

TIEROD CYLINDER SCG SERIES

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Ecological cylinder with
compact switch

New Variations added



New eco-friendly

cylinder

New easy-to-use SCG Series (ø32 to ø100) air cylinders - Remove toxic substances and protect the environment by preventing contamination

Port and needle on same plane

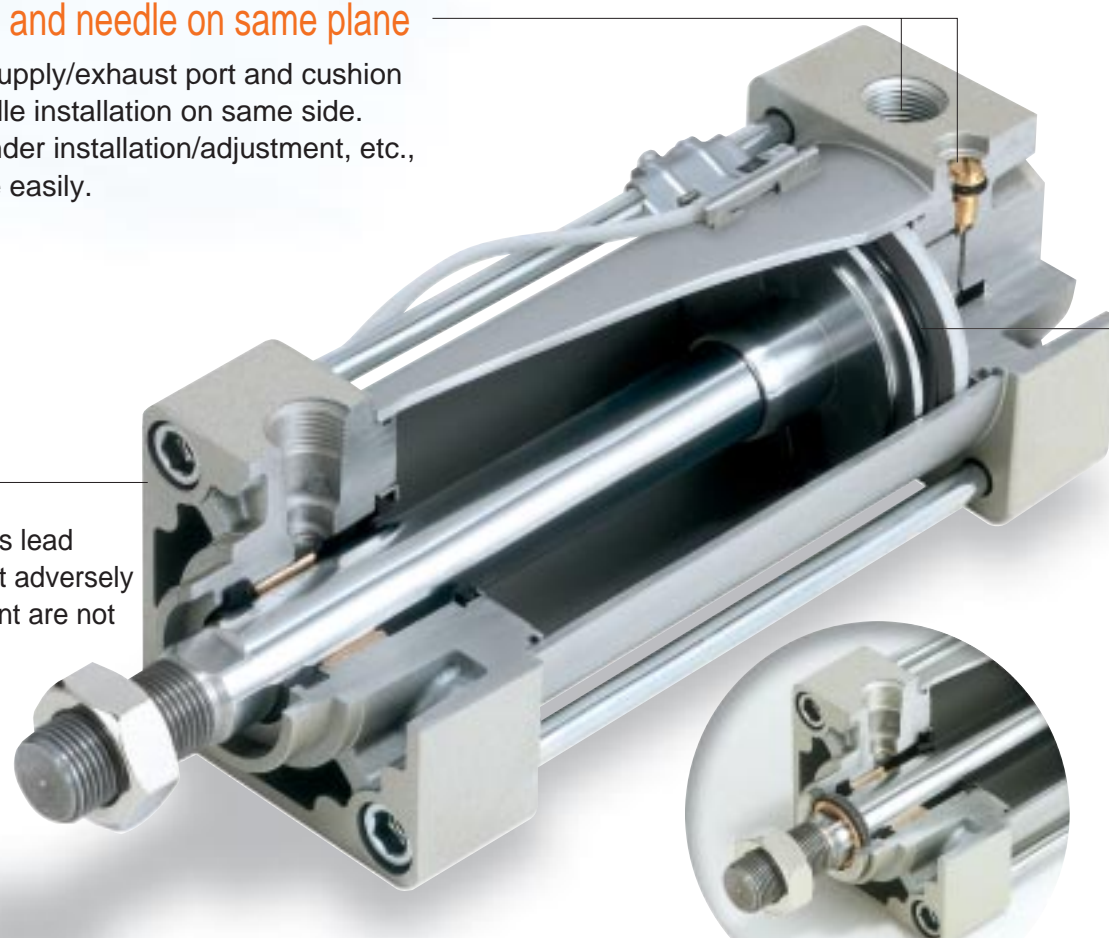
Air supply/exhaust port and cushion needle installation on same side. Cylinder installation/adjustment, etc., were easily.

Ecological product

Harmful substances such as lead and hexavalent chrome that adversely affect the global environment are not used in the cylinder and cylinder switch. (Lead free soldered lead wire is used)

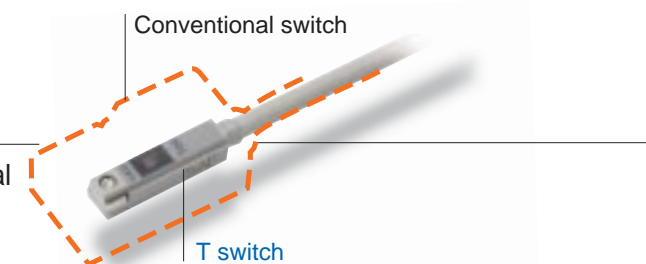
Same dimensions for rubber scraper type (G), coolant proof type (G2, G3), spatter adherence prevention type (G4)

The dimensions of the rubber scraper type, coolant proof type, spatter adherence prevention type have been made the same as the standard type to improve installation performance.



Compact switch

A T switch smaller than the conventional switch is used. This eliminates switch protrusion in installation, saving space.

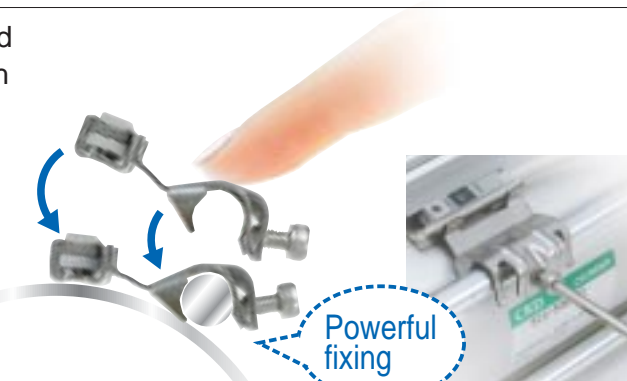


New switch

Switches are installed easily and smoothly with our original switch bracket.

(1) Easily install switches.

The mechanism sandwiches the tie rod, making the switch position adjustable without supporting the switch.



(2) Fix with screws alone.

Installation is completed by tightening screws after adjusting switches.

A T type switch in the rail can be finely adjusted.

Standard magnets

Switches can be installed on all products.

Space-saving

Less installation space is required because the cylinder is up to 40 mm shorter than the conventional cylinder.

White

Products match a variety of equipment with a uniform white exterior.

SCG Series Products

Model variation	Bore size						Stroke length (mm)	Page
	ø32	ø40	ø50	ø63	ø80	ø100		
Standard type	SCG	●	●	●	●	●	●	3
Position locking type	SCG-Q	●	●	●	●	●	●	17
Low-speed type	SCG-0	●	●	●	●	●	●	39
Low-friction type	New SCG-U	●	●	●	●	●	●	45
Double-rod type	SCG-D	●	●	●	●	●	●	49
Non-rotating type	New SCG-M	●	●	●	●	●	●	55
Rubber scraper type	SCG-G	●	●	●	●	●	●	61
Coolant proof type	SCG-G2,G3	●	●	●	●	●	●	67
Spatter adherence prevention type	SCG-G4	●	●	●	●	●	●	73



Safety Precautions

Always read before starting use

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanical mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices is secured.

It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD product is used safely.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

WARNING

1 This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience in handling.

2 Use this product in accordance of specifications.

Contact CKD when using the product outside the unique specifications range, when using it outdoors, and when using it under the conditions and environment below. Do not attempt to modify or additionally machine the product.

- ① Use for special applications requiring safety including nuclear energy, railroad, aviation, ship, vehicle, medical equipment, equipment, or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits, or for safeguard.
- ② Use for applications where life or assets could be adversely affected, and special safety measures are required.

3 Observe corporate standards and regulations, etc., related to the safety of device design and control, etc.


ISO 4414, JIS B 8370 (pneumatic system rules), JPAS 005 (principles for pneumatic cylinder use and selection), High Pressure Gas Maintenance Laws Occupational Safety and Sanitation Laws, and other safety regulations, corporate standards, and regulations.


4 Do not handle, pipe, or remove devices before confirming safety.


- ① Inspect and service the machine and devices after confirming safety of the entire system related to this product.
- ② Note that there may be hot or charged sections even after operation is stopped.
- ③ When inspecting or servicing the device, turn off the energy source (air supply or water supply), and turn off power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
- ④ When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.

5 Observe warnings and cautions on the pages below to prevent accidents.

■ The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

 **DANGER:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.

 **WARNING:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.

 **CAUTION:** When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation. In any case, important information that must be observed is explained.



Pneumatic components Safety Precautions

Always read before starting use

Refer to Pneumatic Cylinders No. CB-029S for general details on cylinders and cylinder switch.

Tierod cylinder SCG series

Design & Selection

1. Common

CAUTION

- Install a flow control valve on the cylinder.
Install a flow control valve on the cylinder.
Use within the working piston speed of each series.

CAUTION

- Either the rubber cushion type or air cushion type cushion mechanism is assembled in the cylinder. The purpose of the air cushion is to absorb kinetic energy that the piston has by using air compression, and prevent the piston and cover from colliding at the stroke end. Thus, the cushion is not used to decelerate the piston near the stroke end. The table below shows kinetic energy that can be absorbed by the cushion. If kinetic energy exceeds these values, or if bouncing caused by air compression is to be avoided, consider using another cushioning unit.

Bore size (mm)	Rubber cushion	Air cushion	
	Allowable energy absorption J	Effective cushion length (mm)	Allowable energy absorption J
φ32	0.5	8.6	2.5
φ40	0.9	8.6	3.7
φ50	1.6	13.4	8.0
φ63	1.6	13.4	14.4
φ80	3.3	15.4	25.4
φ100	5.8	15.4	45.6

Kinetic energy (J) =

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

(Note) Calculating kinetic energy:

The cylinder average speed is obtained with $V_a = L/T$.

V_a : Average speed (m/s)

L : Cylinder stroke (m)

T : Operation time (s)

Cylinder speed just before entering the cushion can be obtained with the following simple expression:

$$V_m = L/T \times (1 + 1.5 \times \omega / 100)$$

V_m : Speed just before entering cushion (m/s)

ω : Cylinder load rate (%)

When calculating kinetic energy, use V_m value as speed.

2. Position locking type SCG-Q2

CAUTION

- Keep the cylinder load rate at 50% or less. If the load rate is high, the lock may not be released and the lock section could be damaged.

3. Low-friction type SCG-U

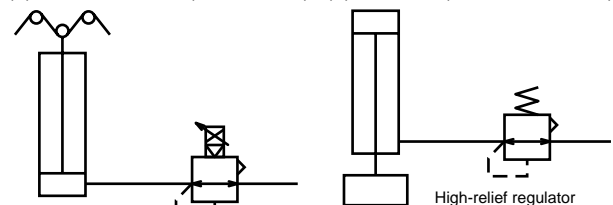
WARNING

- Durability differs based on the work conditions and model features. This cylinder has internal leakage. Refer to the specifications (page 45) for details on the leakage amount.

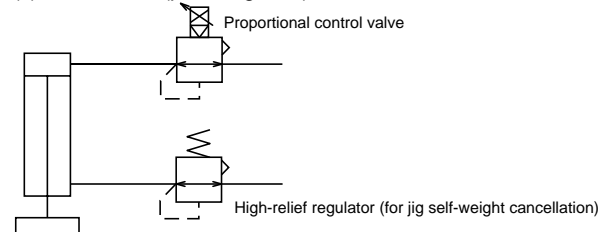
CAUTION

- When using with a balancer, etc., it may be better not to install a speed controller to improve the supply and exhaust efficiency. Use of circuits (a) to (c) below is recommended depending on the application.

(a) Tension control (winder, etc.) (b) Balancer (EDM Z axis, etc.)



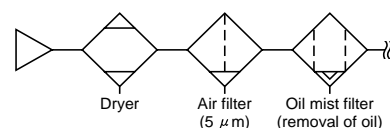
(c) Load control (polishing, etc.)



* Increase the piping volume as much as possible to improve the supply and exhaust features.

- 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 the speed controller near the cylinder.
Adjustment may be unstable if assembled at a place away from the cylinder.
- Generally, the Speed is stable when the air pressure is higher and the load rate is lower.
Keep the load rate at 50% or lower.

4. Coolant proof type SCG-G2/G3

CAUTION

- Do not apply a deviated load onto the piston rod.
Scraper or bearing life could be shortened.
- When using the G2 or G3 series and the coolant or water does not splatter, the piston rod's lubrication could be spent and cause the life to shorten. Use the G Series in this case.

5. Spatter adherence prevention type SCG-G4

WARNING

- The durability of this cylinder in an environment containing spatter is higher than the general cylinder, but durability may be shorter than the general cylinder when used in other environments.

Installation & Adjustment

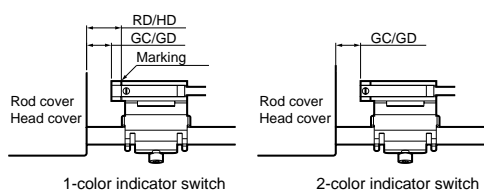
1. Common

CAUTION

Precautions for installing the switch

Assembling the switch bracket

When assembling the cylinder on the switch bracket, fit the tierod to be installed into the bracket, and move the switch so that it is at the center of the operation range (ON range). Then, tighten the fixing bolts with a tightening torque of 0.6 to 0.9 N·m. The bracket position (GC, GD) and switch positions (RD, HD) at which the maximum sensitivity is attained at both stroke ends are shown in the outline drawing.



Moving the switch position in the stroke direction

As a default, the switch is set to the maximum sensitivity. However, the 1-color indicator switch can be finely adjusted approx. ± 3 mm from the default installation position. If the adjustment range exceeds 3 mm, or when adjusting the 2-color indicator switch, loosen the switch bracket's fixing screw and move the bracket position.

Fixing the switch

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 bracket rail has a mark 4 mm from the rail end. Use this as a guide to the installation position when replacing the switch. Switch rail markings are set to default switch maximum sensitivity. Maximum sensitivity is changed when the switch is changed or when the switch bracket is moved. Adjust the position accordingly.

2. Position locking type SCG-Q

CAUTION

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. Confirm that the lock functions before setting the load.

Supply pressure exceeding minimum working pressure to ports having locks.

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.

3. Low-friction SCG-U

CAUTION

Do not apply a horizontal load to the cylinder.

Install the cylinder so that the sliding guide is not twisted.

- Operation could become unstable because of fluctuations in load and resistance.
- When using a long stroke, the speed becomes unstable because of the piston rod's weight. Install a guide when using the long stroke.
- Operation of a guide having a large difference in stationary friction and moving friction could become unstable.

Avoid using where there is vibration.

- The product could be adversely affected by vibration, and result in unstable operation.

4. Non-rotating type SCG-M

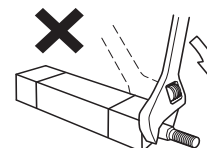
CAUTION

Check that the rotation torque is not applied to the piston rod.

The non-rotating bushing could deform and life could drop remarkably.

Apply the load to the piston rod so that it is in the piston rod's axial direction.

When fixing a workpiece to the end of the piston rod, pull the piston rod into the stroke end. Then, attach a wrench to the section protruding outside the parallel section of the rod, and tighten while making sure that the tightening torque is not applied to the cylinder.



When using the baffle cylinder and fixing a workpiece to the end of the piston rod, the rotation torque applied to the piston rod is as shown below.

Applying a higher rotation torque to the piston rod could cause the operation of piston rod to fail.

Allowable rotation torque	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
N·m	0.25	0.45	0.45	0.45

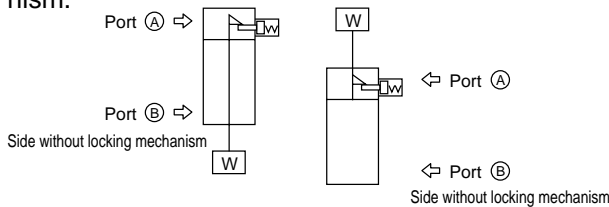
During use & Maintenance

1. Position locking type SCG-Q

⚠ WARNING

■ For safety purposes, prevent the load from dropping under its own weight during maintenance.

■ If pressure is applied from port (A) in the locked state and with neither port pressurized, it may not be possible to release locks, or the lock may be released suddenly and cause the piston rod to pop out. This is extremely hazardous. When releasing the locking mechanism, supply pressure to port (B), and check that there is no load applied to the locking mechanism.



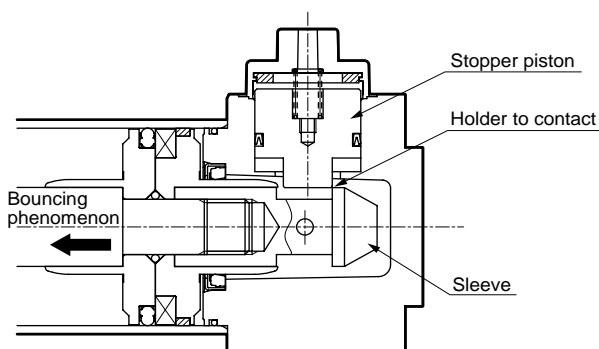
■ If lowering speed is to be increased with the quick exhaust valve, the cylinder may move out faster than the lock pin and prevent the locking pin from being released correctly. Do not use a 3-position valve.

■ Do not use a 3-position valve.

Do not use this cylinder with a 3-position (especially closed center metal seal) valve. The lock will not be applied if pressure is sealed on the port having the locking mechanism. Even if the lock is applied, the air that leaks from the solenoid valve may enter the cylinder, or the lock may be released over time.

■ 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 air cushion needle so that the piston does not bounce.



When stopping with an external shock absorber, etc., adjust in the same manner so that there is no bouncing.

Regularly (once/twice a year) check that the holding section is not damaged this way.

⚠ CAUTION

■ If negative 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.

■ If the locking mechanism has been manually operated, check and then return it manually to the original position. Do not use manual operations other than during adjustment, as this is very hazardous.

■ Release the lock when installing or adjusting the cylinder.

The lock could be damaged if the cylinder is installed while the lock is applied.

■ Do not use multiple cylinders.

Do not move one workpiece using two or more position locking cylinders. It may not be possible to release one of the cylinder's locks.

■ Use the speed controller with meter-out control.

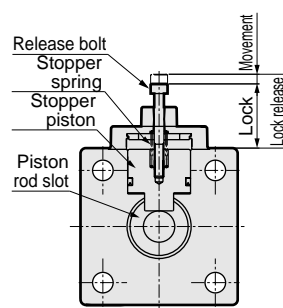
It may not be possible to release the locks when used with meter-in control.

■ Use the side with the lock with the cylinder stroke end.

If the cylinder's piston does not reach the stroke end, the lock may not be applied or may not be released.

■ Releasing the locking type manual override

Screw a release bolt into the stopper piston, and pull the bolt up the movement amount with a force of 20N and over. The stopper piston moves and the lock is released. (During no-load horizontal installation or counter side port is pressurized). When the hand is released, if the stopper piston returns by the internal spring and enters the piston rod groove, the piston is locked.

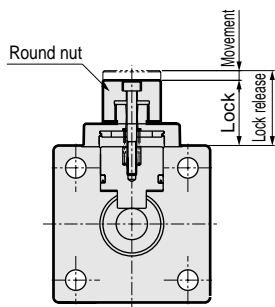


Bore size (mm)	Lock	Lock release	Movement	Release bolt
φ 32	19.5	22.5	3	M3 X 25
φ 40	18	21	3	M3 X 25
φ 50	26.5	30.5	4	M4 X 35
φ 63	21.5	25.5	4	M4 X 35
φ 80	19	23	4	M4 X 35
φ 100	21.5	25.5	4	M4 X 35

■ Releasing the non-locking type manual override

When the round nut is turned counterclockwise, the stopper piston moves and the lock is released.

When the nut is turned clockwise to the lock position, the stopper piston returns. When it fits into the piston rod groove again, the piston is locked.



Bore size (mm)	Lock	Lock release	Movement
φ 32	20	23	3
φ 40	18.5	21.5	3
φ 50	27	31	4
φ 63	22	26	4
φ 80	19.5	23.5	4
φ 100	22	26	4

2. Low-speed SCG-O

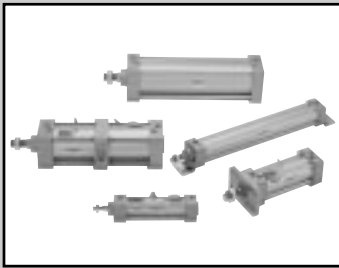
⚠ WARNING

- The O Series uses fluorine-based grease. Lighting a cigarette with fluorine-based grease on hands generates toxic gases.

3. Low-friction SCG-U

⚠ CAUTION

- Do not disassemble this product. It may not be possible to maintain performance if disassembled. The repair parts of this product cannot be purchased without this products purchased.



Tie rod cylinder Double acting single rod type

SCG series

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

JIS symbol

Specifications

Descriptions		SCG					
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.05					
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (to be unfrozen)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	Rubber cushioned	$^{+1.4}_0$ (to 1000)	$^{+1.8}_0$ (to 1500)	$^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)			
	mm Air cushioned	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)					
Working piston speed	mm/s	30 to 1000 (use it within the range of allowable energy absorption)					
Cushion		Rubber cushion/air cushion can be selected.					
Effective air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)					
Allowable energy absorption	Rubber cushioned	0.5	0.9	1.6	1.6	3.3	5.8
	J Air cushioned	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	700	1
$\phi 40$			800	
$\phi 50$			1200	
$\phi 63$			1200	
$\phi 80$			1400	
$\phi 100$			1500	

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			25			30			35		
$\phi 40$												
$\phi 50$												
$\phi 63$												
$\phi 80$												
$\phi 100$												

● When installed on the same plate

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			40	50	75	85	110	120			
$\phi 40$												
$\phi 50$												
$\phi 63$				25			40	50	45	55		
$\phi 80$												
$\phi 100$												

Min. stroke length of type with switch

●Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		Reed
	Proximity		
	T2, T3	T*Y*	
φ32	37		
φ40	42		
φ50	42		
φ63	48		
φ80	54		
φ100	60		

●Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity											
	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
T2, T3	T*Y*	T2, T3		T*Y*	T2, T3		T*Y*	T2, T3		T*Y*		
φ32	63		63		93		93					
φ40	68		68		98		98					
φ50	68		68		98		98					
φ63	74		74		98		98					
φ80	86		86		101		101					
φ100	92		92		107		107					

Switch specifications

●One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire					Proximity 2 wire	
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V		T5H/T5V			T2YD	
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay		Programmable controller, relay, IC circuit (without indicator light), serial connection			Programmable controller	
Power voltage	-		10 to 28V DC		-					-	
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-			Red/green LED (ON lighting)	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

●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		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment		Red/green LED (ON lighting)						
	Preventive maintenance output		-				Yellow LED (ON lighting)		
Output	Power voltage		10 to 28V DC		-		10 to 28V DC		
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less		
	Load current		50 mA or less		5 to 20 mA		50 mA or less		
Preventive maintenance output	Load voltage		30VDC or less						
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less		

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length = 0 mm						Stroke length: Additional weight per 50 mm	Switch weight Grommet	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)			I	Y
φ32	0.50	0.61	0.72	0.65	0.68	0.67	0.12	0.018	0.07	0.13
φ40	0.66	0.80	0.94	0.85	0.85	1.00	0.17	0.018	0.09	0.14
φ50	1.13	1.29	1.61	1.54	1.54	1.61	0.23	0.018	0.20	0.33
φ63	1.39	1.73	2.15	1.95	1.96	2.27	0.25	0.018	0.20	0.33
φ80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.018	0.52	0.96
φ100	3.77	4.63	6.09	5.49	5.52	6.34	0.51	0.018	0.48	0.92

How to order

Without switch

SCG - LB - 40 - B - 100 - J - I

With switch

SCG - LB - 40 - B - 100 - T2H - R - J - I

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Switch model No.

G Switch quantity

H Option
Note 3

I Accessory
Note 4

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head side flange type
CA	Eye bracket type
CB	Clevis bracket type
TA	Rod side trunnion type
TB	Head side trunnion type
TC	Center trunnion type

B Bore size (mm)	
32	φ 32
40	φ 40
50	φ 50
63	φ 63
80	φ 80
100	φ 100

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

D Cushion	
B	Air cushion on both sides (basic type)
D	Rubber cushion on both sides

Note: The rubber cushion is longer than the air cushion.

E Stroke length (mm)	
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	

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

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

G Switch quantity	
R	One on rod side
H	One on head side
D	Two
T	Three

H Option			
		Max. ambient temperature	Instantaneous ambient temperature
J	Bellows	60°C	100°C
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

I Accessory	
I	Rod eye
Y	Rod clevis (connector pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (connector pin and split pin attached)
B3	Eye bracket
B4	Trunnion type No. 2 bracket

⚠ Note on model No. selection

Note 1: The installation bracket is shipped with the product.
(Note that trunnion type, rod side flange with bellows is assembled to ship.)

Note 2: Custom stroke length is available per 1mm increment.

Note 3: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.

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

<Example of model number>

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

Model: Tierrod cylinder, double acting single rod type

- A Mounting style : Axial foot type
- B Bore size : φ 40mm
- C Port thread type : Rc thread
- D Cushion : Both sides air-cushioned
- E Stroke length : 100mm
- F Switch model No. : Proximity T2H switch, lead wire 1m
- G Switch quantity : Two
- H Option : With bellows
- I Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

Switch model No. (F) on previous page Bore size (B) on previous page

● Switch body

SW - T0H

Switch model No. (F) on previous page

● Switch bracket set

SCG - T - 40

Bracket Bore size (B) on previous page

Note: If a T type switch of ecological is used, please consult with CKD.

How to order mounting bracket

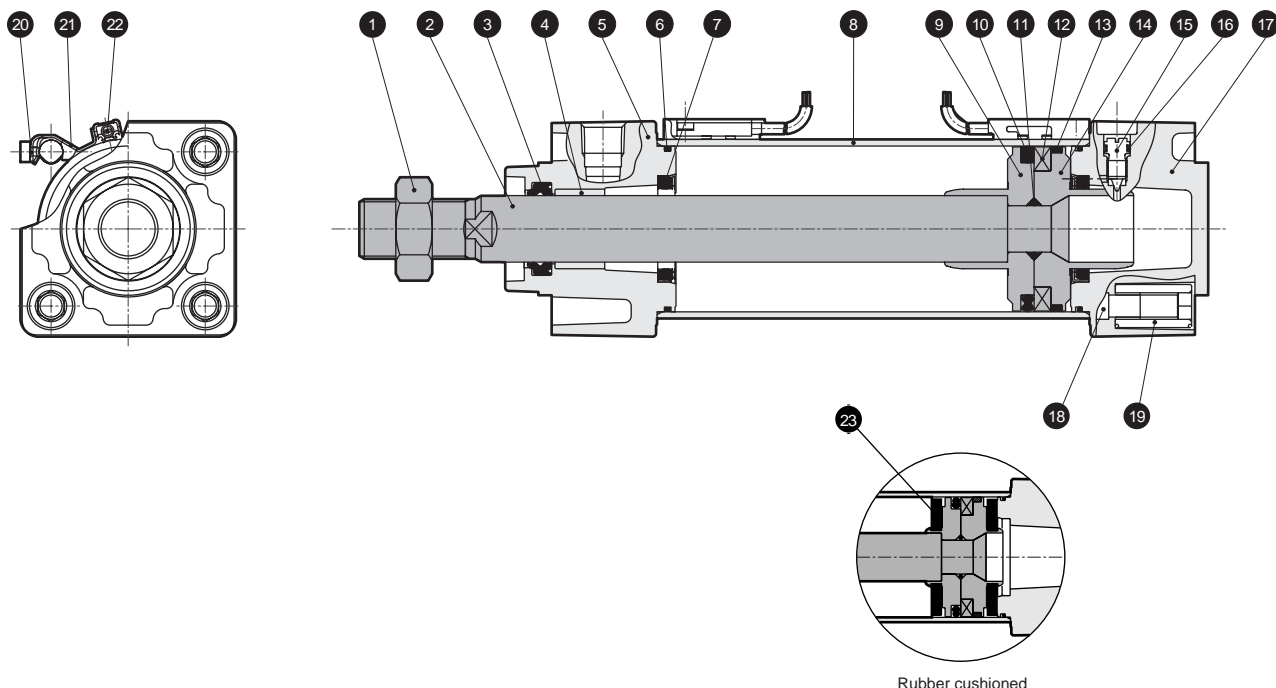
Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) Note 1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note 1: Designate "SCG-FA-(bore size)-J" for the flange with bellows (FA).

Note 2: The foot (LB) is provided as a two-piece set.

Internal structure and parts list

●SCG



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	12	Magnet	Plastic	
2	Piston rod	Steel	Industrial chrome plated	13	Wear ring	Acetar resin	
3	Rod packing seal	Nitrile rubber		14	Piston H	φ 32, φ40: aluminum alloy φ 50 to φ100: aluminum alloy die casting	
4	Bush	Oil impregnated bearing alloy		15	Cushion needle	Brass	
5	Rod cover	Aluminum alloy die casting	Paint	16	Needle gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		17	Head cover	Aluminum alloy die casting	Paint
7	Cushion packing seal	Nitrile rubber, steel	Only with air cushion	18	Tierod	Steel	Zinc chromate plating
8	Cylinder tube	Aluminum alloy	Hard alumite	19	Round nut	Steel	Zinc chromate plating
9	Piston R	φ 32, φ40: aluminum alloy φ 50 to φ100: aluminum alloy die casting		20	Hexagon socket head cap screw	Steel	Zinc chromate plating
10	Piston packing seal	Nitrile rubber		21	Bracket	Stainless steel spring steel	
11	Piston gasket	Nitrile rubber		22	Switch		
				23	Cushion rubber	Urethane rubber	Only with rubber cushion

Repair parts list

● Air cushioned

Bore size (mm)	Kit number	Repair parts number
φ 32	SCG-32BK	
φ 40	SCG-40BK	
φ 50	SCG-50BK	3 6 7
φ 63	SCG-63BK	10 13 16
φ 80	SCG-80BK	
φ 100	SCG-100BK	

Note: Specify the kit number when placing an order.

