to order switch

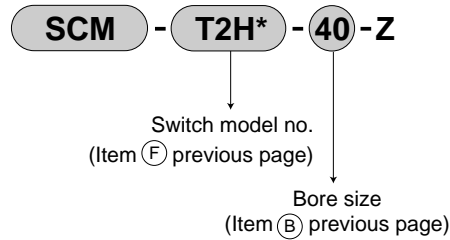
(switch installation method: rail method)

● Switch body + mounting rail set

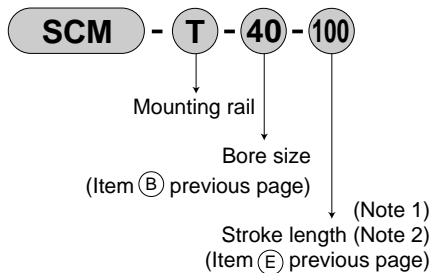


(switch installation method: band method)

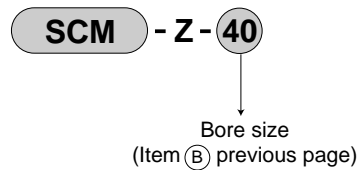
● Switch body + mounting rail + band



● Only mounting rail



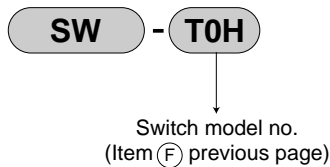
● Mounting rail + band



Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(only switch body)



### How to order mounting bracket

Bore size (mm)	φ 20	φ 25	φ 32	φ 40	φ 50	φ 63
Mounting bracket						
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63
Eye (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

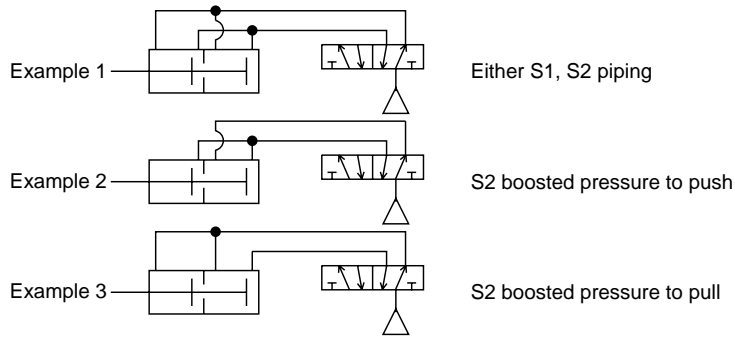
Note 1: Mounting bolts are attached to each mounting bracket.

Note 2: 2 piece/set is applied for a foot type mounting bracket.

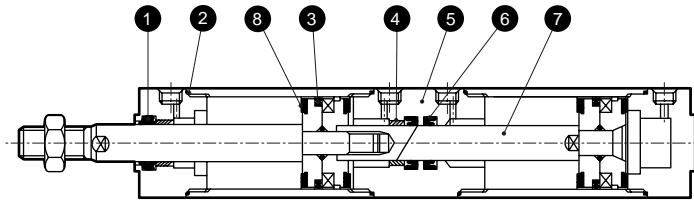
- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
Standard type

## Applications



## Internal structure and parts list



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod packing seal	Nitrile rubber		5	Intermediate guard	Aluminum alloy	Paint
2	Cylinder gasket	Nitrile rubber		6	Rod packing seal	Nitrile rubber	
3	Piston packing seal	Nitrile rubber		7	Piston rod	$\phi 20$ to $\phi 25$ : stainless steel $\phi 32$ to $\phi 63$ : steel	Industrial chrome plating
4	Bush	Oil impregnated bearing alloy		8	Cushion rubber	Urethane rubber	

## Repair parts list

Bore size (mm)	Kit No.	Repair parts number
$\phi 20$	SCM-W4-20DK	
$\phi 25$	SCM-W4-25DK	
$\phi 32$	SCM-W4-32DK	
$\phi 40$	SCM-W4-40DK	1 2 3 8
$\phi 50$	SCM-W4-50DK	
$\phi 63$	SCM-W4-63DK	

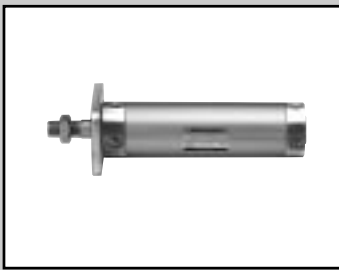
Note 1: Specify the kit No. when placing an order.

Note 2: The rod packing (6) is not replaceable, and is not enclosed in the consumables kit.

Two of the four cushion rubbers (8) cannot be replaced, so only two are enclosed in the consumables kit.



SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending

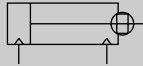


Round shaped medium bore size cylinder  
 Double acting non-rotating type

# SCM-M Series

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

JIS symbol



## Specifications

Descriptions		SCM-M					
Bore size	mm	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63
Actuation		Double acting non-rotating type					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.1				0.05	
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (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 (Use within the allowable energy absorption. )					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)					
Revolvable angle tolerance	Degree	$\pm 1$					
Allowable energy absorption	J	0.1	0.2	0.5	0.9	1.6	1.6

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

Note 2: Strokes exceeding 600 mm are available as custom order parts. Contact CKD for details.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi$ 20	10		25		40	50	55		75	85
$\phi$ 25	10		25		40	50	55		75	85
$\phi$ 32	10		25		40	50	55		75	85
$\phi$ 40	10		25		40	50	55		75	85
$\phi$ 50	10		25		40	50	55		75	85
$\phi$ 63	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

\* The TO/T5 switch can be used with 220 VAC.  
Contact CKD for working conditions.

