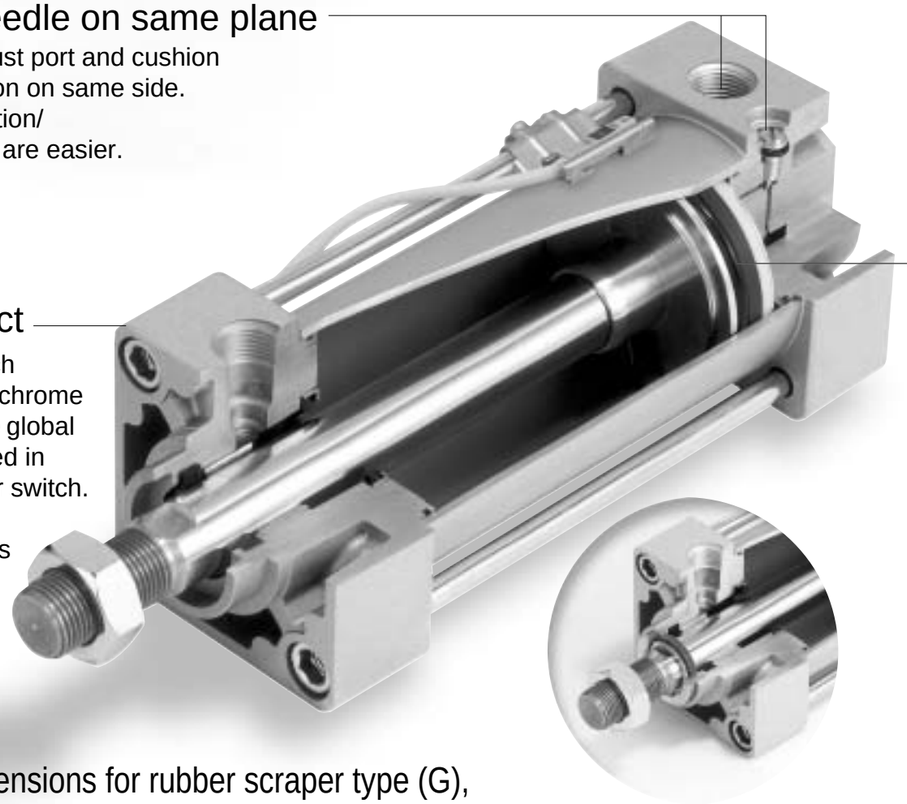
New eco-friendly guided cylinder

CKD Green Technology

New easy-to-use SCG Series (ϕ32 to ϕ100) 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. are easier.



Ecological product

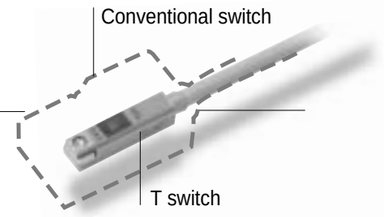
Harmful substances such as lead and hexavalent chrome that adversely affect the global environment are not used in the cylinder and cylinder switch. This product complies with the RoHS Directives in effect in the EU. (Lead-free solder and lead wires)

Standard magnets

Switches can be installed on all products.

Compact switch

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

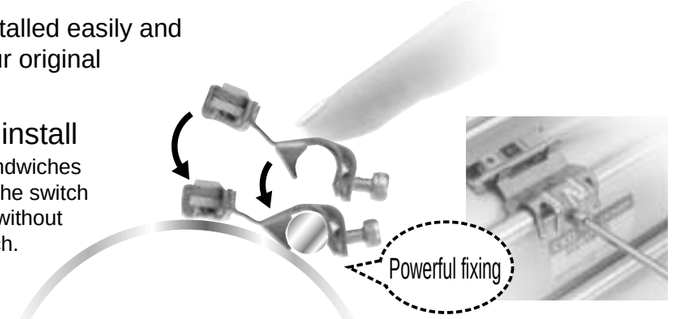


New switch

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

①Easy switch install

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



②Fix with screws alone

Installation is completed by tightening screws after adjusting switches.

The T switch in the rail is finely adjustable.

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.

Same dimensions for rubber scraper type (G), coolant proof type (G1, G2) and spatter adherence prevention type (G4)

The dimensions of the rubber scraper and spatter adherence prevention are the same as the standard type, facilitating installation.

■SCG Series Products

Model variation		Bore size						Stroke length (mm)
		ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100	25～500
Standard type	SCG	●	●	●	●	●	●	●
Position locking type	SCG-Q	●	●	●	●	●	●	●
Low speed type	SCG-O	●	●	●	●	●	●	●
Low friction type	SCG-U	●	●	●	●	●	●	●
Double rod type	SCG-D	●	●	●	●	●	●	●
Non-rotating type	SCG-M	●	●	●	●			●
Rubber scraper type	SCG-G	●	●	●	●	●	●	●
Coolant proof type	SCG-G2,G3		●	●	●	●	●	●
Spatter adherence type	SCG-G4	●	●	●	●	●	●	●

RoHS Directive-compatible Tierod Cylinder —— SCG Series

●: Standard, ◎: Option, ○:Custom order, : Not available

Variation	Model no. JIS symbol	Bore size (mm)	Standard stroke length (mm) 25	50	75	100	150	200	250	300	350	400	450	500	Min. stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Custom stroke length (Per mm)	Mounting style: Basic type 00	Axial foot type LB	Rod end flange type FA	Head end flange type FB	Eye bracket type CA	Clevis bracket type CB	Rod end trunnion type TA	Head end trunnion type TB	Center trunnion type TC	Cushion: No cushion N	Both sides air cushion B	Both sides rubber cushion D	Option: Bellows (60℃) J	Piston rod material stainless steel M	Copper and PTFE free P6	Accessory: Rod eye I	Rod clevis Y	Eye bracket B1	Clevis bracket B2	Eye bracket B3	Trunnion type No. 2 bracket B4	Switch	Page
Double acting single rod type	SCG	ϕ32 ϕ40 ϕ50, ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	350
Double acting position locking type	SCG-Q	ϕ32 ϕ40 ϕ50, ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●			◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	364
Double acting low speed type	SCG-O	ϕ32 to ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	600 700 800	1	●	●	●	●	●	●	●	●	●	●	Consult with CKD.		◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	386
Double acting low friction type	SCG-U	ϕ32 to ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	600 700 800	1	●	●	●	●	●	●	●	●	●	●	Consult with CKD.		◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	392
Double acting double rod type	SCG-D	ϕ32 to ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	600 700 800	1	●	●	●	●			●	●	●		●	◎	◎	◎	◎	◎	◎				◎	◎	396
Double acting non-rotating type	SCG-M	ϕ32 to ϕ63	●	●	●	●	●	●	●	●	●	●	●	●	1	600	600	1	●	●	●	●	●	●	●	●	●		●	◎	◎			◎	◎	◎	◎	◎	◎	◎	402
Double acting powerful scraper type	SCG-G	ϕ32 ϕ40 ϕ50, ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●	◎		◎	◎	◎	◎	◎	◎	◎	◎	◎	408
Double acting coolant proof type	SCG-G2/G3	ϕ40 ϕ50, ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●	Consult with CKD.				◎	◎	◎	◎	◎	◎	◎	414
Double acting spatter adhesion prevention type	SCG-G4	ϕ32 ϕ40 ϕ50, ϕ63 ϕ80 ϕ100	●	●	●	●	●	●	●	●	●	●	●	●	1	600 700 800	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●	◎		◎		◎	◎	◎	◎	◎	◎	◎	420

Variation and option selection table

●: Standard
◎: Option
○: Available (custom order)
△: Available depending on conditions
X : Not available

Code		Code	Variation										Port thread			Option			
			Double acting single rod type	Non-rotating type	Position locking type	Low speed type	Low friction type	Rubber scraper type	Coolant proof scraper (NBR)	Coolant proof scraper (FKM)	Spatter adherence prevention type		NPT Note 1	G Note 1		With bellows (polyolefin material)	PR material stainless steel	Copper and PTFE free type	Customized piston rod end form
			No	M	Q	O	U	G	G2	G3	G4		N	G		J	M	P6	N*
Variation	Double acting single rod type	Blank											○	○		◎	◎	◎	○
	Non-rotating type	M			X	X	X	X	X	X	X		○	○		◎	X	X	○
	Position locking type	Q				△	X	△	△	△	△		○	○		◎	◎	◎	○
	Low speed type	O					X	X	X	X	X		○	○		Note 1	◎	○	○
	Low friction type	U						X	X	X	X		○	○		X	◎	X	○
	Rubber scraper type	G							X	X	X		○	○		○	○	○	○
	Coolant proof scraper (NBR)	G2								X	X		○	○		Note 2	●	○	○
	Coolant proof scraper (FKM)	G3									X		○	○		X	●	○	○
	Spatter adherence prevention type	G4											○	○		○	○	X	○
Port thread	NPT	N												X		○	○	○	○
	G	G														○	○	○	○
Option	With bellows (polyolefin material)	J															○	○	○
	Piston rod material stainless steel	M																	○
	Copper and PTFE free type	P6																	
	Customized piston rod end form	N*																	
Accessory	Cylinder switch	Listed on Ending	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		◎	◎	◎	◎
	Rod eye	I	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		◎	◎	◎	△
	Rod clevis	Y	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		◎	◎	◎	△
	Eye bracket	B1	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		◎	◎	◎	◎
	Clevis bracket	B2	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		◎	◎	◎	◎
	Eye bracket	B3	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		◎	◎	◎	◎
	Trunnion type No. 2 bracket	B4	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎		◎	◎	◎	◎

Cautions
Note 1: Resistance of bellows at stretch motion rises the value of minimum starting pressure.
Note 2: Coolant may remain in bellows depending on conditions.

Safety precautions

Always read this section before starting use.
Refer to Intro 71 for general notes of cylinders and Intro 78 for cylinder switches.

Tie rod 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 applicable piston speed range for each cylinder.

⚠ CAUTION

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

Bore size (mm)	Rubber cushion	Air cushion	
	Allowable energy absorption J	Valid cushion length (mm)	Allowable energy absorption J
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) =

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

(Note) Calculating kinetic energy:

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

Va: Average speed (m/s)
L : Cylinder stroke (m)
T : Operation time (s)

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

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

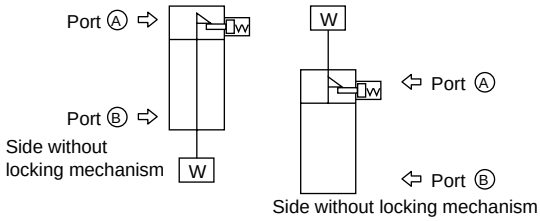
Vm: Speed just before rush-into the cushion (m/s)
ω : Cylinder load factor (%)

Use this Vm value as speed to calculate kinetic energy.

2. Position locking type SCG-Q

⚠ WARNING

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



■ 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 quick exhaust valve with the cylinder with position locking.

■ Do not use a 3-position valve.
Do not use this together with 3-position solenoid valve (especially with closed center metal seal type). This kind of use closes the pressure at the locking mechanism side, and is unable to lock the position. Even once locked, air leakage form a solenoid valve will enter to a cylinder and this may release locking.

⚠ CAUTION

■ Cylinder load factor must be 50% or less.
If the load factor is high, the lock may not be released or the lock section could be damaged.

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

■ Don't operate cylinders synchronously.
Do not move one workpiece using more than two cylinders with position locking mechanism simultaneously. One of the cylinder's locks may not be released.

3. Low friction type SCG-U

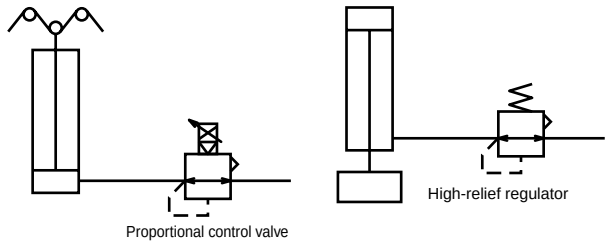
⚠ WARNING

■ Durability differs based on working conditions and model features.
This cylinder is the cylinder which has internal leakage.
Refer to the specification on page 392 for the internal leakage volume.

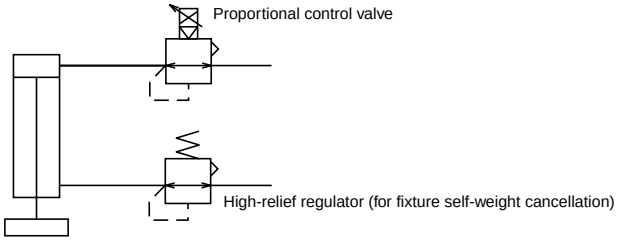
⚠ CAUTION

■ When a balancer, etc., is used, a flow control valve should not be installed if supply and exhaust efficiency are impaired. Use of circuits (a) to (c) below is recommended based on the application.

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



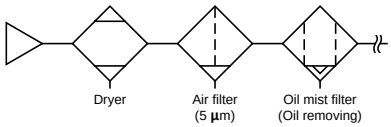
(c) Load control (grinding, etc)



* Maximize piping volume to improve supply and exhaust.

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

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



■ Install the flow control valve near the cylinder.
If this is installed away from a cylinder, adjustment will be unstable.

■ In general, higher air pressure and smaller load factor results in more stable operation.
Load factor should be 50% or less.

4. Coolant proof type SCG-G2/G3

⚠ CAUTION

■ Do not apply the deviated load onto the piston rod. It could shorten scraper and bearing life.

■ If coolant or water do not get on the G2 or G3 series, the piston rod lubrication could be spent and shorten life. Use the G Series in this case.

5. Spatter adherence prevention type SCG-G4

⚠ WARNING

■ This cylinder series has improved durability over the general-purpose cylinder in atmospheres where spatter could occur. But durability may be shorter than the general cylinder when used in other environments.

Installation & Adjustment

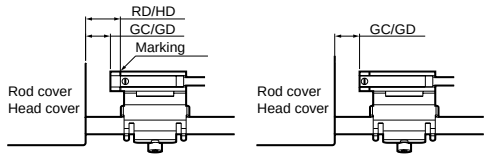
1. Common

⚠ CAUTION

Precautions for switch installation

■ Assembling the switch bracket

When assembling the cylinder onto the switch bracket, fit the tie rod 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, DD) and switch positions (RD, HD) at which the maximum sensitivity is attained at both stroke ends are shown in the dimension drawing.



■ Moving the switch position in the stroke direction

The 1-color indicator switch can be finely adjusted ±3 mm from the default maximum sensitivity installation position. If the adjustment range exceeds 3 mm, or when adjusting the 2-color indicator switch, loosen fixing bolt of switch mounting bracket 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 at 4 mm from the rail end. Use this as a guide to the mounting position when replacing the switch.

The switch rail markings are set to the default switch maximum sensitivity position.

The maximum sensitivity position will change when the switch type is changed or when the switch bracket is moved. Adjust the position accordingly.

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. Before setting the load, check that the locking mechanism functions correctly.

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

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

3. Low friction type SCG-U

⚠ CAUTION

■ Do not apply lateral load a cylinder.

Install sliding guide without twist and biting.

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

■ Avoid use in the place subject to vibration.

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

4. Non-rotating type SCG-M

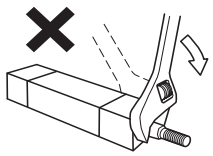
⚠ CAUTION

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

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

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

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



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

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

Allowable torque	ϕ32	ϕ40	ϕ50	ϕ63
N·m	0.25	0.45	0.45	0.45

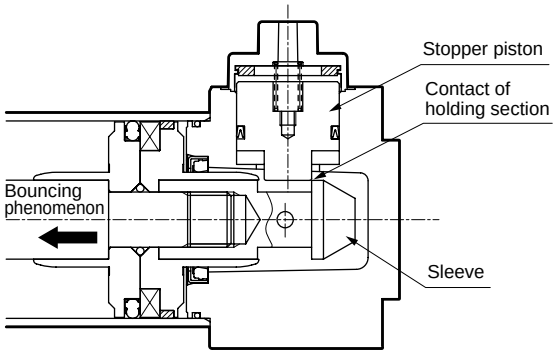
During Use & Maintenance

1. Position locking type SCG-Q

⚠ WARNING

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

■ 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 way to prevent bouncing.
Regularly (once/twice a year) check that the holding section is not damaged by this symptom.

⚠ CAUTION

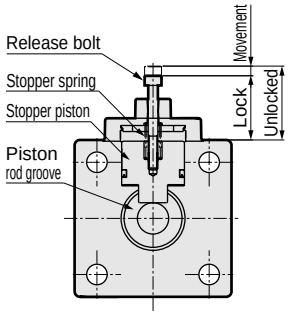
■ If the locking mechanism has been manually operated, check and then return it manually to the original position. Do not use a manual override except during adjustment, because this may be dangerous.

■ Release the lock when installing or adjusting the cylinder.
The lock could be damaged if the cylinder is installed while the lock is applied.

■ Use the flow control valve with meter-out control.
Locks may not be released during meter-in control.

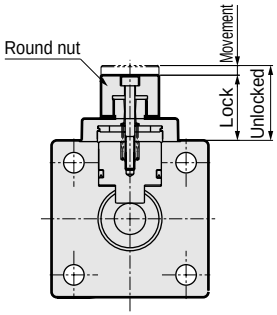
■ On the side of locking mechanism, the piston rod must reach the stroke limit.
If the cylinder's piston does not reach the stroke end, the lock may not be applied or may not be released.

■ Releasing the nonlocking manual override
The stopper pin moves and the lock is released when the release bolt is screwed into the stopper piston and the bolt is pulled up with a force of 20 N or more. (During no-load horizontal installation or when 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	Unlocked	Movement	Release bolt
ϕ32	19.5	22.5	3	M3 x 25
ϕ40	18	21	3	M3 x 25
ϕ50	26.5	30.5	4	M4 x 35
ϕ63	21.5	25.5	4	M4 x 35
ϕ80	19	23	4	M4 x 35
ϕ100	21.5	25.5	4	M4 x 35

■ Releasing the locking manual override
When the round nut is turned counterclockwise, the stopper pin 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	Unlocked	Movement
ϕ32	20	23	3
ϕ40	18.5	21.5	3
ϕ50	27	31	4
ϕ63	22	26	4
ϕ80	19.5	23.5	4
ϕ100	22	26	4

2. Low speed type SCG-O

⚠ WARNING

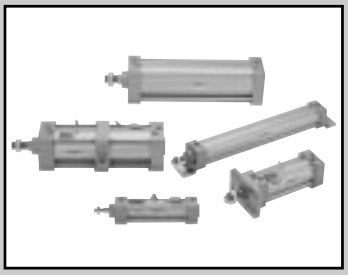
■ The O Series uses fluorine-based grease. If personnel light cigarettes or the like with fluorine-based grease on their hands, toxic gases that could cause bodily harm are generated.

3. Low friction type SCG-U

⚠ CAUTION

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

MEMO



Tie rod cylinder, double acting single rod type

SCG series

● Bore size: ϕ 32, ϕ 40, ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol 

RoHS CAD

Specifications

Descriptions		SCG					
Bore size	mm	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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	℃	-10 to 60 (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm	Rubber cushioned	$^{+1.4}_{0}$ (Up to 1000), $^{+1.8}_{0}$ (1001 to 1500)					
	Air cushioned	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 1000), $^{+1.8}_{0}$ (1001 to 1500)					
Working piston speed	mm/s	30 to 1000 (use within the allowable energy absorption.)					
Cushion		Selection of air cushion and rubber cushion possible					
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 length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ 32	25, 50, 75, 100 150, 200, 250 300, 350, 400 450, 500	600	700	1
ϕ 40			800	
ϕ 50			1200	
ϕ 63			1200	
ϕ 80		700	1400	
ϕ 100		800	1500	

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T0/T5 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ϕ 40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ 50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ 63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ϕ 80	10	20	39	59	10	20	39	59	96 (66)	96 (66)	99 (99)	99 (99)	41	47
ϕ 100	10	20	40	60	10	20	40	60	101 (71)	101 (71)	105 (105)	105 (105)	47	53

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time.
In this case, adjust the distance between switches as far as possible.

Min. stroke length with T8 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ϕ 40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ 50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ 63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ϕ 80	10	20	39	59	10	20	39	59	100 (70)	100 (70)	111 (111)	111 (111)	43	49
ϕ 100	10	20	40	60	10	20	40	60	105 (75)	105 (75)	117 (117)	117 (117)	49	55

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time.
In this case, adjust the distance between switches as far as possible.

Min. stroke length with T2/T3 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (34)	64 (34)	131 (95)	131 (95)	27	27
ϕ 40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ 50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ 63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38
ϕ 80	6	11	22	33	6	11	22	33	88 (58)	88 (58)	88 (80)	88 (80)	37	43
ϕ 100	6	11	22	33	6	11	22	33	93 (63)	93 (63)	93 (85)	93 (85)	43	49

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T1/T2Y/T3Y/T2YD switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ 40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ 50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ 63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ 80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ 100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

● 1 color/2 color indicator, strong magnetic field proof

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

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							Proximity 2-wire
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	TOH/TOV	T5H/T5V		T8H/T8V				T2YD
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay				Programmable controller dedicated
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	w/o light		LED (ON lighting)				Red/green LED (ON lighting)
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							1mA or less

● With preventive maintenance output

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

Note 1: Refer to an Ending 1 for other switch specifications.
Note 2: Max load current above: 20mA at 25℃. When ambient temperature around switch is more than 25℃, the value is lower than 20 mA. (5 to 10 mA at 60℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm:						Stroke length : Additional weight per 50mm	Switch mass	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	0.50	0.61	0.72	0.65	0.68	0.67	0.12	0.018	0.07	0.10
ϕ 40	0.66	0.80	0.94	0.85	0.85	1.00	0.17	0.018	0.07	0.13
ϕ 50	1.13	1.29	1.61	1.54	1.54	1.61	0.23	0.018	0.20	0.30
ϕ 63	1.39	1.73	2.15	1.95	1.96	2.27	0.25	0.018	0.20	0.30
ϕ 80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.018	0.52	0.94
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 - LB - 40 ○ B - 100 ——— J I

With switch

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

Model no.

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model no.

Ⓖ Switch quantity Note 3

Ⓗ Option Note 4

Ⓘ Accessory Note 5

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

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

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

Ⓓ Cushion	
B	Both sides air cushion (basic type)
D	Both sides rubber cushion
Note: The rubber cushion is longer than the air cushion types.	

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 2	Available stroke length	Custom stroke length
ϕ 32	1 to 600	700	Per 1 mm increment
ϕ 40		800	
ϕ 50		1200	
ϕ 63			
ϕ 80	1 to 700	1400	
ϕ 100	1 to 800	1500	

Ⓕ Switch model no.

Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		w/o light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*			
T3H*	T3V*			3-wire
T3PH*	T3PV*		1 color indicator type (custom order)	
T2YH*	T2YV*		2 color indicator type	2-wire
T3YH*	T3YV*			3-wire
T2YFH*	T2YFV*		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	T3YFV*			4-wire
T2YMH*	T2YMV*		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	T3YMV*			4-wire
T2YD*	-		Strong magnetic field proof switch	2-wire
T2YDT*	-			
T2JH*	T2JV*		Off-delay type	2-wire

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

Ⓖ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓗ Option

		Max. ambient	Max. instantaneous
J	Bellows	60℃	100℃
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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. (However, trunnion type, rod end flange with bellows are installed onto the product when shipped.)
Note 2: Refer to page 350 for minimum switch stroke length.
Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod end) for TB.
Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.
Note 5: "I" and "Y" cannot be selected at the same time.

<Example of model number>

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

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

How to order switch

● Switch body + mounting bracket

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

- **T0H**: Switch model no. (Section (F) in previous page)
- **40**: Bore size (Section (B) in previous page)

● Only switch body

SW - **T0H**

- **T0H**: Switch model no. (Section (F) in previous page)

● Switch bracket set

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

- **T**: Bracket
- **40**: Bore size (Section (B) in previous page)

Note: Consult with CKD when using the environment compatible T-type switch.

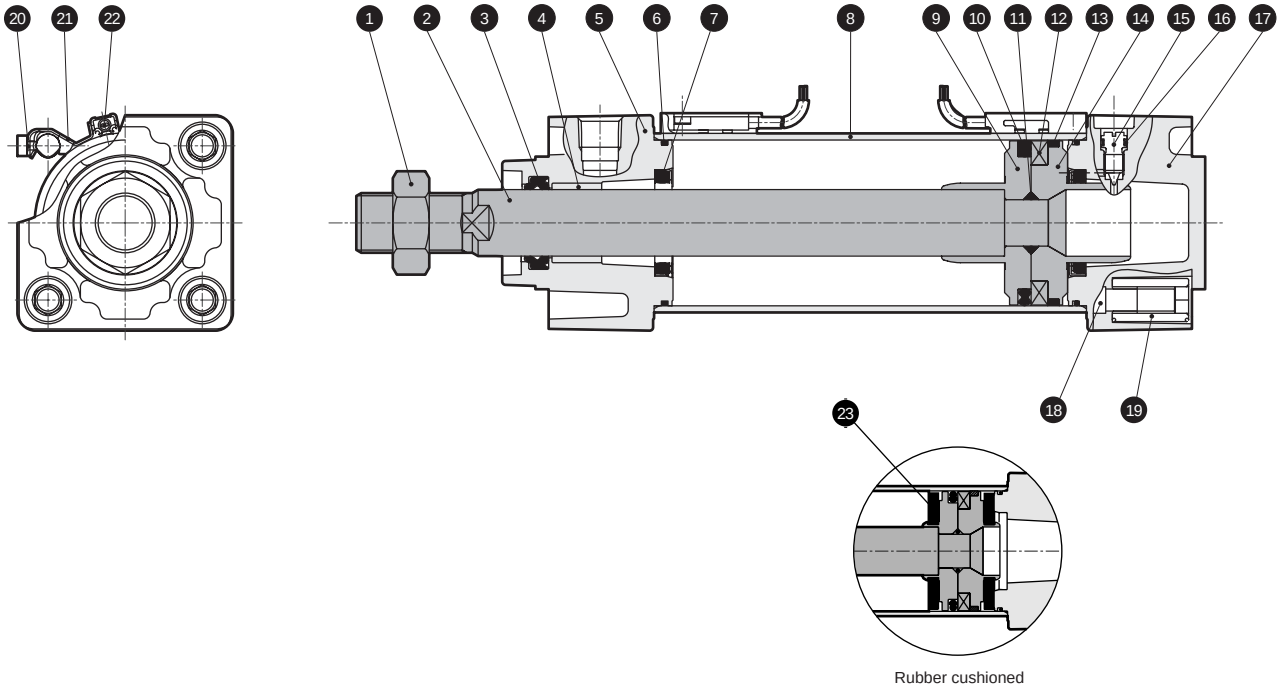
How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ 32	ϕ 40	ϕ 50	ϕ 63	ϕ 80	ϕ100
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 type bracket (LB) is a two-piece set.

