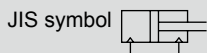




Tie rod cylinder Double acting/single rod

SCG Series

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



Specifications

Item		SCG					
Bore size mm		ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure	MPa	0.05 (≈7.3 psi, 0.5 bar)					
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke	With rubber cushion	$^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)					
tolerance mm	With air cushion	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (361 to 1000), $^{+1.8}_0$ (1001 to 1500)					
Working piston speed mm/s		30 to 1000 (Operate within the allowable absorbed energy.)					
Cushion		Either air cushion or rubber cushion can be selected					
Effective air cushion length mm		8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)					
Allowable	With rubber cushion	0.5	0.9	1.6	1.6	3.3	5.8
absorbed energy J	With air cushion	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

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

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

*3: For the type with bellows, the available stroke length is 500 mm for $\phi 32$ to $\phi 40$ bore size, 600 mm for $\phi 50$ to $\phi 63$, and 800 mm for $\phi 80$ to $\phi 100$.

Min. stroke with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\phi 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\phi 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\phi 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
$\phi 80$	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
$\phi 100$	10	20	40	60	10	20	40	60	101(84)	101(84)	105(105)	105(105)	47	53

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\phi 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\phi 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\phi 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
$\phi 80$	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
$\phi 100$	10	20	40	60	10	20	40	60	105(80)	105(80)	117(117)	117(117)	49	55

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	5	10	20	30	5	40(33)	70(64)	101(94)	64(55)	64(55)	131(116)	131(116)	27	27
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38
ø80	6	11	22	33	6	11	22	33	88(79)	88(79)	88(80)	88(80)	37	43
ø100	6	11	22	33	6	11	22	33	93(84)	93(84)	93(85)	93(85)	43	49

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T1/T2Y/T3Y/T2YD/T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	6	11	22	33	6	62(49)	92(80)	123(110)	86(61)	86(61)	177(122)	177(122)	38	38
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49
ø80	7	13	25	38	7	13	25	38	110(85)	110(85)	110(86)	110(86)	48	54
ø100	7	13	26	39	7	13	26	39	115(90)	115(90)	115(92)	115(92)	54	60

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

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

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

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

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

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

Weight table

(Unit: kg)

Bore size (mm)	Product weight for 0 mm stroke length						Added weight /50 mm stroke	Switch weight (per 1 pc)	Switch mounting bracket	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA, TB, TC)				I	Y
ø32	0.50	0.61	0.72	0.65	0.68	0.67	0.12	Refer to the weight in the switch specifications.	0.024	0.07	0.10
ø40	0.66	0.80	0.94	0.85	0.85	1.00	0.17		0.024	0.07	0.13
ø50	1.13	1.29	1.61	1.54	1.54	1.61	0.23		0.022	0.20	0.30
ø63	1.39	1.73	2.15	1.95	1.96	2.27	0.25		0.022	0.20	0.30
ø80	2.66	3.09	4.23	3.93	3.94	4.15	0.40		0.026	0.52	0.94
ø100	3.77	4.63	6.09	5.49	5.52	6.34	0.51		0.024	0.48	0.92

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

G Switch quantity
*3

H Option
*4

I Accessory
*5

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
(If the product is the trunnion (TA, TB or TC) with bellows and the mounting bracket is LB or FA, it will be attached with the product.)

*2 : Refer to pages 358 and 359 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

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

[Example of model No.]

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

Model: Tie rod cylinder, double acting/single rod

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided air cushion
- E** Stroke length : 100 mm
- F** Switch model No. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Option : With bellows
- I** Accessory : Rod eye (included product)

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

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

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

D Cushion	
B	Two-sided air cushion (basic)
D	Two-sided rubber cushion
Note: The rubber cushion has a longer total length than the air cushion.	

E Stroke length (mm)			
Bore size	Stroke length *2	Available stroke length	Custom stroke length
ø32	1 to 600	700	In 1 mm increments
ø40		800	
ø50		1200	
ø63			
ø80	1 to 700	1400	
ø100	1 to 800	1500	

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

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Option			
		Max. ambient temperature	Instantaneous ambient temp
J	Bellows	100°C	200°C
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG - T0H - 40

Switch model No.
(Item ⑤ on page 360)

Bore size
(Item ⑥ on page 360)

- Switch body only

SW - T0H

Switch model No.
(Item ⑤ on page 360)

- Switch mounting bracket set

SCG - T - 40

Mounting
bracket

Bore size
(Item ⑥ on page 360)

Note: Contact CKD when using
an environment-friendly
T switch.

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) *1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

*1: Specify the flange (FA) with bellows as "SCG-FA-(bore size)-J".

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

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

Specifications for rechargeable battery

(Catalog No. CC-1226A)

- Design is compatible with rechargeable battery manufacturing process.

SCG -...- **P4***

* Contact CKD for details.

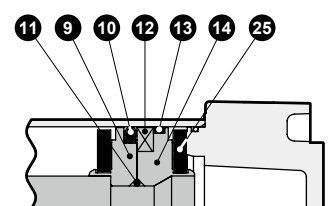
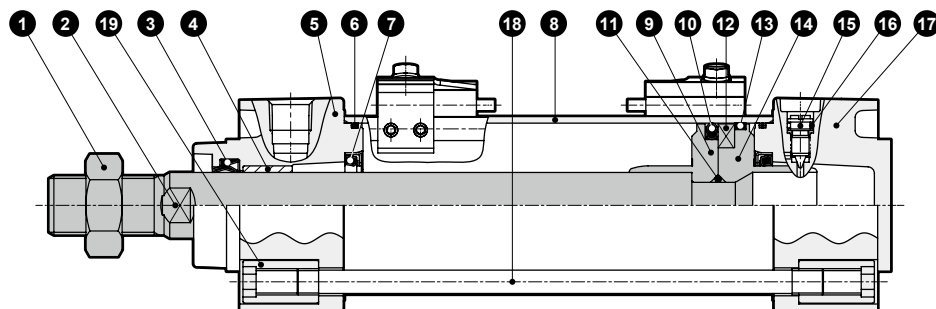
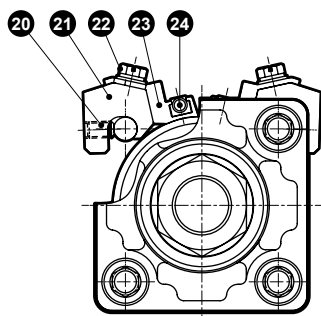
Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	40.2	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	34.6	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	62.8	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	52.8	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	98.2	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	82.5	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Internal structure and parts list

With air cushion



With rubber cushion

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickel plating	14	Piston H	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
2	Piston rod	Steel	Industrial chrome plating	15	Cushion needle	Copper alloy	Nickel plating
3	Rod packing	Nitrile rubber		16	Needle gasket	Nitrile rubber	
4	Bush	Oil-impregnated bearing alloy		17	Head cover	Aluminum alloy die-casting	Paint
5	Rod cover	Aluminum alloy die-casting	Paint	18	Tie rod	Steel	Zinc chromate treatment
6	Cylinder gasket	Nitrile rubber		19	Round nut	Steel	Zinc chromate treatment
7	Cushion packing	Nitrile rubber, steel	With air cushion only	20	Hexagon socket set screw	Steel	Black finish
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	21	Switch mounting base	Aluminum alloy	
9	Piston R	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		22	Slot head hexagon head bolt with captive washer	Stainless steel	
10	Piston packing	Nitrile rubber		23	Switch holder	Aluminum alloy	
11	Piston gasket	Nitrile rubber		24	Cylinder switch		
12	Magnet	Plastic		25	Cushion rubber	Urethane rubber	With rubber cushion only
13	Wear ring	Polyacetal resin					

Repair parts list

● With air cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-32BK	3 6 7 10 13 16
ø40	SCG-40BK	
ø50	SCG-50BK	
ø63	SCG-63BK	
ø80	SCG-80BK	
ø100	SCG-100BK	

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

● With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-32DK	3 6 10 13 16 25
ø40	SCG-40DK	
ø50	SCG-50DK	
ø63	SCG-63DK	
ø80	SCG-80DK	
ø100	SCG-100DK	

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

Material of mounting bracket

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

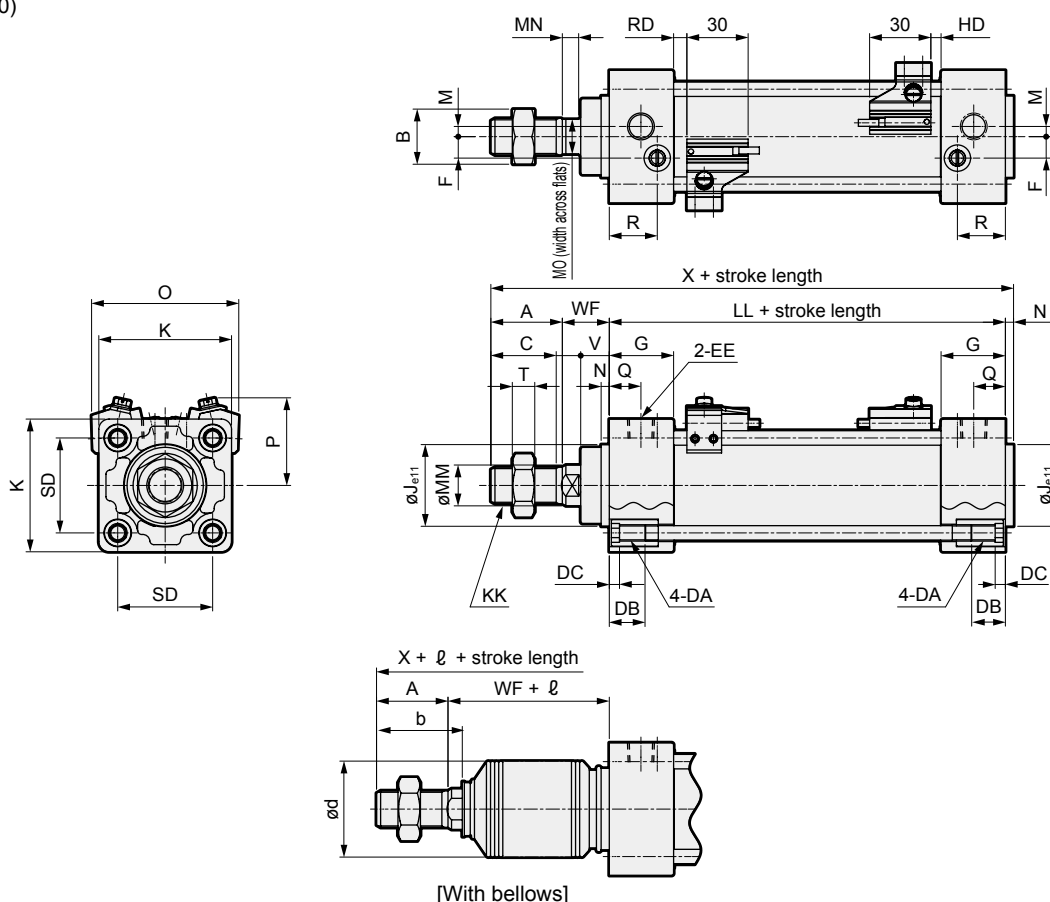
Note: Mounting bracket will be shipped with the product.

If the product is the trunnion (TA, TB or TC) with bellows and the mounting is LB or FA, it will be attached with the product.

Dimensions



● Basic (00)



*1: Dimensions in () are for the rubber cushion.

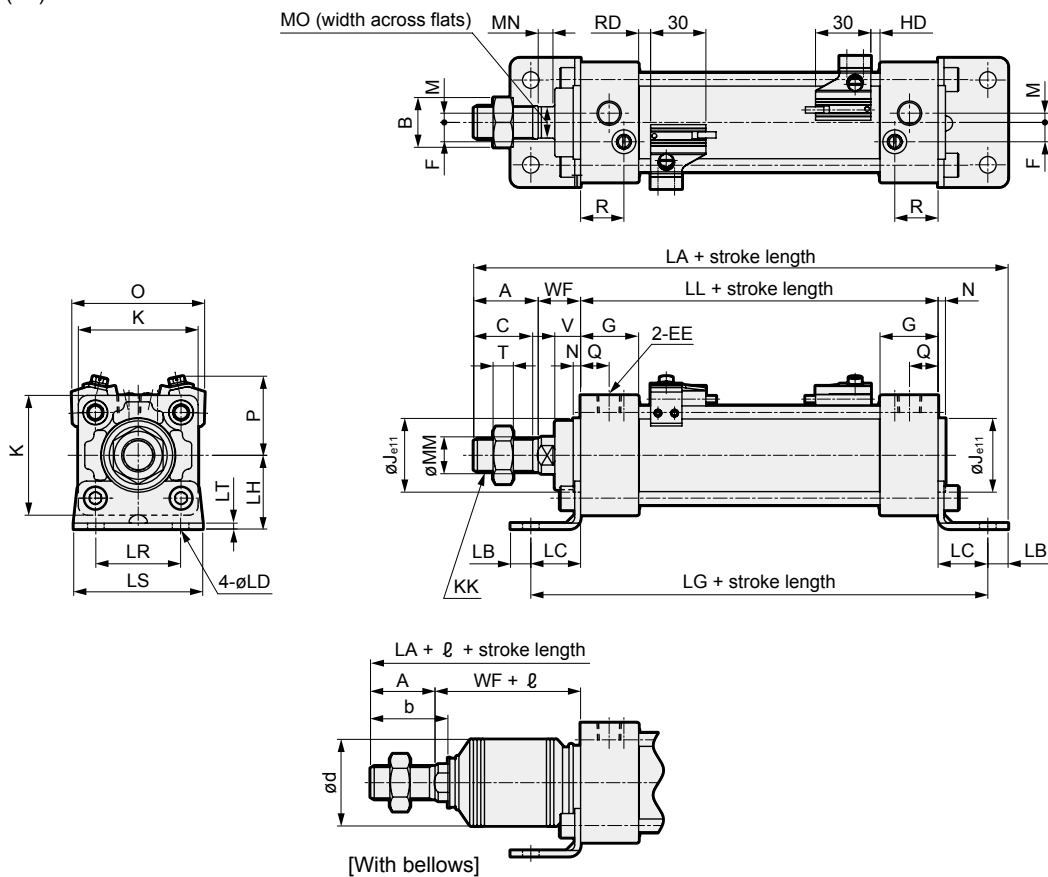
*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Basic (00) basic dimensions																
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10
ø40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17
ø80	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22
ø100	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27
Code	Mounting method								With switch								
Bore size (mm)	N	Q	R	SD	T	V	WF	*1 X	O	P	T0, T5 ,T2, T3		T2W, T3W				
											RD	HD	RD	HD			
ø32	4	13	19	32.5	6	13	25	135 (141)	59	38	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)			
ø40	4	14	19	38	8	13	21	139 (145)	66	41	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)			
ø50	4	15.5	23.5	46.5	11	14	23	156 (164)	72	43	6.5 (10.5)	5 (9)	9 (13)	7 (11)			
ø63	4	16.5	21.5	56.5	11	14	23	156 (164)	83	48	6.5 (10.5)	5 (9)	9 (13)	7 (11)			
ø80	4	19	28	72	13	20	32	190 (200)	104	57	12.5 (17.5)	6 (11)	15 (20)	8 (13)			
ø100	4	19	28	89	16	20	32	190 (200)	121	63	12 (17)	6.5 (11.5)	14.5 (19.5)	8.5 (13.5)			
Code	With bellows																
Bore size (mm)	A	b	d	WF	ℓ												
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800		
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37					
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32					
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41				
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41				
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63		
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63		

Dimensions

- Axial foot (LB)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

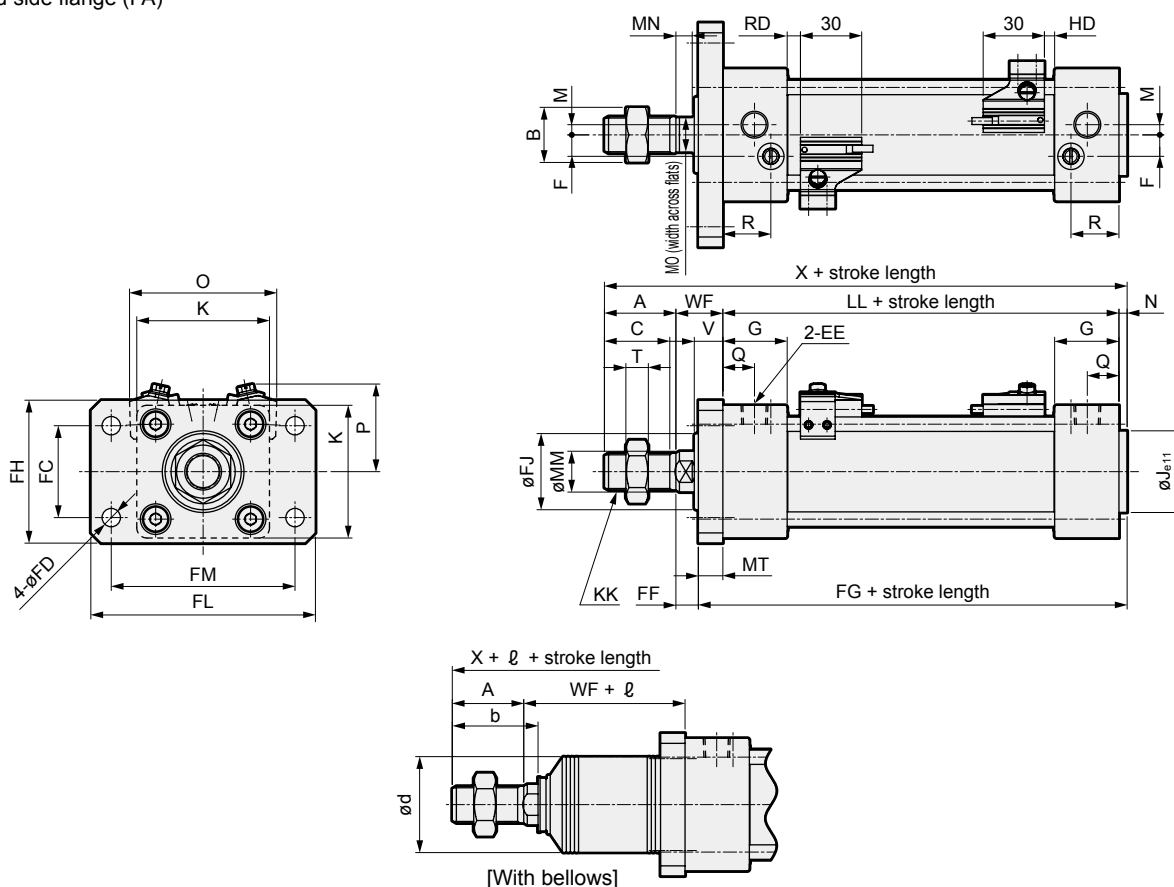
*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code		Axial foot (LB) basic dimensions																			
Bore size (mm)		A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V	WF
ø32		22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13	25
ø40		30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13	21
ø50		35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14	23
ø63		35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14	23
ø80		40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20	32
ø100		40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20	32
Code		Mounting method										With switch									
Bore size (mm)		*1 LA	LB	LC	LD	*1 LG	LH	LR	LS	LT	O	P	T0, T5 ,T2, T3			T2W, T3W					
													RD		HD		RD		HD		
ø32		162 (168)		9	22	7	128 (134)	30	32	50	3.2	59	38	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)	
ø40		170 (176)		11	24	9	132 (138)	33	38	55	3.2	66	41	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)	
ø50		190 (198)		11	27	9	148 (156)	40	46	70	3.2	72	43	6.5 (10.5)		5 (9)		9 (13)		7 (11)	
ø63		193 (201)		14	27	12	148 (156)	45	56	80	4.5	83	48	6.5 (10.5)		5 (9)		9 (13)		7 (11)	
ø80		230 (240)		14	30	12	174 (184)	55	72	95	4.5	104	57	12.5 (17.5)		6 (11)		15 (20)		8 (13)	
ø100		234 (244)		16	32	14	178 (188)	65	89	114	6	121	63	12 (17)		6.5 (11.5)		14.5 (19.5)		8.5 (13.5)	
Code		With bellows																			
Bore size (mm)		A	b	d	WF	ℓ															
						50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800					
ø32		22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37								
ø40		30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32								
ø50		35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41							
ø63		35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41							
ø80		40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63					
ø100		40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63					

Dimensions



● Rod side flange (FA)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

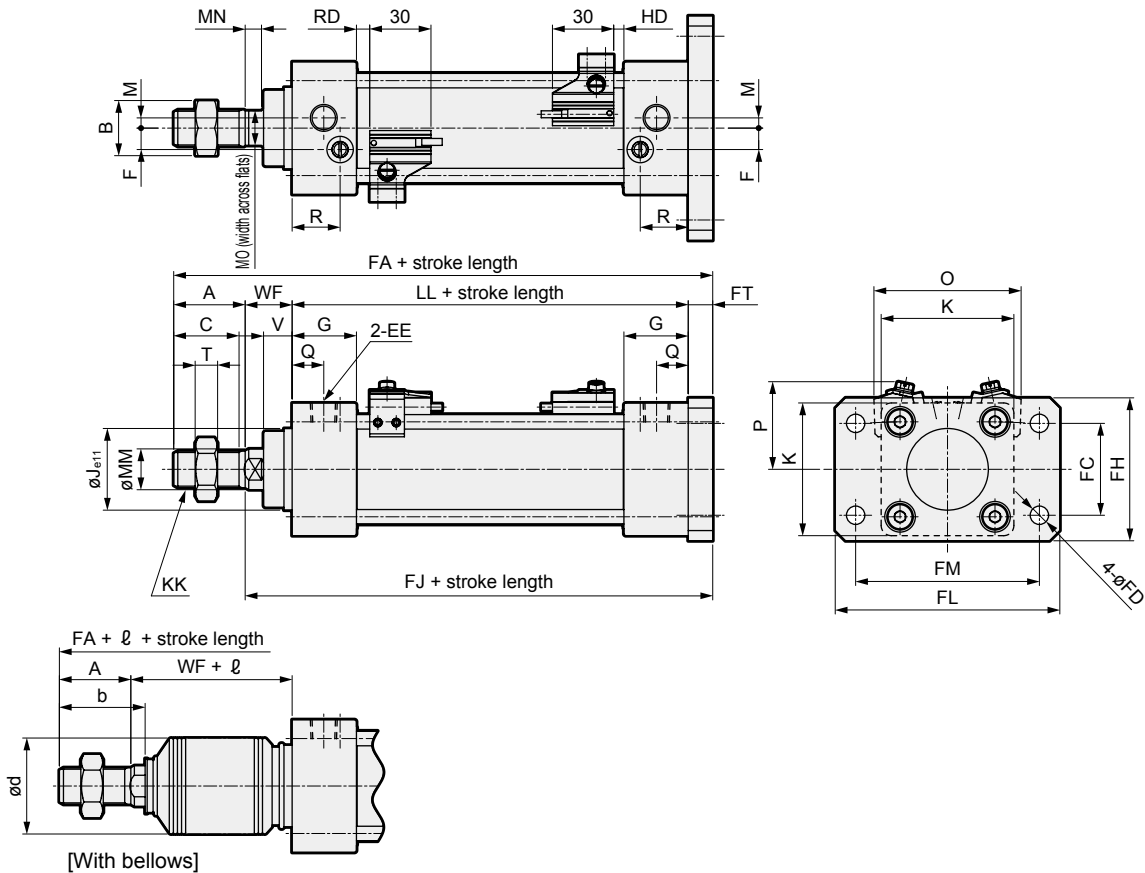
*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Rod side flange (FA) basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V	WF	*1 X
ø32	22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13	25	135 (141)
ø40	30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13	21	139 (145)
ø50	35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14	23	156 (164)
ø63	35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14	23	156 (164)
ø80	40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20	32	190 (200)
ø100	40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20	32	190 (200)
Code	Mounting method										With switch										
Bore size (mm)	FC	FD	FF	*1 FG	FJ	MT	FH	FL	FM	O	P	T0, T5 ,T2, T3				T2W, T3W					
												RD		HD		RD		HD			
ø32	32	7	15	98 (104)	29	10	50	64	79	59	38	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)			
ø40	36	9	11	98 (104)	30	10	55	72	90	66	41	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)			
ø50	45	9	11	110 (118)	38	12	70	90	110	72	43	6.5 (10.5)		5 (9)		9 (13)		7 (11)			
ø63	50	9	11	110 (118)	38	12	80	100	120	83	48	6.5 (10.5)		5 (9)		9 (13)		7 (11)			
ø80	63	12	16	134 (144)	43	16	100	126	153	104	57	12.5 (17.5)		6 (11)		15 (20)		8 (13)			
ø100	75	14	16	134 (144)	51	16	120	150	178	121	63	12 (17)		6.5 (11.5)		14.5 (19.5)		8.5 (13.5)			
Code	With bellows																				
Bore size (mm)	A	b	d	WF	ℓ																
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800						
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37									
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32									
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41								
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41								
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63						
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63						

Dimensions



● Head side flange (FB)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

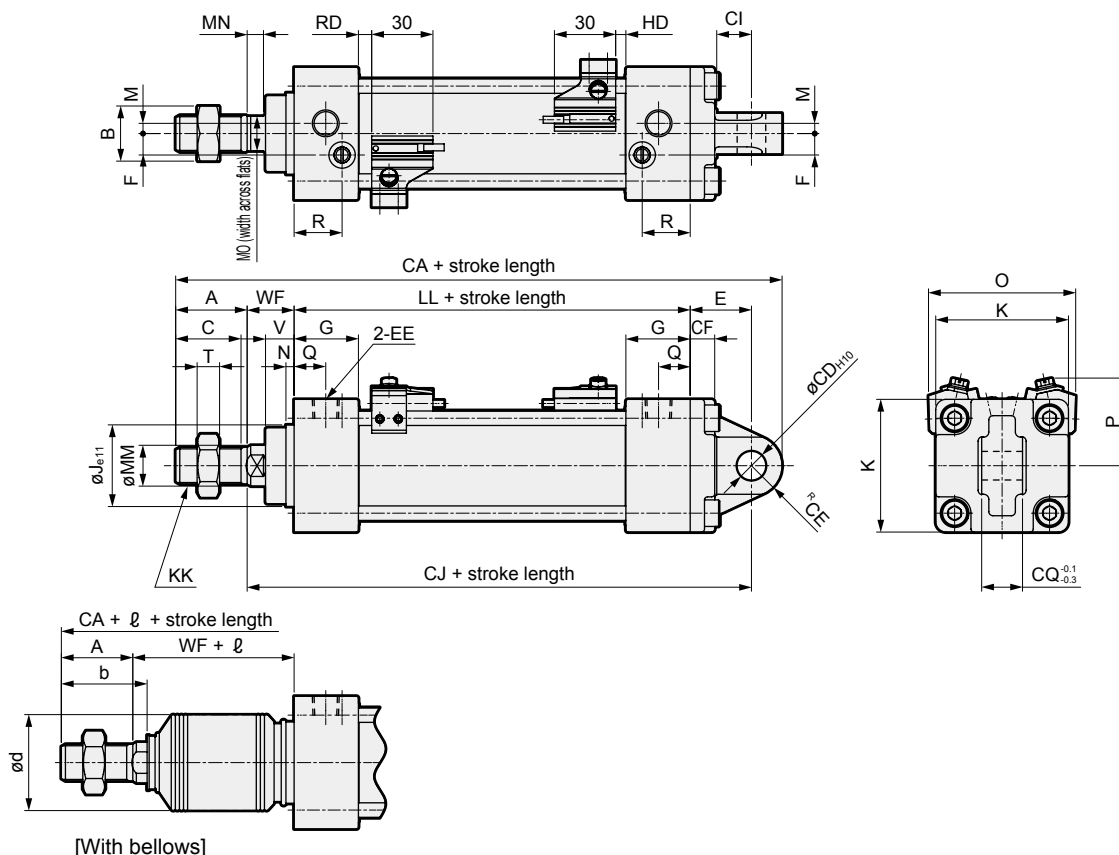
*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Head side flange (FB) basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V	WF	
ø32	22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13	25	
ø40	30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13	21	
ø50	35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14	23	
ø63	35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14	23	
ø80	40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20	32	
ø100	40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20	32	
Code	Mounting method									With switch											
Bore size (mm)	*1 FA	FC	FD	FH	*1 FJ	FL	FM	FT	O	P	T0, T5 ,T2, T3				T2W, T3W						
											RD		HD		RD		HD				
ø32	141 (147)		32	7	50	119 (125)		64	79	10	59	38	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)		
ø40	145 (151)		36	9	55	115 (121)		72	90	10	66	41	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)		
ø50	164 (172)		45	9	70	129 (137)		90	110	12	72	43	6.5 (10.5)		5 (9)		9 (13)		7 (11)		
ø63	164 (172)		50	9	80	129 (137)		100	120	12	83	48	6.5 (10.5)		5 (9)		9 (13)		7 (11)		
ø80	202 (212)		63	12	100	162 (172)		126	153	16	104	57	12.5 (17.5)		6 (11)		15 (20)		8 (13)		
ø100	202 (212)		75	14	120	162 (172)		150	178	16	121	63	12 (17)		6.5 (11.5)		14.5 (19.5)		8.5 (13.5)		
Code	With bellows																				
Bore size (mm)	A	b	d	WF	ℓ																
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800						
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37									
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32									
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41								
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41								
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63						
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63						