● 1 color/2 color indicator

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve		Programmable controller dedicated	Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC		10 to 30 VDC	30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA		5 to 20 mA (Note 1)	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
Light	LED (ON lighting)		LED (ON lighting) Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC		1 mA or less	10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire			
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V			
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay			
Output method	NPN output									
Light	Red/Green LED (ON lighting)									
	Installation position adjustment		-						Yellow LED (ON lighting)	
Regular output	Preventive maintenance output		-						Yellow LED (ON lighting)	
	Power voltage		10 to 28 VDC		-		10 to 28 VDC			
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less			
	Load current		50 mA or less		5 to 20 mA		50 mA or less			
Preventive maintenance output	Leakage current		1 mA or less		10 μA or less		1.2 mA or less		10 μA or less	
	Load voltage		30 VDC or less							
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
Leakage current		10 μA or less								

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight per S = 10 mm	Additional weight per S = 10 mm (with rail)	Band weight per 1 switch
	Basic type	Axial foot type	Flange type	Clevis type	Trunnion type				
Port size						Grommet			
φ 20	0.10	0.21	0.13	0.15	0.11	0.018	0.010	0.012	0.007
φ 25	0.18	0.31	0.22	0.26	0.20	0.018	0.014	0.016	0.007
φ 32	0.27	0.43	0.33	0.42	0.30	0.018	0.018	0.020	0.007
φ 40	0.44	0.66	0.52	0.67	0.49	0.018	0.030	0.032	0.007
φ 50	0.85	1.33	1.19	1.25	0.99	0.018	0.044	0.046	0.008
φ 63	1.15	1.87	1.65	1.83	1.29	0.018	0.052	0.054	0.009

(Eg.) 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

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type

## How to order

Without switch

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

With switch

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

A Mounting style  
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length

F Switch model no.  
Note 3

G Switch quantity

H Switch installation method

I Option  
Note 4, Note 6

J Accessory  
Note 7

Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
TA	Rod end trunnion type
TB	Head end trunnion type

<b>B Bore size (mm)</b>	
20	φ 20
25	φ 25
32	φ 32
40	φ 40
50	φ 50
63	φ 63

<b>C Port thread type</b>	
Blank	Rc thread
N	NPT thread (custom order)
G	G thread (custom order)

<b>D Cushion</b>	
D	Both sides rubber cushioned

<b>E Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
φ20 to φ63	10 to 600	Per 1 mm

<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type without light	2-wire
T5H*	T5V*		1 color indicator type	
T8H*	T8V*			
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*			
T3H*	T3V*			
T3PH*	T3PV*		1 color indicator type (custom order)	3-wire
T2YH*	T2YV*		2 color indicator type	2-wire
T3YH*	T3YV*		2 color indicator type (W/o light for preventive maintenance output)	3-wire
T2YFH*	T2YFV*		2 color indicator type (W/ light for preventive maintenance output)	3-wire
T3YFH*	T3YFV*		2 color indicator type (W/ light for preventive maintenance output (1 color))	4-wire
T2YMH*	T2YMV*			3-wire
T3YMH*	T3YMV*			4-wire
T2YD*	-		Strong magnetic field proof switch	2-wire
T2YDT*	-			
T2JH*	T2JV*		Off-delay type	2-wire

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

<b>G Switch quantity</b>	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

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

<b>I Option</b>			
		Max. ambient	Max. instantaneous
J	Bellows	60 °C	100 °C
K	Bellows	100 °C	200 °C
L	Bellows	250 °C	400 °C
Q	Switch rail attached at shipment		

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

### Note on model no. selection

Note 1: The mounting bracket is shipped with the product.

Note 2: Refer to page 322 for switch quantity and min. stroke length.

Note 3: Switches other than switch model no. "F" are available. (Custom order)  
Refer to Ending 1 for details.

Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.

Note 5: Refer to Ending 89 about custom specifications of rod end form.

Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.

Note 7: "I" and "Y" can not be selected at the same time.

### <Example of model number>

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

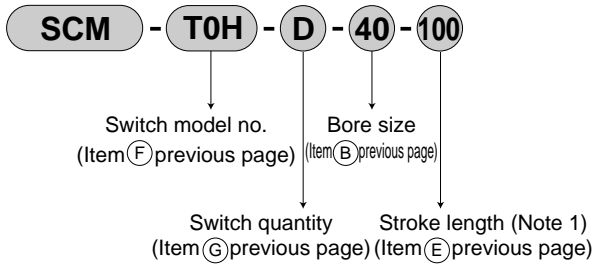
Model: Round shaped cylinder double acting non-rotating type

- A Mounting style : Axial foot type
- B Bore size : φ 40 mm
- C Port thread type : Rc thread
- D Cushion : Both sides rubber cushioned
- E Stroke length : 100 mm
- F Switch model no. : Reed T0H switch, lead wire 1 m
- G Switch quantity : 2
- H Switch installation method : Rail method
- I Option : Bellows material / max. ambient temperature 60 °C
- J Accessory : Rod eye

### How to order switch

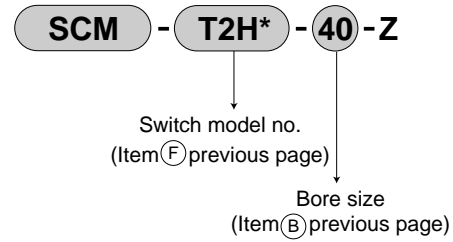
(switch installation method: rail method)

● Switch body + mounting rail set

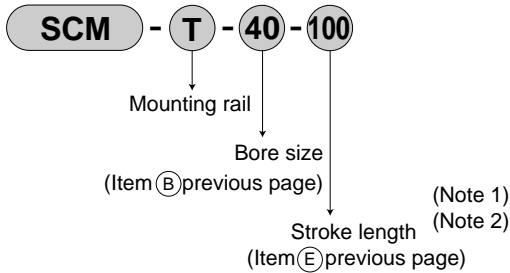


(switch installation method: band method)

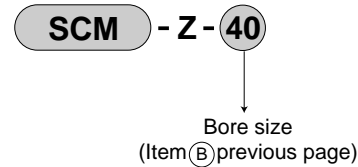
● Switch body + mounting rail + band



● Only mounting rail



● Mounting rail + band

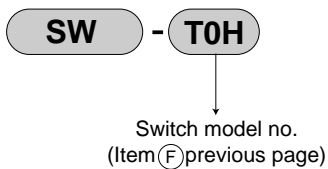


Note 1: When more than 300 mm stroke, indicate "X".

When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(only switch body)



### How to order mounting bracket

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

Note 1: Mounting bolt is attached to each mounting bracket.

Note 2: 2 piece/set is applied for a foot type mounting bracket.

