

SCG

Tie rod cylinder

Standard

ø32/ø40/ø50/ø63/ø80/ø100

Overview

Standard cylinders with medium bore size (ø32 to ø100). The covers fixed with tie rod on both sides have enhanced durability. Suitable for all applications with reliable performance and a wide variety of options.

Features

Tie rod general purpose cylinder
The air supply/exhaust ports and cushion needle are positioned on the same surface. Tie rod general purpose cylinder with easy mounting and adjustment.

Compact switch equipped
T-switch is smaller than conventional. An additional switch can be mounted with the built-in magnet included as standard.

Wide variety of options and variations
Plentiful variations including position locking, anti-rotation, and heavy duty scraper are available. Designing the layout is simple since the functions relying on a built-in scraper, such as the anti-spatter adherence type and rubber scraper, have the same dimensions as those of the standard.



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The cylinder switches T2YH, T2YV, T3YH, and T3YV are scheduled for end of production at the end of December 2023.

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

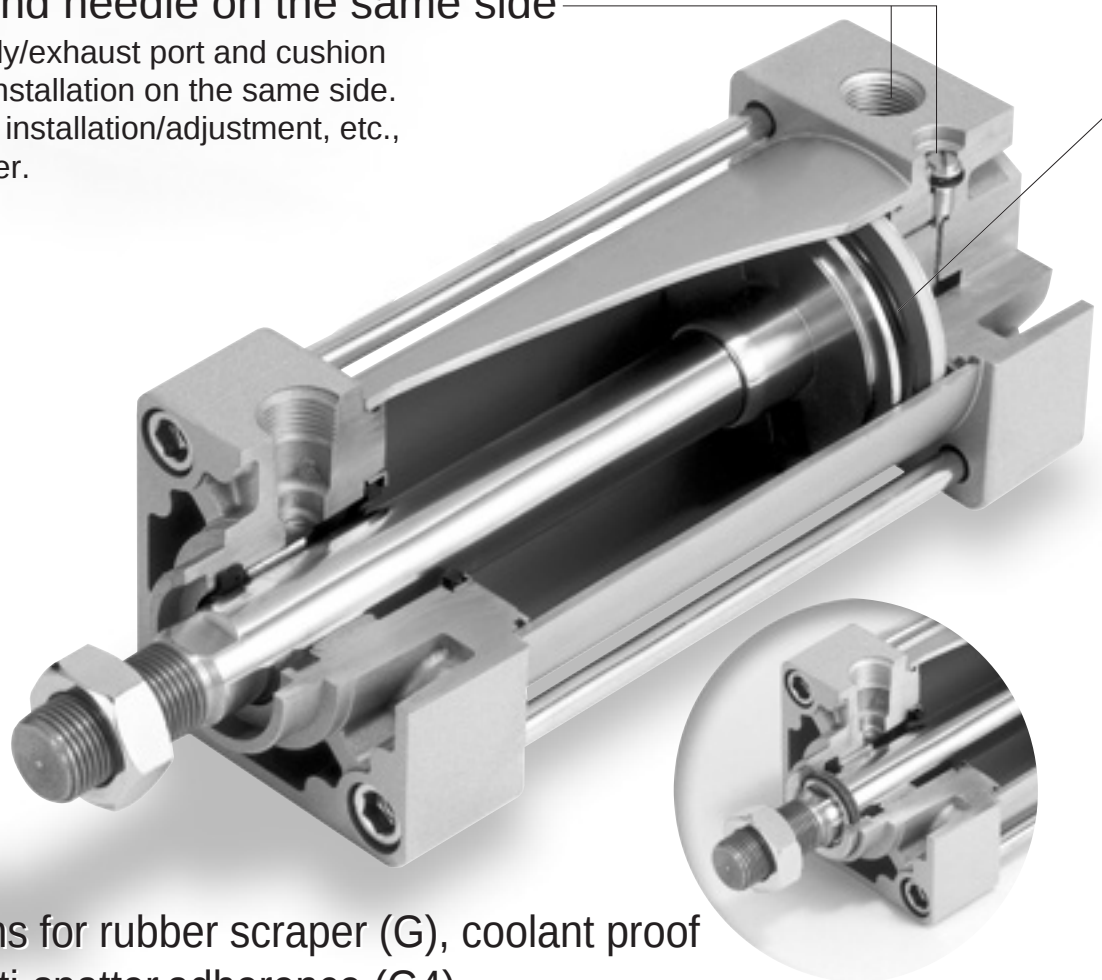
New eco-friendly

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
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SRT3
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New easy-to-use SCG Series (ø32 to ø100)

Port and needle on the same side

Air supply/exhaust port and cushion
needle installation on the same side.
Cylinder installation/adjustment, etc.,
are easier.



Same dimensions for rubber scraper (G), coolant proof
(G2, G3) and anti-spatter adherence (G4)

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

RoHS

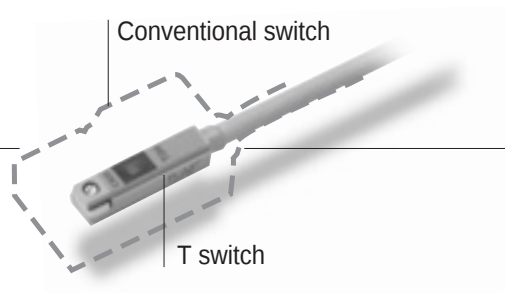
Directive-compatible
Tie rod Cylinder

SCG Series

guided cylinder

Compact switch

T switch is smaller than the conventional switch, eliminating switch protrusion in installation and saving space.



Standard magnets

Switches can be installed on all products.

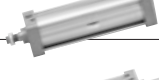
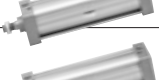
Space-saving

Less installation space with cylinder up to 40 mm shorter than the conventional cylinder.

White

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

SCG Series Products

Model variation			Bore size						Stroke length (mm)
			ø32	ø40	ø50	ø63	ø80	ø100	25 to 500
Standard	SCG		●	●	●	●	●	●	●
Position locking	SCG-Q		●	●	●	●	●	●	●
Low speed	SCG-O		●	●	●	●	●	●	●
Low friction	SCG-U		●	●	●	●	●	●	●
Double rod	SCG-D		●	●	●	●	●	●	●
Non-rotating	SCG-M		●	●	●	●	●	●	●
Rubber scraper	SCG-G		●	●	●	●	●	●	●
Coolant proof	SCG-G2,G3		●	●	●	●	●	●	●
Anti-spatter adherence	SCG-G4		●	●	●	●	●	●	●

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

Series variation



Tie rod cylinder SCG Series

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CMK2
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SCM
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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

Variation	Model No. JIS symbol	Bore size (mm)	Standard stroke (mm)												(mm) Min. stroke	(mm) Max. stroke	
			25	50	75	100	150	200	250	300	350	400	450	500			
Double acting/ single rod	SCG 	ø32												1	600		
		ø40													700		
		ø50/ø63	●	●	●	●	●	●	●	●	●	●	●		800		
		ø80															
Double acting/ position locking	SCG-Q 	ø32												5	600		
		ø40													700		
		ø50/ø63	●	●	●	●	●	●	●	●	●	●	●		800		
		ø80															
Double acting/ low speed	SCG-O 	ø32 to ø63												1	600		
		ø80	●	●	●	●	●	●	●	●	●	●	●		700		
		ø100													800		
Double acting/ low friction	SCG-U 	ø32 to ø63												1	600		
		ø80	●	●	●	●	●	●	●	●	●	●	●		700		
		ø100													800		
Double acting/ double rod	SCG-D 	ø32 to ø63												1	600		
		ø80	●	●	●	●	●	●	●	●	●	●	●		700		
		ø100													800		
Double acting/ rotation-stop	SCG-M 	ø32 to ø63	●	●	●	●	●	●	●	●	●	●	●	1	600		
Double acting/ rubber scraper	SCG-G 	ø32												1	600		
		ø40													700		
		ø50/ø63	●	●	●	●	●	●	●	●	●	●	●		800		
		ø80															
Double acting/ coolant proof	SCG-G2, G3 	ø40												1	600		
		ø50/ø63	●	●	●	●	●	●	●	●	●	●	●		700		
		ø80													800		
		ø100															
Double acting/ anti-spatter adherence	SCG-G4 	ø32												1	600		
		ø40													700		
		ø50/ø63	●	●	●	●	●	●	●	●	●	●	●		800		
		ø80															
		ø100															

●: Standard, ◎: Option, ○: Made to order, ■: Not available

	Available stroke (mm)	Custom stroke(per mm)	Mounting									Cushion			Option			Accessory							Switch	Page
			Basic	Axial foot	Rod side flange	Head side flange	Eye bracket	Clevis bracket	Rod side trunnion	Head side trunnion	Intermediate trunnion	Without cushion	Two-sided air cushion	Two-sided rubber cushion	Bellows (100°C)	Piston rod material stainless steel	Copper and PTFE free	Rod eye	Rod clevis	Eye bracket	Clevis bracket	Eye bracket	Trunnion No. 2 bracket			
			00	LB	FA	FB	CA	CB	TA	TB	TC	N	B	D	J	M	P6	I	Y	B1	B2	B3	B4			
	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●		●	○	○	○	○	○	○	○	○	○	○	○	○	○	358
	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●		●			○	○	○	○	○	○	○	○	○	○	○	374
	600 700 800	1	●	●	●	●	●	●	●	●	●	Contact CKD for details.		○	○	○	○	○	○	○	○	○	○	○	○	396
	600 700 800	1	●	●	●	●	●	●	●	●	●	Contact CKD for details.		○		○	○	○	○	○	○	○	○	○	○	402
	600 700 800	1	●	●	●	●			●	●	●		●	○	○	○	○	○				○	○	○	○	406
	600	1	●	●	●	●	●	●	●	●	●		●	○	○			○	○	○	○	○	○	○	○	412
	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●	○		○	○	○	○	○	○	○	○	○	○	418
	800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●	Contact CKD for details.				○	○	○	○	○	○	○	○	424
	700 800 1200 1400 1500	1	●	●	●	●	●	●	●	●	●		●	○		○		○	○	○	○	○	○	○	○	430

SCP*3
CMK2
CMA2
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SSD2
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CAT
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FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

Variation and option combination selection table

- mark : Standard
- ◎ mark : Option
- mark : Available (made to order product)
- △ mark : Available depending on conditions (contact us)
- × mark : Not available

Category		Category	Variation										Port thread		Option				
			Double acting single rod	Rotation-stop	Position locking	Low speed	Low friction	Rubber scraper	Coolant proof scraper (NBR)	Coolant proof scraper (FKM)	Anti-spatter adherence		NPT	G		With bellows (polyolefin) *3	Stainless steel PR	Copper and PTFE free	Specify piston rod end form
			None	M	Q	O	U	G	G2	G3	G4		N	G		J	M	P6	N*
Variation	Double acting single rod	Blank											○	○	◎	◎	◎	○	
	Rotation-stop	M			×	×	×	×	×	×		○	○	◎	×	×	○		
	Position locking	Q				△	×	△	△	△		○	○	△	◎	◎	○		
	Low speed	O					×	×	×	×		○	○	*1	◎	×	○		
	Low friction	U						×	×	×		○	○	×	◎	×	○		
	Rubber scraper	G							×	×	×	○	○	○	○	○	○	○	
	Coolant proof scraper (NBR)	G2								×	×	○	○	*2	●	○	○	○	
	Coolant proof scraper (FKM)	G3									×	○	○	×	●	○	○	○	
	Anti-spatter adherence	G4										○	○	○	○	×	○		
Port thread																			
	NPT	N											×		○	○	○	○	
	G	G													○	○	○	○	
Option																			
	With bellows (polyolefin) *3	J														○	○	○	
	Piston rod material stainless steel	M																○	
	Copper and PTFE free	P6																	
Accessory	Specify piston rod end form	N*																	
	Cylinder switch	Listed separately	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎	
	Rod eye	I	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	△	
	Rod clevis	Y	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	△	
	Eye bracket	B1	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎	
	Clevis bracket	B2	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎	
	Eye bracket	B3	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎	
Trunnion No. 2 bracket	B4	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎		◎	◎	◎	◎		

Caution

*1: The min. starting pressure is larger due to the resistance of expansion and contraction of the bellows.

*2: Coolant may accumulate in the bellows in some conditions.

*3: ø32 material is neoprene.

MEMO

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

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Spd
Contr

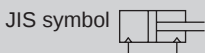
Ending



Tie rod cylinder Double acting/single rod

SCG Series

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



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

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

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

*2: If the max. stroke 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 is 500 mm for $\varnothing 32$ to $\varnothing 40$ bore size, 600 mm for $\varnothing 50$ to $\varnothing 63$, and 800 mm for $\varnothing 80$ to $\varnothing 100$.

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
$\varnothing 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\varnothing 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\varnothing 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\varnothing 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
$\varnothing 80$	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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
$\varnothing 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\varnothing 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\varnothing 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\varnothing 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
$\varnothing 80$	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire). T2YD does not have an L-shaped lead wire (V).

*2: When the stroke 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 LED/for AC magnetic field proof

Item	2-wire proximity		2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity	
	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	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)		No 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						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

No 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

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 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 : 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 (mm)			
Bore size	Stroke *2	Available stroke	Custom stroke
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		Indicator	Lead wire
			AC	DC		
TOH*	TOV*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T8H*	T8V*		●	●	1-color LED	
T1H*	T1V*	Proximity	●		1-color LED	2-wire
T2H*	T2V*			●		
T3H*	T3V*			●	1-color LED	3-wire
T3PH*	T3PV*			●		
T2WH*	T2WV*			●	2-color LED	2-wire
T2YH*	T2YV*			●		
T3WH*	T3WV*			●		3-wire
T3YH*	T3YV*			●		
T2YD*	-			●	2-color LED for AC magnetic field	2-wire
T2YDT*	-			●		
T2JH*	T2JV*			●	1-color LED 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 temp.	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 **F** on page 360)

Bore size
(Item **B** on page 360)

- Switch body only

SW - T0H

Switch model No.
(Item **F** on page 360)

- Switch mounting bracket set

SCG - T - 40

Mounting
bracket

Bore size
(Item **B** 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	1.21x10 ²	1.61x10 ²	2.41x10 ²	3.22x10 ²	4.02x10 ²	4.83x10 ²	5.63x10 ²	6.43x10 ²	7.24x10 ²	8.04x10 ²
	Pull	34.6	69.1	1.04x10 ²	1.38x10 ²	2.07x10 ²	2.76x10 ²	3.46x10 ²	4.15x10 ²	4.84x10 ²	5.53x10 ²	6.22x10 ²	6.91x10 ²
ø40	Push	62.8	1.26x10 ²	1.88x10 ²	2.51x10 ²	3.77x10 ²	5.03x10 ²	6.28x10 ²	7.54x10 ²	8.80x10 ²	1.01x10 ³	1.13x10 ³	1.26x10 ³
	Pull	52.8	1.06x10 ²	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²	8.44x10 ²	9.50x10 ²	1.06x10 ³
ø50	Push	98.2	1.96x10 ²	2.95x10 ²	3.93x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³	1.57x10 ³	1.77x10 ³	1.96x10 ³
	Pull	82.5	1.65x10 ²	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push	1.56x10 ²	3.12x10 ²	4.68x10 ²	6.23x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³	2.49x10 ³	2.81x10 ³	3.12x10 ³
	Pull	1.40x10 ²	2.80x10 ²	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 ³
ø80	Push	2.51x10 ²	5.03x10 ²	7.54x10 ²	1.01x10 ³	1.51x10 ³	2.01x10 ³	2.51x10 ³	3.02x10 ³	3.52x10 ³	4.02x10 ³	4.52x10 ³	5.03x10 ³
	Pull	2.27x10 ²	4.54x10 ²	6.80x10 ²	9.07x10 ²	1.36x10 ³	1.81x10 ³	2.27x10 ³	2.72x10 ³	3.17x10 ³	3.63x10 ³	4.08x10 ³	4.54x10 ³
ø100	Push	3.93x10 ²	7.85x10 ²	1.18x10 ³	1.57x10 ³	2.36x10 ³	3.14x10 ³	3.93x10 ³	4.71x10 ³	5.50x10 ³	6.28x10 ³	7.07x10 ³	7.85x10 ³
	Pull	3.57x10 ²	7.15x10 ²	1.07x10 ³	1.43x10 ³	2.14x10 ³	2.86x10 ³	3.57x10 ³	4.29x10 ³	5.00x10 ³	5.72x10 ³	6.43x10 ³	7.15x10 ³

SCP*3

Internal structure and parts list

CMK2

With air cushion

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVPIN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

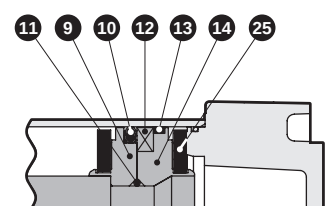
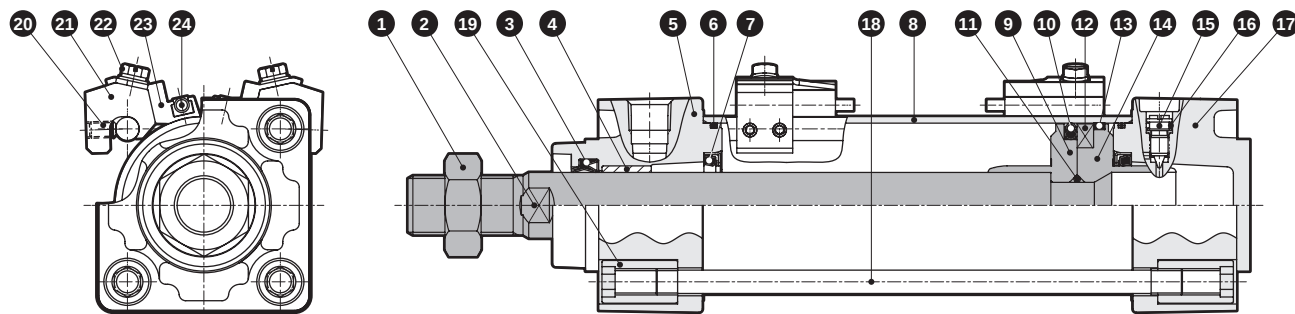
MSD/
MSDG

FC*

STK

SRL3

SRG3



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	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-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