● Rubber cushioned

Bore size (mm)	Kit number	Repair parts number
φ 32	SCG-32DK	
φ 40	SCG-40DK	
φ 50	SCG-50DK	3 6 10
φ 63	SCG-63DK	13 16 23
φ 80	SCG-80DK	
φ 100	SCG-100DK	

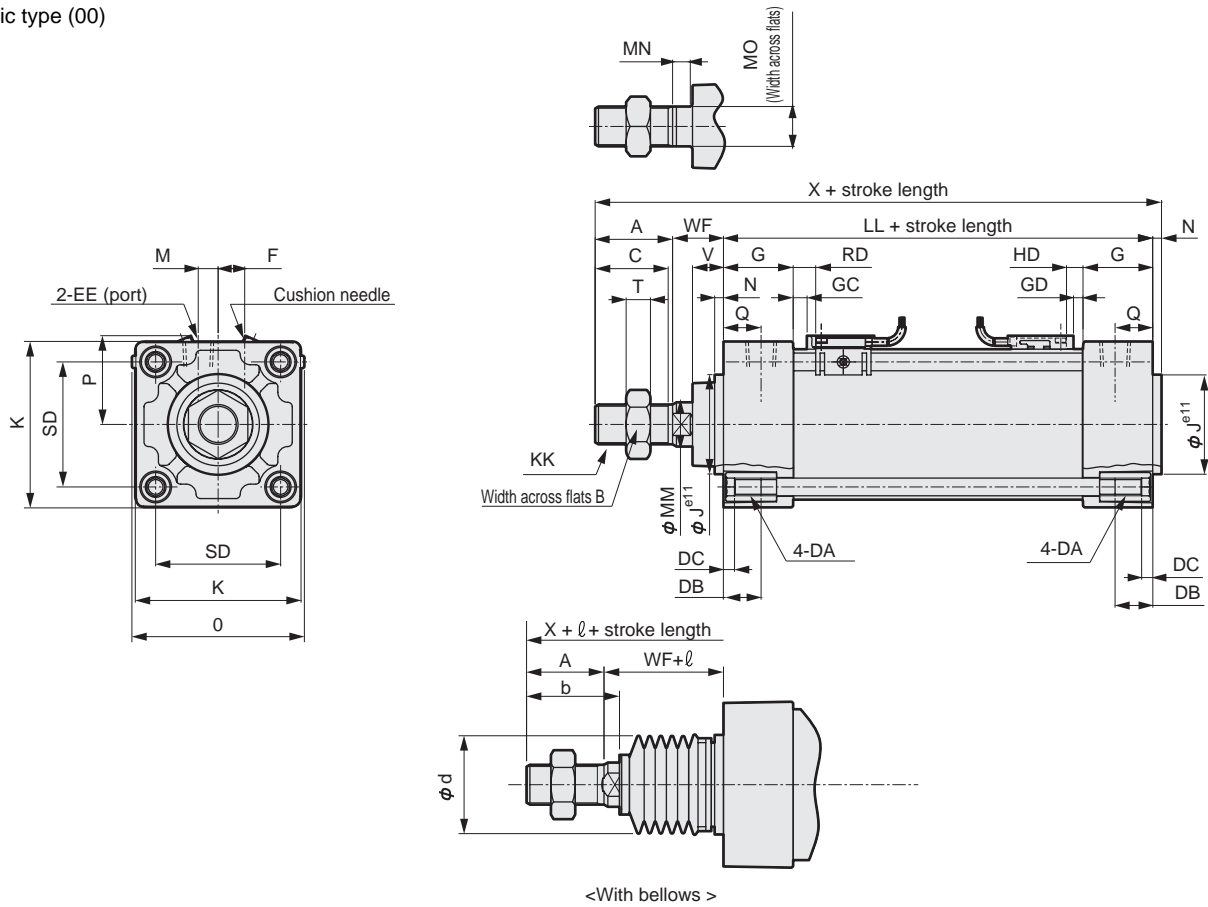
Note: Specify the kit number when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Dimensions

● Basic type (00)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Basic type (00) basic dimensions																			
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	Note 1 LL	M	MM	MN	MO	N	O	Q
$\phi 32$	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	5.5	10	4	52	13
$\phi 40$	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	6	14	4	58	14
$\phi 50$	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	8	17	4	68	15.5
$\phi 63$	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	8	17	4	78	16.5
$\phi 80$	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	11	22	4	95	19
$\phi 100$	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	13	27	4	114	19

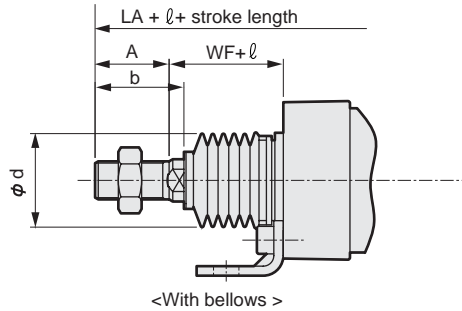
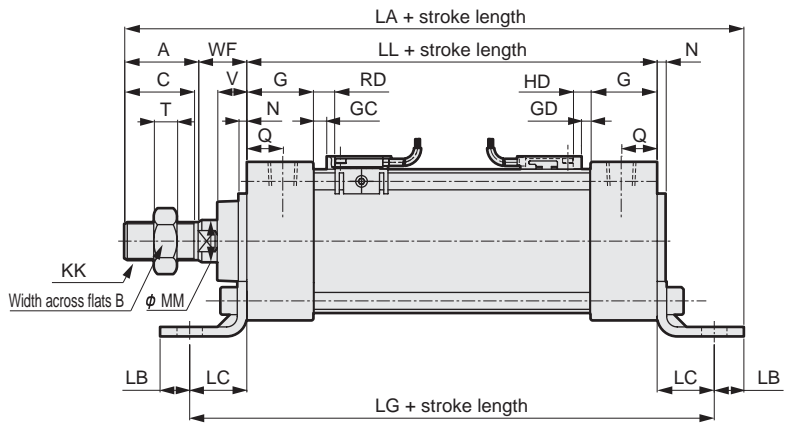
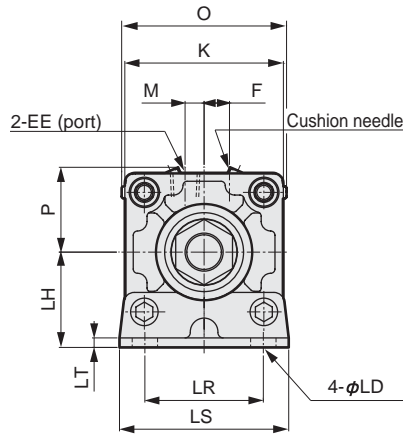
Symbol	With bellows																			
Bore size (mm)	SD	T	V	WF	Note 1 X	A	b	d	WF	l										
										50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800	
$\phi 32$	32.5	6	13	25	135 (141)	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-	-
$\phi 40$	38	8	13	21	139 (145)	30	35	40	21	30	43	55	68	93	118	143	-	-	-	-
$\phi 50$	46.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169	-	-	-
$\phi 63$	56.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169	-	-	-
$\phi 80$	72	13	20	32	190 (200)	40	50	53	32	29	42	54	67	92	117	142	167	192	217	-
$\phi 100$	89	16	20	32	190 (200)	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	-

Symbol	With switch								
Bore size (mm)	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P
$\phi 40$	1 (4)	1 (4)	5 (8)	5 (8)	29				
$\phi 50$	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34				
$\phi 63$	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40				
$\phi 80$	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-				
$\phi 100$	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-				

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Axial foot type (LB)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol Bore size (mm)	Axial foot type (LB) basic dimensions																Installation dimensions	
	A	B	C	EE	F	G	K	KK	Note 1 LL	M	MM	N	O	Q	T	V	WF	Note 1 LA
$\phi 32$	22	17	19.5	Rc1/8	6.5	27	46	M10 X 1.25	84 (90)	4	12	4	52	13	6	13	25	162 (168)
$\phi 40$	30	22	27	Rc1/4	9	27	52	M14 X 1.5	84 (90)	4	16	4	58	14	8	13	21	170 (176)
$\phi 50$	35	27	32	Rc1/4	10.5	31.5	65	M18 X 1.5	94 (102)	5	20	4	68	15.5	11	14	23	190 (198)
$\phi 63$	35	27	32	Rc3/8	12	31.5	75	M18 X 1.5	94 (102)	9	20	4	78	16.5	11	14	23	193 (201)
$\phi 80$	40	32	37	Rc3/8	14	38	95	M22 X 1.5	114 (124)	11.5	25	4	95	19	13	20	32	230 (240)
$\phi 100$	40	41	37	Rc1/2	15	38	114	M26 X 1.5	114 (124)	17	30	4	114	19	16	20	32	234 (244)

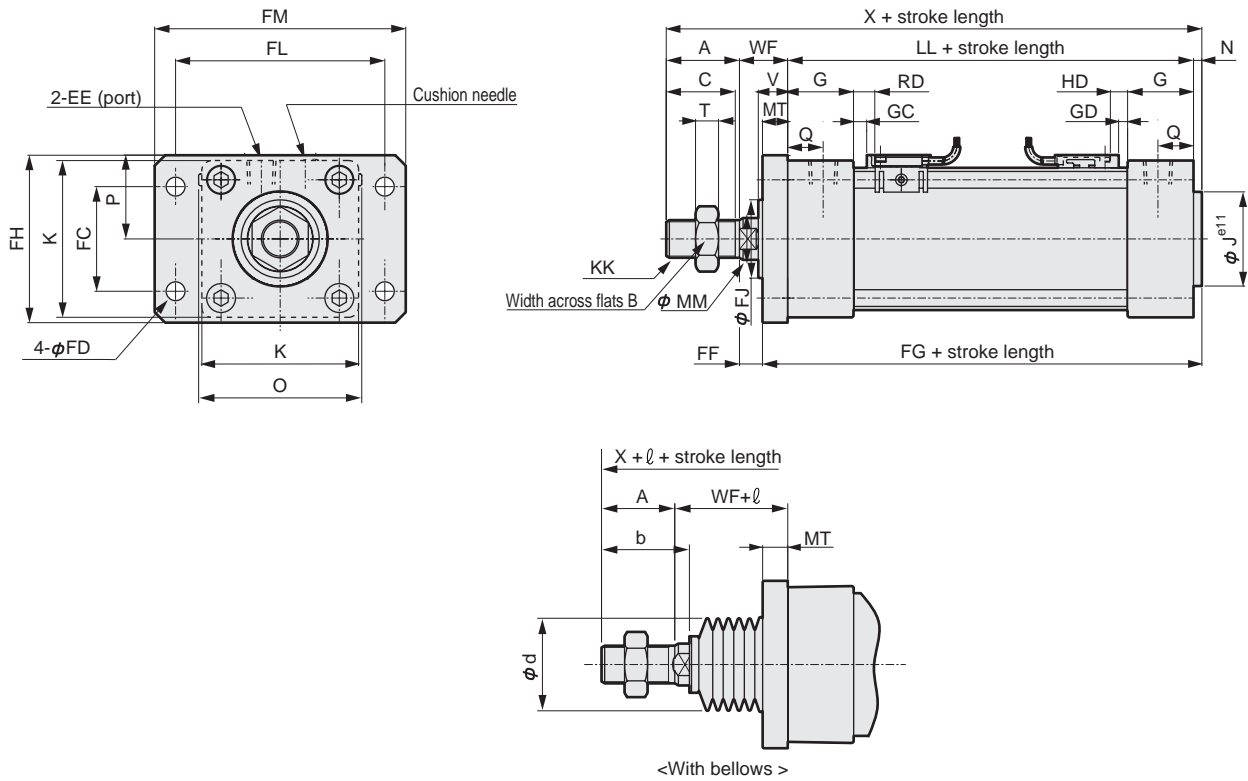
Symbol Bore size (mm)	With bellows																					
	LB	LC	LD	Note 1 LG	LH	LR	LS	LT	A	b	d	WF	l									
													50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
$\phi 32$	9	22	7	128 (134)	30	32	50	3.2	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
$\phi 40$	11	24	9	132 (138)	33	38	55	3.2	30	35	40	21	30	43	55	68	93	118	143	-	-	-
$\phi 50$	11	27	9	148 (156)	40	46	70	3.2	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 63$	14	27	12	148 (156)	45	56	80	4.5	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 80$	14	30	12	174 (184)	55	72	95	4.5	40	50	53	32	29	42	54	67	92	117	142	167	192	217
$\phi 100$	16	32	14	178 (188)	65	89	114	6	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217

Symbol Bore size (mm)	With switch								
	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P
$\phi 32$	1 (4)		1 (4)		5 (8)		5 (8)		25
$\phi 40$	1 (4)		1 (4)		5 (8)		5 (8)		29
$\phi 50$	2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)		34
$\phi 63$	2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)		40
$\phi 80$	8.5 (13.5)		2 (7)		12.5 (17.5)		6 (11)		-
$\phi 100$	8 (13)		2.5 (7.5)		12 (17)		6.5 (11.5)		-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Rod side flange type (FA)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

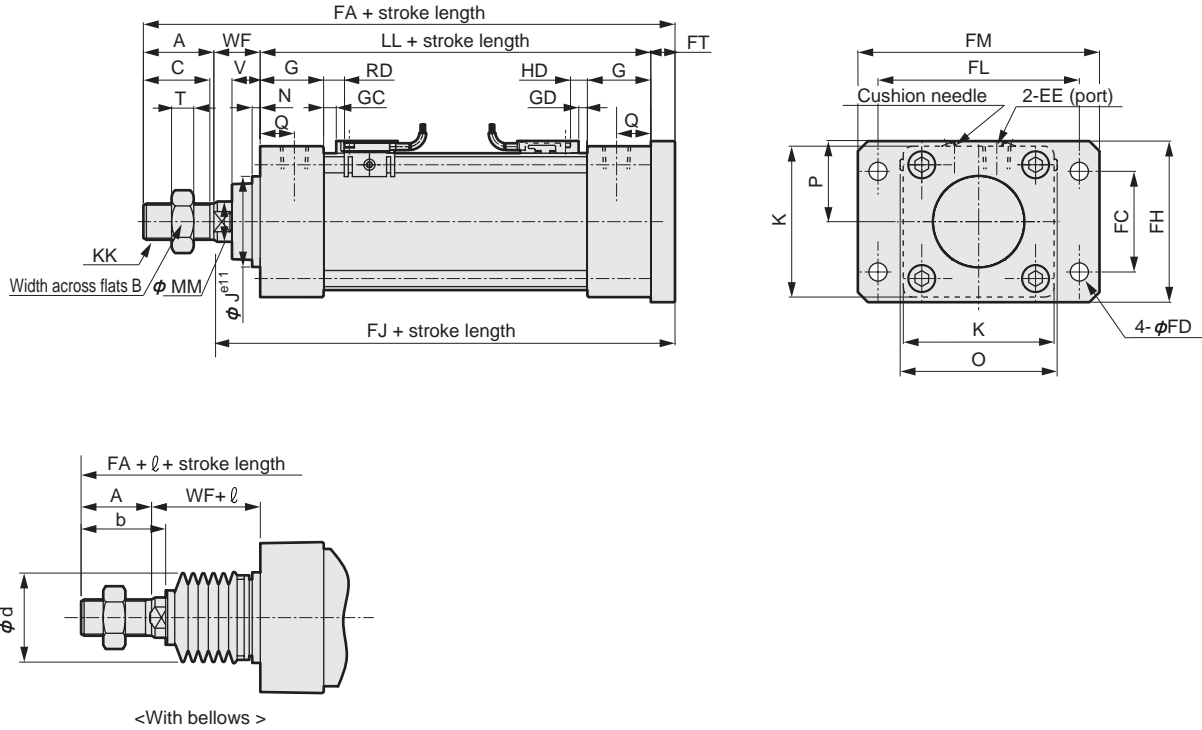
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol		Rod side flange type (FA) basic dimensions																					
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	N	O	Q	T	V	WF	Note 1 X				
$\phi 32$	22	17	19.5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	4	52	13	6	13	25	135 (141)				
$\phi 40$	30	22	27	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	4	58	14	8	13	21	139 (145)				
$\phi 50$	35	27	32	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	4	68	15.5	11	14	23	156 (164)				
$\phi 63$	35	27	32	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	4	78	16.5	11	14	23	156 (164)				
$\phi 80$	40	32	37	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	4	95	19	13	20	32	190 (200)				
$\phi 100$	40	41	37	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	4	114	19	16	20	32	190 (200)				
Symbol		Installation dimensions										With bellows											
Bore size (mm)	FC	FD	FF	Note 1 FG	FJ	MT	FH	FL	FM	A	b	d	WF	ℓ									
										50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800				
$\phi 32$	32	7	15	98 (104)	29	10	50	64	79	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
$\phi 40$	36	9	11	98 (104)	30	10	55	72	90	30	35	40	21	30	43	55	68	93	118	143	-	-	-
$\phi 50$	45	9	11	110 (118)	38	12	70	90	110	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 63$	50	9	11	110 (118)	38	12	80	100	120	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 80$	63	12	16	134 (144)	43	16	100	126	153	40	50	53	32	29	42	54	67	92	117	142	167	192	217
$\phi 100$	75	14	16	134 (144)	51	16	120	150	178	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217
Symbol		With switch																					
Bore size (mm)	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P														
$\phi 32$		1 (4)		1 (4)		5 (8)		5 (8)	25														
$\phi 40$		1 (4)		1 (4)		5 (8)		5 (8)	29														
$\phi 50$		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	34														
$\phi 63$		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	40														
$\phi 80$		8.5 (13.5)		2 (7)		12.5 (17.5)		6 (11)	-														
$\phi 100$		8 (13)		2.5 (7.5)		12 (17)		6.5 (11.5)	-														

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Head side flange type (FB)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Head side flange type (FB) basic dimensions																
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	O	Q	T	V	WF
$\phi 32$	22	17	19.5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	52	13	6	13	25
$\phi 40$	30	22	27	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	58	14	8	13	21
$\phi 50$	35	27	32	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	68	15.5	11	14	23
$\phi 63$	35	27	32	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	78	16.5	11	14	23
$\phi 80$	40	32	37	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	95	19	13	20	32
$\phi 100$	40	41	37	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	114	19	16	20	32

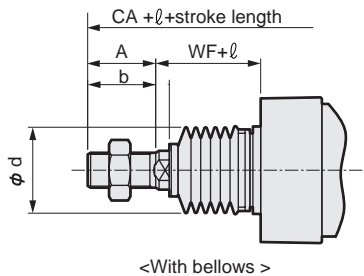
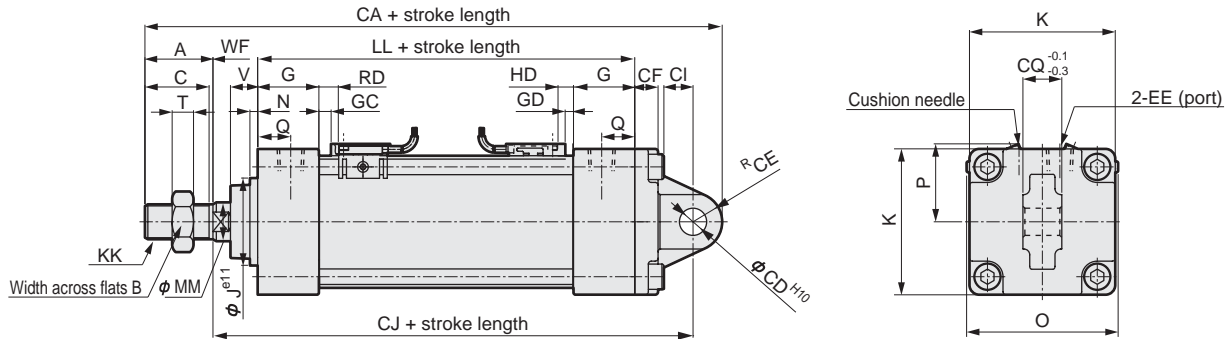
Symbol	Installation dimensions							With bellows													
	Note 1 FA	FC	FD	Note 1 FJ	FL	FM	FT	A	b	d	WF	ℓ									
Bore size (mm)												50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
$\phi 32$	141 (147)	32	7	119 (125)	64	79	10	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
$\phi 40$	145 (151)	36	9	115 (121)	72	90	10	30	35	40	21	30	43	55	68	93	118	143	-	-	-
$\phi 50$	162 (172)	45	9	129 (137)	90	110	12	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 63$	162 (172)	50	9	129 (137)	100	120	12	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 80$	202 (212)	63	12	162 (172)	126	153	16	40	50	53	32	29	42	54	67	92	117	142	167	192	217
$\phi 100$	202 (212)	75	14	162 (172)	150	178	16	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217

Symbol	With switch								
	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P
$\phi 32$	1 (4)		1 (4)		5 (8)		5 (8)		25
$\phi 40$	1 (4)		1 (4)		5 (8)		5 (8)		29
$\phi 50$	2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)		34
$\phi 63$	2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)		40
$\phi 80$	8.5 (13.5)		2 (7)		12.5 (17.5)		6 (11)		-
$\phi 100$	8 (13)		2.5 (7.5)		12 (17)		6.5 (11.5)		-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Eye bracket type (CA)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

(φ 32/φ 40; +6 mm, φ 50/φ 63; +8 mm, φ 80/φ 100; +10 mm)

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Eye bracket type (CA) basic dimensions															
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	O	Q	T	V	WF
φ 32	22	17	19.5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	52	13	6	13	25
φ 40	30	22	27	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	58	14	8	13	21
φ 50	35	27	32	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	68	15.5	11	14	23
φ 63	35	27	32	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	78	16.5	11	14	23
φ 80	40	32	37	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	95	19	13	20	32
φ 100	40	41	37	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	114	19	16	20	32

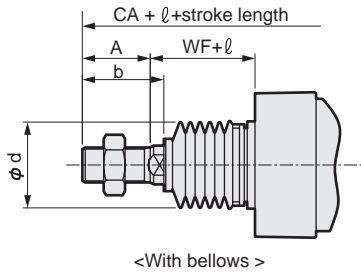
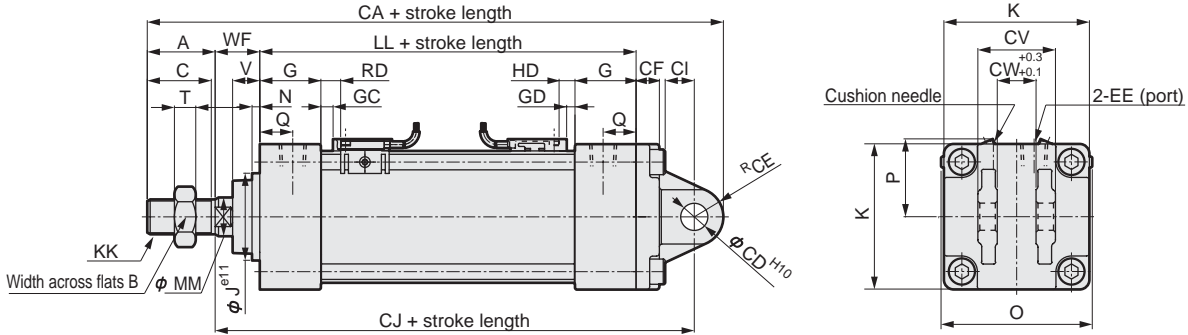
Symbol	Installation dimensions							With bellows													
	Note 1 CA	CD	CE	CF	CI	Note 1 CJ	CQ	A	b	d	WF	ℓ									
Bore size (mm)												50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
φ 32	164.5 (170.5)	10	10.5	9	13	132 (138)	14	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
φ 40	169 (175)	10	11	9	13	128 (134)	14	30	35	40	21	30	43	55	68	93	118	143	-	-	-
φ 50	197 (205)	14	15	12	17	147 (155)	20	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ 63	197 (205)	14	15	12	17	147 (155)	20	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ 80	251 (261)	22	23	15	26	188 (198)	30	40	50	53	32	29	42	54	67	92	117	142	167	192	217
φ 100	251 (261)	22	23	15	26	188 (198)	30	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217

Symbol	With switch								
	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P
φ 32		1 (4)		1 (4)		5 (8)		5 (8)	25
φ 40		1 (4)		1 (4)		5 (8)		5 (8)	29
φ 50		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	34
φ 63		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	40
φ 80		8.5 (13.5)		2 (7)		12.5 (17.5)		6 (11)	-
φ 100		8 (13)		2.5 (7.5)		12 (17)		6.5 (11.5)	-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Clevis bracket type (CB)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.
(ϕ 32/ ϕ 40; +6 mm, ϕ 50/ ϕ 63; +8 mm, ϕ 80/ ϕ 100; +10 mm)

Note 2: The pin, split pin, and plain washer are included.

Note 3: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Clevis bracket type (CB) basic dimensions																Installation dimensions		
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	O	Q	T	V	WF	Note 1 CA	CD
ϕ 32	22	17	19.5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	52	13	6	13	25	164.5 (170.5)	10
ϕ 40	30	22	27	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	58	14	8	13	21	169 (175)	10
ϕ 50	35	27	32	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	68	15.5	11	14	23	197 (205)	14
ϕ 63	35	27	32	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	78	16.5	11	14	23	197 (205)	14
ϕ 80	40	32	37	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	95	19	13	20	32	251 (261)	22
ϕ 100	40	41	37	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	114	19	16	20	32	251 (261)	22

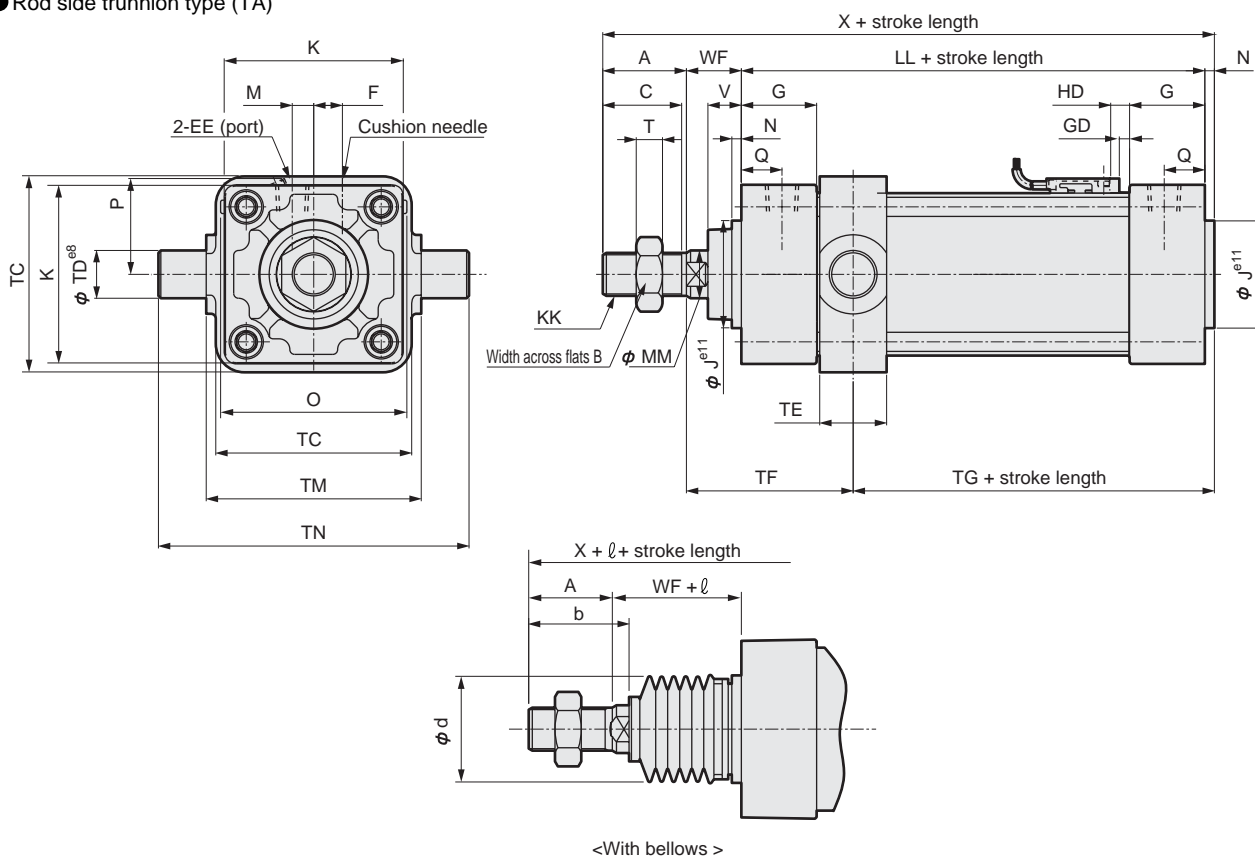
Symbol	With bellows																			
Bore size (mm)	CE	CF	CI	Note 1 CJ	CV	CW	A	b	d	WF	ℓ									
											50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
ϕ 32	10.5	9	13	132 (138)	28	14	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
ϕ 40	11	9	13	128 (134)	28	14	30	35	40	21	30	43	55	68	93	118	143	-	-	-
ϕ 50	15	12	17	147 (155)	40	20	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ 63	15	12	17	147 (155)	40	20	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ 80	23	15	26	188 (198)	60	30	40	50	53	32	29	42	54	67	92	117	142	167	192	217
ϕ 100	23	15	26	188 (198)	60	30	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217

Symbol	With switch								
Bore size (mm)	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P
ϕ 40	1 (4)	1 (4)	5 (8)	5 (8)	29				
ϕ 50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34				
ϕ 63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40				
ϕ 80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-				
ϕ 100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-				

Note 4: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Rod side trunnion type (TA)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

Note 2: Switches cannot be installed on the head side.

Note 3: HD in the dimensions indicates the switch end positions, and GD indicates the switch rail end positions.