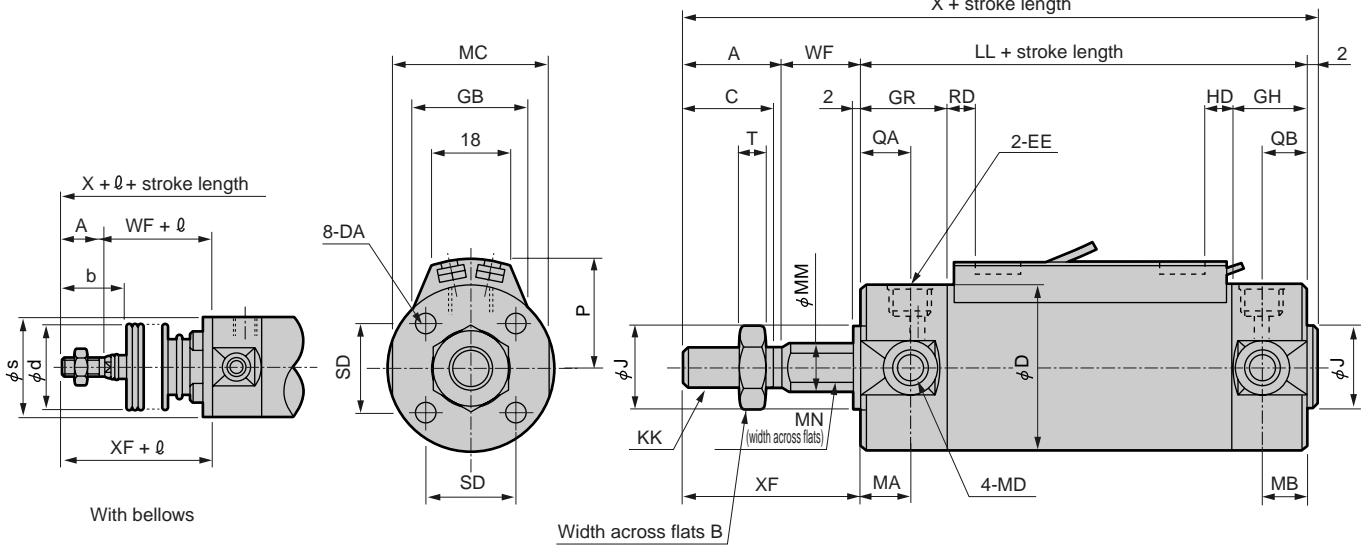
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type

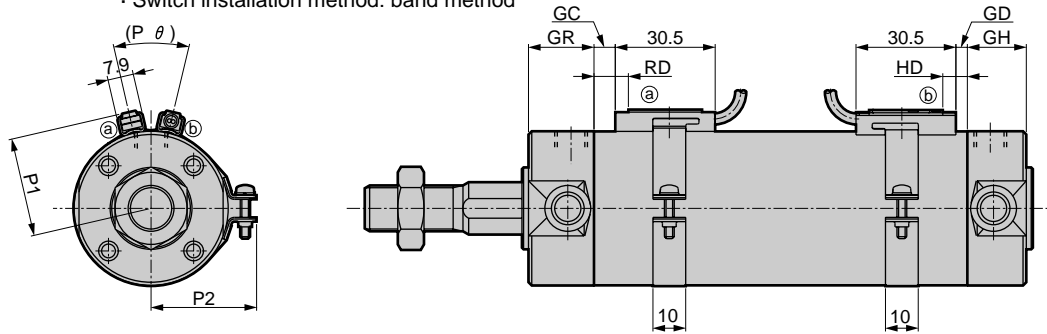
## Dimensions

● Double acting non-rotating type

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions																		
	A	B	C	D	DA	EE	GH	GR	J	KK	LL	MA	MB	MC	MD	MM	MN	QA	QB
φ 20	18	13	15.5	26	M4 depth 6.5	Rc1/8	17	19	12	M8	69	11	11	24	M5	10	8	12	10
φ 25	22	17	19.5	31	M5 depth 6.5	Rc1/8	17	19	14	M10 x 1.25	69	11	11	29	M6	12	10	12	10
φ 32	22	17	19.5	38	M5 depth 7.5	Rc1/8	17	19	18	M10 x 1.25	71	11	10	36	M8	12	10	12	10
φ 40	30	22	27	47	M6 depth 12	Rc1/8	19	20	25	M14 x 1.5	78	12	10	44	M10	16	14	13	12
φ 50	35	27	32	58	M8 depth 16	Rc1/4	22	25	30	M18 x 1.5	90	13	12	55	M12	20	17	15	12
φ 63	35	27	32	72	M10 depth 16	Rc1/4	22	25	32	M18 x 1.5	90	13	12	69	M14	20	17	15	12

Symbol	With bellows										Switch installation method: rail method							
	SD	T	WF	X	XF	b	d	s	ℓ	P	GB	HD		RD		P1	P2	Pθ
												T0, T5	T2, T3	T0, T5	T2, T3			
φ 20	14	5	17	106	35	30	30	25.7	(stroke length/3) + 18.5	19.5	23	4.0	7.0	7.0	7.5			
φ 25	16.5	6	18	111	40	35	30	30.7	(stroke length/3) + 20.5	22	24.4	3.0	6.0	8.0	8.5			
φ 32	20	6	18	113	40	31.5	35	37.7	(stroke length/3) + 19	25.5	25	4.0	7.0	9.0	9.5			
φ 40	26	8	20	130	50	40	35	46.7	(stroke length/3) + 18.5	30	25.7	6.0	9.0	11.0	11.5			
φ 50	32	11	23	150	58	46	40	57.7	(stroke length/3.6) + 18.5	35.5	26.2	8.0	11.5	12.0	13.0			
φ 63	38	11	23	150	58	46	40	71.7	(stroke length/3.6) + 18.5	42.5	26.5	8.0	11.5	12.0	13.0			

Symbol	Switch installation method: band method						
	GC	GD	HD	RD	P1	P2	Pθ
φ 20	2.5	3.5	7.5	6.5	19.6	21.5	(38°)
φ 25	1.5	4.5	8.5	5.5	22.1	23.9	(34°)
φ 32	2.5	5.5	9.5	6.5	25.6	27.6	(30°)
φ 40	4.5	7.5	11.5	8.5	30.2	32.1	(26°)
φ 50	7.0	9.0	13.0	11.0	35.7	37.4	(22°)
φ 63	7.0	9.0	13.0	11.0	42.7	44.4	(20°)

Note: Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.

### Internal structure drawing

It is same as standard type. Refer to page 228.