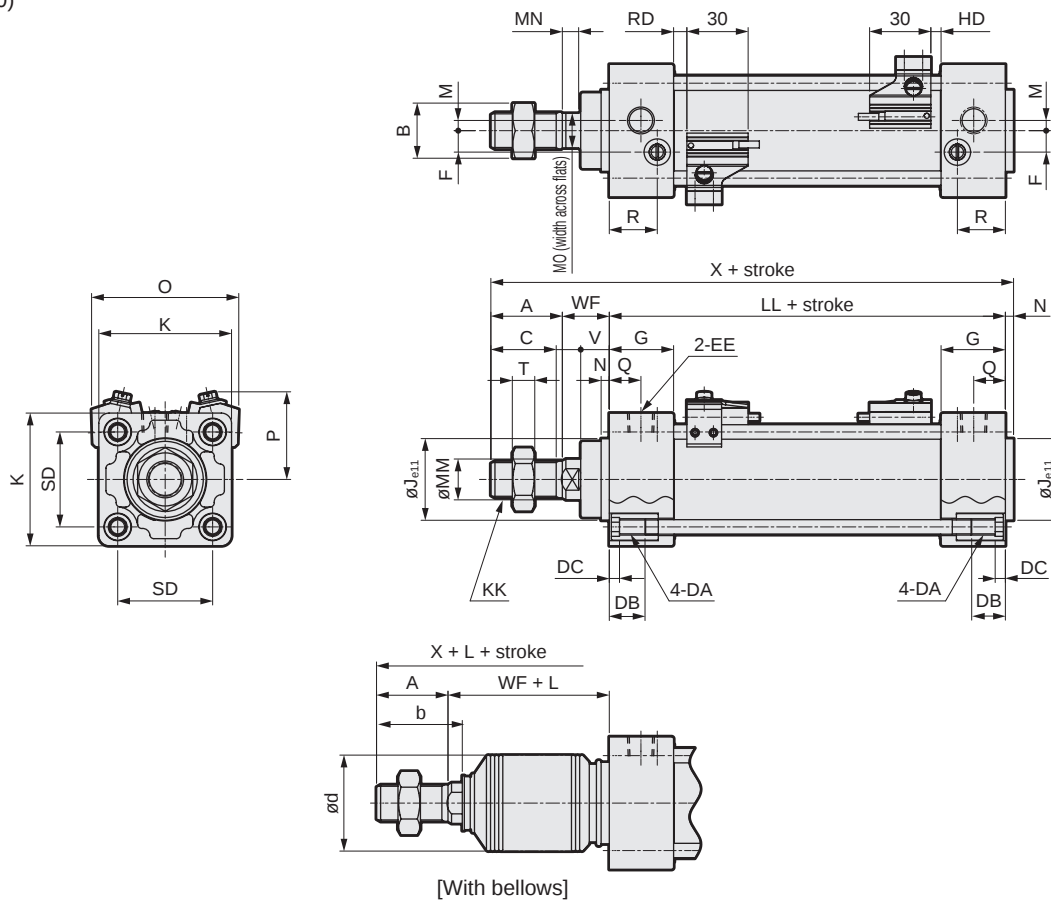
Note: Mounting bracket will be shipped with the product.

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)



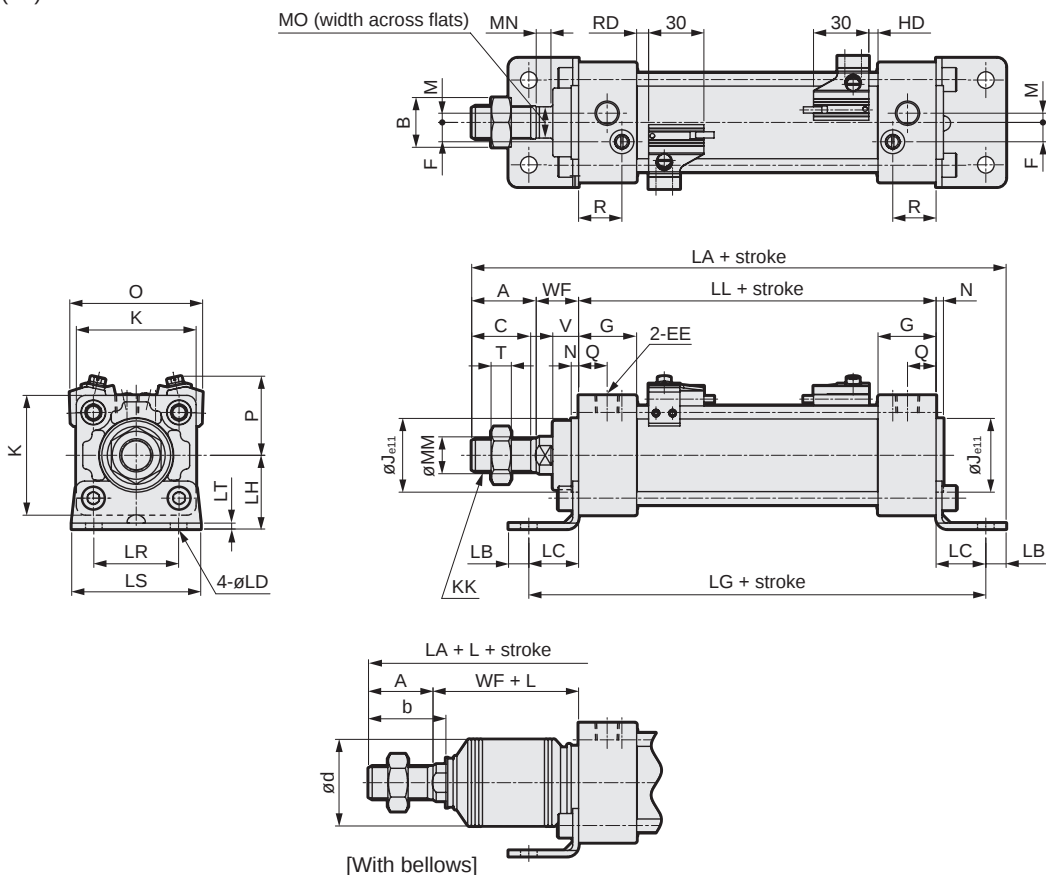
*1: Dimensions in () are for the rubber cushion.

*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		

- 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.

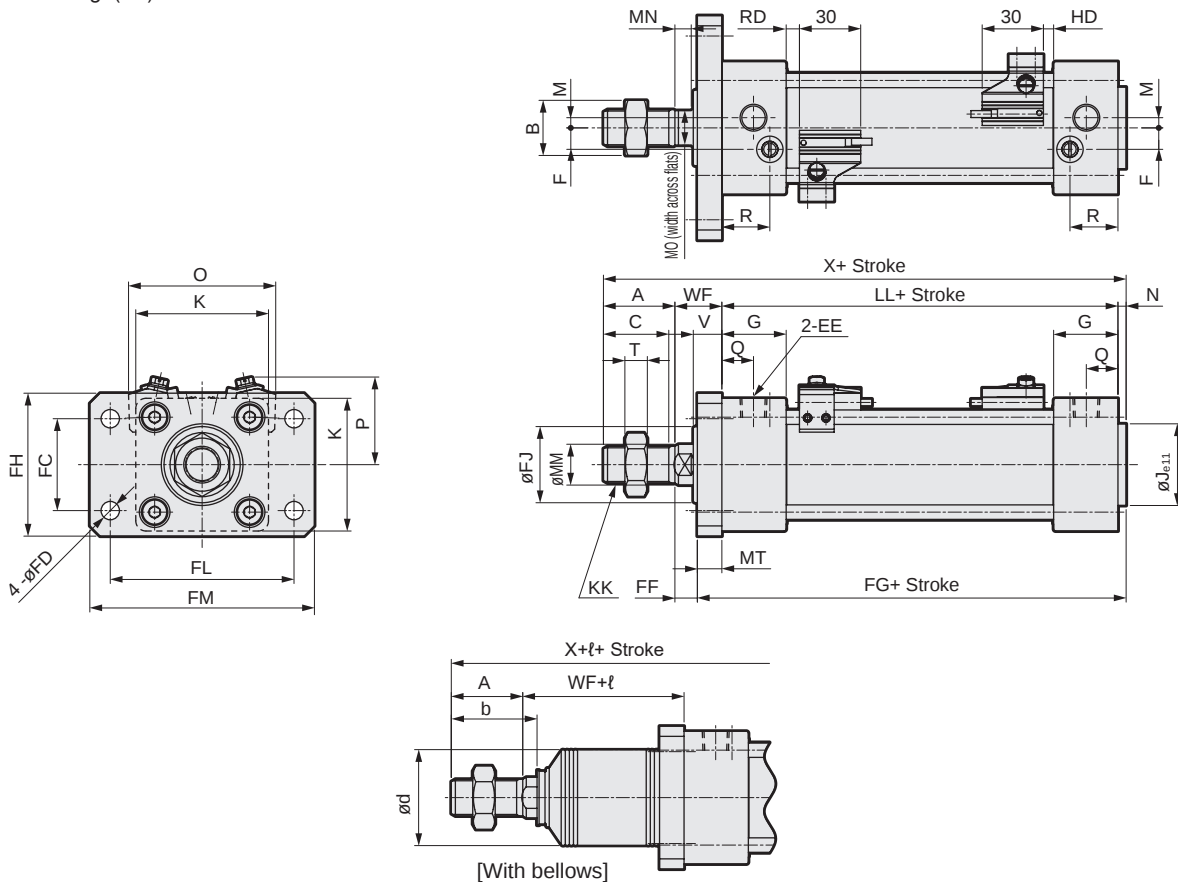
*3: For the dimensions of the accessories, refer to pages 372 and 373.

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	27	
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.

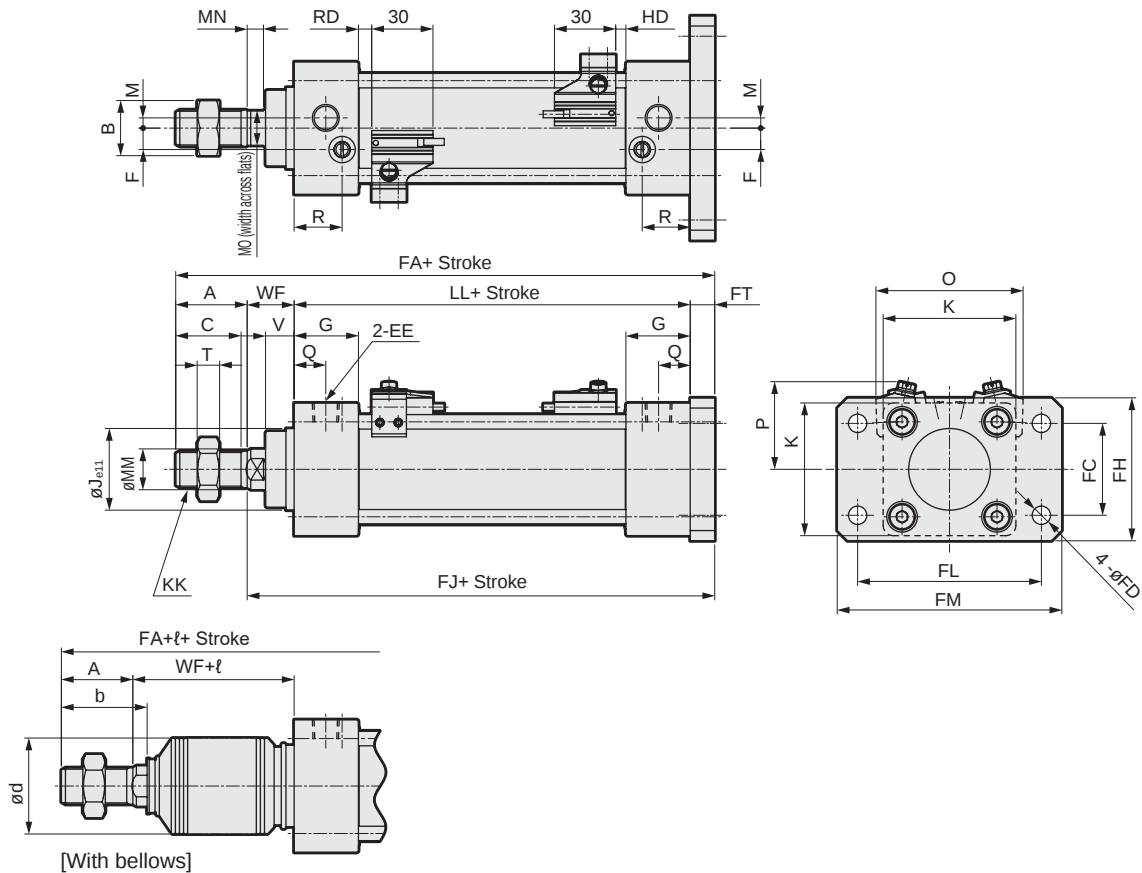
*3: For the dimensions of the accessories, refer to pages 372 and 373.

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 dimensions										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	29	10	50	64	79	59	38	5(8)	5(8)	7.5 (10.5)	7.5 (10.5)						
ø40	36	9	11	98	30	10	55	72	90	66	41	5(8)	5(8)	7.5 (10.5)	7.5 (10.5)						
ø50	45	9	11	110	38	12	70	90	110	72	43	6.5 (10.5)	5(9)	9(13)	7(11)						
ø63	50	9	11	110	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.

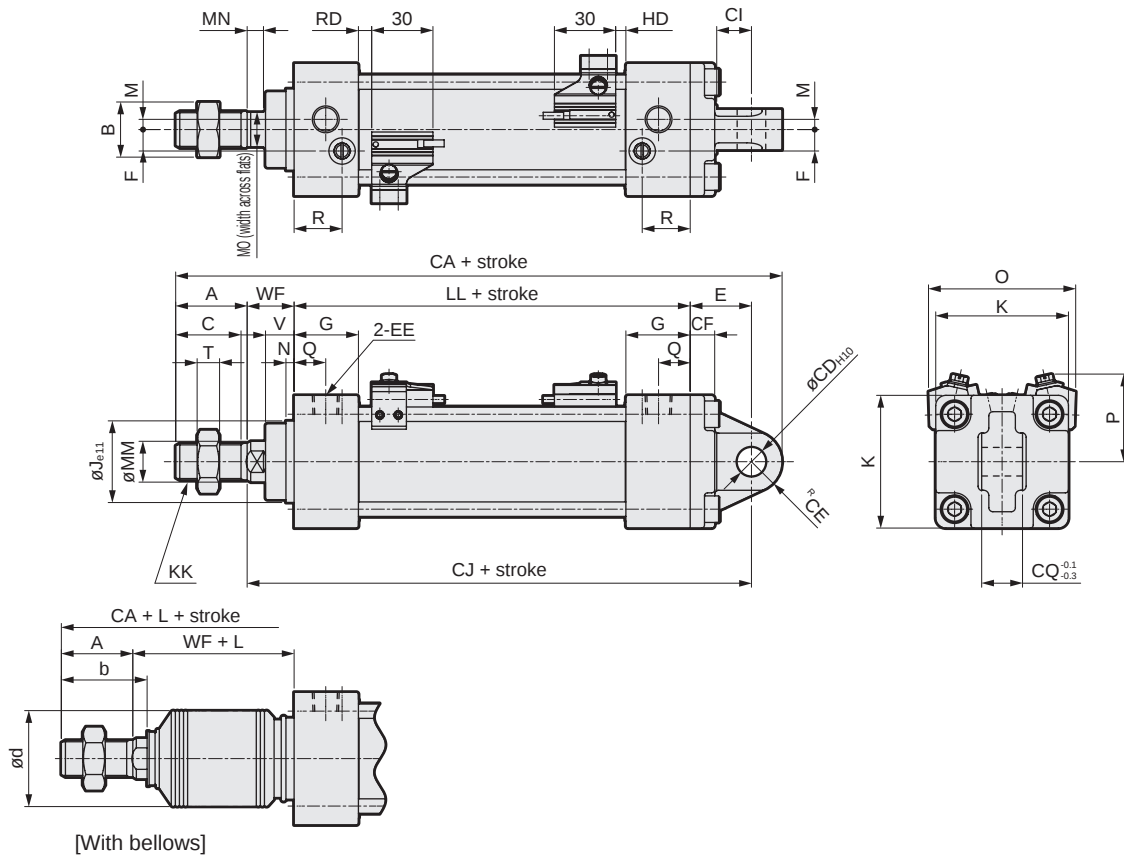
*3: For the dimensions of the accessories, refer to pages 372 and 373.

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 dimensions									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.

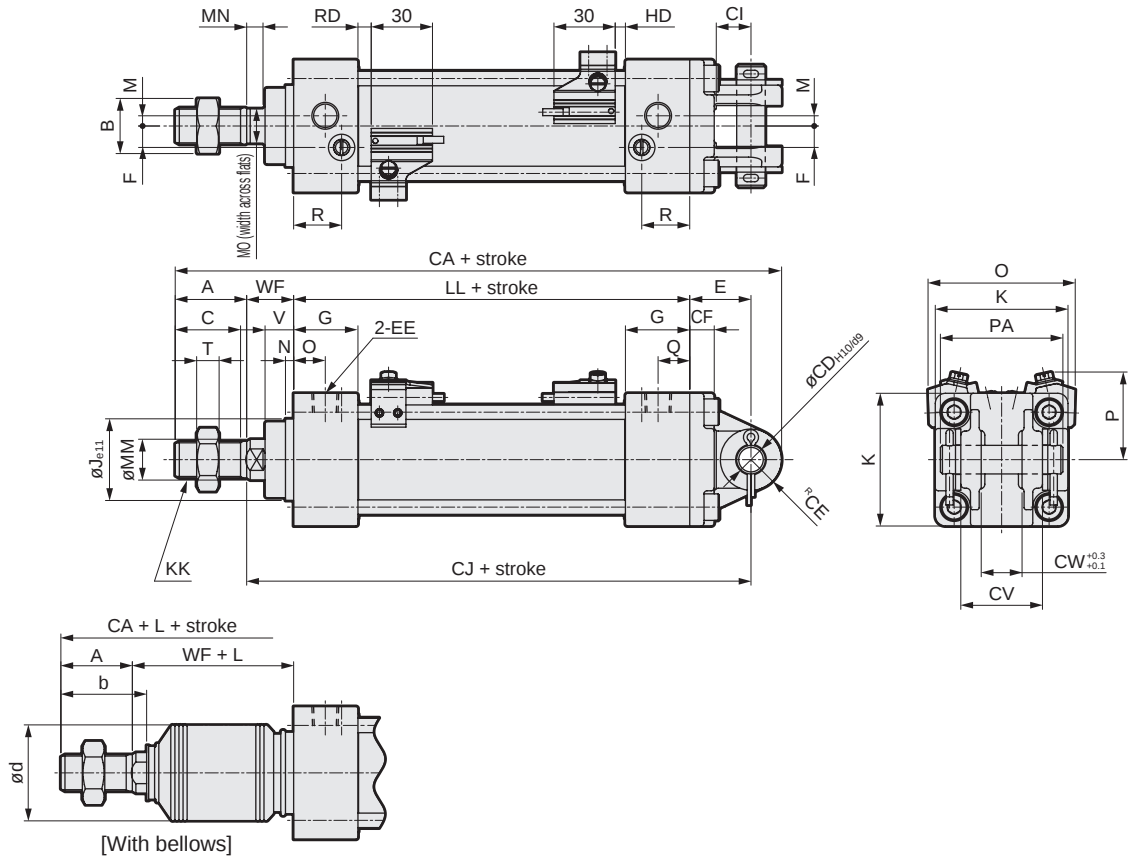
*3: For the dimensions of the accessories, refer to pages 372 and 373.