Internal structure and parts list

● SCG



Rubber cushioned

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

Repair parts list

● Air cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ32	SCG-32BK	❸ ❻ ❼ ❿ ⓭ ⓰
ϕ40	SCG-40BK	
ϕ50	SCG-50BK	
ϕ63	SCG-63BK	
ϕ80	SCG-80BK	
ϕ100	SCG-100BK	

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

● Rubber cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ32	SCG-32DK	❸ ❻ ❿ ⓭ ⓰ ㉓
ϕ40	SCG-40DK	
ϕ50	SCG-50DK	
ϕ63	SCG-63DK	
ϕ80	SCG-80DK	
ϕ100	SCG-100DK	

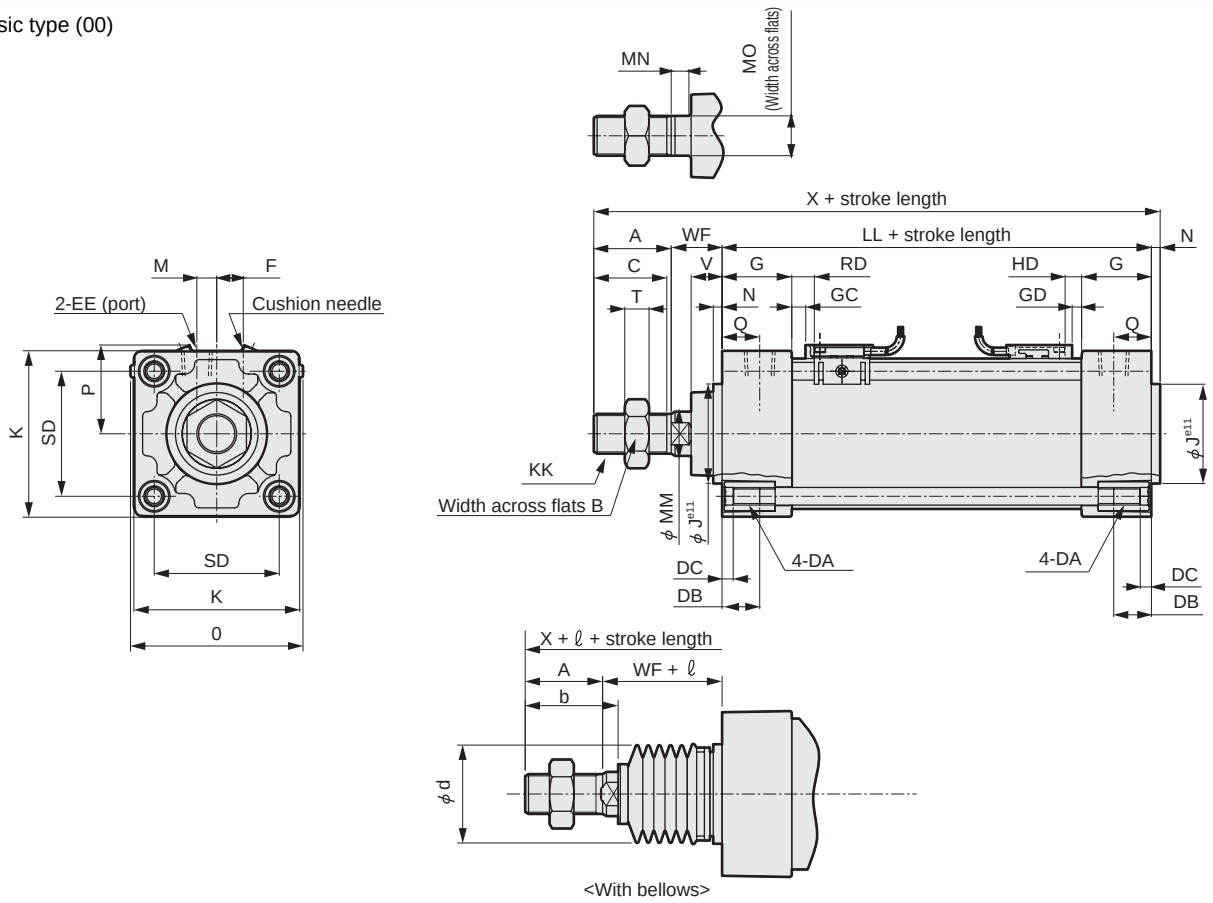
Note: Specify the kit No. when placing an order.

Mounting bracket material

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

Dimensions

● Basic type (00)



<With bellows>

Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ32, ϕ40; +6 mm, ϕ50, ϕ63; +8 mm, ϕ80, ϕ100; +10 mm)
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

Symbol / Bore size (mm)	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
ϕ 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
ϕ 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
ϕ 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
ϕ 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
ϕ 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
ϕ 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

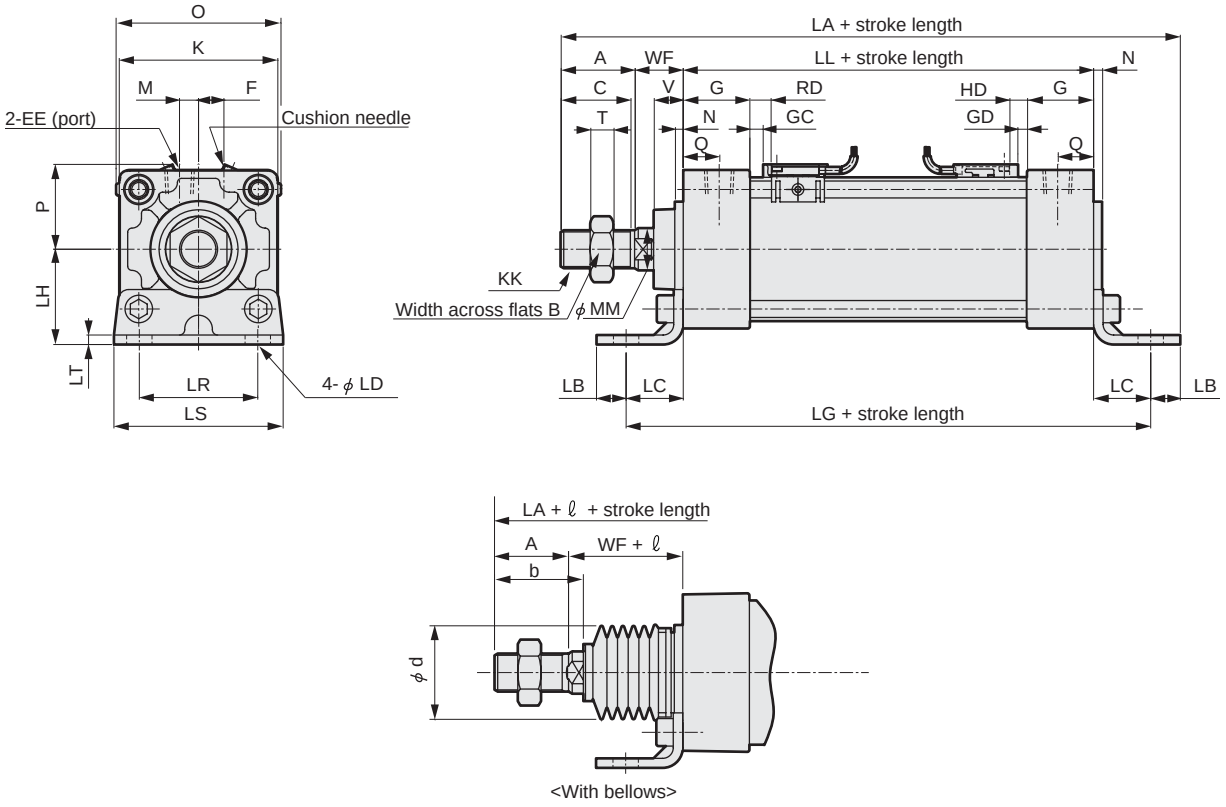
Symbol / Bore size (mm)						With bellows													
	SD	T	V	WF	Note 1 X	A	b	d	WF	ℓ 50 or less	ℓ 50 to 100	ℓ 100 to 150	ℓ 150 to 200	ℓ 200 to 300	ℓ 300 to 400	ℓ 400 to 500	ℓ 500 to 600	ℓ 600 to 700	ℓ 700 to 800
ϕ 32	32.5	6	13	25	135 (141)	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
ϕ 40	38	8	13	21	139 (145)	30	35	40	21	30	43	55	68	93	118	143	-	-	-
ϕ 50	46.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ 63	56.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ 80	72	13	20	32	190 (200)	40	50	53	32	29	42	54	67	92	117	142	167	192	217
ϕ 100	89	16	20	32	190 (200)	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
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 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions CAD

● Axial foot type (LB)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(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 DC 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
ϕ 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)
ϕ 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)
ϕ 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)
ϕ 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)
ϕ 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)
ϕ 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)

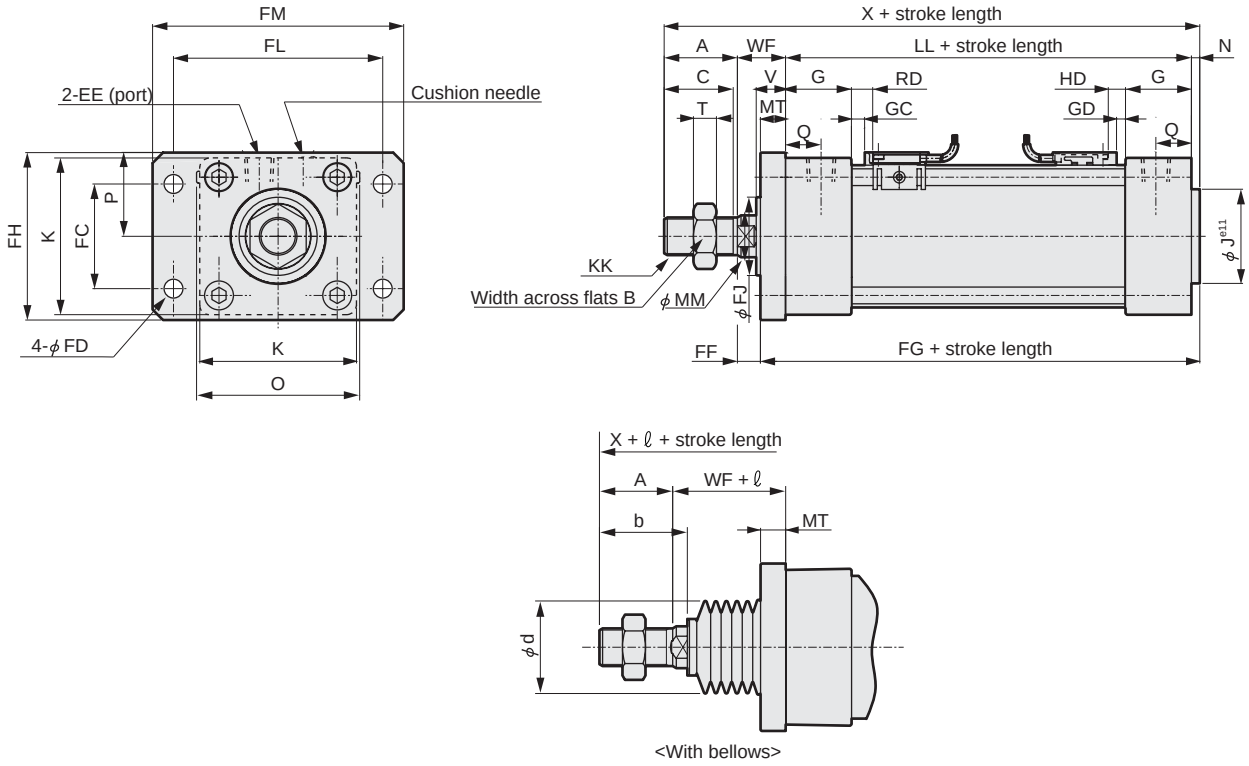
Symbol / Bore size (mm)									With bellows															
	LB	LC	LD	Note 1 LG	LH	LR	LS	LT	A	b	d	WF	ℓ 50 or less	ℓ 50 to 100	ℓ 100 to 150	ℓ 150 to 200	ℓ 200 to 300	ℓ 300 to 400	ℓ 400 to 500	ℓ 500 to 600	ℓ 600 to 700	ℓ 700 to 800
ϕ 32	9	22	7	128 (134)	30	32	50	3.2	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
ϕ 40	11	24	9	132 (138)	33	38	55	3.2	30	35	40	21	30	43	55	68	93	118	143	-	-	-
ϕ 50	11	27	9	148 (156)	40	46	70	3.2	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ 63	14	27	12	148 (156)	45	56	80	4.5	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ 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
ϕ 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
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 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Rod end flange type (FA)



<With bellows>

Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ32, ϕ40; +6 mm, ϕ50, ϕ63; +8 mm, ϕ80, ϕ100; +10 mm)
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

Symbol / Bore size (mm)	Rod end flange type (FA) basic dimensions																		
	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	N	O	Q	T	V	WF	Note 1 X
ϕ32	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)
ϕ40	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)
ϕ50	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)
ϕ63	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)
ϕ80	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)
ϕ100	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)

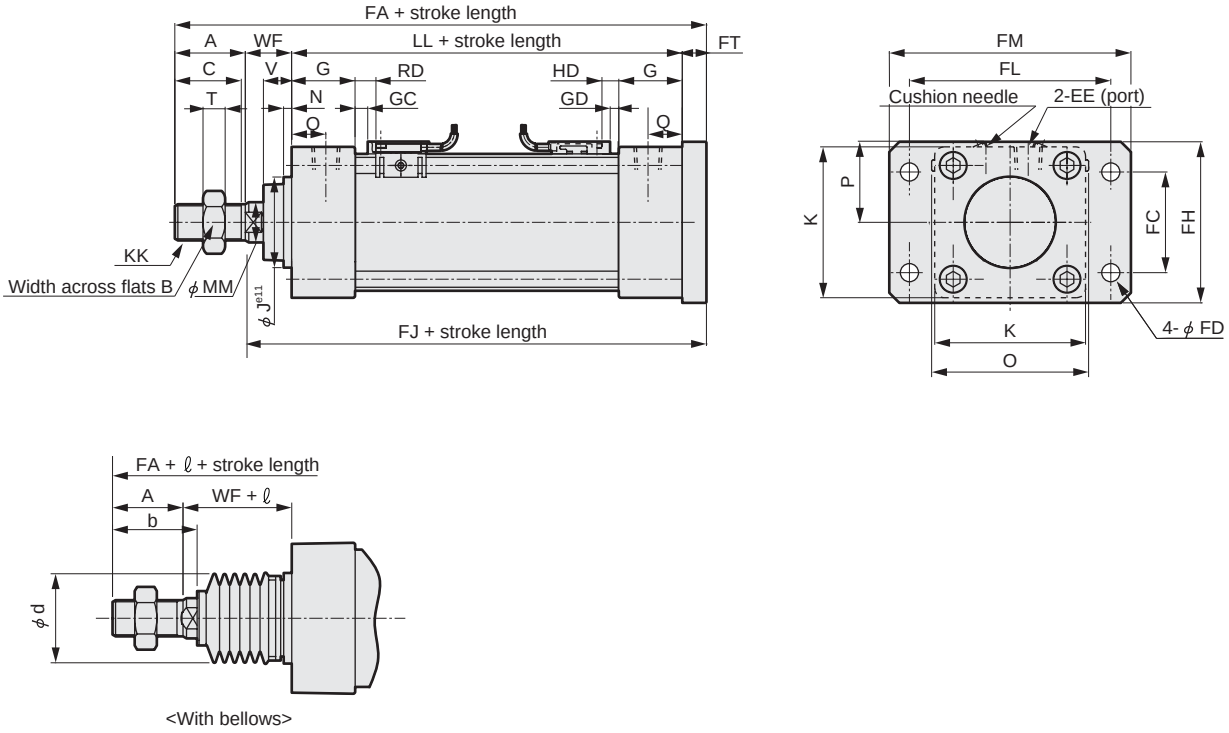
Symbol / Bore size (mm)	Installation dimensions									With bellows												
	FC	FD	FF	Note 1 FG	FJ	MT	FH	FL	FM	A	b	d	WF	ℓ 50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
ϕ32	32	7	15	98 (104)	29	10	50	64	79	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
ϕ40	36	9	11	98 (104)	30	10	55	72	90	30	35	40	21	30	43	55	68	93	118	143	-	-	-
ϕ50	45	9	11	110 (118)	38	12	70	90	110	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ63	50	9	11	110 (118)	38	12	80	100	120	35	42	47	23	31	44	56	69	94	119	144	169	-	-
ϕ80	63	12	16	134 (144)	43	16	100	126	153	40	50	53	32	29	42	54	67	92	117	142	167	192	217
ϕ100	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 / Bore size (mm)	With switch				
	GC Note 1	GD Note 1	RD Note 1	HD Note 1	P
ϕ32	1 (4)	1 (4)	5 (8)	5 (8)	25
ϕ40	1 (4)	1 (4)	5 (8)	5 (8)	29
ϕ50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
ϕ63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
ϕ80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
ϕ100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions CAD

● Head end flange type (FB)



<With bellows>

Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ32, φ40; +6 mm, φ50, φ63; +8 mm, φ80, φ100; +10 mm)
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

Symbol / Bore size (mm)	Head end flange type (FB) basic dimensions																
	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	O	Q	T	V	WF
φ32	22	17	19.5	Rc1/8	6.5	27	30	46	M10 x 1.25	84 (90)	4	12	52	13	6	13	25
φ40	30	22	27	Rc1/4	9	27	35	52	M14 x 1.5	84 (90)	4	16	58	14	8	13	21
φ50	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
φ63	35	27	32	Rc3/8	12	31.5	45	75	M18 x 1.5	94 (102)	9	20	78	16.5	11	14	23
φ80	40	32	37	Rc3/8	14	38	45	95	M22 x 1.5	114 (124)	11.5	25	95	19	13	20	32
φ100	40	41	37	Rc1/2	15	38	55	114	M26 x 1.5	114 (124)	17	30	114	19	16	20	32

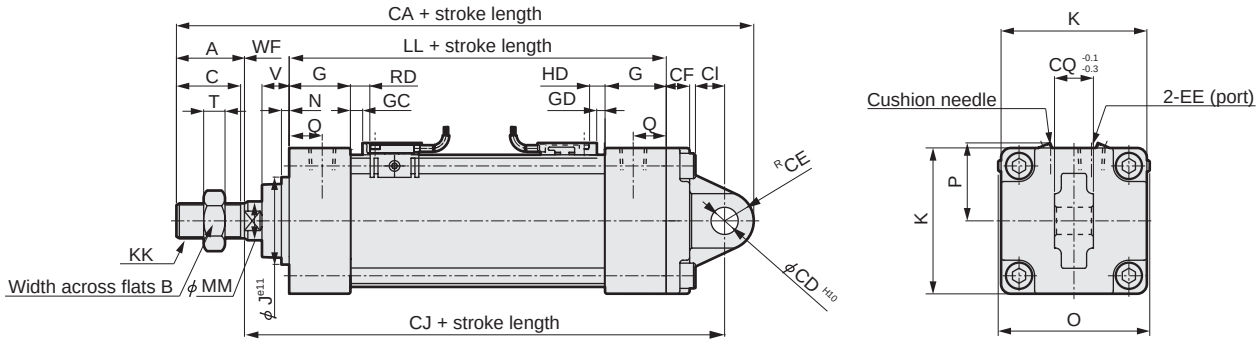
Symbol / Bore size (mm)	Installation dimensions							With bellows														
	Note 1 FA	FC	FD	Note 1 FJ	FL	FM	FT	A	b	d	WF	ℓ										
												50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
φ32	141 (147)	32	7	119 (125)	64	79	10	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
φ40	145 (151)	36	9	115 (121)	72	90	10	30	35	40	21	30	43	55	68	93	118	143	-	-	-
φ50	164 (172)	45	9	129 (137)	90	110	12	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ63	164 (172)	50	9	129 (137)	100	120	12	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ80	202 (212)	63	12	162 (172)	126	153	16	40	50	53	32	29	42	54	67	92	117	142	167	192	217
φ100	202 (212)	75	14	162 (172)	150	178	16	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217

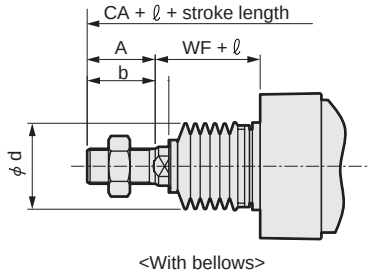
Symbol / Bore size (mm)	With switch				
	GC Note 1	GD Note 1	RD Note 1	HD Note 1	P
φ32	1 (4)	1 (4)	5 (8)	5 (8)	25
φ40	1 (4)	1 (4)	5 (8)	5 (8)	29
φ50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Eye bracket type (CA)





<With bellows>

Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ32, φ40; +6 mm, φ50, φ63; +8 mm, φ80, φ100; +10 mm)
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

Symbol / Bore size (mm)	Eye bracket type (CA) basic dimensions															
	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	O	Q	T	V	WF
φ32	22	17	19.5	Rc1/8	6.5	27	30	46	M10 x 1.25	84 (90)	4	52	13	6	13	25
φ40	30	22	27	Rc1/4	9	27	35	52	M14 x 1.5	84 (90)	4	58	14	8	13	21
φ50	35	27	32	Rc1/4	10.5	31.5	40	65	M18 x 1.5	94 (102)	5	68	15.5	11	14	23
φ63	35	27	32	Rc3/8	12	31.5	45	75	M18 x 1.5	94 (102)	9	78	16.5	11	14	23
φ80	40	32	37	Rc3/8	14	38	45	95	M22 x 1.5	114 (124)	11.5	95	19	13	20	32
φ100	40	41	37	Rc1/2	15	38	55	114	M26 x 1.5	114 (124)	17	114	19	16	20	32

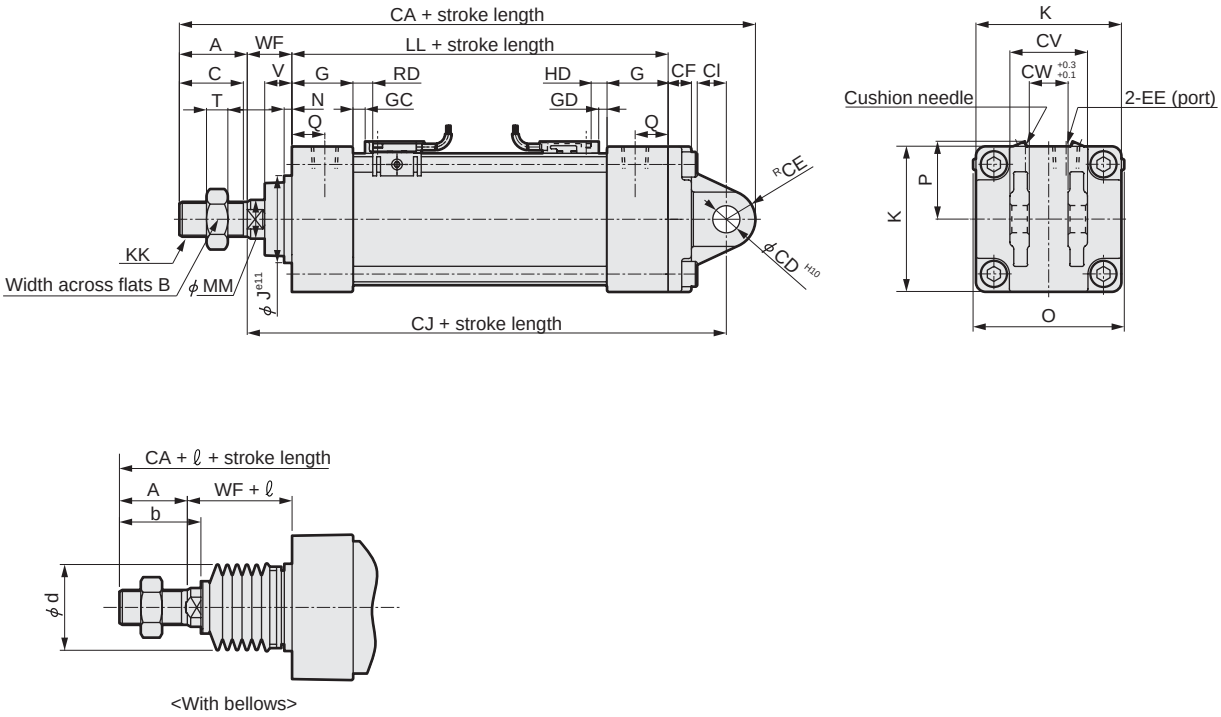
Symbol / Bore size (mm)	Installation dimensions							With bellows														
	Note 1 CA	CD	CE	CF	CI	Note 1 CJ	CQ	A	b	d	WF	ℓ										
												50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
φ32	164.5 (170.5)	10	10.5	9	13	132 (138)	14	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
φ40	169 (175)	10	11	9	13	128 (134)	14	30	35	40	21	30	43	55	68	93	118	143	-	-	-
φ50	197 (205)	14	15	12	17	147 (155)	20	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ63	197 (205)	14	15	12	17	147 (155)	20	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ80	251 (261)	22	23	15	26	188 (198)	30	40	50	53	32	29	42	54	67	92	117	142	167	192	217
φ100	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 / Bore size (mm)	With switch				
	GC Note 1	GD Note 1	RD Note 1	HD Note 1	P
φ32	1 (4)	1 (4)	5 (8)	5 (8)	25
φ40	1 (4)	1 (4)	5 (8)	5 (8)	29
φ50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions CAD

● Clevis bracket type (CB)



<With bellows>

Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ 32, ϕ40; +6 mm, ϕ 50, ϕ63; +8 mm, ϕ 80, ϕ100; +10 mm)
Note 2: 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 / Bore size (mm)	Clevis bracket type (CB) basic dimensions.																	Installation dimensions	
	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

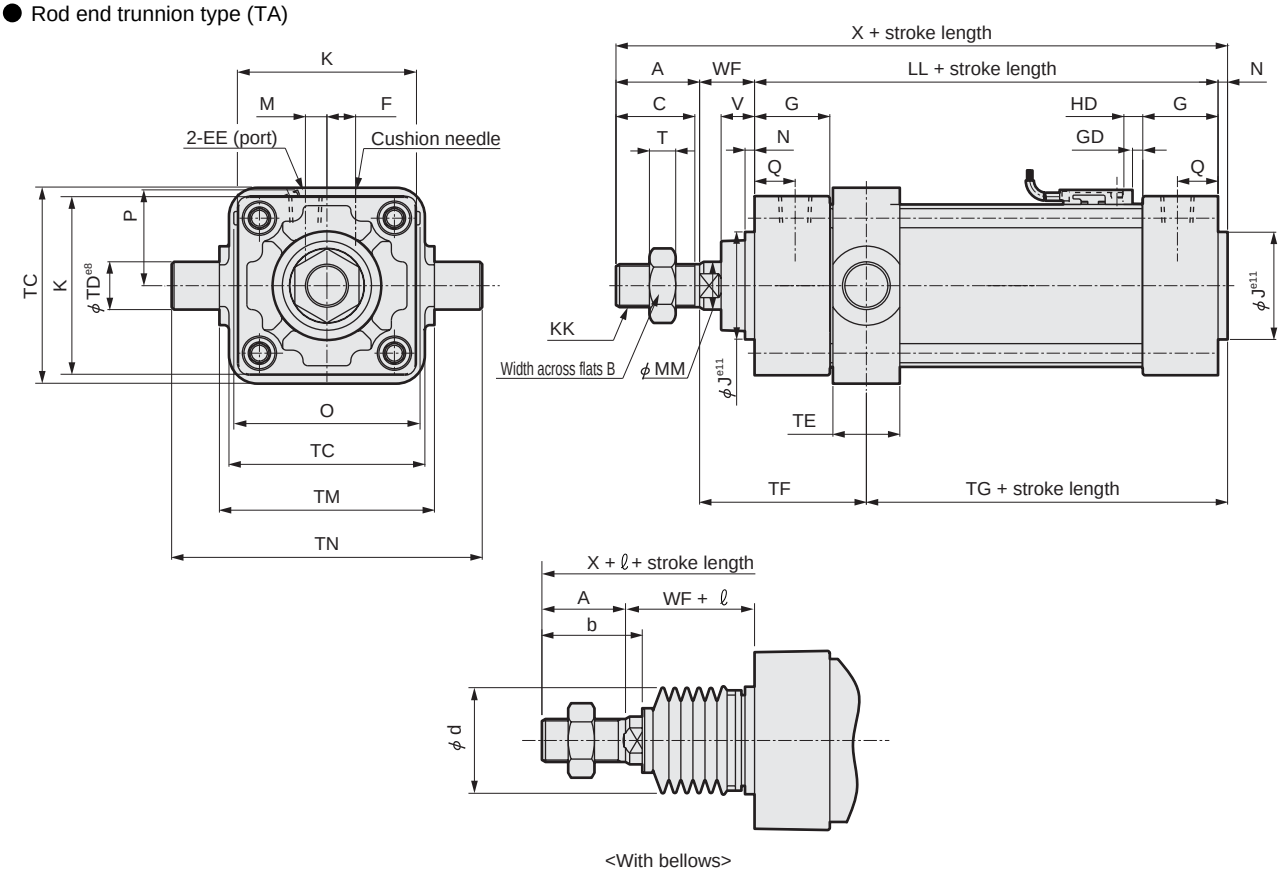
Symbol / Bore size (mm)							With bellows														
	CE	CF	CI	Note 1 CJ	CV	CW	A	b	d	WF	ℓ										
											50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
ϕ 32	10.5	9	13	132 (138)	28	14	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
ϕ 40	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 / Bore size (mm)	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 4: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 5: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Rod end trunnion type (TA)



<With bellows>

Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ32, φ40; +6 mm, φ50, φ63; +8 mm, φ80, φ100; φ10 mm)
Note 2: Switches can not be installed on the rod end.
Note 3: HD in the dimensions indicate the switch end positions, and GD indicate the switch rail end positions.