### Repair parts list

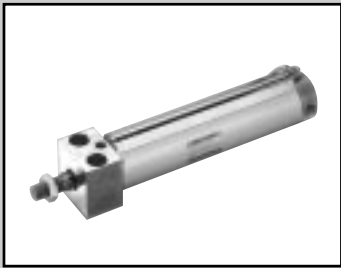
Bore size (mm)	Kit No.	Repair parts number
φ 20	SCM-M-20K	
φ 25	SCM-M-25K	
φ 32	SCM-M-32K	3 6 8 10 13
φ 40	SCM-M-40K	
φ 50	SCM-M-50K	
φ 63	SCM-M-63K	

SCP*2
CMK2
CMA2
<b>SCM</b>
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Round shaped cylinder  
Standard type



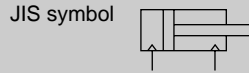
SCP\*2  
 CMK2  
 CMA2  
**SCM**  
 SCG  
 SCA2  
 SCS  
 CKV2  
 CA/OV2  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMD2  
 MSD\*  
 FC\*  
 STK  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3  
 USSD  
 USC  
 JSB3  
 LMB  
 STG  
 STS/L  
 LCS  
 LCG  
 LCM  
 LCT  
 LCY  
 STR2  
 UCA2  
 HCM  
 HCA  
 SRL2  
 SRG  
 SRM  
 SRT  
 MRL2  
 MRG2  
 SM-25  
 CAC3  
 UCAC  
 RCC2  
 MFC  
 SHC  
 GLC  
 Ending



Round shaped medium bore size cylinder  
 Double acting direct mounting foot

# SCM-LD Series

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



## Specifications

Descriptions		SCM-LD					
Bore size	mm	$\phi$ 20	$\phi$ 25	$\phi$ 32	$\phi$ 40	$\phi$ 50	$\phi$ 63
Actuation		Double acting direct mounting foot					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.1			0.05		
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (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 (Use within the allowable energy absorption. )					
Cushion		Rubber cushion					
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)					
Allowable energy absorption	J	0.1	0.2	0.5	0.9	1.6	1.6

## Stroke length

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

Note 1: Custom stroke length is available per 1 mm increment.

## Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity Bore size (mm)	1		2		3		4		5	
	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
$\phi$ 20	10		25		40	50	55		75	85
$\phi$ 25	10		25		40	50	55		75	85
$\phi$ 32	10		25		40	50	55		75	85
$\phi$ 40	10		25		40	50	55		75	85
$\phi$ 50	10		25		40	50	55		75	85
$\phi$ 63	10		25		40	50	55		75	85

● Switch installation method: Band method

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

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change. Refer to page 333 for installation position.

### Switch specifications

● 1 color/2 color indicator

\* The TO/T5 switch can be used with 220 VAC.  
Contact CKD for working conditions.

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV		T5H/T5V		T8H/T8V			
Applications	Programmable controller, relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	
Load current	5 to 100 mA	5 to 20 mA (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire			
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V			
Applications	Programmable controller dedicated		Programmable controller, relay		Programmable controller dedicated		Programmable controller, relay			
Output method	NPN output									
Light	Red/Green LED (ON lighting)									
	Installation position adjustment		-						Yellow LED (ON lighting)	
Regular output	Preventive maintenance output		-						Yellow LED (ON lighting)	
	Power voltage		-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage		10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current		5 to 20 mA		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Leakage current		1 mA or less		10 μA or less		1.2 mA or less		10 μA or less	
	Load voltage		30 VDC or less							
	Load current		20 mA or less		50 mA or less		5 to 20 mA or less		50 mA or less	
Leakage current		10 μA or less								

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C.  
(5 to 10mA at 60 °C)

### Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm		Switch weight		Additional weight		Band weight per	
	Basic type		Grommet	per S = 10 mm	per S = 10 mm (with rail)	1 switch		
φ20	0.14		0.018	0.010	0.012	0.007		
φ25	0.22		0.018	0.014	0.016	0.007		
φ32	0.34		0.018	0.018	0.020	0.007		
φ40	0.56		0.018	0.030	0.032	0.007		
φ50	1.04		0.018	0.044	0.046	0.008		
φ63	1.46		0.018	0.052	0.054	0.009		

(Eg.) 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 × $\frac{100}{10}$ = 0.32 kg
	Weight of 2 switches	0.036 kg
	Product weight	0.56 kg + 0.32 kg + 0.036 kg = 0.916 kg

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
UCA2  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Round shaped cylinder  
Standard type

## How to order

Without switch

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

With switch

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

**A** Mounting style

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length

**F** Switch model no.  
Note 2

**G** Switch quantity

**H** Switch installation method

**I** Option  
Note 4

**J** Accessory  
Note 5

### ⚠ Note on model no. selection

- Note 1: Refer to page 328 for min. stroke length with switch.  
 Note 2: Switches other than switch model no. "F" are available. (Custom order)  
 Refer to Ending 1 for details.  
 Note 3: Refer to Ending 89 about custom specifications of rod end form.  
 Note 4: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.  
 Note 5: "I" and "Y" can not be selected at the same time.

<Example of model number>

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

Model: Round shaped cylinder double acting direct mounting foot

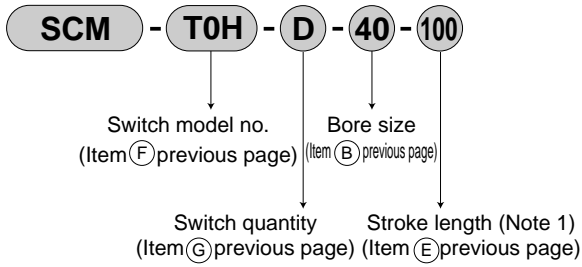
- A** Mounting style : Direct mounting foot
- B** Bore size :  $\phi$  40 mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides rubber cushioned
- E** Stroke length : 100 mm
- F** Switch model no. : Reed T0H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Switch installation method: Rail method
- I** Option : Piston rod material (stainless steel)
- J** Accessory : Rod eye

Symbol	Descriptions			
<b>A Mounting style</b>				
LD	Direct mounting foot			
<b>B Bore size (mm)</b>				
20	$\phi$ 20			
25	$\phi$ 25			
32	$\phi$ 32			
40	$\phi$ 40			
50	$\phi$ 50			
63	$\phi$ 63			
<b>C Port thread type</b>				
Blank	Rc thread			
N	NPT thread (custom order)			
G	G thread (custom order)			
<b>D Cushion</b>				
D	Both sides rubber cushioned			
<b>E Stroke length (mm)</b>				
Bore size	Stroke length Note 1	Custom stroke length		
$\phi$ 20 to $\phi$ 63	10 to 300	Per 1 mm		
<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	
		Reed	Lead wire	
T0H*	T0V*	1 color indicator type	2-wire	
T5H*	T5V*			without light
T8H*	T8V*			1 color indicator type
T1H*	T1V*	1 color indicator type	2-wire	
T2H*	T2V*			
T3H*	T3V*			
T3PH*	T3PV*	1 color indicator type (custom)	3-wire	
T2YH*	T2YV*	2 color indicator type	2-wire	
T3YH*	T3YV*		3-wire	
T2YFH*	T2YFV*		2 color indicator type (W/o light for preventive maintenance output)	3-wire
T3YFH*	T3YFV*	2 color indicator type (W/ light for preventive maintenance output (1 color))	4-wire	
T2YMH*	T2YMV*		3-wire	
T3YMH*	T3YMV*		4-wire	
T2YD*	-	Strong magnetic field proof switch	2-wire	
T2YDT*	-			
T2JH*	T2JV*	Off-delay type	2-wire	
<b>*Lead wire length</b>				
Blank	1 m (standard)			
3	3 m (option)			
5	5 m (option)			
<b>G Switch quantity</b>				
R	One on rod end			
H	One on head end			
D	Two			
T	Three			
4	4 switches (When more than 4 switches, indicate switch quantity.)			
<b>H Switch installation method</b>				
Blank	Rail method			
Z	Band method			
<b>I Option</b>				
Q	Switch rail attached at shipment			
M	Piston rod material (stainless steel)			
P6	Copper and PTFE free (custom order)			
<b>J Accessory</b>				
I	Rod eye			
Y	Rod clevis (pin and snap ring attached)			