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.

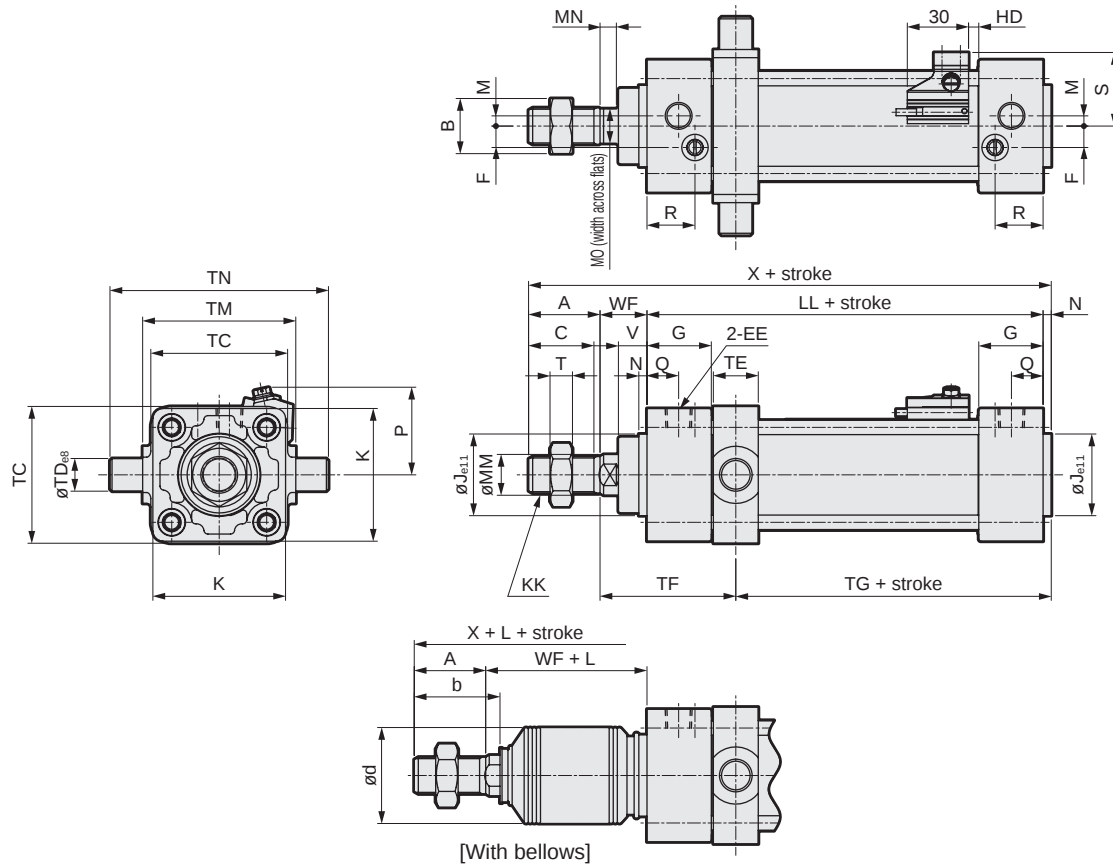
*3: For the dimensions of the accessories, refer to pages 372 and 373.

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.

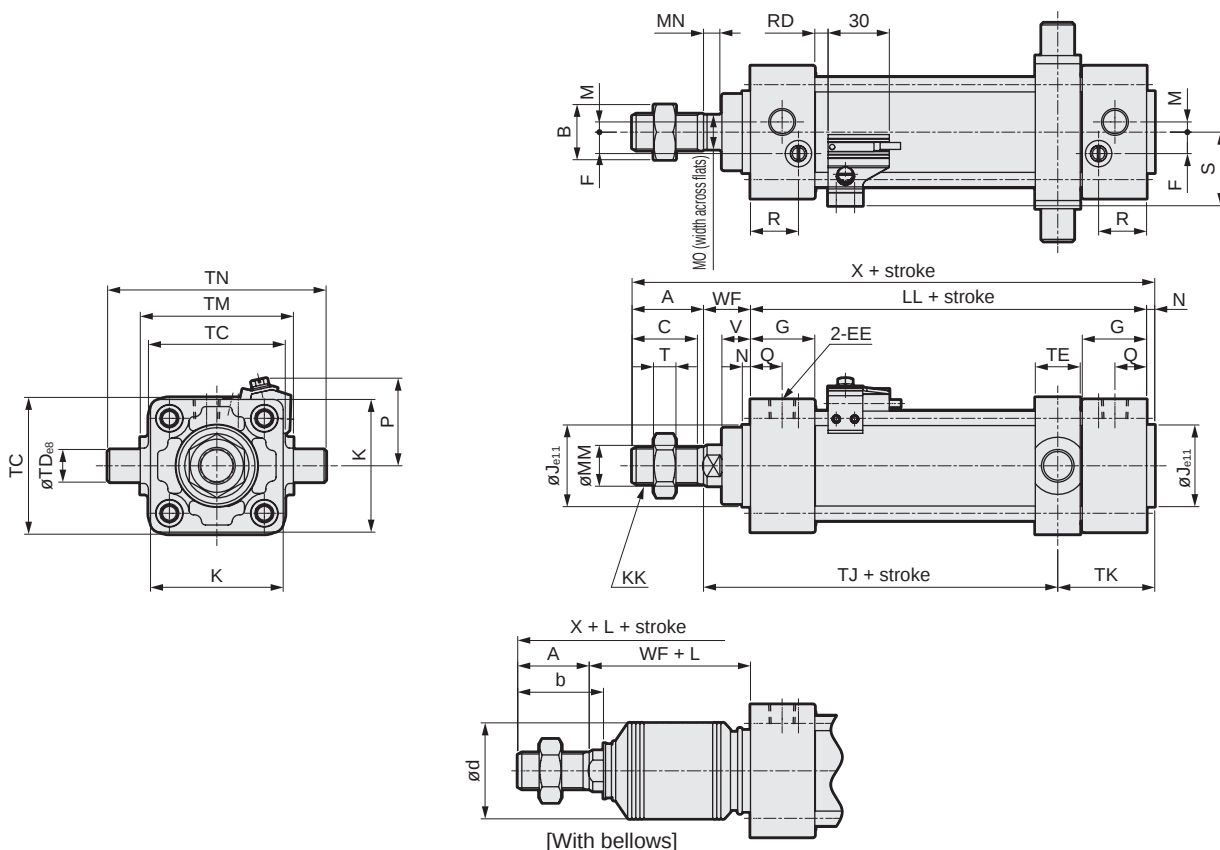
*4: For the dimensions of the accessories, refer to pages 372 and 373.

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.

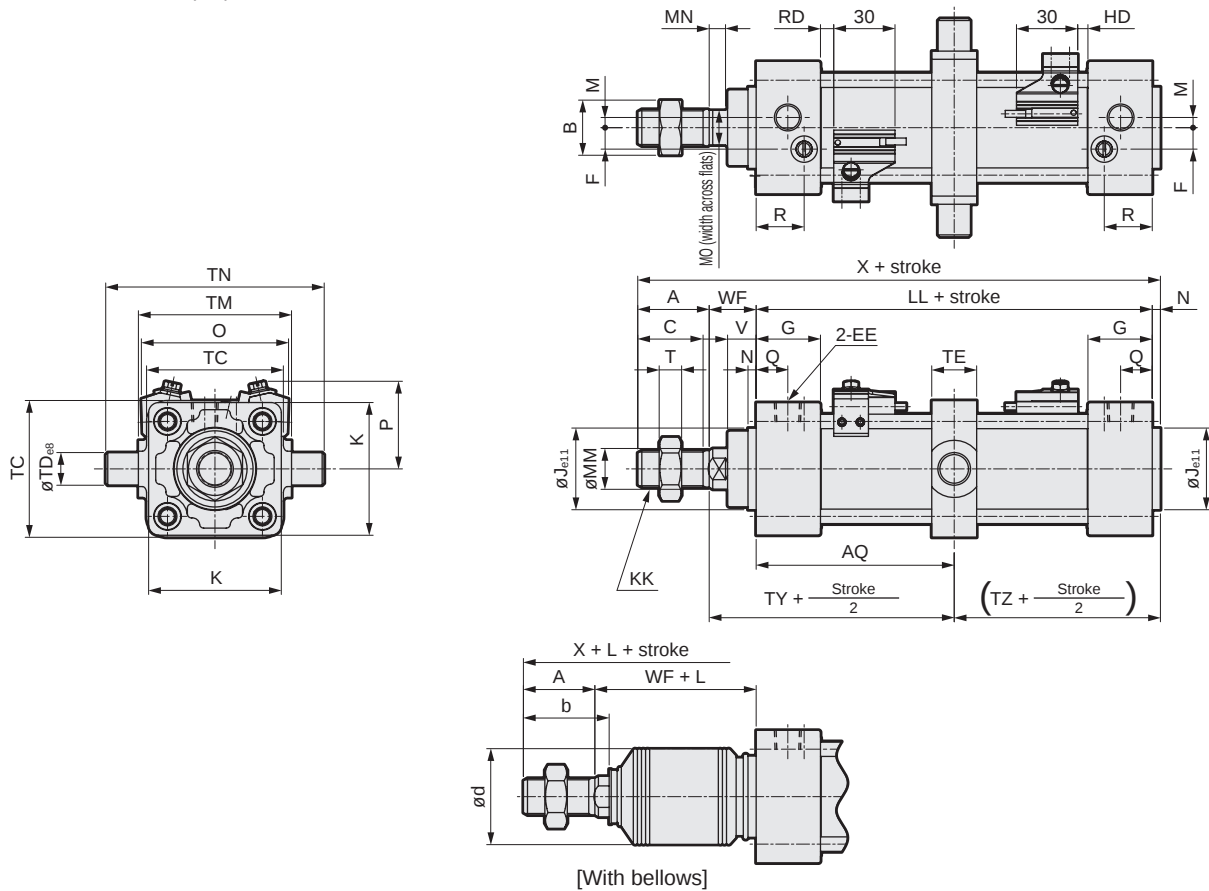
*4: For the dimensions of the accessories, refer to pages 372 and 373.

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			
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														
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)+ $\frac{\text{Stroke}}{2}$		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)+ $\frac{\text{Stroke}}{2}$		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)+ $\frac{\text{Stroke}}{2}$		67	16	22	75	107	70 (74)	51 (55)	72	43	6.5 (10.5)		5 (9)		9 (13)	7 (11)				
ø63	47 (51)+ $\frac{\text{Stroke}}{2}$		82	20	28	90	130	70 (74)	51 (55)	83	48	6.5 (10.5)		5 (9)		9 (13)	7 (11)				
ø80	57 (62)+ $\frac{\text{Stroke}}{2}$		100	20	34	110	150	89 (94)	61 (66)	104	57	12.5 (17.5)		6 (11)		15 (20)	8 (13)				
ø100	57 (62)+ $\frac{\text{Stroke}}{2}$		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)

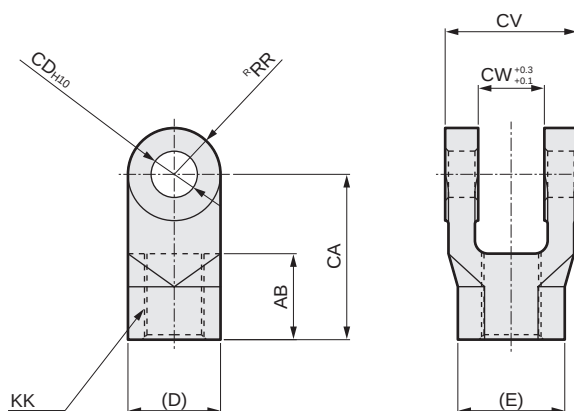
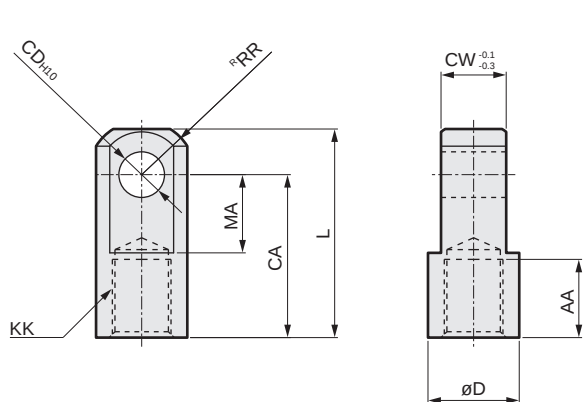


● Rod eye (I)

Material: Steel
Painted

● Rod clevis (Y)

Material: Cast iron
Painted



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	M10x1.25	40	16	12	0.07
SCG-I-40	40	19	40	10	14	22	M14x1.5	50	19	12.5	0.07
SCG-I-50	50, 63	24	50	14	20	28	M18x1.5	64	24	16.5	0.20
SCG-I-80	80	26	60	22	30	40	M22x1.5	80	34	23.5	0.52
SCG-I-100	100	26	60	22	30	40	M26x1.5	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	M10x1.25	10	0.10
SCG-Y-40	40	21	40	10	28	14	22	22.4	M14x1.5	11	0.13
SCG-Y-50	50, 63	26	50	14	40	20	28	29.3	M18x1.5	14	0.30
SCG-Y-80	80	31	65	22	60	30	40	43.2	M22x1.5	20	0.94
SCG-Y-100	100	31	65	22	60	30	40	43.2	M26x1.5	20	0.92

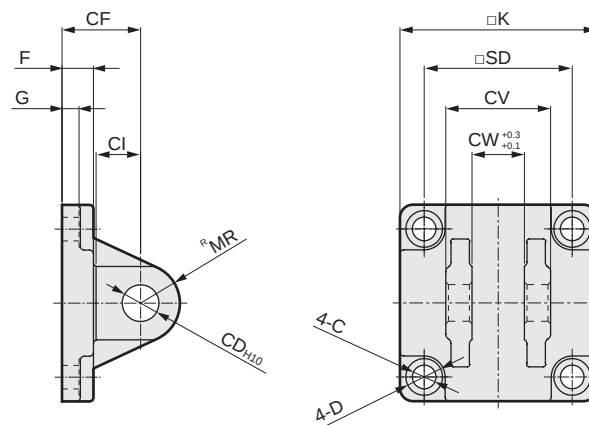
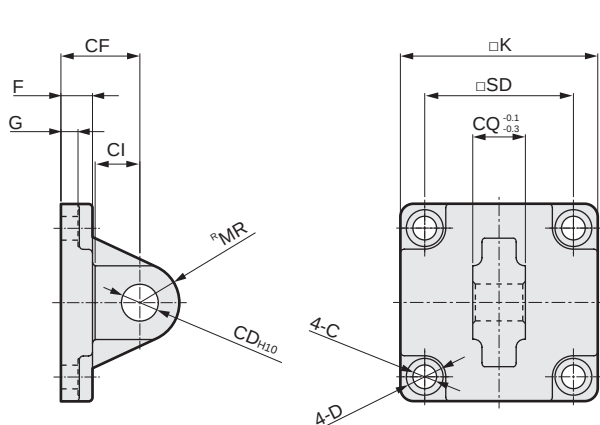
Note: A pin, a split pin and a plain washer are included.

● Eye bracket (B1)

Material: Cast iron
Painted

● Clevis bracket (B2)

Material: Cast iron
Painted



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

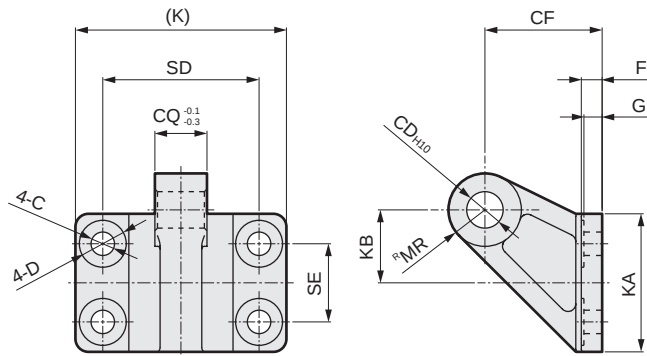
Note: A pin, a split pin and a plain washer are included.

Accessory dimensions



● Eye bracket (B3)

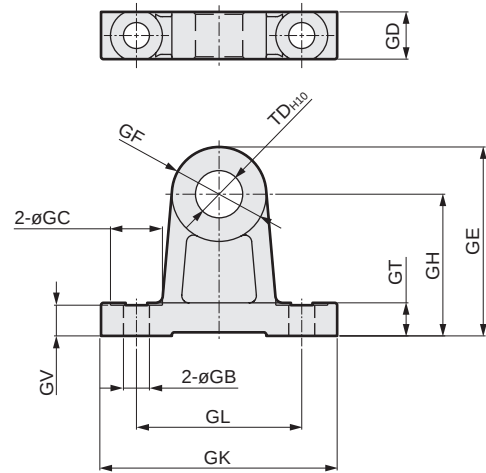
Material: Cast iron
Painted



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

● Trunnion No. 2 bracket (B4)

Material: Cast iron
Painted

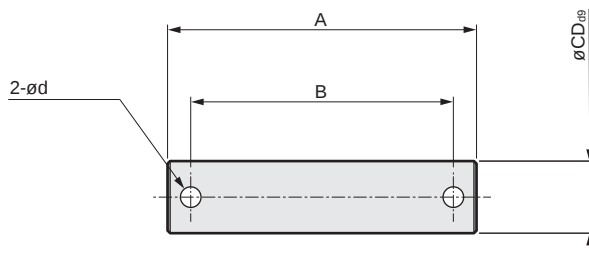


Model No.	Bore size (mm)	GB	GC	GD	GE	GF	GH	GK	GL	GT	GV	TD	Wt. (kg)
SCG-B4-32	32	7	13	12	47	24	35	62	45	10	9	12	0.20
SCG-B4-40	40, 50	9	18	17	60	30	45	80	60	12	11	16	0.43
SCG-B4-63	63, 80	11	22	20	80	40	60	100	70	14	13	20	0.87
SCG-B4-100	100	13.5	24	26	100	50	75	120	90	17	16	25	1.75

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

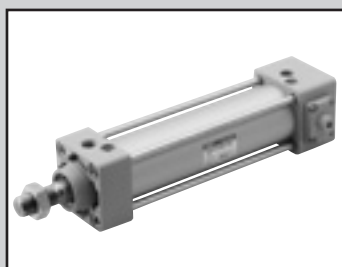
ShkAbs

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

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (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 is available in 1 mm increments.