Symbol / Bore size (mm)	Rod end trunnion type (TA) basic dimensions																	
	A	B	C	EE	F	G	J	K	KK	Note 1 LL	M	MM	N	O	Q	T	V	WF
φ32	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
φ40	30	22	27	Rc1/4	9	27	35	52	M14 x 1.5	84 (90)	4	16	4	58	14	8	13	21
φ50	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
φ63	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
φ80	40	32	37	Rc3/8	14	38	45	95	M22 x 1.5	114 (124)	11.5	25	4	95	19	13	20	32
φ100	40	41	37	Rc1/2	15	38	55	114	M26 x 1.5	114 (124)	17	30	4	114	19	16	20	32

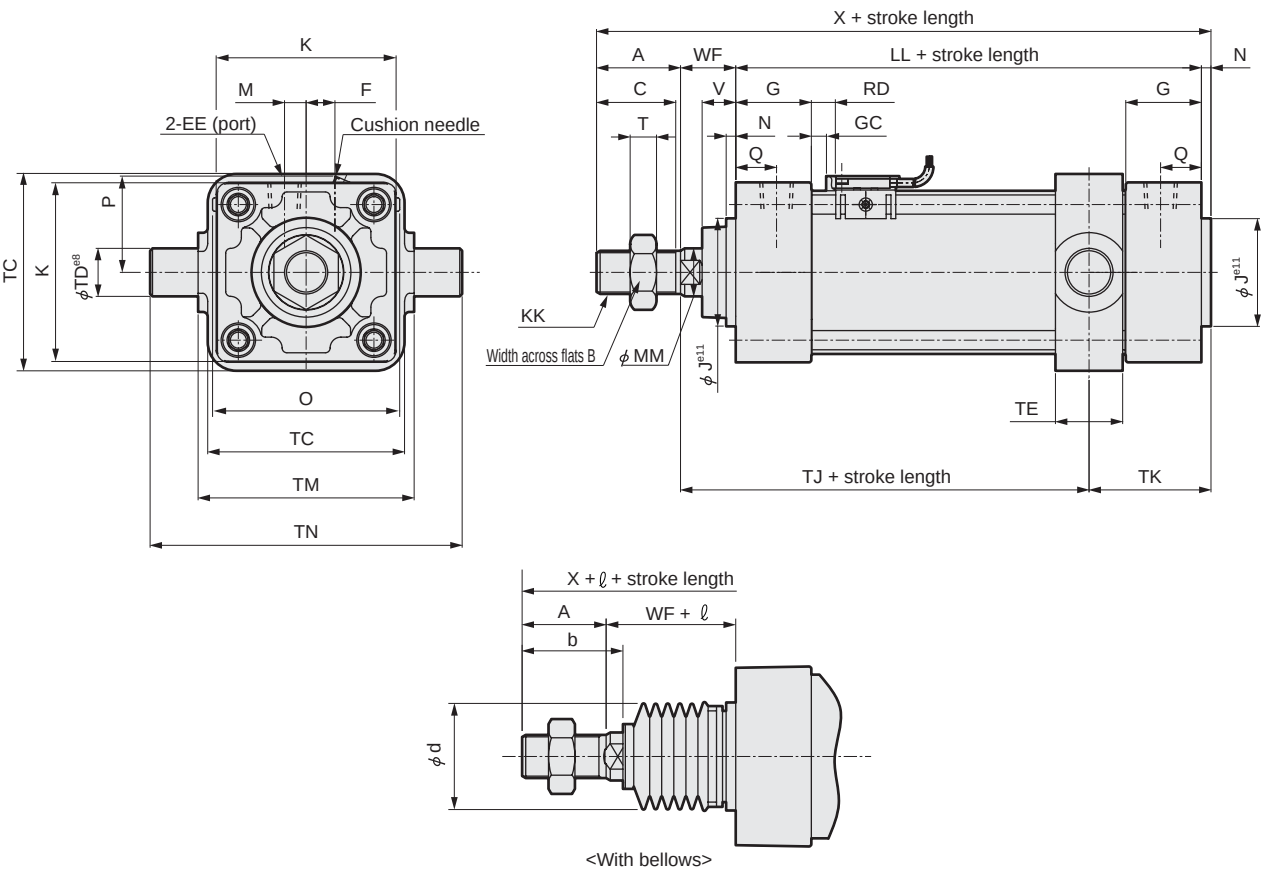
Symbol / Bore size (mm)		Installation dimensions							With switch			With bellows						
	Note 1 X	TC	TD	TE	TF	Note 1 TG	TM	TN	Note 1 GD	Note 1 HD	P	A	b	d	WF	ℓ 50 or less	ℓ 50 to 100	ℓ 100 to 150
φ32	135 (141)	47	12	17	61.5	51.5 (57.5)	50	74	1 (4)	5 (8)	25	22	31.5	30	25	26	39	51
φ40	139 (145)	57	16	22	60	49 (55)	63	95	1 (4)	5 (8)	29	30	35	40	21	30	43	55
φ50	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
φ63	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
φ80	190 (200)	100	20	34	88	62 (72)	110	150	2 (7)	6 (11)	-	40	50	53	32	29	42	54
φ100	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 / Bore size (mm)	With bellows ℓ						
	150 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800
φ32	64	89	114	139	-	-	-
φ40	68	93	118	143	-	-	-
φ50	69	94	119	144	169	-	-
φ63	69	94	119	144	169	-	-
φ80	67	92	117	142	167	192	217
φ100	67	92	117	142	167	192	217

Note 4: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 5: Refer to pages 428, 429 for accessory dimensions.

Dimensions CAD

● Head end trunnion type (TB)



<With bellows>

Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ 32, φ 40; +6 mm, φ 50, φ 63; +8 mm, φ 80, φ 100; φ 10 mm)
Note 2: Switches can not be installed on the head end.
Note 3: RD in the dimensions indicate the switch end positions, and GC indicate the switch rail end positions.

Symbol / Bore size (mm)	Head end trunnion type (TB) basic dimensions																	
	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

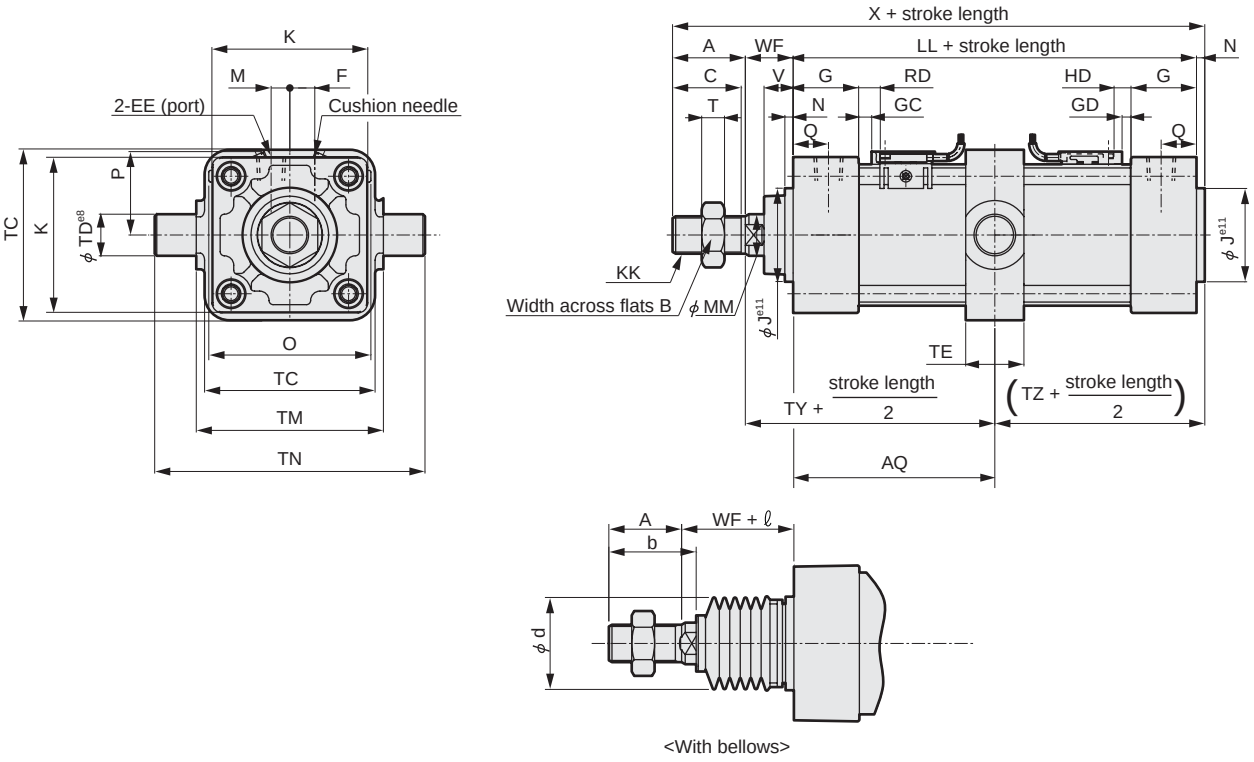
Symbol / Bore size (mm)	Installation dimensions								With switch			With bellows						
	Note 1 X	TC	TD	TE	Note 1 TJ	TK	TM	TN	Note 1 GC	Note 1 RD	P	A	b	d	WF	ℓ 50 or less	ℓ 50 to 100	ℓ 100 to 150
φ 32	135 (141)	47	12	17	72.5 (78.5)	40.5	50	74	1 (4)	5 (8)	25	22	31.5	30	25	26	39	51
φ 40	139 (145)	57	16	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 / Bore size (mm)	With bellows ℓ						
	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 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 5: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Center trunnion type (TC)



<With bellows>

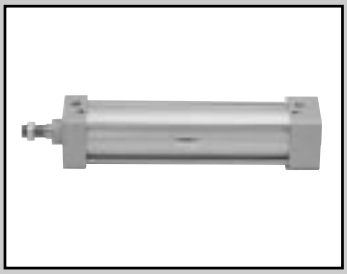
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ 32, φ 40; +6 mm, φ 50, φ 63; +8 mm, φ 80, φ 100; +10 mm)
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

Symbol / Bore size (mm)	Center trunnion type (TC) basic dimensions																	
	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 / Bore size (mm)	Installation dimensions								With bellows								
	Note 1 X	AQ	TC	TD	TE	TM	TN	Note 1 TY	Note 1 TZ	A	b	d	WF	ℓ 50 or less	ℓ 50 to 100	ℓ 100 to 150	ℓ 150 to 200	ℓ 200 to 300
φ 32	135 (141)	42 (45) + Stroke length/2	47	12	17	50	74	67 (70)	46 (49)	22	31.5	30	25	26	39	51	64	89
φ 40	139 (145)	42 (45) + Stroke length/2	57	16	22	63	95	63 (66)	46 (49)	30	35	40	21	30	43	55	68	93
φ 50	156 (164)	47 (51) + Stroke length/2	67	16	22	75	107	70 (74)	51 (55)	35	42	47	23	31	44	56	69	94
φ 63	156 (164)	47 (51) + Stroke length/2	82	20	28	90	130	70 (74)	51 (55)	35	42	47	23	31	44	56	69	94
φ 80	190 (200)	57 (62) + Stroke length/2	100	20	34	110	150	89 (94)	61 (66)	40	50	53	32	29	42	54	67	92
φ 100	190 (200)	57 (62) + Stroke length/2	121	25	40	132	182	89 (94)	61 (66)	40	52.5	61	32	29	42	54	67	92

Symbol / Bore size (mm)	With switch									
	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800	GC Note 1	GD Note 1	RD Note 1	HD Note 1	P
φ 32	114	139	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	25
φ 40	118	143	-	-	-	1 (4)	1 (4)	5 (8)	5 (8)	29
φ 50	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ 63	119	144	169	-	-	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ 80	117	142	167	192	217	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ 100	117	142	167	192	217	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

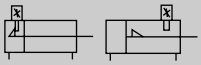
Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.



Tie rod cylinder, double acting position locking type

SCG-Q Series

● Bore size: ϕ 32, ϕ 40, ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol 

RoHS CAD

Specifications

Descriptions		SCG-Q					
Bore size	mm	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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	℃	-10 to 60 (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 1000), $^{+1.8}_{0}$ (1001 to 1500)					
Working piston speed	mm/s	30 to 1000 (use within the allowable energy absorption.)					
Cushion		Air cushion					
Effective air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Position locking mechanism		Head end, rod end					
Holding force		Maximum 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 length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ 32	25, 50, 75, 100 150, 200, 250 300, 350, 400 450, 500	600	700	1
ϕ 40			800	
ϕ 50			1200	
ϕ 63			1200	
ϕ 80		700	1400	
ϕ 100		800	1500	

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T0/T5 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ϕ 40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ 50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ 63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ϕ 80	10	20	39	59	10	20	39	59	96 (66)	96 (66)	99 (99)	99 (99)	41	47
ϕ 100	10	20	40	60	10	20	40	60	101 (71)	101 (71)	105 (105)	105 (105)	47	53

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T8 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ϕ 40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ 50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ 63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ϕ 80	10	20	39	59	10	20	39	59	100 (70)	100 (70)	111 (111)	111 (111)	43	49
ϕ 100	10	20	40	60	10	20	40	60	105 (75)	105 (75)	117 (117)	117 (117)	49	55

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T2/T3 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (34)	64 (34)	131 (95)	131 (95)	27	27
ϕ 40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ 50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ 63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38
ϕ 80	6	11	22	33	6	11	22	33	88 (58)	88 (58)	88 (80)	88 (80)	37	43
ϕ 100	6	11	22	33	6	11	22	33	93 (63)	93 (63)	93 (85)	93 (85)	43	49

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T1/T2Y/T3Y/T2YD switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ 40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ 50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ 63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ 80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ 100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

● 1 color/2 color indicator, strong magnetic field proof

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

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							Proximity 2-wire
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/ T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	TOH/TOV		T5H/T5V		T8H/T8V			T2YD
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (w/o light), serial connection		Programmable controller, relay			Programmable controller dedicated
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		w/o light		LED (ON lighting)			Red/green LED (ON lighting)
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							1mA or less

● With preventive maintenance output

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

Note 1: Refer to an Ending 1 for other switch specifications.
Note 2: Max load current above: 20mA at 25℃. When ambient temperature around switch is more than 25℃, the value is lower than 20 mA. (5 to 10 mA at 60℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm: Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)	Stroke length: Additional weight per 50mm	Switch mass Grommet	Accessory weight I	Accessory weight Y
ϕ 32	0.69	0.8	0.91	0.84	0.87	0.86	0.12	0.018	0.07	0.10
ϕ 40	1.03	1.17	1.31	1.21	0.85	1.37	0.17	0.018	0.07	0.13
ϕ 50	1.69	1.85	2.17	2.10	2.10	2.17	0.23	0.018	0.20	0.30
ϕ 63	2.03	2.37	2.79	2.59	2.60	2.91	0.25	0.018	0.20	0.30
ϕ 80	3.96	4.39	5.53	5.23	5.24	5.45	0.40	0.018	0.52	0.94
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. / Ⓐ Mounting style Note 1 / Ⓑ Bore size / Ⓒ Port thread type / Ⓓ Cushion / Ⓔ Stroke length / Ⓕ Position locking mechanism / Ⓖ Switch model no. / Ⓗ Switch quantity Note 3 / Ⓘ Option Note 4 Note 5 / Ⓙ Accessory Note 6

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

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

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

Ⓓ Cushion	
B	Both sides air cushion (basic type)

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 2	Available stroke length	Custom stroke length
ϕ 32	**1 to 600**	**700**	**Per 1 mm increment**
ϕ 40		**800**	
ϕ 50		**1200**	
ϕ 63			
ϕ 80	**1 to 700**	**1400**	
ϕ 100	**1 to 800**	**1500**	

Ⓕ Position locking mechanism	
H	Head end position locking
R	Rod end position locking

Ⓖ Switch model no.

Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	**T0V***	Reed	1 color indicator type	2-wire
T5H*	**T5V***		w/o light	
T8H*	**T8V***		1 color indicator type	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			
T3H*	**T3V***			3-wire
T3PH*	**T3PV***		1 color indicator type (custom order)	
T2YH*	**T2YV***		2 color indicator type	2-wire
T3YH*	**T3YV***			3-wire
T2YFH*	**T2YFV***		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	**T3YFV***			4-wire
T2YMH*	**T2YMV***		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	**T3YMV***			4-wire
T2YD*	**-**		Strong magnetic field proof switch	2-wire
T2YDT*	**-**			
T2JH*	**T2JV***		Off-delay type	2-wire

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

Ⓗ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓘ Option	
Blank	Basic position locking type
M0	Non-locking manual override (release bolt attached)
M1	Locking manual override
M	Piston rod material (stainless steel)
P6	Copper and PTFE free

Ⓙ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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. (However, trunnion type is installed onto the product when shipped.)
Mounting style TA and position locking mechanism R are not available.
Mounting style TB and position locking mechanism H are not available.

Note 2: Refer to page 364 for the minimum switch stroke length.

Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod end) for TB.

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

Note 5: If "M0" or "M1" is not selected for the "I" Options, only the nonlocking manual override is available. Release bolt is not included.

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

<Example of model number>

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

Model: Tie rod cylinder double acting position locking type

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

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

- T0H: Switch model no. (Section Ⓖ in previous page)
- 40: Bore size (Section Ⓑ in previous page)

● Only switch body

SW - T0H

- T0H: Switch model no. (Section Ⓖ in previous page)

● Switch bracket set

SCG - T - 40

- T: Bracket
- 40: Bore size (Section Ⓑ in previous page)

Note: Consult with CKD when using the environment compatible T-type switch.

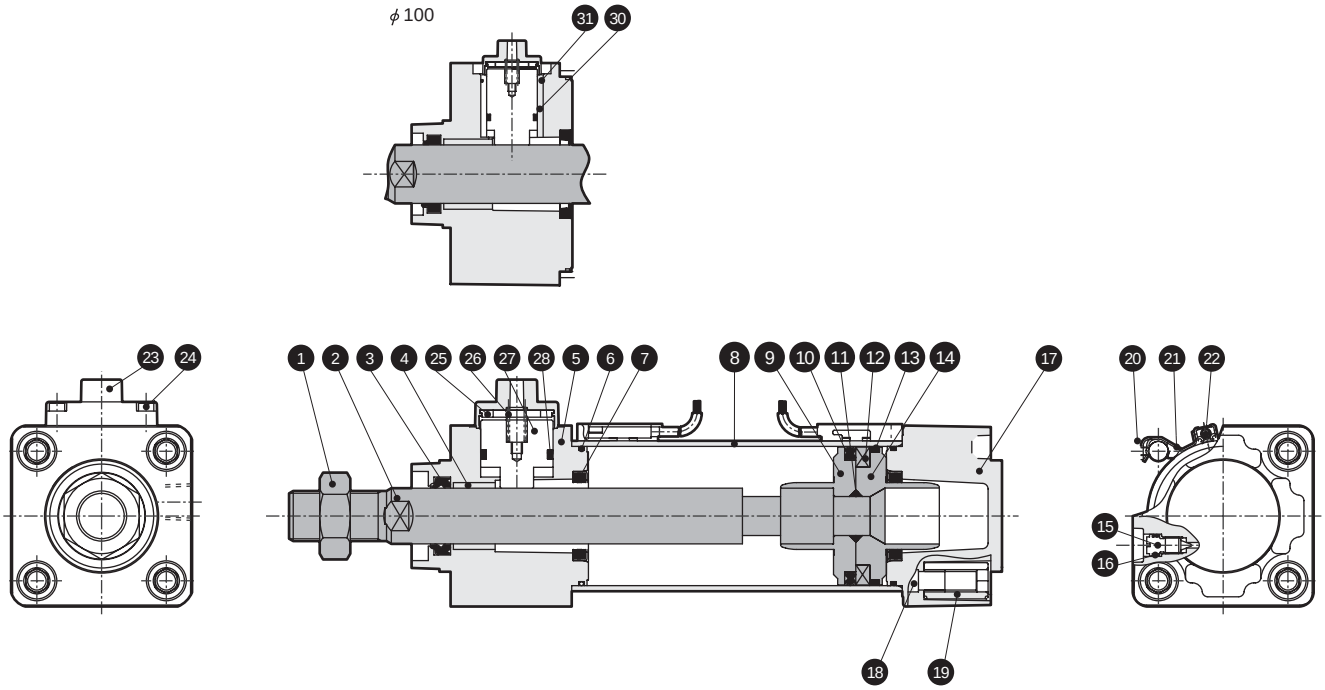
How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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

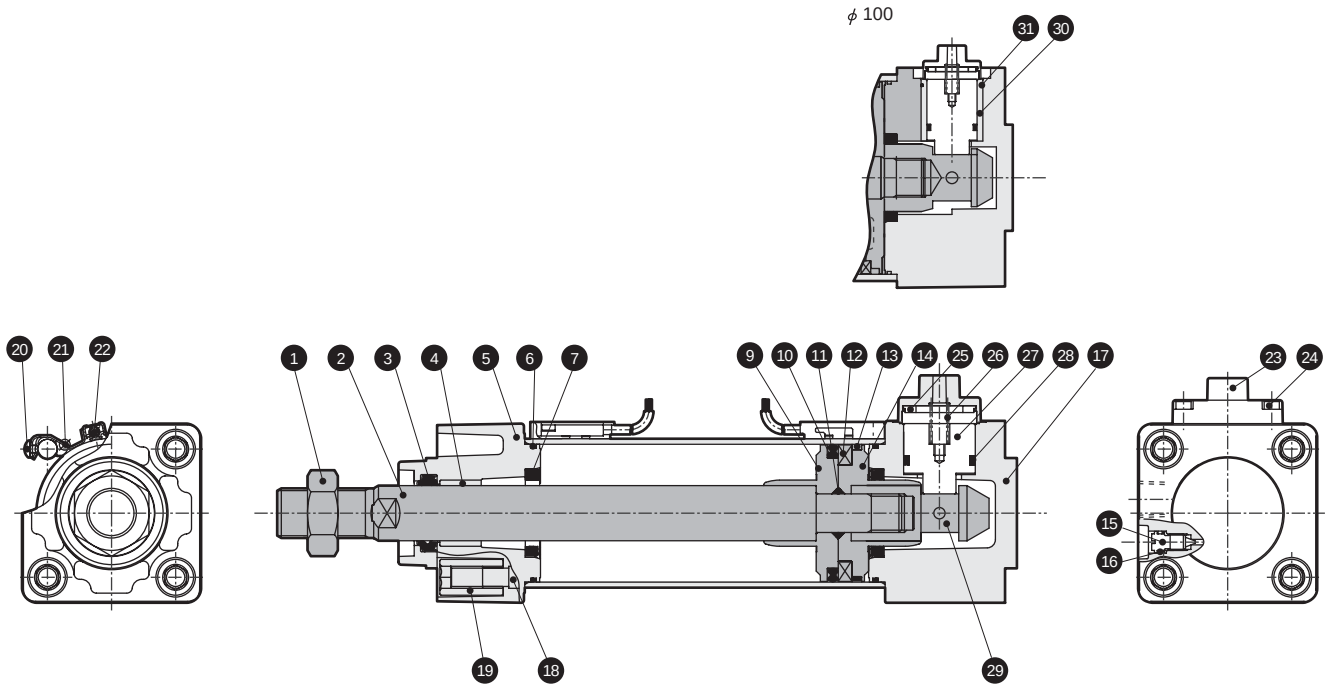
Note 1: 2 piece/set is applied for a foot type mounting bracket.

Internal structure drawing

● Rod end position locking



● Head end position locking



Part list

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickel plating	16	Needle gasket	Nitrile rubber	
2	Piston rod	Steel	Industrial chrome plating	17	Head cover	Aluminum alloy die-casting Note 2	Paint
3	Rod packing seal	Nitrile rubber		18	Tie rod	Steel	Zinc chromate plating
4	Bush	Oil impregnated bearing alloy		19	Round nut	Steel	Zinc chromate plating
5	Rod cover	Aluminum alloy casting Note 1	Paint	20	Hexagon socket head cap bolt	Steel	Zinc chromate plating
6	Cylinder gasket	Nitrile rubber		21	Bracket	Stainless steel spring steel	
7	Cushion packing seal	Nitrile rubber, steel		22	Switch		
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	23	Stopper guard	Aluminum alloy die-casting	Paint
9	Piston R	ϕ32, 40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting		24	Hexagon socket head cap bolt	Stainless steel	
				25	Cushion rubber B	Urethane rubber	
10	Piston packing seal	Nitrile rubber		26	Spring	Steel	
11	Piston gasket	Nitrile rubber		27	Stopper piston	Steel	Nitriding
12	Magnet	Plastic		28	Piston packing seal B	Nitrile rubber	
13	Wear ring	Polyacetal resin		29	Sleeve	Steel	Nitriding
14	Piston H	ϕ32, 40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting		30	O ring	Nitrile rubber	
				31	Housing	Aluminum alloy	
15	Cushion needle	Copper alloy					

Note 1: Aluminum alloy die-casting is used for the head end position locking.
Note 2: Aluminum alloy casting is used for the head end position locking.

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
ϕ 32	SCG-Q-32BK	❸ ❻ ❼ ❿ ⓭ ⓰ ㉕ ㉘
ϕ 40	SCG-Q-40BK	
ϕ 50	SCG-Q-50BK	
ϕ 63	SCG-Q-63BK	
ϕ 80	SCG-Q-80BK	
ϕ 100	SCG-Q-100BK	❸ ❻ ❼ ❿ ⓭ ⓰ ㉕ ㉘ ㉚

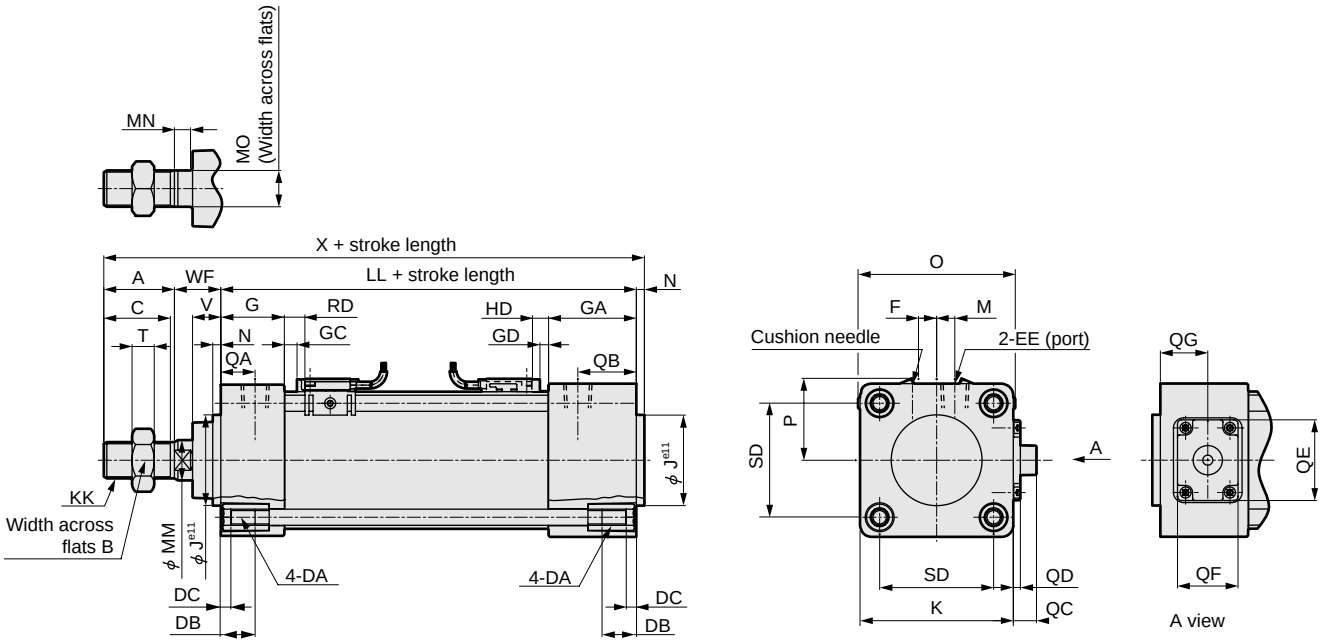
Note: Specify the kit No. when placing an order.