Dimensions



- Eye bracket (CA)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

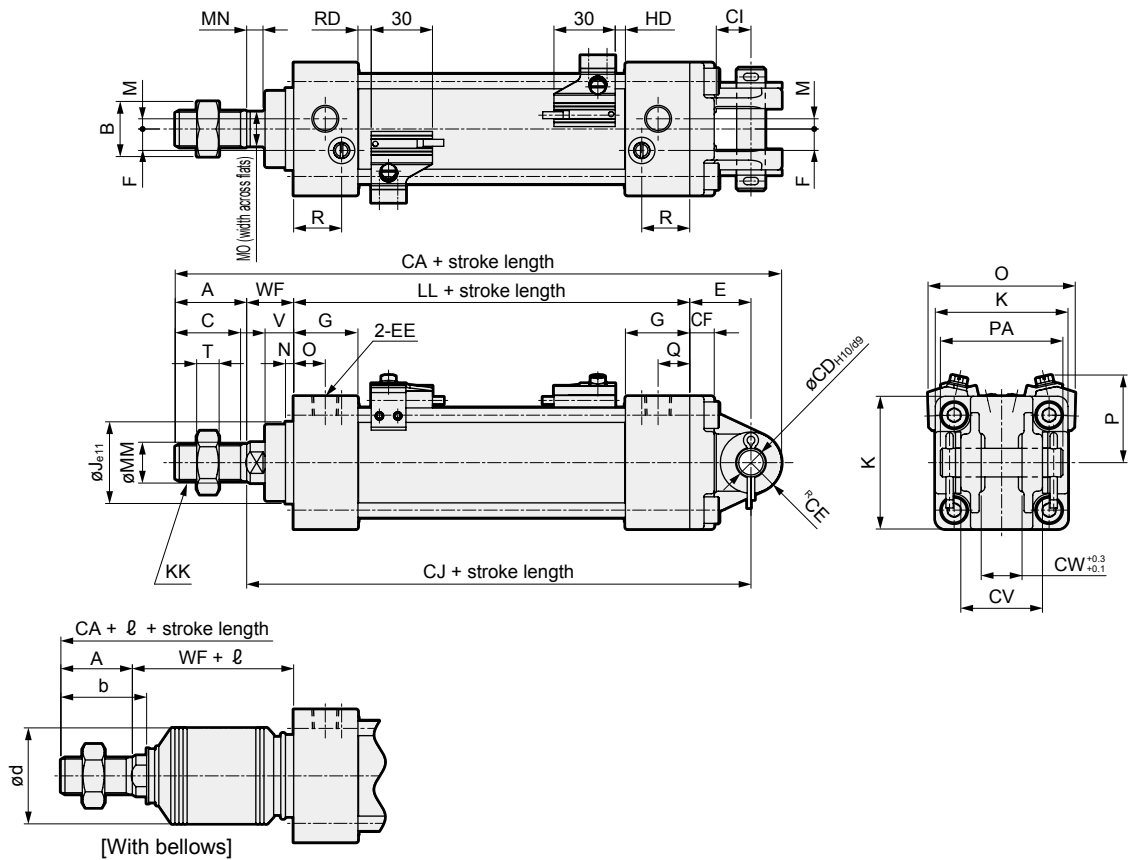
*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Eye bracket (CA) basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V	WF
ø32	22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13	25
ø40	30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13	21
ø50	35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14	23
ø63	35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14	23
ø80	40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20	32
ø100	40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20	32
Code	Mounting method									With switch										
Bore size (mm)	*1 CA	CD	CE	CF	CI	*1 CJ	CQ	E	O	P	T0, T5 ,T2, T3			T2W, T3W						
											RD		HD		RD		HD			
ø32	164.5 (170.5)		10	10.5	9	13	132 (138)		14	23	59	38	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)	
ø40	169 (175)		10	11	9	13	128 (134)		14	23	66	41	5 (8)		5 (8)		7.5 (10.5)		7.5 (10.5)	
ø50	197 (205)		14	15	12	17	147 (155)		20	30	72	43	6.5 (10.5)		5 (9)		9 (13)		7 (11)	
ø63	197 (205)		14	15	12	17	147 (155)		20	30	83	48	6.5 (10.5)		5 (9)		9 (13)		7 (11)	
ø80	251 (261)		22	23	15	26	188 (198)		30	42	104	57	12.5 (17.5)		6 (11)		15 (20)		8 (13)	
ø100	251 (261)		22	23	15	26	188 (198)		30	42	121	63	12 (17)		6.5 (11.5)		14.5 (19.5)		8.5 (13.5)	
Code	With bellows																			
Bore size (mm)	A	b	d	WF	ℓ															
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800					
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37								
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32								
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41							
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41							
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63					
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63					

Dimensions



● Clevis bracket (CB)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

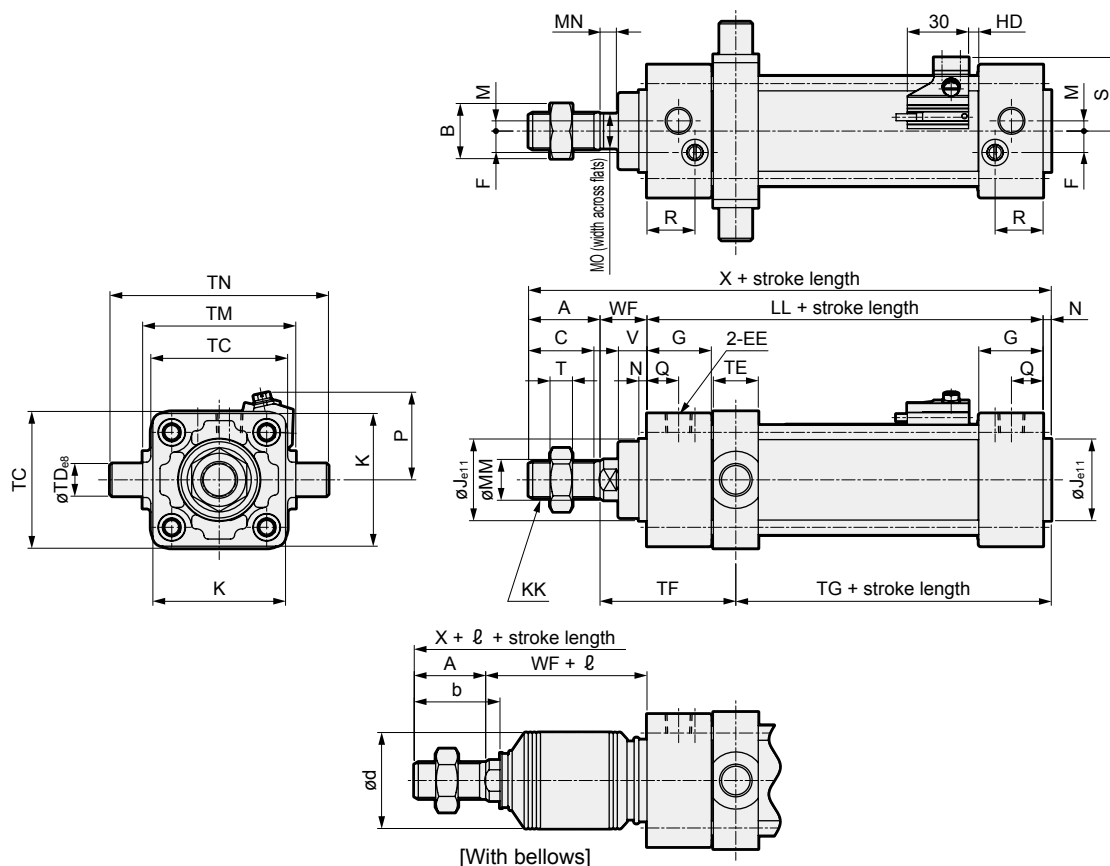
*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Clevis bracket (CB) basic dimensions																			
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V	WF
ø32	22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13	25
ø40	30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13	21
ø50	35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14	23
ø63	35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14	23
ø80	40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20	32
ø100	40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20	32
Code	Mounting method										With switch									
Bore size (mm)	*1 CA	CD	CE	CF	CI	*1 CJ	CV	CW	E	PA	O	P	T0, T5 ,T2, T3		T2W, T3W					
													RD	HD	RD	HD				
ø32	164.5 (170.5)		10	10.5	9	13	132 (138)		28	14	23	44	59	38	5 (8)		5 (8)	7.5 (10.5)		7.5 (10.5)
ø40	169 (175)		10	11	9	13	128 (134)		28	14	23	44	66	41	5 (8)		5 (8)	7.5 (10.5)		7.5 (10.5)
ø50	197 (205)		14	15	12	17	147 (155)		40	20	30	60	72	43	6.5 (10.5)		5 (9)	9 (13)		7 (11)
ø63	197 (205)		14	15	12	17	147 (155)		40	20	30	60	83	48	6.5 (10.5)		5 (9)	9 (13)		7 (11)
ø80	251 (261)		22	23	15	26	188 (198)		60	30	42	82	104	57	12.5 (17.5)		6 (11)	15 (20)		8 (13)
ø100	251 (261)		22	23	15	26	188 (198)		60	30	42	82	121	63	12 (17)		6.5 (11.5)	14.5 (19.5)		8.5 (13.5)
Code	With bellows																			
Bore size (mm)	A	b	d	WF	ℓ															
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800					
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37								
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32								
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41							
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41							
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63					
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63					

Dimensions



● Rod side trunnion (TA)



*1: Dimensions in () are for the rubber cushion.

*2: A switch cannot be installed on the rod side.

*3: Refer to page 436 for HD and protruding dimensions of other switches.

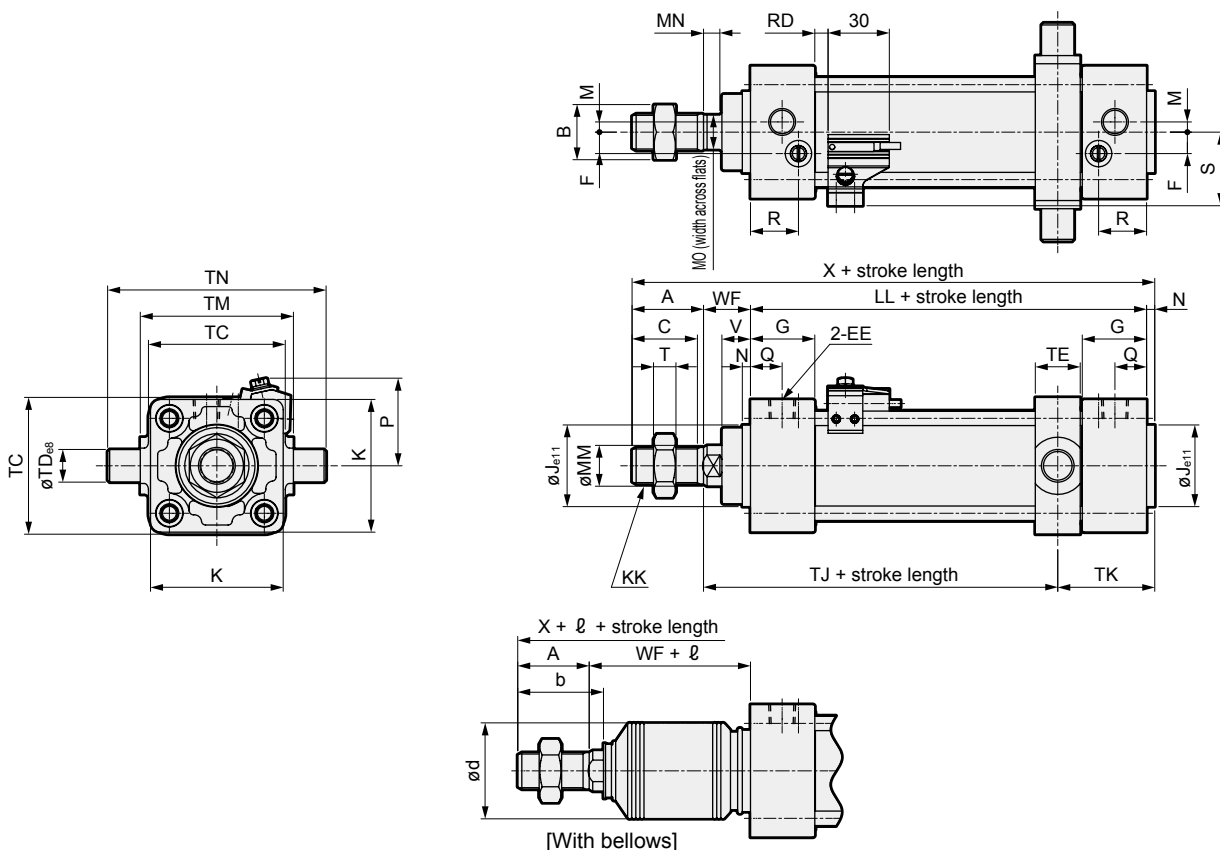
*4: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Rod side trunnion (TA) basic dimensions																		
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V
ø32	22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13
ø40	30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13
ø50	35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14
ø63	35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14
ø80	40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20
ø100	40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20
Code	Mounting method									With switch									
Bore size (mm)	WF	*1 X	TC	TD	TE	TF	*1 TG	TM	TN	S	P	T0, T5 ,T2, T3			T2W, T3W				
												HD			HD				
ø32	25	135 (141)	47	12	17	61.5	51.5 (57.5)	50	74	29.5	38	5 (8)			7.5 (10.5)				
ø40	21	139 (145)	57	16	22	60	49 (55)	63	95	33	41	5 (8)			7.5 (10.5)				
ø50	23	156 (164)	67	16	22	66.5	54.5 (62.5)	75	107	36	43	5 (9)			7 (11)				
ø63	23	156 (164)	82	20	28	69.5	51.5 (59.5)	90	130	41.5	48	5 (9)			7 (11)				
ø80	32	190 (200)	100	20	34	88	62 (72)	110	150	52	57	6 (11)			8 (13)				
ø100	32	190 (200)	121	25	40	91	59 (69)	132	182	60.5	63	6.5 (11.5)			8.5 (13.5)				
Code	With bellows																		
Bore size (mm)	A	b	d	WF	ℓ														
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800				
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37							
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32							
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41						
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41						
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63				
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63				

Dimensions



● Head side trunnion (TB)



*1: Dimensions in () are for the rubber cushion.

*2: A switch cannot be installed on the rod side.

*3: Refer to page 436 for RD and protruding dimensions of other switches.

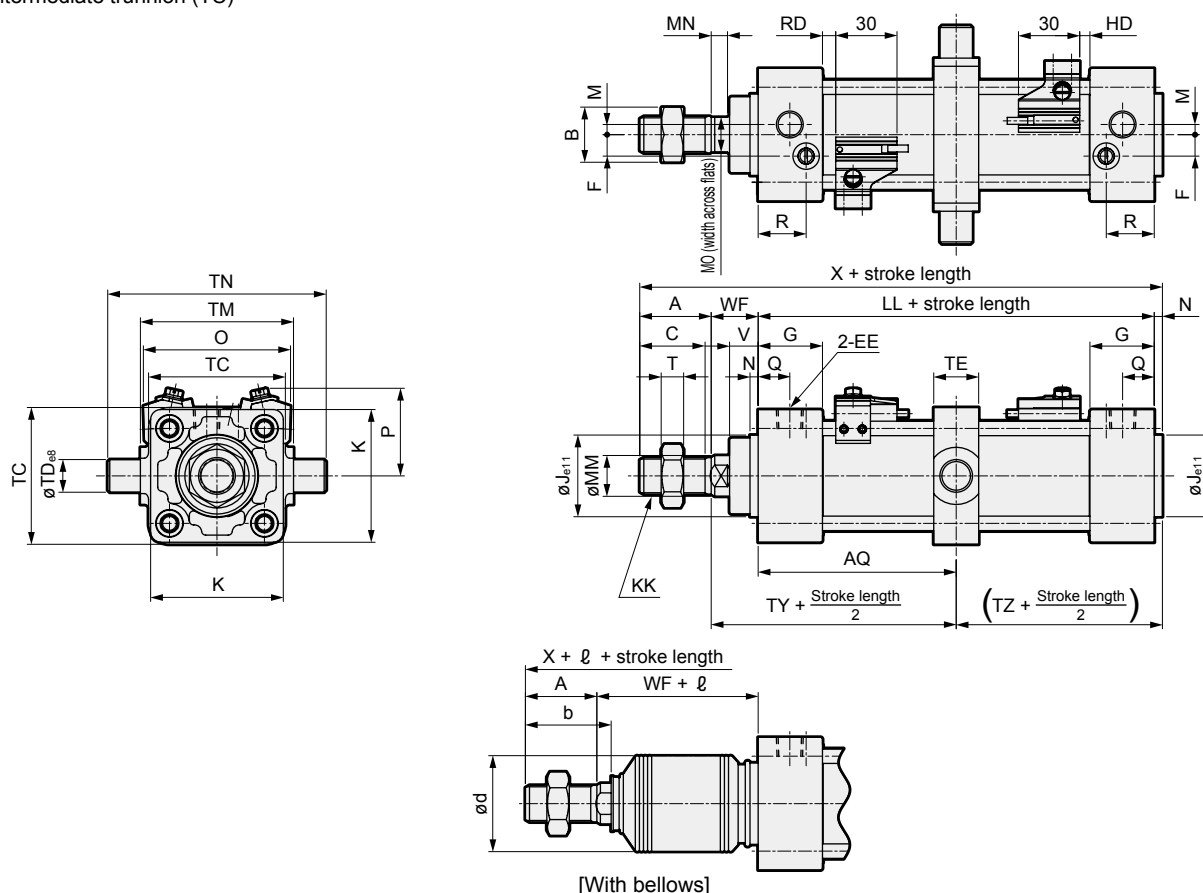
*4: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Head side trunnion (TB) basic dimensions																		
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V
ø32	22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13
ø40	30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13
ø50	35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14
ø63	35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14
ø80	40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20
ø100	40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20
Code											With switch								
Bore size (mm)	WF	*1 X	TC	TD	TE	TJ	TK	TM	TN	S	P	T0, T5 ,T2, T3			T2W, T3W				
												RD			RD				
ø32	25	135 (141)	47	12	17	72.5 (78.5)	40.5	50	74	29.5	38	5 (8)			7.5 (10.5)				
ø40	21	139 (145)	57	16	22	66 (72)	43	63	95	33	41	5 (8)			7.5 (10.5)				
ø50	23	156 (164)	67	16	22	73.5 (81.5)	47.5	75	107	36	43	6.5 (10.5)			9 (13)				
ø63	23	156 (164)	82	20	28	70.5 (78.5)	50.5	90	130	41.5	48	6.5 (10.5)			9 (13)				
ø80	32	190 (200)	100	20	34	90 (100)	60	110	150	52	57	12.5 (17.5)			15 (20)				
ø100	32	190 (200)	121	25	40	87 (97)	63	132	182	60.5	63	12 (17)			14.5 (19.5)				
Code	With bellows																		
Bore size (mm)	A	b	d	WF	ℓ														
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800				
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37							
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32							
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41						
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41						
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63				
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63				

Dimensions



● Intermediate trunnion (TC)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Intermediate trunnion (TC) basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO	N	Q	R	T	V	WF	*1 X
ø32	22	17	19.5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10	4	13	19	6	13	25	135 (141)
ø40	30	22	27	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14	4	14	19	8	13	21	139 (145)
ø50	35	27	32	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17	4	15.5	23.5	11	14	23	156 (164)
ø63	35	27	32	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17	4	16.5	21.5	11	14	23	156 (164)
ø80	40	32	37	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22	4	19	28	13	20	32	190 (200)
ø100	40	41	37	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27	4	19	28	16	20	32	190 (200)
Code	Mounting method										With switch										
Bore size (mm)	AQ		TC	TD	TE	TM	TN	*1 TY	*1 TZ	O	P	T0, T5 ,T2, T3		T2W, T3W							
												RD	HD	RD	HD						
ø32	42 (45)+ Stroke length 2		47	12	17	50	74	67 (70)	46 (49)	59	38	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)						
ø40	42 (45)+ Stroke length 2		57	16	22	63	95	63 (66)	46 (49)	66	41	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)						
ø50	47 (51)+ Stroke length 2		67	16	22	75	107	70 (74)	51 (55)	72	43	6.5 (10.5)	5 (9)	9 (13)	7 (11)						
ø63	47 (51)+ Stroke length 2		82	20	28	90	130	70 (74)	51 (55)	83	48	6.5 (10.5)	5 (9)	9 (13)	7 (11)						
ø80	57 (62)+ Stroke length 2		100	20	34	110	150	89 (94)	61 (66)	104	57	12.5 (17.5)	6 (11)	15 (20)	8 (13)						
ø100	57 (62)+ Stroke length 2		121	25	40	132	182	89 (94)	61 (66)	121	63	12 (17)	6.5 (11.5)	14.5 (19.5)	8.5 (13.5)						
Code	With bellows																				
Bore size (mm)	A	b	d	WF	ℓ																
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800						
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37									
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32									
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41								
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 X stroke-41								
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63						
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 X stroke-63						

SCG Series common accessory dimensions (rod eye, clevis, bracket)

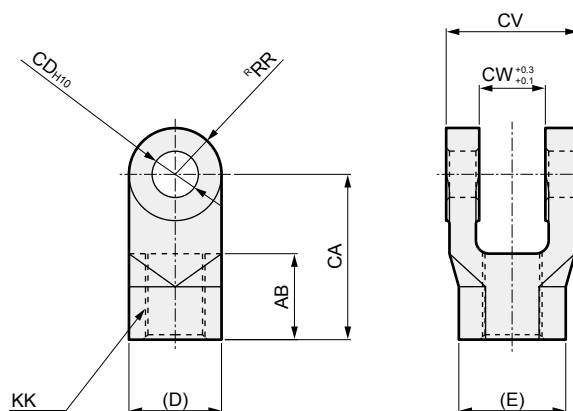
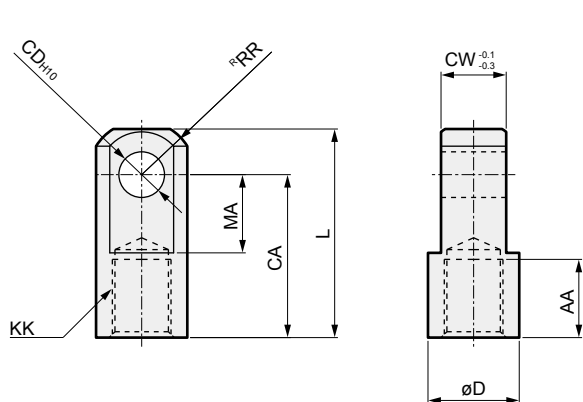


● Rod eye (I)

Material: Steel
Painting

● Rod clevis (Y)

Material: Cast iron
Painting



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

Model No.	Bore size (mm)	AB	CA	CD	CV	CW	D	E	KK	RR	Wt. (kg)
SCG-Y-32	32	14	30	10	28	14	20	20.1	M10×1.25	10	0.10
SCG-Y-40	40	21	40	10	28	14	22	22.4	M14×1.5	11	0.13
SCG-Y-50	50, 63	26	50	14	40	20	28	29.3	M18×1.5	14	0.30
SCG-Y-80	80	31	65	22	60	30	40	43.2	M22×1.5	20	0.94
SCG-Y-100	100	31	65	22	60	30	40	43.2	M26×1.5	20	0.92

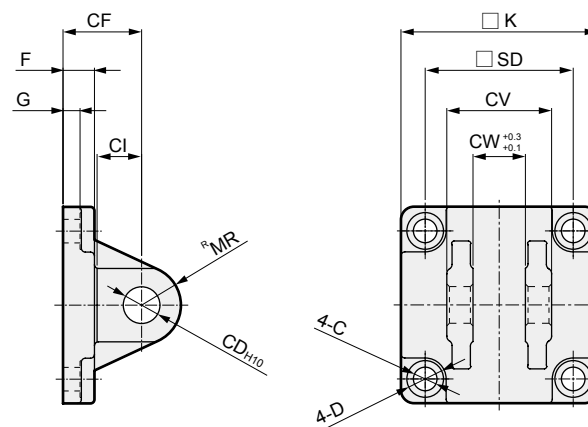
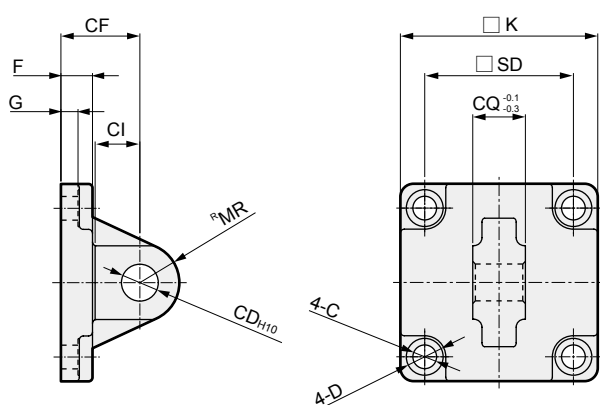
Note: A pin, a split pin and a plain washer are included.

● Eye bracket (B1)

Material: Cast iron
Painting

● Clevis bracket (B2)

Material: Cast iron
Painting



Model No.	Bore size (mm)	C	CD	CF	CI	CQ	D	F	G	K	MR	SD	Wt. (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	17.5	15	8.5	95	23	72	1.19
SCG-B1-100	100	11	22	42	26	30	17.5	15	8.5	114	23	89	1.56

Model No.	Bore size (mm)	C	CD	CF	CI	CV	CW	D	F	G	K	MR	SD	Wt. (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	17.5	15	8.5	95	23	72	1.52
SCG-B2-100	100	11	22	42	26	60	30	17.5	15	8.5	114	23	89	1.91

Note: A pin, a split pin and a plain washer are included.

Accessory dimensions

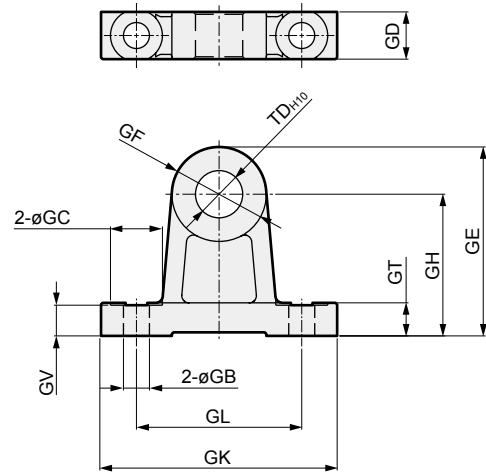
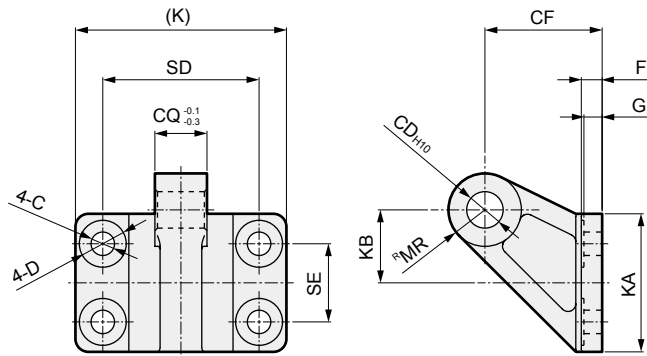


● Eye bracket (B3)

Material: Cast iron
Painting

● Trunnion No. 2 bracket (B4)

Material: Cast iron
Painting



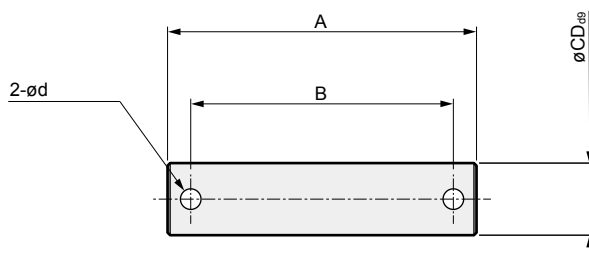
Model No.	Bore size (mm)	C	CD	CF	CQ	D	F	G	K	KA	KB	MR	SD	SE	Wt. (kg)
SCG-B3-32	32, 40	6.6	10	33	14	15	7	6	62	42	21	10	44	22	0.21
SCG-B3-50	50, 63	9	14	45	20	18	8	7	81	53	28	14	60	30	0.45
SCG-B3-80	80, 100	11	22	65	30	22	10	9	111	73	41.5	22	86	45	1.23

Model No.	Bore size (mm)	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	TD	Wt. (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

Note: The bracket is provided as 2 pcs./set.