*2: If the max. stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire). T2YD does not have an L-shaped lead wire (V).

*2: When the stroke 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 LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed							2-wire proximity
	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	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)		No 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

Bore size (mm)	Product weight for 0 mm stroke							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				0.07	0.13
ø50	1.69	1.85	2.17	2.10	2.10	2.17	0.23				0.20	0.30
ø63	2.03	2.37	2.79	2.59	2.60	2.91	0.25				0.20	0.30
ø80	3.96	4.39	5.53	5.23	5.24	5.45	0.40				0.52	0.94
ø100	5.74	6.6	8.06	7.46	7.49	8.31	0.51				0.48	0.92

How to order

No 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

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 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
• 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 : 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 (mm)			
Bore size	Stroke *2	Available stroke	Custom stroke
ø32	5 to 600	700	In 1 mm increments
ø40		800	
ø50		1200	
ø63		1400	
ø80	5 to 700	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	Indicator	Lead wire	
TOH*	T0V*	Reed	● ●	1-color LED	2-wire	
T5H*	T5V*		● ●	No indicator lamp		
T8H*	T8V*		● ●	1-color LED	2-wire	
T1H*	T1V*		●			
T2H*	T2V*	Proximity	●	1-color LED	3-wire	
T3H*	T3V*		●			
T3PH*	T3PV*		●	1-color LED	2-wire	
T2WH*	T2WV*		●			
T2YH*	T2YV*		●	2-color LED	3-wire	
T3WH*	T3WV*		●			
T3YH*	T3YV*		●		2-wire	
T2YD*	-		●	2-color LED		
T2YDT*	-		●	AC magnetic field	2-wire	
T2JH*	T2JV*		●	1-color LED 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-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

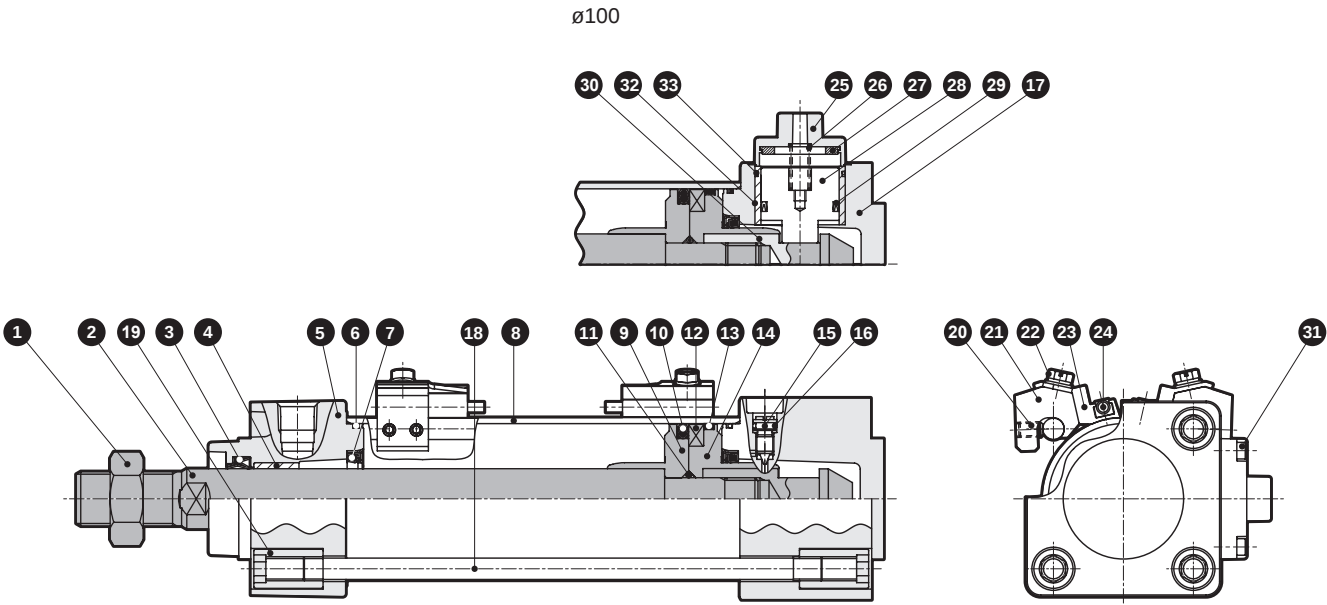
(Unit: N)

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	1.21x10 ²	1.61x10 ²	2.41x10 ²	3.22x10 ²	4.02x10 ²	4.83x10 ²	5.63x10 ²	6.43x10 ²	7.24x10 ²	8.04x10 ²
	Pull	1.04x10 ²	1.38x10 ²	2.07x10 ²	2.76x10 ²	3.46x10 ²	4.15x10 ²	4.84x10 ²	5.53x10 ²	6.22x10 ²	6.91x10 ²
ø40	Push	1.88x10 ²	2.51x10 ²	3.77x10 ²	5.03x10 ²	6.28x10 ²	7.54x10 ²	8.80x10 ²	1.01x10 ³	1.13x10 ³	1.26x10 ³
	Pull	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²	8.44x10 ²	9.50x10 ²	1.06x10 ³
ø50	Push	2.95x10 ²	3.93x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³	1.57x10 ³	1.77x10 ³	1.96x10 ³
	Pull	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push	4.68x10 ²	6.23x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³	2.49x10 ³	2.81x10 ³	3.12x10 ³
	Pull	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 ³
ø80	Push	7.54x10 ²	1.01x10 ³	1.51x10 ³	2.01x10 ³	2.51x10 ³	3.02x10 ³	3.52x10 ³	4.02x10 ³	4.52x10 ³	5.03x10 ³
	Pull	6.80x10 ²	9.07x10 ²	1.36x10 ³	1.81x10 ³	2.27x10 ³	2.72x10 ³	3.17x10 ³	3.63x10 ³	4.08x10 ³	4.54x10 ³
ø100	Push	1.18x10 ³	1.57x10 ³	2.36x10 ³	3.14x10 ³	3.93x10 ³	4.71x10 ³	5.50x10 ³	6.28x10 ³	7.07x10 ³	7.85x10 ³
	Pull	1.07x10 ³	1.43x10 ³	2.14x10 ³	2.86x10 ³	3.57x10 ³	4.29x10 ³	5.00x10 ³	5.72x10 ³	6.43x10 ³	7.15x10 ³

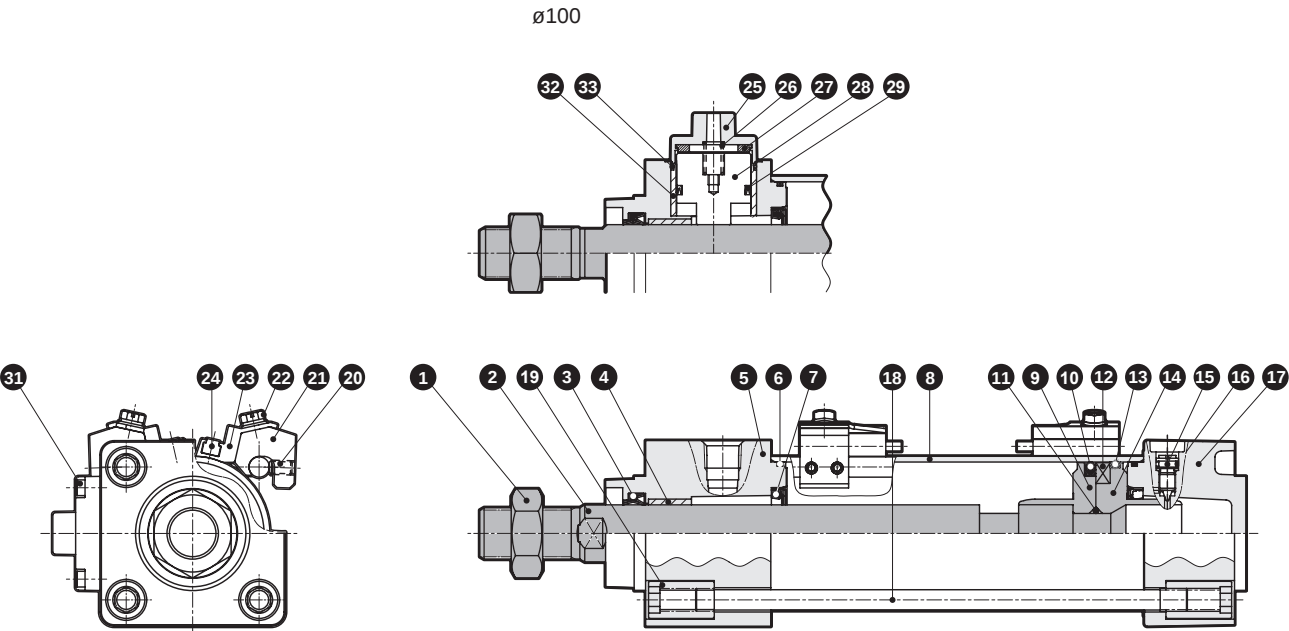
SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/ COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/ MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

Internal structure

● 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

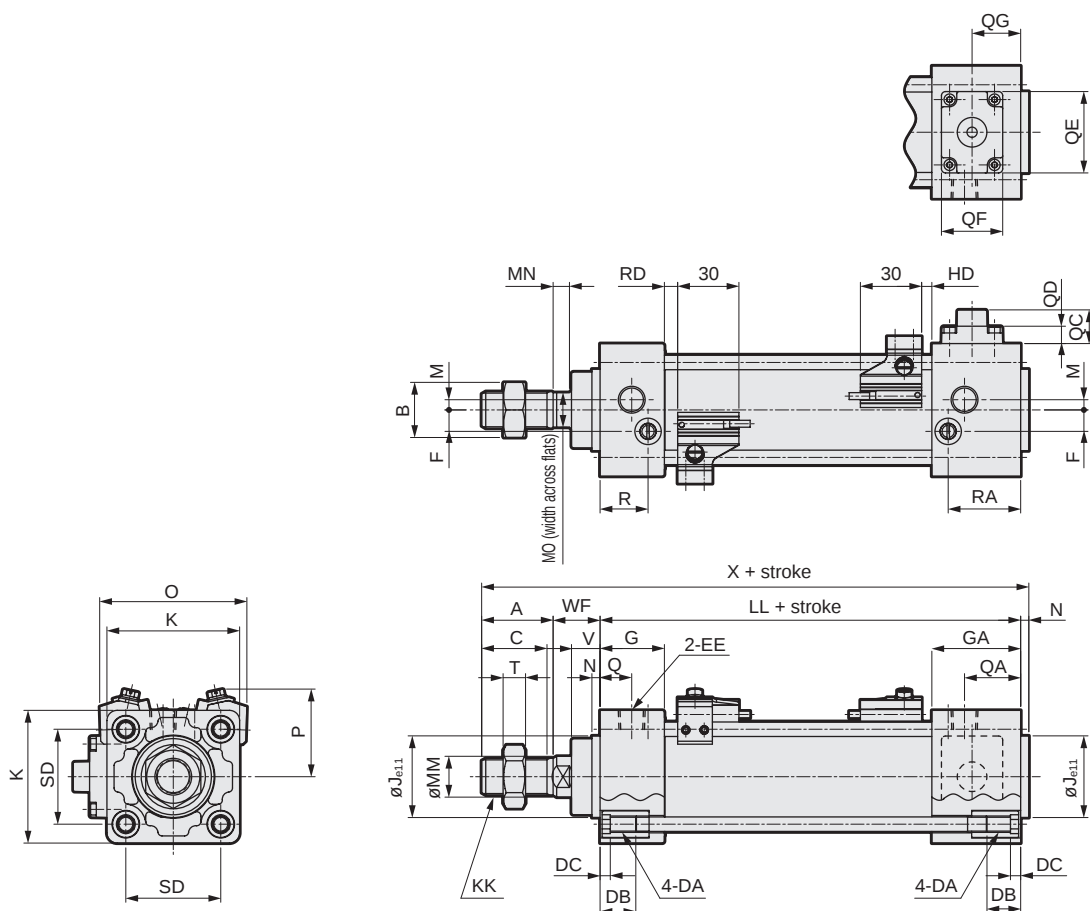
Note: Mounting bracket will be shipped with the product.

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.

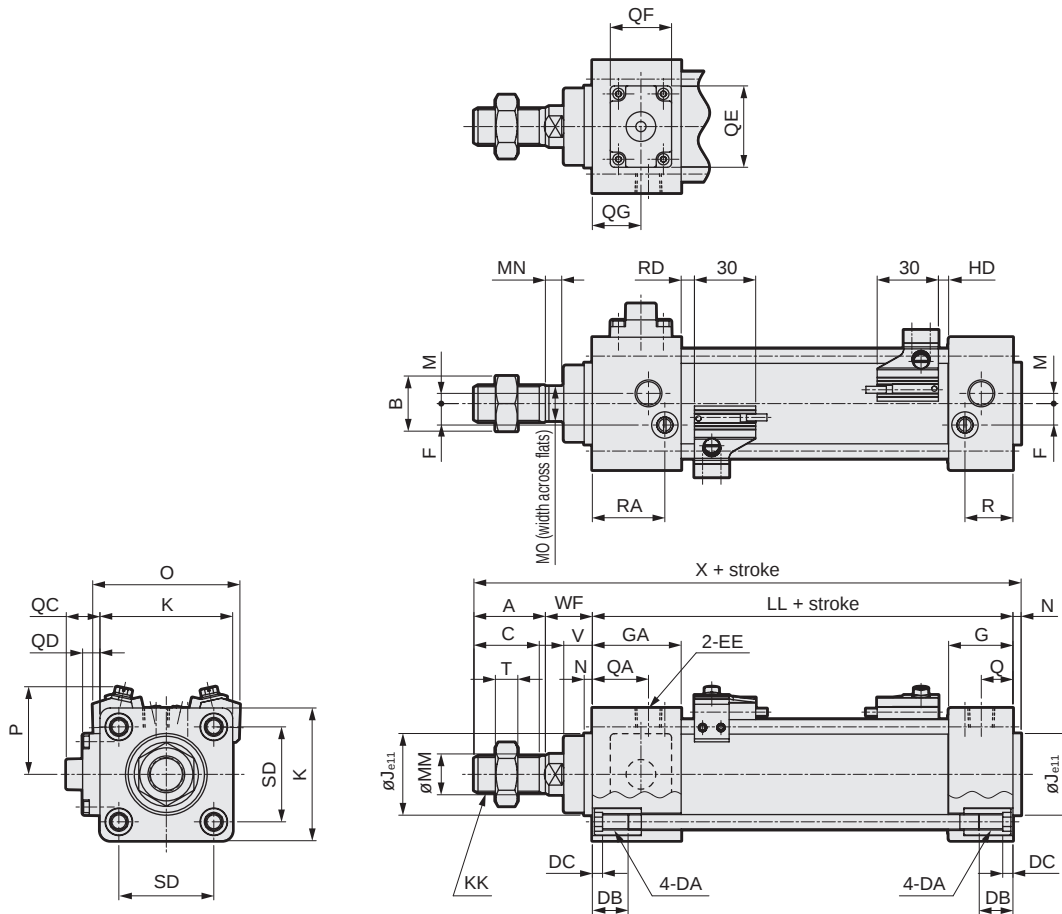
Code	Basic (00) with head side position locking basic dimensions																			
	A	B	C	DA	DB	DC	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q
ø32	22	17	19.5	M6	16	5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13
ø40	30	22	27	M6	16	5	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14
ø50	35	27	32	M8	16	5	Rc1/4	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																			
	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		
																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	