Mounting bracket material

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

Dimensions CAD

● Basic type (00) with head end 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.

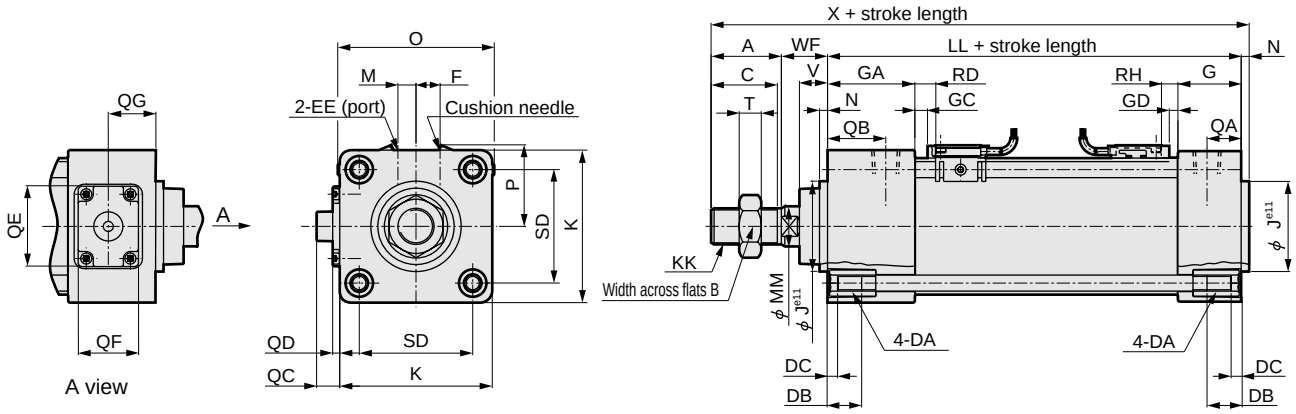
Symbol / Bore size (mm)	Basic dimensions for basic type (00) with head end position locking																			
	A	B	C	DA	DB	DC	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	O	QA
φ32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	5.5	10	4	52	13
φ40	30	22	27	M6	16	5	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	6	14	4	58	14
φ50	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)												With switch				
	QB	QC	QD	QE	QF	QG	SD	T	V	WF	X	GC	GD	RD	HD	P
φ32	21	13	8	22	16	17.5	32.5	6	13	25	143	1	1	5	5	25
φ40	27	12	7	22	16	18.5	38	8	13	21	152	1	1	5	5	29
φ50	27.5	17	8.5	40	30	23.8	46.5	11	14	23	168	2.5	1	6.5	5	34
φ63	28.5	11.5	3.5	40	30	23.8	56.5	11	14	23	168	2.5	1	6.5	5	40
φ80	37	10	2	40	30	27.5	72	13	20	32	208	8.5	2	12.5	6	-
φ100	37	11	3	40	30	27.5	89	16	20	32	208	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Basic type (00) with rod end 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.

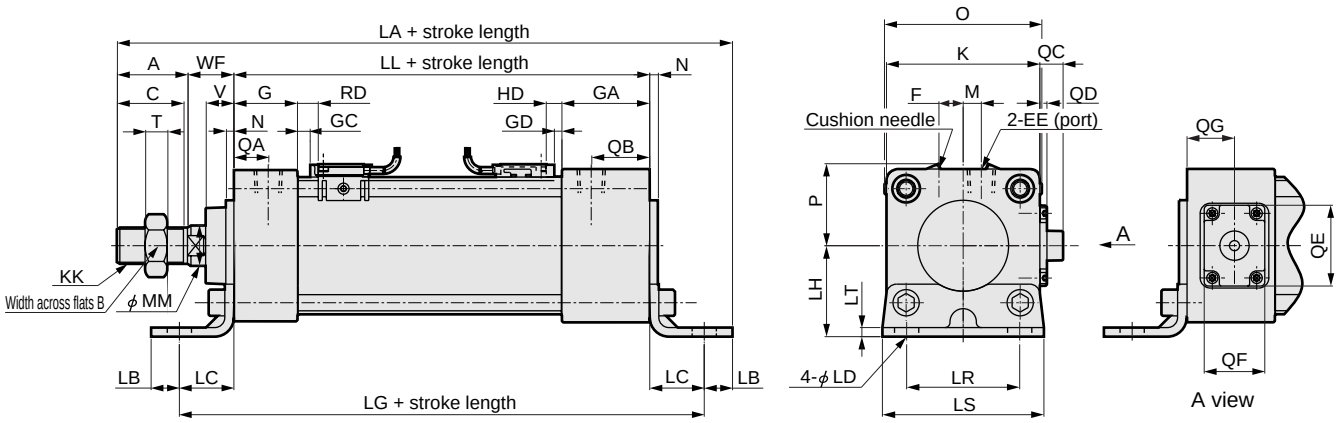
Symbol / Bore size (mm)	Basic dimensions for basic type (00) with rod end position locking																		
	A	B	C	DA	DB	DC	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA
ϕ32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	4	52	13
ϕ40	30	22	27	M6	16	5	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	4	58	14
ϕ50	35	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
ϕ63	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
ϕ80	40	32	37	M10	16	5	Rc3/8	14	38	56	45	95	M22 x 1.5	132	11.5	25	4	95	19
ϕ100	40	41	37	M10	16	5	Rc1/2	15	38	56	55	114	M26 x 1.5	132	17	30	4	114	19

Symbol / Bore size (mm)												With switch				
	QB	QC	QD	QE	QF	QG	SD	T	V	WF	X	GC	GD	RD	HD	P
ϕ32	21	13	8	22	16	17.5	32.5	6	13	25	143	1	1	5	5	25
ϕ40	27	12	7	22	16	18.5	38	8	13	21	152	1	1	5	5	29
ϕ50	27.5	17	8.5	40	30	23.8	46.5	11	14	23	168	2.5	1	6.5	5	34
ϕ63	28.5	11.5	3.5	40	30	23.8	56.5	11	14	23	168	2.5	1	6.5	5	40
ϕ80	37	10	2	40	30	27.5	72	13	20	32	208	8.5	2	12.5	6	-
ϕ100	37	11	3	40	30	31.5	89	16	20	32	208	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Axial foot type (LB) with head end 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.

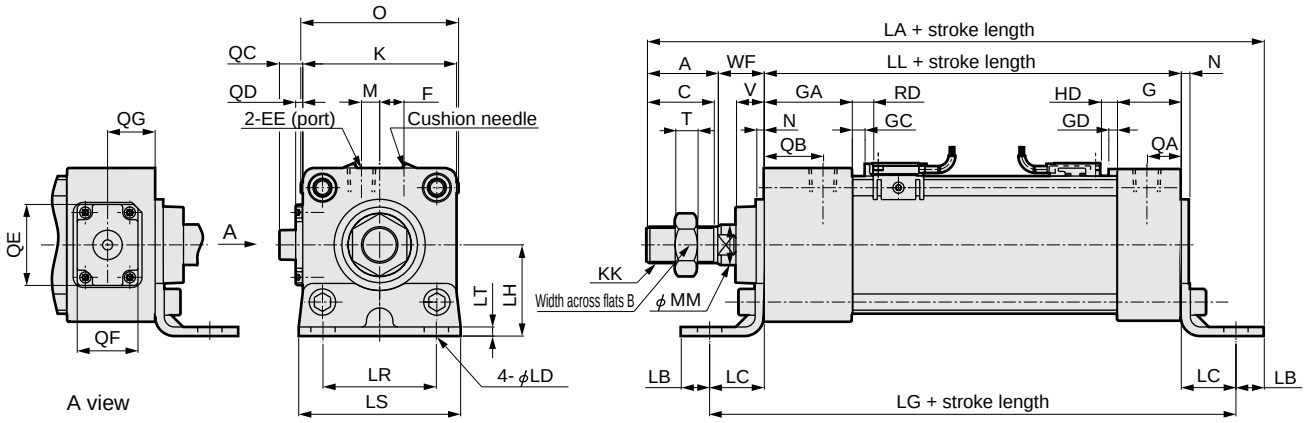
Symbol / Bore size (mm)	Basic dimensions for axial foot type (LB) with head end position locking																		
	A	B	C	EE	F	G	GA	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE	QF
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	46	M10 x 1.25	92	4	12	4	52	13	21	13	8	22	16
ϕ40	30	22	27	Rc1/4	9	27	40	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22	16
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)					Installation dimensions									With switch				
	QG	T	V	WF	LA	LB	LC	LD	LG	LH	LR	LS	LT	GC	GD	RD	HD	P
ϕ32	17.5	6	13	25	170	9	22	7	136	30	32	50	3.2	1	1	5	5	25
ϕ40	18.5	8	13	21	183	11	24	9	145	33	38	55	3.2	1	1	5	5	29
ϕ50	23.8	11	14	23	202	11	27	9	160	40	46	70	3.2	2.5	1	6.5	5	34
ϕ63	23.8	11	14	23	205	14	27	12	160	45	56	80	4.5	2.5	1	6.5	5	40
ϕ80	27.5	13	20	32	248	14	30	12	192	55	72	95	4.5	8.5	2	12.5	6	-
ϕ100	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 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Axial foot type (LB) with rod end 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.

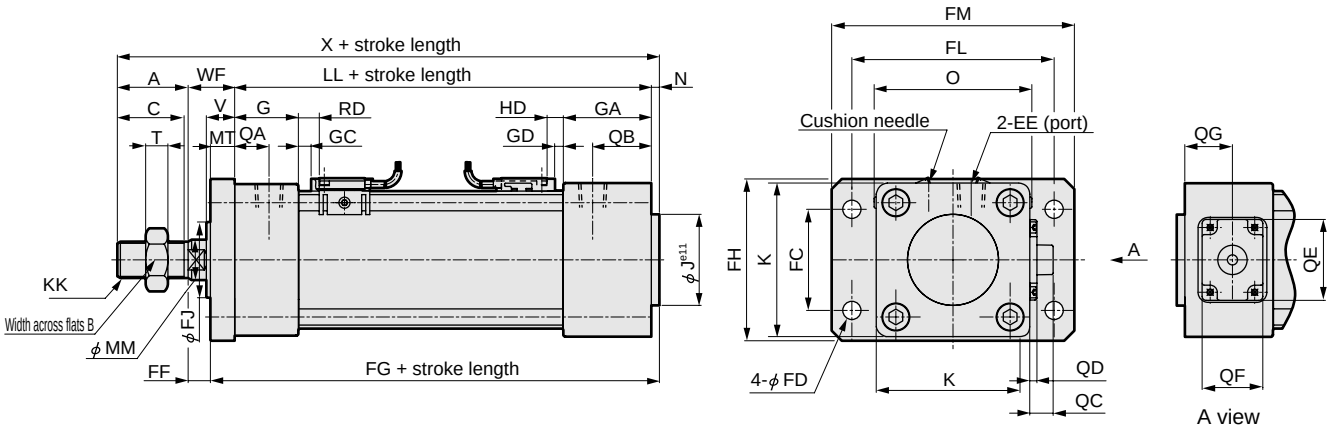
Symbol / Bore size (mm)	Basic dimensions for axial foot type (LB) with rod end position locking																			
	A	B	C	EE	F	G	GA	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE	QF
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	46	M10 x 1.25	92	4	12	4	52	13	21	13	8	22	16
ϕ40	30	22	27	Rc1/4	9	27	40	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22	16
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)					Installation dimensions									With switch				
	QG	T	V	WF	LA	LB	LC	LD	LG	LH	LR	LS	LT	GC	GD	RD	HD	P
ϕ32	17.5	6	13	25	170	9	22	7	136	30	32	50	3.2	1	1	5	5	25
ϕ40	18.5	8	13	21	183	11	24	9	145	33	38	55	3.2	1	1	5	5	29
ϕ50	23.8	11	14	23	202	11	27	9	160	40	46	70	3.2	2.5	1	6.5	5	34
ϕ63	23.8	11	14	23	205	14	27	12	160	45	56	80	4.5	2.5	1	6.5	5	40
ϕ80	27.5	13	20	32	248	14	30	12	192	55	72	95	4.5	8.5	2	12.5	6	-
ϕ100	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 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Rod end flange type (FA) with head end 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.

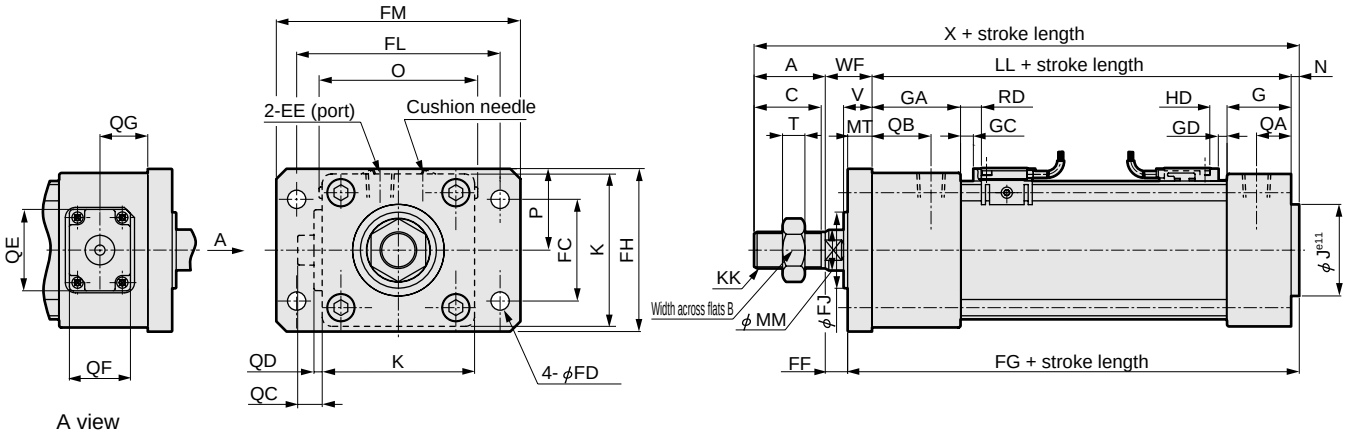
Symbol / Bore size (mm)	Basic dimensions for rod end flange type (FA) with head end position locking																		
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	4	52	13	21	13	8	22
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)							Installation dimensions									With switch				
	QF	QG	T	V	WF	X	FC	FD	FF	FG	Fj	MT	FH	FL	FM	GC	GD	RD	HD	P
ϕ32	16	17.5	6	13	25	143	32	7	15	106	29	10	50	64	79	1	1	5	5	25
ϕ40	16	18.5	8	13	21	152	36	9	11	111	30	10	55	72	90	1	1	5	5	29
ϕ50	30	23.8	11	14	23	168	45	9	11	122	38	12	70	90	110	2.5	1	6.5	5	34
ϕ63	30	23.8	11	14	23	168	50	9	11	122	38	12	80	100	120	2.5	1	6.5	5	40
ϕ80	30	27.5	13	20	32	208	63	12	16	152	43	16	100	126	153	8.5	2	12.5	6	-
ϕ100	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 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Rod end flange type (FA) with rod end 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.

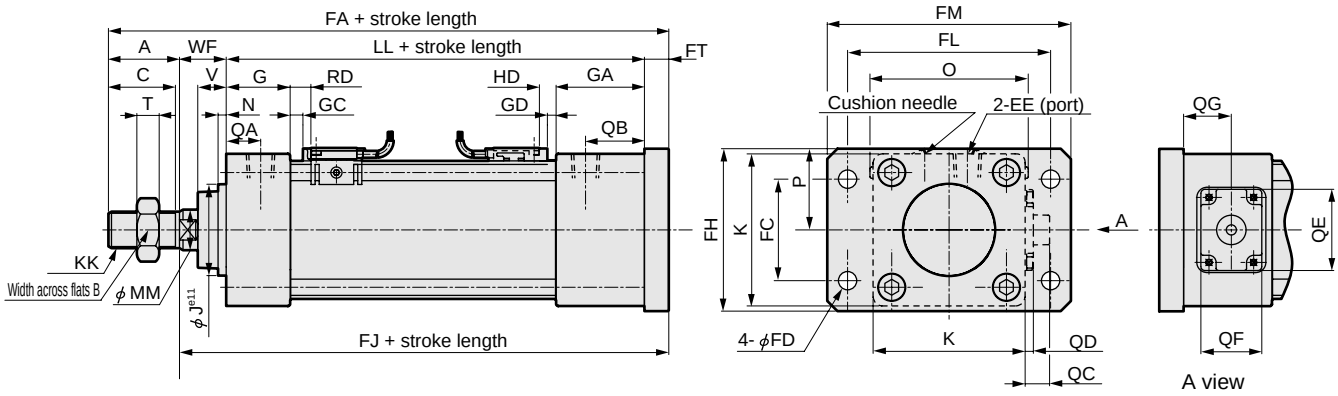
Symbol / Bore size (mm)	Basic dimensions for rod end flange type (FA) with rod end position locking																		
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	4	52	13	21	13	8	22
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)							Installation dimensions									With switch				
	QF	QG	T	V	WF	X	FC	FD	FF	FG	Fj	MT	FH	FL	FM	GC	GD	RD	HD	P
ϕ32	16	17.5	6	13	25	143	32	7	15	106	29	10	50	64	79	1	1	5	5	25
ϕ40	16	18.5	8	13	21	152	36	9	11	111	30	10	55	72	90	1	1	5	5	29
ϕ50	30	23.8	11	14	23	168	45	9	11	122	38	12	70	90	110	2.5	1	6.5	5	34
ϕ63	30	23.8	11	14	23	168	50	9	11	122	38	12	80	100	120	2.5	1	6.5	5	40
ϕ80	30	27.5	13	20	32	208	63	12	16	152	43	16	100	126	153	8.5	2	12.5	6	-
ϕ100	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 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions CAD

● Head end flange type (FB) with head end 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.

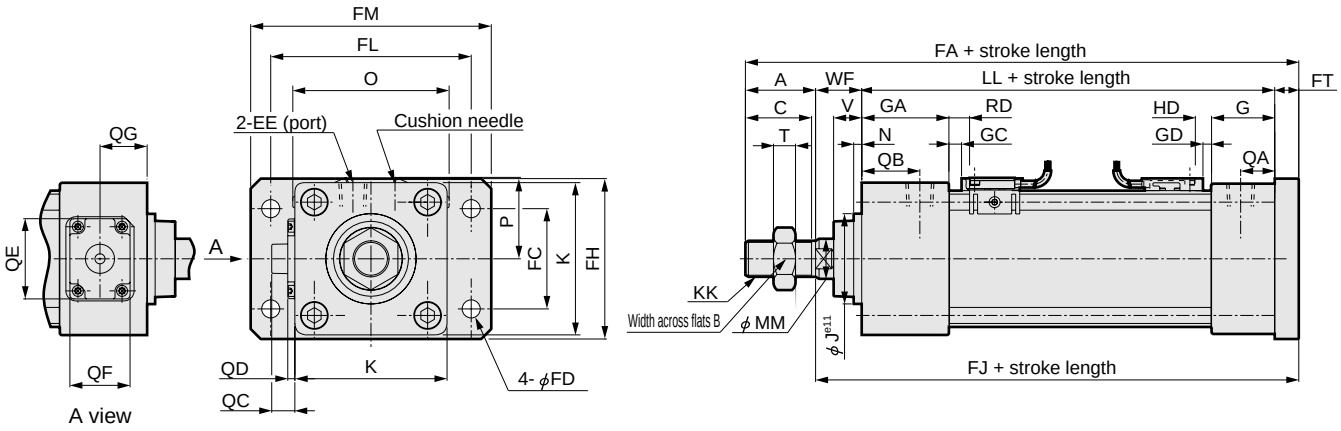
Symbol / Bore size (mm)	Basic dimensions for head end flange type (FB) with head end position locking																		
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	52	13	21	13	8	22	16
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	58	14	27	12	7	22	16
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)					Installation dimensions							With switch				
	QG	T	V	WF	FA	FC	FD	FJ	FL	FM	FT	GC	GD	RD	HD	P
ϕ32	17.5	6	13	25	149	32	7	127	64	79	10	1	1	5	5	25
ϕ40	18.5	8	13	21	158	36	9	128	72	90	10	1	1	5	5	29
ϕ50	23.8	11	14	23	176	45	9	141	90	110	12	2.5	1	6.5	5	34
ϕ63	23.8	11	14	23	176	50	9	141	100	120	12	2.5	1	6.5	5	40
ϕ80	27.5	13	20	32	220	63	12	180	126	153	16	8.5	2	12.5	6	-
ϕ100	27.5	16	20	32	220	75	14	180	150	178	16	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Head end flange type (FB) with rod end 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.

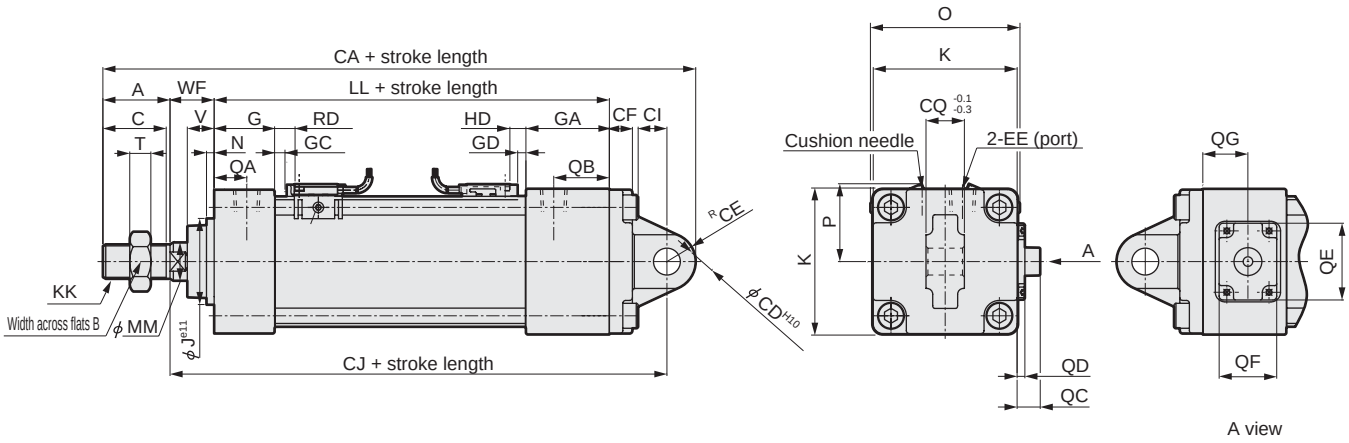
Symbol / Bore size (mm)	Basic dimensions for head end flange type (FB) with rod end position locking																			
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	52	13	21	13	8	22	16
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	58	14	27	12	7	22	16
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)	Installation dimensions											With switch				
	QG	T	V	WF	FA	FC	FD	FJ	FL	FM	FT	GC	GD	RD	HD	P
ϕ32	17.5	6	13	25	149	32	7	127	64	79	10	1	1	5	5	25
ϕ40	18.5	8	13	21	158	36	9	128	72	90	10	1	1	5	5	29
ϕ50	23.8	11	14	23	176	45	9	141	90	110	12	2.5	1	6.5	5	34
ϕ63	23.8	11	14	23	176	50	9	141	100	120	12	2.5	1	6.5	5	40
ϕ80	27.5	13	20	32	220	63	12	180	126	153	16	8.5	2	12.5	6	-
ϕ100	31.5	16	20	32	220	75	14	180	150	178	16	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Eye bracket type (CA) with head end 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.

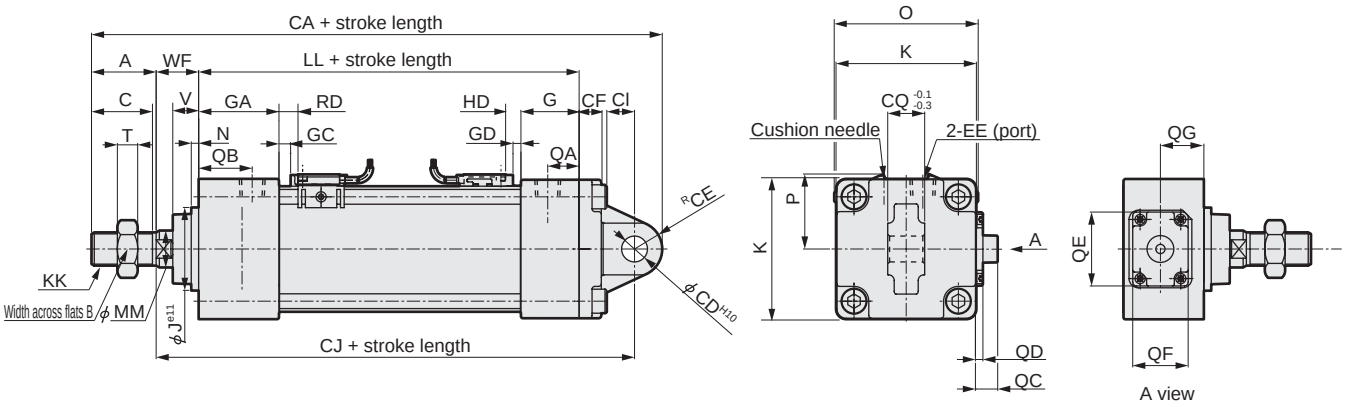
Symbol / Bore size (mm)	Basic dimensions for eye bracket type (CA) with head end position locking																			
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
φ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	52	13	21	13	8	22	16	17.5
φ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	58	14	27	12	7	22	16	18.5
φ50	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)				Installation dimensions							With switch				
	T	V	WF	CA	CD	CE	CF	CI	CJ	CQ	GC	GD	RD	HD	P
φ32	6	13	25	172.5	10	10.5	9	13	140	14	1	1	5	5	25
φ40	8	13	21	182	10	11	9	13	141	14	1	1	5	5	29
φ50	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	34
φ63	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	40
φ80	13	20	32	269	22	23	15	26	206	30	8.5	2	12.5	6	-
φ100	16	20	32	269	22	23	15	26	206	30	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Eye bracket type (CA) with rod end 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.