● Pin (P)

Material: Steel
Trivalent chromate treatment



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: For clevis bracket/rod clevis/clevis bracket
Split pin and plain washer are included.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/IN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

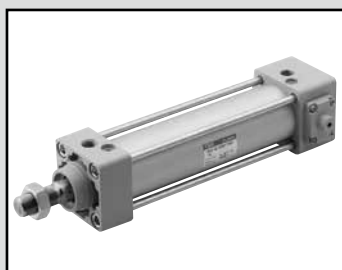
ShkAbs

FJ

FK

Spd
Contr

Ending



Tie rod cylinder Double acting/position locking

SCG-Q Series

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

JIS symbol



Specifications

Item		SCG-Q					
Bore size	mm	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure	MPa	0.15 (≈22 psi, 1.5 bar)					
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	^{+1.0} ₀ (to 360), ^{+1.4} ₀ (361 to 1000), ^{+1.8} ₀ (1001 to 1500)					
Working piston speed	mm/s	30 to 1000 (Operate within the allowable absorbed energy.)					
Cushion		Air cushion					
Effective air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Position locking mechanism		Head side, rod side					
Holding force		Max. thrust x 0.7					
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)					
Allowable absorbed energy J	With air cushion	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25/50/75/100	600	700	5
$\phi 40$			800	
$\phi 50$			1200	
$\phi 63$			1200	
$\phi 80$	450/500	700	1400	
$\phi 100$		800	1500	

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

Min. stroke with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\phi 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\phi 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\phi 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
$\phi 80$	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
$\phi 100$	10	20	40	60	10	20	40	60	101(84)	101(84)	105(105)	105(105)	47	53

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\phi 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\phi 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\phi 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
$\phi 80$	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
$\phi 100$	10	20	40	60	10	20	40	60	105(80)	105(80)	117(117)	117(117)	49	55

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	5	10	20	30	5	40(33)	70(64)	101(94)	64(55)	64(55)	131(116)	131(116)	27	27
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38
ø80	6	11	22	33	6	11	22	33	88(79)	88(79)	88(80)	88(80)	37	43
ø100	6	11	22	33	6	11	22	33	93(84)	93(84)	93(85)	93(85)	43	49

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T1/T2Y/T3Y/T2YD/T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	6	11	22	33	6	62(49)	92(80)	123(110)	86(61)	86(61)	177(122)	177(122)	38	38
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49
ø80	7	13	25	38	7	13	25	38	110(85)	110(85)	110(86)	110(86)	48	54
ø100	7	13	26	39	7	13	26	39	115(90)	115(90)	115(92)	115(92)	54	60

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

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

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

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

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

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

Weight table

Bore size (mm)	Product weight for 0 mm stroke length							Stroke:Added weight/50 mm	Switch weight (per 1 pc)	Switch bracket	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA, TB, TC)					I	Y
ø32	0.69	0.8	0.91	0.84	0.87	0.86	0.12	Refer to the weight in the switch specifications.		0.024	0.07	0.10
ø40	1.03	1.17	1.31	1.21	0.85	1.37	0.17			0.024	0.07	0.13
ø50	1.69	1.85	2.17	2.10	2.10	2.17	0.23			0.022	0.20	0.30
ø63	2.03	2.37	2.79	2.59	2.60	2.91	0.25			0.022	0.20	0.30
ø80	3.96	4.39	5.53	5.23	5.24	5.45	0.40			0.026	0.52	0.94
ø100	5.74	6.6	8.06	7.46	7.49	8.31	0.51			0.024	0.48	0.92

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Position locking mechanism

G Switch model No.

H Switch quantity
*3

I Option
*4
*5

J Accessory
*6

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
(Trunnion are assembled at shipment.)

TA mounting with R position locking mechanism is not available.

TB mounting with H position locking mechanism is not available.

*2 : Refer to pages 374 and 375 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

*5 : Only non-locking manual override unless "M0" or "M1" of **I** Option is selected. Release bolt is not included.

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

[Example of model No.]

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

Model: Tie rod cylinder, double acting/position locking

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

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

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

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

D Cushion	
B	Two-sided air cushion (basic)

E Stroke length (mm)			
Bore size	Stroke length *2	Available stroke length	Custom stroke length
ø32	5 to 600	700	In 1 mm increments
ø40		800	
ø50		1200	
ø63	5 to 700	1400	
ø80		1500	
ø100	5 to 800		

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

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

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

H Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

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

J Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG - T0H - 40

Switch model No.
(Item ⑥ on page 376)

Bore size
(Item ⑧ on page 376)

- Switch body only

SW - T0H

Switch model No.
(Item ⑥ on page 376)

Note: Contact CKD when using an environment-friendly T type switch.

- Switch mounting bracket set

SCG - T - 40

Mounting
bracket

Bore size
(Item ⑧ on page 376)

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

*1: The foot mounting bracket (LB) is provided as 2 pcs./set.

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

Specifications for rechargeable battery

(Catalog No. CC-1226A)

- Design is compatible with rechargeable battery manufacturing process.

SCG-Q-...- **P4***

* Contact CKD for details.

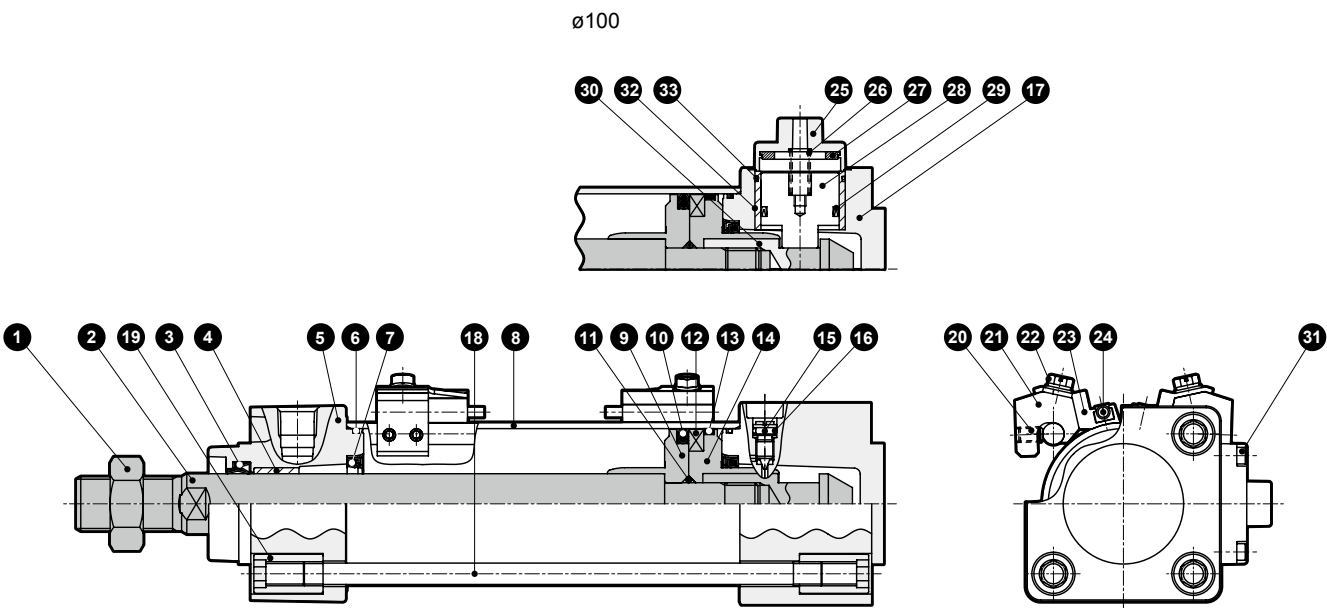
Theoretical thrust table

(Unit: N)

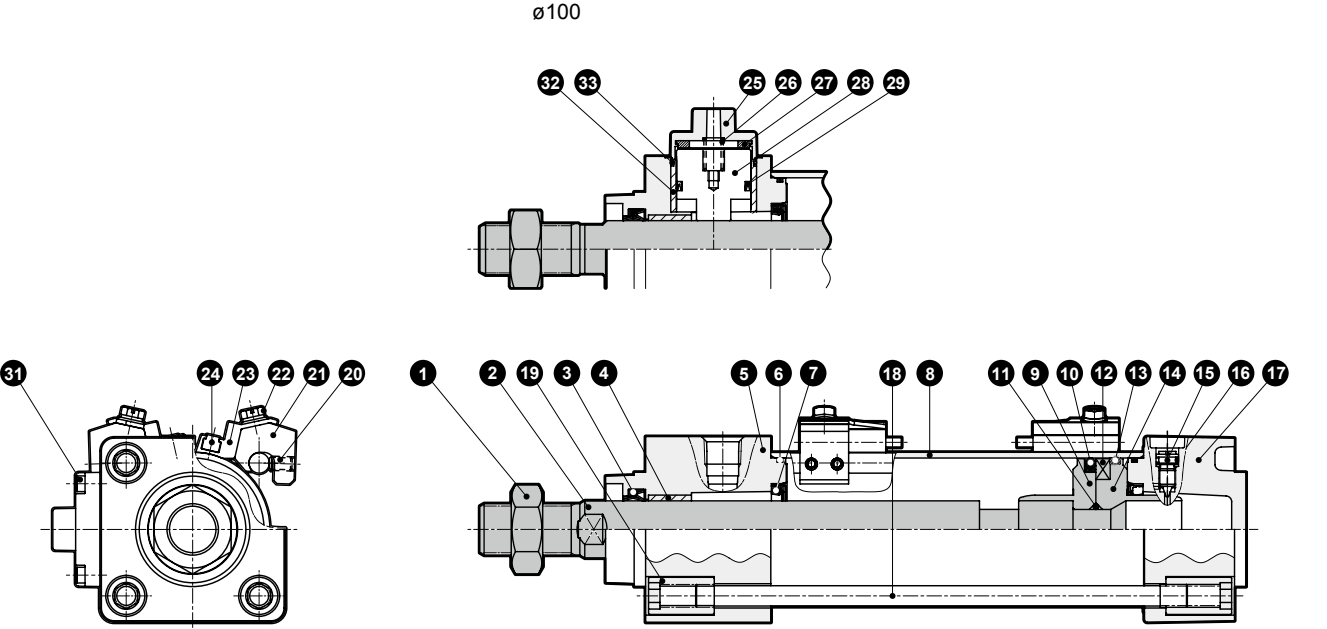
Bore size (mm)	Operating direction	Working pressure MPa									
		0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Internal structure

● With head side position locking



● With rod side position locking



Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickel plating	17	Head cover	With head side position locking: Aluminum alloy casting With rod side position locking: Aluminum alloy die-casting	Paint
2	Piston rod	Steel	Industrial chrome plating	18	Tie rod	Steel	Zinc chromate treatment
3	Rod packing	Nitrile rubber		19	Round nut	Steel	Zinc chromate treatment
4	Bush	Oil-impregnated bearing alloy		20	Hexagon socket set screw	Steel	Black finish
5	Rod cover	With head side position locking: Aluminum alloy die-casting With rod side position locking: Aluminum alloy casting	Paint	21	Switch mounting base	Aluminum alloy	
6	Cylinder gasket	Nitrile rubber		22	Slotted head hexagon head bolt with captive washer	Stainless steel	
7	Cushion packing	Nitrile rubber, steel	With air cushion only	23	Switch holder	Aluminum alloy	
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	24	Cylinder switch		
9	Piston R	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		25	Stopper cover	Aluminum die-casting	Paint
10	Piston packing	Nitrile rubber		26	Spring	Steel	
11	Piston gasket	Nitrile rubber		27	Cushion rubber B	Urethane rubber	
12	Magnet	Plastic		28	Stopper piston	Steel	Nitriding
13	Wear ring	Polyacetal resin		29	Piston packing B	Nitrile rubber	
14	Piston H	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		30	Sleeve	Steel	Nitriding
15	Cushion needle	Copper alloy	Nickel plating	31	Hexagon socket head cap screw	Stainless steel	
16	Needle gasket	Nitrile rubber		32	Housing	Aluminum alloy casting	ø100 only
				33	O-ring	Nitrile rubber	ø100 only

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-Q-32BK	3 6 7 10 13 16 27 29
ø40	SCG-Q-40BK	
ø50	SCG-Q-50BK	
ø63	SCG-Q-63BK	
ø80	SCG-Q-80BK	
ø100	SCG-Q-100BK	3 6 7 10 13 16 27 29 33

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

Material of mounting bracket

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

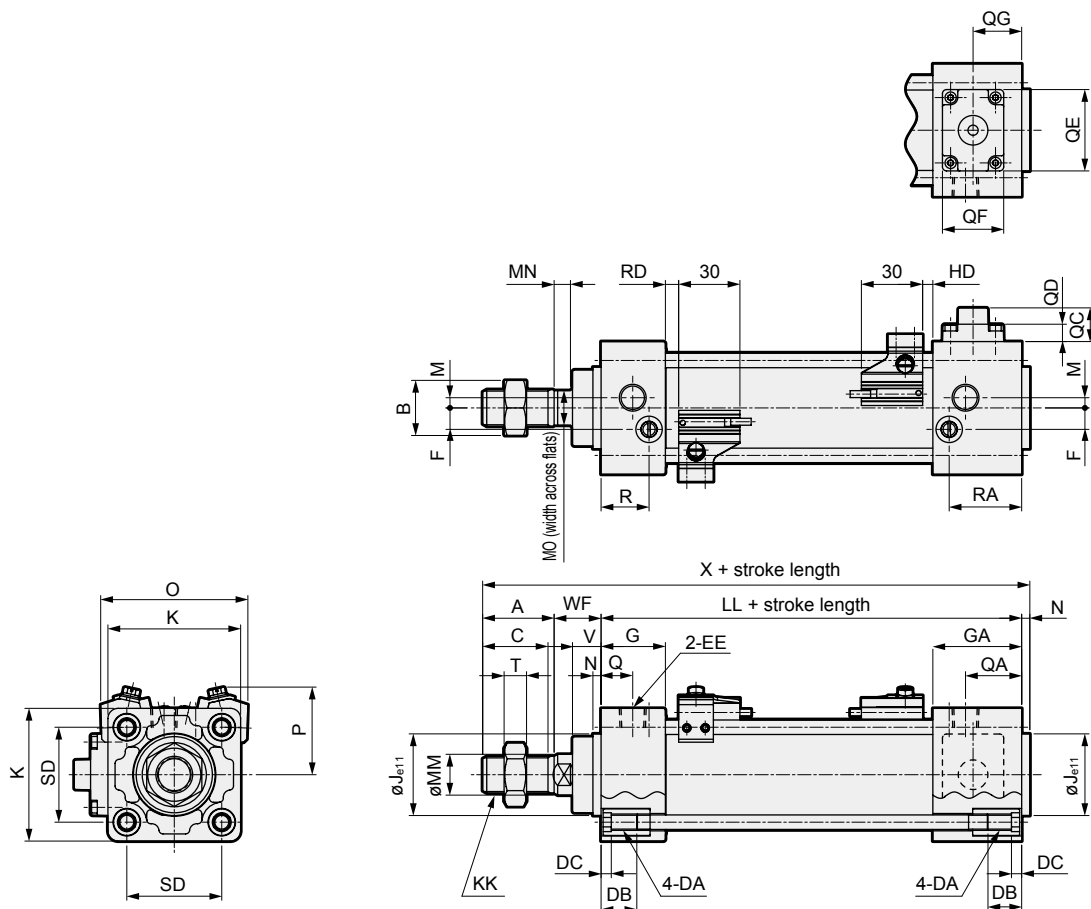
Note: Mounting bracket will be shipped with the product.

For trunnion type (TA, TB or TC) with bellows and mounting format LB or FA, it will be shipped assembled with the product.

Dimensions



● Basic (00) with head side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

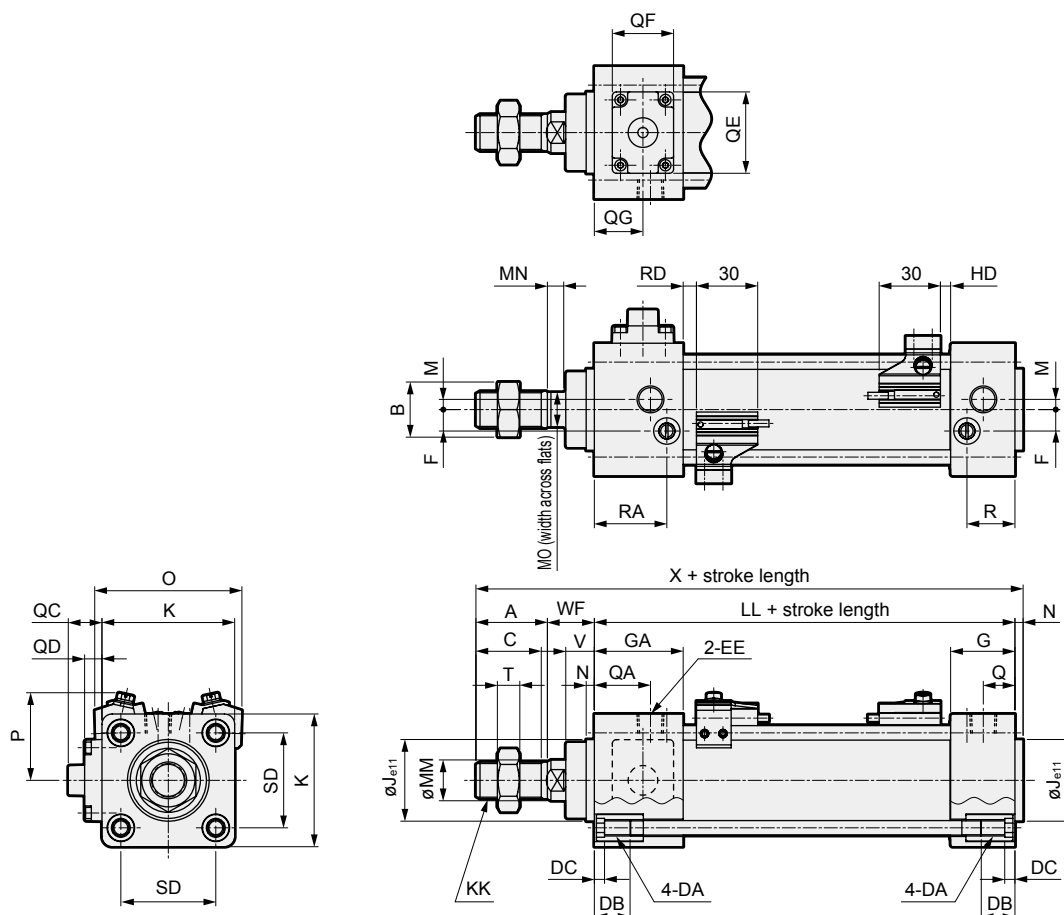
Code	Basic (00) with head side position locking basic dimensions																			
	A	B	C	DA	DB	DC	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13
ø40	30	22	27	M6	16	5	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5
ø80	40	32	37	M10	16	5	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19
ø100	40	41	37	M10	16	5	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19

Code														With switch						
	QA	QC	QD	QE	QF	QG	R	RA	SD	T	V	WF	X	O	P	T0, T5 ,T2, T3		T2W, T3W		
Bore size (mm)																RD	HD	RD	HD	
ø32	21	12.5	6.5	22	16	17.5	19	27	32.5	6	13	25	143	59	38	5	5	7.5	7.5	
ø40	27	12	6	22	16	18.5	19	32	38	8	13	21	152	66	41	5	5	7.5	7.5	
ø50	27.5	16.5	8.5	40	30	23.8	23.5	35.5	46.5	11	14	23	168	72	43	6.5	5	9	7	
ø63	28.5	11.5	3.5	40	30	23.8	21.5	33.5	56.5	11	14	23	168	83	48	6.5	5	9	7	
ø80	38	10	2	40	30	27.5	28	47	72	13	20	32	208	104	57	12.5	6	15	8	
ø100	37	11	3	40	30	27.5	28	46	89	16	20	32	208	121	63	12	6.5	14.5	8.5	

Dimensions



- Basic (00) with rod side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

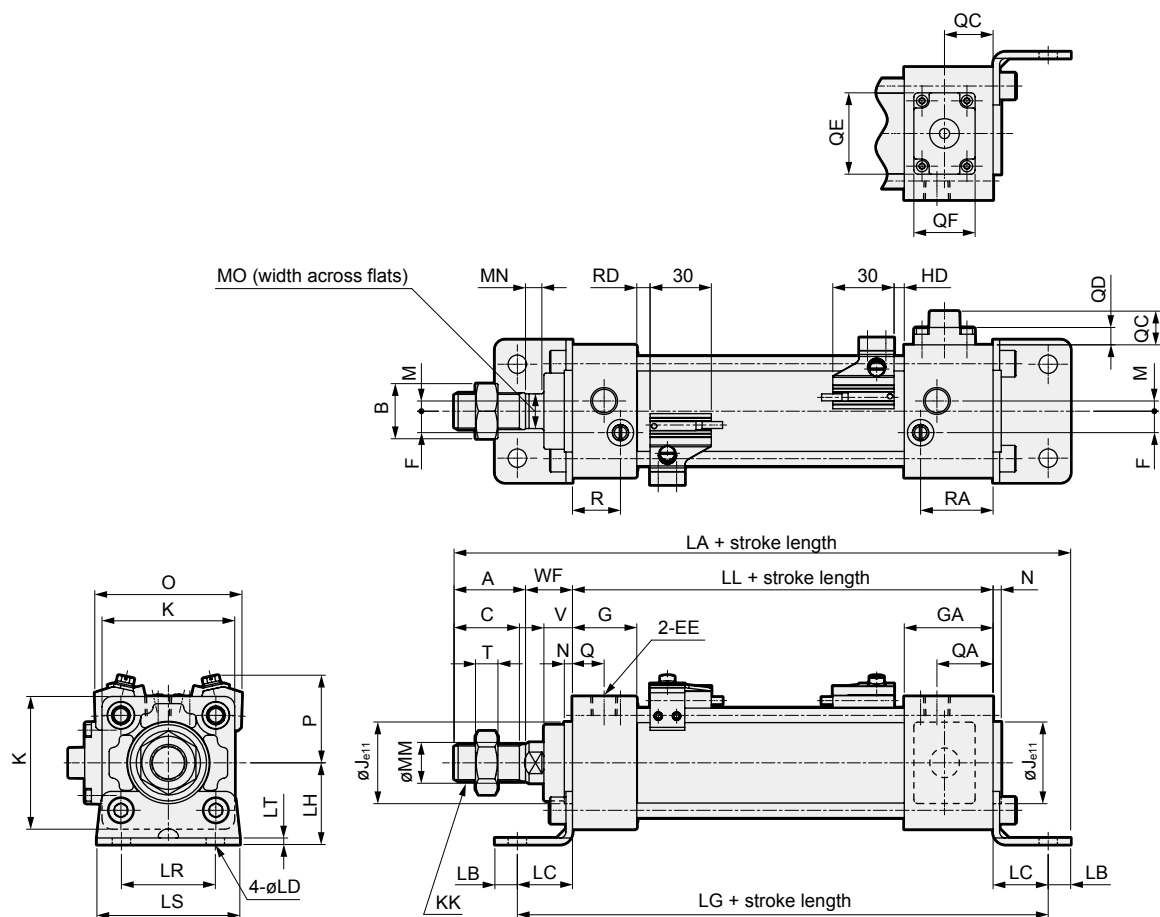
Code	Basic (00) with rod side position locking basic dimensions																			
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13
ø40	30	22	27	M6	16	5	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5
ø80	40	32	37	M10	16	5	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19
ø100	40	41	37	M10	16	5	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19

Code														With switch					
Bore size (mm)	QA	QC	QD	QE	QF	QG	R	RA	SD	T	V	WF	X	O	P	T0, T5, T2, T3		T2W, T3W	
																RD	HD	RD	HD
ø32	21	12.5	6.5	22	16	17.5	19	27	32.5	6	13	25	143	59	38	5	5	7.5	7.5
ø40	27	12	6	22	16	18.5	19	32	38	8	13	21	152	66	41	5	5	7.5	7.5
ø50	27.5	16.5	8.5	40	30	23.8	23.5	35.5	46.5	11	14	23	168	72	43	6.5	5	9	7
ø63	28.5	11.5	3.5	40	30	23.8	21.5	33.5	56.5	11	14	23	168	83	48	6.5	5	9	7
ø80	37	10	2	40	30	27.5	28	46	72	13	20	32	208	104	57	12.5	6	15	8
ø100	37	11	3	40	30	31.5	28	46	89	16	20	32	208	121	63	12	6.5	14.5	8.5

Dimensions



● Axial foot (LB) with head side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

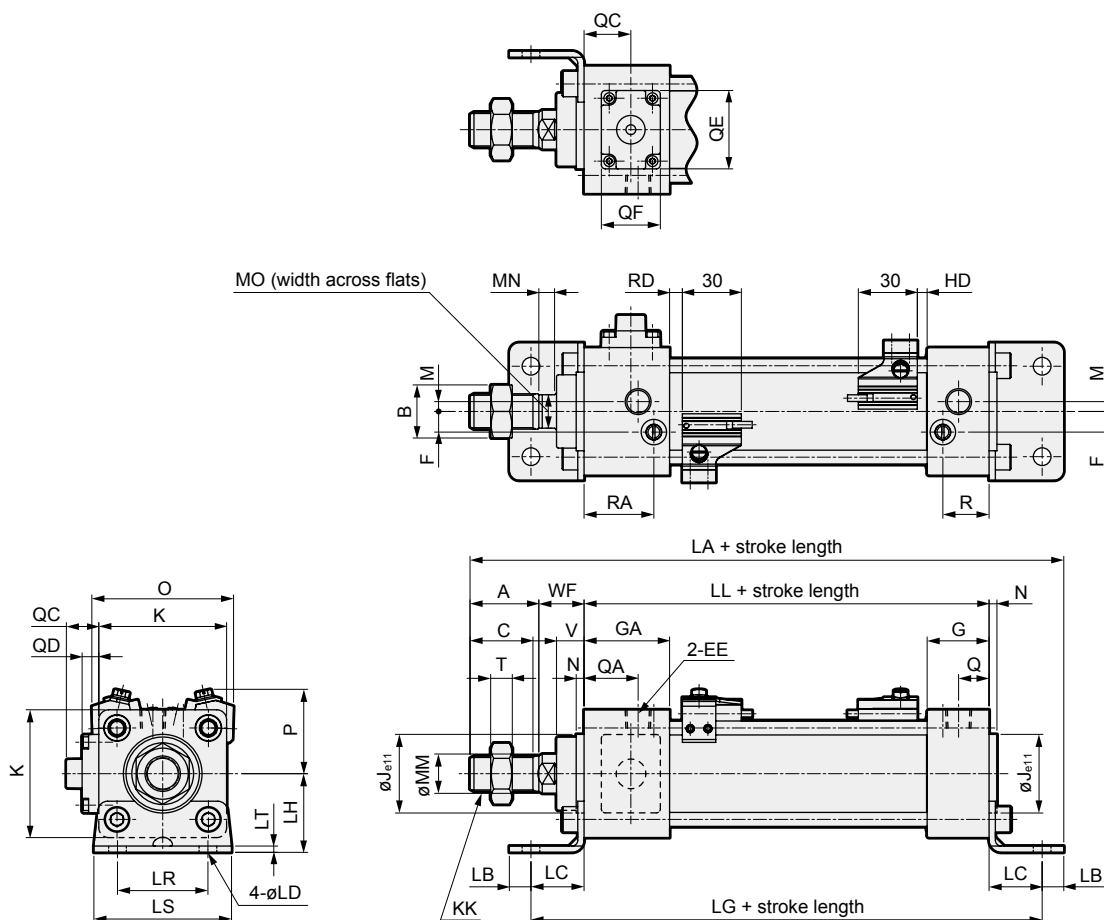
Code	Axial foot (LB) with head side position locking basic dimensions																					
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	QF
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22	16
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22	16
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40	30
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40	30
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	38	10	2	40	30
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40	30

Code							Mounting dimensions								With switch						
Bore size (mm)	QG	R	RA	T	V	WF	LA	LB	LC	LD	LG	LH	LR	LS	LT	O	P	T0, T5 ,T2, T3		T2W, T3W	
																		RD	HD	RD	HD
ø32	17.5	19	27	6	13	25	170	9	22	7	136	30	32	50	3.2	59	38	5	5	7.5	7.5
ø40	18.5	19	32	8	13	21	183	11	24	9	145	33	38	55	3.2	66	41	5	5	7.5	7.5
ø50	23.8	23.5	35.5	11	14	23	202	11	27	9	160	40	46	70	3.2	72	43	6.5	5	9	7
ø63	23.8	21.5	33.5	11	14	23	205	14	27	12	160	45	56	80	4.5	83	48	6.5	5	9	7
ø80	27.5	28	47	13	20	32	248	14	30	12	192	55	72	95	4.5	104	57	12.5	6	15	8
ø100	27.5	28	46	16	20	32	252	16	32	14	196	65	89	114	6	121	63	12	6.5	14.5	8.5

Dimensions



- Axial foot (LB) with rod side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