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

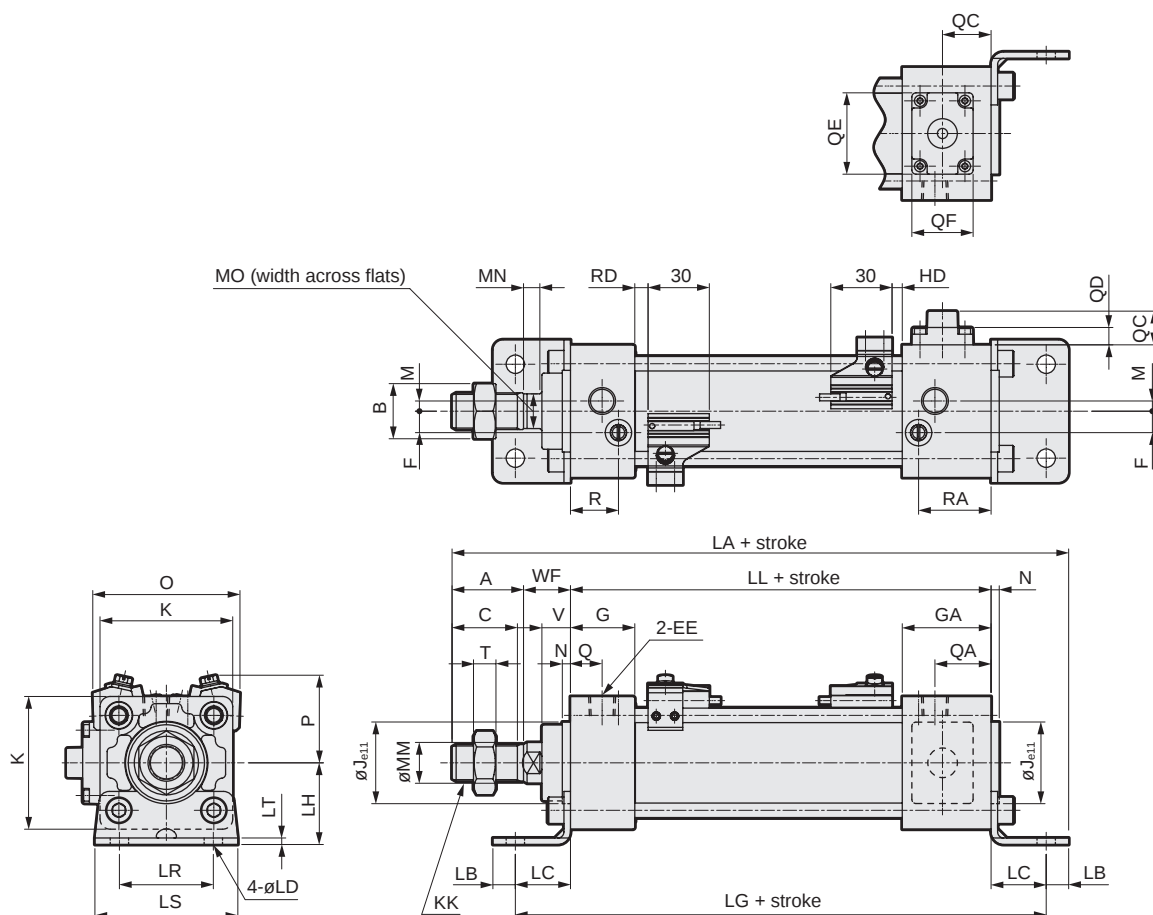
Spd
Contr

Ending

Dimensions



● Axial foot (LB) with head side position locking



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

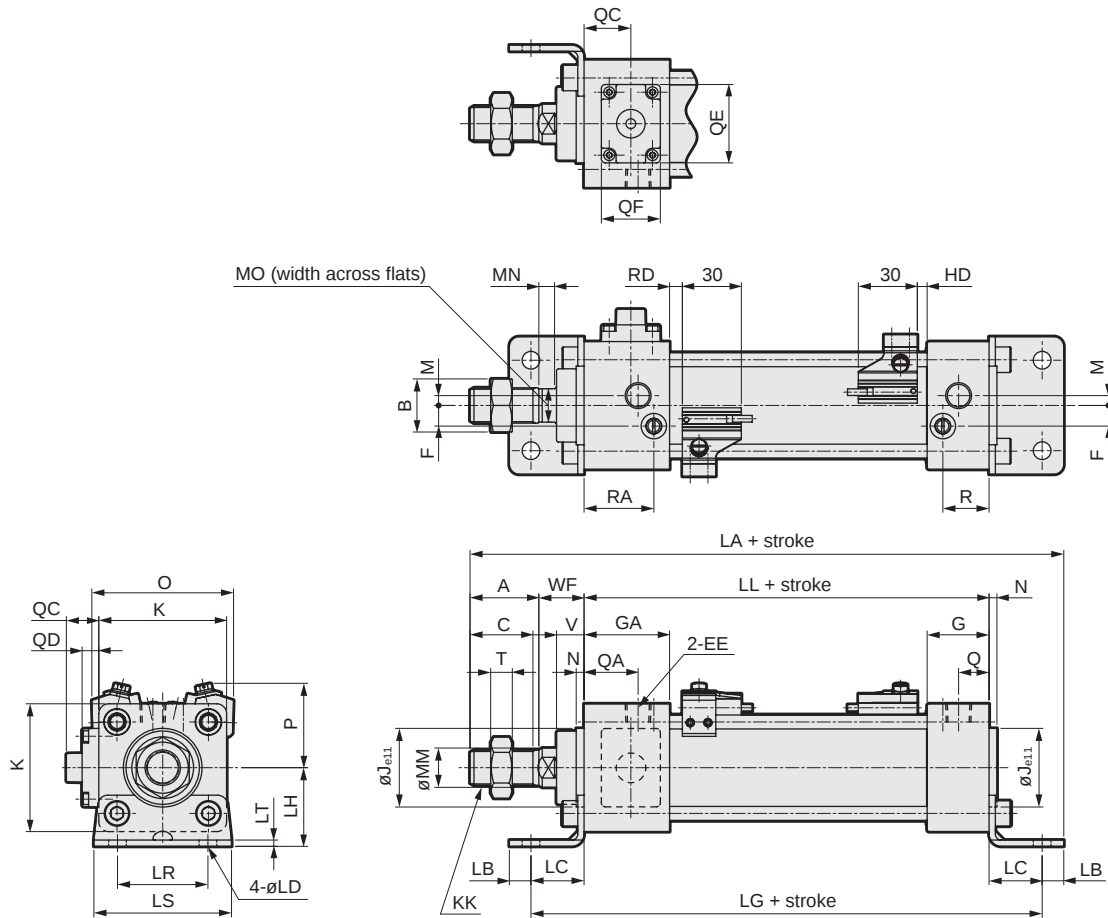
*2: For the dimensions of the accessories, refer to pages 372 and 373.

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.

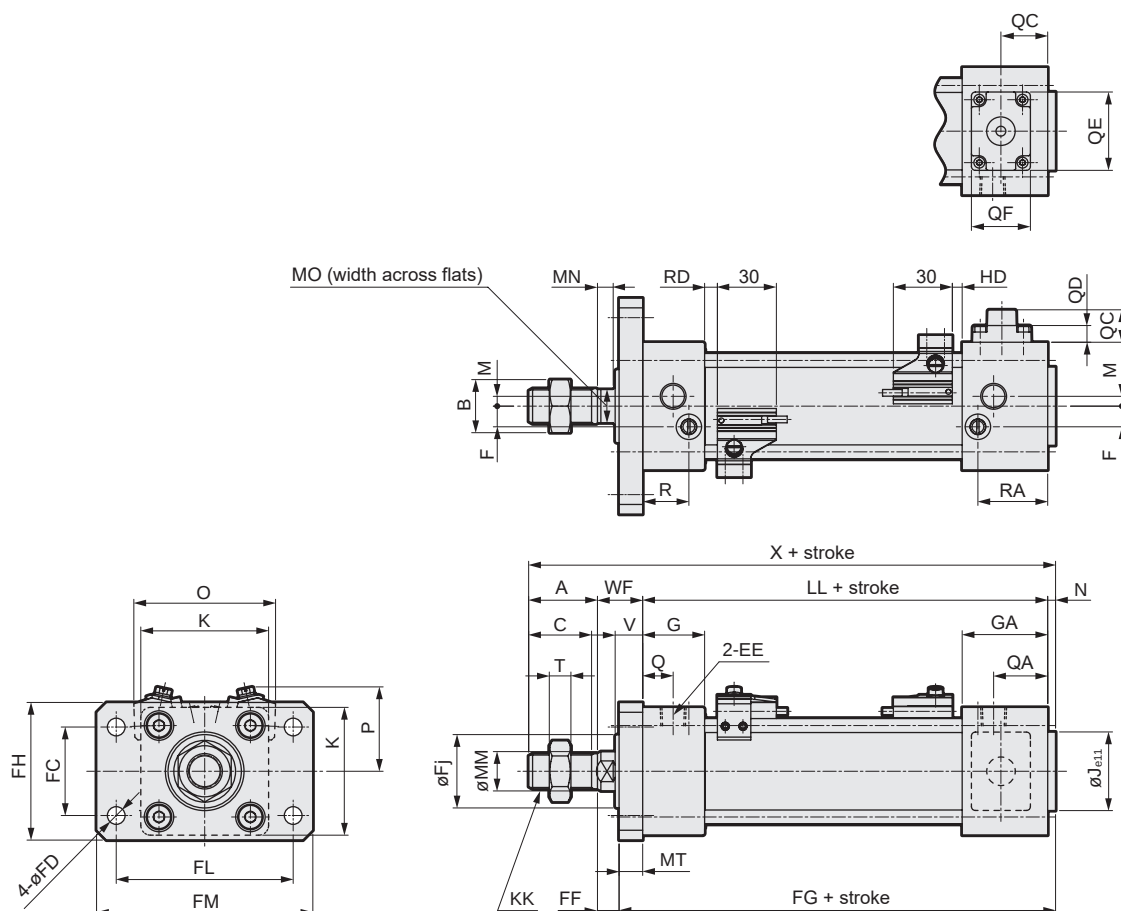
*2: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Axial foot (LB) with rod side position locking basic dimensions																					
	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.

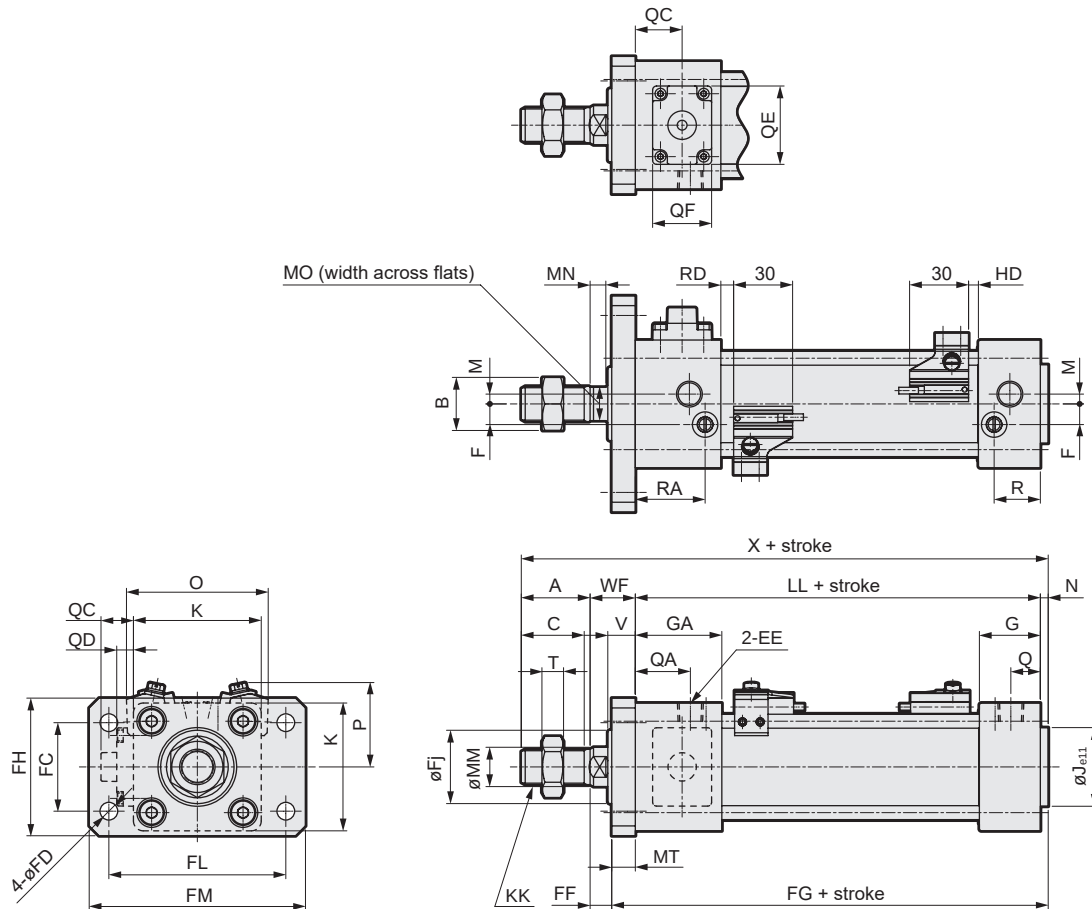
Code	Rod side flange (FA) with head side position locking basic dimensions																					
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	QF
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22	16
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	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	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																					
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	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

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

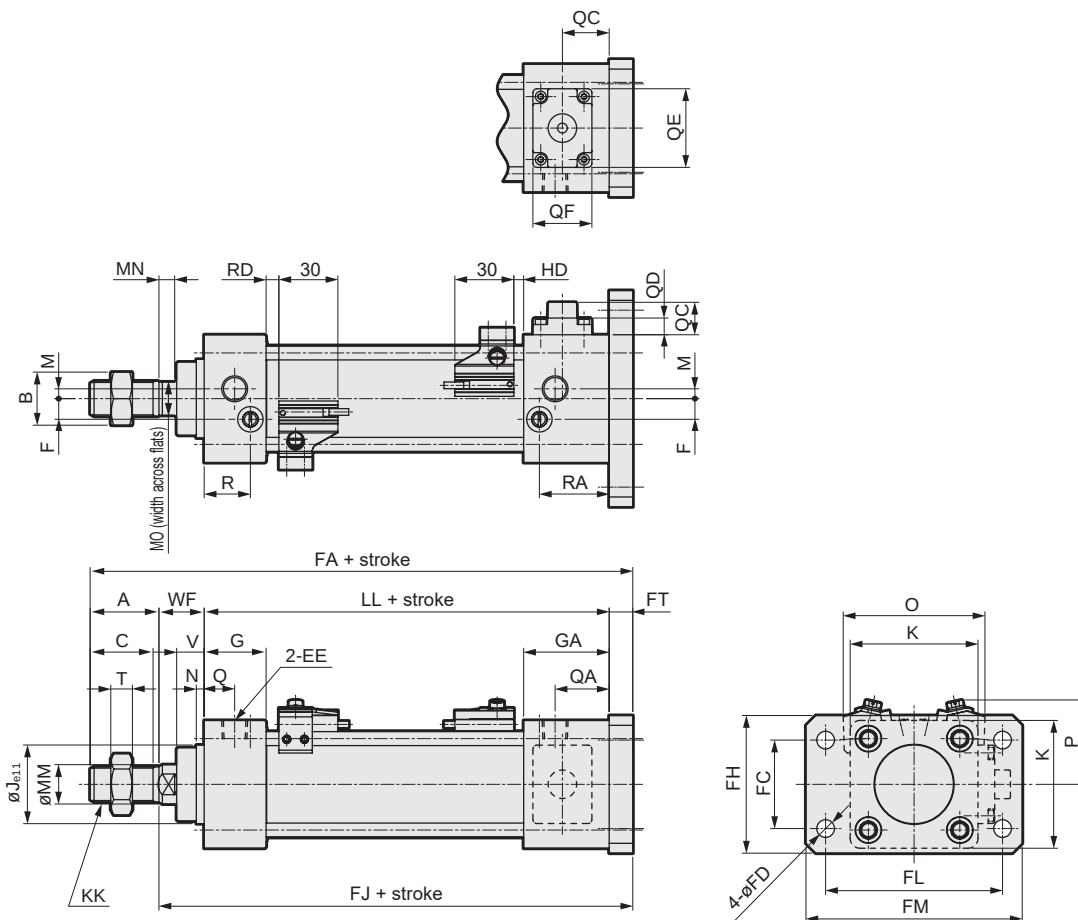
ShkAbs

FJ

FK

Spd
Contr

Ending



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

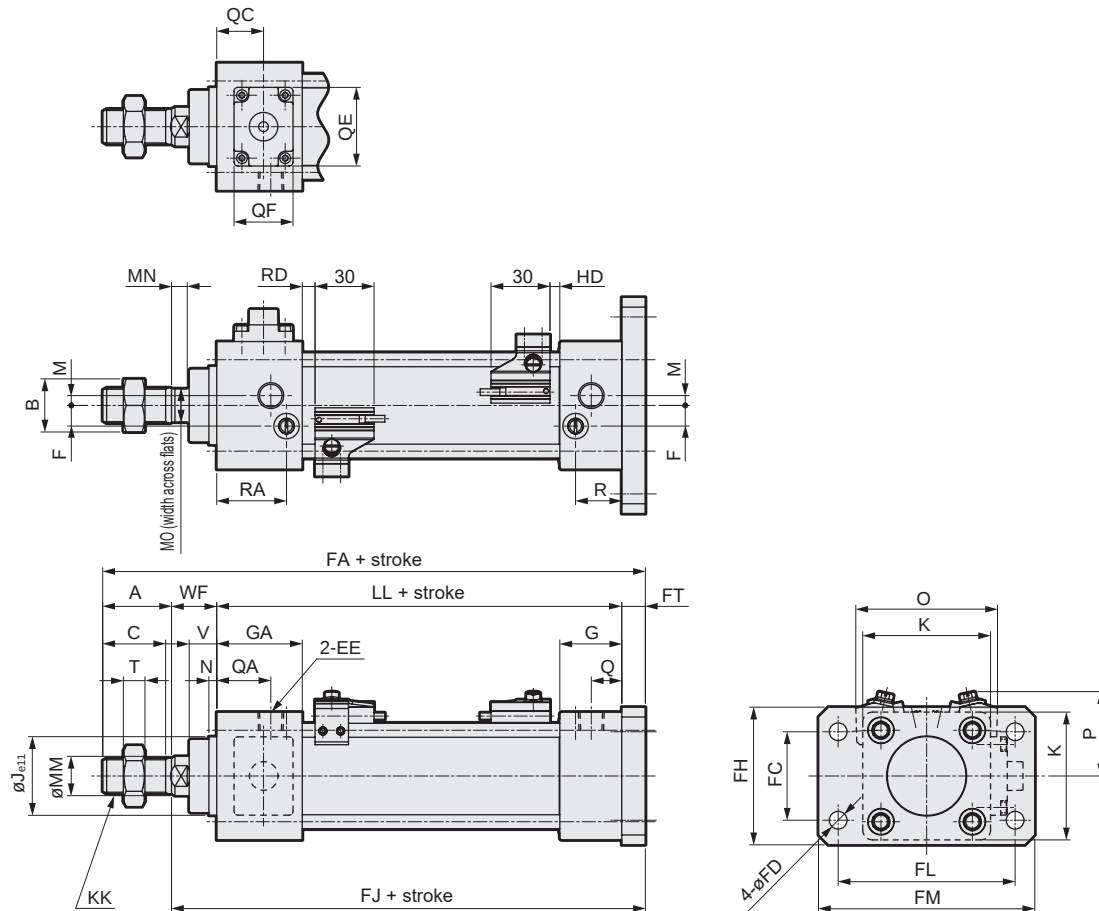
*2: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Head side flange (FB) with head side position locking basic dimensions																				
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
Bore size (mm)	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
ø32	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	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																				
	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					
	QF	QG	R	RA	T	V	WF	FA	FC	FD	FH	FJ	FL	FM	FT	O	P	T0, T5 ,T2, T3		T2W, T3W	
Bore size (mm)																		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