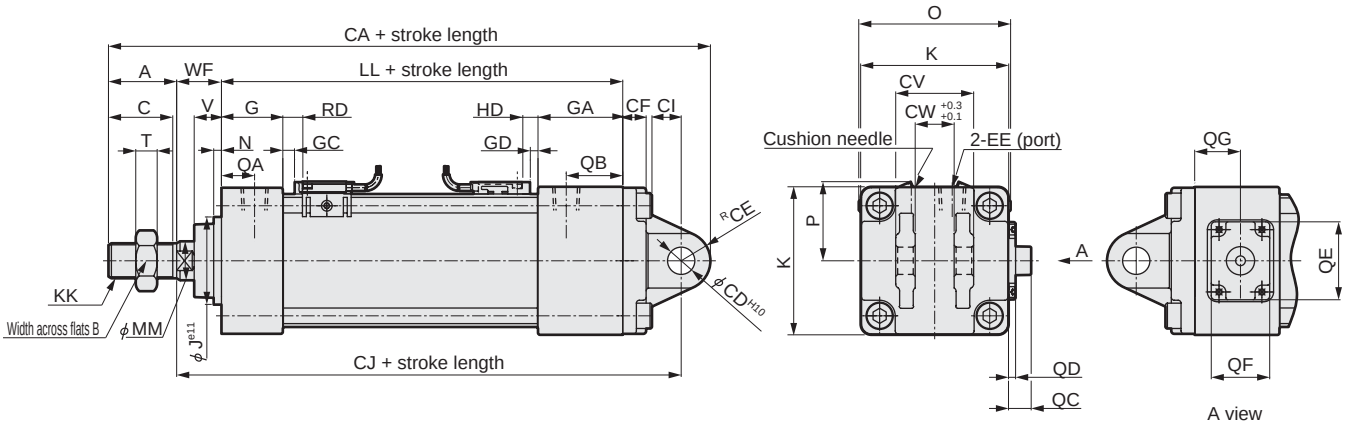
Symbol / Bore size (mm)	Basic dimensions for eye bracket type (CA) with rod end position locking																			
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
φ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	52	13	21	13	8	22	16	17.5
φ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	58	14	27	12	7	22	16	18.5
φ50	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)				Installation dimensions							With switch				
	T	V	WF	CA	CD	CE	CF	CI	CJ	CQ	GC	GD	RD	HD	P
φ32	6	13	25	172.5	10	10.5	9	13	140	14	1	1	5	5	25
φ40	8	13	21	182	10	11	9	13	141	14	1	1	5	5	29
φ50	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	34
φ63	11	14	23	209	14	15	12	17	159	20	2.5	1	6.5	5	40
φ80	13	20	32	269	22	23	15	26	206	30	8.5	2	12.5	6	-
φ100	16	20	32	269	22	23	15	26	206	30	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

Dimensions CAD

● Clevis bracket type (CB) with head end position locking



Note 1: Pin, split pin and plain washer are included.
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

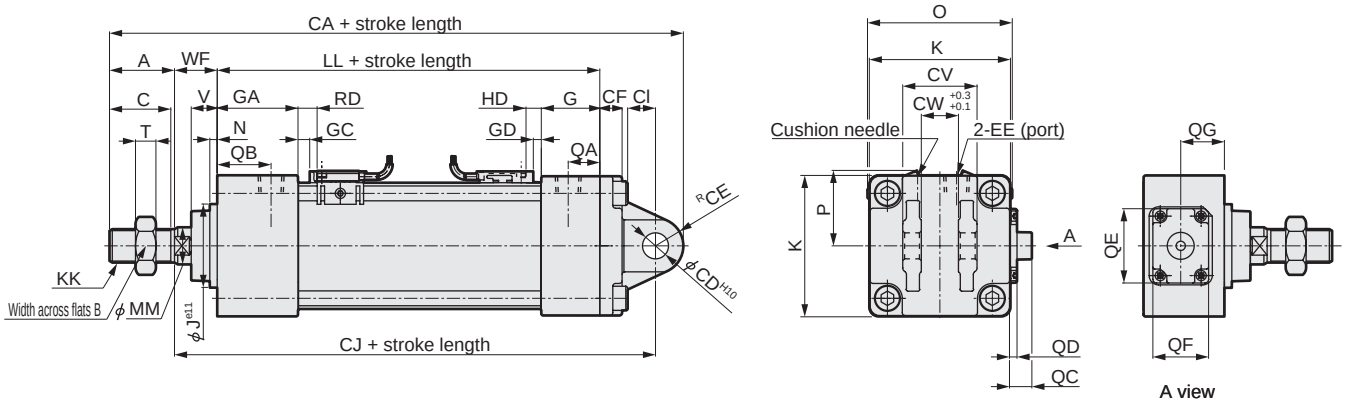
Symbol / Bore size (mm)	Basic dimensions for clevis bracket type (CB) with head end position locking																				
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
φ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	52	13	21	13	8	22	16	17.5
φ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	58	14	27	12	7	22	16	18.5
φ50	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)				Installation dimensions								With switch				
	T	V	WF	CA	CD	CE	CF	CI	CJ	CV	CW	GC	GD	RD	HD	P
φ32	6	13	25	172.5	10	10.5	9	13	140	28	14	1	1	5	5	25
φ40	8	13	21	182	10	11	9	13	141	28	14	1	1	5	5	29
φ50	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	34
φ63	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	40
φ80	13	20	32	269	22	23	15	26	206	60	30	8.5	2	12.5	6	-
φ100	16	20	32	269	22	23	15	26	206	60	30	8	2.5	12	6.5	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Clevis bracket type (CB) with rod end position locking



Note 1: Pin, split pin and plain washer are included.
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

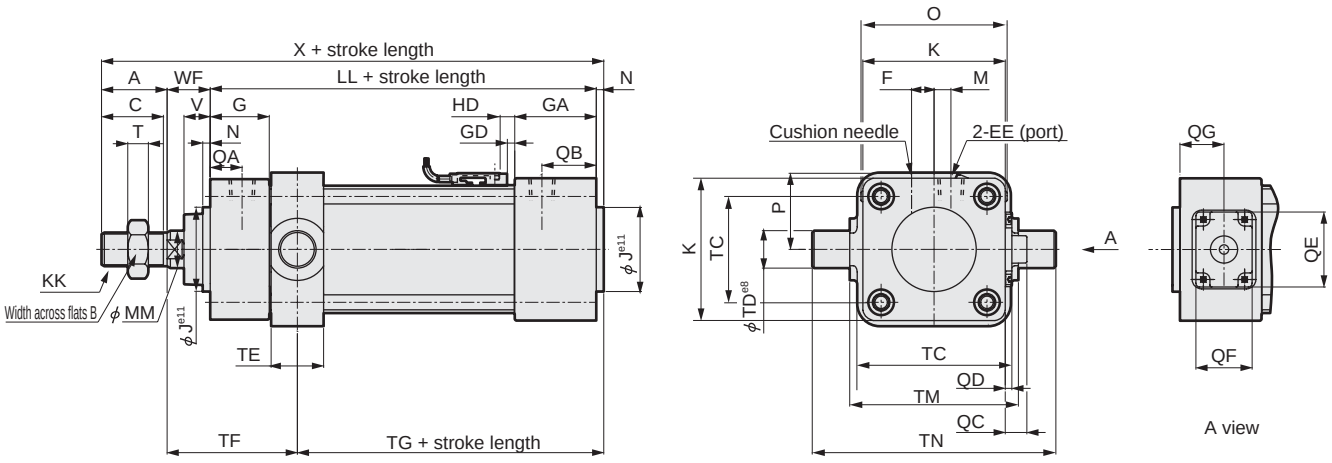
Symbol / Bore size (mm)	Basic dimensions for clevis bracket type (CB) with rod end position locking																			
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	O	QA	QB	QC	QD	QE	QF	QG
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	52	13	21	13	8	22	16	17.5
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	58	14	27	12	7	22	16	18.5
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)				Installation dimensions								With switch				
	T	V	WF	CA	CD	CE	CF	CI	CJ	CV	CW	GC	GD	RD	HD	P
ϕ32	6	13	25	172.5	10	10.5	9	13	140	28	14	1	1	5	5	25
ϕ40	8	13	21	182	10	11	9	13	141	28	14	1	1	5	5	29
ϕ50	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	34
ϕ63	11	14	23	209	14	15	12	17	159	40	20	2.5	1	6.5	5	40
ϕ80	13	20	32	269	22	23	15	26	206	60	30	8.5	2	12.5	6	-
ϕ100	16	20	32	269	22	23	15	26	206	60	30	8	2.5	12	6.5	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Rod end trunnion type (TA) with head end position locking



Note 1: Switches can not be installed on the rod end.

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

Symbol / Bore size (mm)	Basic dimensions for rod end trunnion type (TA) with head end position locking																		
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
ϕ32	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
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	40	41	37	Rc1/2	15	38	56	55	114	M26 x 1.5	132	17	30	4	114	19	37	11	3	40

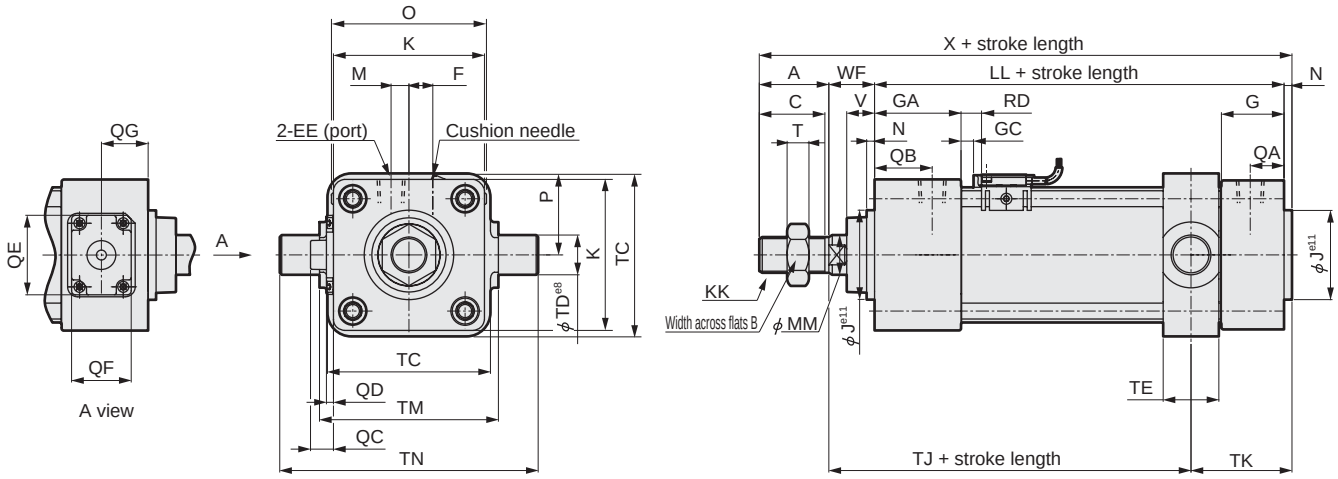
Symbol / Bore size (mm)							Installation dimensions							With switch		
	QF	QG	T	V	WF	X	TC	TD	TE	TF	TG	TM	TN	GD	HD	P
ϕ32	16	17.5	6	13	25	143	47	12	17	61.5	59.5	50	74	1	5	25
ϕ40	16	18.5	8	13	21	152	57	16	22	60	62	63	95	1	5	29
ϕ50	30	23.8	11	14	23	168	67	16	22	66.5	66.5	75	107	1	5	34
ϕ63	30	23.8	11	14	23	168	82	20	28	69.5	63.5	90	130	1	5	40
ϕ80	30	27.5	13	20	32	208	100	20	34	88	80	110	150	2	6	-
ϕ100	30	27.5	16	20	32	208	121	25	40	91	77	132	182	2.5	6.5	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.

Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions

● Head end trunnion type (TB) with rod end position locking



Note 1: Switches can not be installed on the head end.
Note 2: RD in the dimensions indicate the switch end positions, and GC indicate the switch rail end positions.

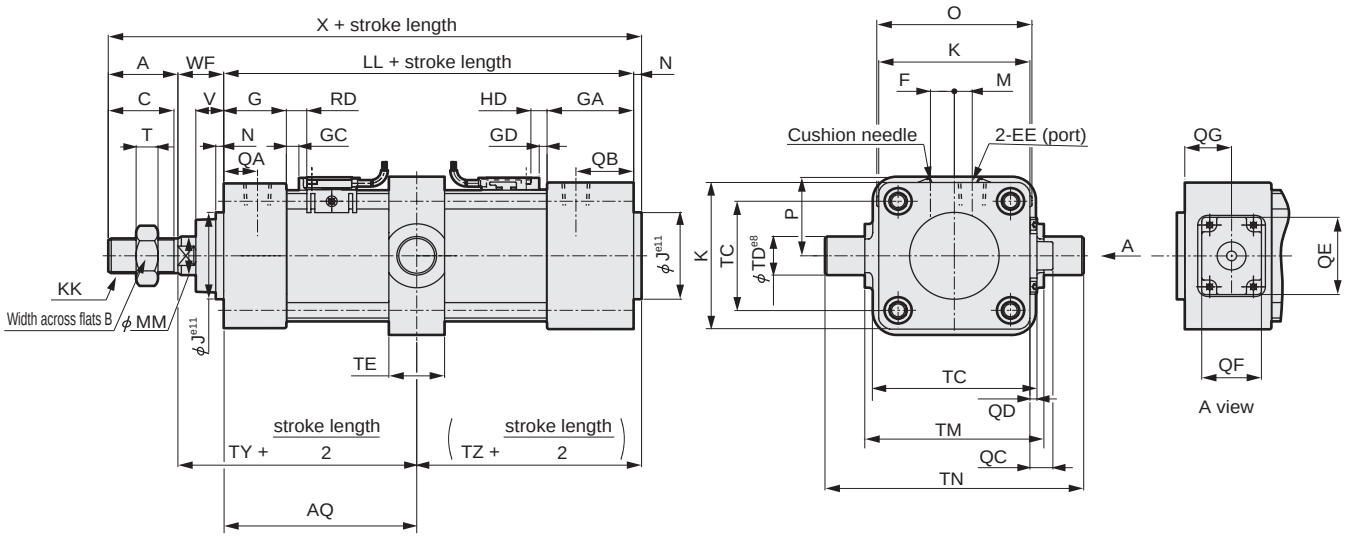
Symbol / Bore size (mm)	Basic dimensions for head end trunnion type (TB) with rod end position locking																		
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
ϕ32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10 x 1.25	92	4	12	4	52	13	21	13	8	22
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)							Installation dimensions							With switch		
	QF	QG	T	V	WF	X	TC	TD	TE	TJ	TK	TM	TN	GC	RD	P
ϕ32	16	17.5	6	13	25	143	47	12	17	80.5	40.5	50	74	1	5	25
ϕ40	16	18.5	8	13	21	152	57	16	22	79	43	63	95	1	5	29
ϕ50	30	23.8	11	14	23	168	67	16	22	85.5	47.5	75	107	2.5	6.5	34
ϕ63	30	23.8	11	14	23	168	82	20	28	82.5	50.5	90	130	2.5	6.5	40
ϕ80	30	27.5	13	20	32	208	100	20	34	108	60	110	150	8.5	12.5	-
ϕ100	30	27.5	16	20	32	208	121	25	40	105	63	132	182	8	12	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Dimensions CAD

● Center trunnion type (TC) with head end 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 / Bore size (mm)	Basic dimensions for center trunnion type (TC) with head end position locking																		
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
φ32	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
φ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22
φ50	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
φ63	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
φ80	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
φ100	40	41	37	Rc1/2	15	38	56	55	114	M26 x 1.5	132	17	30	4	114	19	37	11	3	40

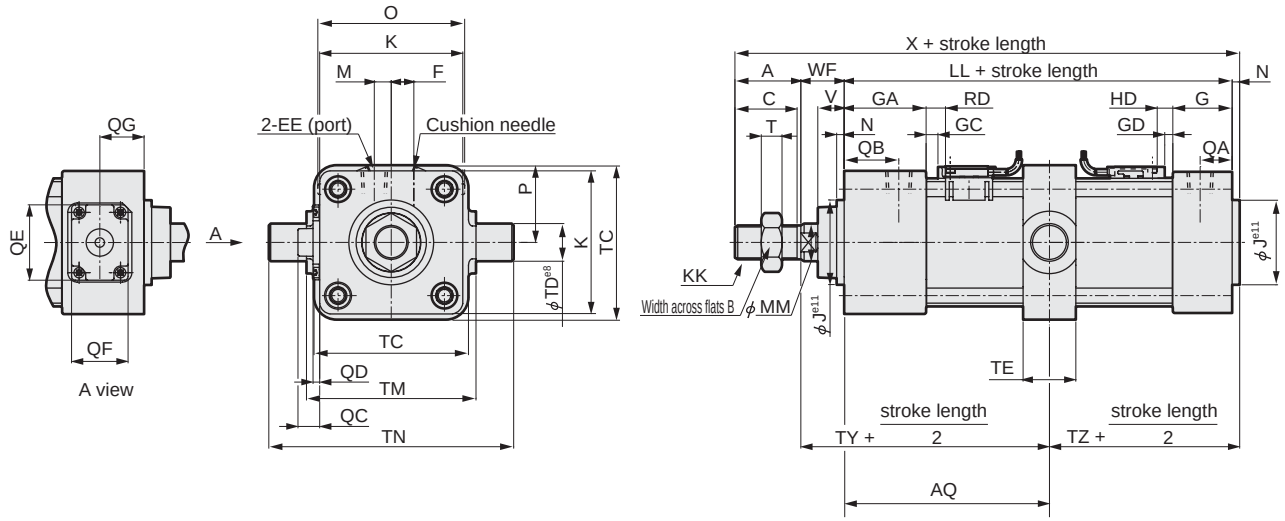
Symbol / Bore size (mm)							Installation dimensions								With switch				
	QF	QG	T	V	WF	X	AQ	TC	TD	TE	TM	TN	TY	TZ	GC	GD	RD	HD	P
φ32	16	17.5	6	13	25	143	42+*	47	12	17	50	74	67	54	1	1	5	5	25
φ40	16	18.5	8	13	21	152	42+*	57	16	22	63	95	63	59	1	1	5	5	29
φ50	30	23.8	11	14	23	168	47+*	67	16	22	75	107	70	63	2.5	1	6.5	5	34
φ63	30	23.8	11	14	23	168	47+*	82	20	28	90	130	70	63	2.5	1	6.5	5	40
φ80	30	27.5	13	20	32	208	57+*	100	20	34	110	150	89	79	8.5	2	12.5	6	-
φ100	30	27.5	16	20	32	208	57+*	121	25	40	132	182	89	79	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

*: $\frac{\text{Stroke length}}{2}$

Dimensions

● Center trunnion type (TC) with rod end position locking



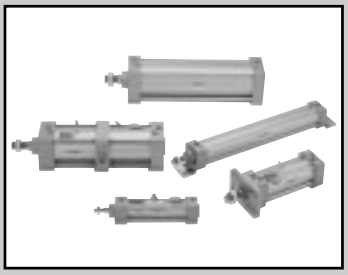
Note 1: RD and HD in the dimensions indicate the switch end positions, and GC and GD indicate the switch rail end positions.

Symbol / Bore size (mm)	Basic dimensions for center trunnion type (TC) with rod end position locking																		
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	N	O	QA	QB	QC	QD	QE
ϕ32	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
ϕ40	30	22	27	Rc1/4	9	27	40	35	52	M14 x 1.5	97	4	16	4	58	14	27	12	7	22
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)	Installation dimensions													With switch				
	QF	QG	T	V	WF	X	AQ	TC	TD	TE	TM	TN	TY	TZ	GC	GD	RD	HD	P
ϕ32	16	17.5	6	13	25	143	50^{+*}	47	12	17	50	74	75	46	1	1	5	5	25
ϕ40	16	18.5	8	13	21	152	55^{+*}	57	16	22	63	95	76	46	1	1	5	5	29
ϕ50	30	23.8	11	14	23	168	59^{+*}	67	16	22	75	107	82	51	2.5	1	6.5	5	34
ϕ63	30	23.8	11	14	23	168	59^{+*}	82	20	28	90	130	82	51	2.5	1	6.5	5	40
ϕ80	30	27.5	13	20	32	208	75^{+*}	100	20	34	110	150	107	61	8.5	2	12.5	6	-
ϕ100	30	31.5	16	20	32	208	75^{+*}	121	25	40	132	182	107	61	8	2.5	12	6.5	-

Note 2: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 3: Refer to pages 428, 429 for accessory dimensions.

$*: \frac{\text{Stroke length}}{2}$



Tie rod cylinder, double acting low speed type

SCG-O Series

● Bore size: ϕ 32, ϕ 40, ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol 

RoHS CAD

Specifications

Descriptions		SCG-O					
Bore size	mm	ϕ 32	ϕ 40	ϕ 50	ϕ 63	ϕ 80	ϕ 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	℃	-10 to 60 (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 800)					
Working piston speed	mm/s	10 to 200 (use within the allowable energy absorption.)					
Cushion		None					
Lubrication		Not available					
Allowable energy absorption J	No cushion	0.018	0.032	0.057	0.057	0.112	0.153
		If "No cushion" is selected, the large energy generated by the external load cannot be absorbed. So an external shock absorber should be used.					

Note 1: When using ϕ32 and leaving for a long time, use with a pressure of 0.1 MPa or higher.

Stroke length

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

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T0/T5 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ϕ 40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ 50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ 63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ϕ 80	10	20	39	59	10	20	39	59	96 (66)	96 (66)	99 (99)	99 (99)	41	47
ϕ 100	10	20	40	60	10	20	40	60	101 (71)	101 (71)	105 (105)	105 (105)	47	53

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T8 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ϕ 40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ 50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ 63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ϕ 80	10	20	39	59	10	20	39	59	100 (70)	100 (70)	111 (111)	111 (111)	43	49
ϕ 100	10	20	40	60	10	20	40	60	105 (75)	105 (75)	117 (117)	117 (117)	49	55

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T2/T3 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (34)	64 (34)	131 (95)	131 (95)	27	27
ϕ 40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ 50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ 63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38
ϕ 80	6	11	22	33	6	11	22	33	88 (58)	88 (58)	88 (80)	88 (80)	37	43
ϕ 100	6	11	22	33	6	11	22	33	93 (63)	93 (63)	93 (85)	93 (85)	43	49

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T1/T2Y/T3Y/T2YD switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ 40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ 50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ 63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ 80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ 100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

● 1 color/2 color indicator, strong magnetic field proof

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

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							Proximity 2-wire
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV		T5H/T5V		T8H/T8V			T2YD
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (w/o light), serial connection		Programmable controller, relay			Programmable controller dedicated
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		w/o light		LED (ON lighting)			Red/green LED (ON lighting)
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							1mA or less

● With preventive maintenance output

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

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max load current above: 20mA at 25℃. When ambient temperature around switch is more than 25℃, the value is lower than 20 mA. (5 to 10 mA at 60℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm:						Stroke length : Additional weight per 50mm	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	0.50	0.61	0.72	0.65	0.68	0.67	0.12	0.018	0.07	0.10
ϕ 40	0.66	0.80	0.94	0.85	0.85	1.00	0.17	0.018	0.07	0.13
ϕ 50	1.13	1.29	1.61	1.54	1.54	1.61	0.23	0.018	0.20	0.30
ϕ 63	1.39	1.73	2.15	1.95	1.96	2.27	0.25	0.018	0.20	0.30
ϕ 80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.018	0.52	0.94
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.

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model no.

Ⓖ Switch quantity Note 3

Ⓗ Option

Ⓘ Accessory Note 4

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

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

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

Ⓓ Cushion	
N	No cushion

Note: Consult with CKD for the availability of the type with air cushion and type with rubber cushion.

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 2	Custom stroke length
ϕ 32	**1 to 600**	**Per 1 mm increment**
ϕ 40		
ϕ 50		
ϕ 63		
ϕ 80	**1 to 700**	
ϕ 100	**1 to 800**	

Ⓕ Switch model no.

Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	**T0V***	Reed	1 color indicator type	2-wire
T5H*	**T5V***		w/o light	
T8H*	**T8V***		1 color indicator type	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***		1 color indicator type	2-wire
T3H*	**T3V***			3-wire
T3PH*	**T3PV***		1 color indicator type (custom order)	3-wire
T2YH*	**T2YV***		2 color indicator type	2-wire
T3YH*	**T3YV***			3-wire
T2YFH*	**T2YFV***		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	**T3YFV***			4-wire
T2YMH*	**T2YMV***		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	**T3YMV***			4-wire
T2YD*	**-**		Strong magnetic field proof switch	2-wire
T2YDT*	**-**			
T2JH*	**T2JV***		Off-delay type	2-wire

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

Ⓖ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓗ Option	
M	Piston rod material (stainless steel)
P6	Copper and PTFE free

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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. (However, trunnion type is installed onto the product when shipped.)

Note 2: Refer to page 386 for min. stroke length with switch.

Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod end) for TB.

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

<Example of model number>

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

Model: Tie rod cylinder double acting low speed type

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

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

- T0H: Switch model no. (Section Ⓕ in previous page)
- 40: Bore size (Section Ⓑ in previous page)

● Only switch body

SW - T0H

- T0H: Switch model no. (Section Ⓕ in previous page)

Note: Consult with CKD when using the environment compatible T-type switch.

● Switch bracket set

SCG - T - 40

- T: Bracket
- 40: Bore size (Section Ⓑ in previous page)

How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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

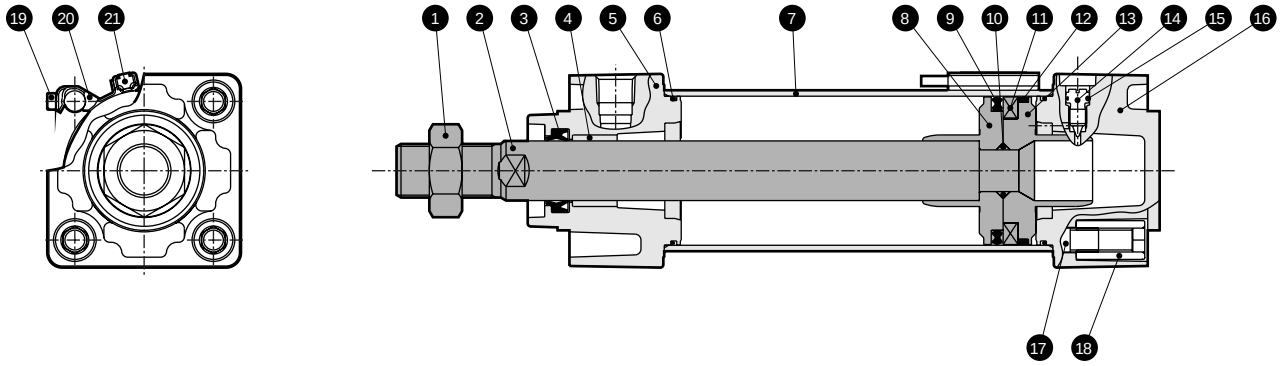
Note: 2 piece/set is applied for a foot type mounting bracket.

Dimensions

It is same as double acting single rod type. Refer to pages 355 to 363.

Internal structure and parts list

● SCG-O



No.	Parts name	Material	Remarks	No	Parts name	Material	Remarks
1	Rod nut	Steel	Nickel plating	12	Wear ring	Polyacetal resin	
2	Piston rod	Steel	Industrial chrome plating	13	Piston H	ϕ32, ϕ40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting	
3	Rod packing seal	Nitrile rubber					
4	Bush	Oil impregnated bearing alloy		14	Cushion needle	Copper alloy	
5	Rod cover	Aluminum alloy die-casting	Paint	15	Needle gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		16	Head cover	Aluminum alloy die-casting	Paint
7	Cylinder tube	Aluminum alloy	Hard alumite treatment	17	Tie rod	Steel	Zinc chromate plating
8	Piston R	ϕ32, ϕ40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting		18	Round nut	Steel	Zinc chromate plating
				19	Hexagon socket head cap bolt	Stainless steel	
9	Piston packing seal	Nitrile rubber		20	Switch bracket	Stainless steel	
10	Piston gasket	Nitrile rubber		21	Switch		
11	Magnet	Plastic					

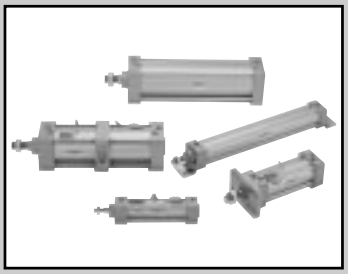
Repair parts list

Bore size (mm)	Kit No.	Repair parts number
ϕ 32	SCG-O-32NK	❸ ❻ ❼ ❾ ⓬ ⓯
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 No. when placing an order.

Mounting bracket material

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



Tie rod cylinder double acting low friction type (constant friction type with pressurized)

SCG-U Series

● Bore size: ϕ32, ϕ40, ϕ50, ϕ63, ϕ80, ϕ100

RoHS CAD

Specifications

Descriptions		SCG-U					
Bore size	mm	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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	℃	5 to 60					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 800)					
Working piston speed	mm/s	10 to 1000 (use within the allowable energy absorption.)					
Cushion		None					
Lubrication		Not available					
Internal leakage volume	ℓ/min.	5				8	
Allowable energy absorption	J	0.018	0.032	0.057	0.057	0.112	0.153
		The type without cushioning cannot absorb a large energy generated by an external load. So an external shock absorber should be used.					