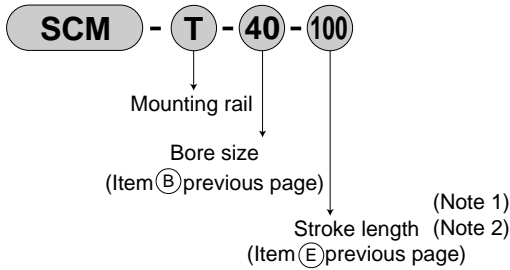
### How to order switch

(switch installation method: rail method)

● Switch body + mounting rail set



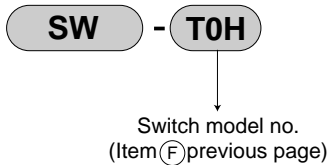
● Only mounting rail



Note 1: When more than 300 mm stroke, indicate "X".  
When more than 300 mm stroke, a short rail (100 mm switch adjustment distance) is provided per switch.

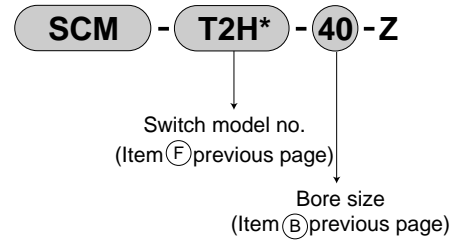
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

(only switch body)

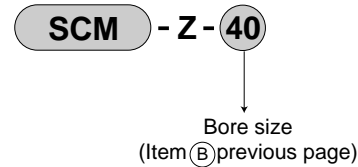


(switch installation method: band method)

● Switch body + mounting rail + band



● Mounting rail + band



SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

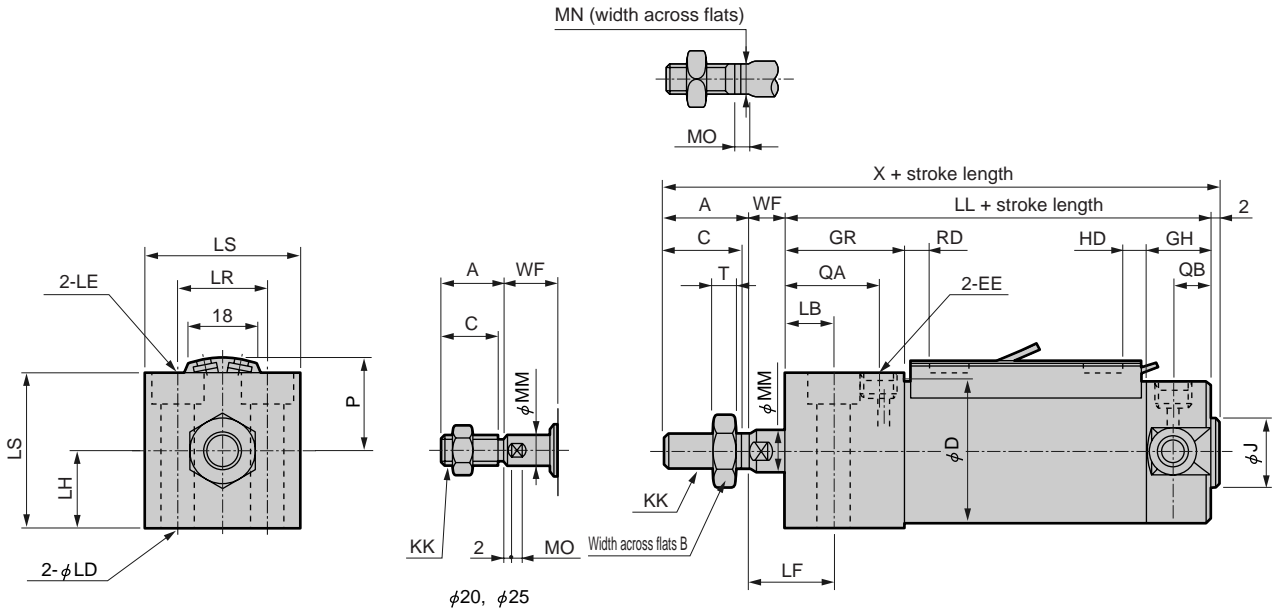
Round shaped cylinder  
Standard type



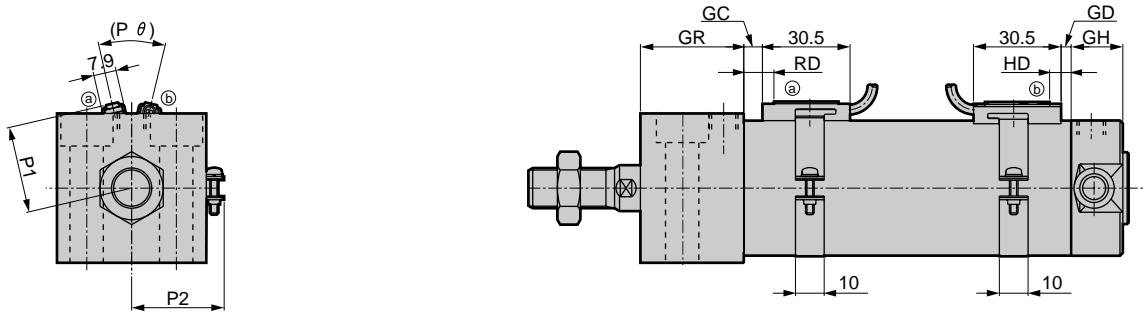
## Dimensions

● Double acting direct mounting foot

· Switch installation method: rail method



· Switch installation method: band method



Note 1: Refer to the page 333 for the RD, HD, and projecting dimensions of the 2-color indicator type, preventive maintenance output type, off delay type, strong magnetic field proof type, T1H/V, T8H/V switch.  
 Note 2: Refer to page 334 and 335 for accessory dimensions.