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

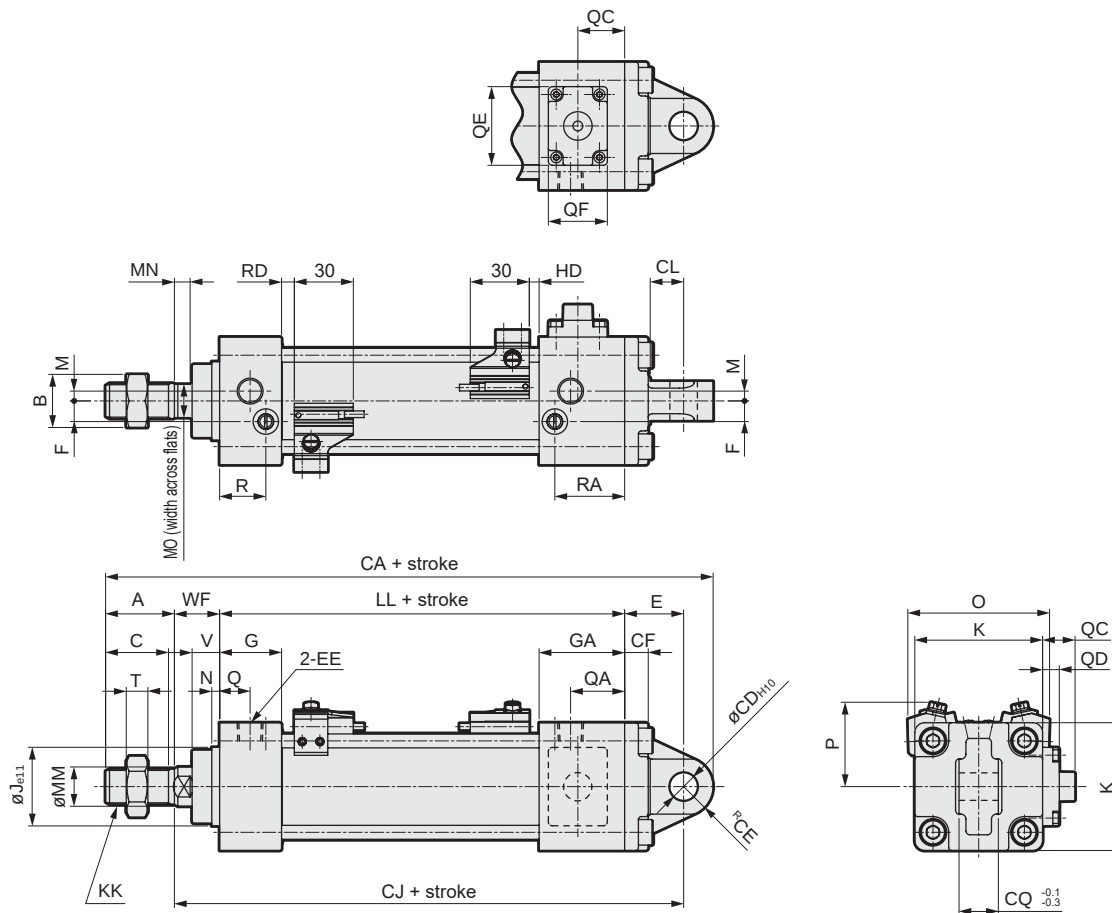
Spd
Contr

Ending

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.

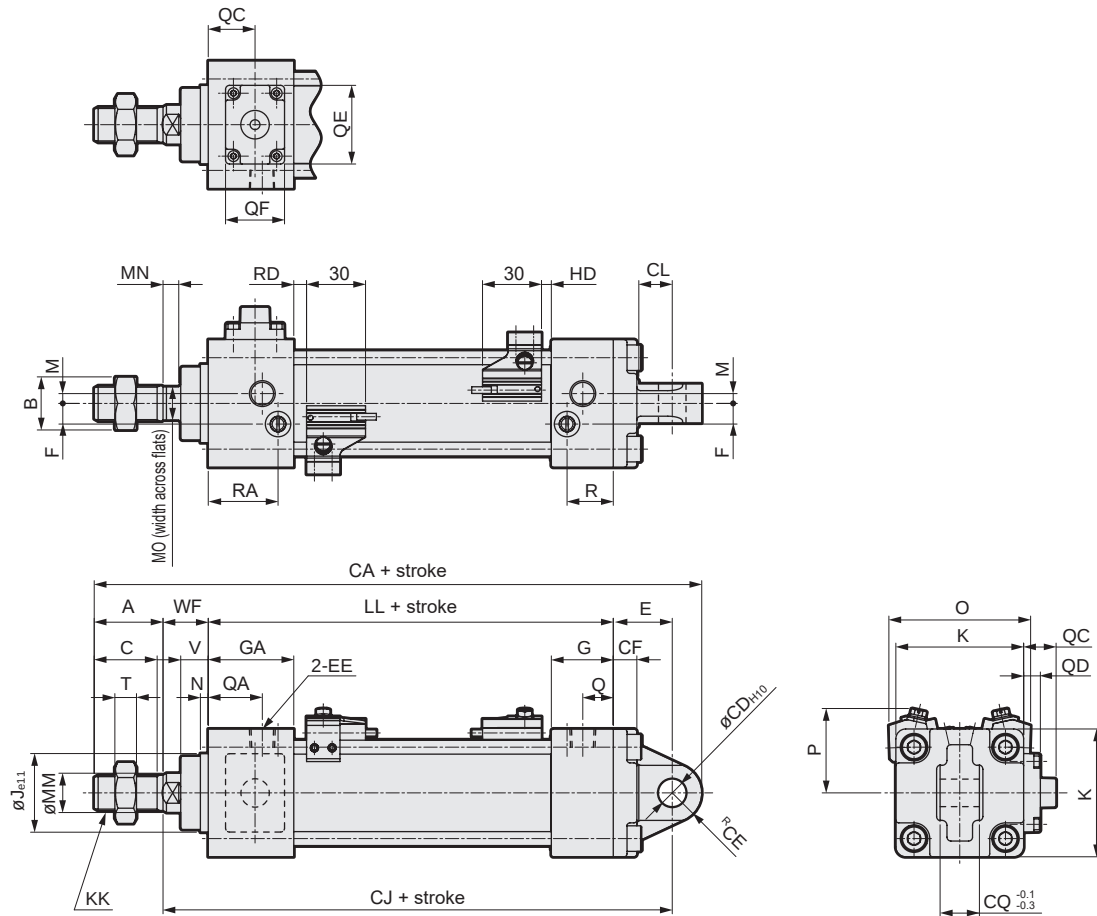
Code	Eye bracket (CA) with head side position locking basic dimensions																				
Bore size (mm)	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	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.

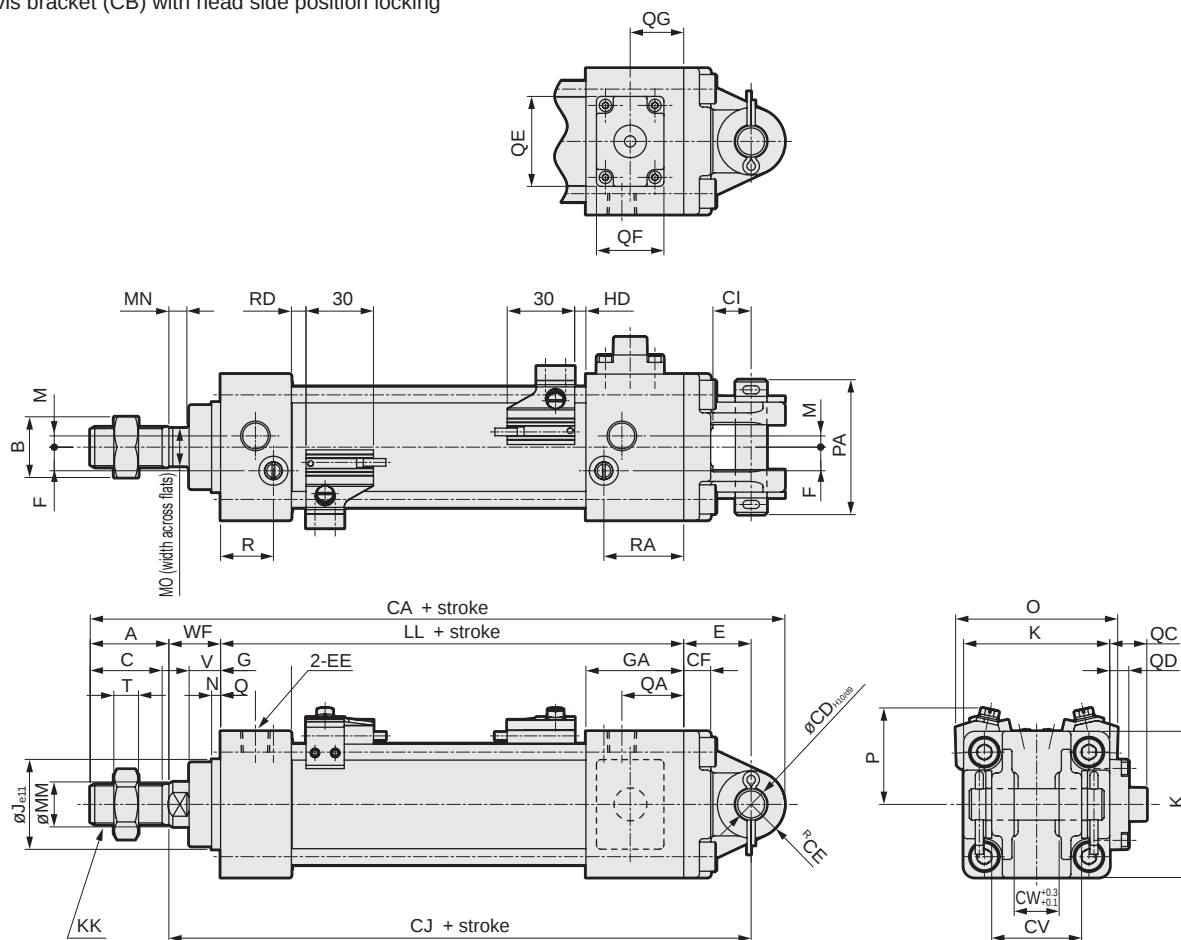
Code	Eye bracket (CA) with rod side position locking basic dimensions																				
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	97	4	16	6	14	4	14	27	12	6	22
ø50	35	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					
	QF	QG	R	RA	T	V	WF	CA	CD	CE	CF	CI	CJ	CQ	E	O	P	T0, T5 ,T2, T3		T2W, T3W	
Bore size (mm)																		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.

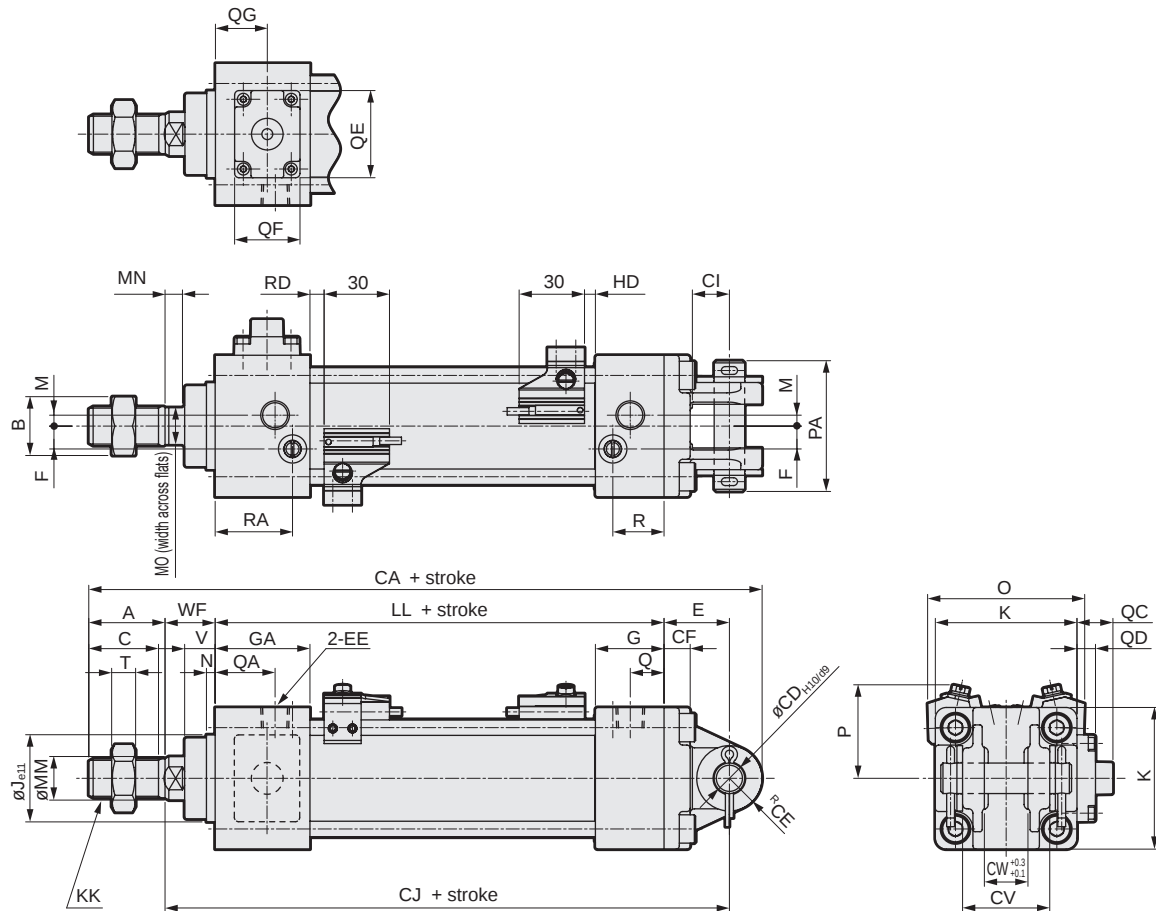
Code	Clevis bracket (CB) with head side position locking basic dimensions																				
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE
Bore size (mm)																					
ø32	22	17	19.5	Rc1/8	6.5	27	35	30	46	M10X1.25	92	4	12	5.5	10	4	13	21	12.5	6.5	22
ø40	30	22	27	Rc1/4	9	27	40	35	52	M14X1.5	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	
Bore size (mm)																				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	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

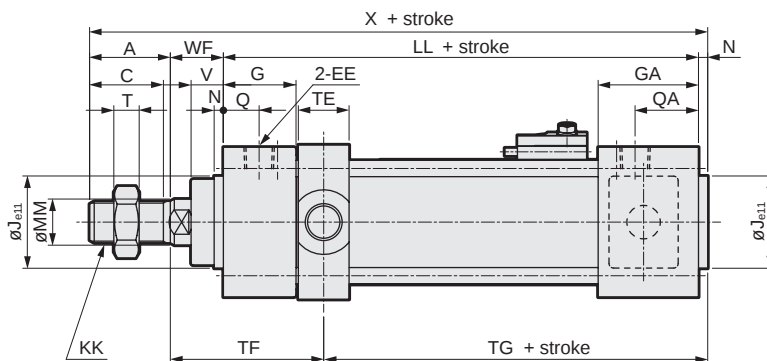
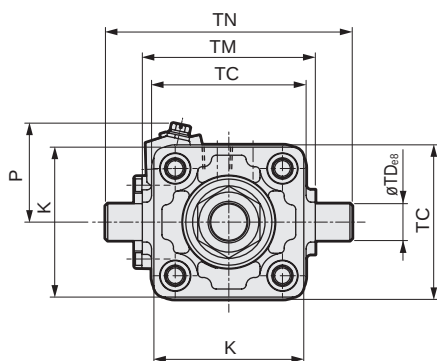
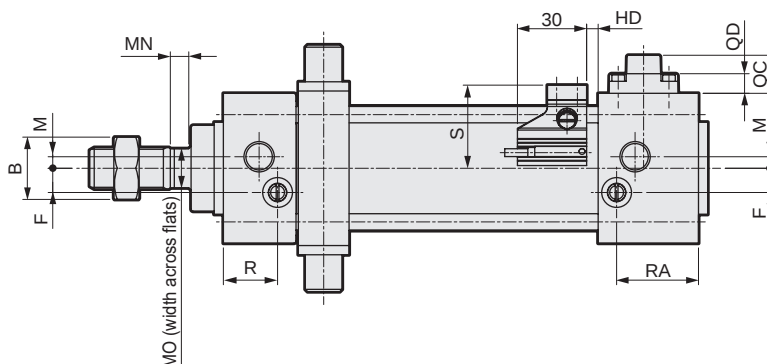


*1: Refer to page 436 for HD, RD and protruding dimensions of other switches.

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

Code	Clevis bracket (CB) 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		
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							
	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	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

● 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.

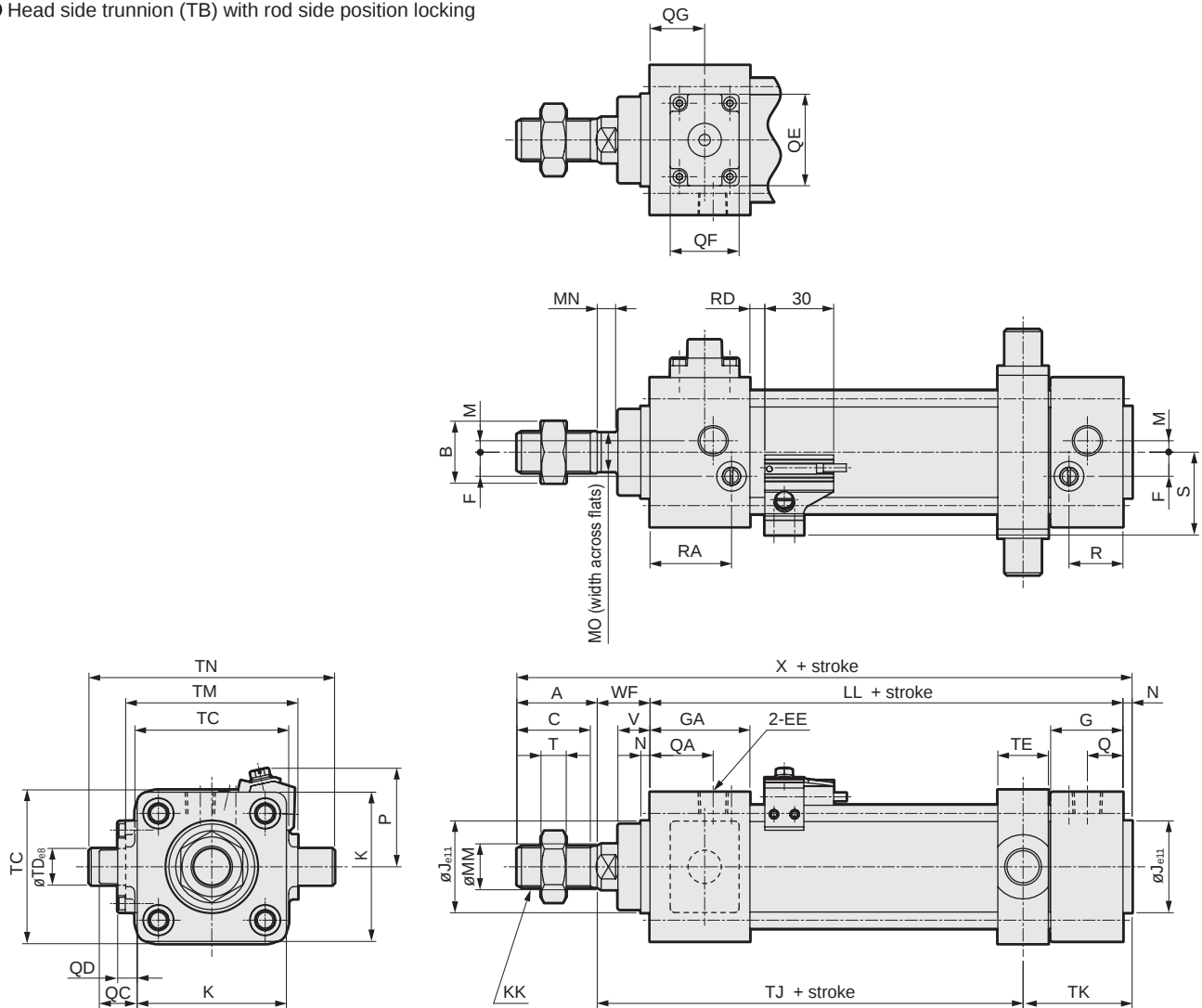
*3: For the dimensions of the accessories, refer to pages 372 and 373.