Symbol	Rod side trunnion type (TA) basic dimensions																	
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	N	O	Q	T	V	WF
$\phi 32$	22	17	19.5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	4	52	13	6	13	25
$\phi 40$	30	22	27	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	4	58	14	8	13	21
$\phi 50$	35	27	32	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	4	68	15.5	11	14	23
$\phi 63$	35	27	32	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	4	78	16.5	11	14	23
$\phi 80$	40	32	37	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	4	95	19	13	20	32
$\phi 100$	40	41	37	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	4	114	19	16	20	32

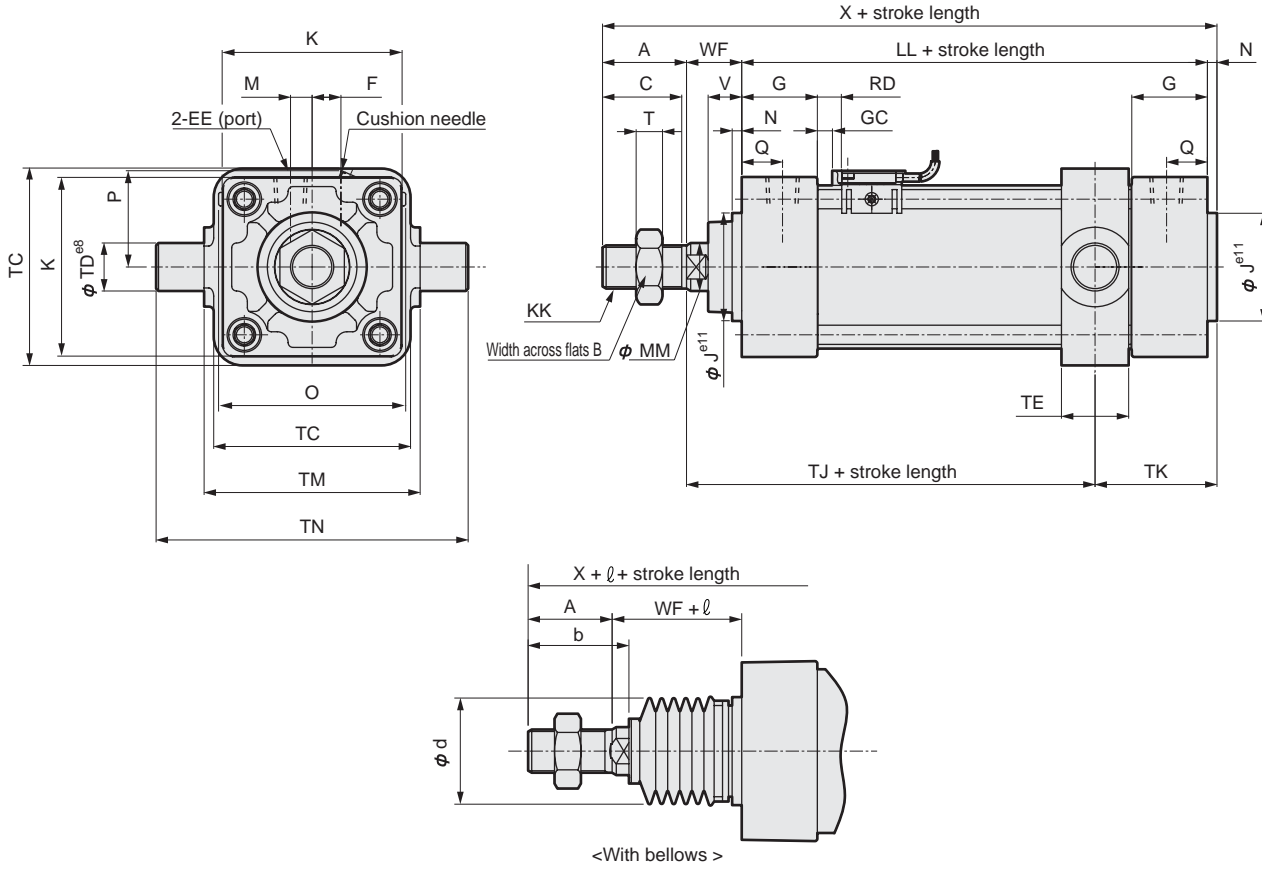
Symbol	Installation dimensions								With switch			With bellows						
	Note 1 X	TC	TD	TE	TF	Note 1 TG	TM	TN	Note 1 GD	Note 1 HD	P	A	b	d	WF	ℓ		
Bore size (mm)																50 or less	50 to 100	100 to 150
$\phi 32$	135 (141)	47	12	17	61.5	51.5 (57.5)	50	74	1 (4)	5 (8)	25	22	31.5	30	25	26	39	51
$\phi 40$	139 (145)	57	16	22	60	49 (55)	63	95	1 (4)	5 (8)	29	30	35	40	21	30	43	55
$\phi 50$	156 (164)	67	16	22	66.5	54.5 (62.5)	75	107	1 (5)	5 (9)	34	35	42	47	23	31	44	56
$\phi 63$	156 (164)	82	20	28	69.5	51.5 (59.5)	90	130	1 (5)	5 (9)	40	35	42	47	23	31	44	56
$\phi 80$	190 (200)	100	20	34	88	62 (72)	110	150	2 (7)	6 (11)	-	40	50	53	32	29	42	54
$\phi 100$	190 (200)	121	25	40	91	59 (69)	132	182	2.5 (7.5)	6.5 (11.5)	-	40	52.5	61	32	29	42	54

Symbol	With bellows						
	ℓ						
Bore size (mm)	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
$\phi 32$	64	89	114	139	-	-	-
$\phi 40$	68	93	118	143	-	-	-
$\phi 50$	69	94	119	144	169	-	-
$\phi 63$	69	94	119	144	169	-	-
$\phi 80$	67	92	117	142	167	192	217
$\phi 100$	67	92	117	142	167	192	217

Note 4: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Head side trunnion type (TB)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

(φ32/ φ40; +6 mm, φ50/ φ63; +8 mm, φ80/ φ100; +10 mm)

Note 2: Switches cannot be installed on the head side.

Note 3: RD in the dimensions indicates the switch end positions, and GC indicates the switch rail end positions.

Symbol	Head side trunnion type (TB) basic dimensions																	
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	N	O	Q	T	V	WF
φ 32	22	17	19.5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	4	52	13	6	13	25
φ 40	30	22	27	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	4	58	14	8	13	21
φ 50	35	27	32	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	4	68	15.5	11	14	23
φ 63	35	27	32	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	4	78	16.5	11	14	23
φ 80	40	32	37	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	4	95	19	13	20	32
φ 100	40	41	37	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	4	114	19	16	20	32

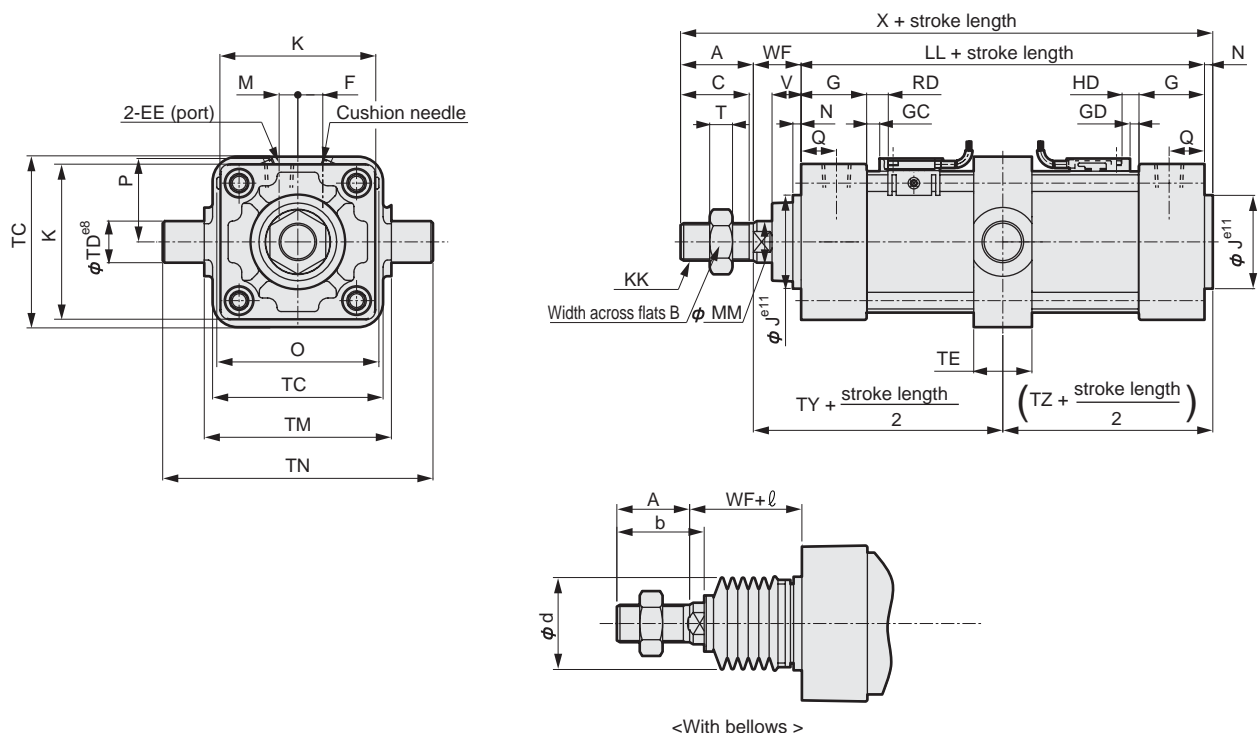
Symbol	Installation dimensions								With switch			With bellows						
	Note 1 X	TC	TD	TE	Note 1 TJ	TK	TM	TN	Note 1 GC	Note 1 RD	P	A	b	d	WF	ℓ		
Bore size (mm)																50 or less	50 to 100	100 to 150
φ 32	135 (141)	47	12	17	72.5 (78.5)	40.5	50	74	1 (4)	5 (8)	25	22	31.5	30	25	26	39	51
φ 40	139 (145)	57	16	22	66 (72)	43	63	95	1 (4)	5 (8)	29	30	35	40	21	30	43	55
φ 50	156 (164)	67	16	22	73.5 (81.5)	47.5	75	107	2.5 (6.5)	6.5 (10.5)	34	35	42	47	23	31	44	56
φ 63	156 (164)	82	20	28	70.5 (78.5)	50.5	90	130	2.5 (6.5)	6.5 (10.5)	40	35	42	47	23	31	44	56
φ 80	190 (200)	100	20	34	90 (100)	60	110	150	8.5 (13.5)	12.5 (17.5)	-	40	50	53	32	29	42	54
φ 100	190 (200)	121	25	40	87 (97)	63	132	182	8 (13)	12 (17)	-	40	52.5	61	32	29	42	54

Symbol	With bellows						
	ℓ						
Bore size (mm)	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
φ 32	64	89	114	139	-	-	-
φ 40	68	93	118	143	-	-	-
φ 50	69	94	119	144	169	-	-
φ 63	69	94	119	144	169	-	-
φ 80	67	92	117	142	167	192	217
φ 100	67	92	117	142	167	192	217

Note 4: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Center trunnion type (TC)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

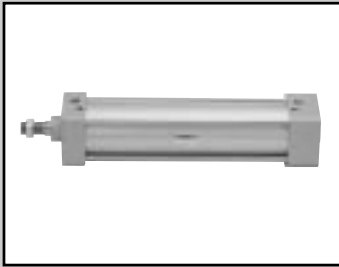
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Center trunnion type (TC) basic dimensions																	
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	N	O	Q	T	V	WF
$\phi 32$	22	17	19.5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	4	52	13	6	13	25
$\phi 40$	30	22	27	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	4	58	14	8	13	21
$\phi 50$	35	27	32	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	4	68	15.5	11	14	23
$\phi 63$	35	27	32	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	4	78	16.5	11	14	23
$\phi 80$	40	32	37	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	4	95	19	13	20	32
$\phi 100$	40	41	37	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	4	114	19	16	20	32

Symbol	Installation dimensions								With bellows										
	Note 1 X	TC	TD	TE	TM	TN	Note 1 TY	Note 1 TZ	A	b	d	WF	l						
Bore size (mm)													50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500
$\phi 32$	135 (141)	47	12	17	50	74	67 (70)	46 (49)	22	31.5	30	25	26	39	51	64	89	114	139
$\phi 40$	139 (145)	57	16	22	63	95	63 (66)	46 (49)	30	35	40	21	30	43	55	68	93	118	143
$\phi 50$	156 (164)	67	16	22	75	107	70 (74)	51 (55)	35	42	47	23	31	44	56	69	94	119	144
$\phi 63$	156 (164)	82	20	28	90	130	70 (74)	51 (55)	35	42	47	23	31	44	56	69	94	119	144
$\phi 80$	190 (200)	100	20	34	110	150	89 (94)	61 (66)	40	50	53	32	29	42	54	67	92	117	142
$\phi 100$	190 (200)	121	25	40	132	182	89 (94)	61 (66)	40	52.5	61	32	29	42	54	67	92	117	142

Symbol	With switch							
	500 to 600	600 to 700	700 to 800	GC Note 1	GD Note 1	RD Note 1	HD Note 1	P
$\phi 32$	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	25
$\phi 40$	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
$\phi 50$	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
$\phi 63$	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
$\phi 80$	167	192	217	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
$\phi 100$	167	192	217	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

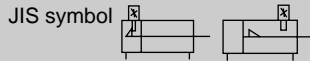
Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.



Tie rod cylinder Double acting, position locking type

SCG-Q Series

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



Specifications

Descriptions		SCG-Q					
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.15					
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (to be unfrozen)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)					
Working piston speed	mm/s	30 to 1000 (use it within the range of allowable energy absorption)					
Cushion		Air cushion					
Valid air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Position locking mechanism		Head side, rod side					
Holding force		Max. thrust X 0.7					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISO VG32.)					
Allowable energy absorption J	Air cushioned	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	700	1
$\phi 40$			800	
$\phi 50$			1200	
$\phi 63$			1200	
$\phi 80$			1400	
$\phi 100$			1500	

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			25			30			35		
$\phi 40$												
$\phi 50$												
$\phi 63$												
$\phi 80$												
$\phi 100$												

● When installed on the same plate

(Unit: mm)

Switch quantity Bore size	1			2		3		4			
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity	
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*
$\phi 32$	10			40	50	75	85	110	120		
$\phi 40$											
$\phi 50$											
$\phi 63$				25		40	50	45	55		
$\phi 80$											
$\phi 100$											

Min. stroke length of type with switch

● Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		
	Proximity		Reed
T2, T3	T*Y*		
φ 32	37		
φ 40	42		
φ 50	42		
φ 63	48		
φ 80	54		
φ 100	60		

● Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity											
	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
φ 32	63			63			93			93		
φ 40	68			68			98			98		
φ 50	68			68			98			98		
φ 63	74			74			98			98		
φ 80	86			86			101			101		
φ 100	92			92			107			107		

Switch specifications

● One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V	T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V		T5H/T5V		T2YD	
Applications	Programmable controller		Programmable controller		Programmable controller, relay		Programmable controller, relay, IC circuit (without indicator light), serial connection		Programmable controller		
Power voltage	-		10 to 28V DC		-						-
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-		-		Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

● 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		Programmable controller, relay Controller and relay		Programmable controller		Programmable controller, relay	
Light	Installation position adjustment		Red/green LED (ON lighting)					
	Preventive maintenance output		-		Yellow LED (ON lighting)			
Output	Power voltage		10 to 28V DC		-		10 to 28V DC	
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Load voltage		30V DC or less					
	Load current		50 mA or less		5 to 20 mA (Note 1)		50 mA or less	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length = 0 mm						Stroke length: 50 mm Additional weight per 50 mm	Switch weight	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)		Grommet	I	Y
φ 32	0.69	0.8	0.91	0.84	0.87	0.86	0.12	0.018	0.07	0.13
φ 40	1.03	1.17	1.31	1.21	0.85	1.37	0.17	0.018	0.09	0.14
φ 50	1.69	1.85	2.17	2.10	2.10	2.17	0.23	0.018	0.20	0.33
φ 63	2.03	2.37	2.79	2.59	2.60	2.91	0.25	0.018	0.20	0.33
φ 80	3.96	4.39	5.53	5.23	5.24	5.45	0.40	0.018	0.52	0.96
φ 100	5.74	6.6	8.06	7.46	7.49	8.31	0.51	0.018	0.48	0.92

How to order

Without switch

SCG-Q - LB - 40 - B - 100 - H - M1 I

With switch

SCG-Q - LB - 40 - B - 100 - H - T2H - R - M1 I

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Position locking mechanism

G Switch model No.

H Switch quantity

I Option
Note 3

J Accessory
Note 4

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head side flange type
CA	Eye bracket type
CB	Clevis bracket type
TA	Rod side trunnion type
TB	Head side trunnion type
TC	Center trunnion type

B Bore size (mm)	
32	φ 32
40	φ 40
50	φ 50
63	φ 63
80	φ 80
100	φ 100

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

D Cushion	
B	Air cushion on both sides (basic type)

E Stroke length (mm)	
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	

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

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

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

H Switch quantity	
R	One on rod side
H	One on head side
D	Two
T	Three

I Option	
Blank	Basic position locking type
MO	Non-locking manual override (release bolt attached)
M1	Locking manual override
M	Piston rod material (stainless steel)
P6	Copper and PTFE free

J Accessory	
I	Rod eye
Y	Rod clevis (pin and split pins attached)
B1	Eye bracket
B2	Clevis bracket (pin and split pins attached)
B3	Eye bracket
B4	Trunnion type No. 2 bracket

⚠ Note on model No. selection

- Note 1: The installation bracket is shipped with the product.
(Note that the trunnion type is assembled before shipment.)
The mounting style TA and position locking mechanism R are not used.
The mounting style TB and position locking mechanism H are not used.
- Note 2: Custom stroke length is available per 1mm increment.
- Note 3: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.
- Note 4: "I" and "Y" cannot be selected at the same time.

<Example of model number>

SCG-Q-LB-40B-100-H-T2H-D-I

Model: Tierrod cylinder, double acting position locking type

- A Mounting style : Axial foot type
- B Bore size : φ 40mm
- C Port thread type : Rc thread
- D Cushion : Both sides air-cushioned
- E Stroke length : 100mm
- F Position locking mechanism : With head side position locking
- G Switch model No. : Proximity T2H switch, lead wire 1m
- H Switch quantity : Two
- I Option : Basic position locking type
- J Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - **T0H** - **40**

Switch model No. (G on previous page) Bore size (B on previous page)

● Switch body

SW - **T0H**

Switch model No. (G on previous page)

● Switch mounting bracket

SCG - **T** - **40**

Bracket Bore size (B on previous page)

Note: If an ecological T type switch is used, consult with CKD.

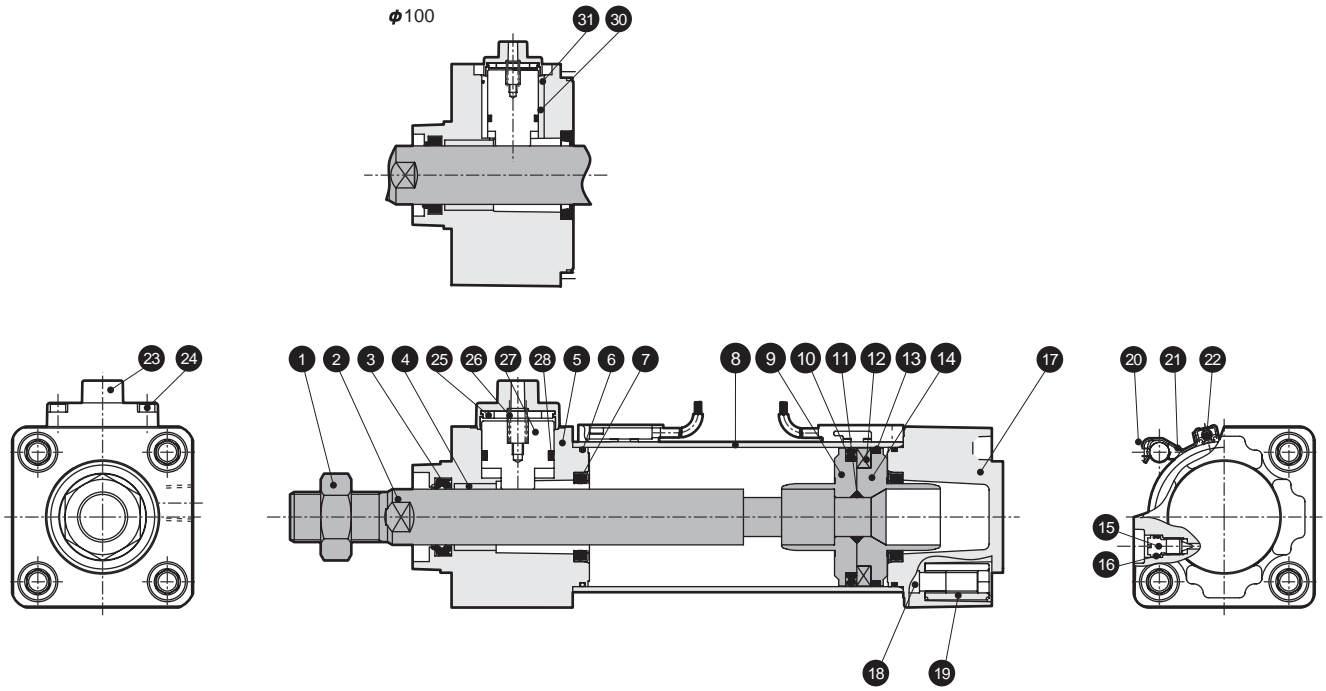
How to order mounting bracket

Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

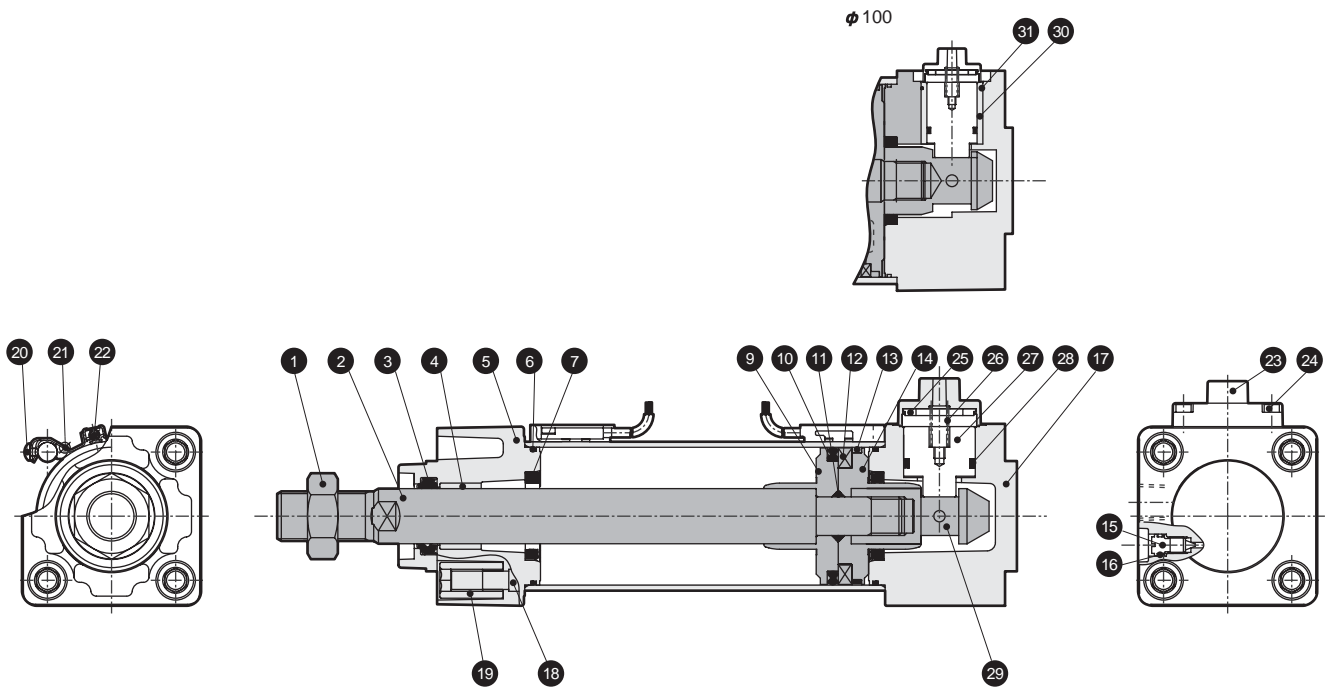
Note 1: Foot (LB) is provided as 2 pieces per set.

Internal structure drawing

● With rod side position locking



● With head side position locking



Parts list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	17	Head cover	Aluminum alloy die casting Note 2	Paint
2	Piston rod	Steel	Industrial chrome plated	18	Tierod	Steel	Zinc chromate plating
3	Rod packing seal	Nitrile rubber		19	Round nut	Steel	Zinc chromate plating
4	Bush	Oil impregnated bearing alloy		20	Hexagon socket head cap screw	Steel	Zinc chromate plating
5	Rod cover	Aluminum alloy die casting Note 1	Paint	21	Bracket	Stainless steel spring steel	
6	Cylinder gasket	Nitrile rubber		22	Switch		
7	Cushion packing seal	Nitrile rubber, steel		23	Stopper cover	Aluminum alloy die casting	Paint
8	Cylinder tube	Aluminum alloy	Hard alumite	24	Hexagon socket head cap screw	Stainless steel	
9	Piston R	ϕ 32, 40: aluminum alloy ϕ 50 to 100: aluminum alloy die casting		25	Cushion rubber B	Urethane rubber	
10	Piston packing seal	Nitrile rubber		26	Spring	Steel	
11	Piston gasket	Nitrile rubber		27	Stopper piston	ϕ 32, ϕ 40, ϕ 80: stainless steel ϕ 50, ϕ 63, ϕ 100: steel	Zinc chromate plating
12	Magnet	Plastic		28	Piston packing seal B	Nitrile rubber	
13	Wear ring	Acetar resin		29	Sleeve	ϕ 32 to ϕ 63: stainless steel ϕ 80, ϕ 100: steel	Industrial chrome plated
14	Piston H	ϕ 32, 40: aluminum alloy ϕ 50 to 100: aluminum alloy die casting		30	O ring	Nitrile rubber	
15	Cushion needle	Brass		31	Housing	Aluminum alloy	
16	Needle gasket	Nitrile rubber					

Note 1: Aluminum alloy die-casting is used for the rod side position locking.

Note 2: Aluminum alloy casting is used for the rod side position locking.

Repair parts list

Bore size (mm)	Kit number	Repair parts number
ϕ 32	SCG-Q-32BK	
ϕ 40	SCG-Q-40BK	3 6 7 10 13 16
ϕ 50	SCG-Q-50BK	25 28
ϕ 63	SCG-Q-63BK	
ϕ 80	SCG-Q-80BK	
ϕ 100	SCG-Q-100-BK	3 6 7 10 13 16 25 28 30

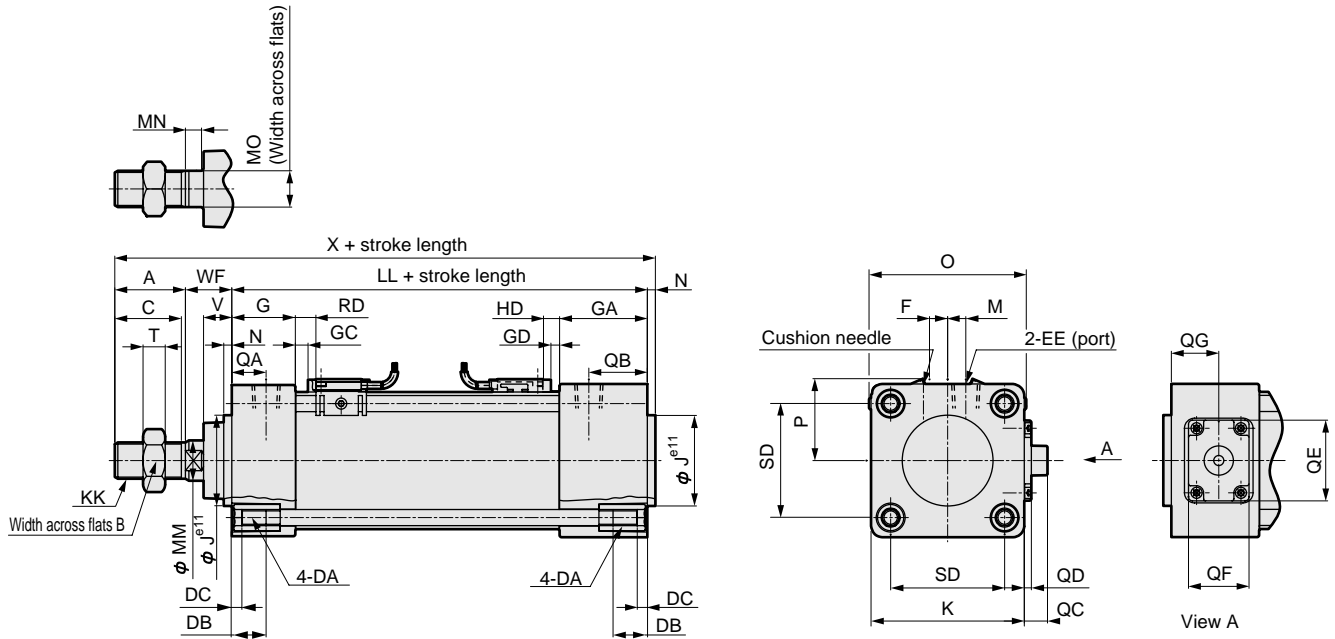
Note: Specify the kit number when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Dimensions

- Basic type (00) head side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

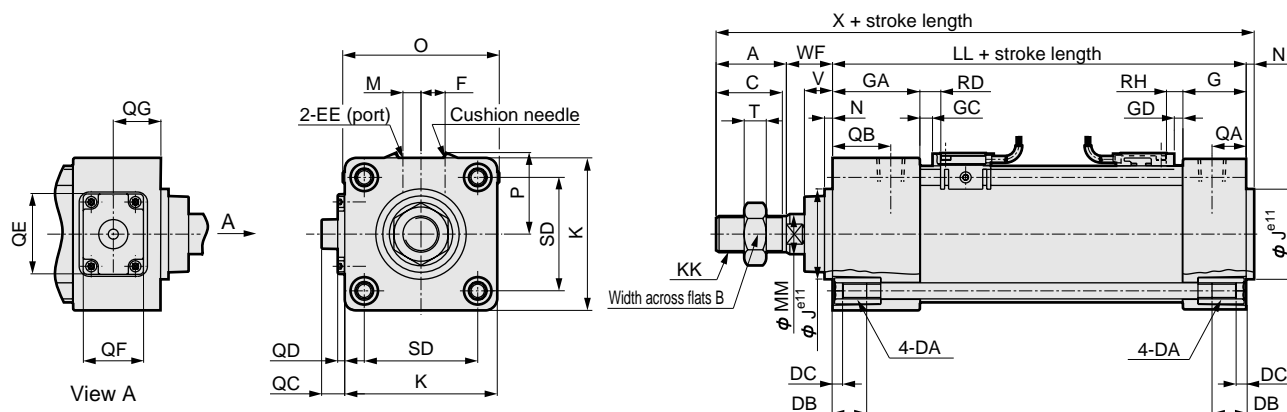
Symbol	Basic type (00) head side position locking basic dimension																				
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	O	QA
φ 32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	5.5	10	4	52	13
φ 40	30	22	27	M6	16	5	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	6	14	4	58	14
φ 50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	7	17	4	68	15.5
φ 63	35	27	32	M8	16	5	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	7	17	4	78	16.5
φ 80	40	32	37	M10	16	5	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	10	22	4	95	19
φ 100	40	41	37	M10	16	5	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	10	27	4	114	19