Symbol	Basic type (00) basic dimensions																						
	A	B	C	D	EE	GH	GR	J	KK	LL	MM	MN	MO	QA	QB	T	WF	X	LB	LD	LE	LF	
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
φ25	22	17	19.5	31	Rc1/8	17	27	14	M10 x 1.25	77	10	8	5	20	10	6	10	111	12	6.6	11 spot face depth	6.5	22
φ32	22	17	19.5	38	Rc1/8	17	32	18	M10 x 1.25	84	12	10	5.5	25	10	6	10	118	13	9	14 spot face depth	8.6	23
φ40	30	22	27	47	Rc1/8	19	36	25	M14 x 1.5	94	16	14	6	29	12	8	9	135	16	11	17.5 spot face depth	10.8	25
φ50	35	27	32	58	Rc1/4	22	43	30	M18 x 1.5	108	20	17	8	33	12	11	10	155	17	14	20 spot face depth	13	27
φ63	35	27	32	72	Rc1/4	22	48	32	M18 x 1.5	113	20	17	8	38	12	11	10	160	19	18	26 spot face depth	17.5	29

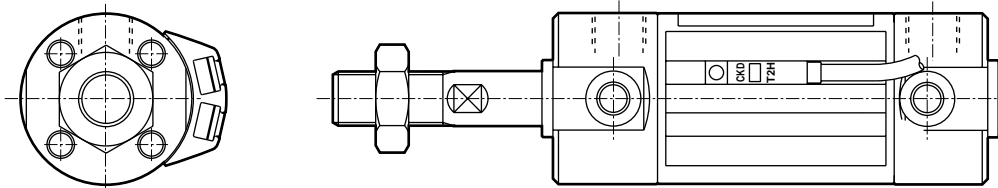
  

Symbol	Switch installation method: rail method											Switch installation method: band method					
	LH	LR	LS	P	HD			RD			GC	GD	HD	RD	P1	P2	P θ
					T0, T5	T2, T3	T0, T5	T2, T3	T0, T2, T3, T5	T0, T2, T3, T5							
φ20	15	18	30	19.5	4.0	7.0	7.0	7.5	2.5	3.5	7.5	6.5	19.6	21.5	(38°)		
φ25	18	22	36	22	3.0	6.0	8.0	8.5	1.5	4.5	8.5	5.5	22.1	23.9	(34°)		
φ32	21	24	42	25.5	4.0	7.0	9.0	9.5	2.5	5.5	9.5	6.5	25.6	27.6	(30°)		
φ40	26	32	52	30	6.0	9.0	11.0	11.5	4.5	7.5	11.5	8.5	30.2	32.1	(26°)		
φ50	32	41	64	35.5	8.0	11.5	12.0	13.0	7.0	9.0	13.0	11.0	35.7	37.4	(22°)		
φ63	38	46	76	42.5	8.0	11.5	12.0	13.0	7.0	9.0	13.0	11.0	42.7	44.4	(20°)		

Each mounting style installation dimension is same as SCM (double acting). Refer to pages 232 to 243.  
 Internal structure drawing

It is same as standard type. Refer to page 228.

### Switch rail installation position (the installation position when 10 to 25 mm stroke and one switch installation)



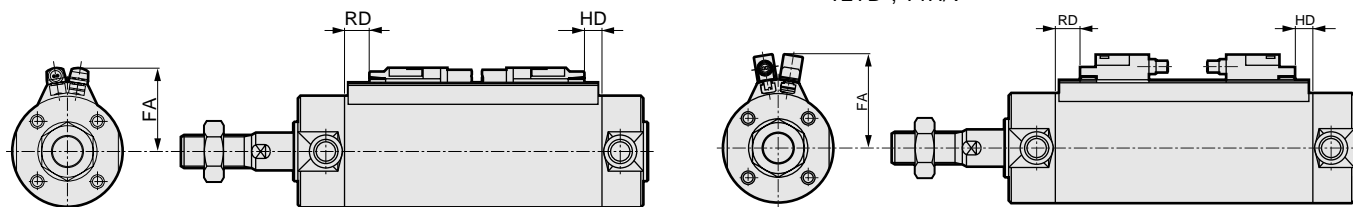
1. Switch rail is installed at 90° tilted position from the standard position.
2. Since a switch rail is interfered with a bracket, mounting style of trunnion type is not available.
3. For variation B and W, when combining a 10 to 25 mm stroke cylinder and longer than 25 mm stroke cylinder, the switch rail installation position of both Cylinder 1 and 2 is 90° rotated as the above drawing.

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

### Mounting and projection dimensions of rail method, 2-color indication/preventive maintenance output, strong magnetic proof, off delay, T1H/V, T8H/V switch.

● SCM-\*, T2YH/V, T3YH/V, T2JH/V, T8H/V

● SCM-\* T2YFH/V, T3YFH/V, T2YMH/V, T3YMH/V  
T2YD\*, T1H/V

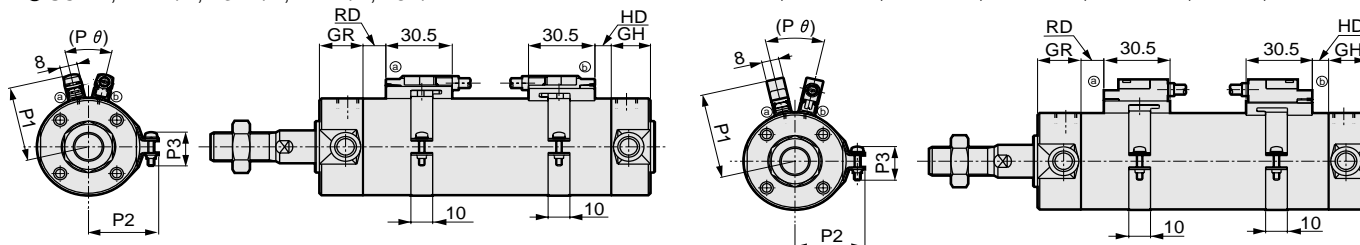


Bore size (mm)	FA				RD			HD	
	T*YH, T8H T2JH	T*YV, T8V T2JV	T*YFH, T*YMH T2YD*, T1H	T*YFV, T*YMV T1V	T*YH/V, T1H/V, T2JH/V T*YFH/V, T*YMH/V, T2YD*	T8H/V	T*YH/V, T1H/V, T2JH/V T*YFH/V, T*YMH/V, T2YD*	T8H/V	
φ20	24	27	29.5	32.5	6.5	1	5.5	0	
φ25	26.5	29.5	32	35	7.5	2	4.5	0	
φ32	30	33	35.5	38.5	8.5	3	5.5	0	
φ40	34.5	37.5	40	43	10.5	5	7.5	2	
φ50	40	43	45.5	48.5	12	6	10	4	
φ63	47	50	52.5	55.5	12	6	10	4	
φ80	55.5	58.5	61	64	19	13	12	6.5	
φ100	66	69	71.5	74.5	18.5	12.5	12.5	7	

### Mounting and projection dimensions of band method, 2-color indication/preventive maintenance output, strong magnetic proof, off delay, T1H/V, T8H/V switch.