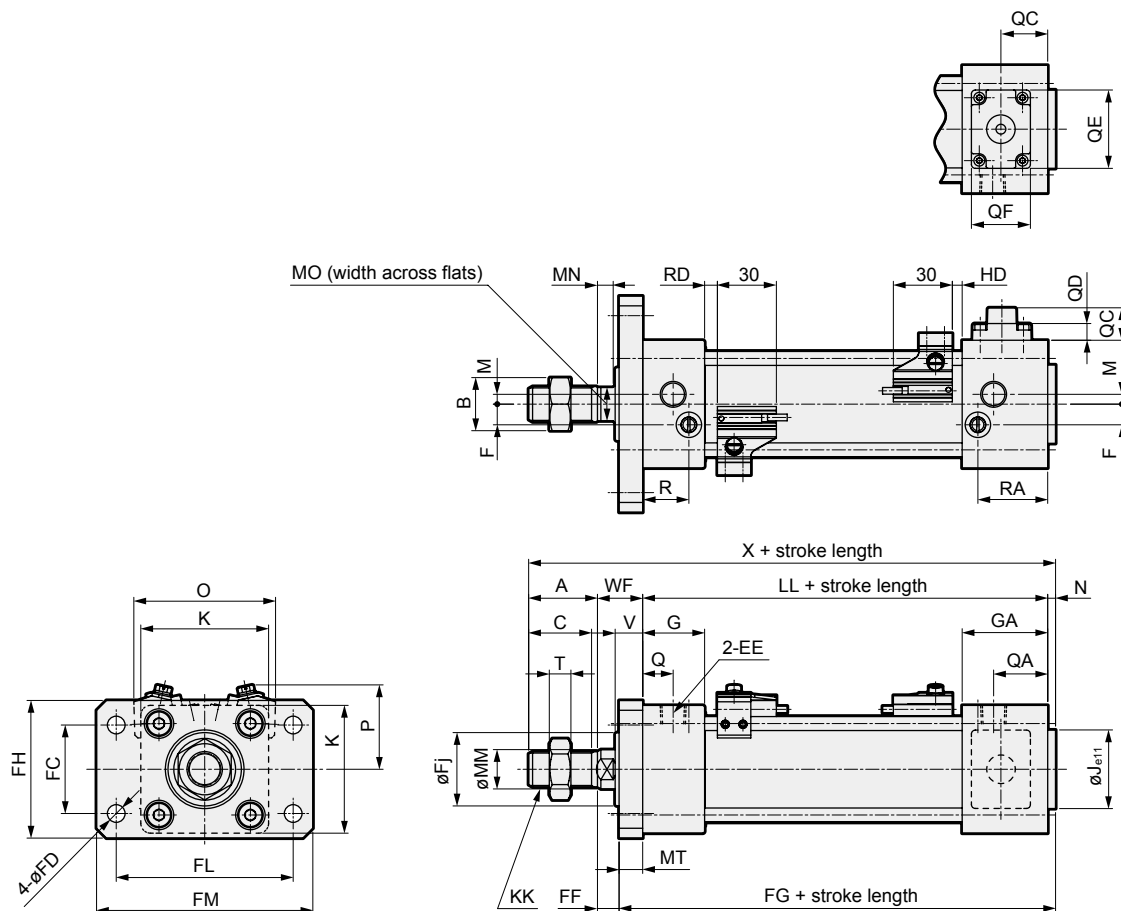
Code	Axial foot (LB) with rod side position locking basic dimensions																					
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	QF
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22	16
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22	16
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40	30
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40	30
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	37	10	2	40	30
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40	30

Code							Mounting dimensions								With switch						
Bore size (mm)	QG	R	RA	T	V	WF	LA	LB	LC	LD	LG	LH	LR	LS	LT	O	P	T0, T5 ,T2, T3		T2W, T3W	
																		RD	HD	RD	HD
ø32	17.5	19	27	6	13	25	170	9	22	7	136	30	32	50	3.2	59	38	5	5	7.5	7.5
ø40	18.5	19	32	8	13	21	183	11	24	9	145	33	38	55	3.2	66	41	5	5	7.5	7.5
ø50	23.8	23.5	35.5	11	14	23	202	11	27	9	160	40	46	70	3.2	72	43	6.5	5	9	7
ø63	23.8	21.5	33.5	11	14	23	205	14	27	12	160	45	56	80	4.5	83	48	6.5	5	9	7
ø80	27.5	28	46	13	20	32	248	14	30	12	192	55	72	95	4.5	104	57	12.5	6	15	8
ø100	31.5	28	46	16	20	32	252	16	32	14	196	65	89	114	6	121	63	12	6.5	14.5	8.5

Dimensions



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



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

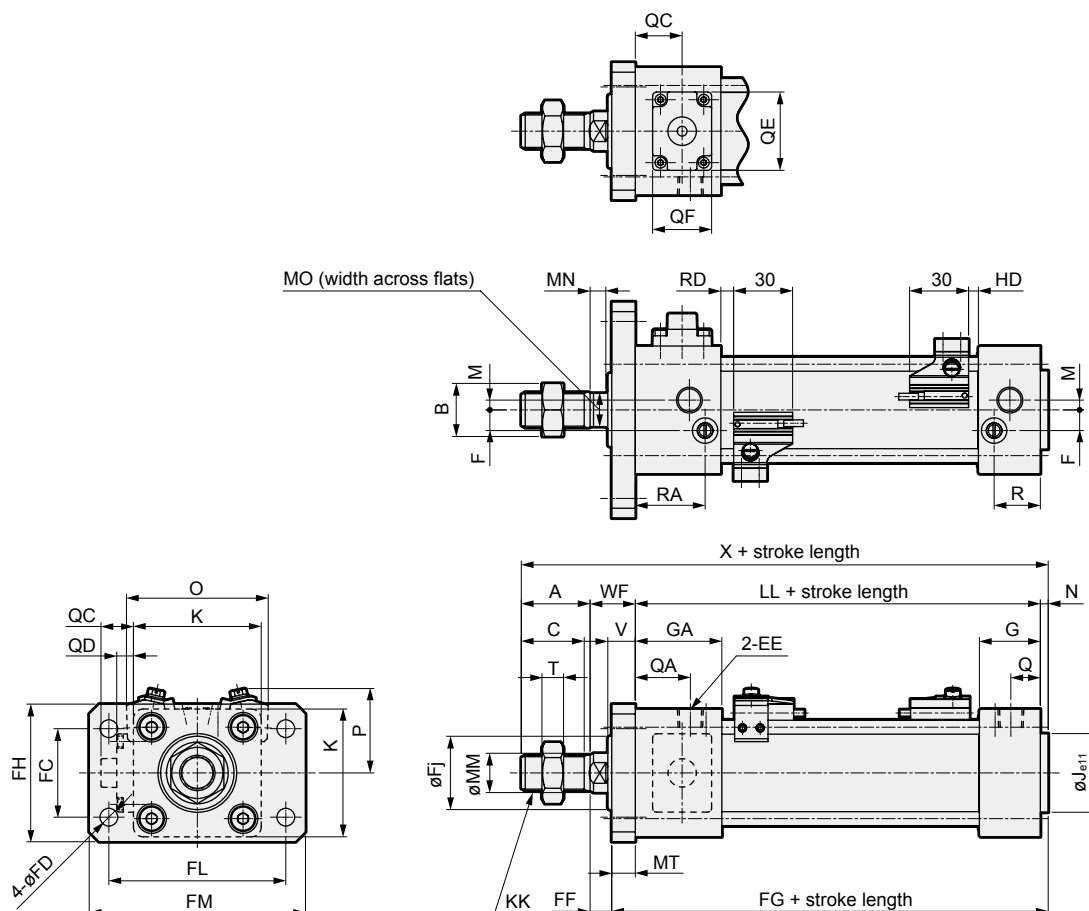
Code	Rod side flange (FA) with head side position locking basic dimensions																					
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	QF
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22	16
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22	16
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40	30
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40	30
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	38	10	2	40	30
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40	30

Code									Mounting dimensions								With switch					
	QG	R	RA	T	V	WF	X	FC	FD	FF	FG	Fj	MT	FH	FL	FM	O	P	T0, T5 ,T2, T3		T2W, T3W	
RD																			HD	RD	HD	
ø32	17.5	19	27	6	13	25	143	32	7	15	106	29	10	50	64	79	59	38	5	5	7.5	7.5
ø40	18.5	19	32	8	13	21	152	36	9	11	111	30	10	55	72	90	66	41	5	5	7.5	7.5
ø50	23.8	23.5	35.5	11	14	23	168	45	9	11	122	38	12	70	90	110	72	43	6.5	5	9	7
ø63	23.8	21.5	33.5	11	14	23	168	50	9	11	122	38	12	80	100	120	83	48	6.5	5	9	7
ø80	27.5	28	47	13	20	32	208	63	12	16	152	43	16	100	126	153	104	57	12.5	6	15	8
ø100	27.5	28	46	16	20	32	208	75	14	16	152	51	16	120	150	178	121	63	12	6.5	14.5	8.5

Dimensions



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



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

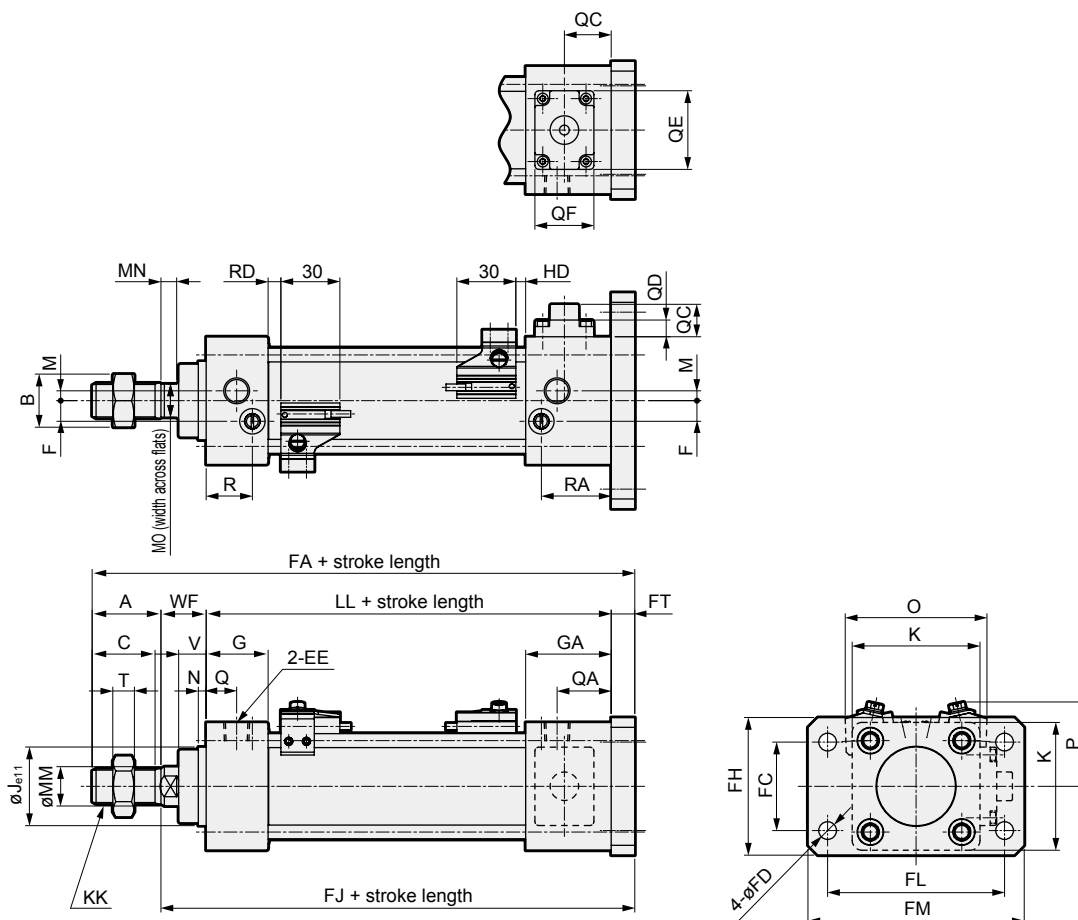
*2: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Rod side flange (FA) with rod side position locking basic dimensions																						
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	QF	
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22	16	
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22	16	
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40	30	
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40	30	
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	37	10	2	40	30	
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40	30	
Code								Mounting dimensions									With switch						
	Bore size (mm)	QG	R	RA	T	V	WF	X	FC	FD	FF	FG	Fj	MT	FH	FL	FM	O	P	T0, T5 ,T2, T3		T2W, T3W	
																				RD	HD	RD	HD
ø32	17.5	19	27	6	13	25	143	32	7	15	106	29	10	50	64	79	59	38	5	5	7.5	7.5	
ø40	18.5	19	32	8	13	21	152	36	9	11	111	30	10	55	72	90	66	41	5	5	7.5	7.5	
ø50	23.8	23.5	35.5	11	14	23	168	45	9	11	122	38	12	70	90	110	72	43	6.5	5	9	7	
ø63	23.8	21.5	33.5	11	14	23	168	50	9	11	122	38	12	80	100	120	83	48	6.5	5	9	7	
ø80	27.5	28	46	13	20	32	208	63	12	16	152	43	16	100	126	153	104	57	12.5	6	15	8	
ø100	31.5	28	46	16	20	32	208	75	14	16	152	51	16	120	150	178	121	63	12	6.5	14.5	8.5	

Dimensions



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



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

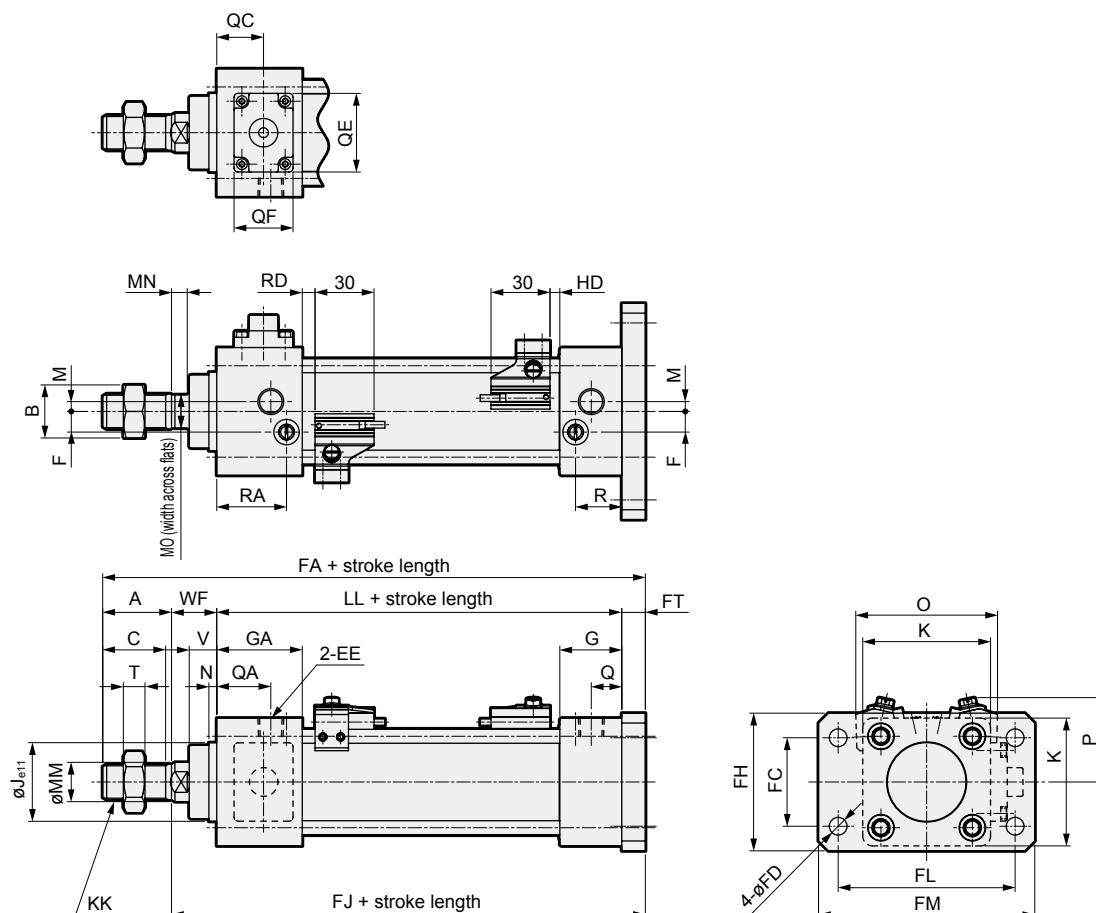
Code	Head side flange (FB) with head side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	38	10	2	40
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40

Code	Mounting dimensions														With switch						
Bore size (mm)	QF	QG	R	RA	T	V	WF	FA	FC	FD	FH	FJ	FL	FM	FT	O	P	T0, T5 ,T2, T3		T2W, T3W	
																		RD	HD	RD	HD
ø32	16	17.5	19	27	6	13	25	149	32	7	50	127	64	79	10	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	158	36	9	55	128	72	90	10	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	176	45	9	70	141	90	110	12	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	176	50	9	80	141	100	120	12	83	48	6.5	5	9	7
ø80	30	27.5	28	47	13	20	32	220	63	12	100	180	126	153	16	104	57	12.5	6	15	8
ø100	30	27.5	28	46	16	20	32	220	75	14	120	180	150	178	16	121	63	12	6.5	14.5	8.5

Dimensions



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



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

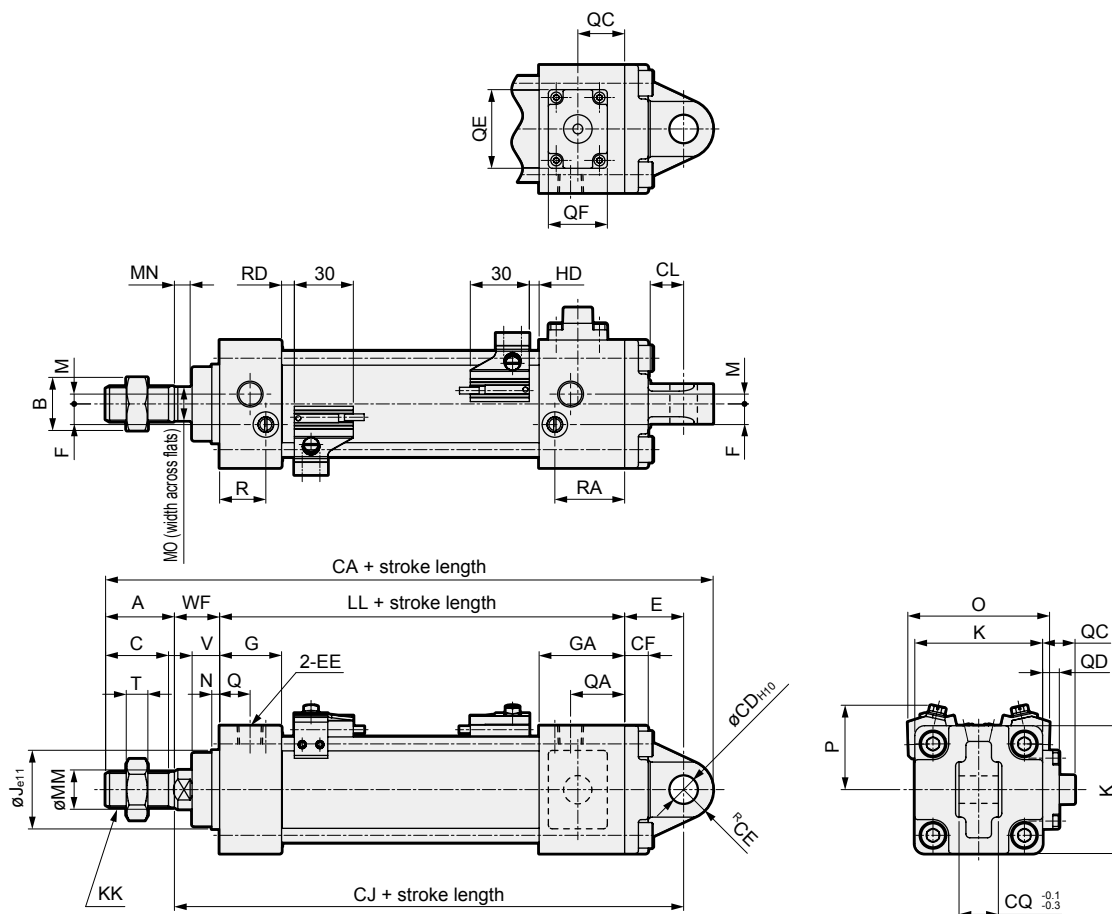
Code	Head side flange (FB) with rod side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	37	10	2	40
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40

Code	Mounting dimensions														With switch						
Bore size (mm)	QF	QG	R	RA	T	V	WF	FA	FC	FD	FH	FJ	FL	FM	FT	O	P	T0, T5 ,T2, T3		T2W, T3W	
																		RD	HD	RD	HD
ø32	16	17.5	19	27	6	13	25	149	32	7	50	127	64	79	10	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	158	36	9	55	128	72	90	10	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	176	45	9	70	141	90	110	12	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	176	50	9	80	141	100	120	12	83	48	6.5	5	9	7
ø80	30	27.5	28	46	13	20	32	220	63	12	100	180	126	153	16	104	57	12.5	6	15	8
ø100	30	31.5	28	46	16	20	32	220	75	14	120	180	150	178	16	121	63	12	6.5	14.5	8.5

Dimensions



● Eye bracket (CA) with head side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

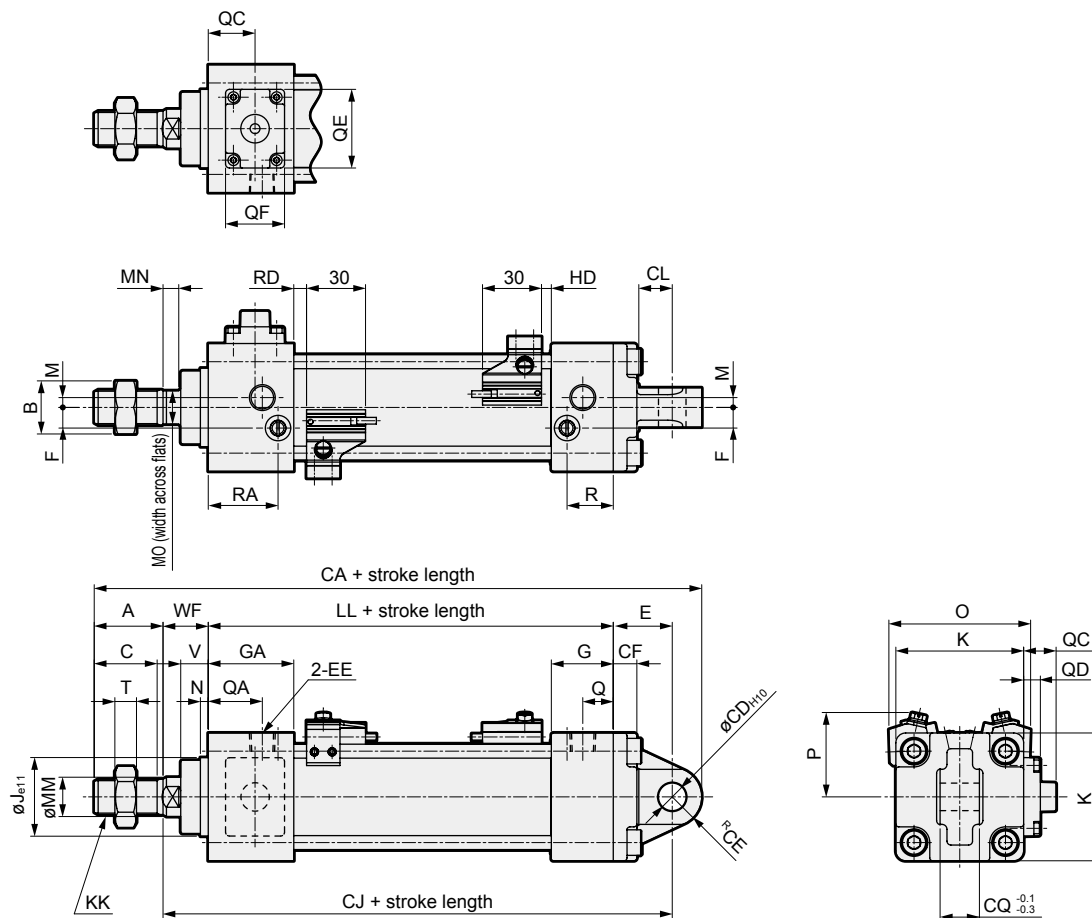
Code	Eye bracket (CA) with head side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	38	10	2	40
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40

Code	Mounting dimensions														With switch						
Bore size (mm)	QF	QG	R	RA	T	V	WF	FA	FC	FD	FH	FJ	FL	FM	FT	O	P	T0, T5 ,T2, T3		T2W, T3W	
																		RD	HD	RD	HD
ø32	16	17.5	19	27	6	13	25	172.5	10	10.5	9	13	140	14	23	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	182	10	11	9	13	141	14	23	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	209	14	15	12	17	159	20	30	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	209	14	15	12	17	159	20	30	83	48	6.5	5	9	7
ø80	30	27.5	28	47	13	20	32	269	22	23	15	26	206	30	42	104	57	12.5	6	15	8
ø100	30	27.5	28	46	16	20	32	269	22	23	15	26	206	30	42	121	63	12	6.5	14.5	8.5

Dimensions



- Eye bracket (CA) with rod side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

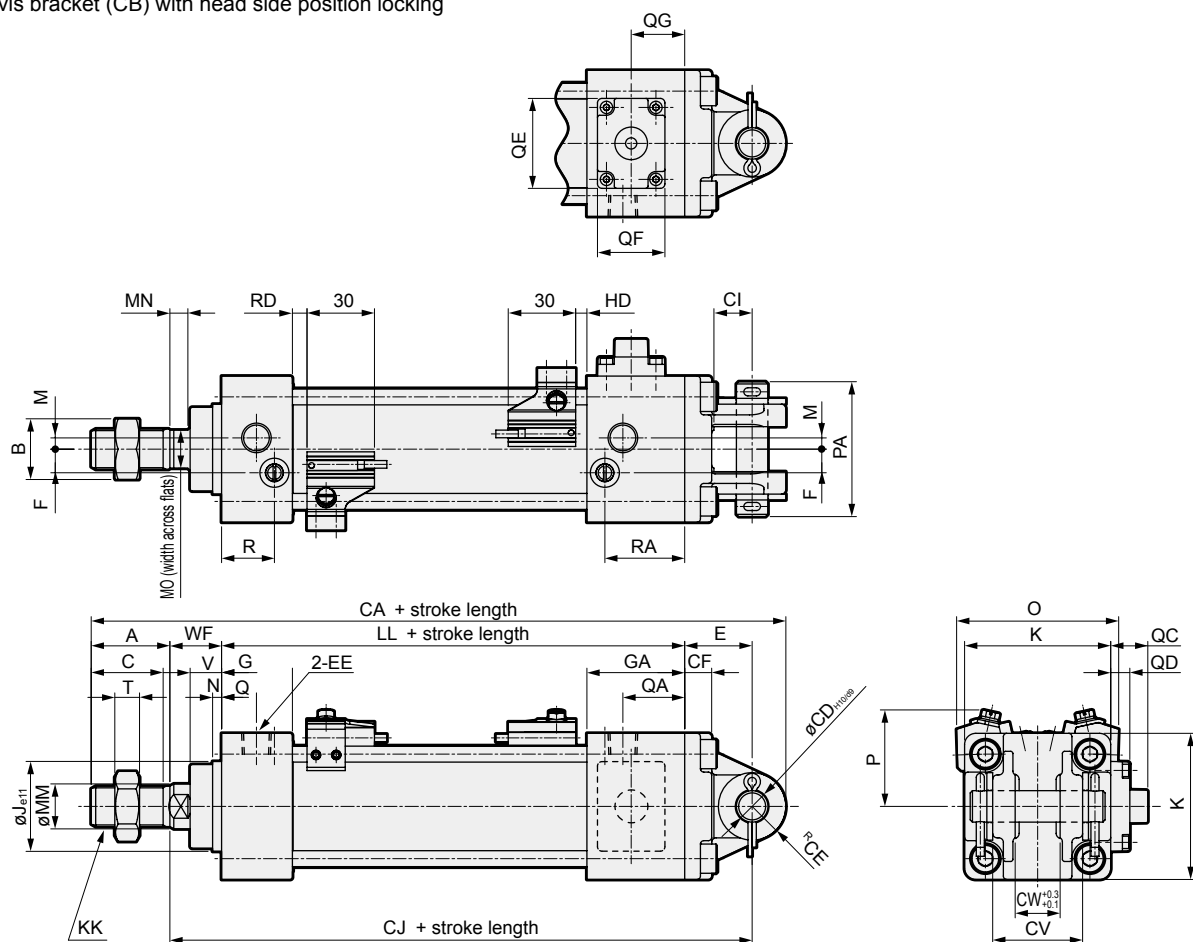
Code	Eye bracket (CA) with rod side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	37	10	2	40
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40

Code	Mounting dimensions														With switch						
Bore size (mm)	QF	QG	R	RA	T	V	WF	CA	CD	CE	CF	CI	CJ	CQ	E	O	P	T0, T5 ,T2, T3		T2W, T3W	
																		RD	HD	RD	HD
ø32	16	17.5	19	27	6	13	25	172.5	10	10.5	9	13	140	14	23	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	182	10	11	9	13	141	14	23	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	209	14	15	12	17	159	20	30	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	209	14	15	12	17	159	20	30	83	48	6.5	5	9	7
ø80	30	27.5	28	46	13	20	32	269	22	23	15	26	206	30	42	104	57	12.5	6	15	8
ø100	30	31.5	28	46	16	20	32	269	22	23	15	26	206	30	42	121	63	12	6.5	14.5	8.5