Symbol	With switch															
Bore size (mm)	QB	QC	QD	QE	QF	QG	SD	T	V	WF	X	GC	GD	RD	HD	P
φ 32	21	13	8	22	16	17.5	32.5	6	13	25	143	1	1	5	5	25
φ 40	27	12	7	22	16	18.5	38	8	13	21	152	1	1	5	5	29
φ 50	27.5	17	8.5	40	30	23.8	46.5	11	14	23	168	2.5	1	6.5	5	34
φ 63	28.5	11.5	3.5	40	30	23.8	56.5	11	14	23	168	2.5	1	6.5	5	40
φ 80	37	10	2	40	30	27.5	72	13	20	32	208	8.5	2	12.5	6	-
φ 100	37	11	3	40	30	27.5	89	16	20	32	208	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Basic type (00) rod side position locking



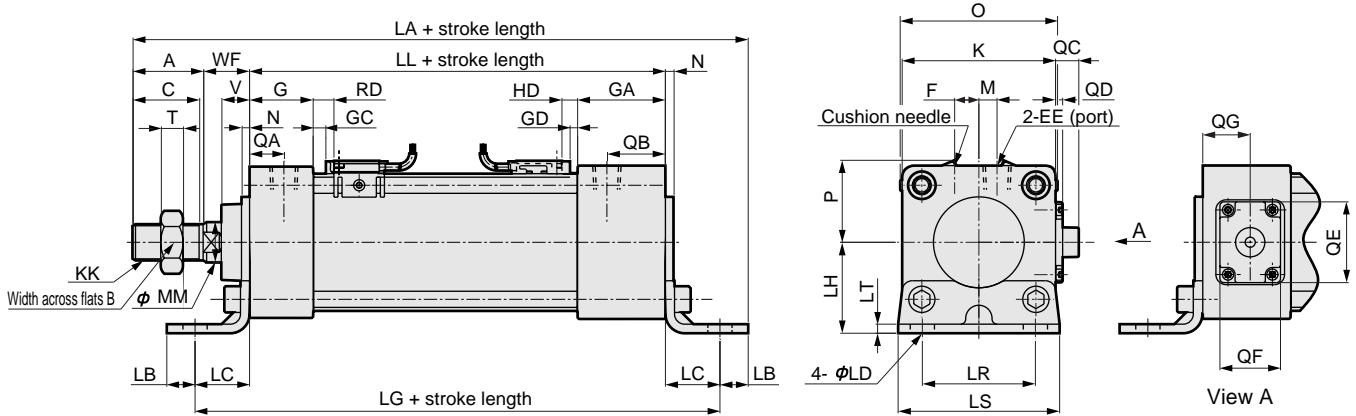
Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Basic type (00) rod side position locking basic dimensions																		
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA
φ 32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	4	52	13
φ 40	30	22	27	M6	16	5	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	4	58	14
φ 50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	4	68	15.5
φ 63	35	27	32	M8	16	5	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	4	78	16.5
φ 80	40	32	37	M10	16	5	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	4	95	19
φ 100	40	41	37	M10	16	5	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	4	114	19
Symbol	With switch																		
Bore size (mm)	QB	QC	QD	QE	QF	QG	SD	T	V	WF	X	GC	GD	RD	HD	P			
φ 32	21	13	8	22	16	17.5	32.5	6	13	25	143	1	1	5	5	25			
φ 40	27	12	7	22	16	18.5	38	8	13	21	152	1	1	5	5	29			
φ 50	27.5	17	8.5	40	30	23.8	46.5	11	14	23	168	2.5	1	6.5	5	34			
φ 63	28.5	11.5	3.5	40	30	23.8	56.5	11	14	23	168	2.5	1	6.5	5	40			
φ 80	37	10	2	40	30	27.5	72	13	20	32	208	8.5	2	12.5	6	-			
φ 100	37	11	3	40	30	31.5	89	16	20	32	208	8	2.5	12	6.5	-			

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Axial foot type (LB) head side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

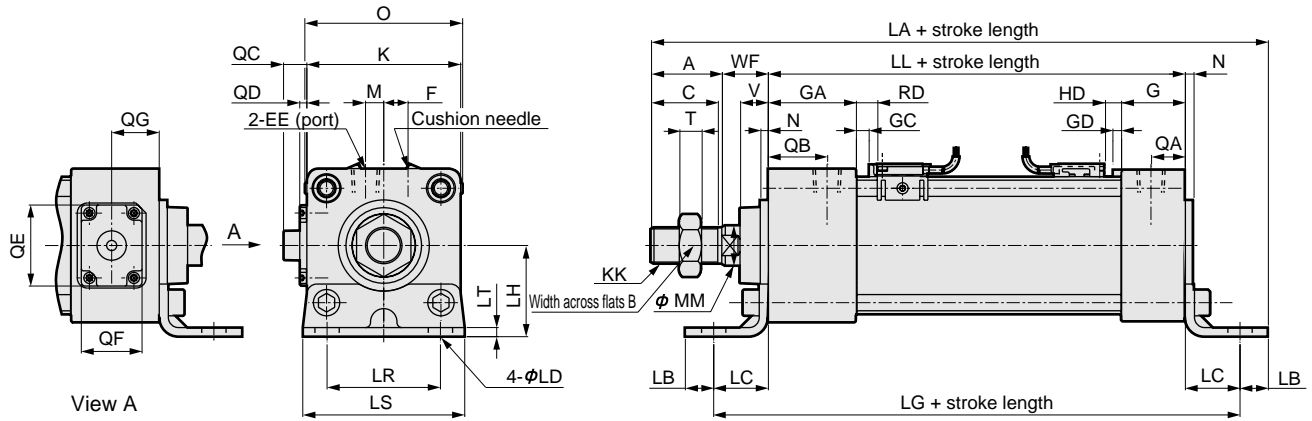
Symbol	Axial foot type (LB) head side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE	QF
φ 32	22	17	19.5	Rc1/8	6.5	27	35	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22	16
φ 40	30	22	27	Rc1/4	9	27	40	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22	16
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40	30
φ 63	35	27	32	Rc3/8	12	31.5	43.5	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40	30
φ 80	40	32	37	Rc3/8	14	38	56	95	M22 X 1.5	132	11.5	25	4	95	19	37	10	2	40	30
φ 100	40	41	37	Rc1/2	15	38	56	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40	30

Symbol	Installation dimensions												With switch					
Bore size (mm)	QG	T	V	WF	LA	LB	LC	LD	LG	LH	LR	LS	LT	GC	GD	RD	HD	P
φ 32	17.5	6	13	25	170	9	22	7	136	30	32	50	3.2	1	1	5	5	25
φ 40	18.5	8	13	21	183	11	24	9	145	33	38	55	3.2	1	1	5	5	29
φ 50	23.8	11	14	23	202	11	27	9	160	40	46	70	3.2	2.5	1	6.5	5	34
φ 63	23.8	11	14	23	205	14	27	12	160	45	56	80	4.5	2.5	1	6.5	5	40
φ 80	27.5	13	20	32	248	14	30	12	192	55	72	95	4.5	8.5	2	12.5	6	-
φ 100	27.5	16	20	32	252	16	32	14	196	65	89	114	6	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Axial foot type (LB) rod side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

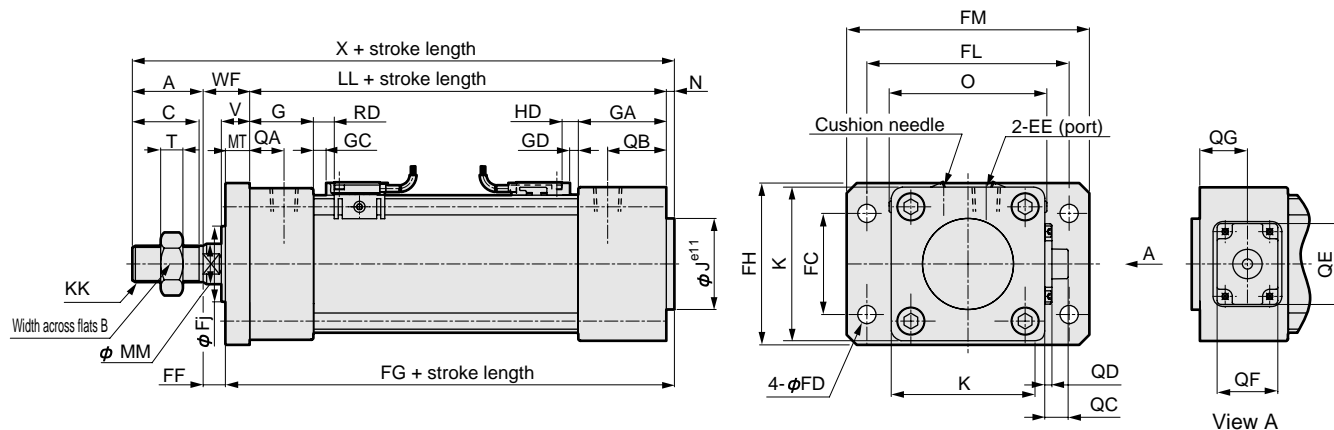
Symbol	Axial foot type (LB) rod side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE	QF
φ 32	22	17	19.5	Rc1/8	6.5	27	35	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22	16
φ 40	30	22	27	Rc1/4	9	27	40	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22	16
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40	30
φ 63	35	27	32	Rc3/8	12	31.5	43.5	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40	30
φ 80	40	32	37	Rc3/8	14	38	56	95	M22 X 1.5	132	11.5	25	4	95	19	37	10	2	40	30
φ 100	40	41	37	Rc1/2	15	38	56	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40	30

Symbol	Installation dimensions												With switch					
	QG	T	V	WF	LA	LB	LC	LD	LG	LH	LR	LS	LT	GC	GD	RD	HD	P
φ 32	17.5	6	13	25	170	9	22	7	136	30	32	50	3.2	1	1	5	5	25
φ 40	18.5	8	13	21	183	11	24	9	145	33	38	55	3.2	1	1	5	5	29
φ 50	23.8	11	14	23	202	11	27	9	160	40	46	70	3.2	2.5	1	6.5	5	34
φ 63	23.8	11	14	23	205	14	27	12	160	45	56	80	4.5	2.5	1	6.5	5	40
φ 80	27.5	13	20	32	248	14	30	12	192	55	72	95	4.5	8.5	2	12.5	6	-
φ 100	31.5	16	20	32	252	16	32	14	196	65	89	114	6	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Rod side flange type (FA) head side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

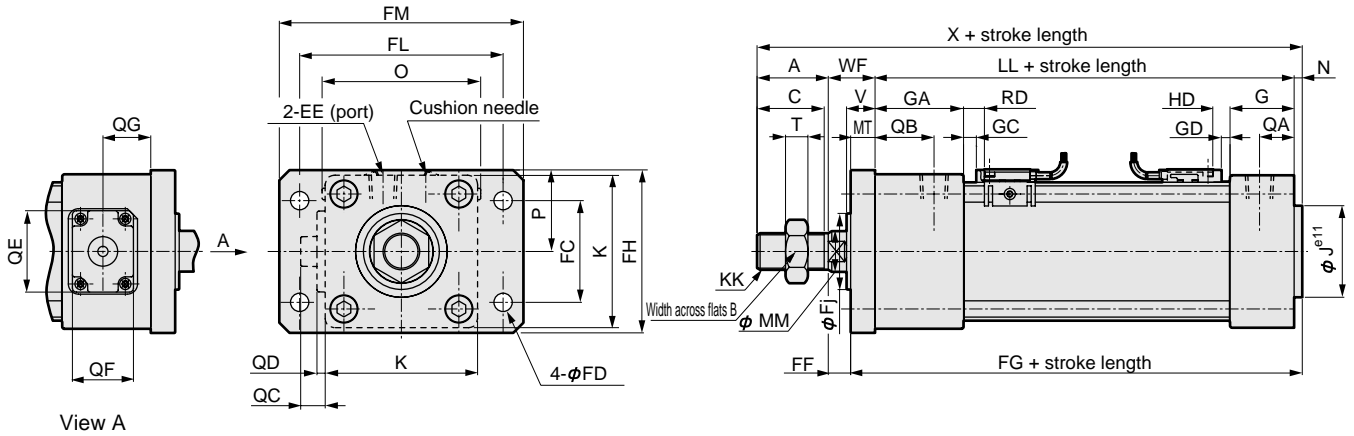
Symbol	Rod side flange type (FA) head side position locking basic dimensions																			
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	4	95	19	37	10	2	40
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40

Symbol	Installation dimensions											With switch								
	QF	QG	T	V	WF	X	FC	FD	FF	FG	Fj	MT	FH	FL	FM	GC	GD	RD	HD	P
φ 32	16	17.5	6	13	25	143	32	7	15	106	29	10	50	64	79	1	1	5	5	25
φ 40	16	18.5	8	13	21	152	36	9	11	111	30	10	55	72	90	1	1	5	5	29
φ 50	30	23.8	11	14	23	168	45	9	11	122	38	12	70	90	110	2.5	1	6.5	5	34
φ 63	30	23.8	11	14	23	168	50	9	11	122	38	12	80	100	120	2.5	1	6.5	5	40
φ 80	30	27.5	13	20	32	208	63	12	16	152	43	16	100	126	153	8.5	2	12.5	6	-
φ 100	30	27.5	16	20	32	208	75	14	16	152	51	16	120	150	178	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Rod side flange type (FA) rod side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

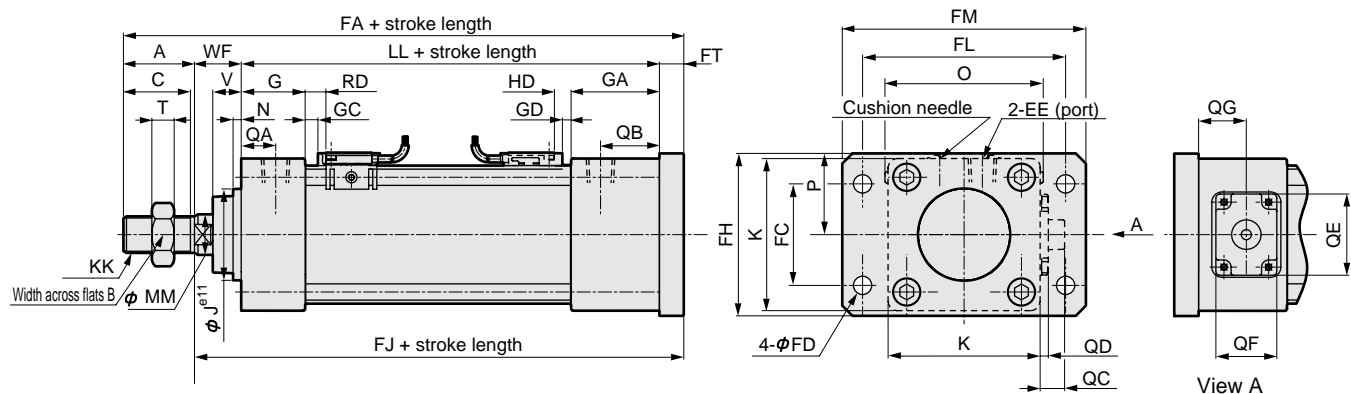
Symbol	Rod side flange type (FA) rod side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	4	95	19	37	10	2	40
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40

Symbol	Installation dimensions														With switch					
Bore size (mm)	QF	QG	T	V	WF	X	FC	FD	FF	FG	Fj	MT	FH	FL	FM	GC	GD	RD	HD	P
φ 32	16	17.5	6	13	25	143	32	7	15	106	29	10	50	64	79	1	1	5	5	25
φ 40	16	18.5	8	13	21	152	36	9	11	111	30	10	55	72	90	1	1	5	5	29
φ 50	30	23.8	11	14	23	168	45	9	11	122	38	12	70	90	110	2.5	1	6.5	5	34
φ 63	30	23.8	11	14	23	168	50	9	11	122	38	12	80	100	120	2.5	1	6.5	5	40
φ 80	30	27.5	13	20	32	208	63	12	16	152	43	16	100	126	153	8.5	2	12.5	6	-
φ 100	30	31.5	16	20	32	208	75	14	16	152	51	16	120	150	178	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Head side flange type (FB) head side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

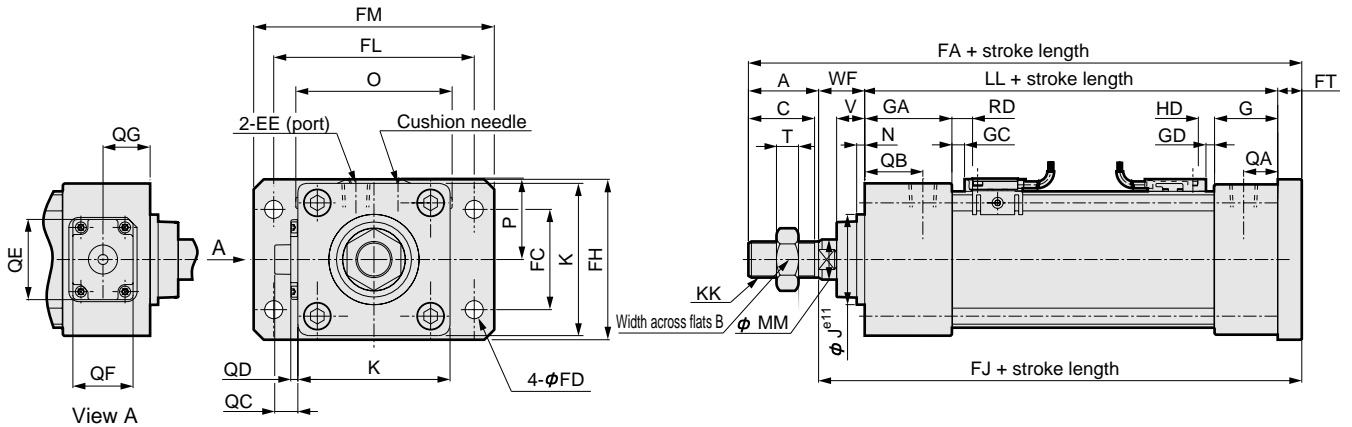
Symbol	Head side flange type (FB) head side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	52	13	21	13	8	22	16
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	58	14	27	12	7	22	16
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	68	15.5	27.5	17	8.5	40	30
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	78	16.5	28.5	11.5	3.5	40	30
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	95	19	37	10	2	40	30
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	114	19	37	11	3	40	30

Symbol	Installation dimensions										With switch					
	QG	T	V	WF	FA	FC	FD	FJ	FL	FM	FT	GC	GD	RD	HD	P
φ 32	17.5	6	13	25	149	32	7	127	64	79	10	1	1	5	5	25
φ 40	18.5	8	13	21	158	36	9	128	72	90	10	1	1	5	5	29
φ 50	23.8	11	14	23	176	45	9	141	90	110	12	2.5	1	6.5	5	34
φ 63	23.8	11	14	23	176	50	9	141	100	120	12	2.5	1	6.5	5	40
φ 80	27.5	13	20	32	220	63	12	180	126	153	16	8.5	2	12.5	6	-
φ 100	27.5	16	20	32	220	75	14	180	150	178	16	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Head side flange type (FB) rod side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

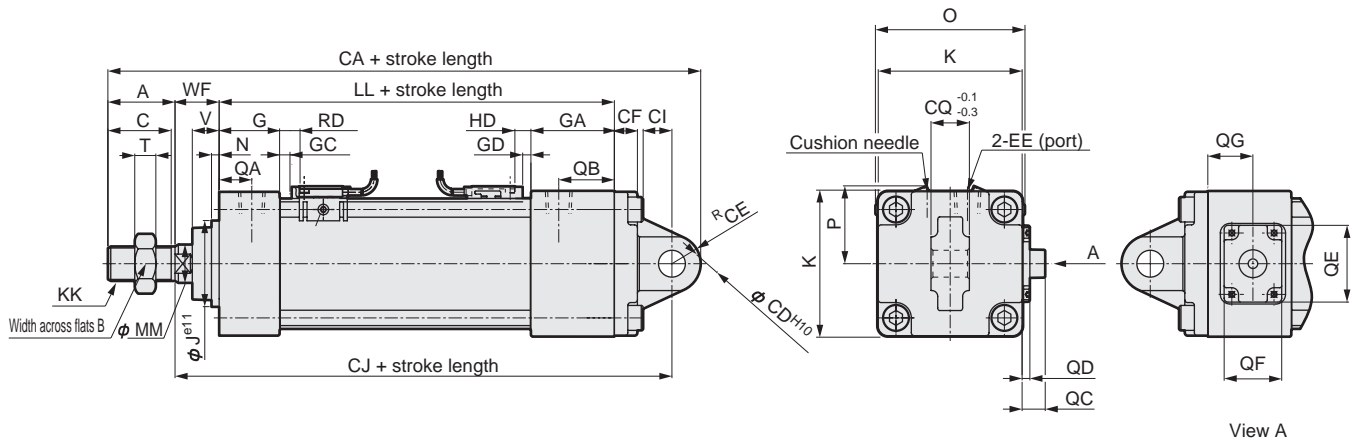
Head side flange type (FB) rod side position locking basic dimensions																				
Symbol																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	52	13	21	13	8	22	16
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	58	14	27	12	7	22	16
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	68	15.5	27.5	17	8.5	40	30
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	78	16.5	28.5	11.5	3.5	40	30
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	95	19	37	10	2	40	30
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	114	19	37	11	3	40	30

Symbol	Installation dimensions										With switch					
	QG	T	V	WF	FA	FC	FD	FJ	FL	FM	FT	GC	GD	RD	HD	P
φ 32	17.5	6	13	25	149	32	7	127	64	79	10	1	1	5	5	25
φ 40	18.5	8	13	21	158	36	9	128	72	90	10	1	1	5	5	29
φ 50	23.8	11	14	23	176	45	9	141	90	110	12	2.5	1	6.5	5	34
φ 63	23.8	11	14	23	176	50	9	141	100	120	12	2.5	1	6.5	5	40
φ 80	27.5	13	20	32	220	63	12	180	126	153	16	8.5	2	12.5	6	-
φ 100	31.5	16	20	32	220	75	14	180	150	178	16	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Eye bracket type (CA) head side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

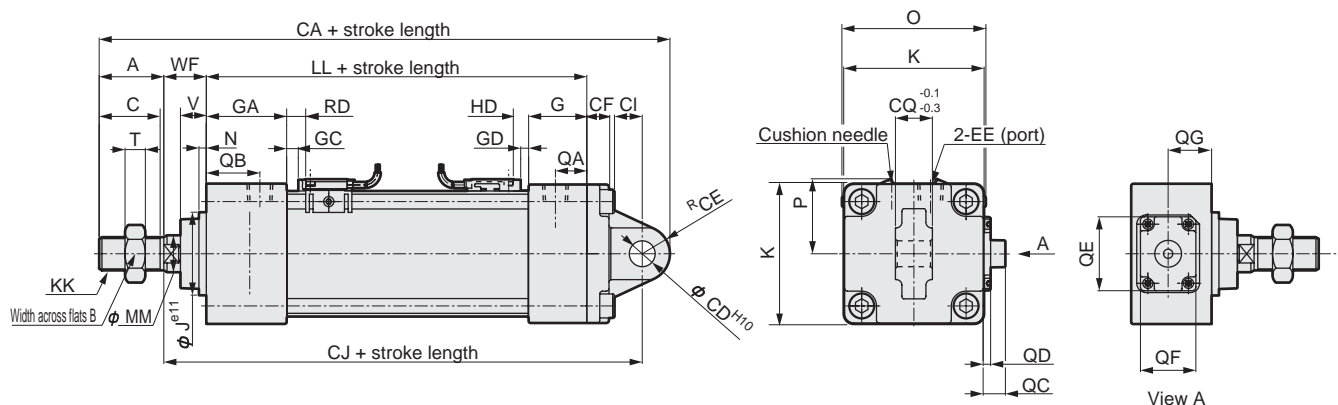
Symbol	Eye bracket type (CA) head side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	52	13	21	13	8	22	16	17.5
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	58	14	27	12	7	22	16	18.5
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	68	15.5	27.5	17	8.5	40	30	23.8
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	78	16.5	28.5	11.5	3.5	40	30	23.8
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	95	19	37	10	2	40	30	27.5
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	114	19	37	11	3	40	30	27.5

Symbol	Installation dimensions									With switch					
Bore size (mm)	T	V	WF	CA	CD	CE	CF	CI	CJ	CQ	GC	GD	RD	HD	P
φ 32	6	13	25	172.5	10	10.5	9	13	140	14	1	1	5	5	25
φ 40	8	13	21	182	10	11	9	13	141	14	1	1	5	5	29
φ 50	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	34
φ 63	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	40
φ 80	13	20	32	269	22	23	15	26	206	30	8.5	2	12.5	6	-
φ 100	16	20	32	269	22	23	15	26	206	30	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Eye bracket type (CA) rod side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

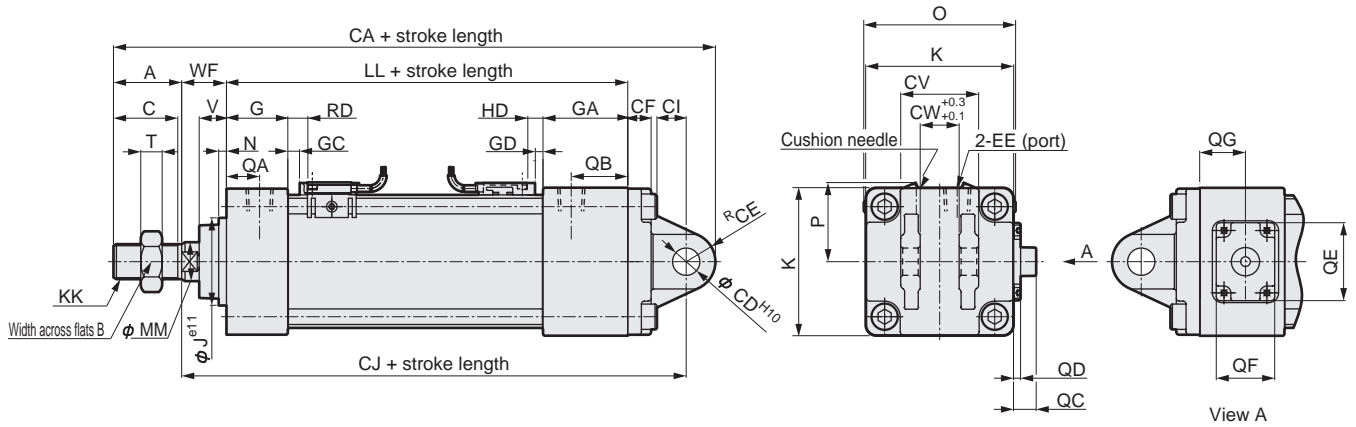
Symbol	Eye bracket type (CA) rod side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	52	13	21	13	8	22	16	17.5
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	58	14	27	12	7	22	16	18.5
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	68	15.5	27.5	17	8.5	40	30	23.8
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	78	16.5	28.5	11.5	3.5	40	30	23.8
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	95	19	37	10	2	40	30	27.5
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	114	19	37	11	3	40	30	31.5

Symbol	Installation dimensions										With switch				
Bore size (mm)	T	V	WF	CA	CD	CE	CF	CI	CJ	CQ	GC	GD	RD	HD	P
φ 32	6	13	25	172.5	10	10.5	9	13	140	14	1	1	5	5	25
φ 40	8	13	21	182	10	11	9	13	141	14	1	1	5	5	29
φ 50	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	34
φ 63	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	40
φ 80	13	20	32	269	22	23	15	26	206	30	8.5	2	12.5	6	-
φ 100	16	20	32	269	22	23	15	26	206	30	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Clevis bracket type (CB) head side position locking.



Note 1: The pin, split pin, and plain washer are included.

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

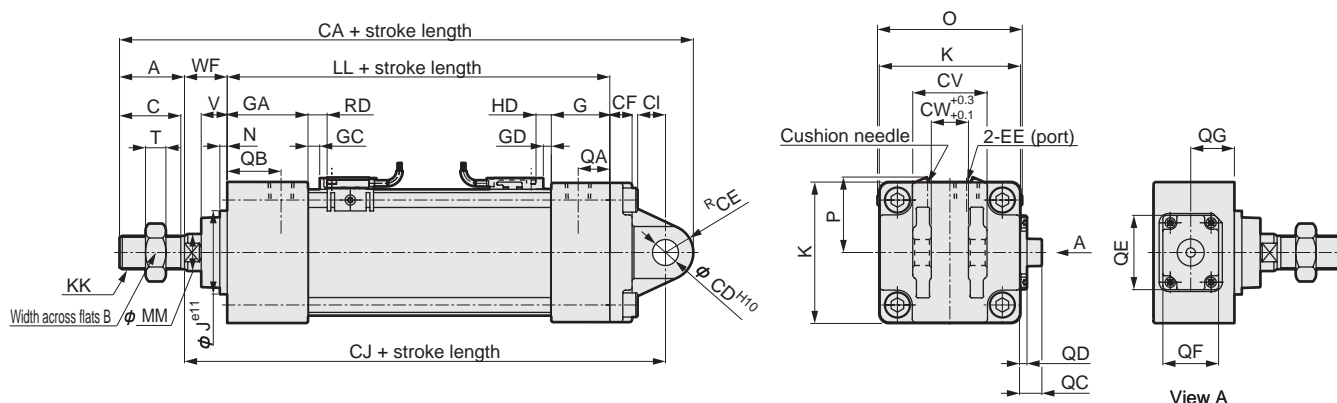
Symbol	Clevis bracket type (CB) head side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
ϕ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	52	13	21	13	8	22	16	17.5
ϕ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	58	14	27	12	7	22	16	18.5
ϕ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	68	15.5	27.5	17	8.5	40	30	23.8
ϕ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	78	16.5	28.5	11.5	3.5	40	30	23.8
ϕ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	95	19	37	10	2	40	30	27.5
ϕ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	114	19	37	11	3	40	30	27.5

Symbol	Installation dimensions										With switch					
Bore size (mm)	T	V	WF	CA	CD	CE	CF	CI	CJ	CV	CW	GC	GD	RD	HD	P
ϕ 32	6	13	25	172.5	10	10.5	9	13	140	28	14	1	1	5	5	25
ϕ 40	8	13	21	182	10	11	9	13	141	28	14	1	1	5	5	29
ϕ 50	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	34
ϕ 63	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	40
ϕ 80	13	20	32	269	22	23	15	26	206	60	30	8.5	2	12.5	6	-
ϕ 100	16	20	32	269	22	23	15	26	206	60	30	8	2.5	12	6.5	-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Clevis bracket type (CB) rod side position locking.