● SCM-\*, T2YH/V, T3YH/V, T2YH/V, T8H/V

● SCM-\*, T2YFH/V, T3YFH/V, T2YMH/V, T3YMH/V, T2YD\*, T1H/V



Bore size (mm)	P1				RD			HD	
	T*YH, T8H T2JH	T*YV, T8V T2JV	T*YFH, T*YMH T2YD*, T1H	T*YFV, T*YMV T1V	T*YH/V, T1H/V, T2JH/V T*YFH/V, T*YMH/V, T2YD*	T8H/V	T*YH/V, T1H/V, T2JH/V T*YFH/V, T*YMH/V, T2YD*	T8H/V	
φ20	25.4	28.4	30.4	33.4	6.5	1	5.5	0	
φ25	27.9	30.9	32.9	35.9	7.5	2	4.5	0	
φ32	31.4	34.4	36.4	39.4	8.5	3	5.5	0	
φ40	36	39	41	44	10.5	5	7.5	2	
φ50	41.5	44.5	46.5	49.5	12	6	10	4	
φ63	48.5	51.5	53.5	56.5	12	6	10	4	
φ80	57	60	62	65	19	13	12	6.5	
φ100	67.5	70.5	72.5	75.5	18.5	12.5	12.5	7	

Round shaped cylinder  
Standard type



- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

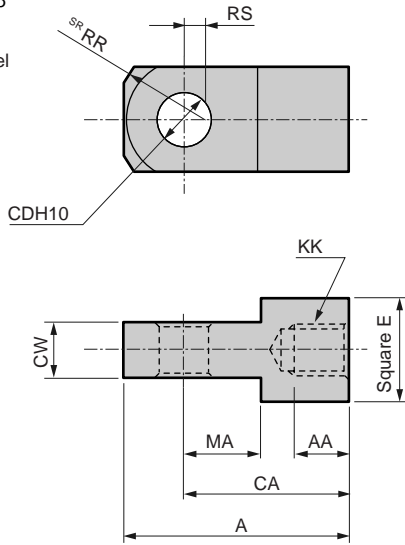
## Accessory dimensions



### ● Rod eye

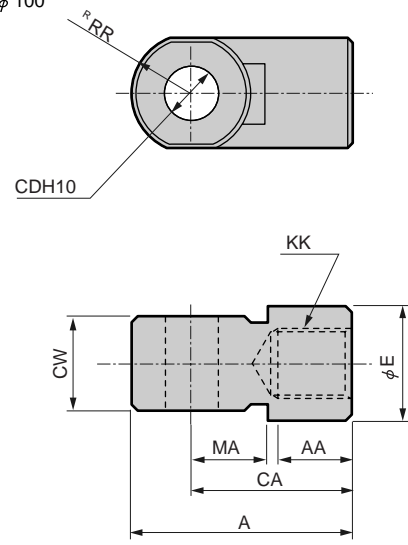
● SCM-I- $\phi$ 20 to  $\phi$ 25

Material: Steel



● SCM-I- $\phi$ 40 to  $\phi$ 100

Material: Cast iron

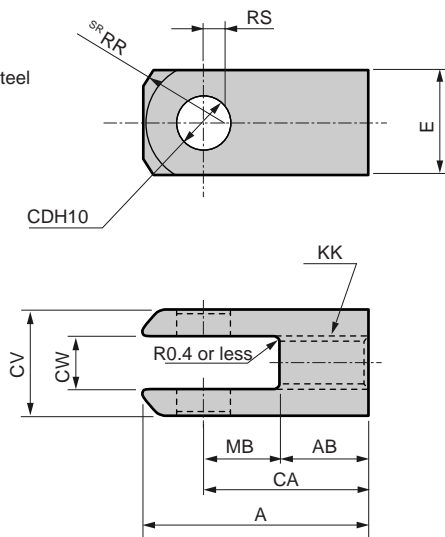


No.	Applicable tube Inner diameter (mm)	A	AA	CA	CD	CW	E	KK	MA	RR	RS	Weight (g)
SCM-I-20	20	34	8.5	25	8	8 <sup>-0.2</sup> <sub>-0.4</sub>	16	M8	11.5	13.4	3.1	39
SCM-I-25	25, 32	41	10.5	30	10	10 <sup>-0.2</sup> <sub>-0.4</sub>	20	M10 x 1.25	14	17.1	4.5	72
SCM-I-40	40	42	14	30	10	18 <sup>-0.3</sup> <sub>-0.5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