Dimensions



- Clevis bracket (CB) with head side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

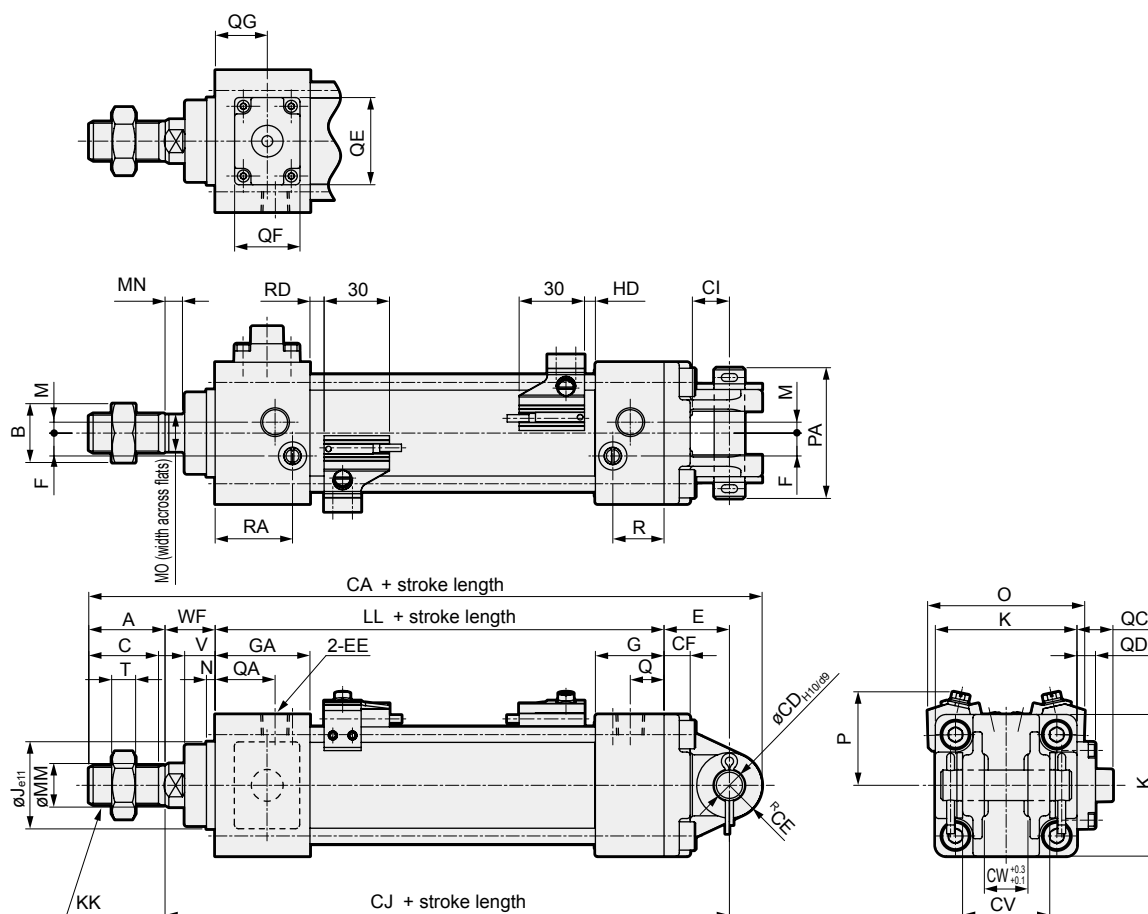
Code	Clevis bracket (CB) with head side position locking basic dimensions																				
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	38	10	2	40
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40

Code								Mounting dimensions										With switch					
	QF	QG	R	RA	T	V	WF	CA	CD	CE	CF	CI	CJ	CV	CW	E	PA	O	P	T0, T5 ,T2, T3		T2W, T3W	
ø32	16	17.5	19	27	6	13	25	172.5	10	10.5	9	13	140	28	14	23	44	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	182	10	11	9	13	141	28	14	23	44	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	209	14	15	12	17	159	40	20	30	60	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	209	14	15	12	17	159	40	20	30	60	83	48	6.5	5	9	7
ø80	30	27.5	28	47	13	20	32	269	22	23	15	26	206	60	30	42	82	104	57	12.5	6	15	8
ø100	30	27.5	28	46	16	20	32	269	22	23	15	26	206	60	30	42	82	121	63	12	6.5	14.5	8.5

Dimensions



- Clevis bracket (CB) with rod side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

2.1 of the dimensions of the accessories refer to pages 672 and 676.

Code	Clevis bracket (CB) with rod side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	37	10	2	40
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40

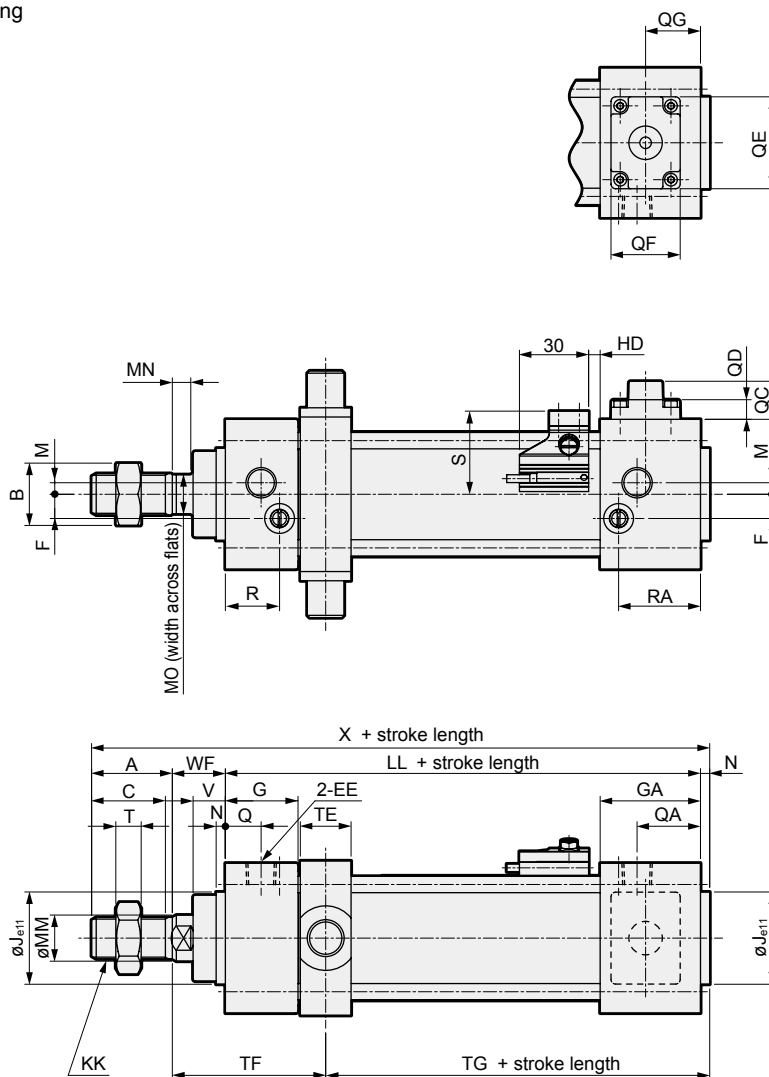
Code								Mounting dimensions										With switch					
Bore size (mm)	QF	QG	R	RA	T	V	WF	CA	CD	CE	CF	CI	CJ	CV	CW	E	PA	O	P	T0, T5 ,T2, T3		T2W, T3W	
																				RD	HD	RD	HD
ø32	16	17.5	19	27	6	13	25	172.5	10	10.5	9	13	140	28	14	23	44	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	182	10	11	9	13	141	28	14	23	44	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	209	14	15	12	17	159	40	20	30	60	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	209	14	15	12	17	159	40	20	30	60	83	48	6.5	5	9	7
ø80	30	27.5	28	46	13	20	32	269	22	23	15	26	206	60	30	42	82	104	57	12.5	6	15	8
ø100	30	31.5	28	46	16	20	32	269	22	23	15	26	206	60	30	42	82	121	63	12	6.5	14.5	8.5

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

Dimensions



● Rod side trunnion (TA) with head side position locking



*1: A switch cannot be installed on the rod side.

*2: Refer to page 436 for HD and protruding dimensions of other switches.

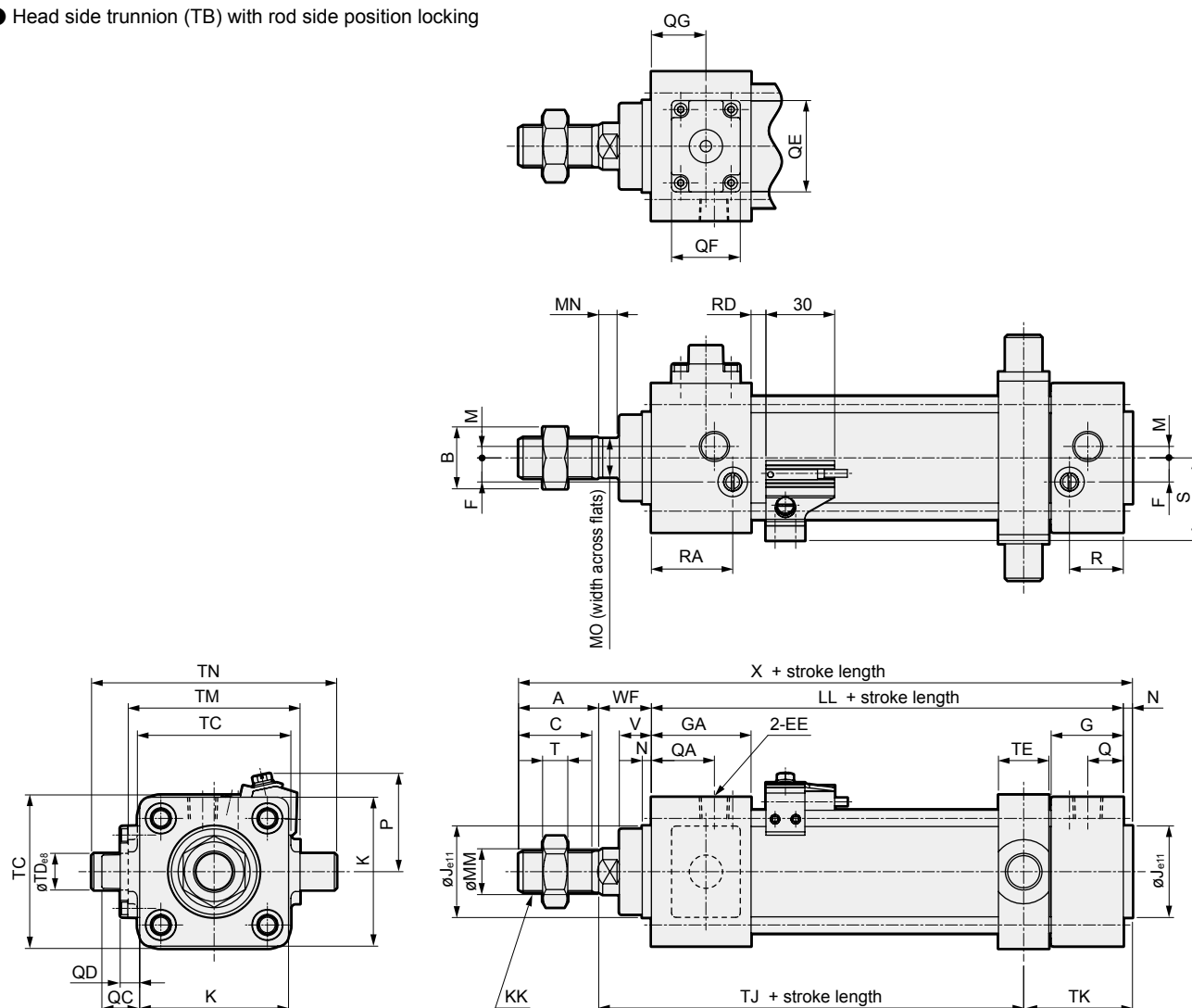
*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Rod side trunnion (TA) with head side position locking basic dimensions																				
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	
Bore size (mm)	ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5
	ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6
	ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5
	ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5
	ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	38	10	2
	ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3
Code										Mounting dimensions							With switch				
Bore size (mm)	QE	QF	QG	R	RA	T	V	WF	X	TC	TD	TE	TF	TG	TM	TN	S	P	T0, T5, T2, T3	T2W, T3W	
																			HD	HD	
	ø32	22	16	17.5	19	27	6	13	25	143	47	12	17	61.5	59.5	50	74	29.5	38	5	7.5
	ø40	22	16	18.5	19	32	8	13	21	152	57	16	22	60	62	63	95	33	41	5	7.5
	ø50	40	30	23.8	23.5	35.5	11	14	23	168	67	16	22	66.5	66.5	75	107	36	43	5	7
	ø63	40	30	23.8	21.5	33.5	11	14	23	168	82	20	28	69.5	63.5	90	130	41.5	48	5	7
	ø80	40	30	27.5	28	47	13	20	32	208	100	20	34	88	80	110	150	52	57	6	8
	ø100	40	30	31.5	28	46	16	20	32	208	121	25	40	91	77	132	182	60.5	63	6.5	8.5

Dimensions



- Head side trunnion (TB) with rod side position locking



*1: A switch cannot be installed on the head side.

*2: Refer to page 436 for RD and protruding dimensions of other switches.

*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Head side trunnion (TB) with rod side position locking basic dimensions																			
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	37	10	2
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3

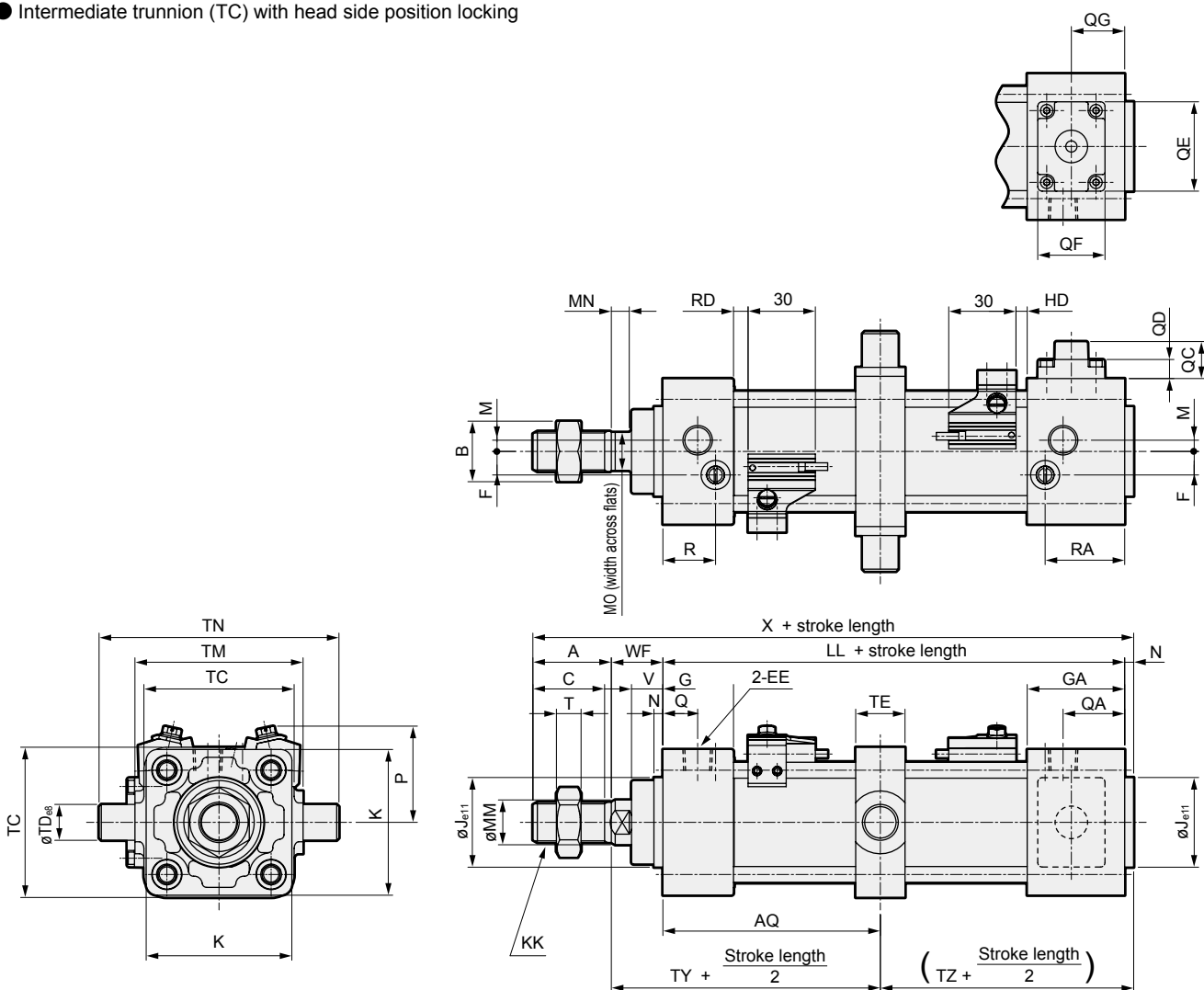
Code										Mounting dimensions							With switch			
	QE	QF	QG	R	RA	T	V	WF	X	TC	TD	TE	TJ	TK	TM	TN	S	P	T0, T5 ,T2, T3	T2W, T3W
ø32	22	16	17.5	19	27	6	13	25	143	47	12	17	80.5	40.5	50	74	29.5	38	5	7.5
ø40	22	16	18.5	19	32	8	13	21	152	57	16	22	79	43	63	95	33	41	5	7.5
ø50	40	30	23.8	23.5	35.5	11	14	23	168	67	16	22	85.5	47.5	75	107	36	43	6.5	9
ø63	40	30	23.8	21.5	33.5	11	14	23	168	82	20	28	82.5	50.5	90	130	41.5	48	6.5	9
ø80	40	30	27.5	28	46	13	20	32	208	100	20	34	108	60	110	150	52	57	12.5	15
ø100	40	30	31.5	28	46	16	20	32	208	121	25	40	105	63	132	182	60.5	63	12	14.5

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

Dimensions



● Intermediate trunnion (TC) with head side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

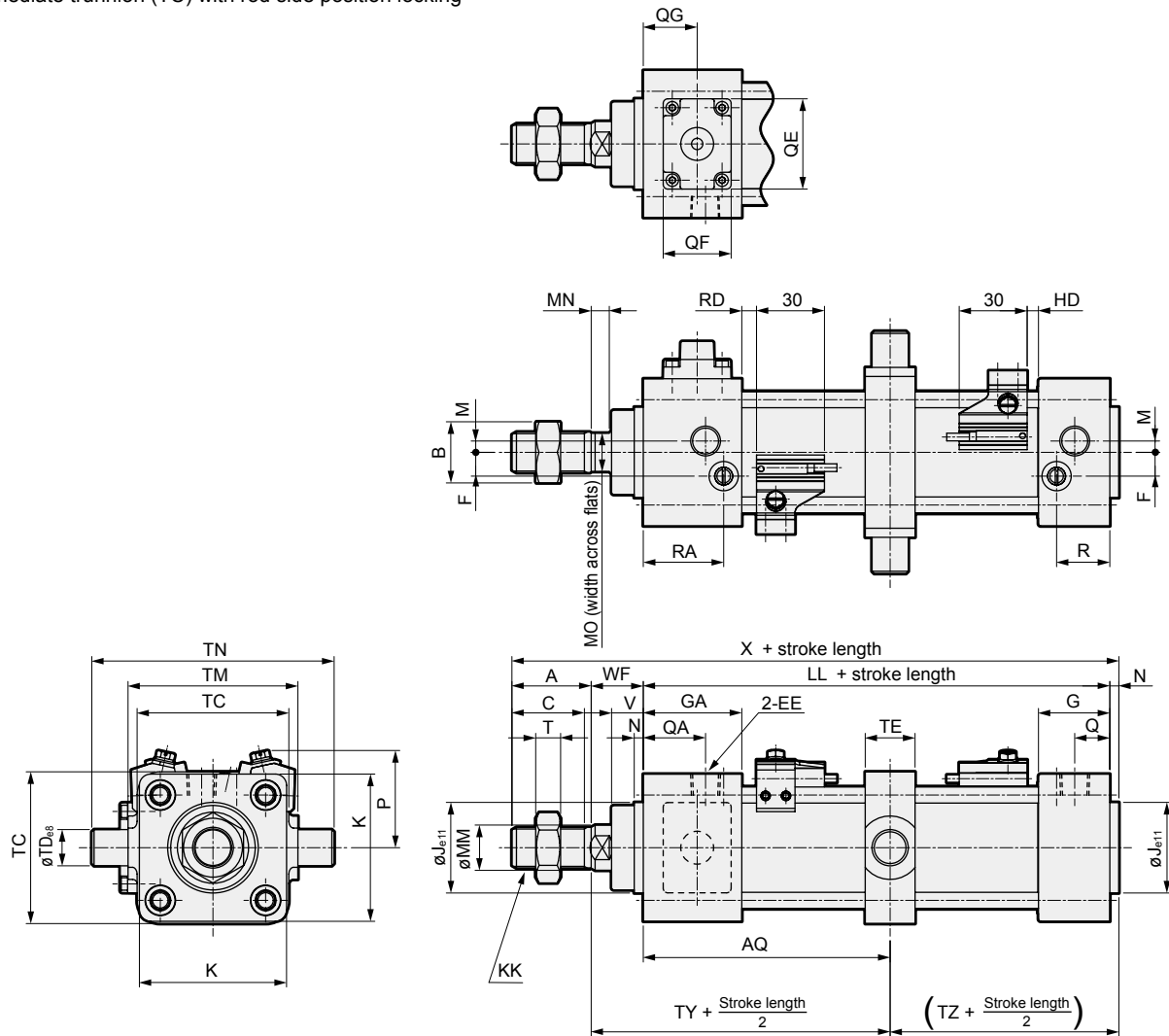
*2: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Intermediate trunnion (TC) with head side position locking basic dimensions																					
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22	
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22	
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40	
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40	
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	38	10	2	40	
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40	
Code									Mounting dimensions								With switch					
Bore size (mm)	QF	QG	R	RA	T	V	WF	X	AQ	TC	TD	TE	TM	TN	TY	TZ	O	P	T0, T5 ,T2, T3		T2W, T3W	
																			RD	HD	RD	HD
ø32	16	17.5	19	27	6	13	25	143	42 + $\frac{\text{Stroke length}}{2}$	47	12	17	50	74	67	54	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	152	42 + $\frac{\text{Stroke length}}{2}$	57	16	22	63	95	63	59	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	168	47 + $\frac{\text{Stroke length}}{2}$	67	16	22	75	107	70	63	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	168	47 + $\frac{\text{Stroke length}}{2}$	82	20	28	90	130	70	63	83	48	6.5	5	9	7
ø80	30	27.5	28	47	13	20	32	208	57 + $\frac{\text{Stroke length}}{2}$	100	20	34	110	150	89	79	104	57	12.5	6	15	8
ø100	30	27.5	28	46	16	20	32	208	57 + $\frac{\text{Stroke length}}{2}$	121	25	40	132	182	89	79	121	63	12	6.5	14.5	8.5

Dimensions



- Intermediate trunnion (TC) with rod side position locking



*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Intermediate trunnion (TC) with rod side position locking basic dimensions																					
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22	
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22	
ø50	35	27	32	Rc1/4	10.5	31.5	43.5	40	65	M18X1.5	106	5	20	8	17	4	15.5	27.5	16.5	8.5	40	
ø63	35	27	32	Rc3/8	12	31.5	43.5	45	75	M18X1.5	106	9	20	8	17	4	16.5	28.5	11.5	3.5	40	
ø80	40	32	37	Rc3/8	14	38	56	45	95	M22X1.5	132	11.5	25	11	22	4	19	37	10	2	40	
ø100	40	41	37	Rc1/2	15	38	56	55	114	M26X1.5	132	17	30	13	27	4	19	37	11	3	40	
Code									Mounting dimensions								With switch					
Bore size (mm)	QF	QG	R	RA	T	V	WF	X	AQ	TC	TD	TE	TM	TN	TY	TZ	O	P	T0, T5 ,T2, T3		T2W, T3W	
ø32	16	17.5	19	27	6	13	25	143	50 + $\frac{\text{Stroke length}}{2}$	47	12	17	50	74	75	46	59	38	5	5	7.5	7.5
ø40	16	18.5	19	32	8	13	21	152	55 + $\frac{\text{Stroke length}}{2}$	57	16	22	63	95	76	46	66	41	5	5	7.5	7.5
ø50	30	23.8	23.5	35.5	11	14	23	168	59 + $\frac{\text{Stroke length}}{2}$	67	16	22	75	107	82	51	72	43	6.5	5	9	7
ø63	30	23.8	21.5	33.5	11	14	23	168	59 + $\frac{\text{Stroke length}}{2}$	82	20	28	90	130	82	51	83	48	6.5	5	9	7
ø80	30	27.5	28	46	13	20	32	208	75 + $\frac{\text{Stroke length}}{2}$	100	20	34	110	150	107	61	104	57	12.5	6	15	8
ø100	30	31.5	28	46	16	20	32	208	75 + $\frac{\text{Stroke length}}{2}$	121	25	40	132	182	107	61	121	63	12	6.5	14.5	8.5



Tie rod cylinder Double acting/low speed

SCG-O Series

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

JIS symbol



Specifications

Item		SCG-O					
Bore size mm		ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure	MPa	0.05 (≈7.3 psi, 0.5 bar)					
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance mm		^{+1.0} ₀ (to 360), ^{+1.4} ₀ (361 to 800)					
Working piston speed mm/s		10 to 200 (Operate within the allowable absorbed energy.)					
Cushion		None					
Lubrication		Not available					
Allowable absorbed energy J	Without cushion	0.018	0.032	0.057	0.057	0.112	0.153
Without any cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.							

*1: If the $\phi 32$ cylinder is expected not to operate for a long time, keep the pressure 0.1 MPa and over.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 32$	25/50/75/100	600	1
$\phi 40$			
$\phi 50$			
$\phi 63$		700	
$\phi 80$		800	

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

Min. stroke with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\phi 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\phi 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\phi 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
$\phi 80$	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
$\phi 100$	10	20	40	60	10	20	40	60	101(84)	101(84)	105(105)	105(105)	47	53

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\phi 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\phi 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\phi 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
$\phi 80$	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
$\phi 100$	10	20	40	60	10	20	40	60	105(80)	105(80)	117(117)	117(117)	49	55

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	5	10	20	30	5	40(33)	70(64)	101(94)	64(55)	64(55)	131(116)	131(116)	27	27
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38
ø80	6	11	22	33	6	11	22	33	88(79)	88(79)	88(80)	88(80)	37	43
ø100	6	11	22	33	6	11	22	33	93(84)	93(84)	93(85)	93(85)	43	49

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T1/T2Y/T3Y/T2YD/T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	6	11	22	33	6	62(49)	92(80)	123(110)	86(61)	86(61)	177(122)	177(122)	38	38
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49
ø80	7	13	25	38	7	13	25	38	110(85)	110(85)	110(86)	110(86)	48	54
ø100	7	13	26	39	7	13	26	39	115(90)	115(90)	115(92)	115(92)	54	60

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

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

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

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

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

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

Weight table

(Unit: kg)

Bore size (mm)	Product weight for 0 mm stroke length						Added weight /50 mm stroke	Switch weight (per 1 pc.)	Switch bracket	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA, TB, TC)				I	Y
ø32	0.50	0.61	0.72	0.65	0.68	0.67	0.12	Refer to the weight in the switch specifications.	0.024	0.07	0.10
ø40	0.66	0.80	0.94	0.85	0.85	1.00	0.17		0.024	0.07	0.13
ø50	1.13	1.29	1.61	1.54	1.54	1.61	0.23		0.022	0.20	0.30
ø63	1.39	1.73	2.15	1.95	1.96	2.27	0.25		0.022	0.20	0.30
ø80	2.66	3.09	4.23	3.93	3.94	4.15	0.40		0.026	0.52	0.94
ø100	3.77	4.63	6.09	5.49	5.52	6.34	0.51		0.024	0.48	0.92

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

G Switch quantity
*3

H Option

I Accessory
*4

⚠ Precautions for model No. selection

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

(Trunnion are assembled at shipment.)

*2 : Refer to pages 396 and 397 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

[Example of model No.]

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

Model: Tie rod cylinder, double acting/low speed

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : Without cushion
- E** Stroke length : 100 mm
- F** Switch model No. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Option : Piston rod material (stainless steel)
- I** Accessory : Rod eye (included product)

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

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

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

D Cushion	
N	Without cushion
Note: Contact CKD for availability of the type with air cushion or rubber cushion.	

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø32	1 to 600	In 1 mm increments
ø40		
ø50		
ø63		
ø80	1 to 700	
ø100	1 to 800	

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

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Option	
M	Piston rod material (stainless steel)

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG-T0H-40

Switch model No.
(Item **F** on page 398)

Bore size
(Item **B** on page 398)

- Switch body only

SW-T0H

Switch model No.
(Item **F** on page 398)

- Switch mounting bracket set

SCG-T-40

Mounting
bracket

Bore size
(Item **B** on page 398)

Note: Contact CKD when using
an environment-friendly
T switch.