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ϕ32	25, 50, 75, 100 150, 200, 250 300, 350, 400 450, 500	600	1
ϕ40			
ϕ50			
ϕ63			
ϕ80		700	
ϕ100		800	

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T0/T5 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ϕ40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ϕ80	10	20	39	59	10	20	39	59	96 (66)	96 (66)	99 (99)	99 (99)	41	47
ϕ100	10	20	40	60	10	20	40	60	101 (71)	101 (71)	105 (105)	105 (105)	47	53

● Note 1: Value in ( ) is for T*V (Radial lead wire).
● Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T8 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ϕ40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ϕ80	10	20	39	59	10	20	39	59	100 (70)	100 (70)	111 (111)	111 (111)	43	49
ϕ100	10	20	40	60	10	20	40	60	105 (75)	105 (75)	117 (117)	117 (117)	49	55

● Note 1: Value in ( ) is for T*V (Radial lead wire).
● Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T2/T3 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (34)	64 (34)	131 (95)	131 (95)	27	27
ϕ40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38
ϕ80	6	11	22	33	6	11	22	33	88 (58)	88 (58)	88 (80)	88 (80)	37	43
ϕ100	6	11	22	33	6	11	22	33	93 (63)	93 (63)	93 (85)	93 (85)	43	49

● Note 1: Value in ( ) is for T*V (Radial lead wire).
● Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with switch T1/T2Y/T3Y/T2YD

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) is for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
● Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

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

●1 color/2 color indicator/strong magnetic field proof

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							Proximity 2-wire
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/ T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	T0H/T0V		T5H/T5V		T8H/T8V			T2YD
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o indicator light), serial connection		Programmable controller, relay			Programmable controller dedicated
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA			100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		Without indicator light		LED (ON lighting)			Red/green LED (ON lighting)
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	5 to 20 mA (Note 1) 1 mA or less		10 μA or less			0 mA							1 mA or less

●With preventive maintenance output

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

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max. load current above: 20 mA at 25 ℃. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 ℃.
(5 to 10 mA at 60 ℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm						Stroke length: Additional weight per 50mm	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	0.10
ϕ40	0.66	0.80	0.77	0.85	0.85	1.00	0.17	0.07	0.13
ϕ50	1.13	1.29	1.31	1.54	1.54	1.61	0.23	0.20	0.30
ϕ63	1.39	1.73	1.68	1.95	1.96	2.27	0.25	0.20	0.30
ϕ80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.52	0.94
ϕ100	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.

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model no.

Ⓖ Switch quantity Note 3

Ⓗ Option

Ⓘ Accessory Note 4

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

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

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

Ⓓ Cushion	
N	No cushion

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 2	Custom stroke length
ϕ32	**1 to 600**	**Per 1 mm increment**
ϕ40		
ϕ50		
ϕ63		
ϕ80	**1 to 700**	
ϕ100	**1 to 800**	

Ⓕ Switch model no.

Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	**T0V***	Reed	1 color indicator type	2-wire
T5H*	**T5V***		Without indicator light	
T8H*	**T8V***		1 color indicator type	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			
T3H*	**T3V***			3-wire
T3PH*	**T3PV***		1 color indicator type (custom order)	3-wire
T2YH*	**T2YV***		2 color indicator type	2-wire
T3YH*	**T3YV***			3-wire
T2YFH*	**T2YFV***		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	**T3YFV***			4-wire
T2YMH*	**T2YMV***		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	**T3YMV***			4-wire
T2YD*	**-**		Strong magnetic field proof switch	2-wire
T2YDT*	**-**			
T2JH*	**T2JV***		Off-delay type	2-wire

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

Ⓖ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓗ Option	
M	Piston rod material (stainless steel)

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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. (However, trunnion type is installed onto before shipment.)

Note 2: Refer to page 392 for min. stroke length with switch.

Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head end) for TA, and "R" (one on rod end) for TB.

Note 4: "I" and "Y" cannot 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 type with pressurized)

- Ⓐ Mounting style : Axial foot type
- Ⓑ Bore size : ϕ40 mm
- Ⓒ Port thread type : Rc thread
- Ⓓ Cushion : No cushion
- Ⓔ Stroke length : 100 mm
- Ⓕ Switch model no. : Proximity T2H switch, lead wire 1 m
- Ⓖ Switch quantity : Two
- Ⓗ Option : Piston rod material (stainless steel)
- Ⓘ Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

Switch model no. (Item Ⓕ in previous page)
Bore size (Item Ⓑ in previous page)

● Only switch body

SW - T0H

Switch model no. (Item Ⓕ in previous page)

● Switch bracket set

SCG - T - 40

Bracket
Bore size (Item Ⓑ in previous page)

Note: Consult CKD when using the environment compatible T-types witch.

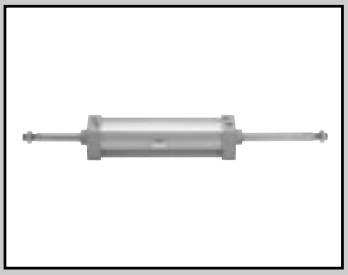
How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ 32	ϕ 40	ϕ 50	ϕ 63	ϕ 80	ϕ 100
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

Note1: The foot type bracket (LB) is a 2 pcs./set.

Dimensions

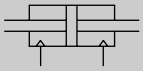
It is the same as the double acting single rod type SCG Series. Refer to pages 355 to 363.



Tie rod cylinder, double acting double rod type

SCG-D Series

● Bore size: ϕ 32, ϕ 40, ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol 

RoHS CAD

Specifications

Descriptions		SCG-D					
Bore size mm		ϕ 32	ϕ 40	ϕ 50	ϕ 63	ϕ 80	ϕ 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 ℃		-10 to 60 (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm	Rubber cushioned	$^{+1.4}_{0}$ (Up to 800)					
	Air cushioned	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 800)					
Working piston speed mm/s		50 to 1000 (use within the allowable energy absorption.)					
Cushion		Selection of air cushion and rubber cushion possible					
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 length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ϕ 32	25, 50, 75, 100 150, 200, 250 300, 350, 400 450, 500	600	1
ϕ 40			
ϕ 50			
ϕ 63			
ϕ 80		700	
ϕ 100		800	

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T0/T5 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ϕ 40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ 50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ 63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ϕ 80	10	20	39	59	10	20	39	59	96 (66)	96 (66)	99 (99)	99 (99)	41	47
ϕ 100	10	20	40	60	10	20	40	60	101 (71)	101 (71)	105 (105)	105 (105)	47	53

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T8 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ϕ 40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ 50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ 63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ϕ 80	10	20	39	59	10	20	39	59	100 (70)	100 (70)	111 (111)	111 (111)	43	49
ϕ 100	10	20	40	60	10	20	40	60	105 (75)	105 (75)	117 (117)	117 (117)	49	55

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T2/T3 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm) \	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (34)	64 (34)	131 (95)	131 (95)	27	27
ϕ 40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ 50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ 63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38
ϕ 80	6	11	22	33	6	11	22	33	88 (58)	88 (58)	88 (80)	88 (80)	37	43
ϕ 100	6	11	22	33	6	11	22	33	93 (63)	93 (63)	93 (85)	93 (85)	43	49

● Note 1: Value in ( ) for T*V (L type lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T1/T2Y/T3Y/T2YD switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm) \	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ 32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ 40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ 50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ 63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ 80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ 100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

● 1 color/2 color indicator, strong magnetic field proof

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

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							Proximity 2-wire
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV		T5H/T5V		T8H/T8V			T2YD
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (w/o light), serial connection		Programmable controller, relay			Programmable controller dedicated
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		w/o light		LED (ON lighting)			Red/green LED (ON lighting)
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							1mA or less

● With preventive maintenance output

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

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max load current above: 20mA at 25℃. When ambient temperature around switch is more than 25℃, the value is lower than 20 mA. (5 to 10 mA at 60℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm:				Stroke length : Additional weight per 50mm	Switch mass	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	0.07	0.10
ϕ 40	0.80	0.94	1.08	1.14	0.25	0.018	0.07	0.13
ϕ 50	1.38	1.54	1.86	1.86	0.35	0.018	0.20	0.30
ϕ 63	1.64	1.98	2.40	2.52	0.37	0.018	0.20	0.30
ϕ 80	3.11	3.54	4.68	4.60	0.59	0.018	0.52	0.94
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

F Switch model no.

G Switch quantity Note 3

H Option Note 4

I Accessory

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
TA	Rod end trunnion type
TB	Head end 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	Both sides air cushion (basic type)
D	Both sides rubber cushion
Note: The rubber cushion is longer than the air cushion types.	

E Stroke length (mm)

Bore size	Stroke length Note 2	Custom stroke length
ϕ 32	**1 to 600**	**Per 1 mm increment**
ϕ 40		
ϕ 50		
ϕ 63		
ϕ 80	**1 to 700**	
ϕ 100	**1 to 800**	

F Switch model no.

Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	**T0V***	Reed	1 color indicator type	2-wire
T5H*	**T5V***		w/o light	
T8H*	**T8V***		1 color indicator type	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			
T3H*	**T3V***			3-wire
T3PH*	**T3PV***		1 color indicator type (custom order)	3-wire
T2YH*	**T2YV***		2 color indicator type	2-wire
T3YH*	**T3YV***			3-wire
T2YFH*	**T2YFV***		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	**T3YFV***			4-wire
T2YMH*	**T2YMV***		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	**T3YMV***			4-wire
T2YD*	-		Strong magnetic field proof switch	2-wire
T2YDT*	-			
T2JH*	**T2JV***		Off-delay type	2-wire

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

G Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

H Option			
		Max. ambient	Max. instantaneous
J	Bellows	60 ℃	100 ℃
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

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

⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product. (However, trunnion type, rod end flange with bellows and head end flange with bellows are installed onto the product when shipped.)

Note 2: Refer to page 396 for min. stroke length with switch.

Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod end) for TB.

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

<Example of model number>

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

Model: Tie rod cylinder double acting double rod type

- A Mounting style : Axial foot type
- B Bore size : ϕ 40 mm
- C Port thread type : Rc thread
- D Cushion : Both sides air cushioned
- E Stroke length : 100 mm
- F Switch model no. : Proximity T2H switch, lead wire 1 m
- 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. (Section F in previous page)
Bore size (Section B in previous page)

● Only switch body

SW - T0H

Switch model no. (Section F in previous page)

Note: Consult with CKD when using the environment compatible T-type switch.

● Switch bracket set

SCG - T - 40

Bracket
Bore size (Section B in previous page)

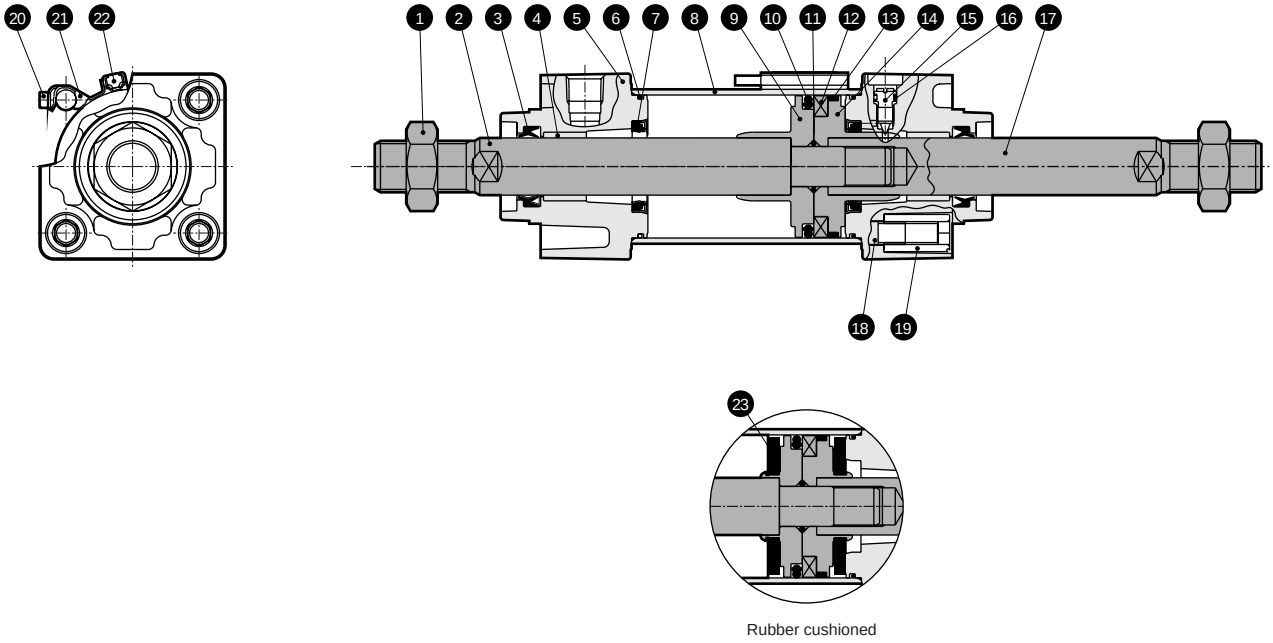
How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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: The foot type bracket (LB) is a two-piece set.

Internal structure and parts list

● SCG-D



Rubber cushioned

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickel plating	13	Wear ring	Polyacetal resin	
2	Piston rod A	Steel	Industrial chrome plating	14	Piston H	ϕ32, ϕ40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting	
3	Rod packing seal	Nitrile rubber					
4	Bush	Oil impregnated bearing alloy		15	Cushion needle	Copper alloy	
5	Rod cover	Aluminum alloy die-casting	Paint	16	Needle gasket	Nitrile rubber	
6	Cylinder gasket	Nitrile rubber		17	Piston rod B	Steel	Industrial chrome plating
7	Cushion packing seal	Nitrile rubber, steel	Only with air cushion	18	Tie rod	Steel	Zinc chromate plating
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	19	Round nut	Steel	Zinc chromate plating
9	Piston R	ϕ32, ϕ40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting		20	Hexagon socket head cap bolt	Steel	Zinc chromate plating
				21	Switch 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 No.	Repair parts number
ϕ 32	SCG-D-32BK	❸ ❻ ❼ ❿ ⓭ ⓰
ϕ 40	SCG-D-40BK	
ϕ 50	SCG-D-50BK	
ϕ 63	SCG-D-63BK	
ϕ 80	SCG-D-80BK	
ϕ 100	SCG-D-100BK	

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

● Rubber cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ 32	SCG-D-32DK	❸ ❻ ❿ ⓭ ⓰ ㉓
ϕ 40	SCG-D-40DK	
ϕ 50	SCG-D-50DK	
ϕ 63	SCG-D-63DK	
ϕ 80	SCG-D-80DK	
ϕ 100	SCG-D-100DK	

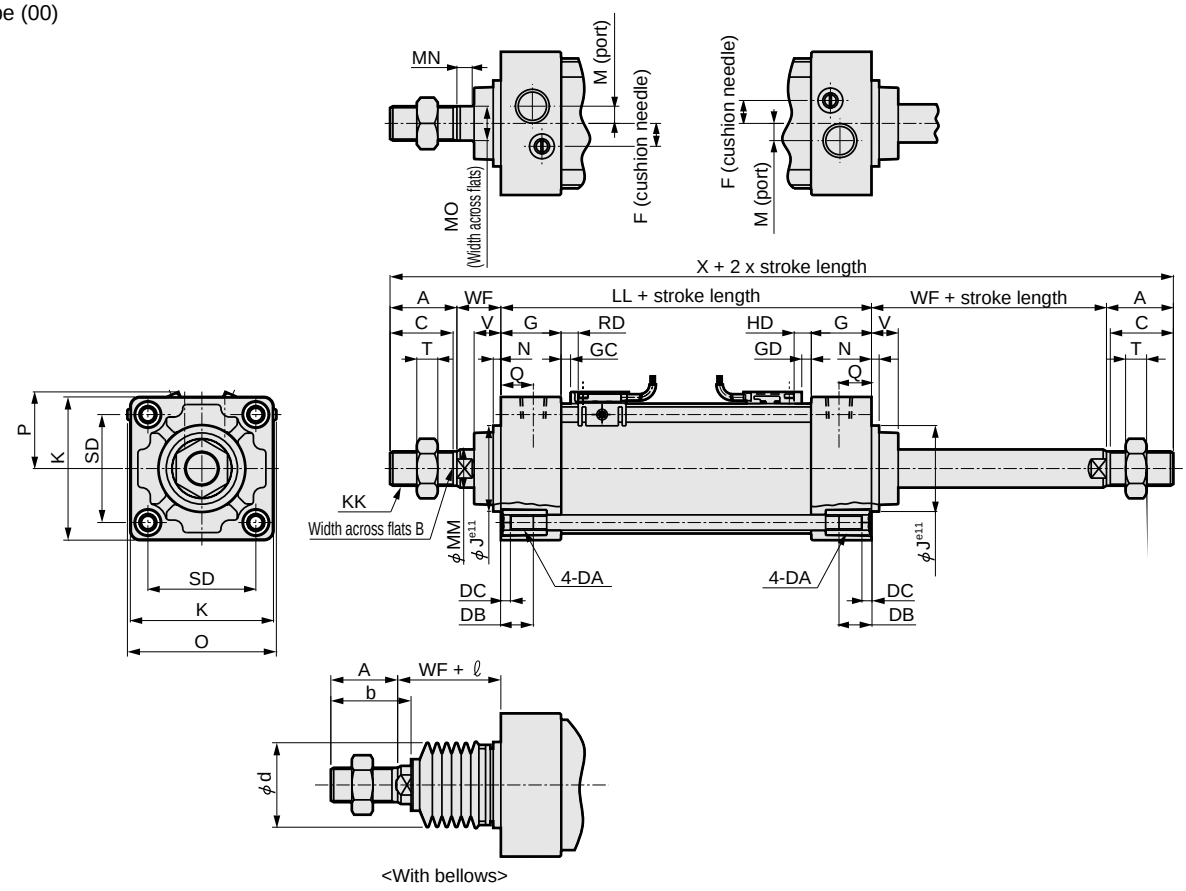
Note: Specify the kit No. when placing an order.

Mounting bracket material

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

Dimensions

● Basic type (00)



Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(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.

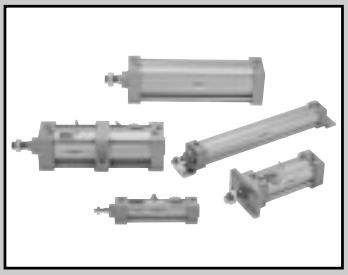
Symbol / Bore size (mm)	Basic type (00) basic dimensions																			
	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	Note 1 LL	M	MM	MN	MO	N	O	Q
φ32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10 x 1.25	84 (90)	4	12	5.5	10	4	51	13
φ40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14 x 1.5	84 (90)	4	16	6	14	4	57	14
φ50	35	27	32	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)						With bellows														
	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
φ32	32.5	6	13	25	178 (184)	22	31.5	30	25	26	39	51	64	89	114	139	-	-	-
φ40	38	8	13	21	186 (192)	30	35	40	21	30	43	55	68	93	118	143	-	-	-
φ50	46.5	11	14	23	210 (218)	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ63	56.5	11	14	23	210 (218)	35	42	47	23	31	44	56	69	94	119	144	169	-	-
φ80	72	13	20	32	258 (268)	40	50	53	32	29	42	54	67	92	117	142	167	192	217
φ100	89	16	20	32	258 (268)	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
φ32	1 (4)	1 (4)	5 (8)	5 (8)	25
φ40	1 (4)	1 (4)	5 (8)	5 (8)	29
φ50	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ63	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ80	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ100	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to page 428, 429 for accessory dimensions.

Note: Each mounting style installation dimension is same as SCG (double acting single rod). Refer to pages 356 to 363.



Tie rod cylinder double acting non-rotating type

SCG-M Series

● Bore size: ϕ32, ϕ40, ϕ50, ϕ63

RoHS

Specifications

Descriptions		SCG-M			
Bore size mm		ϕ32	ϕ40	ϕ50	ϕ63
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 ℃		-10 to 60 (no freezing)			
Port size		Rc1/8	Rc1/4		Rc3/8
Stroke tolerance mm	Rubber cushioned	$^{+1.4}_{0}$ (Up to 600)			
	Air cushioned	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 600)			
Working piston speed mm/s		50 to 1000 (use within the allowable energy absorption.)			
Cushion		Selection of air cushion and rubber cushion possible			
Effective 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 Degree		±1			
Allowable energy absorption J	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 length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ϕ32	25, 50, 75, 100	600	1
ϕ40	150, 200, 250		
ϕ50	300, 350, 400		
ϕ63	450, 500		

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T0/T5 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ϕ40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T8 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ϕ40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T2/T3 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (34)	64 (34)	131 (95)	131 (95)	27	27
ϕ40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T1/T2Y/T3Y/T2YD switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49

● Note 1: Value in ( ) for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

● 1 color/2 color indicator, strong magnetic field proof

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

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							Proximity 2-wire
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV		T5H/T5V		T8H/T8V			T2YD
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay serial connection		Programmable controller, relay			Programmable controller dedicated
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		w/o light		LED (ON lighting)			Red/green LED (ON lighting)
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							1mA or less

● With preventive maintenance output

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

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max load current above: 20mA at 25℃. When ambient temperature around switch is more than 25℃, the value is lower than 20 mA.
(5 to 10 mA at 60℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm: Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TC)	Stroke length : Additional weight per 50mm	Accessory weight I	Accessory weight Y
ϕ32	0.50	0.61	0.58	0.65	0.68	0.67	0.12	0.07	0.10
ϕ40	0.66	0.80	0.77	0.85	0.85	1.00	0.17	0.07	0.13
ϕ50	1.13	1.29	1.31	1.54	1.54	1.61	0.23	0.20	0.30
ϕ63	1.39	1.73	1.68	1.95	1.96	2.27	0.25	0.20	0.30

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.
- Ⓐ Mounting style Note 1
- Ⓑ Bore size
- Ⓒ Port thread type
- Ⓓ Cushion
- Ⓔ Stroke length
- Ⓕ Switch model no.
- Ⓖ Switch quantity Note 3
- Ⓗ Option
- Ⓘ Accessory Note 4

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

Ⓑ Bore size (mm)	
32	ϕ32
40	ϕ40
50	ϕ50
63	ϕ63

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

Ⓓ Cushion	
B	Air cushioned on both sides (basic type)
D	Rubber cushioned on both sides
Note: The rubber cushion type is longer than the air cushion type.	

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 2	Custom stroke length
ϕ32	**1 to 600**	**Per 1 mm increment**
ϕ40		
ϕ50		
ϕ63		

Ⓕ Switch model no.

Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	**T0V***	Reed	1 color indicator type	2-wire
T5H*	**T5V***		Without indicator light	
T8H*	**T8V***		1 color indicator type	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			3-wire
T3H*	**T3V***			
T3PH*	**T3PV***		1 color indicator type (custom order)	3-wire
T2YH*	**T2YV***		2 color indicator type	2-wire
T3YH*	**T3YV***			3-wire
T2YFH*	**T2YFV***		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	**T3YFV***			4-wire
T2YMH*	**T2YMV***		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	**T3YMV***			4-wire
T2YD*	**-**		Strong magnetic field proof switch	2-wire
T2YDT*	**-**			
T2JH*	**T2JV***		Off-delay type	2-wire

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

Ⓖ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓗ Option

		Max. ambient	Instantaneous ambient
J	Bellows	60 ℃	100 ℃

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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. (However, trunnion type and rod end flange with bellows are installed onto before shipment.)
Note 2: Refer to page 402 for min. stroke length with switch.
Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head end) for TA, and "R" (one on rod end) for TB.
Note 4: "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
- Ⓐ Mounting style : Axial foot type
- Ⓑ Bore size : ϕ 40 mm
- Ⓒ Port thread type : Rc thread
- Ⓓ Cushion : Air cushioned
- Ⓔ Stroke length : 100 mm
- Ⓕ Switch model no. : Proximity T2H switch, lead wire 1 m
- Ⓖ Switch quantity : Two
- Ⓗ Option : With bellows
- Ⓘ Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

Switch model no. (Item Ⓕ in previous page)
Bore size (Item Ⓑ in previous page)

● Only switch body

SW - T0H

Switch model no. (Item Ⓕ in previous page)

● Switch bracket set

SCG - T - 40

Bracket
Bore size (Item Ⓑ in previous page)

Note: Consult CKD when using the environment compatible T-types witch.

How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ 32	ϕ 40	ϕ 50	ϕ 63	ϕ 80	ϕ 100
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 type bracket is a 2 pcs./set.

Internal structure drawing

It is the same as standard type. Refer to page 354.
Note that the following part is different material.

No.	Parts name	Material	Remarks
2	Piston rod	ϕ 32: Stainless steel copper	
		ϕ40 to 63: Steel	Industrial chrome plating

Repair parts list

● Air cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ 32	SCG-M-32BK	❸ ❻ ❼ ❿ ⓭ ⓰
ϕ 40	SCG-M-40BK	
ϕ 50	SCG-M-50BK	
ϕ 63	SCG-M-63BK	

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

● Rubber cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ 32	SCG-M-32DK	❸ ❻ ❿ ⓭ ⓰ ㉓
ϕ 40	SCG-M-40DK	
ϕ 50	SCG-M-50DK	
ϕ 63	SCG-M-63DK	

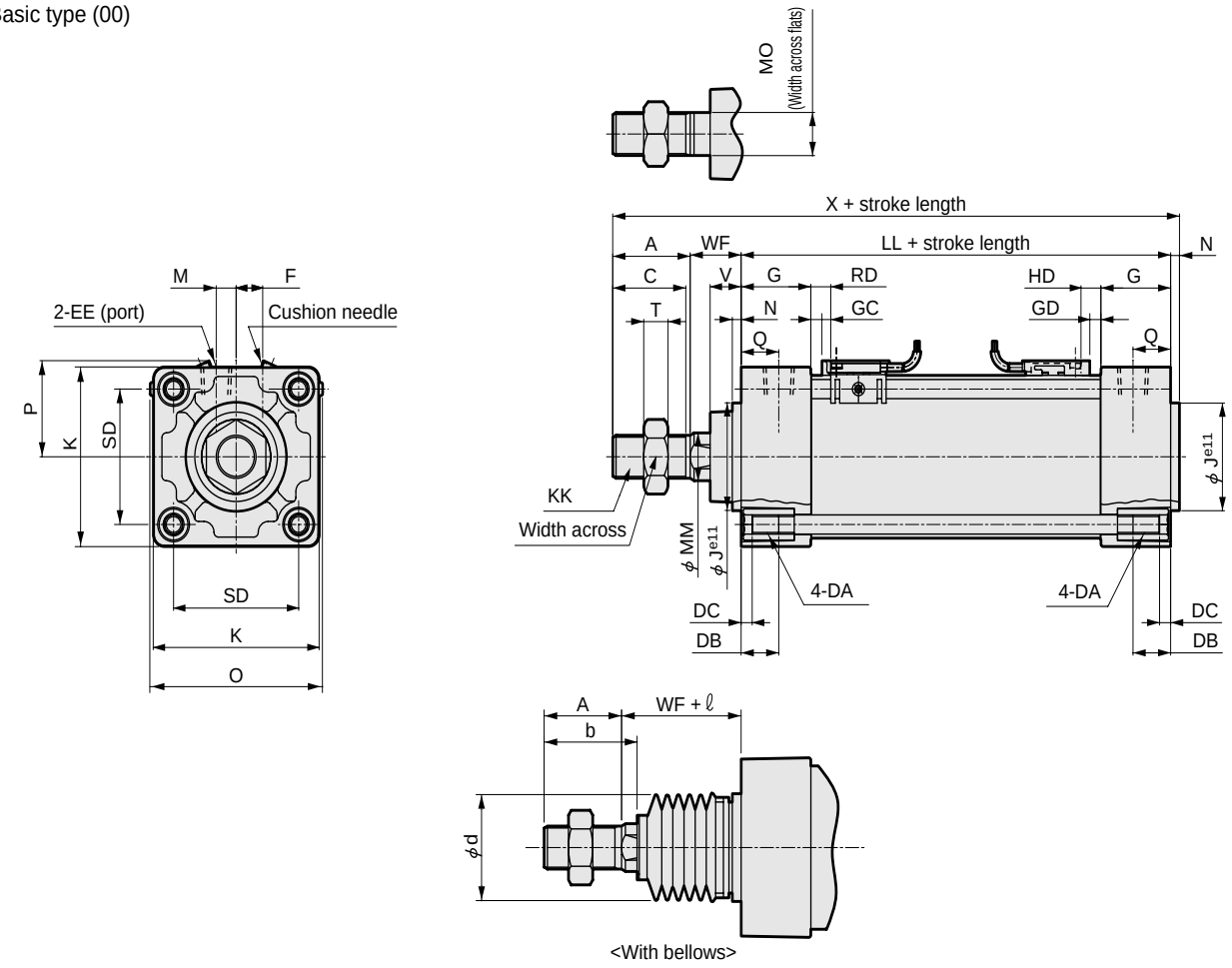
Note: Indicate the kit No. when placing an order.