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			
	QE	QF	QG	R	RA	T	V	WF	X	TC	TD	TE	TF	TG	TM	TN	S	P	T0, T5, T2, T3	T2W, T3W
Bore size (mm)																				
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			
Bore size (mm)	QE	QF	QG	R	RA	T	V	WF	X	TC	TD	TE	TJ	TK	TM	TN	S	P	T0, T5 ,T2, T3	T2W, T3W
																			RD	RD
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/IN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

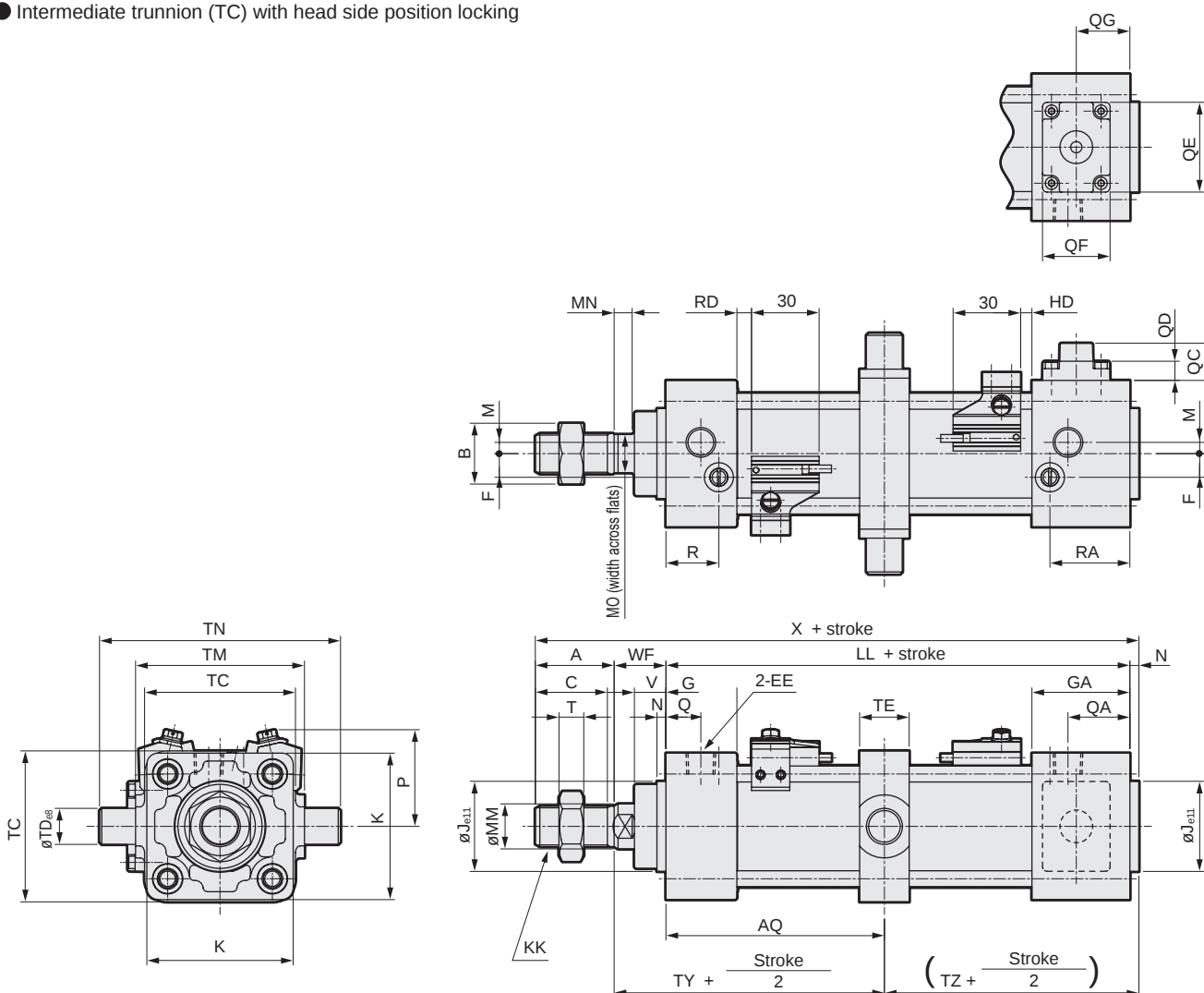
Spd
Contr

Ending

Dimensions



● Intermediate trunnion (TC) with head side position locking



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

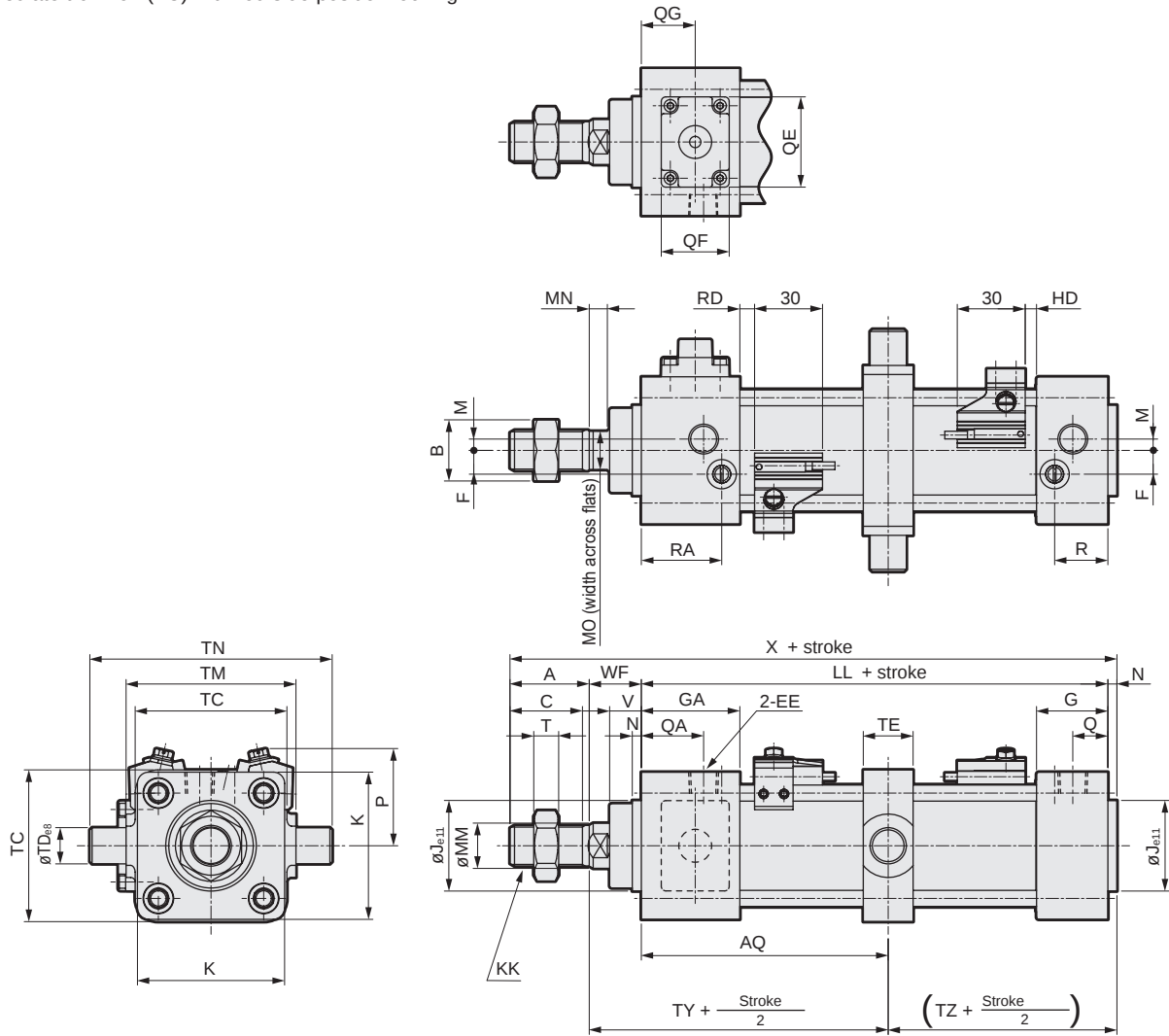
*2: For the dimensions of the accessories, refer to pages 372 and 373.

Code	Intermediate trunnion (TC) with head side position locking basic dimensions																					
	A	B	C	EE	F	G	GA	J	K	KK	LL	M	MM	MN	MO	N	Q	QA	QC	QD	QE	
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	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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 + $\frac{\text{Stroke}}{2}$	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: $\varnothing 32/\varnothing 40/\varnothing 50/\varnothing 63/\varnothing 80/\varnothing 100$

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 $\varnothing 32$ cylinder is expected not to operate for a long time, keep the pressure 0.1 MPa and over.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (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 is available in 1 mm increments.

*2: If the max. stroke 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
$\varnothing 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\varnothing 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\varnothing 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\varnothing 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
$\varnothing 80$	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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
$\varnothing 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\varnothing 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\varnothing 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\varnothing 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
$\varnothing 80$	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire). T2YD does not have an L-shaped lead wire (V).

*2: When the stroke 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 LED/for AC magnetic field proof

Item	2-wire proximity		2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity	
	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	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)		No 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						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

No 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

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 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 : 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 (mm)		
Bore size	Stroke *2	Custom stroke
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		Indicator	Lead wire
			AC	DC		
TOH*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T8H*	T8V*		●	●	1-color LED	
T1H*	T1V*	Proximity	●		1-color LED	2-wire
T2H*	T2V*			●	1-color LED	2-wire
T3H*	T3V*			●	1-color LED	3-wire
T3PH*	T3PV*			●	1-color LED	3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T2YH*	T2YV*			●		
T3WH*	T3WV*			●	2-color LED	3-wire
T3YH*	T3YV*			●		
T2YD*	-			●	2-color LED	2-wire
T2YDT*	-			●	AC magnetic field	
T2JH*	T2JV*		●	1-color LED 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 398)

Bore size
(Item ⑥ on page 398)

- Switch body only

SW - T0H

Switch model No.
(Item ⑤ on page 398)

- Switch mounting bracket set

SCG - T - 40

Mounting
bracket

Bore size
(Item ⑥ 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

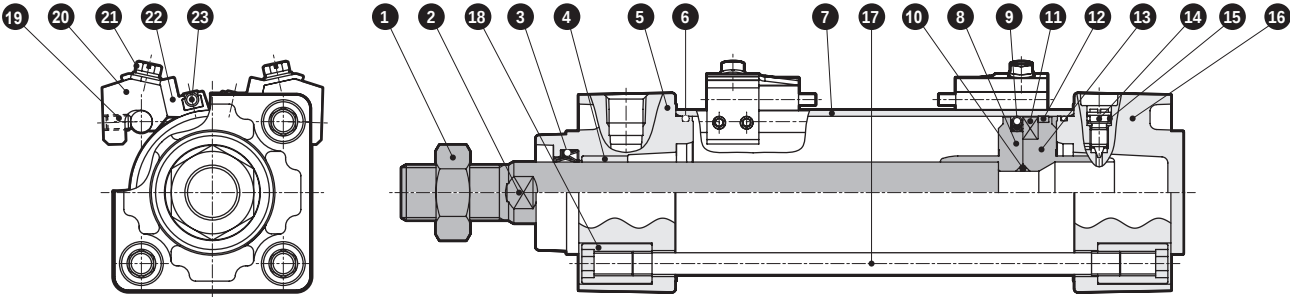
(Unit: N)

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	1.21x10 ²	1.61x10 ²	2.41x10 ²	3.22x10 ²	4.02x10 ²	4.83x10 ²	5.63x10 ²	6.43x10 ²	7.24x10 ²	8.04x10 ²
	Pull	34.6	69.1	1.04x10 ²	1.38x10 ²	2.07x10 ²	2.76x10 ²	3.46x10 ²	4.15x10 ²	4.84x10 ²	5.53x10 ²	6.22x10 ²	6.91x10 ²
ø40	Push	62.8	1.26x10 ²	1.88x10 ²	2.51x10 ²	3.77x10 ²	5.03x10 ²	6.28x10 ²	7.54x10 ²	8.80x10 ²	1.01x10 ³	1.13x10 ³	1.26x10 ³
	Pull	52.8	1.06x10 ²	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²	8.44x10 ²	9.50x10 ²	1.06x10 ³
ø50	Push	98.2	1.96x10 ²	2.95x10 ²	3.93x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³	1.57x10 ³	1.77x10 ³	1.96x10 ³
	Pull	82.5	1.65x10 ²	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push	1.56x10 ²	3.12x10 ²	4.68x10 ²	6.23x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³	2.49x10 ³	2.81x10 ³	3.12x10 ³
	Pull	1.40x10 ²	2.80x10 ²	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 ³
ø80	Push	2.51x10 ²	5.03x10 ²	7.54x10 ²	1.01x10 ³	1.51x10 ³	2.01x10 ³	2.51x10 ³	3.02x10 ³	3.52x10 ³	4.02x10 ³	4.52x10 ³	5.03x10 ³
	Pull	2.27x10 ²	4.54x10 ²	6.80x10 ²	9.07x10 ²	1.36x10 ³	1.81x10 ³	2.27x10 ³	2.72x10 ³	3.17x10 ³	3.63x10 ³	4.08x10 ³	4.54x10 ³
ø100	Push	3.93x10 ²	7.85x10 ²	1.18x10 ³	1.57x10 ³	2.36x10 ³	3.14x10 ³	3.93x10 ³	4.71x10 ³	5.50x10 ³	6.28x10 ³	7.07x10 ³	7.85x10 ³
	Pull	3.57x10 ²	7.15x10 ²	1.07x10 ³	1.43x10 ³	2.14x10 ³	2.86x10 ³	3.57x10 ³	4.29x10 ³	5.00x10 ³	5.72x10 ³	6.43x10 ³	7.15x10 ³

Dimensions

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

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/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/low friction (constant friction when pressurized)

SCG-U Series

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



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

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\varnothing 32$	25/50/75/100	600	1
$\varnothing 40$			
$\varnothing 50$			
$\varnothing 63$			
$\varnothing 80$	450/500	700	1
$\varnothing 100$		800	

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

*2: If the max. stroke 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
$\varnothing 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\varnothing 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\varnothing 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\varnothing 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
$\varnothing 80$	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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
$\varnothing 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\varnothing 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\varnothing 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\varnothing 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
$\varnothing 80$	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire). T2YD does not have an L-shaped lead wire (V).

*2: When the stroke 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 LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity	
	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	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)		No 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

Bore size (mm)	Product weight for 0 mm stroke						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

No 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

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

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
TOH*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T8H*	T8V*		●	●	1-color LED	2-wire
T1H*	T1V*		●	●	1-color LED	
T2H*	T2V*	Proximity	●	●	1-color LED	3-wire
T3H*	T3V*		●	●	1-color LED	3-wire
T3PH*	T3PV*		●	●	1-color LED	3-wire
T2WH*	T2WV*		●	●	2-color LED	2-wire
T2YH*	T2YV*		●	●	2-color LED	3-wire
T3WH*	T3WV*		●	●	2-color LED	2-wire
T3YH*	T3YV*		●	●	2-color LED	3-wire
T2YD*	-		●	●	2-color LED	2-wire
T2YDT*	-		●	●	AC magnetic field	2-wire
T2JH*	T2JV*		●	●	1-color LED 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.

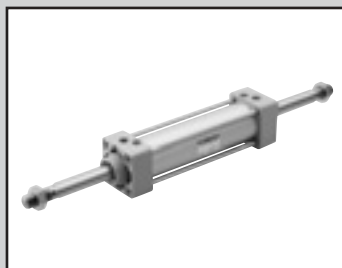
Theoretical thrust table

(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	1.21x10 ²	1.61x10 ²	2.41x10 ²	3.22x10 ²	4.02x10 ²	4.83x10 ²	5.63x10 ²
	Pull	20.7	69.1	1.04x10 ²	1.38x10 ²	2.07x10 ²	2.76x10 ²	3.46x10 ²	4.15x10 ²	4.84x10 ²
ø40	Push	37.8	1.26x10 ²	1.88x10 ²	2.51x10 ²	3.77x10 ²	5.03x10 ²	6.28x10 ²	7.54x10 ²	8.80x10 ²
	Pull	31.8	1.06x10 ²	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²
ø50	Push	58.8	1.96x10 ²	2.95x10 ²	3.93x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³
	Pull	49.5	1.65x10 ²	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³
ø63	Push	93.6	3.12x10 ²	4.68x10 ²	6.23x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³
	Pull	84.0	2.80x10 ²	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³
ø80	Push	1.51x10 ²	5.03x10 ²	7.54x10 ²	1.01x10 ³	1.51x10 ³	2.01x10 ³	2.51x10 ³	3.02x10 ³	3.52x10 ³
	Pull	1.36x10 ²	4.54x10 ²	6.80x10 ²	9.07x10 ²	1.36x10 ³	1.81x10 ³	2.27x10 ³	2.72x10 ³	3.17x10 ³
ø100	Push	2.36x10 ²	7.85x10 ²	1.18x10 ³	1.57x10 ³	2.36x10 ³	3.14x10 ³	3.93x10 ³	4.71x10 ³	5.50x10 ³
	Pull	2.15x10 ²	7.15x10 ²	1.07x10 ³	1.43x10 ³	2.14x10 ³	2.86x10 ³	3.57x10 ³	4.29x10 ³	5.00x10 ³

Dimensions

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



Tie rod cylinder Double acting/double rod

SCG-D Series

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

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

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

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

*2: If the max. stroke 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 is 500 mm for $\varnothing 32$ to $\varnothing 40$ bore size, 600 mm for $\varnothing 50$ to $\varnothing 63$, and 800 mm for $\varnothing 80$ to $\varnothing 100$.