### ● Rod clevis

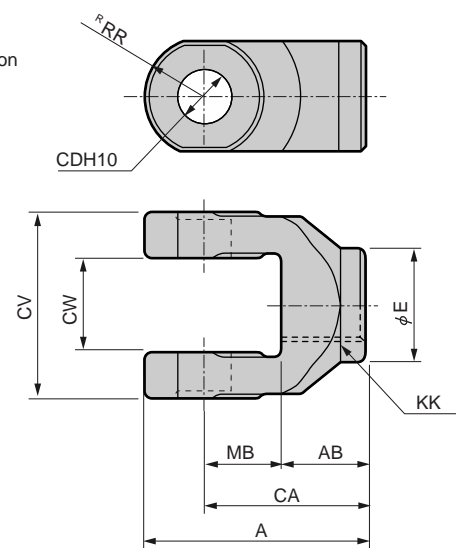
● SCM-Y- $\phi$ 20 to  $\phi$ 25

Material: Steel




● SCM-Y- $\phi$ 40 to  $\phi$ 100

Material: Cast iron

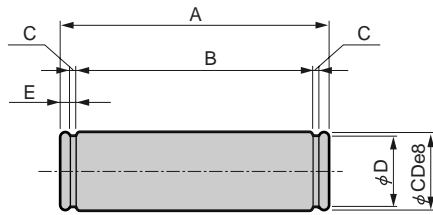


No.	Applicable tube Inner diameter (mm)	A	AB	CA	CD	CV	CW	E	KK	MB	RR	RS	Applicable pin No.	Weight (g)
SCM-Y-20	20	34	13.5	25	8	16	8 <sup>+0.4</sup> <sub>+0.2</sub>	16	M8	11.5	13.4	3.1	SCM-P-20	46
SCM-Y-25	25, 32	41	16	30	10	20	10 <sup>+0.4</sup> <sub>+0.2</sub>	20	M10 x 1.25	14	17.1	4.5	SCM-P-25	85
SCM-Y-40	40	42	16	30	10	36	18 <sup>+0.5</sup> <sub>+0.3</sub>	22	M14 x 1.5	14	12	-	SCM-P-40	122
SCM-Y-50	50, 63	56	20	40	14	44	22 <sup>+0.5</sup> <sub>+0.3</sub>	28	M18 x 1.5	20	16	-	SCM-P-50	258
SCM-Y-80	80	71	23	50	18	56	28 <sup>+0.5</sup> <sub>+0.3</sub>	38	M22 x 1.5	27	21	-	SCM-P-80	590
SCM-Y-100	100	79	24	55	22	64	32 <sup>+0.5</sup> <sub>+0.3</sub>	44	M26 x 1.5	31	24	-	SCM-P-100	909

## Accessory dimensions


● Pin for clevis 

Material: Steel

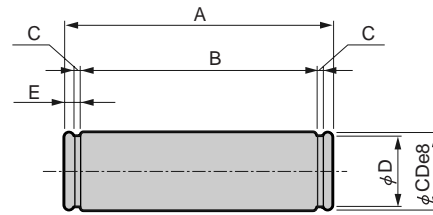


No.	Applicable bore size (mm)	A	B	C	CD	D	E	Used snap ring	Weight (g)
SCM-P1-20	20	43.4	38.6	0.9	8	7.6	1.5	Axis C type 8	17
SCM-P1-25	25	48	42.6	1.15	10	9.6	1.6	Axis C type 10	30
SCM-P1-32	32	59.4	54	1.15	12	11.5	1.6	Axis C type 12	52
SCM-P1-40	40	71.4	65	1.15	14	13.4	2.1	Axis C type 14	85
SCM-P1-50	50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

Note 1: A pin and a snap ring are attached to eye bracket, clevis bracket and rod clevis.  
 Note 2: φ 80 and φ 100 are common with the rod eye/clevis pin.


● Pin for rod eye/clevis 

Material: Steel

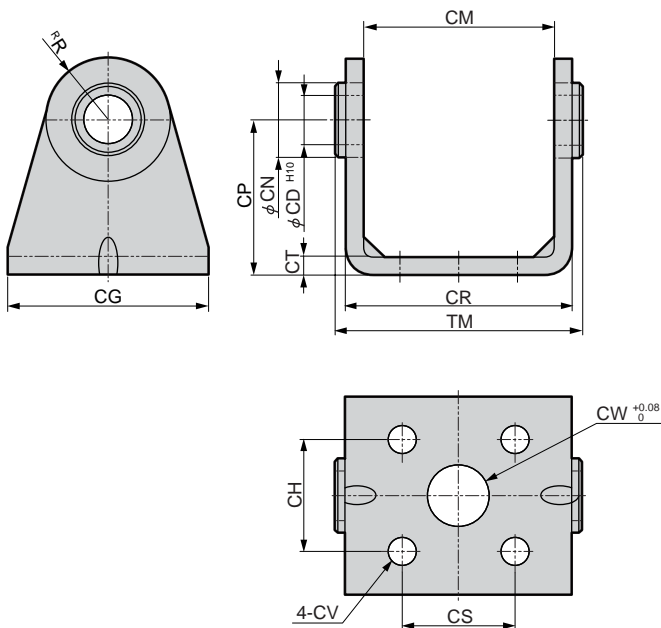


No.	Applicable bore size (mm)	A	B	C	CD	D	E	Used snap ring	Weight (g)
SCM-P-20	20	21	16.2	0.9	8	7.6	1.5	Axis C type 8	9
SCM-P-25	25, 32	25.6	20.2	1.15	10	9.6	1.6	Axis C type 10	16
SCM-P-40	40	41.6	36.2	1.15	10	9.6	1.6	Axis C type 10	26
SCM-P-50	50, 63	50.6	44.2	1.15	14	13.4	2.1	Axis C type 14	60
SCM-P-80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

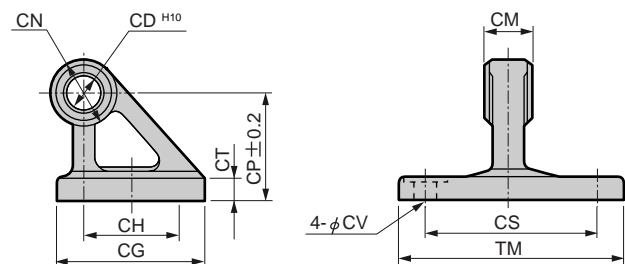
Note: A pin and a snap ring are attached to rod clevis.

● No. 2 bracket 

● Clevis bracket (B2)  
 SCM-B2- φ20 to φ63  
 Material: Steel



● Eye bracket (B1)  
 SCM-B1- φ80 to φ100  
 Material: Cast iron



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 <sup>+0.4</sup> <sub>+0.1</sub>	13	25	35.8	16	3.2	5.5	10	11	38	72
SCM-B2-25	25	10	42	28	33 <sup>+0.4</sup> <sub>+0.1</sub>	15	30	39.8	20	3.2	5.5	10	13	42	90
SCM-B2-32	32	12	48	28	40 <sup>+0.5</sup> <sub>+0.1</sub>	17	35	49.4	22	4.5	6.6	10	15	53.4	166
SCM-B2-40	40	14	56	30	49 <sup>+0.5</sup> <sub>+0.1</sub>	21	40	58.4	30	4.5	6.6	10	18	64.4	239
SCM-B2-50	50	16	64	36	60 <sup>+0.5</sup> <sub>+0.1</sub>	24	50	72.4	36	6	9	20	20	78.8	417
SCM-B2-63	63	18	74	46	74 <sup>+0.7</sup> <sub>+0.1</sub>	26	60	90.4	46	7.5	11	20	22	96.6	754
SCM-B1-80	80	18	72	45	28 <sup>-0.1</sup> <sub>-0.3</sub>	36	55	-	85	11	11	-	-	110	1000
SCM-B1-100	100	22	93	60	32 <sup>-0.1</sup> <sub>-0.3</sub>	50	65	-	100	12	13.5	-	-	130	1735

- SCP\*2
- CMK2
- CMA2
- SCM**
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending

Round shaped cylinder  
 Standard type