Mounting bracket material

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

Dimensions

● Basic type (00)



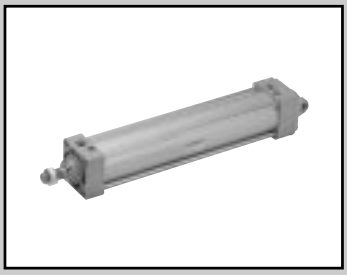
Note 1: Dimensions shown parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(ϕ 32, ϕ40; +6 mm, ϕ 50, ϕ63; +8 mm, ϕ80, ϕ100; +10 mm)
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

Symbol / Bore size (mm)	Basic type (00) basic dimensions																		
	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	Note 1 LL	M	MM	MO	N	O	Q
ϕ 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
ϕ 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
ϕ 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
ϕ 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 / Bore size (mm)						With bellows											
	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
ϕ 32	32.5	6	13	25	135 (141)	22	31.5	30	25	26	39	51	64	89	114	139	-
ϕ 40	38	8	13	21	139 (145)	30	35	40	21	30	43	55	68	93	118	143	-
ϕ 50	46.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169
ϕ 63	56.5	11	14	23	156 (164)	35	42	47	23	31	44	56	69	94	119	144	169

Symbol / Bore size (mm)	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

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.
Each installation method of the mounting style is the same as SCG (double acting single rod type). Refer to pages 356 to 363.



Tie rod cylinder, double acting rubber scraper type

SCG-G Series

● Bore size: ϕ32, ϕ40, ϕ50, ϕ63, ϕ80, ϕ100

JIS symbol 

RoHS CAD

Specifications

Descriptions		SCG-G					
Bore size mm		ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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 ℃		-10 to 60 (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm	Rubber cushioned	$^{+1.4}_{0}$ (Up to 1000), $^{+1.8}_{0}$ (1001 to 1500)					
	Air cushioned	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 1000), $^{+1.8}_{0}$ (1001 to 1500)					
Working piston speed mm/s		50 to 1000 (use within the allowable energy absorption.)					
Cushion		Selection of air cushion and rubber cushion possible					
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 length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ32	25, 50, 75, 100 150, 200, 250 300, 350, 400 450, 500	600	700	1
ϕ40			800	
ϕ50			1200	
ϕ63			1200	
ϕ80		700	1400	
ϕ100		800	1500	

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T0/T5 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ϕ40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ϕ50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ϕ63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ϕ80	10	20	39	59	10	20	39	59	96 (66)	96 (66)	99 (99)	99 (99)	41	47
ϕ100	10	20	40	60	10	20	40	60	101 (71)	101 (71)	105 (105)	105 (105)	47	53

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T8 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ϕ40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ϕ50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ϕ63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ϕ80	10	20	39	59	10	20	39	59	100 (70)	100 (70)	111 (111)	111 (111)	43	49
ϕ100	10	20	40	60	10	20	40	60	105 (75)	105 (75)	117 (117)	117 (117)	49	55

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T2/T3 switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (34)	64 (34)	131 (95)	131 (95)	27	27
ϕ40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (39)	69 (39)	152 (100)	152 (100)	32	32
ϕ50	5	10	20	30	5	10	20	30	71 (41)	71 (41)	71 (61)	71 (61)	31	32
ϕ63	6	11	21	32	6	11	21	32	77 (47)	77 (47)	77 (68)	77 (68)	37	38
ϕ80	6	11	22	33	6	11	22	33	88 (58)	88 (58)	88 (80)	88 (80)	37	43
ϕ100	6	11	22	33	6	11	22	33	93 (63)	93 (63)	93 (85)	93 (85)	43	49

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Min. stroke length with T1/T2Y/T3Y/T2YD switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) for T*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

● 1 color/2 color indicator, strong magnetic field proof

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

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire							Proximity 2-wire
	T1H/T1 V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	TOH/TOV		T5H/T5V		T8H/T8V			T2YD
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay			Programmable controller dedicated
Output method	-			NPN output	PNP output	NPN output	-							
Power voltage	-			10 to 28 VDC			-							
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC	24 VDC ±10%
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 20 mA	7 to 10 mA	5 to 20 mA
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		w/o light		LED (ON lighting)			Red/green LED (ON lighting)
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA							1mA or less

● With preventive maintenance output

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

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max load current above: 20mA at 25℃. When ambient temperature around switch is more than 25 ℃, the value is lower than 20 mA. (5 to 10 mA at 60 ℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm:						Stroke length : Additional weight per 50mm	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
ϕ32	0.51	0.62	0.73	0.66	0.69	0.68	0.12	0.018	0.07	0.10
ϕ40	0.68	0.82	0.96	0.86	0.86	1.02	0.17	0.018	0.07	0.13
ϕ50	1.16	1.32	1.64	1.56	1.57	1.64	0.23	0.018	0.20	0.30
ϕ63	1.42	1.76	2.18	1.97	1.99	2.29	0.25	0.018	0.20	0.30
ϕ80	2.69	3.12	4.26	3.96	3.96	4.18	0.40	0.018	0.52	0.94
ϕ100	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.

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model no.

Ⓖ Switch quantity Note 3

Ⓗ Option

Ⓘ Accessory Note 4

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

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

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

Ⓓ Cushion	
B	Both sides air cushion (basic type)
D	Both sides rubber cushion

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

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 2	Available stroke length	Custom stroke length
ϕ32	1 to 600	700	Per 1 mm increment
ϕ40		800	
ϕ50		1200	
ϕ63			
ϕ80	1 to 700	1400	
ϕ100	1 to 800	1500	

Ⓕ Switch model no.

Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		w/o light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*			
T3H*	T3V*			3-wire
T3PH*	T3PV*		1 color indicator type (custom order)	3-wire
T2YH*	T2YV*		2 color indicator type	2-wire
T3YH*	T3YV*			3-wire
T2YFH*	T2YFV*		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YFH*	T3YFV*			4-wire
T2YMH*	T2YMV*		2 color indicator type (with light for preventive maintenance output (1 color))	3-wire
T3YMH*	T3YMV*			4-wire
T2YD*	-		Strong magnetic field proof switch	2-wire
T2YDT*	-			
T2JH*	T2JV*		Off-delay type	2-wire

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

Ⓖ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓗ Option	
M	Piston rod material (stainless steel)
P6	Copper and PTFE free

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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. (However, trunnion type is installed onto the product when shipped.)

Note 2: Refer to page 408 for min. stroke length with switch.

Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod end) for TB.

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

<Example of model number>

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

Model: Tie rod cylinder double acting rubber scraper type

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

How to order switch

● Switch body + mounting bracket

SCG - T0H - 40

- SCG - T0H: Switch model no. (Section Ⓕ in previous page)
- 40: Bore size (Section Ⓑ in previous page)

● Only switch body

SW - T0H

Switch model no. (Section Ⓕ in previous page)

Note: Consult with CKD when using the environment compatible T-type switch.

● Switch bracket set

SCG - T - 40

- T: Bracket
- 40: Bore size (Section Ⓑ in previous page)

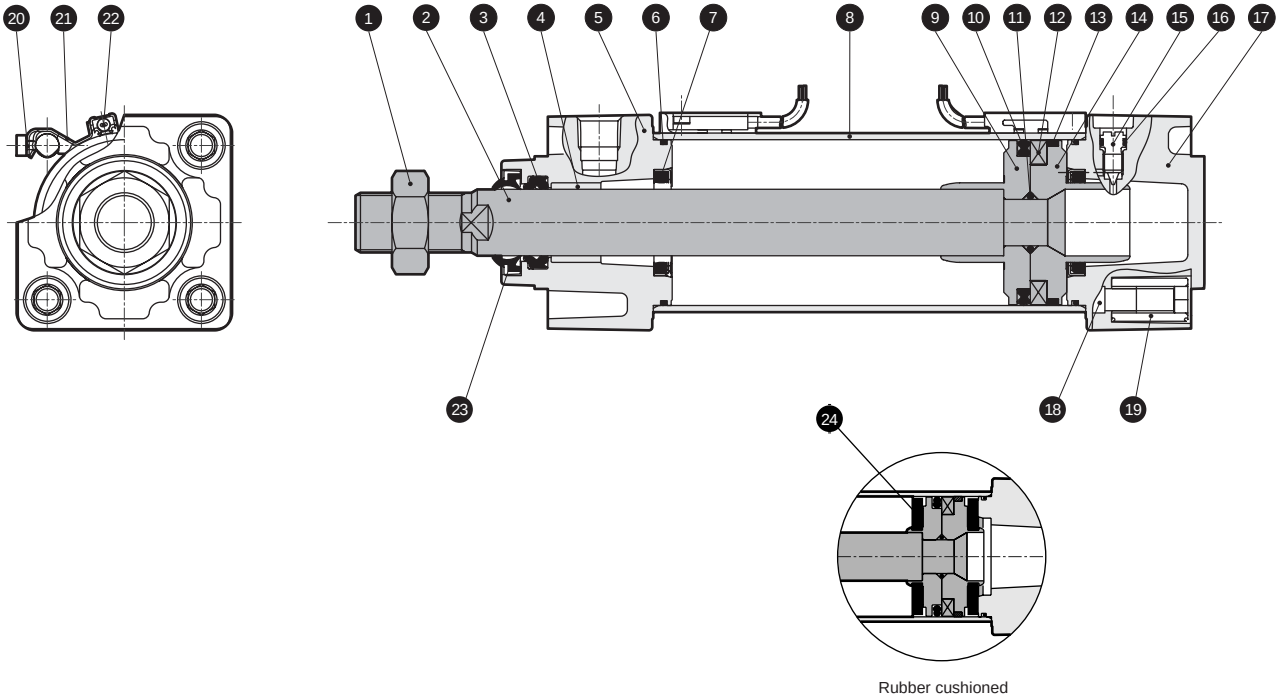
How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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: 2 piece/set is applied for a foot type mounting bracket.

Internal structure and parts list

● SCG-G



Rubber cushioned

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Nickel plating	13	Wear ring	Polyacetal resin	
2	Piston rod	Steel	Industrial chrome plating	14	Piston H	ϕ32, 40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting	
3	Rod packing seal	Nitrile rubber					
4	Bush	Oil impregnated bearing alloy		15	Cushion needle	Copper alloy	
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	Tie rod	Steel	Zinc chromate plating
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	19	Round nut	Steel	Zinc chromate plating
9	Piston R	ϕ32, 40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting		20	Hexagon socket head cap bolt	Steel	Zinc chromate plating
				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 No.	Repair parts number
ϕ 32	SCG-G-32BK	❸ ❻ ❼ ❿ ⓭ ⓰ ㉓
ϕ 40	SCG-G-40BK	
ϕ 50	SCG-G-50BK	
ϕ 63	SCG-G-63BK	
ϕ 80	SCG-G-80BK	
ϕ 100	SCG-G-100BK	

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

● Rubber cushioned

Bore size (mm)	Kit No.	Repair parts number
ϕ 32	SCG-G-32DK	❸ ❻ ❿ ⓭ ⓰ ㉓ ㉔
ϕ 40	SCG-G-40DK	
ϕ 50	SCG-G-50DK	
ϕ 63	SCG-G-63DK	
ϕ 80	SCG-G-80DK	
ϕ 100	SCG-G-100DK	

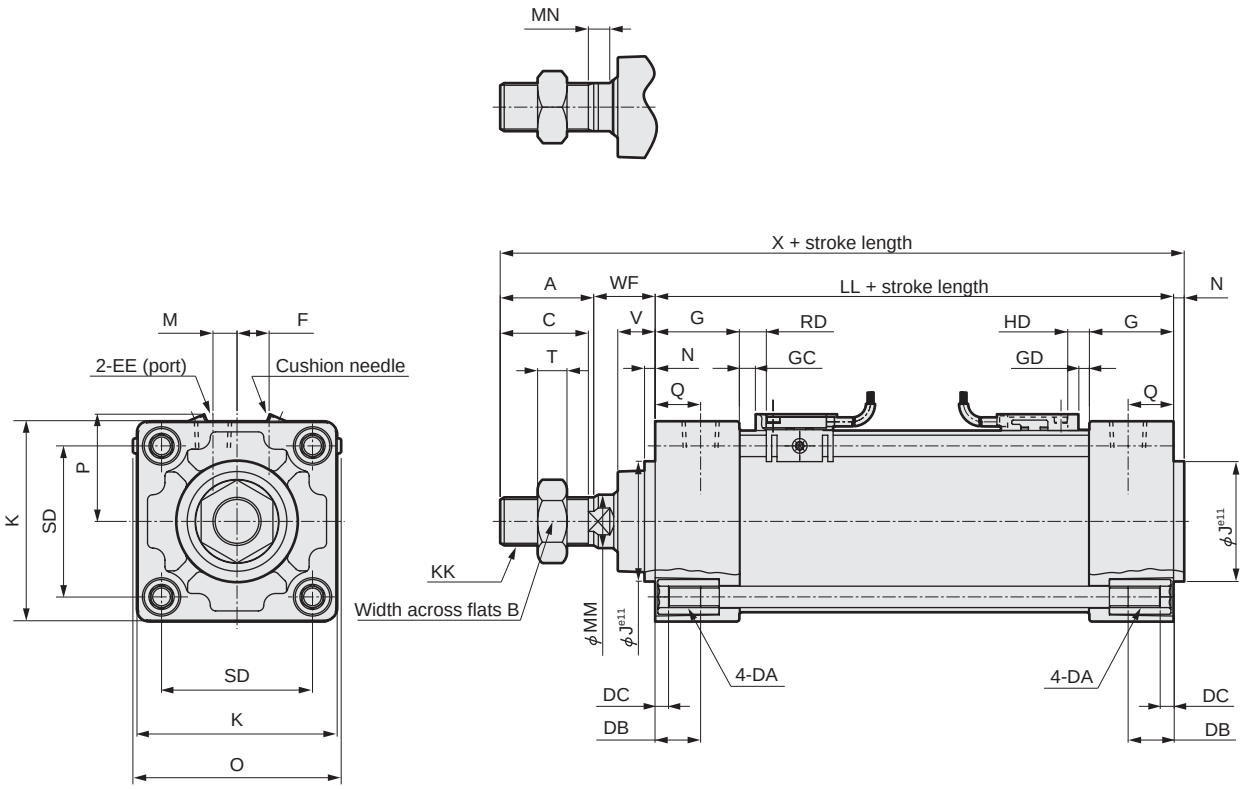
Note: Specify the kit No. when placing an order.

Mounting bracket material

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

Dimensions

● Basic type (00)



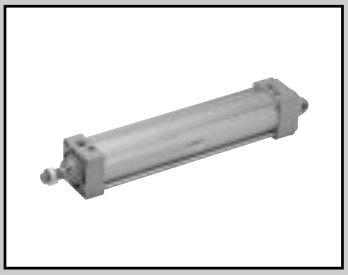
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ32, φ40; +6 mm, φ50, φ63; +8 mm, φ80, φ100; +10 mm)
Note 2: RD and HD in the dimensions indicate the switch end positions, and GC and DC indicate the switch rail end positions.

Symbol / Bore size (mm)	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
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)	With switch								
	T	V	WF	Note 1 X	GC Note 1	GD Note 1	RD	HD	P
φ32	6	13	25	135 (141)	1 (4)	1 (4)	5 (8)	5 (8)	25
φ40	8	13	21	139 (145)	1 (4)	1 (4)	5 (8)	5 (8)	29
φ50	11	14	23	156 (164)	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	34
φ63	11	14	23	156 (164)	2.5 (6.5)	1 (5)	6.5 (10.5)	5 (9)	40
φ80	13	20	32	190 (200)	8.5 (13.5)	2 (7)	12.5 (17.5)	6 (11)	-
φ100	16	20	32	190 (200)	8 (13)	2.5 (7.5)	12 (17)	6.5 (11.5)	-

Note 3: Refer to page 426 for the HD, RD and projecting dimensions of 2-color indicators with preventive maintenance output.
Note 4: Refer to pages 428, 429 for accessory dimensions.

Note: Each mounting style installation dimension is same as SCG (double acting single rod). Refer to pages 356 to 363.



Tie rod cylinder, double acting coolant proof type

SCG-$^{G2}_{G3}$ Series

● Bore size: ϕ 40, ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol 

RoHS CAD

Specifications

Descriptions		SCG-$^{G2}_{G3}$				
Bore size	mm	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Actuation		Double acting coolant proof type				
Working fluid		Compressed air				
Max. working pressure	MPa	1.0				
Min. working pressure	MPa	0.1				
Withstanding pressure	MPa	1.6				
Ambient temperature	℃	-10 to 60 (no freezing)				
Port size		Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 1000), $^{+1.8}_{0}$ (1001 to 1500)				
Working piston speed	mm/s	50 to 1000 (use within the allowable energy absorption.)				
Cushion		Air cushion				
Effective 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: Consult with CKD for the availability of the bore size ϕ32.
Note 2: Consult with CKD for the availability of the type with rubber cushion.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ40	25, 50, 75, 100 150, 200, 250 300, 350, 400 450, 500	600	800	1
ϕ50			1200	
ϕ63			1200	
ϕ80		700	1400	
ϕ100		800	1500	

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T2YL/T3YL switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

Descriptions	Proximity 2-wire	Proximity 3-wire
	T2YLH/T2YLV	T3YLH/T3YLV
Applications	Programmable controller	Programmable controller, relay
Output method	-	NPN output
Power voltage	-	10 to 28 VDC
Load voltage and current	10 to 30 VDC, 5 to 20 mA Note 1	30 VDC or less, 50 mA or less
Light	Red/Green LED (ON lighting)	
Leakage current	1mA or less	10 μA or less
Maximum shock resistance	980 m / S^2	

Note 1: Max. load current above: 20 mA at 25 ℃. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 ℃.
(5 to 10 mA at 60 ℃)

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm:						Stroke length : Additional weight per 50mm	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	0.07	0.13
ϕ50	1.13	1.29	1.61	1.54	1.54	1.61	0.23	0.018	0.20	0.30
ϕ63	1.39	1.73	2.15	1.95	1.96	2.27	0.25	0.018	0.20	0.30
ϕ80	2.66	3.09	4.23	3.93	3.94	4.15	0.40	0.018	0.52	0.94
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

Ⓐ Protective structure

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

Ⓑ Mounting style Note 1

Ⓑ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

Ⓒ Bore size

Ⓒ Bore size (mm)	
40	ϕ40
50	ϕ50
63	ϕ63
80	ϕ80
100	ϕ100
Note: Consult with CKD for the availability of the bore size ϕ32.	

Ⓓ Port thread type

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

Ⓔ Cushion

Ⓔ Cushion	
B	Both sides air cushion (basic type)
Note: Consult with CKD for the availability of the type with rubber cushion.	

Ⓕ Stroke length

Ⓕ Stroke length (mm)			
Bore size	**Stroke length Note 2**	**Available stroke length**	**Custom stroke length**
ϕ40	**1 to 600**	**800**	**Per 1 mm increment**
ϕ50		**1200**	
ϕ63			
ϕ80	**1 to 700**	**1400**	
ϕ100	**1 to 800**	**1500**	

Ⓖ Switch model no.

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

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

Ⓗ Switch quantity Note 3

Ⓗ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓘ Accessory Note 4

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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.
(However, trunnion type is installed onto the product when shipped.)
Note 2: Refer to page 414 for min. stroke length with switch.
Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod end) for TB.
Note 4: "I" and "Y" cannot be selected at the same time.

<Example of model number>

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

Model: Tie rod cylinder double acting coolant proof type
Ⓐ Protective structure : coolant proof scraper + packing seal NBR
Ⓑ Mounting style : Axial foot type
Ⓒ Bore size : ϕ 40 mm
Ⓓ Port thread type : Rc thread
Ⓔ Cushion : Both sides air cushioned
Ⓕ Stroke length : 100 mm
Ⓖ Switch model no. : Proximity T2H switch, lead wire 1 m
Ⓗ Switch quantity : Two
Ⓘ Accessory : Rod eye (attachment)

How to order switch

● Switch body + mounting bracket

SCG - T2YLH - 40

- T2YLH: Switch model no. (Section Ⓖ in previous page)
- 40: Bore size (Section Ⓒ in previous page)

● Only switch body

SW - T2YLH

- T2YLH: Switch model no. (Section Ⓖ in previous page)

Note: Consult with CKD when using the environment compatible T-type switch.

● Switch bracket set

SCG - T - 40

- T: Bracket
- 40: Bore size (Section Ⓒ in previous page)

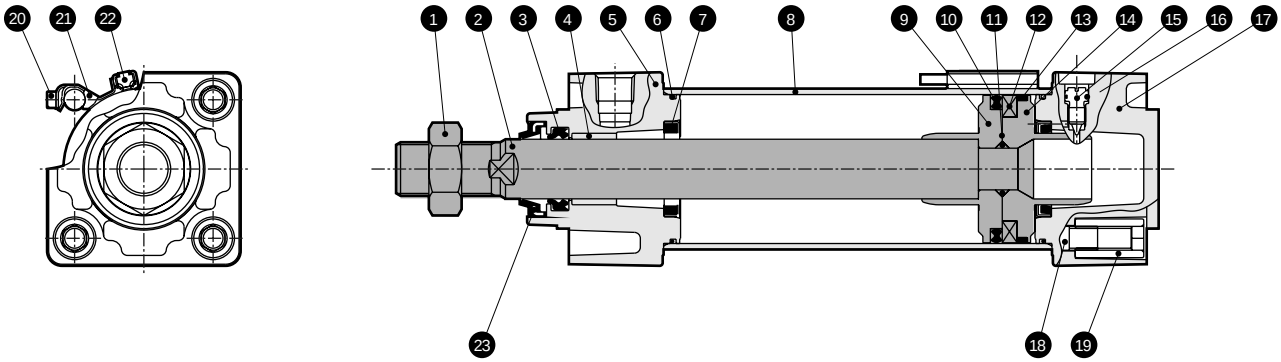
How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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: 2 piece/set is applied for a foot type mounting bracket.

Internal structure and parts list

●SCG-G2 G3



No.	Parts name		Material	Remarks
1	Rod nut		Stainless steel	
2	Piston rod		Stainless steel	Industrial chrome plating
3	Rod packing seal	G2	Nitrile rubber	
		G3	Fluoro rubber	
4	Bush		Oil impregnated bearing alloy	
5	Rod cover		Aluminum alloy die-casting	Paint
6	Cylinder gasket	G2	Nitrile rubber	
		G3	Fluoro rubber	
7	Cushion packing seal	G2	Nitrile rubber, steel	
		G3	Fluoro rubber, steel	
8	Cylinder tube		Aluminum alloy	Hard alumite treatment
9	Piston R		ϕ40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting	Chromate treatment
10	Piston packing seal	G2	Nitrile rubber	
		G3	Fluoro rubber	
11	Piston gasket	G2	Nitrile rubber	
		G3	Fluoro rubber	
12	Magnet		Plastic	
13	Wear ring		Polyacetal resin	
14	Piston H		ϕ40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting	Chromate treatment
15	Cushion needle		Copper alloy	
16	Needle gasket	G2	Nitrile rubber	
		G3	Fluoro rubber	
17	Head cover		Aluminum alloy die-casting	Paint
18	Tie rod		Steel	Zinc chromate plating
19	Round nut		Steel	Zinc chromate plating
20	Hexagon socket head cap bolt		Steel	Zinc chromate plating
21	Switch bracket		Stainless steel	
22	Switch			
23	Dust wiper	G2	Nitrile rubber, steel	
		G3	Fluoro rubber, steel	

Repair parts list

Bore size (mm)		Kit No.	Repair parts number
ϕ40	G2	SCG-G2-40BK	❸ ❻ ❼ ❿ ⓭ ⓰ ㉓
	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	

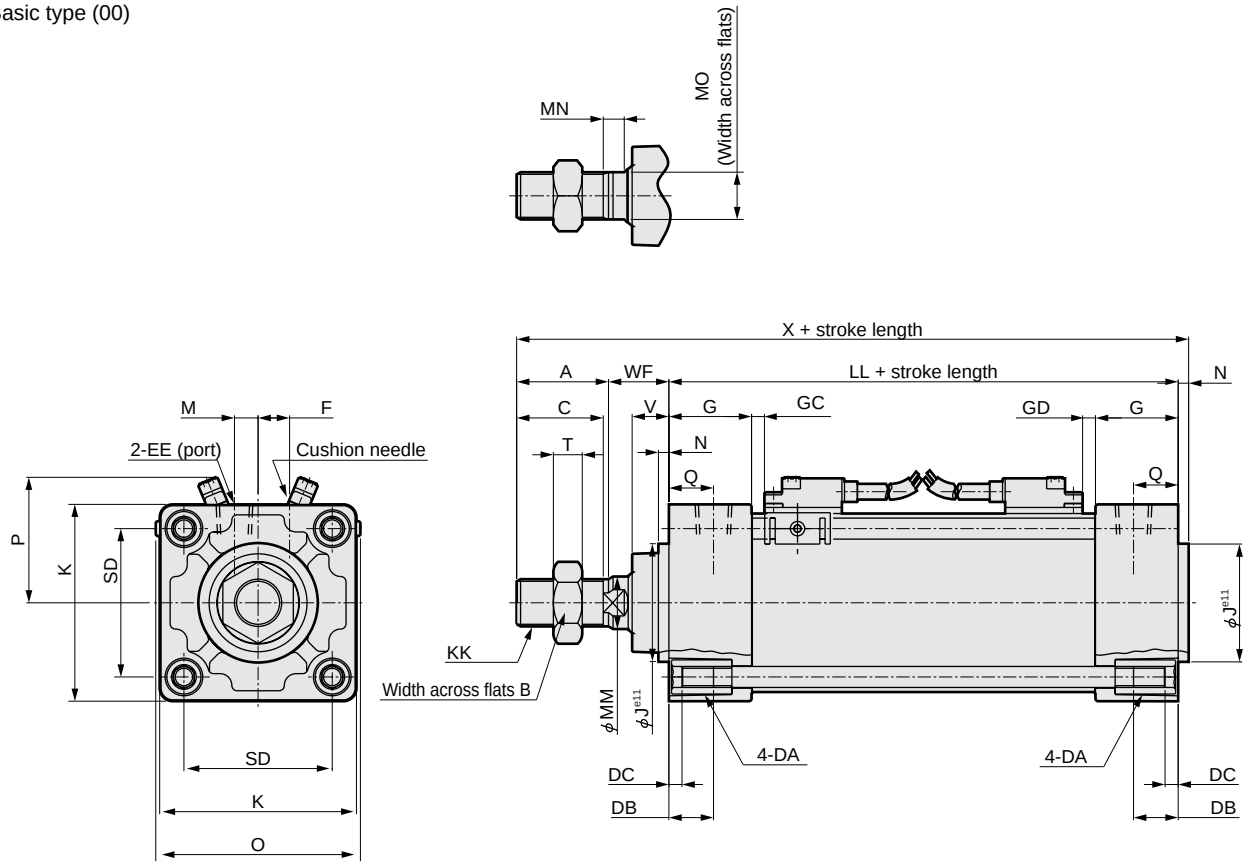
Note: Specify the kit No. when placing an order.