Note 1: The pin, split pin, and plain washer are included.

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

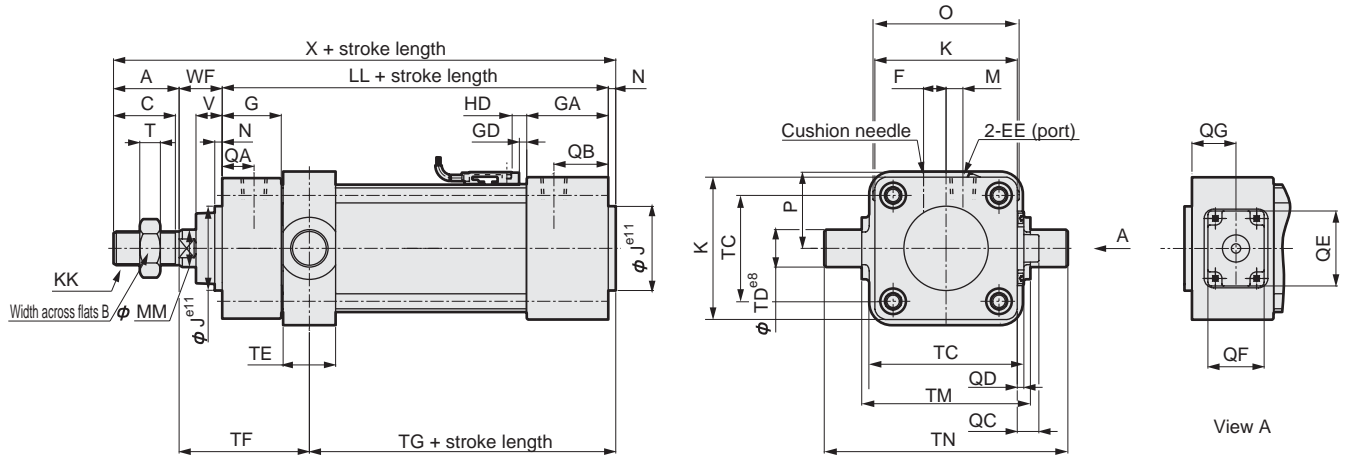
Symbol	Clevis bracket type (CB) rod side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	52	13	21	13	8	22	16	17.5
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	58	14	27	12	7	22	16	18.5
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	68	15.5	27.5	17	8.5	40	30	23.8
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	78	16.5	28.5	11.5	3.5	40	30	23.8
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	95	19	37	10	2	40	30	27.5
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	114	19	37	11	3	40	30	31.5

Symbol	Installation dimensions											With switch				
Bore size (mm)	T	V	WF	CA	CD	CE	CF	CI	CJ	CV	CW	GC	GD	RD	HD	P
φ 32	6	13	25	172.5	10	10.5	9	13	140	28	14	1	1	5	5	25
φ 40	8	13	21	182	10	11	9	13	141	28	14	1	1	5	5	29
φ 50	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	34
φ 63	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	40
φ 80	13	20	32	269	22	23	15	26	206	60	30	8.5	2	12.5	6	-
φ 100	16	20	32	269	22	23	15	26	206	60	30	8	2.5	12	6.5	-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Rod side trunnion type (TA) head side position locking



Note 1: Switches cannot be installed on the rod side.

Note 2: HD in the dimensions indicates the switch end positions, and GD indicates the switch rail end positions.

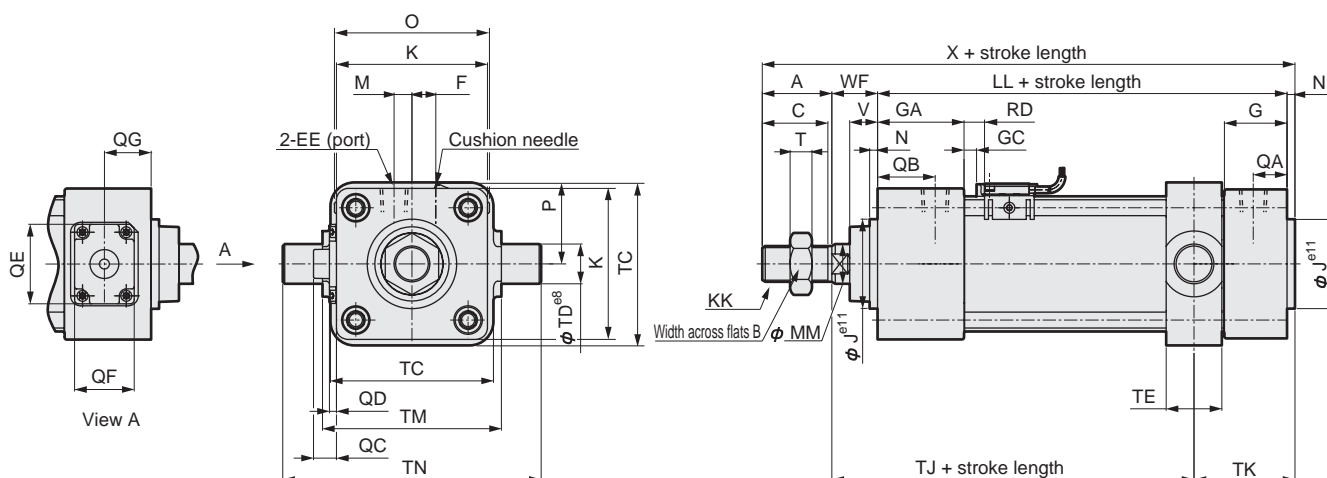
Symbol	Rod side trunnion type (TA) head side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	4	95	19	38	10	2	40
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40

Symbol	Installation dimensions												With switch			
Bore size (mm)	QF	QG	T	V	WF	X	TC	TD	TE	TF	TG	TM	TN	GD	HD	P
φ 32	16	17.5	6	13	25	143	47	12	17	61.5	59.5	50	74	1	5	25
φ 40	16	18.5	8	13	21	152	57	16	22	60	62	63	95	1	5	29
φ 50	30	23.8	11	14	23	168	67	16	22	66.5	66.5	75	107	1	5	34
φ 63	30	23.8	11	14	23	168	82	20	28	69.5	63.5	90	130	1	5	40
φ 80	30	27.5	13	20	32	208	100	20	34	88	80	110	150	2	6	-
φ 100	30	27.5	16	20	32	208	121	25	40	91	77	132	182	2.5	6.5	-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Head side trunnion type (TB) rod side position locking



Note 1: Switches cannot be installed on the head side.

Note 2: RD in the dimensions indicates the switch end positions, and GC indicates the switch rail end positions.

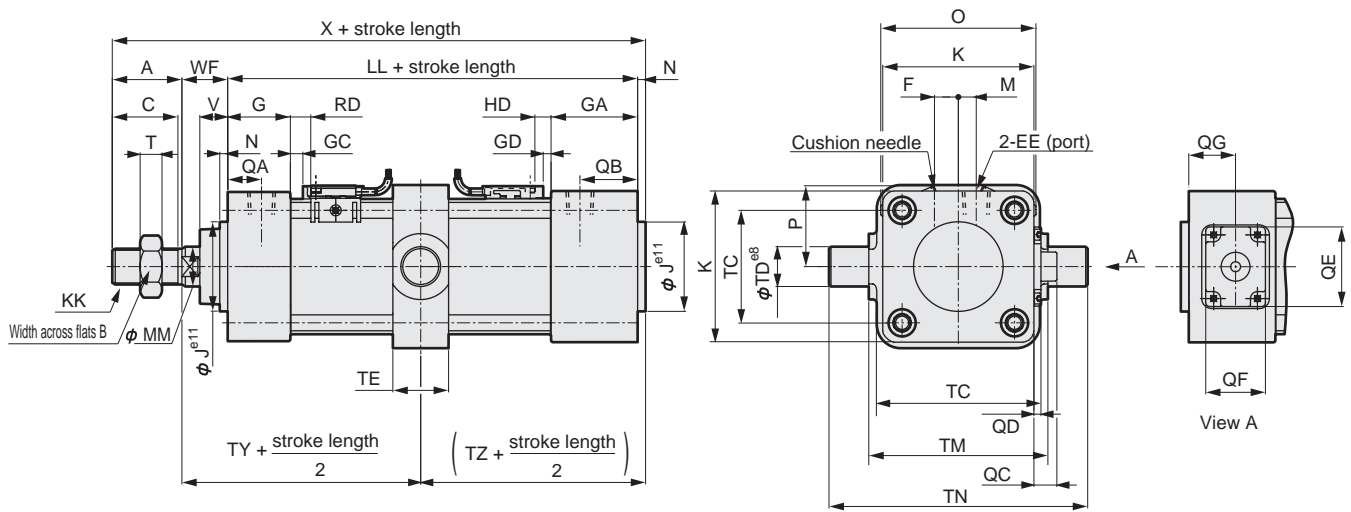
Symbol	Head side trunnion type (TB) rod side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	4	95	19	37	10	2	40
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40

Symbol	Installation dimensions												With switch			
Bore size (mm)	QF	QG	T	V	WF	X	TC	TD	TE	TJ	TK	TM	TN	GC	RD	P
φ 32	16	17.5	6	13	25	143	47	12	17	80.5	40.5	50	74	1	5	25
φ 40	16	18.5	8	13	21	152	57	16	22	79	43	63	95	1	5	29
φ 50	30	23.8	11	14	23	168	67	16	22	85.5	47.5	75	107	2.5	6.5	34
φ 63	30	23.8	11	14	23	168	82	20	28	82.5	50.5	90	130	2.5	6.5	40
φ 80	30	27.5	13	20	32	208	100	20	34	108	60	110	150	8.5	12.5	-
φ 100	30	27.5	16	20	32	208	121	25	40	105	63	132	182	8	12	-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

● Center trunnion type (TC) head side position locking



Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

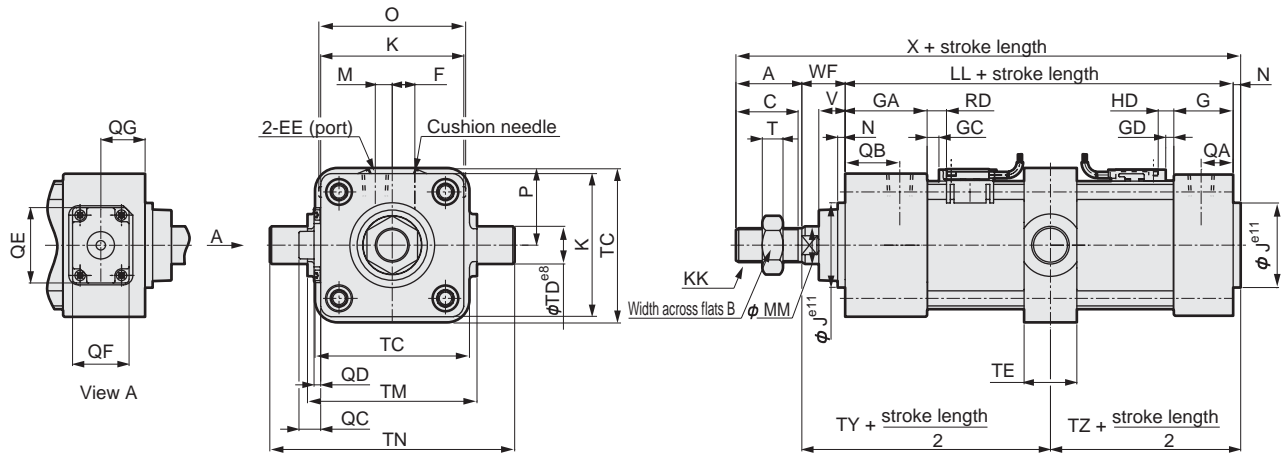
Symbol	Center trunnion type (TC) head side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	4	95	19	37	10	2	40
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40

Symbol	Installation dimensions												With switch					
Bore size (mm)	QF	QG	T	V	WF	X	TC	TD	TE	TM	TN	TY	TZ	GC	GD	RD	HD	P
φ 32	16	17.5	6	13	25	143	47	12	17	50	74	67	54	1	1	5	5	25
φ 40	16	18.5	8	13	21	152	57	16	22	63	95	63	59	1	1	5	5	29
φ 50	30	23.8	11	14	23	168	67	16	22	75	107	70	63	2.5	1	6.5	5	34
φ 63	30	23.8	11	14	23	168	82	20	28	90	130	70	63	2.5	1	6.5	5	40
φ 80	30	27.5	13	20	32	208	100	20	34	110	150	89	79	8.5	2	12.5	6	-
φ 100	30	27.5	16	20	32	208	121	25	40	132	182	89	79	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Dimensions

- Center trunnion type (TC) rod side position locking

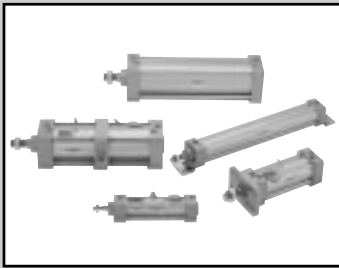


Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Center trunnion type (TC) rod side position locking basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
φ 32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 X 1.25	92	4	12	4	52	13	21	13	8	22
φ 40	30	22	27	Rc1/4	9	27	40	35	52	M14 X 1.5	97	4	16	4	58	14	27	12	7	22
φ 50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18 X 1.5	106	5	20	4	68	15.5	27.5	17	8.5	40
φ 63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18 X 1.5	106	9	20	4	78	16.5	28.5	11.5	3.5	40
φ 80	40	32	37	Rc3/8	14	38	56	45	95	M22 X 1.5	132	11.5	25	4	95	19	37	10	2	40
φ 100	40	41	37	Rc1/2	15	38	56	55	114	M26 X 1.5	132	17	30	4	114	19	37	11	3	40

Symbol	Installation dimensions												With switch					
Bore size (mm)	QF	QG	T	V	WF	X	TC	TD	TE	TM	TN	TY	TZ	GC	GD	RD	HD	P
φ 32	16	17.5	6	13	25	143	47	12	17	50	74	75	46	1	1	5	5	25
φ 40	16	18.5	8	13	21	152	57	16	22	63	95	76	46	1	1	5	5	29
φ 50	30	23.8	11	14	23	168	67	16	22	75	107	82	51	2.5	1	6.5	5	34
φ 63	30	23.8	11	14	23	168	82	20	28	90	130	82	51	2.5	1	6.5	5	40
φ 80	30	27.5	13	20	32	208	100	20	34	110	150	107	61	8.5	2	12.5	6	-
φ 100	30	31.5	16	20	32	208	121	25	40	132	182	107	61	8	2.5	12	6.5	-

Note 2: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.



Tie rod cylinder Double acting low-speed type

SCG-O Series

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

JIS symbol

Specifications

Descriptions		SCG-O					
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.05					
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (to be unfrozen)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_0$ (to 360) $^{+1.4}_0$ (361 to 1000) $^{+1.8}_0$ (1001 to 1500)					
Working piston speed	mm/s	10 to 200 (use it within the range of allowable energy absorption.)					
Cushion		None					
Lubrication		Not required					
Allowable energy absorption J	No cushion	0.018	0.032	0.057	0.057	0.112	0.153
If there is no cushion, large energy generated by an external load cannot be absorbed. An external shock absorber should also be used.							

Note 1: If the $\phi 32$ model is left for a long time, use 0.1 MPa or higher pressure.

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1
$\phi 40$			
$\phi 50$			
$\phi 63$			
$\phi 80$			
$\phi 100$			

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			25			30			35		
$\phi 40$												
$\phi 50$												
$\phi 63$												
$\phi 80$												
$\phi 100$												

● When installed on the same plate

(Unit: mm)

Switch quantity Bore size	1			2			3			4			
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		
$\phi 32$	10			40		50	75		85	110		120	
$\phi 40$													
$\phi 50$				25		40		50		45		55	
$\phi 63$													
$\phi 80$													
$\phi 100$													

Min. stroke length of type with switch

●Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		
	Proximity		Reed
T2, T3	T*Y*		
φ 32	37		
φ 40	42		
φ 50	42		
φ 63	48		
φ 80	54		
φ 100	60		

●Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity											
	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
T2, T3	T*Y*	T2, T3		T*Y*	T2, T3		T*Y*	T2, T3		T*Y*		
φ 32	63		63		93		93					
φ 40	68		68		98		98					
φ 50	68		68		98		98					
φ 63	74		74		98		98					
φ 80	86		86		101		101					
φ 100	92		92		107		107					

Switch specifications

●One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire					Proximity 2 wire	
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V		T5H/T5V			T2YD	
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay		Programmable controller, relay, IC circuit (without indicator light), serial connection			Programmable controller	
Power voltage	-		10 to 28V DC		-					-	
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-			Red/green LED (ON lighting)	

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10 mA when 60 °C)

●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		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment		Red/green LED (ON lighting)						
	Preventive maintenance output		-				Yellow LED (ON lighting)		
Output	Power voltage		10 to 28V DC		-		10 to 28V DC		
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less		
	Load current		50 mA or less		5 to 20 mA		50 mA or less		
Preventive maintenance output	Load voltage		30V DC or less						
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less		

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10 mA when 60 °C)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length = 0 mm						Stroke length: Additional weight per 50 mm	Switch weight Grommet	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)			I	Y
φ 32	0.50	0.61	0.72	0.65	0.68	0.67	0.12	0.018	0.07	0.13
φ 40	0.66	0.80	0.94	0.85	0.85	1.00	0.17	0.018	0.09	0.14
φ 50	1.13	1.29	1.61	1.54	1.54	1.61	0.23	0.018	0.20	0.33
φ 63	1.39	1.73	2.15	1.95	1.96	2.27	0.25	0.018	0.20	0.33
φ 80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.018	0.52	0.96
φ 100	3.77	4.63	6.09	5.49	5.52	6.34	0.51	0.018	0.48	0.92

How to order

Without switch

SCG-O - LB - 32 - N - 100 - J Y

With switch

SCG-O - LB - 32 - N - 100 - T2H - R - J Y

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Switch model No.

G Switch quantity

H Option

I Accessory
Note 3

Symbol	Descriptions					
A Mounting style						
00	Basic type					
LB	Axial foot type					
FA	Rod side flange type					
FB	Head side flange type					
CA	Eye bracket type					
CB	Clevis bracket type					
TA	Rod side trunnion type					
TB	Head side trunnion type					
TC	Center trunnion type					
B Bore size (mm)						
32	φ32					
40	φ40					
50	φ50					
63	φ63					
80	φ80					
100	φ100					
C Port thread type						
Blank	Rc thread					
N	NPT thread (custom order)					
G	G thread (custom order)					
D Cushion						
N	No cushion					
Note: Consult with CKD for the availability of the type with air cushion and type with rubber cushion.						
E Stroke length (mm)						
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500						
F Switch model No.						
	Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire	
	T0H*	T0V*	Reed	1 color indicator	2 wire	
	T5H*	T5V*		Without indicator light		
	T2H*	T2V*		Proximity	1 color indicator	2 wire
	T3H*	T3V*	Without light for preventive maintenance output		3 wire	
	T2YH*	T2YV*	2 color indicator		2 wire	
	T3YH*	T3YV*	Without light for preventive maintenance output		3 wire	
	T2YFH*	T2YFV*	2 color indicator		3 wire	
	T3YFH*	T3YFV*	Without light for preventive maintenance output		4 wire	
	T2YMH*	T2YMV*	2 color indicator		3 wire	
	T3YMH*	T3YMV*	Without light for preventive maintenance output (1 color)		4 wire	
	T2YD*	-	Strong magnetic field proof switch		2 wire	
	T2YDT*	-	Off-delay type		2 wire	
	T2JH*	T2JV*				
*Lead wire length						
Blank	1m (standard)					
3	3m (option)					
5	5m (option)					
G Switch quantity						
R	One on rod side					
H	One on head side					
D	Two					
T	Three					
H Option						
M	Piston rod material (stainless steel)					
P6	Copper and PTFE free					
I Accessory						
I	Rod eye					
Y	Rod clevis (connector pin and split pin attached)					
B1	Eye bracket					
B2	Clevis bracket (connector pin and split pin attached)					
B3	Eye bracket					
B4	Trunnion type No. 2 bracket					

⚠ Note on model No. selection

- Note 1: The installation bracket is shipped with the product.
(Note that the trunnion type is assembled before shipment.)
- Note 2: Custom stroke length is available per 1mm increment.
- Note 3: "I" and "Y" cannot be selected at the same time.

<Example of model number>

SCG-O-LB-40N-100-T2H-D-MI

Model: Tierrod cylinder, Double acting low-speed type

- A Mounting style : Axial foot type
- B Bore size : φ40mm
- C Port thread type : Rc thread
- D Cushion : No cushion
- E Stroke length : 100mm
- F Switch model No. : Proximity T2H switch, lead wire 1m
- G Switch quantity : Two
- H Option : Piston rod material (stainless steel)
- I Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

Switch model No. (F) on previous page Bore size (B) on previous page

● Switch body

SW - T0H

Switch model No. (F) on previous page

● Switch mounting bracket

SCG - T - 40

Bracket Bore size (B) on previous page

Note: If an ecological T type switch is used, consult with CKD.

How to order mounting bracket

Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

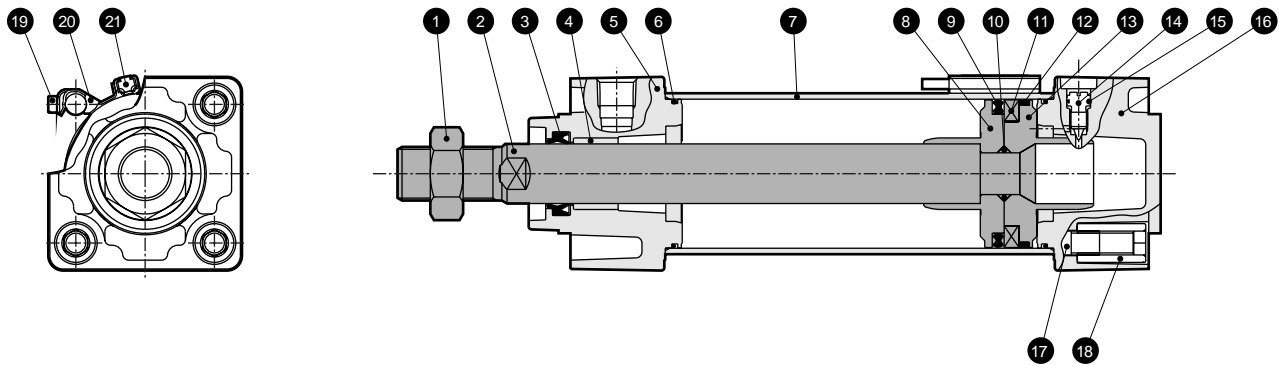
Note: Foot (LB) is provided as 2 pieces per set.

Dimensions

The dimensions are the same as the double-acting, single rod model. Refer to Pages 8 to 16.

Internal structure and parts list

●SCG-O



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	12	Wear ring	Acetar resin	
2	Piston rod	Steel	Industrial chrome plated	13	Piston H	φ 32, φ 40: aluminum alloy φ50 to φ100: aluminum alloy die casting	
3	Rod packing seal	Nitrile rubber		14	Cushion needle	Copper alloy	
4	Bush	Oil impregnated bearing alloy		15	Needle gasket	Nitrile rubber	
5	Rod cover	Aluminum alloy die casting	Paint	16	Head cover	Aluminum alloy die casting	Paint
6	Cylinder gasket	Nitrile rubber		17	Tierod	Steel	Zinc chromate plating
7	Cylinder tube	Aluminum alloy	Hard alumite	18	Round nut	Steel	Zinc chromate plating
8	Piston R	φ 32, φ 40: aluminum alloy φ 50 to φ 100: aluminum alloy die casting		19	Hexagon socket head cap screw	Stainless steel	
9	Piston packing seal	Nitrile rubber		20	Switch mounting bracket	Stainless steel	
10	Piston gasket	Nitrile rubber		21	Switch		
11	Magnet	Plastic					

Repair parts list

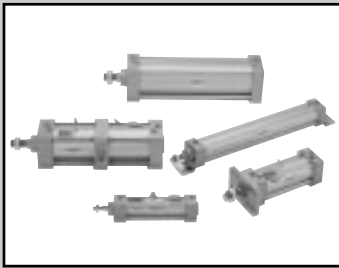
Bore size (mm)	Kit number	Repair parts number
φ 32	SCG-O-32NK	3 6 7 9 12 15
φ 40	SCG-O-40NK	
φ 50	SCG-O-50NK	
φ 63	SCG-O-63NK	
φ 80	SCG-O-80NK	
φ 100	SCG-O-100NK	

Note: Specify the kit number when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

MEMO



Tie rod cylinder Double acting low-friction type (Constant friction with pressurized)

SCG-U Series

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

Specifications

Descriptions		SCG-U					
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	0.7					
Min. working pressure	MPa	0.03					
Withstanding pressure	MPa	1.0					
Ambient temperature	°C	5 to 60					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_0$ (to 360) $^{+1.4}_0$ (to 1000) $^{+1.8}_0$ (to 1500)					
Working piston speed	mm/s	10 to 1000 (use it within the range of allowable energy absorption)					
Cushion		None					
Lubrication		Not required					
Internal leakage	ℓ /min	5				8	
Allowable energy absorption	J	0.018	0.032	0.057	0.057	0.112	0.153
		If there is no cushion, large energy generated by an external load cannot be absorbed. An external shock absorber should also be used.					

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1
$\phi 40$			
$\phi 50$			
$\phi 63$			
$\phi 80$			
$\phi 100$			

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			25			30			35		
$\phi 40$												
$\phi 50$												
$\phi 63$												
$\phi 80$												
$\phi 100$												

● When installed on the same surface

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			40		50	75		85	110		120
$\phi 40$												
$\phi 50$												
$\phi 63$				25			40		50	45		55
$\phi 80$												
$\phi 100$												

Min. stroke length of type with switch

●Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		
	Proximity		Reed
T2, T3	T*Y*		
φ 32	37		
φ 40	42		
φ 50	42		
φ 63	48		
φ 80	54		
φ 100	60		

●Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity											
	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
T2, T3	T*Y*	T2, T3		T*Y*	T2, T3		T*Y*	T2, T3		T*Y*		
φ 32	63		63		63		93		93			
φ 40	68		68		68		98		98			
φ 50	68		68		68		98		98			
φ 63	74		74		74		98		98			
φ 80	86		86		86		101		101			
φ 100	92		92		92		107		107			

Switch specifications

●One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD
Applications	Programmable controller		Programmable controller		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light), serial connection			Programmable controller
Power voltage	-		10 to 28V DC		-						-
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

●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		Programmable controller, relay		Programmable controller		Programmable controller relay	
Light	Installation position adjustment		Red/green LED (ON lighting)					
	Preventive maintenance output		-			Yellow LED (ON lighting)		
Output	Power voltage		10 to 28V DC		-		10 to 28V DC	
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Load voltage		30V DC or less					
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length = 0 mm						Stroke length: Additional weight per 50 mm	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC)		I	Y
φ 32	0.50	0.61	0.58	0.65	0.68	0.67	0.12	0.07	0.13
φ 40	0.66	0.80	0.77	0.85	0.85	1.00	0.17	0.09	0.14
φ 50	1.13	1.29	1.31	1.54	1.54	1.61	0.23	0.20	0.33
φ 63	1.39	1.73	1.68	1.95	1.96	2.27	0.25	0.20	0.33
φ 80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.52	0.96
φ 100	3.77	4.63	6.09	5.49	5.52	6.34	0.51	0.48	0.92

How to order

Without switch

SCG-U - LB - 32 - N - 100 - M I

With switch

SCG-U - LB - 32 - N - 100 - T2H - R - M I

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Switch model No.

G Switch quantity

H Option

I Accessory
Note 3

Symbol	Descriptions					
A Mounting style						
00	Basic type					
LB	Axial foot type					
FA	Rod side flange type					
FB	Head side flange type					
CA	Eye bracket type					
CB	Clevis bracket type					
TA	Rod side trunnion type					
TB	Head side trunnion type					
TC	Center trunnion type					
B Bore size (mm)						
32	φ 32					
40	φ 40					
50	φ 50					
63	φ 63					
80	φ 80					
100	φ 100					
C Port thread type						
Blank	Rc thread					
N	NPT thread (custom order)					
G	G thread (custom order)					
D Cushion						
N	No cushion					
E Stroke length (mm)						
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500						
F Switch model No.						
	Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire	
	T0H*	T0V*	Reed	1 color indicator	2 wire	
	T5H*	T5V*		Without indicator light		
	T2H*	T2V*		Proximity	1 color indicator	2 wire
	T3H*	T3V*	2 color indicator		3 wire	
	T2YH*	T2YV*	(Without light for preventive maintenance output)		2 color indicator	2 wire
	T3YH*	T3YV*			3 color indicator	3 wire
	T2YFH*	T2YFV*	2 color indicator		3 wire	
	T3YFH*	T3YFV*	(Without light for preventive maintenance output)		4 wire	
	T2YMH*	T2YMV*	2 color indicator		3 wire	
	T3YMH*	T3YMV*	(With light for preventive maintenance output (1 color))		4 wire	
	T2YD*	-	Strong magnetic field proof switch		2 wire	
	T2YDT*	-	Off-delay type		2 wire	
	T2JH*	T2JV*				
*Lead wire length						
Blank	1m (standard)					
3	3m (option)					
5	5m (option)					
G Switch quantity						
R	One on rod side					
H	One on head side					
D	Two					
T	Three					
H Option						
M	Piston rod material (stainless steel)					
I Accessory						
I	Rod eye					
Y	Rod clevis (connector pin and split pin attached)					
B1	Eye bracket					
B2	Clevis bracket (connector pin and split pin attached)					
B3	Eye bracket					
B4	Trunnion type No. 2 bracket					

⚠ Note on model No. selection

- Note 1: The mounting bracket is shipped with the product.
(Note that the trunnion type is assembled before shipment.)
Note 2: Custom stroke length is available per 1mm increment.
Note 3: "I" and "Y" can not be selected at the same time.