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note: The foot mounting bracket (LB) is provided as 2 pcs./set.

Note: All mounting brackets are supplied with mounting bolts.

Theoretical thrust table

(Unit: N)

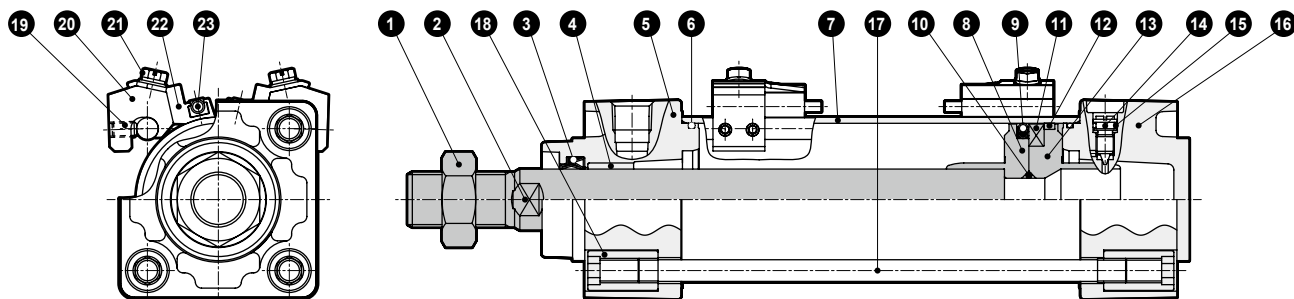
Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	40.2	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	34.6	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	62.8	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	52.8	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	98.2	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	82.5	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	2.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	2.27×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	3.93×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	3.57×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

Dimensions

Same as double acting/single rod. Refer to pages 363 to 371.

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

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickel plating	13	Piston H	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
2	Piston rod	Steel	Industrial chrome plating	14	Cushion needle	Copper alloy	Nickel plating
3	Rod packing	Nitrile rubber		15	Needle gasket	Nitrile rubber	
4	Bush	Oil-impregnated bearing alloy		16	Head cover	Aluminum alloy die-casting	Paint
5	Rod cover	Aluminum alloy die-casting	Paint	17	Tie rod	Steel	Zinc chromate treatment
6	Cylinder gasket	Nitrile rubber		18	Round nut	Steel	Zinc chromate treatment
7	Cylinder tube	Aluminum alloy	Hard alumite treatment	19	Hexagon socket set screw	Steel	Black finish
8	Piston R	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		20	Switch mounting base	Aluminum alloy	
9	Piston packing	Nitrile rubber		21	Slotted head hexagon head bolt with captive washer	Stainless steel	
10	Piston gasket	Nitrile rubber		22	Switch holder	Aluminum alloy	
11	Magnet	Plastic		23	Cylinder switch		
12	Wear ring	Polyacetal resin					

Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-O-32NK	3 6 9 12 15
ø40	SCG-O-40NK	
ø50	SCG-O-50NK	
ø63	SCG-O-63NK	
ø80	SCG-O-80NK	
ø100	SCG-O-100NK	

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

Material of mounting bracket

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

Note: Mounting bracket will be shipped with the product.
Trunnion (TA, TB, TC) are assembled at shipment.

MEMO

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending



Tie rod cylinder Double acting/low friction (constant friction when pressurized)

SCG-U Series

● Bore size: ø32/ø40/ø50/ø63/ø80/ø100



Specifications

Item		SCG-U						
Bore size		mm	ø32	ø40	ø50	ø63	ø80	ø100
Actuation			Double acting					
Working fluid			Compressed air					
Max. working pressure		MPa	0.7 (≈100 psi, 7 bar)					
Min. working pressure		MPa	0.03 (≈4.4 psi, 0.3 bar)					
Proof pressure		MPa	1.0 (≈150 psi, 10 bar)					
Ambient temperature		°C	5 (41°F) to 60 (140°F)					
Port size			Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke tolerance		mm	^{+1.0} ₀ (to 360), ^{+1.4} ₀ (361 to 800)					
Working piston speed		mm/s	10 to 1000 (Operate within the allowable absorbed energy.)					
Cushion			None					
Lubrication			Not available					
Internal leakage		ℓ /min	5				8	
Allowable absorbed energy		J	0.018	0.032	0.057	0.057	0.112	0.153
			Without any cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.					

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ø32	25/50/75/100 150/200/250 300/350/400 450/500	600	1
ø40			
ø50			
ø63		700	
ø80			
ø100			

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

Min. stroke with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
ø40	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
ø50	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
ø63	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
ø80	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
ø100	10	20	40	60	10	20	40	60	101(84)	101(84)	105(105)	105(105)	47	53

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
ø40	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
ø50	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
ø63	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
ø80	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
ø100	10	20	40	60	10	20	40	60	105(80)	105(80)	117(117)	117(117)	49	55

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	5	10	20	30	5	40(33)	70(64)	101(94)	64(55)	64(55)	131(116)	131(116)	27	27
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38
ø80	6	11	22	33	6	11	22	33	88(79)	88(79)	88(80)	88(80)	37	43
ø100	6	11	22	33	6	11	22	33	93(84)	93(84)	93(85)	93(85)	43	49

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T1/T2Y/T3Y/T2YD/T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	6	11	22	33	6	62(49)	92(80)	123(110)	86(61)	86(61)	177(122)	177(122)	38	38
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49
ø80	7	13	25	38	7	13	25	38	110(85)	110(85)	110(86)	110(86)	48	54
ø100	7	13	26	39	7	13	26	39	115(90)	115(90)	115(92)	115(92)	54	60

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

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

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

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

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

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

Weight table

Bore size (mm)	Product weight for 0 mm stroke length						Added weight /50 mm stroke	Switch weight (per 1 pc.)	Switch bracket	Mounting bracket weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TC)				I	Y
ø32	0.50	0.61	0.58	0.65	0.68	0.67	0.12	Refer to the weight in the switch specifications.	0.024	0.07	0.10
ø40	0.66	0.80	0.77	0.85	0.85	1.00	0.17		0.024	0.07	0.13
ø50	1.13	1.29	1.31	1.54	1.54	1.61	0.23		0.022	0.20	0.30
ø63	1.39	1.73	1.68	1.95	1.96	2.27	0.25		0.022	0.20	0.30
ø80	2.66	3.09	4.23	3.93	3.94	4.15	0.40		0.026	0.52	0.94
ø100	3.77	4.63	6.09	5.49	5.52	6.34	0.51		0.024	0.48	0.92

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

G Switch quantity
*3

H Option

I Accessory
*4

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
(Trunnion are assembled at shipment.)

*2 : Refer to pages 402 and 403 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

[Example of model No.]

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

Model: Tie rod cylinder, double acting/low friction (constant friction when pressurized)

A Mounting : Axial foot

B Bore size : ø40 mm

C Port thread : Rc thread

D Cushion : Without cushion

E Stroke length : 100 mm

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

G Switch quantity : 2

H Option : Piston rod material (stainless steel)

I Accessory : Rod eye (included product)

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

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

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

D Cushion	
N	Without cushion

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø32	1 to 600	In 1 mm increments
ø40		
ø50		
ø63		
ø80	1 to 700	
ø100	1 to 800	

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

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Option	
M	Piston rod material (stainless steel)

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG - T0H - 40

Switch model No.

(Item ⑤ on page 404)

Bore size

(Item ⑥ on page 404)

- Switch body only

SW - T0H

Switch model No.

(Item ⑤ on page 404)

- Switch mounting bracket set

SCG - T - 40

Mounting
bracket

Bore size
(Item ⑥ on page 404)

Note: Contact CKD when using
an environment-friendly
T switch.

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) *1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

*1: The foot mounting bracket (LB) is provided as 2 pcs./set.

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

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa								
		0.03	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø32	Push	24.1	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2
	Pull	20.7	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2
ø40	Push	37.8	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2
	Pull	31.8	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2
ø50	Push	58.8	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3
	Pull	49.5	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3
ø63	Push	93.6	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3
	Pull	84.0	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3
ø80	Push	1.51×10^2	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3
	Pull	1.36×10^2	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3
ø100	Push	2.36×10^2	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3
	Pull	2.15×10^2	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3

Dimensions

Same as SCG Series (double acting/single rod). Refer to pages 363 to 371.

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

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVPIN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

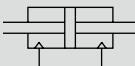


Tie rod cylinder Double acting/double rod

SCG-D Series

● Bore size: ø32/ø40/ø50/ø63/ø80/ø100

JIS symbol



Specifications

Item		SCG-D					
Bore size	mm	ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure	MPa	0.1 (≈15 psi, 1 bar)					
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke	With rubber cushion	^{+1.4} ₀ (to 800)					
tolerance mm	With air cushion	^{+1.0} ₀ (to 360), ^{+1.4} ₀ (361 to 800)					
Working piston speed	mm/s	50 to 1000 (Operate within the allowable absorbed energy.)					
Cushion		Either air cushion or rubber cushion can be selected					
Effective air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)					
Lubrication allowable	With rubber cushion	0.5	0.9	1.6	1.6	3.3	5.8
absorbed energy J	With air cushion	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)
ø32	25/50/75/100 150/200/250 300/350/400 450/500	600 700 800	1
ø40			
ø50			
ø63			
ø80			
ø100			

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

*3: For the type with bellows, the available stroke length is 500 mm for ø32 to ø40 bore size, 600 mm for ø50 to ø63, and 800 mm for ø80 to ø100.

Min. stroke with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
Bore size (mm)														
ø32	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
ø40	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
ø50	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
ø63	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
ø80	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
ø100	10	20	40	60	10	20	40	60	101(84)	101(84)	105(105)	105(105)	47	53

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
Bore size (mm)														
ø32	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
ø40	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
ø50	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
ø63	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
ø80	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
ø100	10	20	40	60	10	20	40	60	105(80)	105(80)	117(117)	117(117)	49	55

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	5	10	20	30	5	40(33)	70(64)	101(94)	64(55)	64(55)	131(116)	131(116)	27	27
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38
ø80	6	11	22	33	6	11	22	33	88(79)	88(79)	88(80)	88(80)	37	43
ø100	6	11	22	33	6	11	22	33	93(84)	93(84)	93(85)	93(85)	43	49

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T1/T2Y/T3Y/T2YD/T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	6	11	22	33	6	62(49)	92(80)	123(110)	86(61)	86(61)	177(122)	177(122)	38	38
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49
ø80	7	13	25	38	7	13	25	38	110(85)	110(85)	110(86)	110(86)	48	54
ø100	7	13	26	39	7	13	26	39	115(90)	115(90)	115(92)	115(92)	54	60

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

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

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

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

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

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

Weight table

Bore size (mm)	Product weight for 0 mm stroke length				Stroke: Added weight/50 mm	Switch weight (per 1 pc)	Switch bracket	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Trunnion (TA, TB, TC)				I	Y
ø32	0.57	0.68	0.79	0.74	0.16	Refer to the weight in the switch specifications.	0.024	0.07	0.10
ø40	0.80	0.94	1.08	1.14	0.25		0.024	0.07	0.13
ø50	1.38	1.54	1.86	1.86	0.35		0.022	0.20	0.30
ø63	1.64	1.98	2.40	2.52	0.37		0.022	0.20	0.30
ø80	3.11	3.54	4.68	4.60	0.59		0.026	0.52	0.94
ø100	4.41	5.27	6.73	6.98	0.79		0.024	0.48	0.92

(Unit: kg)

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting *1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

G Switch quantity
*3

H Option
*4

I Accessory

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
(If the product is the trunnion (TA, TB or TC) with bellows and the mounting bracket is LB or FA, it will be attached with the product.)

*2 : Refer to pages 406 and 407 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

[Example of model No.]

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

Model: Tie rod cylinder, double acting/double rod

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided air cushion
- E** Stroke length : 100 mm
- F** Switch model No. : Proximity T2H switch, lead wire 1 m
- G** Switch quantity : 2
- H** Option : With bellows
- I** Accessory : Rod eye (included product)

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

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

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

D Cushion	
B	Two-sided air cushion (basic)
D	Two-sided rubber cushion
Note: The rubber cushion has a longer total length than the air cushion.	

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø32	1 to 600	In 1 mm increments
ø40		
ø50		
ø63		
ø80	1 to 700	
ø100	1 to 800	

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

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Option			
		Max. ambient temperature	Instantaneous ambient temp
J	Bellows	100°C	200°C
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG - T0H - 40

Switch model No. (Item ㉔ on page 408) Bore size (Item ㉕ on page 408)

- Switch body only

SW - T0H

Switch model No. (Item ㉔ on page 408)

Note: Contact CKD when using an environment-friendly T type switch.

- Switch mounting bracket set

SCG - T - 40

Mounting bracket Bore size (Item ㉕ on page 408)

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) *1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100

*1: Specify the flange (FA or FB) with bellows as "SCG-FA-(bore size)-J".

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

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

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push/Pull	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push/Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push/Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push/Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push/Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push/Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVPIN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

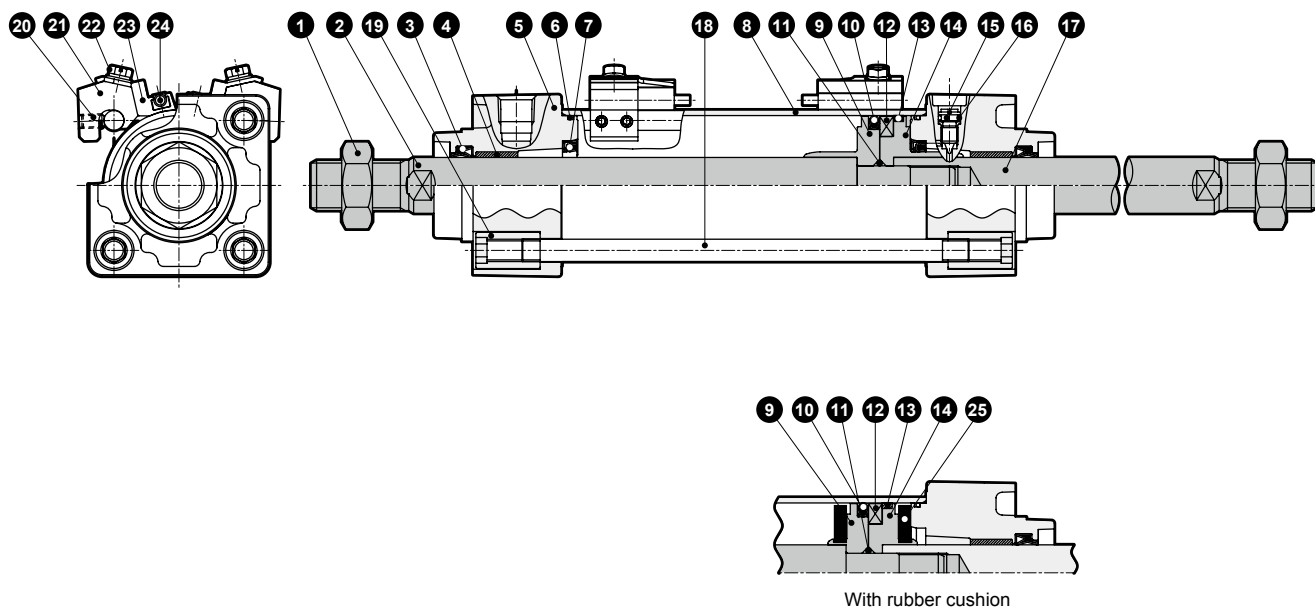
FJ

FK

Spd
Contr

Ending

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickel plating	14	Piston H	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
2	Piston rod A	Steel	Industrial chrome plating	15	Cushion needle	Copper alloy	Nickel plating
3	Rod packing	Nitrile rubber		16	Needle gasket	Nitrile rubber	
4	Bush	Oil-impregnated bearing alloy		17	Piston rod B	Steel	Industrial chrome plating
5	Rod cover	Aluminum alloy die-casting	Paint	18	Tie rod	Steel	Zinc chromate treatment
6	Cylinder gasket	Nitrile rubber		19	Round nut	Steel	Zinc chromate treatment
7	Cushion packing	Nitrile rubber, steel	With air cushion only	20	Hexagon socket set screw	Steel	Black finish
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	21	Switch mounting base	Aluminum alloy	
9	Piston R	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		22	Slotted head hexagon head bolt with captive washer	Stainless steel	
10	Piston packing	Nitrile rubber		23	Switch holder	Aluminum alloy	
11	Piston gasket	Nitrile rubber		24	Cylinder switch		
12	Magnet	Plastic		25	Cushion rubber	Urethane rubber	With rubber cushion only
13	Wear ring	Polyacetal resin					

Repair parts list

● With air cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-D-32BK	3 6 7 10 13 16
ø40	SCG-D-40BK	
ø50	SCG-D-50BK	
ø63	SCG-D-63BK	
ø80	SCG-D-80BK	
ø100	SCG-D-100BK	

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

● With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-D-32DK	3 6 10 13 16 25
ø40	SCG-D-40DK	
ø50	SCG-D-50DK	
ø63	SCG-D-63DK	
ø80	SCG-D-80DK	
ø100	SCG-D-100DK	

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

Material of mounting bracket

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

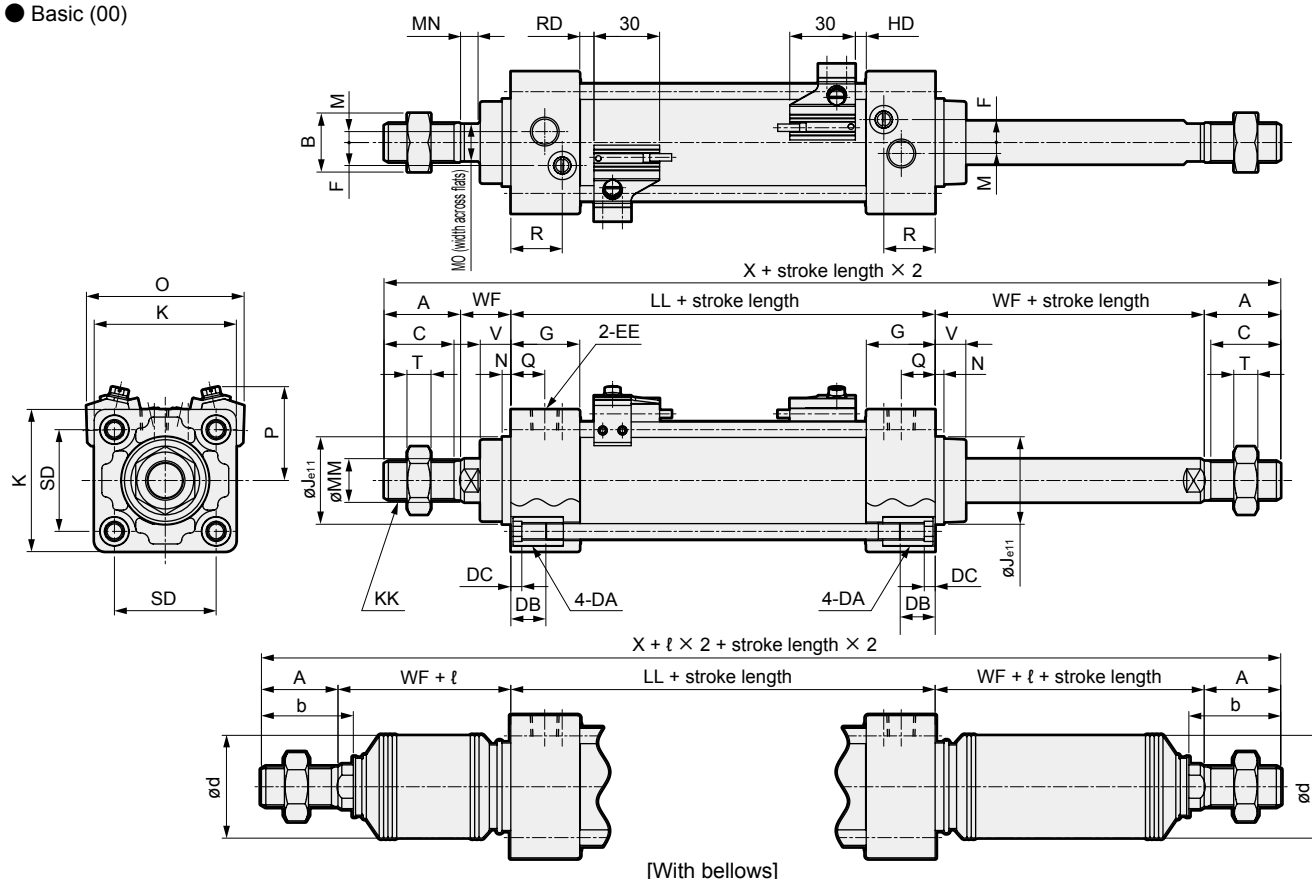
Note: Mounting bracket will be shipped with the product.

If the product is the trunnion (TA, TB or TC) with bellows and the mounting bracket is LB or FA, it will be attached with the product.

Dimensions



● Basic (00)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*3: Mounting dimensions of each mounting form are the same as SCG (double acting/single rod). Refer to pages 364 to 371.

*4: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Basic (00) basic dimensions																
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10
ø40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	6	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17
ø80	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	11	22
ø100	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	13	27
Code									With switch								
Bore size (mm)	N	Q	R	SD	T	V	WF	*1 X	O	P	T0, T5 ,T2, T3		T2W, T3W				
											RD	HD	RD	HD			
ø32	4	13	19	32.5	6	13	25	178 (184)	59	38	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)			
ø40	4	14	19	38	8	13	21	186 (192)	66	41	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)			
ø50	4	15.5	23.5	46.5	11	14	23	210 (218)	72	43	6.5 (10.5)	5 (9)	9 (13)	7 (11)			
ø63	4	16.5	21.5	56.5	11	14	23	210 (218)	83	48	6.5 (10.5)	5 (9)	9 (13)	7 (11)			
ø80	4	19	28	72	13	20	32	258 (268)	104	57	12.5 (17.5)	6 (11)	15 (20)	8 (13)			
ø100	4	19	28	89	16	20	32	258 (268)	121	63	12 (17)	6.5 (11.5)	14.5 (19.5)	8.5 (13.5)			
Code	With bellows																
Bore size (mm)	A	b	d	WF	ℓ												
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600	Over 600 to 700	Over 700 to 800	Over 800		
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 × stroke-37					
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 × stroke-32					
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35 × stroke-41				
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35 × stroke-41				
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35 × stroke-63		
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35 × stroke-63		



Tie rod cylinder Double acting/rotation-stop

SCG-M Series

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



Specifications

Item		SCG-M			
Bore size mm		ø32	ø40	ø50	ø63
Actuation		Double acting			
Working fluid		Compressed air			
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)			
Min. working pressure	MPa	0.1 (≈15 psi, 1 bar)			0.05 (≈7.3 psi, 0.5 bar)
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)			
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)			
Port size		Rc1/8	Rc1/4		Rc3/8
Stroke tolerance	With rubber cushion	$^{+1.4}_0$ (to 600)			
mm	With air cushion	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (361 to 600)			
Working piston speed	mm/s	50 to 1000 (Operate within the allowable absorbed energy.)			
Cushion		Either air cushion or rubber cushion can be selected			
Effective air cushion length	mm	8.6	8.6	13.4	13.4
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)			
Non-rotating accuracy °		±1			
Allowable	With rubber cushion	0.5	0.9	1.6	1.6
absorbed energy J	With air cushion	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)
$\phi 32$	25/50/75/100	600	1
$\phi 40$	150/200/250		
$\phi 50$	300/350/400		
$\phi 63$	450/500		

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

Min. stroke with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\phi 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\phi 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\phi 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

*3: For the type with bellows, the available stroke length is 500 mm for $\phi 32$ to $\phi 40$ bore size and 600 mm for $\phi 50$ to $\phi 63$.

Min. stroke with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\phi 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\phi 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\phi 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	5	10	20	30	5	40(33)	70(64)	101(94)	64(55)	64(55)	131(116)	131(116)	27	27
ø40	5	10	20	30	5	40(33)	70(64)	101(94)	69(60)	69(60)	152(121)	152(121)	32	32
ø50	5	10	20	30	5	10	20	30	71(62)	71(62)	71(61)	71(61)	31	32
ø63	6	11	21	32	6	11	21	32	77(68)	77(68)	77(68)	77(68)	37	38

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T1/T2Y/T3Y/T2YD/T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	6	11	22	33	6	62(49)	92(80)	123(110)	86(61)	86(61)	177(122)	177(122)	38	38
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

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

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

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

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

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

Weight table

(Unit: kg)

Bore size (mm)	Product weight for 0 mm stroke length						Stroke:Added weight/50 mm	Switch weight (per 1 pc)	Switch mounting bracket	Mounting bracket weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TC)				I	Y
ø32	0.50	0.61	0.58	0.65	0.68	0.67	0.12	Refer to the weight in the switch specifications.	0.024	0.07	0.10
ø40	0.66	0.80	0.77	0.85	0.85	1.00	0.17		0.024	0.07	0.13
ø50	1.13	1.29	1.31	1.54	1.54	1.61	0.23		0.022	0.20	0.30
ø63	1.39	1.73	1.68	1.95	1.96	2.27	0.25		0.022	0.20	0.30

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

G Switch quantity

*3

H Option

I Accessory

*4

⚠ Precautions for model No. selection

- *1 : Mounting bracket will be shipped with the product.
(If the product is the trunnion (TA, TB or TC) with bellows and the mounting bracket is LB or FA, it will be included with the product.)
- *2 : Refer to pages 412 and 413 for the min. stroke length with switch.
- *3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.
- *4 : "I" and "Y" cannot be selected together.

[Example of model No.]

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

Model No.: Tie rod cylinder, double acting/rotation-stop

- A Mounting : Axial foot
B Bore size : ø40 mm
C Port thread : Rc thread
D Cushion : With air cushion
E Stroke length : 100 mm
F Switch model No. : Proximity T2H switch, lead wire 1 m
G Switch quantity : 2
H Option : With bellows
I Accessory : Rod eye (included product)

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

B Bore size (mm)	
32	ø32
40	ø40
50	ø50
63	ø63

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

D Cushion	
B	Two-sided air cushion (basic)
D	Two-sided rubber cushion
Note: The rubber cushion has a longer total length than the air cushion.	

E Stroke length (mm)		
Bore size	Stroke length *2	Custom stroke length
ø32	1 to 600	In 1 mm increments
ø40		
ø50		
ø63		

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

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Option			
		Max. ambient temperature	Instantaneous ambient temp
J	Bellows	100°C	200°C

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG - T0H - 40

Switch model No.

(Item ⑤ on page 414)

Bore size

(Item ⑥ on page 414)

- Switch body only

SW - T0H

Switch model No.

(Item ⑤ on page 414)

- Switch mounting bracket set

SCG - T - 40

Mounting
bracket

Bore size

(Item ⑥ on page 414)

Note: Contact CKD when using
an environment-friendly
T switch.

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63
Mounting bracket				
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63
Flange (FA) (FB) *1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63
Eye bracket (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63
Clevis bracket (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63

*1: Specify the flange (FA) with bellows as "SCG-FA-(bore size)-J".

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

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

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa											
		0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	—	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	—	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	—	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	—	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	—	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	—	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	1.56×10^2	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	1.40×10^2	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3

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

Internal structure

Same as standard. Refer to page 362.
Note that the following parts are different in material.