Mounting bracket material

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

Dimensions

● Basic type (00)

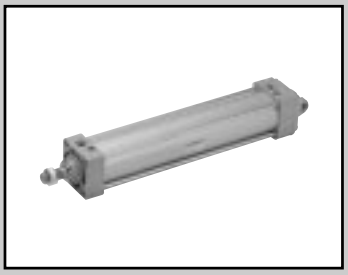


Note 1: Refer to pages 428, 429 for accessory dimensions.

Symbol / Bore size (mm)	Basic type (00) basic dimensions																			
	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	LL	M	MM	MN	MO	N	O	Q
ϕ40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14 x 1.5	84	4	16	5	14	4	57	14
ϕ50	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
ϕ63	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
ϕ80	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
ϕ100	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 / Bore size (mm)						With switch			
	SD	T	V	WF	X	GC	GD	P	
								T*Y*H	T*Y*V
ϕ40	38	8	13	21	139	4	4	35	38
ϕ50	46.5	11	14	23	156	5.5	4	39	42
ϕ63	56.5	11	14	23	156	5.5	4	45	48
ϕ80	72	13	20	32	190	11.5	5	52	55
ϕ100	89	16	20	32	190	11	5.5	60	63

Note: Each mounting style installation dimension is same as SCG (double acting single rod). Refer to pages 356 to 363.



Tie rod cylinder, double acting spatter adherence prevention type

SCG-G4 Series

● Bore size: ϕ 32, ϕ 40, ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol 

RoHS CAD

Specifications

Descriptions		SCG-G4					
Bore size mm		ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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 ℃		-10 to 60 (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm	Rubber cushioned	$^{+1.4}_{0}$ (Up to 1000), $^{+1.8}_{0}$ (1001 to 1500)					
	Air cushioned	$^{+1.0}_{0}$ (Up to 360), $^{+1.4}_{0}$ (361 to 1000), $^{+1.8}_{0}$ (1001 to 1500)					
Working piston speed mm/s		50 to 1000 (use within the allowable energy absorption.)					
Cushion		Selection of air cushion and rubber cushion possible					
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 length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
ϕ32	25, 50, 75, 100 150, 200, 250 300, 350, 400 450, 500	600	700	1
ϕ40			800	
ϕ50			1200	
ϕ63			1200	
ϕ80		700	1400	
ϕ100		800	1500	

Note 1: The custom stroke can be manufactured in 1 mm increments.
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 with T2YD switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation The position cannot be detected on rod side stroke end.	Head end trunnion installation The position cannot be detected on head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ϕ32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (56)	86 (56)	177 (117)	177 (117)	38	38
ϕ40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (61)	91 (61)	182 (122)	182 (122)	43	43
ϕ50	6	12	24	36	6	12	24	36	93 (63)	93 (63)	93 (68)	93 (68)	42	43
ϕ63	6	12	24	36	6	12	24	36	99 (69)	99 (69)	99 (74)	99 (74)	48	49
ϕ80	7	13	25	38	7	13	25	38	110 (80)	110 (80)	110 (86)	110 (86)	48	54
ϕ100	7	13	26	39	7	13	26	39	115 (85)	115 (85)	115 (92)	115 (92)	54	60

● Note 1: Value in ( ) for T*V (Radial lead wire).
● Note 2: When stroke length is not greater than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

Switch specifications

● Strong magnetic field proof

Descriptions	Proximity 2-wire	
	T2YD	T2YDT
Applications	Programmable controller	
Light	Red/Green LED (ON lighting)	
Load voltage	24 VDC ±10%	
Load current	5 to 20 mA	
Internal voltage drop	6 V or less	
Leakage current	1.0 mA or less	

Note 1: This switch can not be used under direct-current magnetic field environment.

Weight

Unit: kg

Bore size (mm)	Product weight when S = 0 mm:						Stroke length : Additional weight per 50mm	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
ϕ32	0.51	0.62	0.73	0.66	0.69	0.68	0.12	0.018	0.07	0.10
ϕ40	0.68	0.82	0.96	0.86	0.86	1.02	0.17	0.018	0.07	0.13
ϕ50	1.16	1.32	1.64	1.56	1.57	1.64	0.23	0.018	0.20	0.30
ϕ63	1.42	1.76	2.18	1.97	1.99	2.29	0.25	0.018	0.20	0.30
ϕ80	2.69	3.12	4.26	3.96	3.96	4.18	0.40	0.018	0.52	0.94
ϕ100	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-G4 - LB - 40 ( ) B - 100 ——— M I

With switch

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

Model no.

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model no.

Ⓖ Switch quantity Note 3

Ⓗ Option

Ⓘ Accessory Note 4

Symbol	Descriptions
Ⓐ Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod end flange type
FB	Head end flange type
CA	Eye bracket type
CB	Clevis bracket type (pin and split pin attached)
TA	Rod end trunnion type
TB	Head end trunnion type
TC	Center trunnion type

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

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

Ⓓ Cushion	
B	Both sides air cushion (basic type)
D	Both sides rubber cushion

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

Ⓔ Stroke length (mm)

Bore size	Stroke length Note 2	Available stroke length	Custom stroke length
ϕ32	1 to 600	700	Per 1 mm increment
ϕ40		800	
ϕ50		1200	
ϕ63			
ϕ80	1 to 700	1400	
ϕ100	1 to 800	1500	

Ⓕ Switch model no.

Lead wire	Contact	Indicator	Lead wire
T2YD*	Proximity	Strong magnetic field proof switch	2-wire
T2YDT*			

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

Ⓖ Switch quantity	
R	1 on rod end
H	1 on head end
D	Two
T	Three

Ⓗ Option	
M	Piston rod material (stainless steel)

Ⓘ Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin attached)
B1	Eye bracket
B2	Clevis bracket (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. (However, trunnion type is installed onto the product when shipped.)

Note 2: Refer to page 420 for min. stroke length with switch.

Note 3: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod end) for TB.

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

<Example of model number>

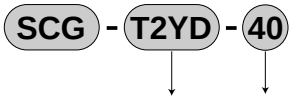
SCG-G4-LB-40B-100-T2YD-D-MI

Model: Tie rod cylinder double acting spatter adherence prevention type

Ⓐ Mounting style : Axial foot type
Ⓑ Bore size : ϕ 40 mm
Ⓒ Port thread type : Rc thread
Ⓓ Cushion : Both sides air cushioned
Ⓔ Stroke length : 100 mm
Ⓕ Switch model no. : Proximity T2YD switch, lead wire 1 m
Ⓖ Switch quantity : Two
Ⓗ Option : Piston rod material (stainless steel)
Ⓘ Accessory : Rod eye (attachment)

How to order switch

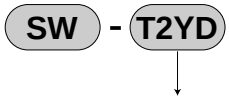
● Switch body + mounting bracket



Switch model no. (Section Ⓕ in previous page)

Bore size (Section Ⓑ in previous page)

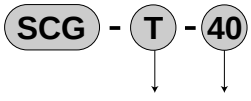
● Only switch body



Switch model no. (Section Ⓕ in previous page)

Note: Consult with CKD when using the environment compatible T-type switch.

● Switch bracket set



Bracket

Bore size (Section Ⓑ in previous page)

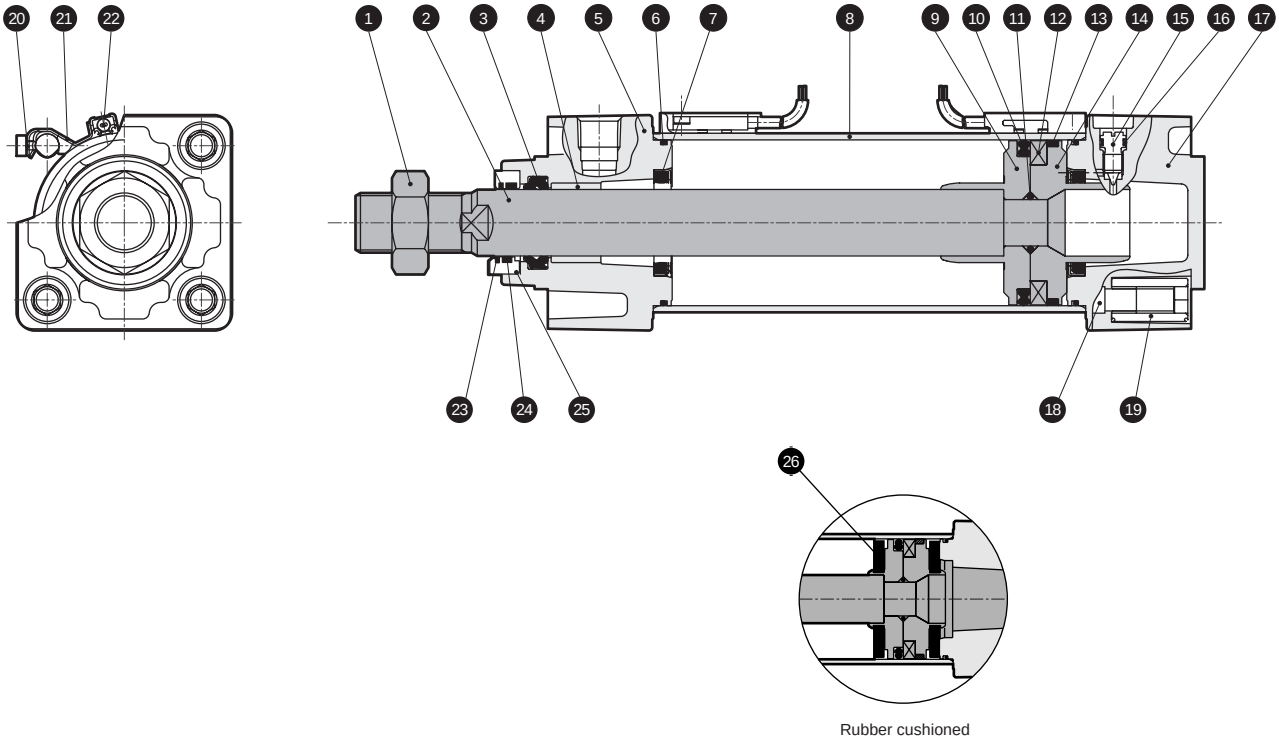
How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
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: 2 piece/set is applied for a foot type mounting bracket.

Internal structure and parts list

●SCG-G4



Rubber cushioned

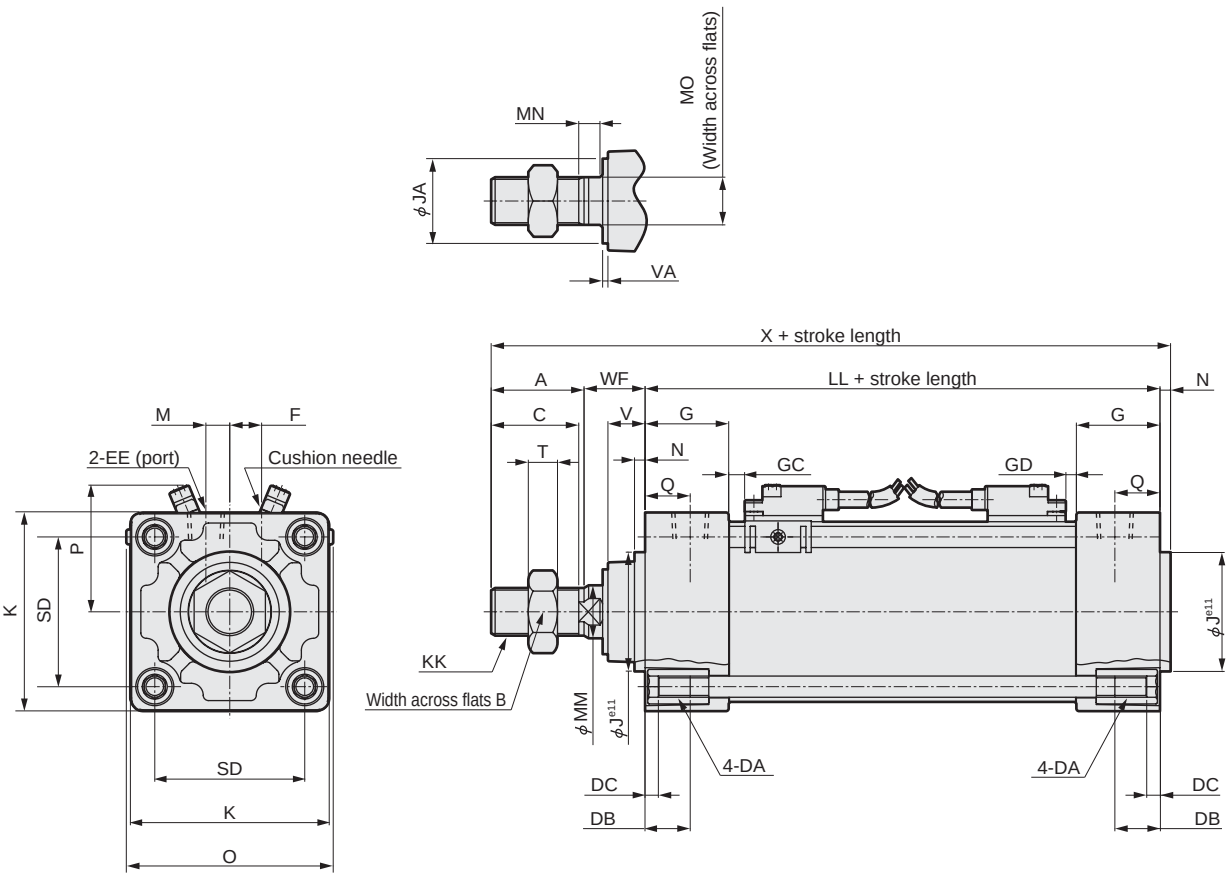
No.	Parts name	Material	Remarks	No.	Material	Parts name	Remarks
1	Rod nut	Steel	Nickel plating	14	Piston H	ϕ32, 40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting	
2	Piston rod	Steel	Industrial chrome plating				
3	Rod packing seal	Nitrile rubber		15	Cushion needle	Copper alloy	
4	Bush	Oil impregnated bearing alloy		16	Needle gasket	Nitrile rubber	
5	Rod cover	Aluminum alloy die-casting	Paint	17	Head cover	Aluminum alloy die-casting	Paint
6	Cylinder gasket	Nitrile rubber		18	Tie rod	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 treatment	20	Hexagon socket head cap bolt	Steel	Zinc chromate plating
9	Piston R	ϕ32, 40: aluminum alloy ϕ50 to 100: aluminum alloy die-casting		21	Bracket	Stainless steel spring steel	
				22	Switch		
10	Piston packing seal	Nitrile rubber		23	Coil scraper	Phosphor bronze	
11	Piston gasket	Nitrile rubber		24	Lube keeping	Special rubber	
12	Magnet	Plastic		25	Adaptor	Stainless steel	
13	Wear ring	Polyacetal resin		26	Cushion rubber	Urethane rubber	Only with rubber cushion

Mounting bracket material

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

Dimensions

● Basic type (00)



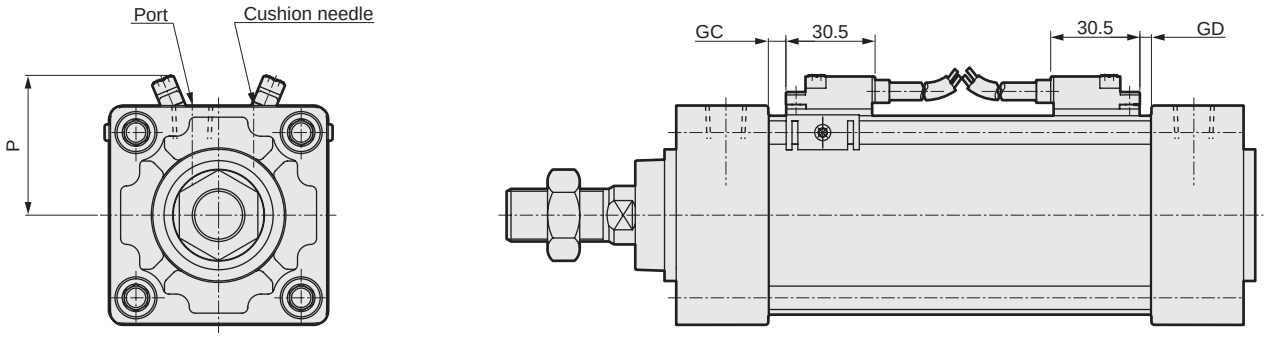
Note 1: Dimensions shown in parentheses are for the rubber cushion type. This type is longer than the air cushion type.
(φ32, φ40; +6 mm, φ50, φ63; +8 mm, φ80, φ100; +10 mm)
Note 2: Refer to pages 428, 429 for accessory dimensions.

Symbol / Bore size (mm)	Basic type (00) basic dimensions																			
	A	B	C	DA	DB	DC	EE	F	G	J	JA	K	KK	Note 1 LL	M	MM	MN	MO	N	O	Q
φ32	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
φ40	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
φ50	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
φ63	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
φ80	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
φ100	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 / Bore size (mm)	With switch								
	SD	T	V	VA	WF	Note 1 X	Note 1 GC	Note 1 GD	P
φ32	32.5	6	13	1	25	135 (141)	4 (7)	4 (7)	33
φ40	38	8	13	3	21	139 (145)	4 (7)	4 (7)	37
φ50	46.5	11	14	2	23	156 (164)	5.5 (9.5)	4 (8)	41
φ63	56.5	11	14	2	23	156 (164)	5.5 (9.5)	4 (8)	48
φ80	72	13	20	2	32	190 (200)	11.5 (16.5)	5 (10)	56
φ100	89	16	20	2	32	190 (200)	11 (16)	5.5 (10.5)	66

Note:Note: Each mounting style installation dimension is same as SCG (double acting single rod). Refer to pages 356 to 363.

Demensions for SCG Series common (with switch, with 2 color indicator type, preventive maintenance output)



Installation dimensions for switch with 2 color indicator and preventive maintenance output

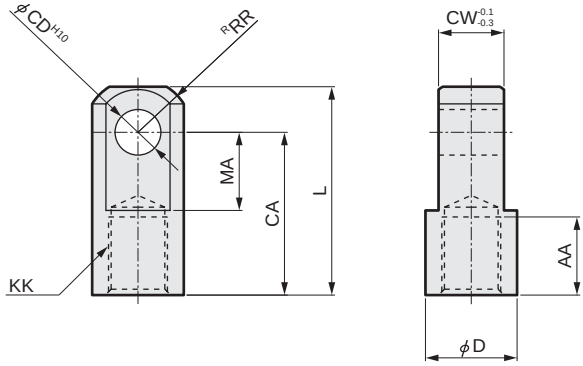
Symbol / Bore size (mm)	P				Note 1 GC	Note 1 GD
	2 color indicator type		Preventive maintenance output type			
	T*YH	T*YV	T*Y*H	T*Y*V		
ϕ32	31	34	36	39	4 (7)	4 (7)
ϕ40	35	38	40	43	4 (7)	4 (7)
ϕ50	39	42	44	47	5.5 (9.5)	4 (8)
ϕ63	45	48	50	53	5.5 (9.5)	4 (8)
ϕ80	52	55	57	60	11.5 (16.5)	5 (10)
ϕ100	60	63	64	67	11 (16)	5.5 (10.5)

Note 1: Dimensions shown in parentheses are for the rubber cushion type.

MEMO

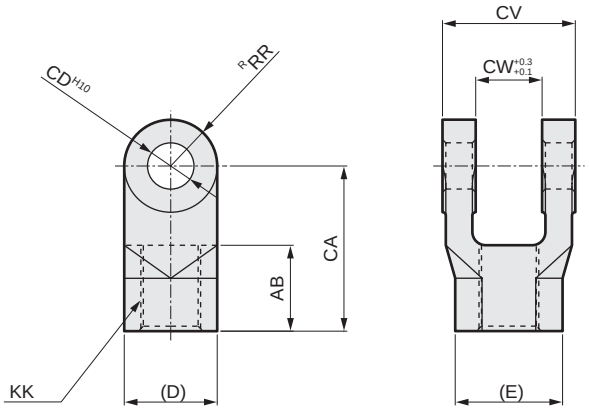
Dimensions for SCG Series common accessory (rod eye/clevis/bracket) CAD

● Rod eye (I) Material: Steel



Model no.	Applicable bore size (mm)	AA	CA	CD	CW	D	KK	L	MA	RR	Weight (kg)
SCG-I-32	32	14	30	10	14	20	M10 x 1.25	40	16	12	0.07
SCG-I-40	40	19	40	10	14	22	M14 x 1.5	50	19	12.5	0.07
SCG-I-50	50, 63	24	50	14	20	28	M18 x 1.5	64	24	16.5	0.20
SCG-I-80	80	26	60	22	30	40	M22 x 1.5	80	34	23.5	0.52
SCG-I-100	100	26	60	22	30	40	M26 x 1.5	80	34	23.5	0.48

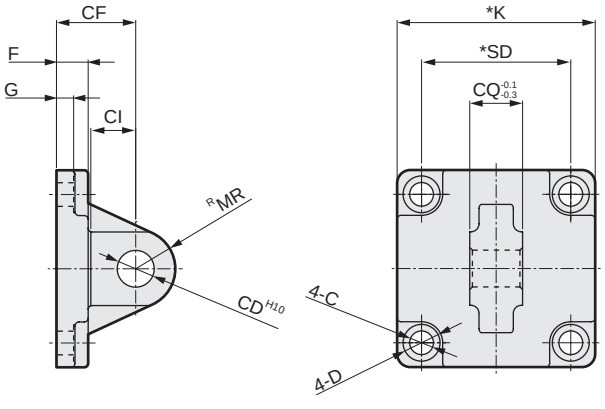
● Rod clevis (Y) Material: Cast iron



Model no.	Applicable bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Weight (kg)
SCG-Y-32	32	14	30	10	28	14	20	23.1	M10 x 1.25	10	0.10
SCG-Y-40	40	21	40	10	28	14	22	25.4	M14 x 1.5	11	0.13
SCG-Y-50	50, 63	26	50	14	40	20	28	32.3	M18 x 1.5	14	0.30
SCG-Y-80	80	31	65	22	60	30	40	46.2	M22 x 1.5	20	0.94
SCG-Y-100	100	31	65	22	60	30	40	46.2	M26 x 1.5	20	0.92

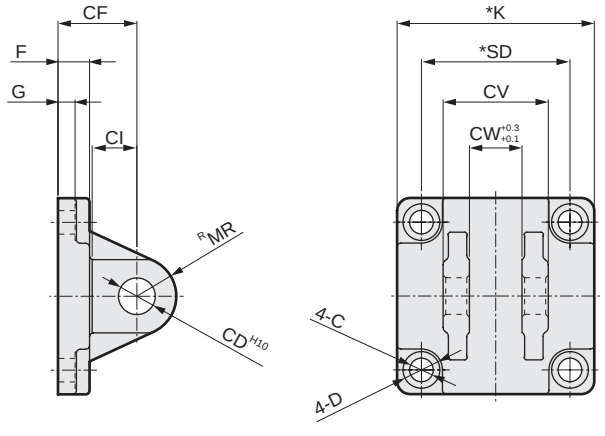
Note: Pin, split pin and plain washer are included.

● Eye bracket (B1) Material: Cast iron



Model no.	Applicable bore size (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD	Weight (kg)
SCG-B1-32	32	6.6	10	23	13	14	11	9	4.5	46	10.5	32.5	0.13
SCG-B1-40	40	6.6	10	23	13	14	11	9	4.5	52	11	38	0.16
SCG-B1-50	50	9	14	30	17	20	14	12	6.5	65	15	46.5	0.38
SCG-B1-63	63	9	14	30	17	20	14	12	6.5	75	15	56.5	0.48
SCG-B1-80	80	11	22	42	26	30	17	15	8.5	95	23	72	1.19
SCG-B1-100	100	11	22	42	26	30	17	15	8.5	114	23	89	1.56

● Clevis bracket (B2) Material: Cast iron

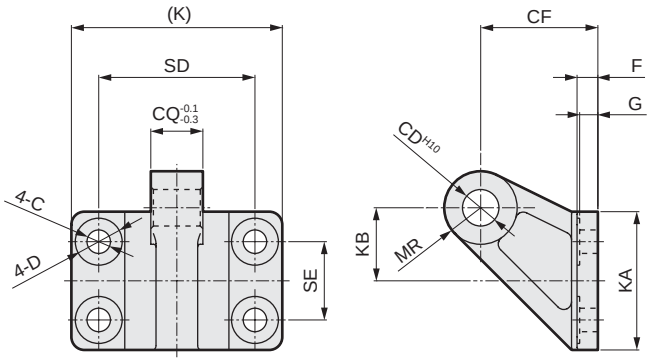


Model no.	Applicable bore size (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD	Weight (kg)
SCG-B2-32	32	6.6	10	23	13	28	14	11	9	4.5	46	10.5	32.5	0.16
SCG-B2-40	40	6.6	10	23	13	28	14	11	9	4.5	52	11	38	0.20
SCG-B2-50	50	9	14	30	17	40	20	14	12	6.5	65	15	46.5	0.46
SCG-B2-63	63	9	14	30	17	40	20	14	12	6.5	75	15	56.5	0.58
SCG-B2-80	80	11	22	42	26	60	30	17	15	8.5	95	23	72	1.52
SCG-B2-100	100	11	22	42	26	60	30	17	15	8.5	114	23	89	1.91

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

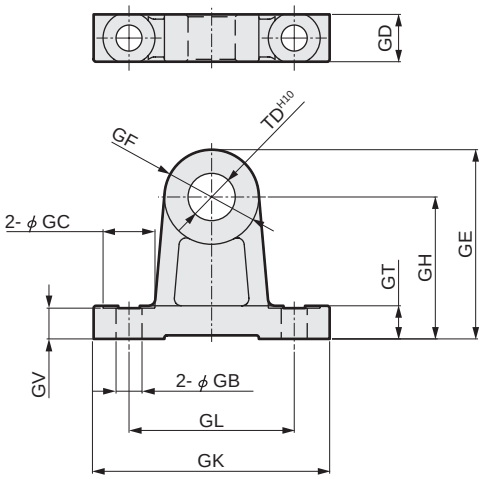
Accessory dimensions CAD

● Eye bracket (B3) Material: Cast iron



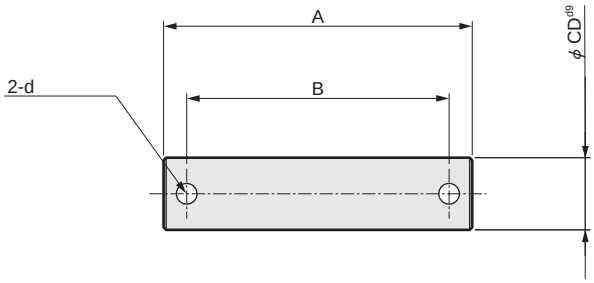
Model no.	Applicable bore size (mm)	C	CD	CF	CQ	D	F	G	K	KA	KB	MR	SD	SE	Weight (kg)
SCG-B3-32	32, 40	6.6	10	33	14	15	7	6	62	42	21	10	44	22	0.21
SCG-B3-50	50, 63	9	14	45	20	18	8	7	81	53	28	14	60	30	0.45
SCG-B3-80	80, 100	11	22	65	30	22	10	9	111	73	41.5	22	86	45	1.23

● Trunnion type No. 2 bracket (B4) Material: Cast iron



Model no.	Applicable bore size (mm)	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	TD	Weight (kg)
SCG-B4-32	32	7	13	12	47	24	35	62	45	10	9	12	0.20
SCG-B4-40	40, 50	9	18	17	60	30	45	80	60	12	11	16	0.43
SCG-B4-63	63, 80	11	22	20	80	40	60	100	70	14	13	20	0.87
SCG-B4-100	100	13.5	24	26	100	50	75	120	90	17	16	25	1.75

● Pin (P) Material: Steel



Model no.	Applicable bore size (mm)	A	B	CD	d	Weight (kg)
SCG-P-32	32, 40	44	36	10	3	0.04
SCG-P-50	50, 63	60	51	14	4	0.10
SCG-P-80	80, 100	82	72	22	4	0.34

Note: Clevis bracket/rod clevis/clevis bracket types.
Split pin and plain washer are included.