<Example of model number>

SCG-U-LB-40N-100-T2H-D-MI

Model: Tie rod cylinder, double acting low-friction type (Constant friction at pressurization)

- A Mounting style : Axial foot type
- B Bore size : φ 40mm
- C Port thread type : Rc thread
- D Cushion : No cushion
- E Stroke length : 100mm
- F Switch model No. : Proximity T2H switch, lead wire 1m
- G Switch quantity : Two
- H Option : Piston rod material (stainless steel)
- I Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

Switch model No. (F) on previous page Bore size (B) on previous page

● Switch body

SW - T0H

Switch model No. (F) on previous page

● Switch mounting bracket

SCG - T - 40

Bracket Bore size (B) on previous page

Note: If a T type switch of ecological is used, please consult with CKD.

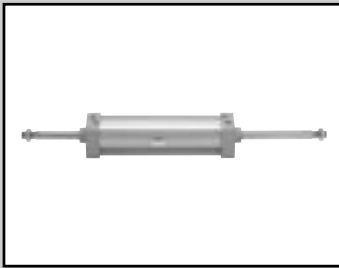
How to order mounting bracket

Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) Note 1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note 1: The foot (LB) is provided as a two-piece set.

Dimensions

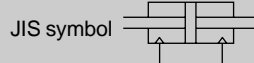
The dimensions are the same as the double-acting, single rod model. Refer to Pages 8 to 16.



Tie rod cylinder Double acting double-rod type

SCG-D Series

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



Specifications

Descriptions		SCG-D					
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.1					
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (to be unfrozen)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm	Rubber cushioned	$^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)					
	Air cushioned	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (361 to 1000), $^{+1.8}_0$ (1001 to 1500)					
Working piston speed	mm/s	50 to 1000 (use it within the range of allowable energy absorption.)					
Cushion		Rubber cushion/air cushion can be selected.					
Valid air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32.)					
Allowable energy absorption J	Rubber cushioned	0.5	0.9	1.6	1.6	3.3	5.8
	Air cushioned	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	1
$\phi 40$			
$\phi 50$			
$\phi 63$			
$\phi 80$			
$\phi 100$			

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			25			30			35		
$\phi 40$												
$\phi 50$												
$\phi 63$												
$\phi 80$												
$\phi 100$												

● When installed on the same plane

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			40	50	75	85	110	120			
$\phi 40$												
$\phi 50$												
$\phi 63$				25			40	50	45	55		
$\phi 80$												
$\phi 100$												

Min. stroke length of type with switch

●Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		
	Proximity		Reed
T2, T3	T*Y*		
φ 32	37		
φ 40	42		
φ 50	42		
φ 63	48		
φ 80	54		
φ 100	60		

●Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity											
	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
T2, T3	T*Y*	T2, T3		T*Y*	T2, T3		T*Y*	T2, T3		T*Y*		
φ 32	63		63		63		93		93			
φ 40	68		68		68		98		98			
φ 50	68		68		68		98		98			
φ 63	74		74		74		98		98			
φ 80	86		86		86		101		101			
φ 100	92		92		92		107		107			

Switch specifications

●One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light), serial connection			Programmable controller
Power voltage	-		10 to 28V DC		-						-
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C)

●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		Programmable controller, relay		Programmable controller		Programmable controller, relay	
Light	Installation position adjustment		Red/green LED (ON lighting)					
	Preventive maintenance output		-			Yellow LED (ON lighting)		
Output	Power voltage		10 to 28V DC		-		10 to 28V DC	
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Load voltage		30V DC or less					
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length =0 mm				Stroke length: Additional weight per 50 mm	Switch weight			Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Trunnion type (TA, TB, TC)		Grommet	I	Y		
	φ 32	0.57	0.68	0.79	0.74				0.16	0.018
φ 40	0.80	0.94	1.08	1.14	0.25	0.018	0.09	0.14		
φ 50	1.38	1.54	1.86	1.86	0.35	0.018	0.20	0.33		
φ 63	1.64	1.98	2.40	2.52	0.37	0.018	0.20	0.33		
φ 80	3.11	3.54	4.68	4.60	0.59	0.018	0.52	0.96		
φ 100	4.41	5.27	6.73	6.98	0.79	0.018	0.48	0.92		

How to order

Without switch

SCG-D - LB - 32 - B - 100 - J Y

With switch

SCG-D - LB - 32 - B - 100 - T2H - R - J Y

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Switch model No.

G Switch quantity

H Option
Note 3

I Accessory
Note 4

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head side flange type
TA	Rod side trunnion type
TB	Head side trunnion type
TC	Center trunnion type

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

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

D Cushion	
B	Air cushion on both sides (basic type)
D	Rubber cushion on both sides

Note: The rubber cushion is longer than the air cushion.

E Stroke length (mm)	
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	

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

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

G Switch quantity	
R	One on rod side
H	One on head side
D	Two
T	Three

H Option			
		Max. ambient temperature	Instantaneous ambient temperature
J	Bellows	60 °C	100 °C
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

I Accessory	
I	Rod eye
Y	Rod clevis (connector pin and split pin attached)
B4	Trunnion type No. 2 bracket

⚠ Note on model No. selection

- Note 1: The installation bracket is shipped with the product.
(Note that with the trunnion, the flange on the rod with bellows, and the flange on the head with bellows is assembled before shipment.)
- Note 2: Custom stroke length is available per 1mm increment.
- Note 3: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.

<Example of model number>

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

Model: Tierrod cylinder, Double acting double-rod type

- A Mounting style : Axial foot type
- B Bore size : φ 40mm
- C Port thread type : Rc thread
- D Cushion : Both sides air-cushioned
- E Stroke length : 100mm
- F Switch model No. : Proximity T2H switch, lead wire 1m
- G Switch quantity : Two
- H Option : With bellows
- I Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - **T0H** - **40**

Switch model No. (F on Previous page) Bore size (B on previous page)

● Switch body

SW - **T0H**

Switch model No. (F on Previous page)

● Switch mounting bracket

SCG - **T** - **40**

Bracket Bore size (B on previous page)

Note: If a T type switch of ecological is used, please consult with CKD.

How to order mounting bracket

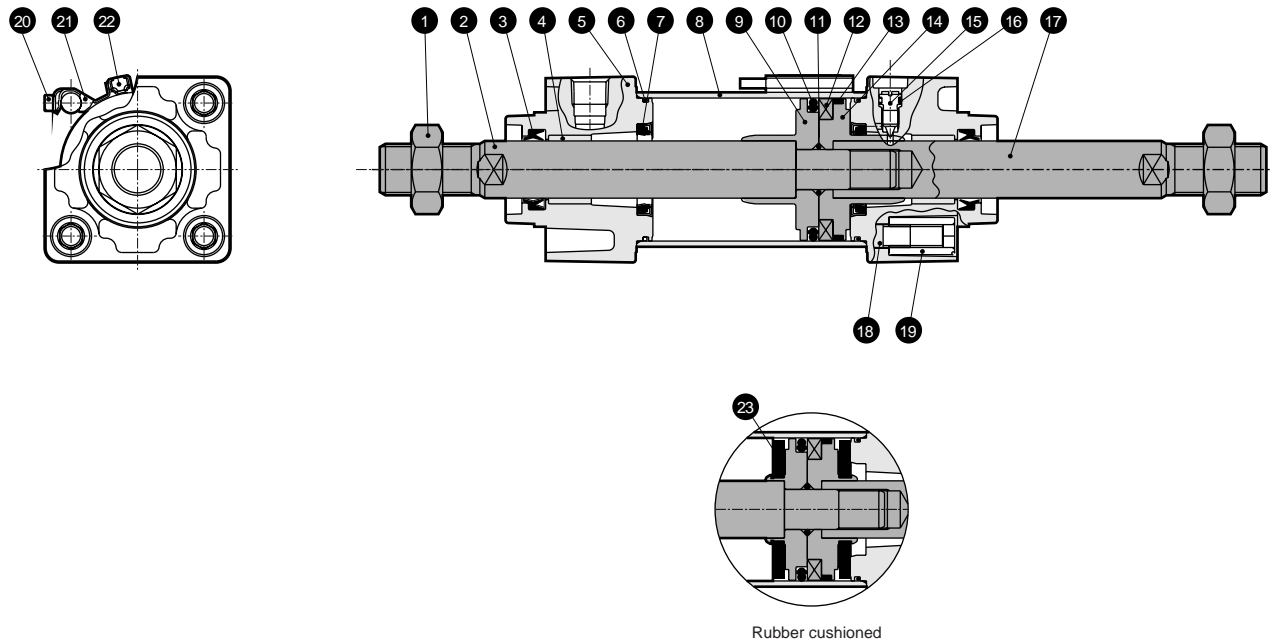
Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) Note 1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100

Note 1: Designate "SCG-FA-(bore size)-J" for the flange with bellows (FA, FB).

Note 2: Foot (LB) is provided as 2 pieces per set.

Internal structure and parts list

● SCG-D



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	13	Wear ring	Acetar resin	
2	Piston rod A	Steel	Industrial chrome plated	14	Piston H	φ32,φ40: aluminum alloy φ50 to φ100: aluminum alloy die casting	
3	Rod packing seal	Nitrile rubber		15	Cushion needle	Copper alloy	
4	Bush	Oil impregnated bearing alloy		16	Needle gasket	Nitrile rubber	
5	Rod cover	Aluminum alloy die casting	Paint	17	Piston rod B	Steel	Industrial chrome plated
6	Cylinder gasket	Nitrile rubber		18	Tierod	Steel	Zinc chromate plating
7	Cushion packing seal	Nitrile rubber, steel	Only with air cushion	19	Round nut	Steel	Zinc chromate plating
8	Cylinder tube	Aluminum alloy	Hard alumite	20	Hexagon socket head cap screw	Steel	Zinc chromate plating
9	Piston R	φ32,φ40: aluminum alloy φ50 to φ100: aluminum alloy die casting		21	Switch mounting bracket	Stainless steel	
10	Piston packing seal	Nitrile rubber		22	Switch		
11	Piston gasket	Nitrile rubber		23	Cushion rubber	Urethane rubber	Only with rubber cushion
12	Magnet	Plastic					

Repair parts list

● Air cushioned

Bore size (mm)	Kit number	Repair parts number
φ 32	SCG-D-32BK	
φ 40	SCG-D-40BK	
φ 50	SCG-D-50BK	3 6 7
φ 63	SCG-D-63BK	10 13 16
φ 80	SCG-D-80BK	
φ 100	SCG-D-100BK	

Note: Specify the kit number when placing an order.

● Rubber cushioned

Bore size (mm)	Kit number	Repair parts number
φ 32	SCG-D-32DK	
φ 40	SCG-D-40DK	
φ 50	SCG-D-50DK	3 6 10
φ 63	SCG-D-63DK	13 16 23
φ 80	SCG-D-80DK	
φ 100	SCG-D-100DK	

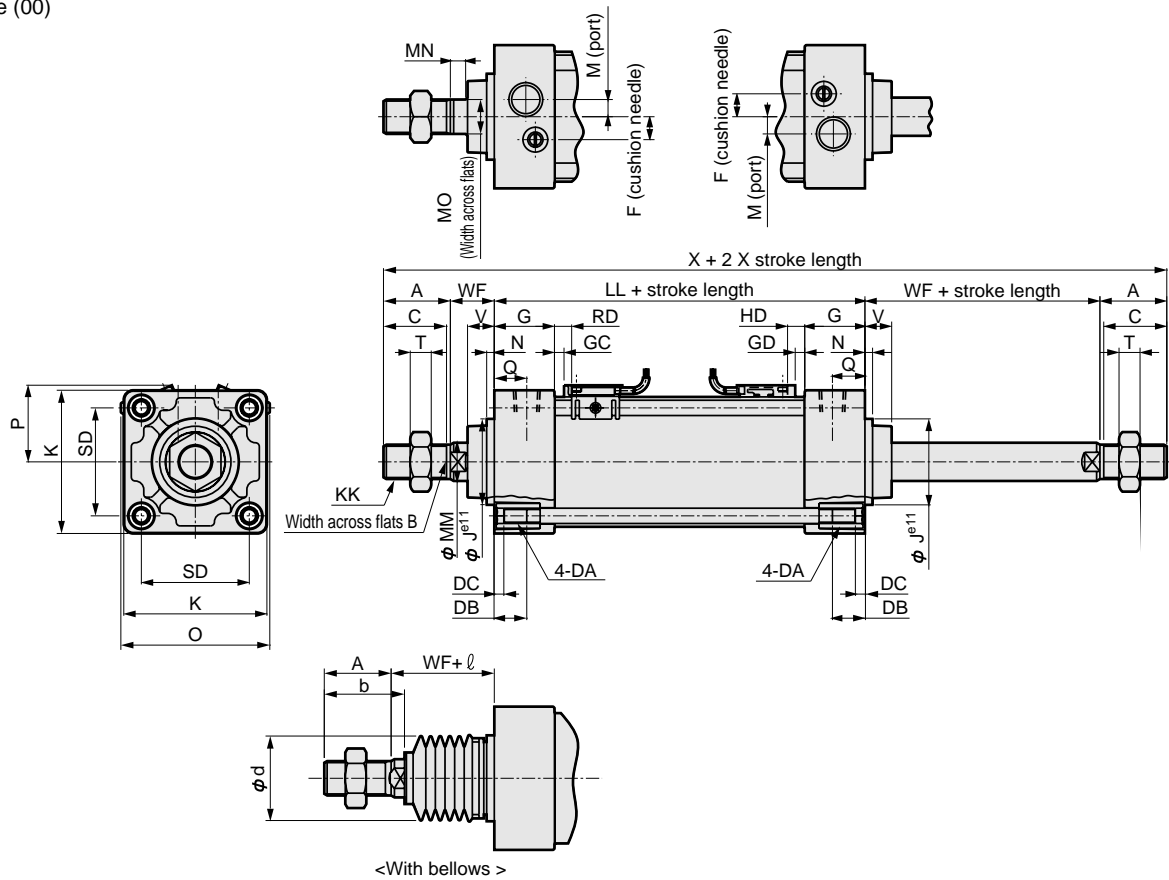
Note: Specify the kit number when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
TA/TB/TC	Cast iron	Paint

Dimensions

● Basic type (00)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

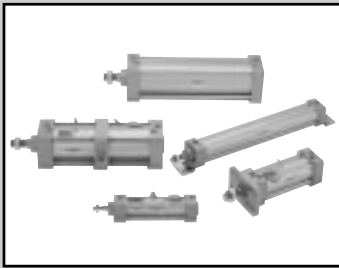
Symbol	Basic type (00) basic dimensions																			
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	Note 1 LL	M	MM	MN	MO	N	O	Q
$\phi 32$	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	5.5	10	4	51	13
$\phi 40$	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	6	14	4	57	14
$\phi 50$	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	8	17	4	68	15.5
$\phi 63$	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	8	17	4	78	16.5
$\phi 80$	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	11	22	4	95	19
$\phi 100$	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	13	27	4	114	19

Symbol	With bellows																		
Bore size (mm)	SD	T	V	WF	Note 1 X	A	b	d	WF	ℓ									
										50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
$\phi 32$	32.5	6	13	25	178 (184)	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
$\phi 40$	38	8	13	21	186 (192)	30	35	40	21	30	43	55	68	93	118	143	-	-	-
$\phi 50$	46.5	11	14	23	210 (218)	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 63$	56.5	11	14	23	210 (218)	35	42	47	23	31	44	56	69	94	119	144	169	-	-
$\phi 80$	72	13	20	32	258 (268)	40	50	53	32	29	42	54	67	92	117	142	167	192	217
$\phi 100$	89	16	20	32	258 (268)	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217

Symbol	With switch								
Bore size (mm)	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P
$\phi 32$		1 (4)		1 (4)		5 (8)		5 (8)	25
$\phi 40$		1 (4)		1 (4)		5 (8)		5 (8)	29
$\phi 50$		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	34
$\phi 63$		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	40
$\phi 80$		8.5 (13.5)		2 (7)		12.5 (17.5)		6 (11)	-
$\phi 100$		8 (13)		2.5 (7.5)		12 (17)		6.5 (11.5)	-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.

Installation dimensions of each mounting style are the same as the SCG (double acting, single rod). Refer to Pages 9 to 16.



Tie rod cylinder Double acting non-rotating type

SCG-M Series

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

Specifications

Descriptions		SCG-M			
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$
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 (to be unfrozen)			
Port size		Rc1/8	Rc1/4		Rc3/8
Stroke tolerance	mm	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (to 1500)			
Working piston speed	mm/s	50 to 1000 (use it within the range of allowable energy absorption))			
Cushion		Rubber cushion/air cushion can be selected.			
Valid air cushion length	mm	8.6	8.6	13.4	13.4
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32)			
Revolvable angle tolerance	deg.	± 1			
Allowable energy absorption	Rubber cushioned	0.5	0.9	1.6	1.6
	Air cushioned	2.5	3.7	8.0	14.4

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100,	600	1
$\phi 40$	150, 200, 250,		
$\phi 50$	300, 350, 400,		
$\phi 63$	450, 500		

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Bore size	Switch quantity	1			2			3			4		
		Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$		10			25			30			35		
$\phi 40$		10			25			30			35		
$\phi 50$		10			25			30			35		
$\phi 63$		10			25			30			35		

● When installed on the same plane

(Unit: mm)

Bore size	Switch quantity	1			2		3		4		
		Proximity		Reed	Proximity		Reed	Proximity		Reed	
		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3
$\phi 32$		10			40	50	75	85	110	120	
$\phi 40$		10			25		40	50	45	55	
$\phi 50$		10			25		40	50	45	55	
$\phi 63$		10			25		40	50	45	55	

Min. stroke length of type with switch

●Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		
	Proximity		Reed
T2, T3	T*Y*		
φ32	37		
φ40	42		
φ50	42		
φ63	48		
φ80	54		
φ100	60		

●Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity											
	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
T2, T3	T*Y*	T2, T3		T*Y*	T2, T3		T*Y*	T2, T3		T*Y*		
φ32	63			63			93			93		
φ40	68			68			98			98		
φ50	68			68			98			98		
φ63	74			74			98			98		
φ80	86			86			101			101		
φ100	92			92			107			107		

Switch specifications

●One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire						Proximity 2 wire
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V			T2YD
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light), serial connection			Programmable controller
Power voltage	-		10 to 28V DC		-						-
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC ±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-			Red/green LED (ON lighting)

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

●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		Programmable controller, relay		Programmable controller		Programmable controller, relay	
Light	Installation position adjustment		Red/green LED (ON lighting)					
	Preventive maintenance output		-			Yellow LED (ON lighting)		
Output	Power voltage		10 to 28V DC		-		10 to 28V DC	
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less	
	Load current		50 mA or less		5 to 20 mA		50 mA or less	
Preventive maintenance output	Load voltage		30V DC or less					
	Load current		50 mA or less		5 to 20 mA or less		50 mA or less	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C.)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length = 0 mm						Stroke length: Additional weight per 50 mm	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC)		I	Y
φ32	0.50	0.61	0.58	0.65	0.68	0.67	0.12	0.07	0.13
φ40	0.66	0.80	0.77	0.85	0.85	1.00	0.17	0.09	0.14
φ50	1.13	1.29	1.31	1.54	1.54	1.61	0.23	0.20	0.33
φ63	1.39	1.73	1.68	1.95	1.96	2.27	0.25	0.20	0.33

How to order

Without switch

SCG-M - LB - 40 - B - 100 - J I

With switch

SCG-M - LB - 40 - B - 100 - T2H - R - J I

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Switch model No.

G Switch quantity

H Option

I Accessory
Note 3

Symbol	Descriptions				
A Mounting style					
00	Basic type				
LB	Axial foot type				
FA	Rod side flange type				
FB	Head side flange type				
CA	Eye bracket type				
CB	Clevis bracket type				
TA	Rod side trunnion type				
TB	Head side trunnion type				
TC	Center trunnion type				
B Bore size (mm)					
32	φ32				
40	φ40				
50	φ50				
63	φ63				
C Port thread type					
Blank	Rc thread				
N	NPT thread (custom order)				
G	G thread (custom order)				
D Cushion					
B	Air cushion on both sides (basic type)				
D	Rubber cushion on both sides				
Note: The rubber cushion is longer than the air cushion.					
E Stroke length (mm)					
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500					
F Switch model No.					
	Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
	T0H*	T0V*	Reed	1 color indicator	2 wire
	T5H*	T5V*		Without indicator light	
	T2H*	T2V*		Proximity	1 color indicator
	T3H*	T3V*	2 color indicator		3 wire
	T2YH*	T2YV*	2 color indicator (Without light for preventive maintenance output)		2 wire
	T3YH*	T3YV*			3 wire
	T2YFH*	T2YFV*	2 color indicator (With 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*	-			2 wire
	T2JH*	T2JV*			
*Lead wire length					
Blank	1m (standard)				
3	3m (option)				
5	5m (option)				
G Switch quantity					
R	One on rod side				
H	One on head side				
D	Two				
T	Three				
H Option					
			Max. ambient temperature	Instantaneous ambient temperature	
J	Bellows		60 °C	100 °C	
I Accessory					
I	Rod eye				
Y	Rod clevis (pin and split pins attached)				
B1	Eye bracket				
B2	Clevis bracket (pin and split pins attached)				
B3	Eye bracket				
B4	Trunnion type No. 2 bracket				

⚠ Note on model No. selection

Note 1: The installation bracket is shipped with the product.
Note that with the trunnion, the flange on the rod with bellows is assembled before shipment.)

Note 2: Custom stroke length is available per 1mm increment.

Note 3: "I" and "Y" cannot be selected at the same time.

<Example of model number>

SCG-M-LB-40B-100-T2H-D-JI

Model: Tie rod cylinder, double acting non-rotating type

- A Mounting style : Axial foot type
- B Bore size : φ 40mm
- C Port thread type : Rc thread
- D Cushion : Air cushioned
- E Stroke length : 100mm
- F Switch model No. : Proximity T2H switch, lead wire 1m
- G Switch quantity : Two
- H Option : With bellows
- I Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

Switch model No. (F) on previous page Bore size (B) on previous page

● Switch body

SW - T0H

Switch model No. (F) on previous page

● Switch mounting bracket

SCG - T - 40

Bracket Bore size (B) on previous page

Note: If a T type switch of ecological is used, please consult with CKD.

How to order mounting bracket

Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) Note 1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note 1: Designate "SCG-FA-(bore size)-J" for the flange with bellows (FA).

Note 2: The foot (LB) is provided as a two-piece set.

Internal structure drawing

The internal structure is the same as the standard. Refer to Page 7.

Note that the materials of the following parts are different:

No.	Parts name	Material	Remarks
2	Piston rod	φ 32: Stainless steel copper	Industrial chrome plated
		φ 40 to 63: steel	

Repair parts list

● Air cushioned

Bore size (mm)	Kit number	Repair parts number
φ32	SCG-M-32BK	
φ40	SCG-M-40BK	3 6 7
φ50	SCG-M-50BK	10 13 16
φ63	SCG-M-63BK	

Note: Specify the kit number when placing an order.

● Rubber cushioned

Bore size (mm)	Kit number	Repair parts number
φ32	SCG-M-32DK	
φ40	SCG-M-40DK	3 6 10
φ50	SCG-M-50DK	13 16 23
φ63	SCG-M-63DK	

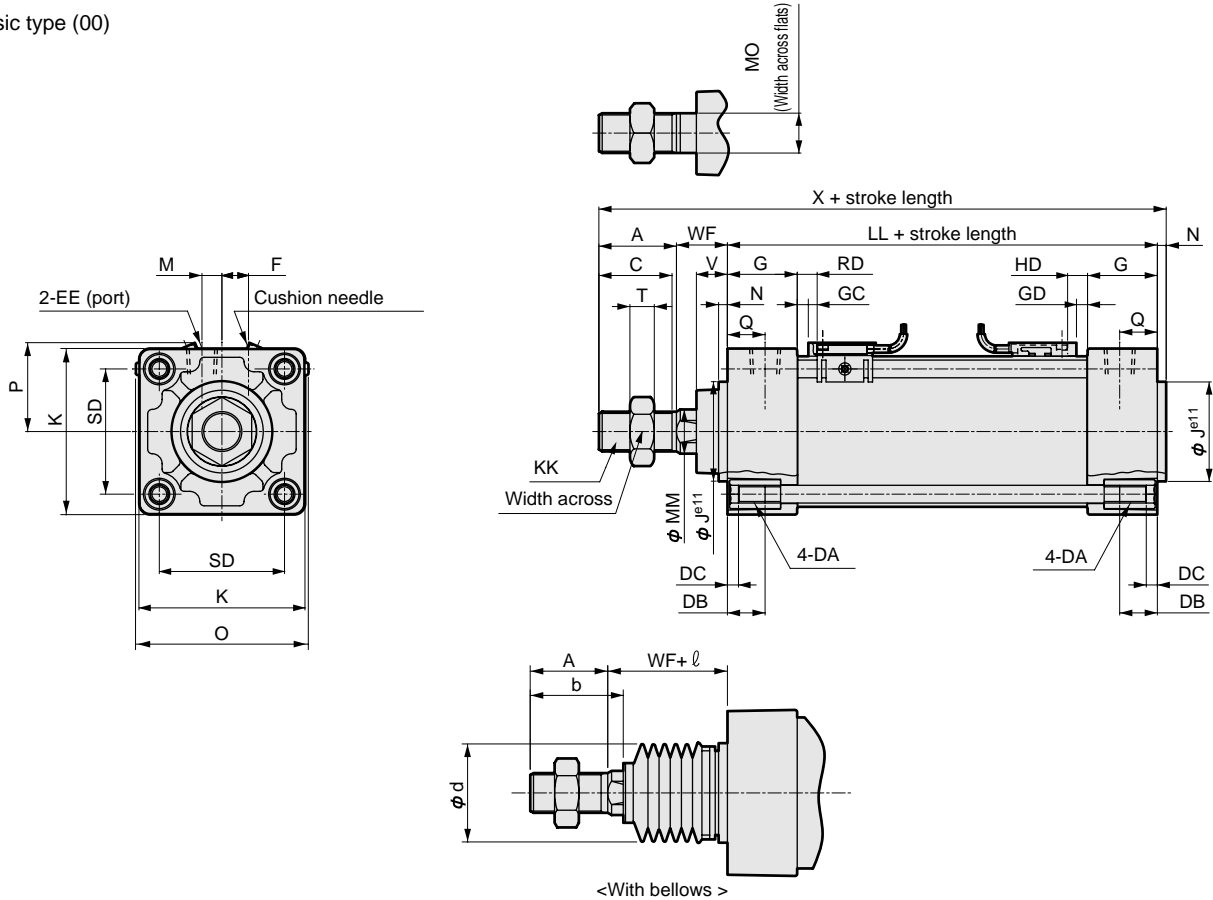
Note: Specify the kit number when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Dimensions

● Basic type (00)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

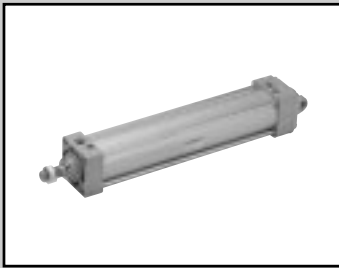
($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Basic type (00) basic dimensions																		
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	Note 1 LL	M	MM	MO	N	O	Q
$\phi 32$	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	10	4	52	13
$\phi 40$	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	14	4	58	14
$\phi 50$	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	18	4	68	15.5
$\phi 63$	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	18	4	78	16.5
Symbol	With bellows																		
Bore size (mm)	SD	T	V	WF	Note 1 X	A	b	d	WF	l									
										50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600		
$\phi 32$	32.5	6	13	25	135 (141)	22	31.5	30	25	26	39	51	64	89	114	139	-		
$\phi 40$	38	8	13	21	139 (145)	30	35	40	21	30	43	55	68	93	118	143	-		
$\phi 50$	46.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169		
$\phi 63$	56.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169		
Symbol	With switch																		
Bore size (mm)	GC	Note 1	GD	Note 1	RD	Note 1	HD	Note 1	P										
$\phi 32$		1 (4)		1 (4)		5 (8)		5 (8)	25										
$\phi 40$		1 (4)		1 (4)		5 (8)		5 (8)	29										
$\phi 50$		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	34										
$\phi 63$		2.5 (6.5)		1 (5)		6.5 (10.5)		5 (9)	40										

Note 3: Refer to page 79 for the HD, RD and end dimensions for 2-color indicator or preventive maintenance output switch.


Installation dimensions of each mounting style are the same as the SCG (double acting, single rod). Refer to Pages 9 to 16.



Tie rod cylinder Double acting rubber scraper type

SCG-G Series

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

JIS symbol 

Specifications

Descriptions		SCG-G					
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.1					
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (to be unfrozen)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm	Rubber cushioned	$^{+1.4}_0$ (to 1000)	$^{+1.8}_0$ (to 1500)	$^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)			
	Air cushioned	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)					
Working piston speed	mm/s	50 to 1000 (use it within the range of allowable energy absorption)					
Cushion		Rubber cushion/air cushion can be selected.					
Valid air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32.)					
Allowable energy absorption J	Rubber cushioned	0.5	0.9	1.6	1.6	3.3	5.8
	Air cushioned	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	700	1
$\phi 40$			800	
$\phi 50$			1200	
$\phi 63$			1200	
$\phi 80$			1400	
$\phi 100$			1500	

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

Note 2: If the maximum stroke is exceeded, product specifications many not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 32$	10			25			30			35		
$\phi 40$												
$\phi 50$												
$\phi 63$												
$\phi 80$												
$\phi 100$												

● When installed on the same plane

(Unit: mm)

Switch quantity Bore size	1			2			3			4					
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed			
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*				
$\phi 32$	10			40	50	75	85	110	120						
$\phi 40$															
$\phi 50$															
$\phi 63$				25			40			50			45		
$\phi 80$															
$\phi 100$															

Min. stroke length of type with switch

● Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		
	Proximity		Reed
T2, T3	T*Y*		
φ 32	37		
φ 40	42		
φ 50	42		
φ 63	48		
φ 80	54		
φ 100	60		

● Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity											
	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
φ 32	63		63		93		93					
φ 40	68		68		98		98					
φ 50	68		68		98		98					
φ 63	74		74		98		98					
φ 80	86		86		101		101					
φ 100	92		92		107		107					

Switch specifications

● One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire					Proximity 2 wire	
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V		T2YD	
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light), serial connection		Programmable controller	
Power voltage	-		10 to 28V DC		-					-	
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC ±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-		Red/green LED (ON lighting)	

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10 mA when 60 °C)

● 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		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment		Red/green LED (ON lighting)						
	Preventive maintenance output		Yellow LED (ON lighting)						
Output	Power voltage		10 to 28V DC		-		10 to 28V DC		
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less		
	Load current		50 mA or less		5 to 20 mA		50 mA or less		
Preventive maintenance output	Load voltage		30V DC or less						
	Load current		20 mA or less		50 mA or less		5 to 20 mA (Note 1)		50 mA or less

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10 mA when 60 °C)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length = 0 mm						Stroke length: Additional weight per 50 mm	Switch weight Grommet	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)			I	Y
φ 32	0.51	0.62	0.73	0.66	0.69	0.68	0.12	0.018	0.07	0.13
φ 40	0.68	0.82	0.96	0.86	0.86	1.02	0.17	0.018	0.09	0.14
φ 50	1.16	1.32	1.64	1.56	1.57	1.64	0.23	0.018	0.20	0.33
φ 63	1.42	1.76	2.18	1.97	1.99	2.29	0.25	0.018	0.20	0.33
φ 80	2.69	3.12	4.26	3.96	3.96	4.18	0.40	0.018	0.52	0.96
φ 100	3.80	4.66	6.12	5.52	5.55	6.37	0.51	0.018	0.48	0.92

How to order

Without switch

SCG-G - LB - 40 - B - 100 - M - I

With switch

SCG-G - LB - 40 - B - 100 - T2H - R - M - I

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Switch model No.