No.	Part name	Material	Remarks
2	Piston rod	ø32: Stainless steel, copper	
		ø40 to 63: Steel	Industrial chrome plating

Repair parts list

● With air cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-M-32BK	3 6 7
ø40	SCG-M-40BK	
ø50	SCG-M-50BK	10 13 16
ø63	SCG-M-63BK	

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

● With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-M-32DK	3 6 10
ø40	SCG-M-40DK	
ø50	SCG-M-50DK	13 16 23
ø63	SCG-M-63DK	

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

Material of mounting bracket

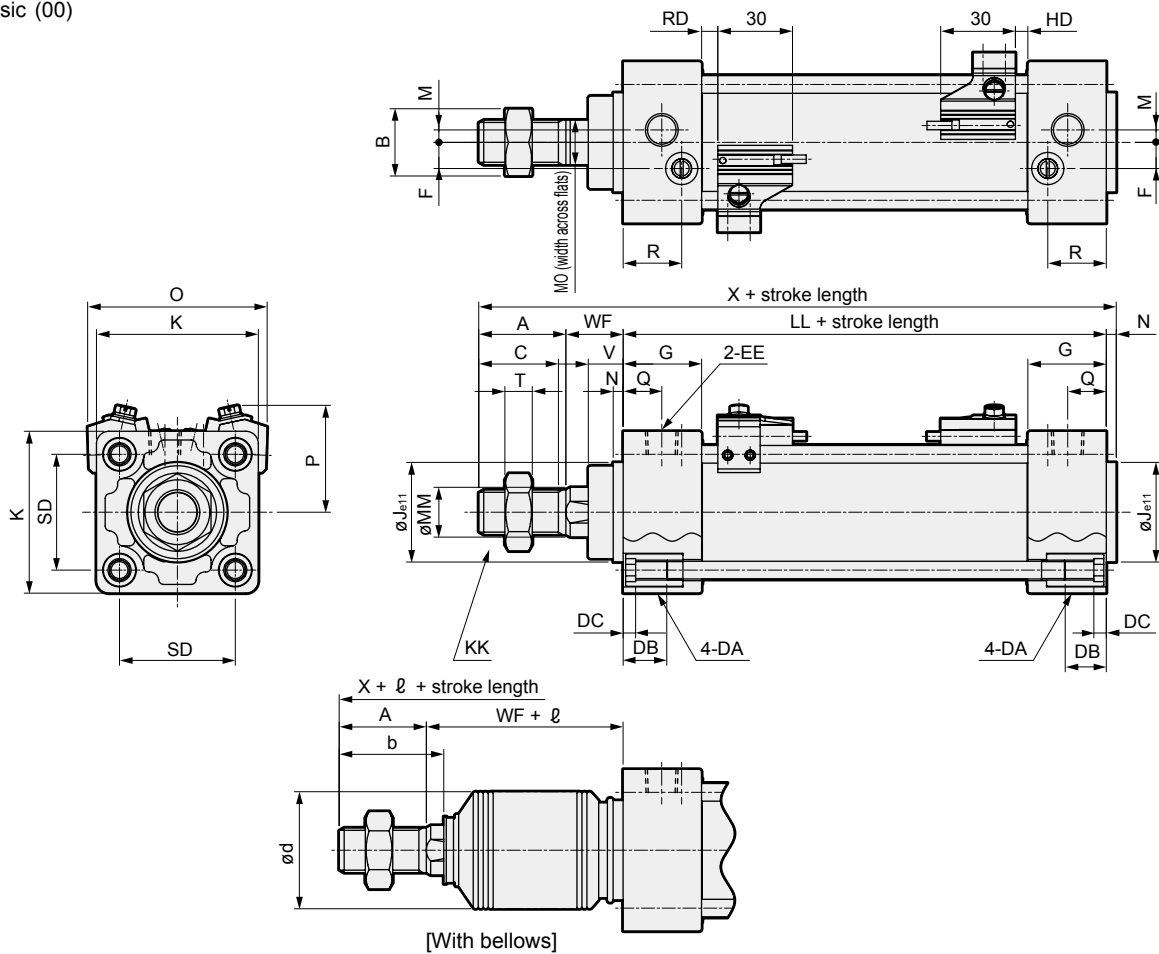
Mounting	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Note: Mounting bracket will be shipped with the product.
If the product is the trunnion (TA, TB or TC) with bellows and the mounting is LB or FA, it will be included with the product.

Dimensions



● Basic (00)



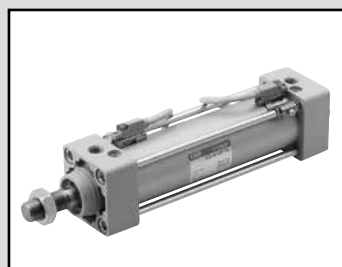
*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*3: Mounting dimensions of each mounting form are the same as SCG (double acting/single rod). Refer to pages 364 to 371.

*4: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Basic (00) basic dimensions															
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	*1 LL	M	MM	M0
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	10
ø40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	18
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	18
Code									With switch							
Bore size (mm)	N	Q	R	SD	T	V	WF	*1 X	O	P	T0, T5 ,T2, T3		T2W, T3W			
											RD	HD	RD	HD		
ø32	4	13	19	32.5	6	13	25	135 (141)	59	38	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)		
ø40	4	14	19	38	8	13	21	139 (145)	66	41	5 (8)	5 (8)	7.5 (10.5)	7.5 (10.5)		
ø50	4	15.5	23.5	46.5	11	14	23	156 (164)	72	43	6.5 (10.5)	5 (9)	9 (13)	7 (11)		
ø63	4	16.5	21.5	56.5	11	14	23	156 (164)	83	48	6.5 (10.5)	5 (9)	9 (13)	7 (11)		
Code	With bellows															
Bore size (mm)	A	b	d	WF	ℓ											
					50 or less	Over 50 to 100	Over 100 to 150	Over 150 to 200	Over 200 to 300	Over 300 to 400	Over 400 to 500	Over 500 to 600				
ø32	22	31.5	38	25	26	39	51	64	89	114	139	0.35 X stroke-37				
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35 X stroke-32				
ø50	35	42	47	23	31	44	56	69	94	119	144	169				
ø63	35	42	47	23	31	44	56	69	94	119	144	169				



Tie rod cylinder Double acting/rubber scraper

SCG-G Series

● Bore size: ø32/ø40/ø50/ø63/ø80/ø100

JIS symbol



Specifications

Item		SCG-G					
Bore size mm		ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)					
Min. working pressure	MPa	0.1 (≈15 psi, 1 bar)					
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)					
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke	With rubber cushion	$^{+1.4}_0$ (to 1000), $^{+1.8}_0$ (1001 to 1500)					
tolerance mm	With air cushion	$^{+1.0}_0$ (to 360), $^{+1.4}_0$ (361 to 1000), $^{+1.8}_0$ (1001 to 1500)					
Working piston speed	mm/s	50 to 1000 (Operate within the allowable absorbed energy.)					
Cushion		Either air cushion or rubber cushion can be selected					
Effective air cushion length	mm	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)					
Allowable	With rubber cushion	0.5	0.9	1.6	1.6	3.3	5.8
absorbed energy J	With air cushion	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)
ø32	25/50/75/100	600	700	1
ø40			800	
ø50			1200	
ø63			1200	
ø80	300/350/400	700	1400	
ø100	450/500		1500	

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

Min. stroke with T0/T5 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
ø40	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
ø50	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
ø63	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
ø80	10	20	39	59	10	20	39	59	96 (79)	96 (79)	99 (99)	99 (99)	41	47
ø100	10	20	40	60	10	20	40	60	101 (84)	101 (84)	105 (105)	105 (105)	47	53

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T8 switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
ø40	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
ø50	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
ø63	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
ø80	10	20	39	59	10	20	39	59	100 (75)	100 (75)	111 (111)	111 (111)	43	49
ø100	10	20	40	60	10	20	40	60	105 (80)	105 (80)	117 (117)	117 (117)	49	55

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T2/T3 switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	5	10	20	30	5	40 (33)	70 (64)	101 (94)	64 (55)	64 (55)	131 (116)	131 (116)	27	27
ø40	5	10	20	30	5	40 (33)	70 (64)	101 (94)	69 (60)	69 (60)	152 (121)	152 (121)	32	32
ø50	5	10	20	30	5	10	20	30	71 (62)	71 (62)	71 (61)	71 (61)	31	32
ø63	6	11	21	32	6	11	21	32	77 (68)	77 (68)	77 (68)	77 (68)	37	38
ø80	6	11	22	33	6	11	22	33	88 (79)	88 (79)	88 (80)	88 (80)	37	43
ø100	6	11	22	33	6	11	22	33	93 (84)	93 (84)	93 (85)	93 (85)	43	49

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Min. stroke with T1/T2Y/T3Y/T2YD/T2W/T3W switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø32	6	11	22	33	6	62 (49)	92 (80)	123 (110)	86 (61)	86 (61)	177 (122)	177 (122)	38	38
ø40	6	11	22	33	6	62 (49)	92 (80)	123 (110)	91 (66)	91 (66)	182 (127)	182 (127)	43	43
ø50	6	12	24	36	6	12	24	36	93 (68)	93 (68)	93 (68)	93 (68)	42	43
ø63	6	12	24	36	6	12	24	36	99 (74)	99 (74)	99 (74)	99 (74)	48	49
ø80	7	13	25	38	7	13	25	38	110 (85)	110 (85)	110 (86)	110 (86)	48	54
ø100	7	13	26	39	7	13	26	39	115 (90)	115 (90)	115 (92)	115 (92)	54	60

*1: The values in () are of T*V (radial lead wire). T2YD does not have a radial lead wire (V).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

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

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

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

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

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

Weight table

Bore size (mm)	Product weight for 0 mm stroke length						Stroke: Added weight/50 mm	Switch weight (per 1 pc)	Switch bracket	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA/TB/TC)				I	Y
ø32	0.51	0.62	0.73	0.66	0.69	0.68	0.12	Refer to the weight in the switch specifications.	0.024	0.07	0.10
ø40	0.68	0.82	0.96	0.86	0.86	1.02	0.17		0.024	0.07	0.13
ø50	1.16	1.32	1.64	1.56	1.57	1.64	0.23		0.022	0.20	0.30
ø63	1.42	1.76	2.18	1.97	1.99	2.29	0.25		0.022	0.20	0.30
ø80	2.69	3.12	4.26	3.96	3.96	4.18	0.40		0.026	0.52	0.94
ø100	3.80	4.66	6.12	5.52	5.55	6.37	0.51		0.024	0.48	0.92

SCG-G Series

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

G Switch quantity

*3

H Option

I Accessory
*4

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
(Trunnion are assembled at shipment.)

*2 : Refer to pages 418 and 419 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

[Example of model No.]

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

Model: Tie rod cylinder, double acting/rubber scraper

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

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

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

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

D Cushion	
B	Two-sided air cushion (basic)
D	Two-sided rubber cushion

Note: The rubber cushion has a longer total length than the air cushion.

E Stroke length (mm)			
Bore size	Stroke length *2	Available stroke length	Custom stroke length
ø32	1 to 600	700	In 1 mm increments
ø40		800	
ø50		1200	
ø63		1400	
ø80	1 to 700	1500	
ø100	1 to 800		

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

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

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

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG - T0H - 40

Switch model No.
(Item ⑤ on page 420)

Bore size
(Item ⑥ on page 420)

- Switch body only

SW - T0H

Switch model No.
(Item ⑤ on page 420)

Note: Contact CKD when using
an environment-friendly
T switch.

- Switch mounting bracket set

SCG - T - 40

Mounting
bracket

Bore size
(Item ⑥ on page 420)

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

*1: The foot mounting bracket (LB) is provided as 2 pcs./set.

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

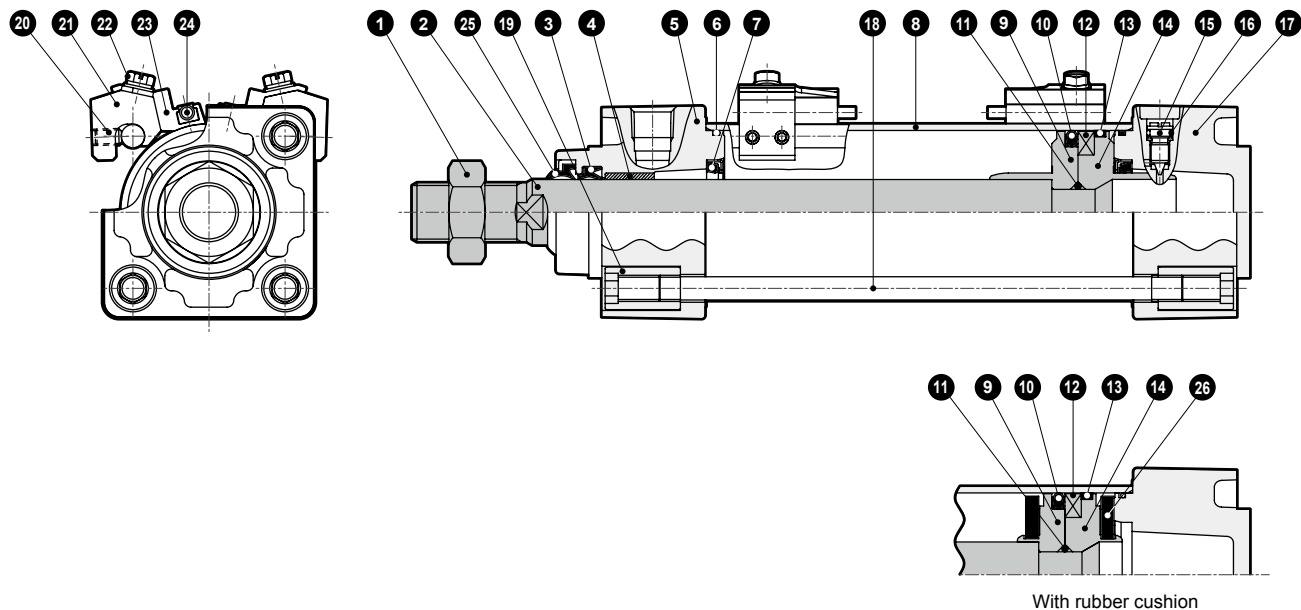
Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

SCG-G Series

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickel plating	14	Piston H	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	
2	Piston rod	Steel	Industrial chrome plating	15	Cushion needle	Copper alloy	Nickel plating
3	Rod packing	Nitrile rubber		16	Needle gasket	Nitrile rubber	
4	Bush	Oil-impregnated bearing alloy		17	Head cover	Aluminum alloy die-casting	Paint
5	Rod cover	Aluminum alloy die-casting	Paint	18	Tie rod	Steel	Zinc chromate treatment
6	Cylinder gasket	Nitrile rubber		19	Round nut	Steel	Zinc chromate treatment
7	Cushion packing	Nitrile rubber, steel	With air cushion only	20	Hexagon socket set screw	Steel	Black finish
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	21	Switch mounting base	Aluminum alloy	
9	Piston R	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		22	Slotted hex head bolt, captive washer	Stainless steel	
10	Piston packing	Nitrile rubber		23	Switch holder	Aluminum alloy	
11	Piston gasket	Nitrile rubber		24	Cylinder switch		
12	Magnet	Plastic		25	Dust wiper	Nitrile rubber, steel	
13	Wear ring	Polyacetal resin		26	Cushion rubber	Urethane rubber	With rubber cushion only

Repair parts list

● With air cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-G-32BK	3 6 7 10
ø40	SCG-G-40BK	
ø50	SCG-G-50BK	
ø63	SCG-G-63BK	
ø80	SCG-G-80BK	13 16 25
ø100	SCG-G-100BK	

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

● With rubber cushion

Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-G-32DK	3 6 10 13
ø40	SCG-G-40DK	
ø50	SCG-G-50DK	
ø63	SCG-G-63DK	
ø80	SCG-G-80DK	16 25 26
ø100	SCG-G-100DK	

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

Material of mounting bracket

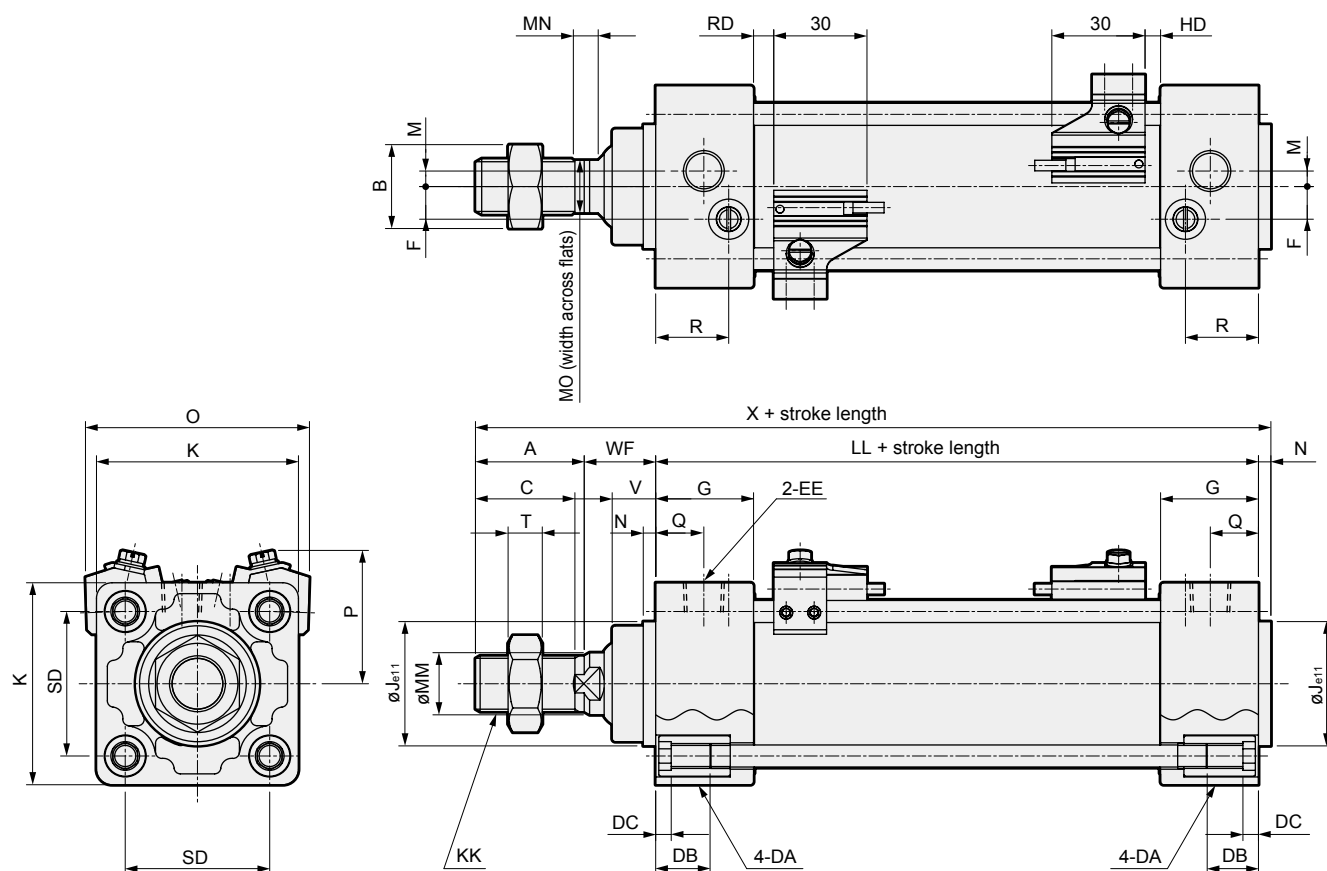
Mounting	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Note: Mounting bracket will be shipped with the product.
Trunnion (TA, TB, TC) are assembled at shipment.

Dimensions



● Basic (00)



*1: Dimensions in () are for the rubber cushion.

*2: Refer to page 436 for HD, RD and protruding dimensions of other switches.

*3: Mounting dimensions of each mounting form are the same as SCG (double acting/single rod). Refer to pages 364 to 371.

*4: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Basic (00) basic dimensions																
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10
ø40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	5	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17
ø80	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	8	22
ø100	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	8	27

Code									With switch					
Bore size (mm)	N	Q	R	SD	T	V	WF	*1 X	O	P	T0, T5, T2, T3		T2W, T3W	
											RD	HD	RD	HD
ø32	4	13	19	32.5	6	13	25	135 (141)	59	38	5	5	7.5	7.5
ø40	4	14	19	38	8	13	21	139 (145)	66	41	5	5	7.5	7.5
ø50	4	15.5	23.5	46.5	11	14	23	156 (164)	72	43	6.5	5	9	7
ø63	4	16.5	21.5	56.5	11	14	23	156 (164)	83	48	6.5	5	9	7
ø80	4	19	28	72	13	20	32	190 (200)	104	57	12.5	6	15	8
ø100	4	19	28	89	16	20	32	190 (200)	121	63	12	6.5	14.5	8.5



Tie rod cylinder Double acting/coolant proof

SCG-G²_{G³} Series

● Bore size: ø40/ø50/ø63/ø80/ø100

JIS symbol



Specifications

Item		SCG- ^{G2} _{G3}				
Bore size	mm	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting/coolant proof				
Working fluid		Compressed air				
Max. working pressure	MPa	1.0 (≈150 psi, 10 bar)				
Min. working pressure	MPa	0.1 (≈15 psi, 1 bar)				
Proof pressure	MPa	1.6 (≈230 psi, 16 bar)				
Ambient temperature	°C	-10 (14°F) to 60 (140°F) (no freezing)				
Port size		Rc1/4		Rc3/8		Rc1/2
Stroke tolerance	mm	^{+1.0} ₀ (to 360), ^{+1.4} ₀ (361 to 1000), ^{+1.8} ₀ (1001 to 1500)				
Working piston speed	mm/s	50 to 1000 (Operate within the allowable absorbed energy.)				
Cushion		Air cushion				
Effective air cushion length	mm	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)				
Allowable absorbed energy	J	3.7	8.0	14.4	25.4	45.6

*1: Contact CKD for availability of ø32.

*2: Contact CKD for 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)
ø40	25/50/75/100	600	800	1
ø50			1200	
ø63	150/200/250	700	1200	
ø80	300/350/400		1400	
ø100	450/500		1500	

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

Min. stroke with T2YL/T3YL switches

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting No position detection at rod side stroke end.	Head side trunnion mounting No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
ø40	6	11	22	33	6	62(49)	92(80)	123(110)	91(66)	91(66)	182(127)	182(127)	43	43
ø50	6	12	24	36	6	12	24	36	93(68)	93(68)	93(68)	93(68)	42	43
ø63	6	12	24	36	6	12	24	36	99(74)	99(74)	99(74)	99(74)	48	49
ø80	7	13	25	38	7	13	25	38	110(85)	110(85)	110(86)	110(86)	48	54
ø100	7	13	26	39	7	13	26	39	115(90)	115(90)	115(92)	115(92)	54	60

*1: The values in () are of T*V (radial lead wire).

*2: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

Item	Proximity 2-wire	Proximity 3-wire
	T2YLH/T2YLV	T3YLH/T3YLV
Applications	Dedicated for programmable controller	Programmable controller, relay
Output method	-	NPN output
Power supply voltage	-	10 to 28 VDC
Load voltage/current	10 to 30 VDC, 5 to 20 mA *3	30 VDC or less, 50 mA or less
Indicator lamp	Red/green LED (Lit when ON)	
Leakage current	1 mA or less	10 µA or less
Max. shock resistance	980 m / S ²	
Weight	g 1 m:33 3 m:87 5 m:142	

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

*2: Switches with connectors are also available. Refer to Ending Page 1.

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

Weight table

(Unit: kg)

Bore size (mm)	Product weight for 0 mm stroke length						Added weight /50 mm stroke	Switch weight (per 1 pc)	Switch mounting bracket	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA, TB, TC)				I	Y
ø40	0.66	0.80	0.94	0.85	0.85	1.00	0.17	Refer to the weight in the switch specifications.	0.024	0.07	0.13
ø50	1.13	1.29	1.61	1.54	1.54	1.61	0.23		0.022	0.20	0.30
ø63	1.39	1.73	2.15	1.95	1.96	2.27	0.25		0.022	0.20	0.30
ø80	2.66	3.09	4.23	3.93	3.94	4.15	0.40		0.026	0.52	0.94
ø100	3.77	4.63	6.09	5.49	5.52	6.34	0.51		0.024	0.48	0.92

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø40	Push	1.26 × 10 ²	1.88 × 10 ²	2.51 × 10 ²	3.77 × 10 ²	5.03 × 10 ²	6.28 × 10 ²	7.54 × 10 ²	8.80 × 10 ²	1.01 × 10 ³	1.13 × 10 ³	1.26 × 10 ³
	Pull	1.06 × 10 ²	1.58 × 10 ²	2.11 × 10 ²	3.17 × 10 ²	4.22 × 10 ²	5.28 × 10 ²	6.33 × 10 ²	7.39 × 10 ²	8.44 × 10 ²	9.50 × 10 ²	1.06 × 10 ³
ø50	Push	1.96 × 10 ²	2.95 × 10 ²	3.93 × 10 ²	5.89 × 10 ²	7.85 × 10 ²	9.82 × 10 ²	1.18 × 10 ³	1.37 × 10 ³	1.57 × 10 ³	1.77 × 10 ³	1.96 × 10 ³
	Pull	1.65 × 10 ²	2.47 × 10 ²	3.30 × 10 ²	4.95 × 10 ²	6.60 × 10 ²	8.25 × 10 ²	9.90 × 10 ²	1.15 × 10 ³	1.32 × 10 ³	1.48 × 10 ³	1.65 × 10 ³
ø63	Push	3.12 × 10 ²	4.68 × 10 ²	6.23 × 10 ²	9.35 × 10 ²	1.25 × 10 ³	1.56 × 10 ³	1.87 × 10 ³	2.18 × 10 ³	2.49 × 10 ³	2.81 × 10 ³	3.12 × 10 ³
	Pull	2.80 × 10 ²	4.20 × 10 ²	5.61 × 10 ²	8.41 × 10 ²	1.12 × 10 ³	1.40 × 10 ³	1.68 × 10 ³	1.96 × 10 ³	2.24 × 10 ³	2.52 × 10 ³	2.80 × 10 ³
ø80	Push	5.03 × 10 ²	7.54 × 10 ²	1.01 × 10 ³	1.51 × 10 ³	2.01 × 10 ³	2.51 × 10 ³	3.02 × 10 ³	3.52 × 10 ³	4.02 × 10 ³	4.52 × 10 ³	5.03 × 10 ³
	Pull	4.54 × 10 ²	6.80 × 10 ²	9.07 × 10 ²	1.36 × 10 ³	1.81 × 10 ³	2.27 × 10 ³	2.72 × 10 ³	3.17 × 10 ³	3.63 × 10 ³	4.08 × 10 ³	4.54 × 10 ³
ø100	Push	7.85 × 10 ²	1.18 × 10 ³	1.57 × 10 ³	2.36 × 10 ³	3.14 × 10 ³	3.93 × 10 ³	4.71 × 10 ³	5.50 × 10 ³	6.28 × 10 ³	7.07 × 10 ³	7.85 × 10 ³
	Pull	7.15 × 10 ²	1.07 × 10 ³	1.43 × 10 ³	2.14 × 10 ³	2.86 × 10 ³	3.57 × 10 ³	4.29 × 10 ³	5.00 × 10 ³	5.72 × 10 ³	6.43 × 10 ³	7.15 × 10 ³

How to order

Without switch (built-in magnet for switch)

SCG - **G2** - **LB** - **40** - **B** - **100** - **Y**

With switch (built-in magnet for switch)

SCG - **G2** - **LB** - **40** - **B** - **100** - **T2H** - **R** - **Y**

A Degree of protection level

B Mounting
*1

C Bore size

D Port thread

E Cushion

F Stroke length

G Switch model No.

H Switch quantity
*3

I Accessory
*4

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
(Trunnion are assembled at shipment.)

*2 : Refer to page 424 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

[Example of model No.]

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

Model: Tie rod cylinder, double acting/coolant proof

A Degree of protection level : Coolant proof scraper + packing NBR

B Mounting : Axial foot

C Bore size : ø40 mm

D Port thread : Rc thread

E Cushion : With two-sided air cushion

F Stroke length : 100 mm

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

H Switch quantity : 2

I Accessory : Rod eye (included product)

Code	Description
A Degree of protection level	
G2	Coolant proof scraper + packing NBR
G3	Coolant proof scraper + packing FKM

B Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

C Bore size (mm)	
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
Note: Contact CKD for availability of ø32.	

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

E Cushion	
B	Two-sided air cushion (basic)
Note: Contact CKD for availability of the type with rubber cushion.	

F Stroke length (mm)			
Bore size	Stroke length *2	Available stroke length	Custom stroke length
ø40	1 to 600	800	In 1 mm increments
ø50		1200	
ø63			
ø80	1 to 700	1400	
ø100	1 to 800	1500	

G Switch model No.					
Axial lead wire	Radial lead wire	Contact	Voltage AC	DC	Display
T2YLH*	T2YLV*	Proximity		●	2-color display
T3YLH*	T3YLV*			●	

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

H Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

● Switch body + mounting bracket set

SCG - T2YLH - 40

Switch model No.
(Item ㉔ on page 426)

Bore size
(Item ㉔ on page 426)

● Switch body only

SW - T2YLH

Switch model No.
(Item ㉔ on page 426)

Note: Contact CKD when using
an environment-friendly
T switch.

● Switch mounting bracket set

SCG-G2 - T - 40

Mounting
bracket

Bore size
(Item ㉔ on page 426)

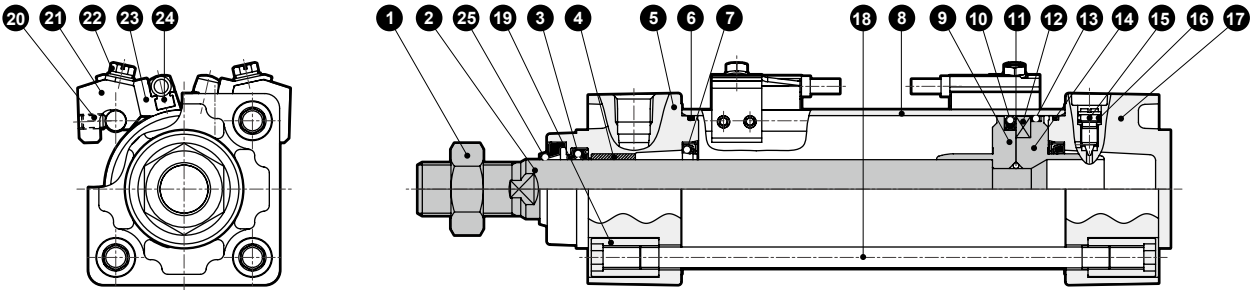
How to order mounting bracket

Bore size (mm)	ø40	ø50	ø63	ø80	ø100
Mounting bracket					
Foot (LB)	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

Note: The foot mounting bracket (LB) is provided as 2 pcs./set.
Note: All mounting brackets are supplied with mounting bolts.

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

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Stainless steel		12	Magnet	Plastic	
2	Piston rod	Stainless steel	Industrial chrome plating	13	Wear ring	Polyacetal resin	
3	Rod packing	G2 Nitrile rubber		14	Piston H	ø40: Aluminum alloy	Chromate treatment
		G3 Fluoro rubber				ø50 to ø100: Aluminum alloy die-casting	
4	Bush	Oil-impregnated bearing alloy		15	Cushion needle	Steel alloy	Nickel plating
5	Rod cover	Aluminum alloy die-casting	Paint	16	Needle gasket	G2 Nitrile rubber	
6	Cylinder gasket	G2 Nitrile rubber				G3 Fluoro rubber	
		G3 Fluoro rubber		17	Head cover	Aluminum alloy die-casting	Paint
7	Cushion packing	G2 Nitrile rubber, steel	With air cushion only	18	Tie rod	Steel	Zinc chromate treatment
		G3 Fluoro rubber, steel	With air cushion only	19	Round nut	Steel	Zinc chromate treatment
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	20	Hexagon socket set screw	Stainless steel	
9	Piston R	ø40: Aluminum alloy	Chromate treatment	21	Switch mounting base	Aluminum alloy	Alodine treatment
		ø50 to ø100: Aluminum alloy die-casting		22	Slotted hex head bolt, captive washer	Stainless steel	
10	Piston packing	G2 Nitrile rubber		23	Switch holder	Aluminum alloy	Alodine treatment
		G3 Fluoro rubber		24	Cylinder switch		
11	Piston gasket	G2 Nitrile rubber		25	Dust wiper	G2 Nitrile rubber, steel	
		G3 Fluoro rubber				G3 Fluoro rubber, steel	

Repair parts list

Bore size (mm)		Kit No.	Repair parts No.
ø40	G2	SCG-G2-40BK	3 6 7 10 13 16 25
	G3	SCG-G3-40BK	
ø50	G2	SCG-G2-50BK	
	G3	SCG-G3-50BK	
ø63	G2	SCG-G2-63BK	
	G3	SCG-G3-63BK	
ø80	G2	SCG-G2-80BK	
	G3	SCG-G3-80BK	
ø100	G2	SCG-G2-100BK	
	G3	SCG-G3-100BK	

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

Material of mounting bracket

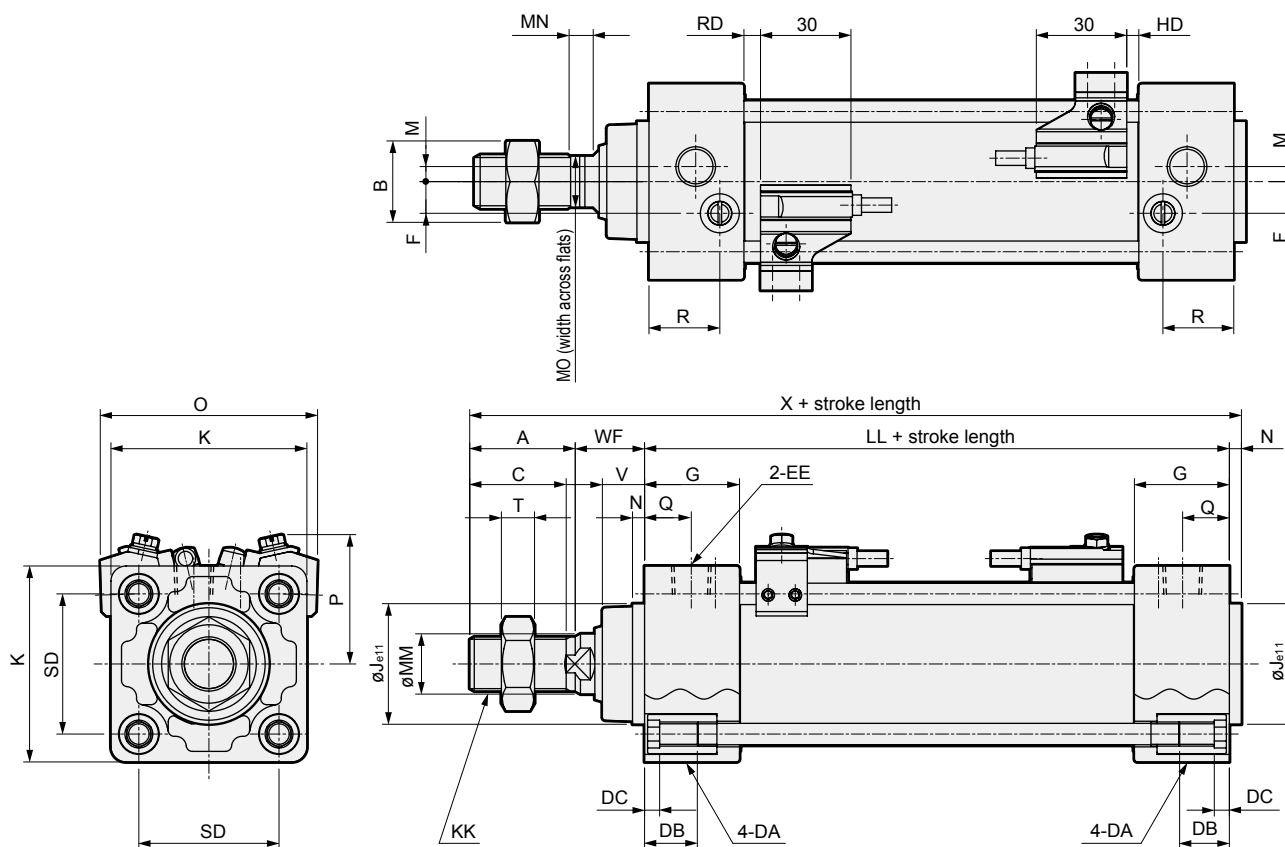
Mounting	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Note: Mounting bracket will be shipped with the product.
Trunnion (TA, TB, TC) are assembled at shipment.

Dimensions



● Basic (00)



*1: Mounting dimensions of each mounting form are the same as SCG (double acting/single rod). Refer to pages 364 to 371.

*2: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Basic (00) basic dimensions																
Bore size (mm)	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	LL	M	MM	MN	MO
ø40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14X1.5	84	4	16	5	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18X1.5	94	5	20	8	17
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18X1.5	94	9	20	8	17
ø80	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22X1.5	114	11.5	25	8	22
ø100	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26X1.5	114	17	30	8	27

Code	With switch											
Bore size (mm)	N	Q	R	SD	T	V	WF	X	O	P	RD	HD
ø40	4	14	19	38	8	13	21	139	66	41	4	4
ø50	4	15.5	23.5	46.5	11	14	23	156	72	43	5.5	4
ø63	4	16.5	21.5	56.5	11	14	23	156	83	48	5.5	4
ø80	4	19	28	72	13	20	32	190	104	57	11.5	5
ø100	4	19	28	89	16	20	32	190	121	63	11	5.5



Tie rod cylinder Double acting/anti-spatter adherence

SCG-G4 Series

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

JIS symbol



Specifications

Item		SCG-G4					
Bore size mm		ø32	ø40	ø50	ø63	ø80	ø100
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure MPa		1.0 (≈150 psi, 10 bar)					
Min. working pressure MPa		0.1 (≈15 psi, 1 bar)					
Proof pressure MPa		1.6 (≈230 psi, 16 bar)					
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)					
Port size		Rc1/8	Rc1/4		Rc3/8		Rc1/2
Stroke	With rubber cushion	+1.4 0 (to 1000), +1.8 0 (1001 to 1500)					
tolerance mm	With air cushion	+1.0 0 (to 360), +1.4 0 (361 to 1000), +1.8 0 (1001 to 1500)					
Working piston speed mm/s		50 to 1000 (Operate within the allowable absorbed energy.)					
Cushion		Either air cushion or rubber cushion can be selected					
Effective air cushion length mm		8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)					
Allowable	With rubber cushion	0.5	0.9	1.6	1.6	3.3	5.8
absorbed energy J	With air cushion	2.5	3.7	8.0	14.4	25.4	45.6

Stroke length

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

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

*2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

Min. stroke with T2YD switch

Switch quantity	Different surface mounting				Same surface mounting				Center trunnion mounting				Rod side trunnion mounting	Head side trunnion mounting
	1	2	3	4	1	2	3	4	1	2	3	4	No position detection at rod side stroke end.	No position detection at head side stroke end.
Bore size (mm)	1	2	3	4	1	2	3	4	1	2	3	4	1	1
$\phi 32$	6	11	22	33	6	62	92	123	86	86	177	177	38	38
$\phi 40$	6	11	22	33	6	62	92	123	91	91	182	182	43	43
$\phi 50$	6	12	24	36	6	12	24	36	93	93	93	93	42	43
$\phi 63$	6	12	24	36	6	12	24	36	99	99	99	99	48	49
$\phi 80$	7	13	25	38	7	13	25	38	110	110	110	110	48	54
$\phi 100$	7	13	26	39	7	13	26	39	115	115	115	115	54	60

*1: When the stroke length is 15 mm or less, the two switches could turn ON at the same time. In this case, adjust switch mounting positions to be as far apart as possible.

Switch specifications

- Strong magnetic field proof

Item	Proximity 2-wire		
	T2YD	T2YDT	
Applications	Dedicated for programmable controller		
Indicator lamp	Red/green LED (Lit when ON)		
Load voltage	24 DC ±10%		
Load current	5 to 20 mA		
Internal voltage drop	6V or less		
Leakage current	1.0 mA or less		
Weight	g	1 m:61	3 m:166 5 m:272

*1: This switch cannot be used in DC magnetic field.

Weight table

(Unit: kg)

Bore size (mm)	Product weight for 0 mm stroke length						Stroke: Added weight/50 mm	Switch weight (per 1 pc)	Switch mounting bracket	Accessory weight	
	Basic (00)	Foot (LB)	Flange (FA, FB)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion (TA/TB/TC)				I	Y
ø32	0.51	0.62	0.73	0.66	0.69	0.68	0.12	Refer to the weight in the switch specifications.	0.024	0.07	0.10
ø40	0.68	0.82	0.96	0.86	0.86	1.02	0.17		0.024	0.07	0.13
ø50	1.16	1.32	1.64	1.56	1.57	1.64	0.23		0.022	0.20	0.30
ø63	1.42	1.76	2.18	1.97	1.99	2.29	0.25		0.022	0.20	0.30
ø80	2.69	3.12	4.26	3.96	3.96	4.18	0.40		0.026	0.52	0.94
ø100	3.80	4.66	6.12	5.52	5.55	6.37	0.51		0.024	0.48	0.92

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø32	Push	80.4	1.21×10^2	1.61×10^2	2.41×10^2	3.22×10^2	4.02×10^2	4.83×10^2	5.63×10^2	6.43×10^2	7.24×10^2	8.04×10^2
	Pull	69.1	1.04×10^2	1.38×10^2	2.07×10^2	2.76×10^2	3.46×10^2	4.15×10^2	4.84×10^2	5.53×10^2	6.22×10^2	6.91×10^2
ø40	Push	1.26×10^2	1.88×10^2	2.51×10^2	3.77×10^2	5.03×10^2	6.28×10^2	7.54×10^2	8.80×10^2	1.01×10^3	1.13×10^3	1.26×10^3
	Pull	1.06×10^2	1.58×10^2	2.11×10^2	3.17×10^2	4.22×10^2	5.28×10^2	6.33×10^2	7.39×10^2	8.44×10^2	9.50×10^2	1.06×10^3
ø50	Push	1.96×10^2	2.95×10^2	3.93×10^2	5.89×10^2	7.85×10^2	9.82×10^2	1.18×10^3	1.37×10^3	1.57×10^3	1.77×10^3	1.96×10^3
	Pull	1.65×10^2	2.47×10^2	3.30×10^2	4.95×10^2	6.60×10^2	8.25×10^2	9.90×10^2	1.15×10^3	1.32×10^3	1.48×10^3	1.65×10^3
ø63	Push	3.12×10^2	4.68×10^2	6.23×10^2	9.35×10^2	1.25×10^3	1.56×10^3	1.87×10^3	2.18×10^3	2.49×10^3	2.81×10^3	3.12×10^3
	Pull	2.80×10^2	4.20×10^2	5.61×10^2	8.41×10^2	1.12×10^3	1.40×10^3	1.68×10^3	1.96×10^3	2.24×10^3	2.52×10^3	2.80×10^3
ø80	Push	5.03×10^2	7.54×10^2	1.01×10^3	1.51×10^3	2.01×10^3	2.51×10^3	3.02×10^3	3.52×10^3	4.02×10^3	4.52×10^3	5.03×10^3
	Pull	4.54×10^2	6.80×10^2	9.07×10^2	1.36×10^3	1.81×10^3	2.27×10^3	2.72×10^3	3.17×10^3	3.63×10^3	4.08×10^3	4.54×10^3
ø100	Push	7.85×10^2	1.18×10^3	1.57×10^3	2.36×10^3	3.14×10^3	3.93×10^3	4.71×10^3	5.50×10^3	6.28×10^3	7.07×10^3	7.85×10^3
	Pull	7.15×10^2	1.07×10^3	1.43×10^3	2.14×10^3	2.86×10^3	3.57×10^3	4.29×10^3	5.00×10^3	5.72×10^3	6.43×10^3	7.15×10^3

SCG-G4 Series

How to order

Without switch (built-in magnet for switch)

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

With switch (built-in magnet for switch)

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

Model No.

A Mounting
*1

B Bore size

C Port thread

D Cushion

E Stroke length

F Switch model No.

G Switch quantity
*3

H Option

I Accessory
*4

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped with the product.
(Trunnion are assembled at shipment.)

*2 : Refer to page 430 for the min. stroke length with switch.

*3 : When selecting TA or TB as mounting, the number of switches is limited to "H" (1 on head side) for TA, and "R" (1 on rod side) for TB.

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

[Example of model No.]

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

Model: Tie rod cylinder Double acting/anti-spatter adherence

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : With two-sided air cushion
- E** Stroke length : 100 mm
- F** Switch model No. : Proximity T2YD switch, lead wire 1 m
- G** Switch quantity : 2
- H** Option : Piston rod material (stainless steel)
- I** Accessory : Rod eye (included product)

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
CA	Eye bracket
CB	Clevis bracket (pin and split pin included)
TA	Rod side trunnion
TB	Head side trunnion
TC	Intermediate trunnion

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

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

D Cushion	
B	Two-sided air cushion (basic)
D	Two-sided rubber cushion

Note: The rubber cushion has a longer total length than the air cushion.

E Stroke length (mm)			
Bore size	Stroke length *2	Available stroke length	Custom stroke length
ø32	1 to 600	700	In 1 mm increments
ø40		800	
ø50		1200	
ø63			
ø80	1 to 700	1400	
ø100	1 to 800	1500	

F Switch model No.			
Lead wire	Contact	Display	Lead wire
T2YD*	Proximity	2-color display AC magnetic field	2-wire
T2YDT*			

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

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Option	
M	Piston rod material (stainless steel)

I Accessory	
I	Rod eye
Y	Rod clevis (pin and split pin included)
B1	Eye bracket
B2	Clevis bracket (pin and split pin included)
B3	Eye bracket
B4	Trunnion No. 2 bracket (2 pcs./set)

How to order switch

- Switch body + mounting bracket set

SCG - T2YD - 40

Switch model No.

(Item ⑤ on page 432)

Bore size

(Item ⑥ on page 432)

- Switch body only

SW - T2YD

Switch model No.

(Item ⑤ on page 432)

Note: Contact CKD when using an environment-friendly T switch.

- Switch mounting bracket set

SCG - T - 40

Mounting bracket

Bore size

(Item ⑥ on page 432)

How to order mounting bracket

Bore size (mm)	ø32	ø40	ø50	ø63	ø80	ø100
Mounting bracket						
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB)	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-32	SCG-CA-40	SCG-CA-50	SCG-CA-63	SCG-CA-80	SCG-CA-100
Clevis bracket (CB)	SCG-CB-32	SCG-CB-40	SCG-CB-50	SCG-CB-63	SCG-CB-80	SCG-CB-100

*1: The foot mounting bracket (LB) is provided as 2 pcs./set.

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

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/IN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

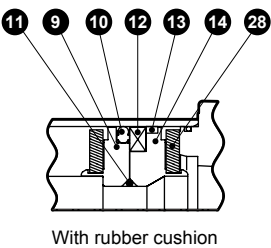
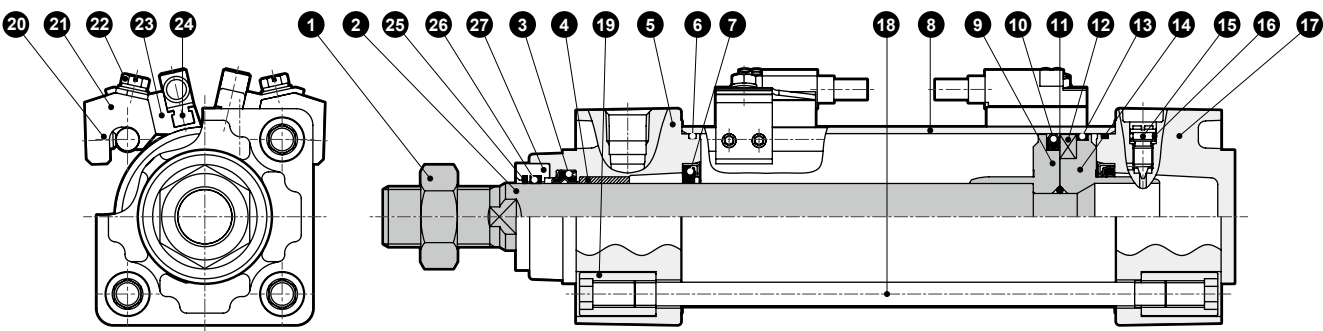
FJ

FK

Spd
Contr

Ending

Internal structure and parts list



No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickel plating	15	Cushion needle	Copper alloy	Nickel plating
2	Piston rod	Steel	Industrial chrome plating	16	Needle gasket	Nitrile rubber	
3	Rod packing	Nitrile rubber		17	Head cover	Aluminum alloy die-casting	Paint
4	Bush	Oil-impregnated bearing alloy		18	Tie rod	Steel	Zinc chromate treatment
5	Rod cover	Aluminum alloy die-casting	Paint	19	Round nut	Steel	Zinc chromate treatment
6	Cylinder gasket	Nitrile rubber		20	Hexagon socket set screw	Steel	Black finish
7	Cushion packing	Nitrile rubber, steel	With air cushion only	21	Switch mounting base	Aluminum alloy	
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	22	Slotted head hexagon head bolt with captive washer	Stainless steel	
9	Piston R	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		23	Switch holder	Aluminum alloy	
10	Piston packing	Nitrile rubber		24	Cylinder switch		
11	Piston gasket	Nitrile rubber		25	Coil scraper	Phosphor bronze	
12	Magnet	Plastic		26	Lube keeping structure	Special rubber	
13	Wear ring	Polyacetal resin		27	Adapter	Stainless steel	
14	Piston H	ø32, ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting		28	Cushion rubber	Urethane rubber	With rubber cushion only

Material of mounting bracket

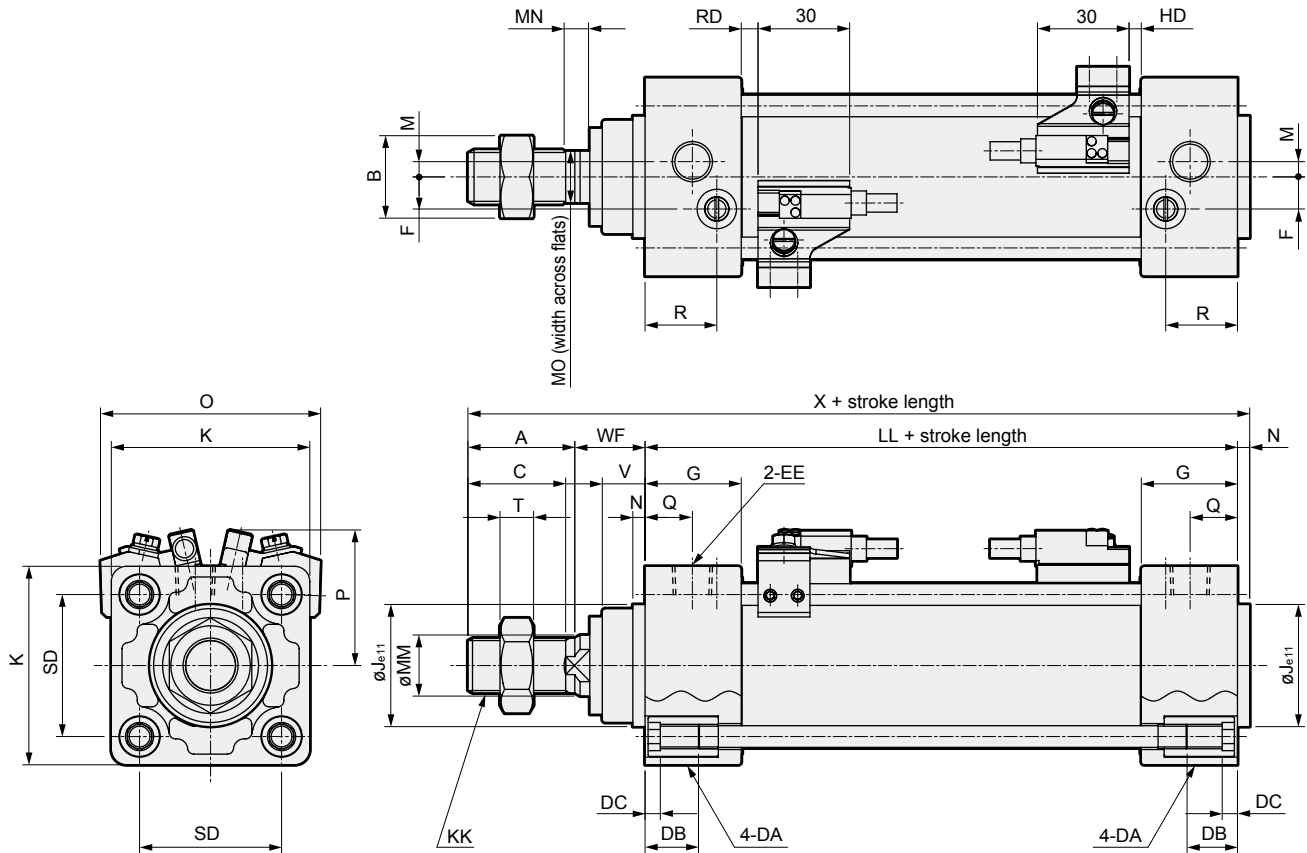
Mounting	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

Note: Mounting bracket will be shipped with the product.
Trunnion (TA, TB, TC) are assembled at shipment.

Dimensions



● Basic (00)



*1: Dimensions in () are for the rubber cushion.

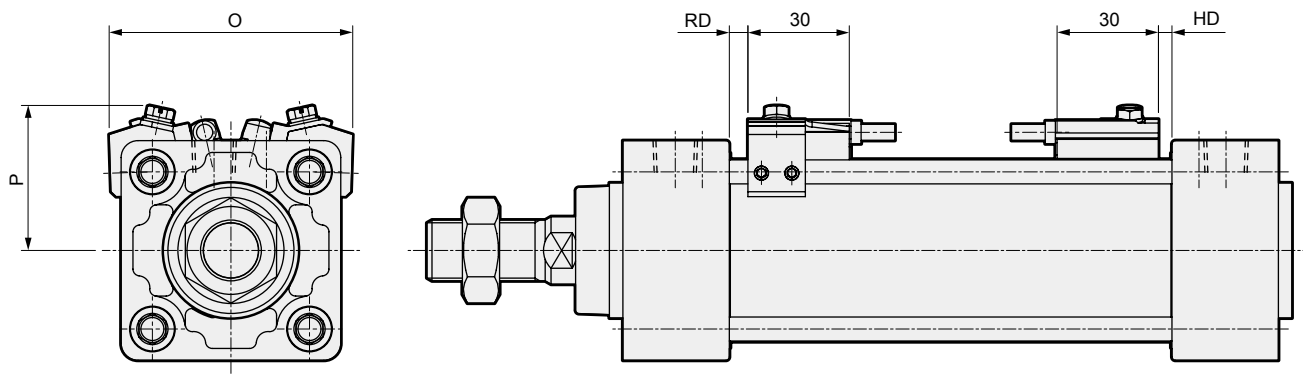
*2: Mounting dimensions of each mounting form are the same as SCG (double acting/single rod). Refer to pages 364 to 371.

*3: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Basic (00) basic dimensions																
	A	B	C	DA	DB	DC	EE	F	G	J	K	KK	*1 LL	M	MM	MN	MO
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	30	46	M10X1.25	84 (90)	4	12	5.5	10
ø40	30	22	27	M6	16	5	Rc1/4	9	27	35	52	M14X1.5	84 (90)	4	16	5	14
ø50	35	27	32	M8	16	5	Rc1/4	10.5	31.5	40	65	M18X1.5	94 (102)	5	20	8	17
ø63	35	27	32	M8	16	5	Rc3/8	12	31.5	45	75	M18X1.5	94 (102)	9	20	8	17
ø80	40	32	37	M10	16	5	Rc3/8	14	38	45	95	M22X1.5	114 (124)	11.5	25	8	22
ø100	40	41	37	M10	16	5	Rc1/2	15	38	55	114	M26X1.5	114 (124)	17	30	8	27
Code												With switch					
	N	Q	R	SD	T	V	WF	*1 X	O	P	*1 RD	*1 HD					
ø32	4	13	19	32.5	6	13	25	135 (141)	59	38	4 (7)	4 (7)					
ø40	4	14	19	38	8	13	21	139 (145)	66	41	4 (7)	4 (7)					
ø50	4	15.5	23.5	46.5	11	14	23	156 (164)	72	44	5.5 (9.5)	4 (8)					
ø63	4	16.5	21.5	56.5	11	14	23	156 (164)	83	50	5.5 (9.5)	4 (8)					
ø80	4	19	28	72	13	20	32	190 (200)	104	59	11.5 (16.5)	5 (10)					
ø100	4	19	28	89	16	20	32	190 (200)	121	67	11 (16)	5.5 (10.5)					

SCG Series common dimensions Dimensions with switch

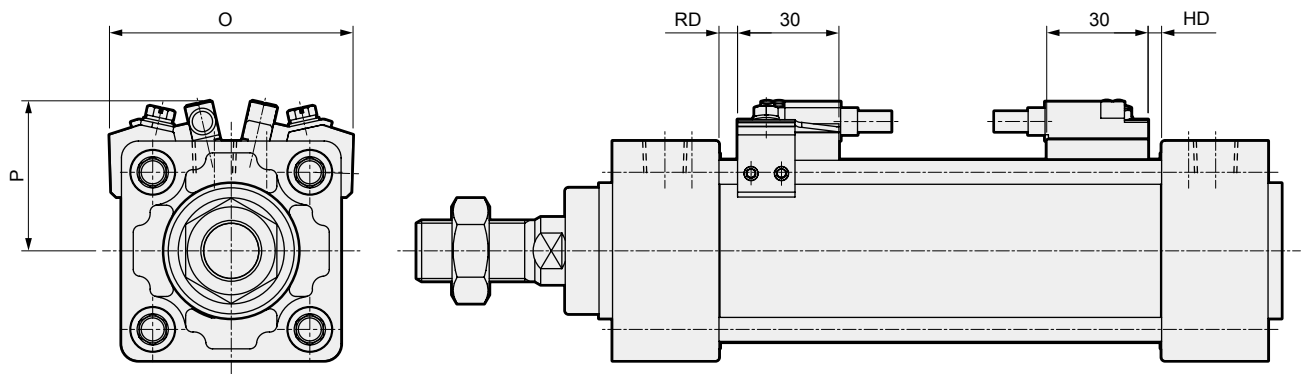
● With T2Y, T3Y, T2J, T8 switches



Code	With T2Y, T3Y, T2J, T8 switches						
	Bore size (mm)	O	P	T2Y, T3Y, T2J		T8	
				RD	HD	RD	HD
ø32	59	38	4 (7)	4 (7)	0 (2)	0 (2)	
ø40	66	41	4 (7)	4 (7)	0 (2)	0 (2)	
ø50	72	43	5.5 (9.5)	4 (8)	0.5 (4.5)	0 (3)	
ø63	83	48	5.5 (9.5)	4 (8)	0.5 (4.5)	0 (3)	
ø80	104	57	11.5 (16.5)	5 (10)	6.5 (11.5)	0 (5)	
ø100	121	63	11 (16)	5.5 (10.5)	6 (11)	0.5 (5.5)	

*1: Dimensions in () are for the rubber cushion.

● With T1, T2YD, T2YDT switches



Code	With T1, T2YD, T2YDT switches			
	Bore size (mm)	O	P	RD
MRL2	ø32	59	38	4 (7)
MRG2	ø40	66	41	4 (7)
SM-25	ø50	72	44	5.5 (9.5)
ShkAbs	ø63	83	50	5.5 (9.5)
	ø80	104	57	11.5 (16.5)
FJ	ø100	121	64	11 (16)

*1: Dimensions in () are for the rubber cushion.