G Switch quantity

H Option

I Accessory
Note 3

Symbol	Descriptions			
A Mounting style				
00	Basic type			
LB	Axial foot type			
FA	Rod side flange type			
FB	Head side flange type			
CA	Eye bracket type			
CB	Clevis bracket type			
TA	Rod side trunnion type			
TB	Head side trunnion type			
TC	Center trunnion type			
B Bore size (mm)				
32	φ32			
40	φ40			
50	φ50			
63	φ63			
80	φ80			
100	φ100			
C Port thread type				
Blank	Rc thread			
N	NPT thread (custom order)			
G	G thread (custom order)			
D Cushion				
B	Air cushion on both sides (basic type)			
D	Rubber cushion on both sides			
Note: The rubber cushion is longer than the air cushion.				
E Stroke length (mm)				
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500				
F Switch model No.				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator	2 wire
T5H*	T5V*		Without indicator light	
T2H*	T2V*		Proximity	1 color indicator
T3H*	T3V*	3 wire		
T2YH*	T2YV*	2 color indicator		2 wire
T3YH*	T3YV*	3 wire		
T2YFH*	T2YFV*	2 color indicator		3 wire
T3YFH*	T3YFV*	(Without light for preventive maintenance output)		4 wire
T2YMH*	T2YMV*	2 color indicator		3 wire
T3YMH*	T3YMV*	(With light for preventive maintenance output (1 color))		4 wire
T2YD*	-	Strong magnetic field proof switch		2 wire
T2YDT*	-	Off-delay type		2 wire
T2JH*	T2JV*			
*Lead wire length				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
G Switch quantity				
R	One on rod side			
H	One on head side			
D	Two			
T	Three			
H Option				
M	Piston rod material (stainless steel)			
P6	Copper and PTFE free			
I Accessory				
I	Rod eye			
Y	Rod clevis (connector pin and split pin attached)			
B1	Eye bracket			
B2	Clevis bracket (connector pin and split pin attached)			
B3	Eye bracket			
B4	Trunnion type No. 2 bracket			

⚠ Note on model No. selection

- Note 1: The installation bracket is shipped with the product.
(Note that the trunnion type is assembled before shipment.)
Note 2: Custom stroke length is available per 1mm increment.
Note 3: "I" and "Y" cannot be selected at the same time.

<Example of model number>

SCG-G-LB-40B-100-T2H-D-MI

Model: Tierrod cylinder, double acting rubber scraper type

- A** Mounting style : Axial foot type
- B** Bore size : φ40mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides air-cushioned
- E** Stroke length : 100mm
- F** Switch model No. : Proximity T2H switch, lead wire 1m
- G** Switch quantity : Two
- H** Option : Piston rod material (stainless steel)
- I** Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

Switch model No. (F on previous page) Bore size (B on previous page)

● Switch body

SW - T0H

Switch model No. (F on previous page)

● Switch mounting bracket

SCG - T - 40

Bracket Bore size (B on previous page)

Note: If an ecological T type switch is used, consult with CKD.

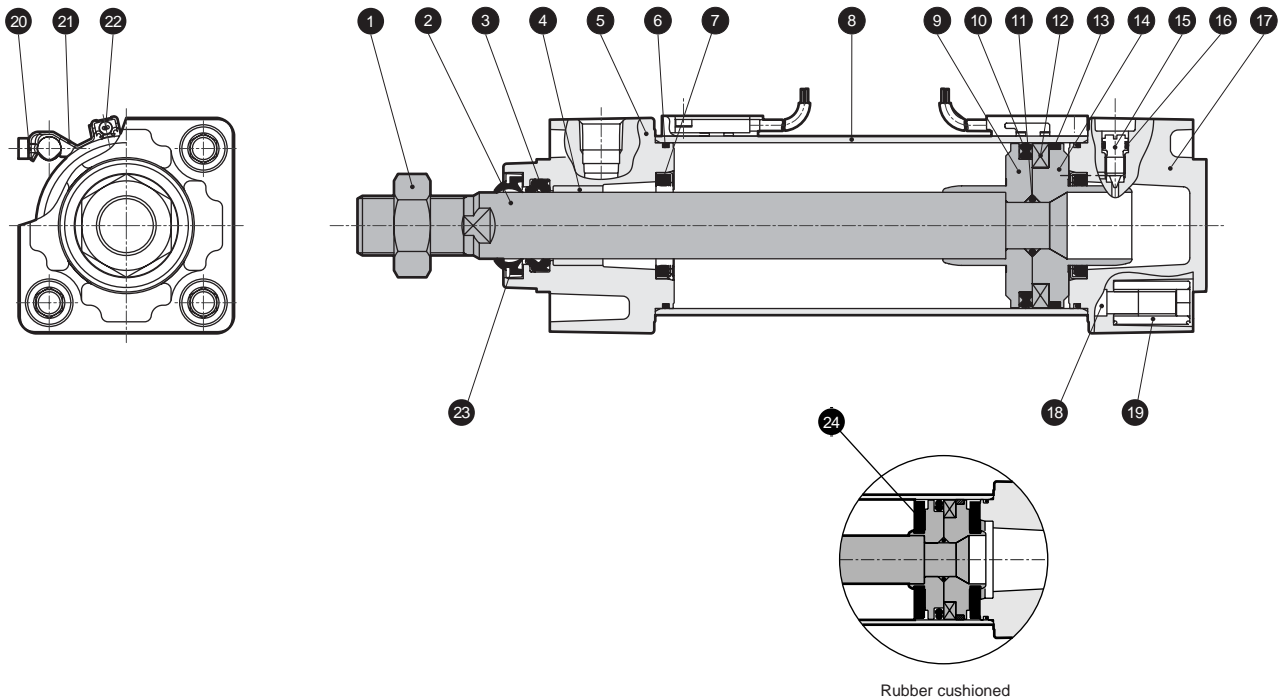
How to order mounting bracket

Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note 1: Foot (LB) is provided as 2 pieces per set.

Internal structure and parts list

● SCG-G



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickeling	13	Wear ring	Acetar resin	
2	Piston rod	Steel	Industrial chrome plated	14	Piston H	$\phi 32, \phi 40$: aluminum alloy $\phi 50$ to $\phi 100$: aluminum alloy die casting	
3	Rod packing seal	Nitrile rubber		15	Cushion needle	Brass	
4	Bush	Oil impregnated bearing alloy		16	Needle gasket	Nitrile rubber	
5	Rod cover	Aluminum alloy die casting	Paint	17	Head cover	Aluminum alloy die casting	Paint
6	Cylinder gasket	Nitrile rubber		18	Tierod	Steel	Zinc chromate plating
7	Cushion packing seal	Nitrile rubber, steel	Only with air cushion	19	Round nut	Steel	Zinc chromate plating
8	Cylinder tube	Aluminum alloy	Hard alumite	20	Hexagon socket head cap screw	Steel	Zinc chromate plating
9	Piston R	$\phi 32, \phi 40$: aluminum alloy $\phi 50$ to $\phi 100$: aluminum alloy die casting		21	Bracket	Stainless steel spring steel	
10	Piston packing seal	Nitrile rubber		22	Switch		
11	Piston gasket	Nitrile rubber		23	Dust wiper	Nitrile rubber, steel	
12	Magnet	Plastic		24	Cushion rubber	Urethane rubber	Only with rubber cushion

Repair parts list

● Air cushioned

Bore size (mm)	Kit number	Repair parts number
$\phi 32$	SCG-G-32BK	
$\phi 40$	SCG-G-40BK	
$\phi 50$	SCG-G-50BK	3 6 7 10
$\phi 63$	SCG-G-63BK	13 16 23
$\phi 80$	SCG-G-80BK	
$\phi 100$	SCG-G-100BK	

Note: Specify the kit number when placing an order.

● Rubber cushioned

Bore size (mm)	Kit number	Repair parts number
$\phi 32$	SCG-G-32DK	
$\phi 40$	SCG-G-40DK	
$\phi 50$	SCG-G-50DK	3 6 10 13
$\phi 63$	SCG-G-63DK	16 23 24
$\phi 80$	SCG-G-80DK	
$\phi 100$	SCG-G-100DK	

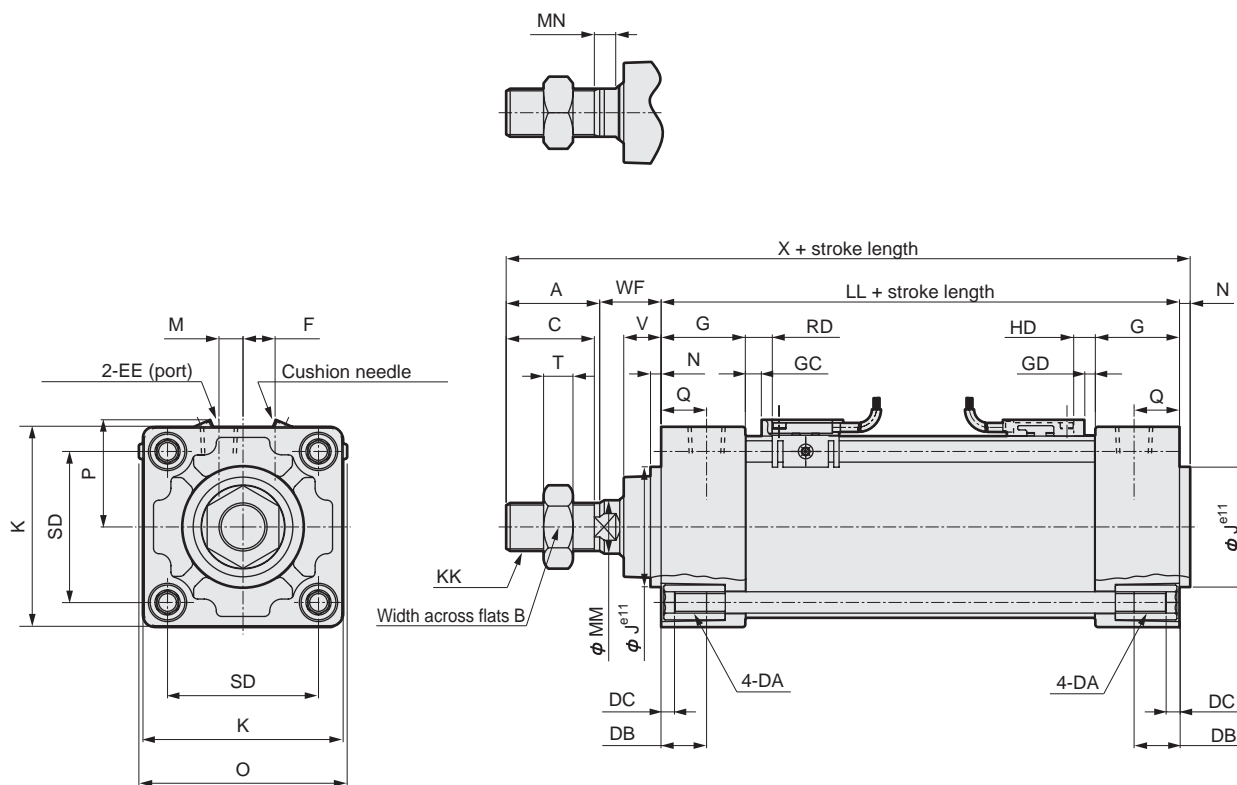
Note: Specify the kit number when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Dimensions

● Basic type (00)



Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

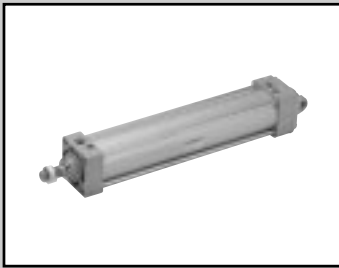
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol	Basic type (00) basic dimensions																				
	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	Note 1 LL	M	MM	MN	MO	N	O	Q	SD
$\phi 32$	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10 X 1.25	84 (90)	4	12	5.5	10	4	52	13	32.5
$\phi 40$	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14 X 1.5	84 (90)	4	16	5	14	4	58	14	38
$\phi 50$	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94 (102)	5	20	8	17	4	68	15.5	46.5
$\phi 63$	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18 X 1.5	94 (102)	9	20	8	17	4	78	16.5	56.5
$\phi 80$	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22 X 1.5	114 (124)	11.5	25	8	22	4	95	19	72
$\phi 100$	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26 X 1.5	114 (124)	17	30	8	27	4	114	19	89

Symbol	With switch								
	T	V	WF	Note 1 X	GC Note 1	GD Note 1	RD	HD	P
$\phi 32$	6	13	25	135 (141)	1 (4)	1 (4)	5 (8)	5 (8)	25
$\phi 40$	8	13	21	139 (145)	1 (4)	1 (4)	5 (8)	5 (8)	29
$\phi 50$	11	14	23	156 (164)	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
$\phi 63$	11	14	23	156 (164)	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
$\phi 80$	13	20	32	190 (200)	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
$\phi 100$	16	20	32	190 (200)	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Note 3: Refer to Page 79 for HD, RD dimensions and dimensions of projecting section of 2 color indicator type, preventive maintenance output switch.


Installation dimensions of each mounting style are the same as the SCG (double acting, single rod). Refer to Pages 9 to 16.



Tie rod cylinder Double acting coolant proof type

SCG-G₂ G₃ Series

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

JIS symbol 

Specifications

Descriptions		SCG-G ₂ G ₃				
Bore size	mm	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double-acting, coolant proof				
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 (to be unfrozen)				
Port size		Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (361 to 1000), $^{+1.8}_0$ (1001 to 1500)				
Working piston speed	mm/s	50 to 1000 (use it within the range of allowable energy absorption.)				
Cushion		Air cushion				
Valid air cushion length	mm	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32.)				
Allowable energy absorption J		3.7	8.0	14.4	25.4	45.6

Note 1: Contact CKD for the availability of the $\phi 32$ bore size.

Note 2: Contact CKD for the availability of the type with rubber cushion.

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 40$	25, 50, 75, 100,	600	800	1
$\phi 50$			1200	
$\phi 63$	150, 200, 250,	700	1200	
$\phi 80$	300, 350, 400,		1400	
$\phi 100$	450, 500	800	1500	

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met, depending on operating conditions. consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 40$	10			25			30			35		
$\phi 50$												
$\phi 63$												
$\phi 80$												
$\phi 100$												

● When installed on the same plane

(Unit: mm)

Switch quantity Bore size	1			2			3			4		
	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
$\phi 40$	10			40	50	75	85	110	120			
$\phi 50$												
$\phi 63$				25			40	50	45	55		
$\phi 80$												
$\phi 100$												

Min. stroke length of type with switch

● Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity	1	
	Proximity	Reed	
		T2, T3	T*Y*
φ40		42	
φ50		42	
φ63		48	
φ80		54	
φ100		60	

● Trunnion type (TC) (Unit: mm)

Bore size	Switch quantity	1			2			3			4		
	Proximity	Reed		Proximity	Reed		Proximity	Reed		Proximity	Reed		
		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
φ40		68			68			98			98		
φ50		68			68			98			98		
φ63		74			74			98			98		
φ80		86			86			101			101		
φ100		92			92			107			107		

Switch specifications

Descriptions	Proximity 2 wire	Proximity 3 wire
	T2YLH/T2YLV	T3YLH/T3YLV
Applications	Programmable controller	Programmable controller, relay
Power voltage	-	10 to 28V DC
Load voltage/current	10 to 30V DC, 5 to 20mA Note 1	30V DC or less 50mA or less
Light	Red/green LED (ON lighting)	
Maximum collision	980 m / S ²	

Note 1: The maximum load current of 20 mA applies at 25°C. If the switch's ambient operating temperature exceeds 25°C, the load current becomes less than 20 mA. (5 to 10 mA when 60°C)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length =0 mm						Stroke length: Additional weight per 50 mm	Switch weight	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)		Grommet	I	Y
φ40	0.66	0.80	0.94	0.85	0.85	1.00	0.17	0.018	0.09	0.14
φ50	1.13	1.29	1.61	1.54	1.54	1.61	0.23	0.018	0.20	0.33
φ63	1.39	1.73	2.15	1.95	1.96	2.27	0.25	0.018	0.20	0.33
φ80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.018	0.52	0.96
φ100	3.77	4.63	6.09	5.49	5.52	6.34	0.51	0.018	0.48	0.92

How to order

Without switch

SCG - G2 - LB - 32 - B - 100 - Y

With switch

SCG - G2 - LB - 32 - B - 100 - T2H - R - Y

A Protective structure level

B Mounting style
Note 1

C Bore size

D Port thread type

E Cushion

F Stroke length
Note 2

G Switch model No.

H Switch quantity

I Accessory
Note 3

A Protective structure level	
G2	Coolant proof scraper + packing seal NBR
G3	Coolant proof scraper + packing seal FKM

Symbol	Descriptions
B Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head side flange type
CA	Eye bracket type
CB	Clevis bracket type
TA	Rod side trunnion type
TB	Head side trunnion type
TC	Center trunnion type

C Bore size (mm)	
40	φ40
50	φ50
63	φ63
80	φ80
100	φ100

Note: Contact CKD for the availability of the φ32 bore size.

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

E Cushion	
B	Air cushion on both sides (basic type)

Note: Contact CKD for the availability of the type with rubber cushion.

F Stroke length (mm)	
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	

G Switch model No.				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T2YLH*	T2YLV*	Proximity	2 color indicator	2 wire
T3YLH*	T3YLV*			3 wire

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

H Switch quantity	
R	One on rod side
H	One on head side
D	Two
T	Three

I Accessory	
I	Rod eye
Y	Rod clevis (connector pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (connector pin and split pin attached)
B3	Eye bracket
B4	Trunnion type No. 2 bracket

⚠ Note on model No. selection

- Note 1: The installation bracket is shipped with the product.
(Note that the trunnion type is assembled before shipment.)
- Note 2: Custom stroke length is available per 1mm increment.
- Note 3: "I" and "Y" cannot be selected at the same time.

<Example of model number>

SCG-G2-LB-40B-100-T2H-D-I

Model: Tierrod cylinder, double acting coolant proof type

- A** Protective structure level : Coolant proof scraper + packing seal NBR
- B** Mounting style : Axial foot type
- C** Bore size : φ40mm
- D** Port thread type : Rc thread
- E** Cushion : Both sides air-cushioned
- F** Stroke length : 100mm
- G** Switch model No. : Proximity T2H switch, lead wire 1m
- H** Switch quantity : Two
- I** Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - **T2YLH** - **40**

Switch model No. (© on previous page) Bore size (© on previous page)

● Switch body

SW - **T2YLH**

Switch model No. (© on previous page)

● Switch mounting bracket

SCG - **T** - **40**

Bracket Bore size (© on previous page)

Note: If an ecological T type switch is used, consult with CKD.

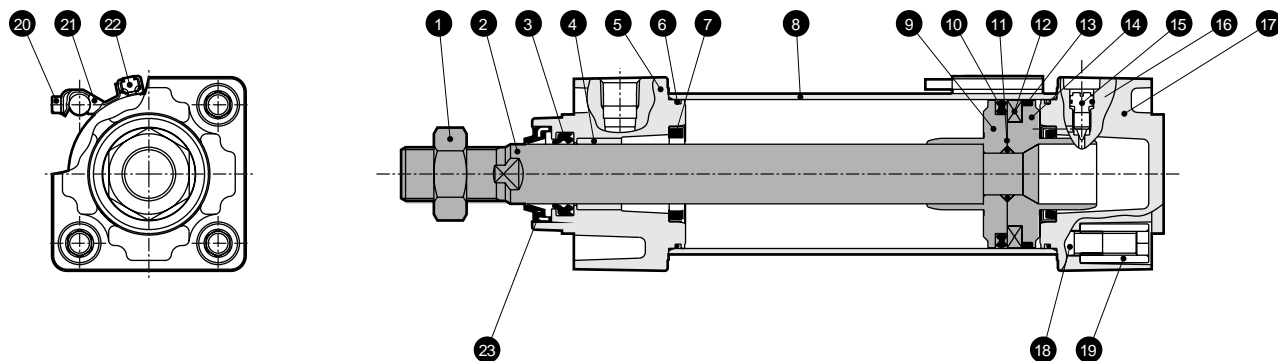
How to order mounting bracket

Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note: Foot (LB) is provided as 2 pieces per set.

Internal structure and parts list

● SCG-G²_{G3}



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Stainless steel		13	Wear ring	Acetar resin	
2	Piston rod	Stainless steel	Industrial chrome plated	14	Piston H	φ40: aluminum alloy φ50 to φ100: aluminum alloy die casting	Chromate plating
3	Rod packing seal	G2	Nitrile rubber	15	Cushion needle	Copper alloy	
		G3	Fluoro rubber				
4	Bush	Oil impregnated bearing alloy		16	Needle gasket	G2	Nitrile rubber
5	Rod cover	Aluminum alloy die casting	Paint			G3	Fluoro rubber
6	Cylinder gasket	G2	Nitrile rubber	17	Head cover	Aluminum alloy die casting	Paint
		G3	Fluoro rubber	18	Tierod	Steel	Zinc chromate plating
7	Cushion packing seal	G2	Nitrile rubber, steel	19	Round nut	Steel	Zinc chromate plating
		G3	Fluoro rubber, steel	20	Hexagon socket head cap screw	Steel	Zinc chromate plating
8	Cylinder tube	Aluminum alloy	Hard alumite	21	Switch mounting bracket	Stainless steel	
9	Piston R	φ40: aluminum alloy φ50 to φ100: aluminum alloy die casting	Chromate plating	22	Switch		
				10	Piston packing seal	G2	Nitrile rubber
G3	Fluoro rubber	G3	Fluoro rubber, steel				
11	Piston gasket	G2	Nitrile rubber				
		G3	Fluoro rubber				
12	Magnet	Plastic					

Repair parts list

Bore size (mm)	Kit number	Repair parts number
φ40	G2	SCG-G2-40BK
	G3	SCG-G3-40BK
φ50	G2	SCG-G2-50BK
	G3	SCG-G3-50BK
φ63	G2	SCG-G2-63BK
	G3	SCG-G3-63BK
φ80	G2	SCG-G2-80BK
	G3	SCG-G3-80BK
φ100	G2	SCG-G2-100BK
	G3	SCG-G3-100BK

3 6 7 10
13 16 23

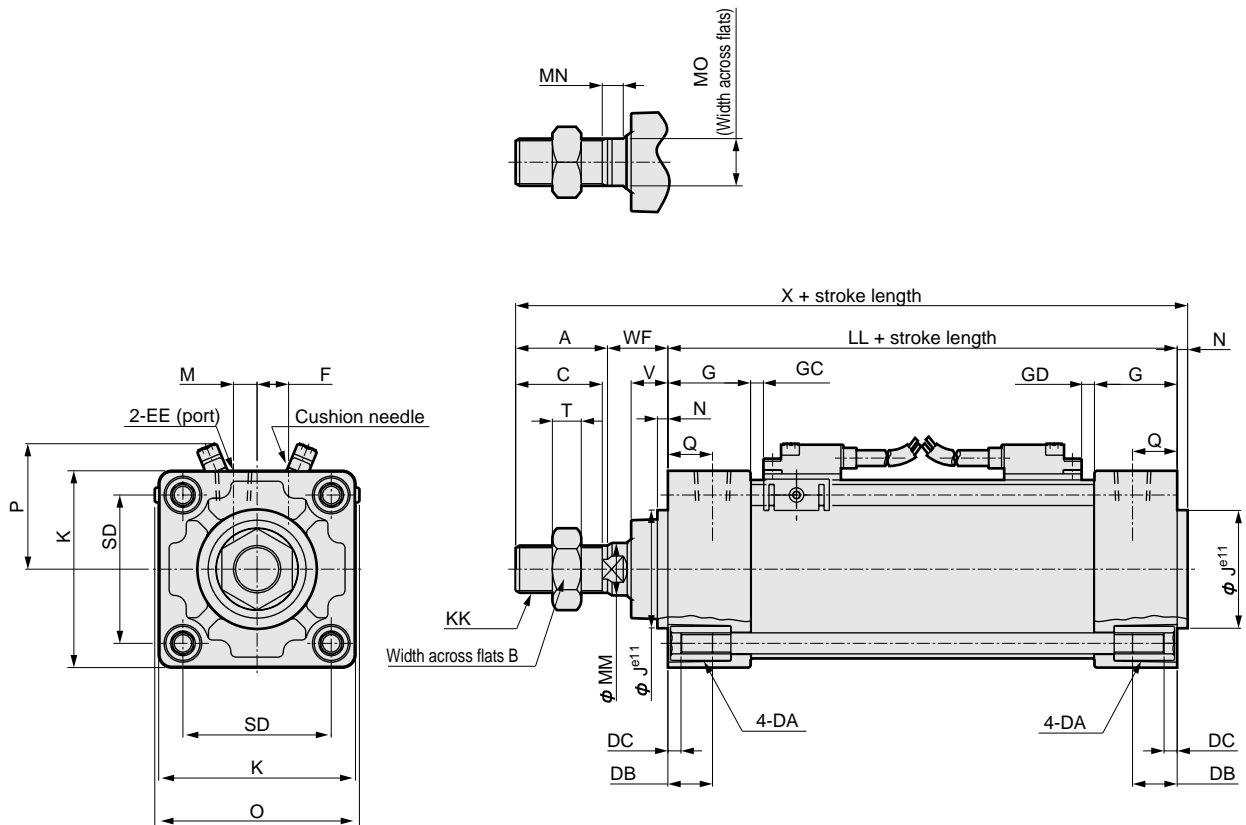
Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Note: Specify the kit number when placing an order.

Dimensions

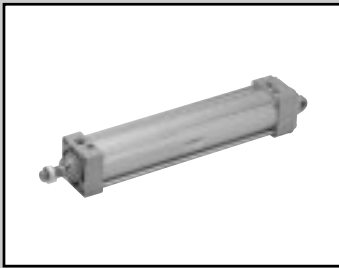
- Basic type (00)



Symbol	Basic type (00) basic dimensions																			
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	LL	M	MM	MN	MO	N	O	Q
φ 40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14 X 1.5	84	4	16	5	14	4	57	14
φ 50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18 X 1.5	94	5	20	8	17	4	68	15.5
φ 63	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18 X 1.5	94	9	20	8	17	4	78	16.5
φ 80	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22 X 1.5	114	11.5	25	8	22	4	95	19
φ 100	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26 X 1.5	114	17	30	8	27	4	114	19

Symbol	With switch								
Bore size (mm)	SD	T	V	WF	X	GC	GD	P	
								T*Y*H	T*Y*V
φ 40	38	8	13	21	139	4	4	35	38
φ 50	46.5	11	14	23	156	5.5	4	39	42
φ 63	56.5	11	14	23	156	5.5	4	45	48
φ 80	72	13	20	32	190	11.5	5	52	55
φ 100	89	16	20	32	190	11	5.5	60	63


Installation dimensions of each mounting style are the same as the SCG (double acting, single rod). Refer to Pages 9 to 16.



Tie rod cylinder Double acting spatter adherence prevention type

SCG-G4 Series

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

JIS symbol 

Specifications

Descriptions		SCG-G4					
Bore size	mm	$\phi 32$	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.1					
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (to be unfrozen)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm	Rubber cushioned	$+1.4_0$ (to 1000)	$+1.8_0$ (to 1500)	$+1.4_0$ (to 1000), $+1.8_0$ (1001 to 1500)			
	Air cushioned	$+1.0_0$ (to 360), $+1.4_0$ (to 1000), $+1.8_0$ (1001 to 1500)					
Working piston speed	mm/s	50 to 1000 (use it within the range of allowable energy absorption.)					
Cushion		Air cushion or rubber cushion can be selected.					
Effective air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (When lubricating, use turbine oil Class 1 ISO VG32.)					
Allowable energy absorption J	Rubber cushioned	0.5	0.9	1.6	1.6	3.3	5.8
	Air cushioned	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	700	1
$\phi 40$			800	
$\phi 50$			1200	
$\phi 63$			1200	
$\phi 80$			700	
$\phi 100$			800	

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

Note 2: If the maximum stroke is exceeded, product specifications may not be met depending on operating conditions. Consult with CKD in this case.

Min. stroke length of type with switch

● When installed on different planes

(Unit: mm)

Switch quantity \ Bore size (mm)	1	2	3	4
$\phi 32$	10	25	30	35
$\phi 40$				
$\phi 50$				
$\phi 63$				
$\phi 80$				
$\phi 100$				

● When installed on the same plane

(Unit: mm)

Switch quantity \ Bore size (mm)	1	2	3	4
$\phi 32$	10	40	75	110
$\phi 40$				
$\phi 50$				
$\phi 63$		25	40	45
$\phi 80$				
$\phi 100$				

Min. stroke length of type with switch

● Trunnion type (TA, TB) (Unit: mm)

Bore size	Switch quantity		
	1		Reed
	Proximity		
	T2, T3	T*Y*	
φ 32	37		
φ 40	42		
φ 50	42		
φ 63	48		
φ 80	54		
φ 100	60		

● Trunnion type (TC) (Unit: mm)

Bore size (mm)	Switch quantity			
	1	2	3	4
φ 32	63	63	93	93
φ 40	68	68	98	98
φ 50	68	68	98	98
φ 63	74	74	98	98
φ 80	86	86	101	101
φ 100	92	92	107	107

Switch specifications

● One color/bi-color indicator/strong magnetic field proof

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire					Proximity 2 wire	
	T2H/T2V/T2LH/T2LV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V			T5H/T5V		T2YD	
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay			Programmable controller, relay, IC circuit (without indicator light), serial connection		Programmable controller	
Power voltage	-		10 to 28V DC		-					-	
Load voltage	10 to 30V DC		30V DC or less		12/24V DC	110V AC	220V AC	5/12/24V DC	110V AC	220V AC	24V DC±10%
Load current	5 to 20 mA (Note 1)		100 mA or less	50 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	50 mA or less	20 mA or less	10 mA or less	5 to 20 mA
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)			-		Red/green LED (ON lighting)	

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10 mA when 60 °C)

● 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		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Light	Installation position adjustment		Red/green LED (ON lighting)						
	Preventive maintenance output		-				Yellow LED (ON lighting)		
Output	Power voltage		10 to 28V DC		-		10 to 28V DC		
	Load voltage		30V DC or less		10 to 30V DC		30V DC or less		
	Load current		50 mA or less		5 to 20 mA		50 mA or less		
Preventive maintenance output	Load voltage		30V DC or less						
	Load current		50 mA or less		5 to 20 mA (Note 1)		50 mA or less		

Note 1: The maximum load current of 20 mA applies at 25 °C. If the switch's ambient operating temperature exceeds 25 °C, the load current becomes less than 20 mA. (5 to 10 mA when 60 °C)

Weight

Unit: kg

Bore size (mm)	Product weight when stroke length =0 mm						Stroke length: Additional weight per 50 mm	Switch weight Grommet	Accessory weight	
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)			I	Y
φ 32	0.51	0.62	0.73	0.66	0.69	0.68	0.12	0.018	0.07	0.13
φ 40	0.68	0.82	0.96	0.86	0.86	1.02	0.17	0.018	0.09	0.14
φ 50	1.16	1.32	1.64	1.56	1.57	1.64	0.23	0.018	0.20	0.33
φ 63	1.42	1.76	2.18	1.97	1.99	2.29	0.25	0.018	0.20	0.33
φ 80	2.69	3.12	4.26	3.96	3.96	4.18	0.40	0.018	0.52	0.96
φ 100	3.80	4.66	6.12	5.52	5.55	6.37	0.51	0.018	0.48	0.92

SCG-G4 Series

How to order

Without switch

SCG-G4 - LB - 40 - B - 100 - M - I

With switch

SCG-G4 - LB - 40 - B - 100 - T2YD - R - M - I

Model No.

A Mounting style
Note 1

B Bore size

C Port thread type

D Cushion

E Stroke length
Note 2

F Switch model No.

G Switch quantity

H Option

I Accessory
Note 3

Symbol	Descriptions		
A Mounting style			
00	Basic type		
LB	Axial foot type		
FA	Rod side flange type		
FB	Head side flange type		
CA	Eye bracket type		
CB	Clevis bracket type		
TA	Rod side trunnion type		
TB	Head side trunnion type		
TC	Center trunnion type		
B Bore size (mm)			
32	φ32		
40	φ40		
50	φ50		
63	φ63		
80	φ80		
100	φ100		
C Port thread type			
Blank	Rc thread		
N	NPT thread (custom order)		
G	G thread (custom order)		
D Cushion			
B	Air cushion on both sides (basic type)		
D	Rubber cushion on both sides		
Note: The rubber cushion is longer than the air cushion.			
E Stroke length (mm)			
25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500			
F Switch model No.			
Lead wire	Contact	Indicator	Lead wire
T2YD*	Proximity	Strong magnetic field proof switch	2 wire
T2YDT*			
*Lead wire length			
Blank	1m (standard)		
3	3m (option)		
5	5m (option)		
G Switch quantity			
R	One on rod side		
H	One on head side		
D	Two		
T	Three		
H Option			
M	Piston rod material (stainless steel)		
I Accessory			
I	Rod eye		
Y	Rod clevis (connector pin and split pin attached)		
B1	Eye bracket		
B2	Clevis bracket (connector pin and split pin attached)		
B3	Eye bracket		
B4	Trunnion type No. 2 bracket		

⚠ Note on model No. selection

- Note 1: The installation bracket is shipped with the product.
(Note that the trunnion type is assembled before shipment.)
Note 2: Custom stroke length is available per 1mm increment.
Note 3: "I" and "Y" cannot be selected at the same time.

<Example of model number>

SCG-G4-LB-40B-100-T2YD-D-MI

Model: Tierod cylinder, double acting spatter adherence prevention type

- A** Mounting style : Axial foot type
- B** Bore size : φ40mm
- C** Port thread type : Rc thread
- D** Cushion : Both sides air-cushioned
- E** Stroke length : 100mm
- F** Switch model No. : Proximity T2YD switch, lead wire 1m
- G** Switch quantity : Two
- H** Option : Piston rod material (stainless steel)
- I** Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T2YD - 40

Switch model No. (F) on previous page Bore size (B) on previous page

● Switch body

SW - T2YD

Switch model No. (F) on previous page

● Switch mounting bracket

SCG - T - 40

Bracket Bore size (B) on previous page

Note: If an ecological T type switch is used, consult with CKD.

How to order mounting bracket

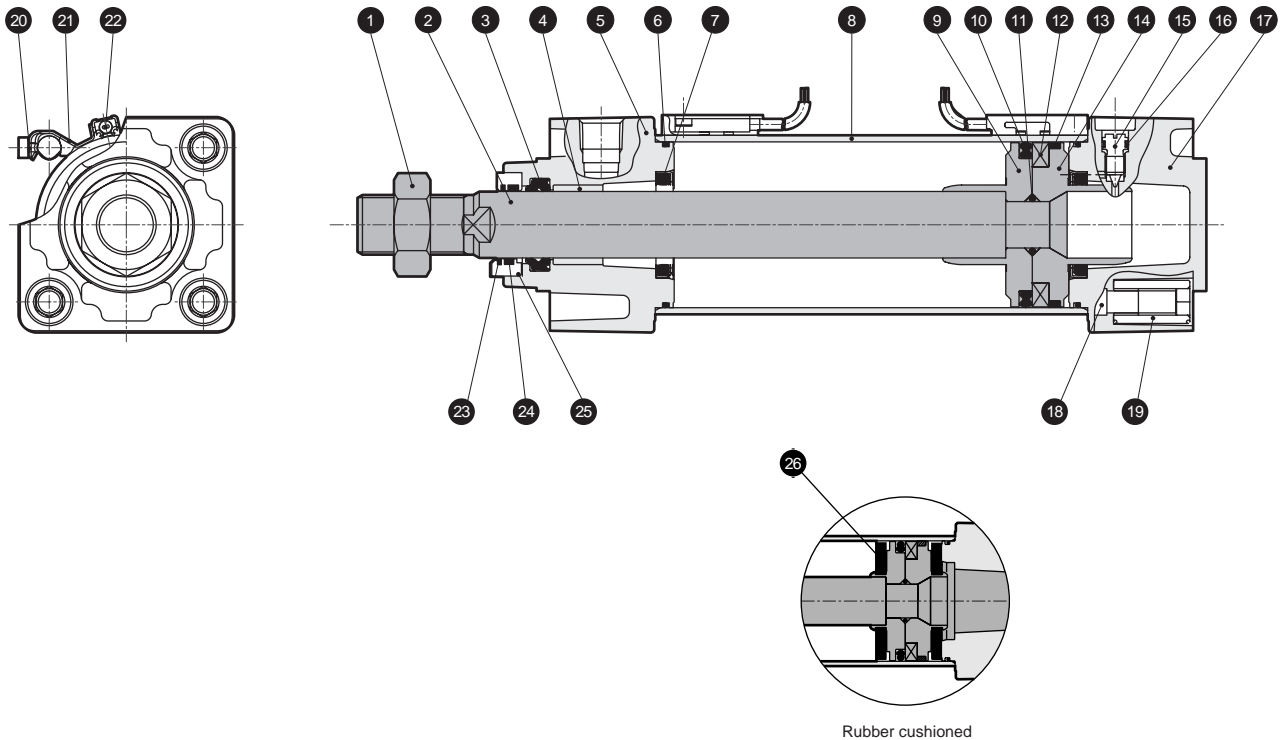
Bore size (mm)	φ 32	φ 40	φ 50	φ 63	φ 80	φ 100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note 1: Foot (LB) is provided as 2 pieces per set.

SCG-G4 Series

Internal structure and parts list

●SCG-G4



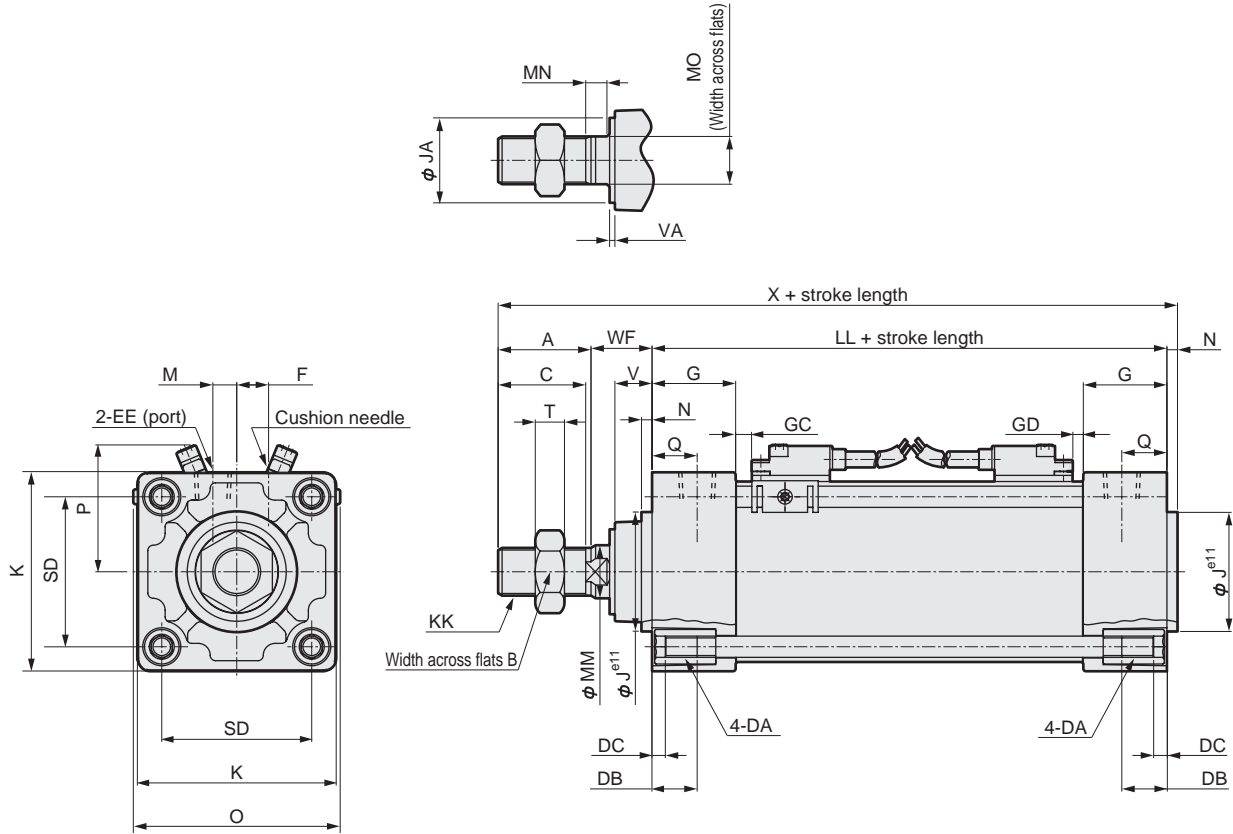
No.	Parts name	Material	Remarks	No.	Material	Parts name	Remarks
1	Rod nut	Steel	Nickeling	14	Piston H	$\phi 32, \phi 40$: aluminum alloy	
2	Piston rod	Steel	Industrial chrome plated			$\phi 50$ to $\phi 100$: aluminum alloy die casting	
3	Rod packing seal	Nitrile rubber		15	Cushion needle	Brass	
4	Bush	Oil impregnated bearing alloy		16	Needle gasket	Nitrile rubber	
5	Rod cover	Aluminum alloy die casting	Paint	17	Head cover	Aluminum alloy die casting	Paint
6	Cylinder gasket	Nitrile rubber		18	Tierod	Steel	Zinc chromate plating
7	Cushion packing seal	Nitrile rubber, steel	Only with air cushion	19	Round nut	Steel	Zinc chromate plating
8	Cylinder tube	Aluminum alloy	Hard alumite	20	Hexagon socket head cap screw	Steel	Zinc chromate plating
9	Piston R	$\phi 32, \phi 40$: aluminum alloy $\phi 50$ to $\phi 100$: aluminum alloy die casting		21	Bracket	Stainless steel spring steel	
10	Piston packing seal	Nitrile rubber		22	Switch		
11	Piston gasket	Nitrile rubber		23	Coil scraper	Bronze phosphate	
12	Magnet	Plastic		24	Lube keeping structure	Special rubber	
13	Wear ring	Acetar resin		25	Adaptor	Stainless steel	
				26	Cushion rubber	Urethane rubber	Only with rubber cushion

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Nickeling
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Dimensions

● Basic type (00)



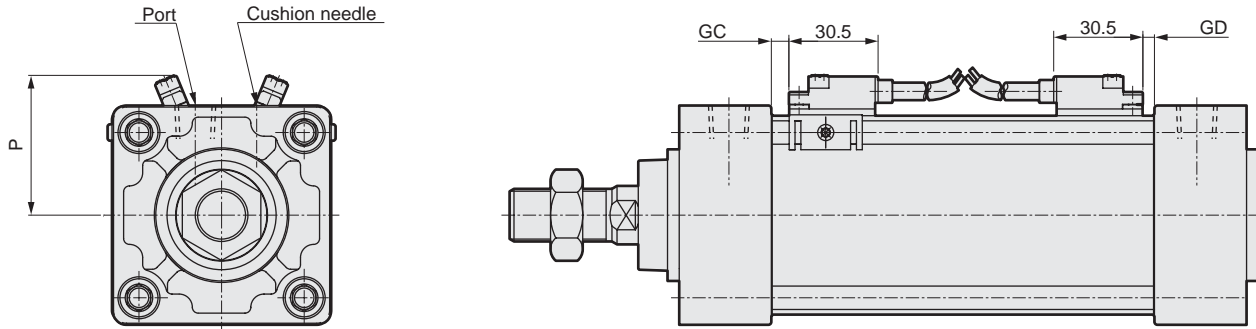
Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.
 ($\phi 32/\phi 40$; +6 mm, $\phi 50/\phi 63$; +8 mm, $\phi 80/\phi 100$; +10 mm)

Symbol	Basic type (00) basic dimensions																				
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	JA	K	KK	Note 1 LL	M	MM	MN	MO	N	O	Q
$\phi 32$	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	22	46	M10 X 1.25	84 (90)	4	12	5.5	10	4	52	13
$\phi 40$	30	22	27	M6	16	5	Rc1/4	9	27	35	26	52	M14 X 1.5	84 (90)	4	16	5	14	4	58	14
$\phi 50$	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	32	65	M18 X 1.5	94 (102)	5	20	8	17	4	68	15.5
$\phi 63$	35	27	32	M8	16	5	Rc3/8	12	31.5	45	32	75	M18 X 1.5	94 (102)	9	20	8	17	4	78	16.5
$\phi 80$	40	32	37	M10	16	5	Rc3/8	14	38	45	37	95	M22 X 1.5	114 (124)	11.5	25	8	22	4	95	19
$\phi 100$	40	41	37	M10	16	5	Rc1/2	15	38	55	42	114	M26 X 1.5	114 (124)	17	30	8	27	4	114	19

Symbol	With switch								
Bore size (mm)	SD	T	V	VA	WF	Note 1 X	Note 1 GC	Note 1 GD	P
$\phi 32$	32.5	6	13	1	25	135 (141)	4 (7)	4 (7)	33
$\phi 40$	38	8	13	3	21	139 (145)	4 (7)	4 (7)	37
$\phi 50$	46.5	11	14	2	23	156 (164)	5.5 (9.5)	4 (8)	41
$\phi 63$	56.5	11	14	2	23	156 (164)	5.5 (9.5)	4 (8)	48
$\phi 80$	72	13	20	2	32	190 (200)	11.5 (16.5)	5 (10)	56
$\phi 100$	89	16	20	2	32	190 (200)	11 (16)	5.5 (10.5)	66

Note: Installation dimensions of each mounting style are the same as the SCG (double acting, single rod). Refer to Pages 9 to 16.

SCG series common (2 color indicator type, with preventive maintenance output with switch) dimensions



2 color indicator, preventive maintenance output switch installation dimensions

Symbol	P				Note 1 GC	Note 1 GD
	2 color indicator		Preventive maintenance output			
Bore size (mm)	T*YH	T*YV	T*Y*H	T*Y*V		
φ 32	31	34	36	39	4 (7)	4 (7)
φ 40	35	38	40	43	4 (7)	4 (7)
φ 50	39	42	44	47	5.5 (9.5)	4 (8)
φ 63	45	48	50	53	5.5 (9.5)	4 (8)
φ 80	52	55	57	60	11.5(16.5)	5 (10)
φ 100	60	63	64	67	11(16)	5.5 (10.5)

Note 1: Dimensions in parentheses are for the rubber cushion, which is longer than the air cushion.

MEMO

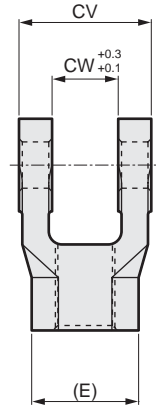
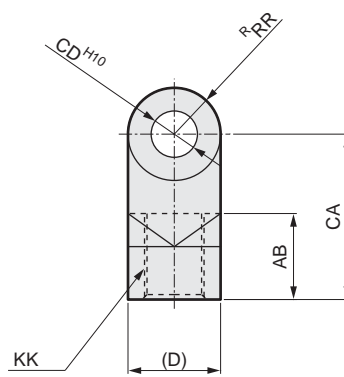
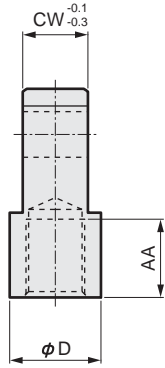
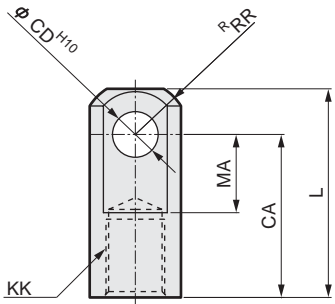
SCG series common accessory (rode eye/clevis, bracket) dimensions

● Rod eye (I)

Material: Steel

● Rod clevis (Y)

Material: Cast iron



Model No.	Applicable tube inner diameter (mm)	AA	CA	CD	CW	D	KK	L	MA	RR
SCG-I-32	32	14	30	10	14	20	M10 X 1.25	40	16	12
SCG-I-40	40	19	40	10	14	22	M14 X 1.5	50	19	12.5
SCG-I-50	50, 63	24	50	14	20	28	M18 X 1.5	64	24	16.5
SCG-I-80	80	26	60	22	30	40	M22 X 1.5	80	34	23.5
SCG-I-100	100	26	60	22	30	40	M26 X 1.5	80	34	23.5

Model No.	Applicable tube inner diameter (mm)	AB	CA	CD	CV	CW	D	E	KK	RR
SCG-Y-32	32	14	30	10	28	14	20	23.1	M10 X 1.25	10
SCG-Y-40	40	21	40	10	28	14	22	25.4	M14 X 1.5	11
SCG-Y-50	50, 63	26	50	14	40	20	28	32.3	M18 X 1.5	14
SCG-Y-80	80	31	65	22	60	30	40	46.2	M22 X 1.5	20
SCG-Y-100	100	31	65	22	60	30	40	46.2	M26 X 1.5	20

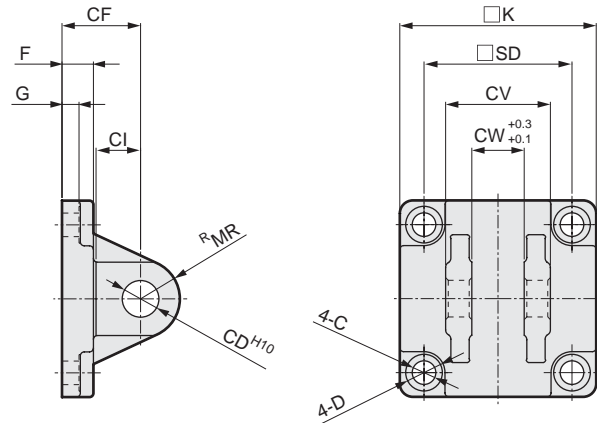
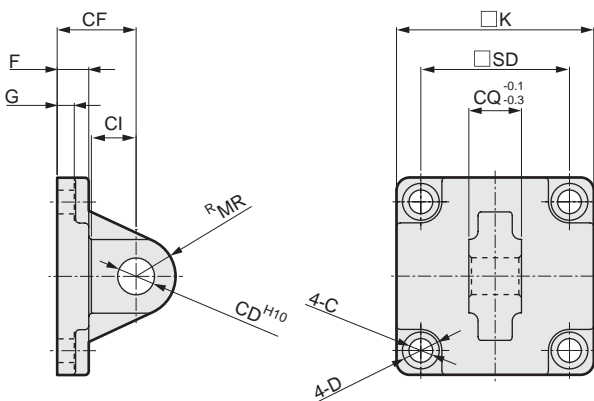
Note: The pin, split pin, and plain washer are included.

● Eye bracket (B1)

Material: Cast iron

● Clevis bracket type (B2)

Material: Cast iron



Model No.	Applicable tube inner diameter (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD
SCG-B1-32	32	6.6	10	23	13	14	11	9	4.5	46	10.5	32.5
SCG-B1-40	40	6.6	10	23	13	14	11	9	4.5	52	11	38
SCG-B1-50	50	9	14	30	17	20	14	12	6.5	65	15	46.5
SCG-B1-63	63	9	14	30	17	20	14	12	6.5	75	15	56.5
SCG-B1-80	80	11	22	42	26	30	17	15	8.5	95	23	72
SCG-B1-100	100	11	22	42	26	30	17	15	8.5	114	23	89

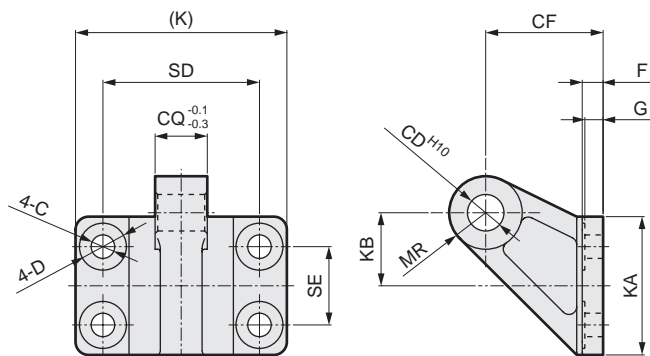
Model No.	Applicable tube inner diameter (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD
SCG-B2-32	32	6.6	10	23	13	28	14	11	9	4.5	46	10.5	32.5
SCG-B2-40	40	6.6	10	23	13	28	14	11	9	4.5	52	11	38
SCG-B2-50	50	9	14	30	17	40	20	14	12	6.5	65	15	46.5
SCG-B2-63	63	9	14	30	17	40	20	14	12	6.5	75	15	56.5
SCG-B2-80	80	11	22	42	26	60	30	17	15	8.5	95	23	72
SCG-B2-100	100	11	22	42	26	60	30	17	15	8.5	114	23	89

Note: The pin, split pin, and plain washer are included.

Accessory dimensions

● Eye bracket (B3)

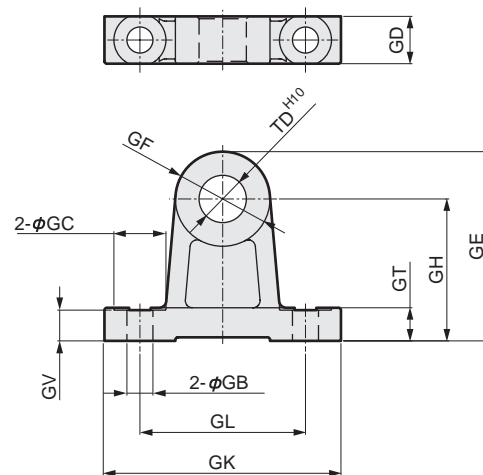
Material: Cast iron



Model No.	Applicable tube I.D. (mm)	C	CD	CF	CQ	D	F	G	K	KA	KB	MR	SD	SE
SCG-B3-32	32, 40	6.6	10	33	14	15	7	6	62	42	21	10	44	22
SCG-B3-50	50, 63	9	14	45	20	18	8	7	81	53	28	14	60	30
SCG-B3-80	80, 100	11	22	65	30	22	10	9	111	73	41.5	22	86	45

● Trunnion type No. 2 bracket (B4)

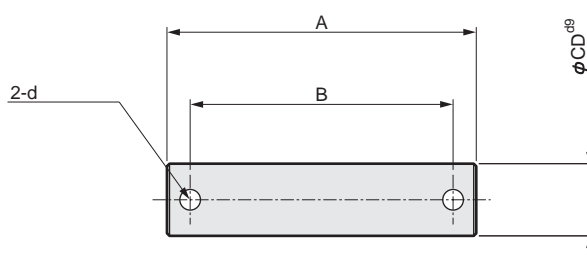
Material: Cast iron



Model No.	Applicable tube I.D. (mm)	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	TD
SCG-B4-32	32	7	13	12	47	24	35	62	45	10	9	12
SCG-B4-40	40, 50	9	18	17	60	30	45	80	60	12	11	16
SCG-B4-63	63, 80	11	22	20	80	40	60	100	70	14	13	20
SCG-B4-100	100	13.5	24	26	100	50	75	120	90	17	16	25

● Pin (P)

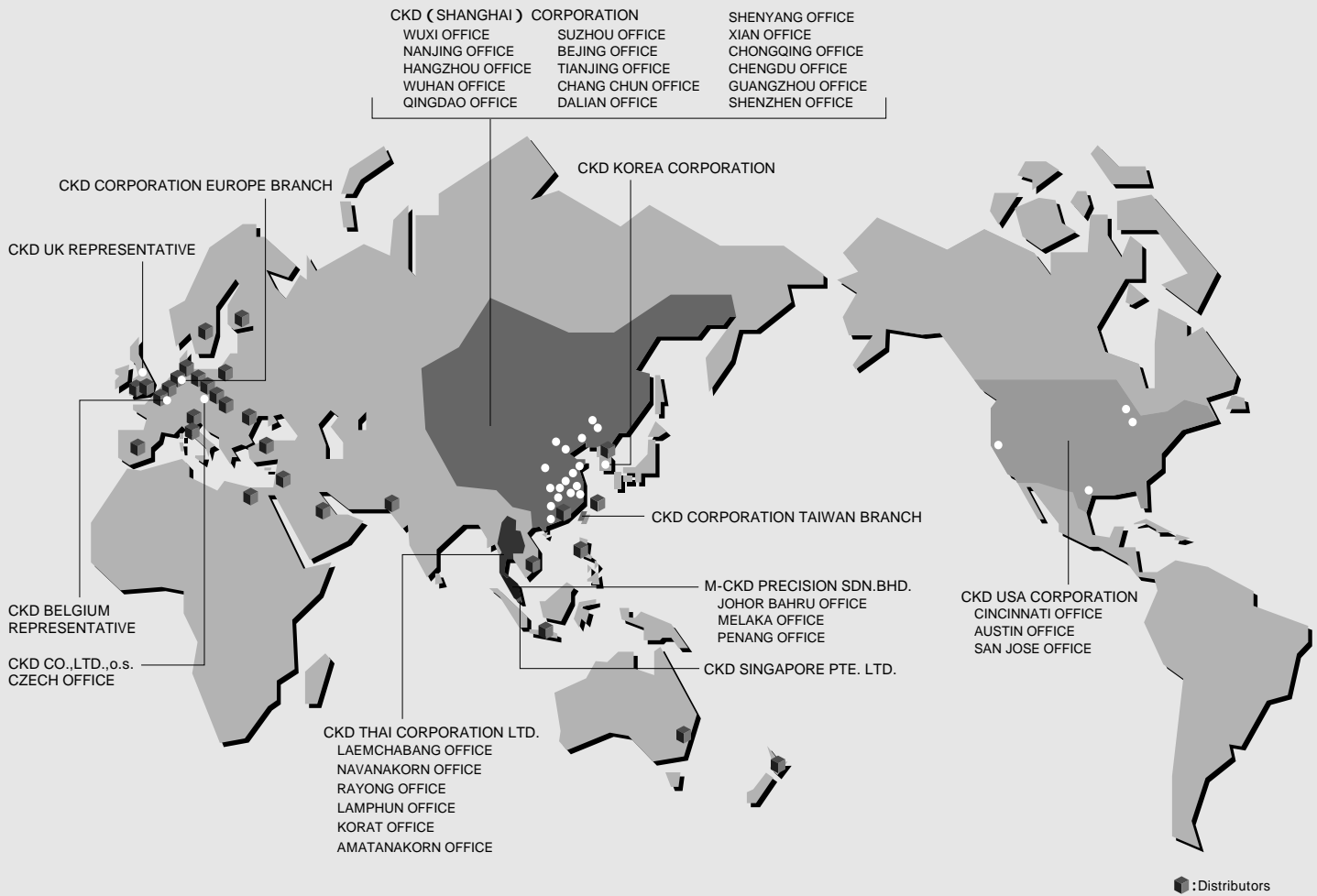
Material: Steel



Model No.	Applicable tube Inner diameter (mm)	A	B	CD	d
SCG-P-32	32, 40	44	36	10	3
SCG-P-50	50, 63	60	51	14	4
SCG-P-80	80, 100	82	72	22	4

Note: The split pin and plain washer for the clevis bracket, rod clevis, and clevis bracket are included.

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