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
$\varnothing 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\varnothing 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\varnothing 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\varnothing 63$	10	19	38	57	10	19	38	57	85(73)	85(73)	91(91)	91(91)	41	42
$\varnothing 80$	10	20	39	59	10	20	39	59	96(79)	96(79)	99(99)	99(99)	41	47
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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
$\varnothing 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\varnothing 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\varnothing 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\varnothing 63$	10	19	38	57	10	19	38	57	89(77)	89(77)	99(99)	99(99)	44	44
$\varnothing 80$	10	20	39	59	10	20	39	59	100(75)	100(75)	111(111)	111(111)	43	49
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire). T2YD does not have an L-shaped lead wire (V).

*2: When the stroke 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 LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity	
	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	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)	No 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

Bore size (mm)	Product weight for 0 mm stroke				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

No 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

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 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 : 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 (mm)		
Bore size	Stroke *2	Custom stroke
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		Indicator	Lead wire
			AC	DC		
TOH*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T8H*	T8V*		●	●	1-color LED	
T1H*	T1V*	Proximity	●		1-color LED	2-wire
T2H*	T2V*			●		3-wire
T3H*	T3V*			●	1-color LED	3-wire
T3PH*	T3PV*			●		
T2WH*	T2WV*			●	2-color LED	2-wire
T2YH*	T2YV*			●		3-wire
T3WH*	T3WV*			●		
T3YH*	T3YV*			●	2-color LED	2-wire
T2YD*	-			●		2-wire
T2YDT*	-			●	for AC magnetic field	
T2JH*	T2JV*			●	1-color LED 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 temp.	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)

- Switch mounting bracket set

SCG - T - 40

Mounting bracket
Bore size
(Item ㉕ on page 408)

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

*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.

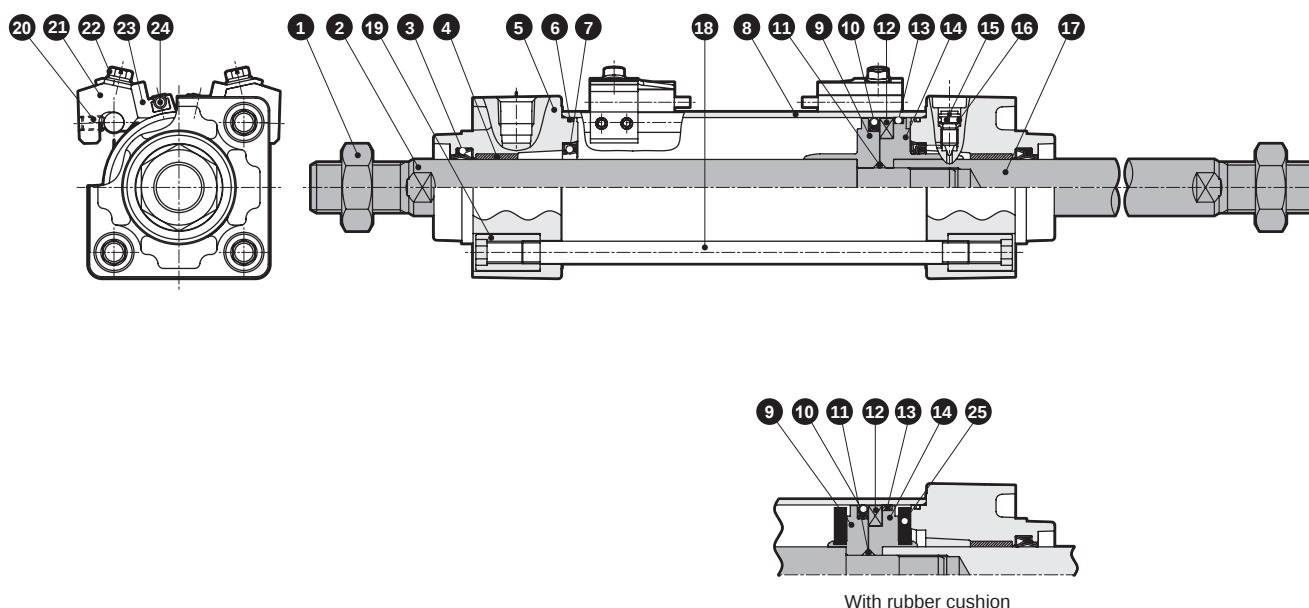
Theoretical thrust table

(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	1.04x10 ²	1.38x10 ²	2.07x10 ²	2.76x10 ²	3.46x10 ²	4.15x10 ²	4.84x10 ²	5.53x10 ²	6.22x10 ²	6.91x10 ²
ø40	Push/Pull	1.06x10 ²	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²	8.44x10 ²	9.50x10 ²	1.06x10 ³
ø50	Push/Pull	1.65x10 ²	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push/Pull	2.80x10 ²	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 ³
ø80	Push/Pull	4.54x10 ²	6.80x10 ²	9.07x10 ²	1.36x10 ³	1.81x10 ³	2.27x10 ³	2.72x10 ³	3.17x10 ³	3.63x10 ³	4.08x10 ³	4.54x10 ³
ø100	Push/Pull	7.15x10 ²	1.07x10 ³	1.43x10 ³	2.14x10 ³	2.86x10 ³	3.57x10 ³	4.29x10 ³	5.00x10 ³	5.72x10 ³	6.43x10 ³	7.15x10 ³

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	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

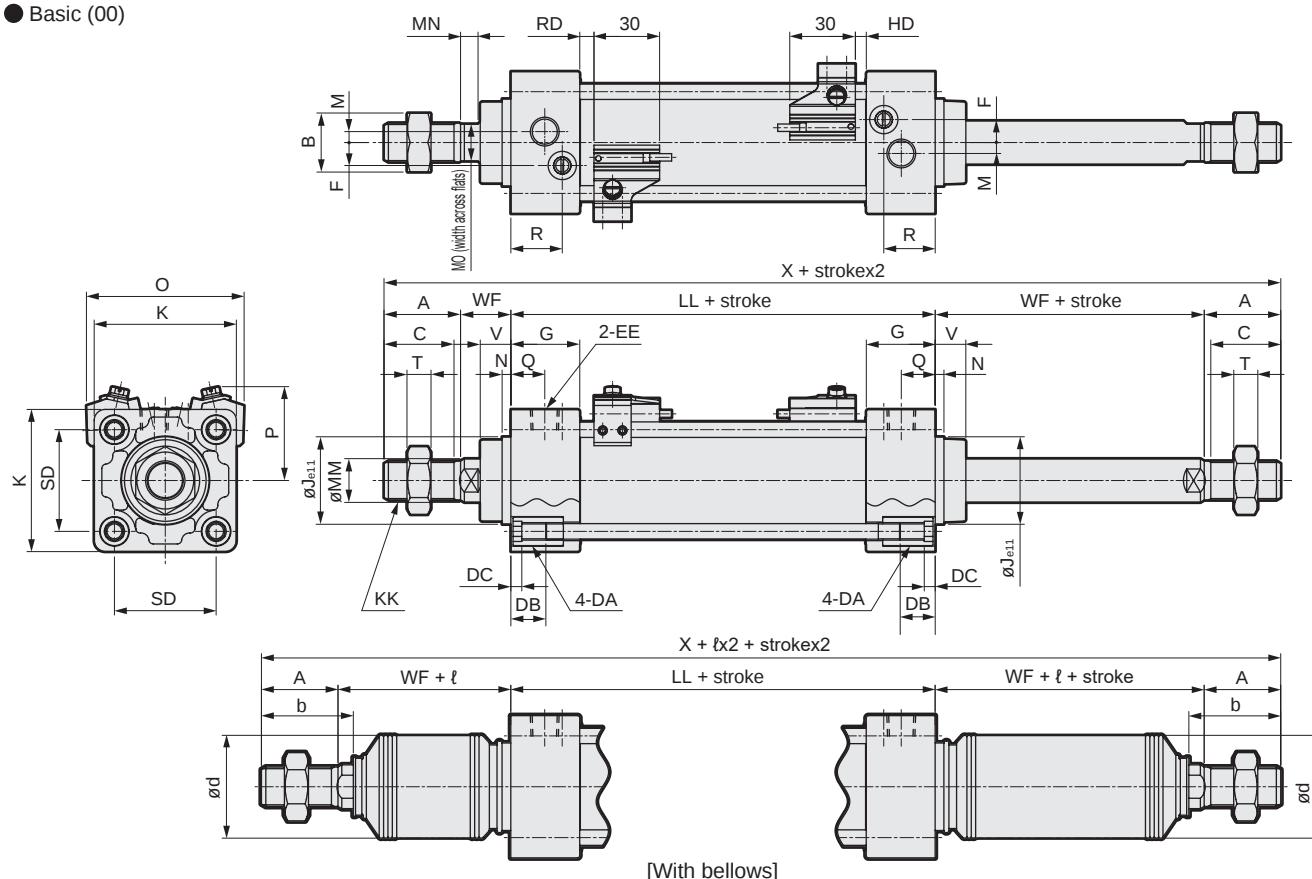
Note: Mounting bracket will be shipped with the product.

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	0.35xstroke-37					
ø40	30	35	40	21	30	43	55	68	93	118	143	0.35xstroke-32					
ø50	35	42	47	23	31	44	56	69	94	119	144	169	0.35xstroke-41				
ø63	35	42	47	23	31	44	56	69	94	119	144	169	0.35xstroke-41				
ø80	40	50	53	32	29	42	54	67	92	117	142	167	192	217	0.35xstroke-63		
ø100	40	52.5	61	32	29	42	54	67	92	117	142	167	192	217	0.35xstroke-63		



Tie rod cylinder Double acting/rotation-stop

SCG-M Series

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



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

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

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

*2: If the max. stroke 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
$\varnothing 32$	9	17	34	51	9	48(33)	78(64)	109(94)	94(94)	94(94)	169(155)	169(155)	42	42
$\varnothing 40$	9	18	36	54	9	48(33)	78(64)	109(94)	81(81)	81(81)	164(142)	164(142)	38	38
$\varnothing 50$	9	18	36	54	9	18	36	54	112(112)	112(112)	121(121)	121(121)	51	53
$\varnothing 63$	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 (L-shaped lead wire).

*2: When the stroke 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 is 500 mm for $\varnothing 32$ to $\varnothing 40$ bore size and 600 mm for $\varnothing 50$ to $\varnothing 63$.

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
$\varnothing 32$	9	17	34	51	9	54(31)	84(62)	115(92)	100(100)	100(100)	191(161)	191(161)	45	45
$\varnothing 40$	9	18	36	54	9	54(31)	84(62)	115(92)	87(87)	87(87)	178(148)	178(148)	41	41
$\varnothing 50$	9	18	36	54	9	18	36	54	116(116)	116(116)	121(121)	121(121)	54	55
$\varnothing 63$	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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire). T2YD does not have an L-shaped lead wire (V).

*2: When the stroke 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 LED/for AC magnetic field proof

Item	2-wire proximity		2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity	
	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	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)	No 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:166				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				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						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

No 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

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

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
TOH*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T8H*	T8V*		●	●	1-color LED	
T1H*	T1V*	Proximity	●		1-color LED	2-wire
T2H*	T2V*			●		3-wire
T3H*	T3V*			●	1-color LED	3-wire
T3PH*	T3PV*			●		3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T2YH*	T2YV*			●		3-wire
T3WH*	T3WV*			●		
T3YH*	T3YV*			●		
T2YD*	-			●	2-color LED for AC magnetic field	2-wire
T2YDT*	-			●		2-wire
T2JH*	T2JV*			●	1-color LED 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 temp.	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	1.21x10 ²	1.61x10 ²	2.41x10 ²	3.22x10 ²	4.02x10 ²	4.83x10 ²	5.63x10 ²	6.43x10 ²	7.24x10 ²	8.04x10 ²
	Pull	—	69.1	1.04x10 ²	1.38x10 ²	2.07x10 ²	2.76x10 ²	3.46x10 ²	4.15x10 ²	4.84x10 ²	5.53x10 ²	6.22x10 ²	6.91x10 ²
ø40	Push	—	1.26x10 ²	1.88x10 ²	2.51x10 ²	3.77x10 ²	5.03x10 ²	6.28x10 ²	7.54x10 ²	8.80x10 ²	1.01x10 ³	1.13x10 ³	1.26x10 ³
	Pull	—	1.06x10 ²	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²	8.44x10 ²	9.50x10 ²	1.06x10 ³
ø50	Push	—	1.96x10 ²	2.95x10 ²	3.93x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³	1.57x10 ³	1.77x10 ³	1.96x10 ³
	Pull	—	1.65x10 ²	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push	1.56x10 ²	3.12x10 ²	4.68x10 ²	6.23x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³	2.49x10 ³	2.81x10 ³	3.12x10 ³
	Pull	1.40x10 ²	2.80x10 ²	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 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

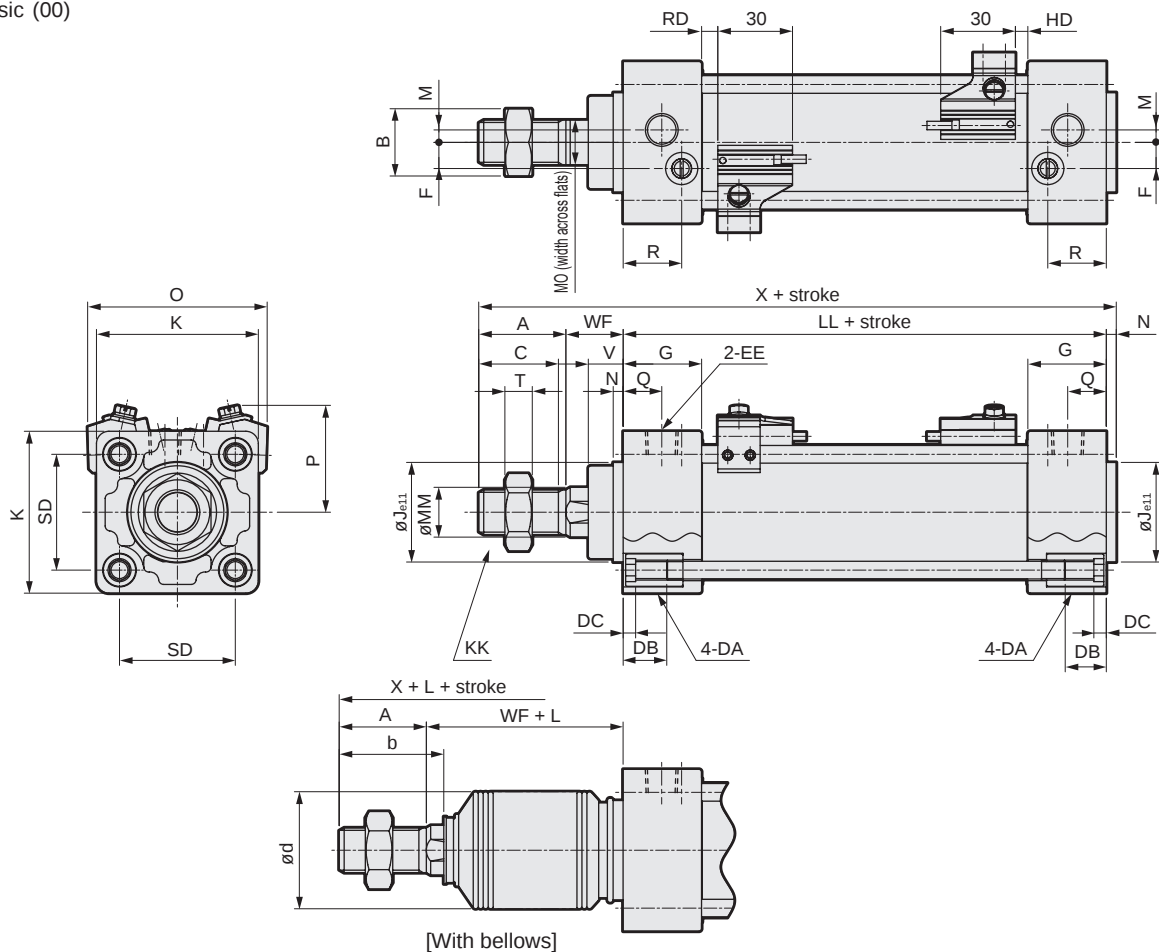
Mounting	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

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)



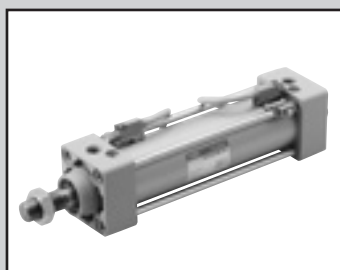
*1: Dimensions in () are for the rubber cushion.

*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															
	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							
									O	P	T0, T5 ,T2, T3		T2W, T3W			
	N	Q	R	SD	T	V	WF	*1 X			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															
	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: $\varnothing 32/\varnothing 40/\varnothing 50/\varnothing 63/\varnothing 80/\varnothing 100$

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

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

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

*2: If the max. stroke 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
$\varnothing 32$	9	17	34	51	9	48 (33)	78 (64)	109 (94)	94 (94)	94 (94)	169 (155)	169 (155)	42	42
$\varnothing 40$	9	18	36	54	9	48 (33)	78 (64)	109 (94)	81 (81)	81 (81)	164 (142)	164 (142)	38	38
$\varnothing 50$	9	18	36	54	9	18	36	54	112 (112)	112 (112)	121 (121)	121 (121)	51	53
$\varnothing 63$	10	19	38	57	10	19	38	57	85 (73)	85 (73)	91 (91)	91 (91)	41	42
$\varnothing 80$	10	20	39	59	10	20	39	59	96 (79)	96 (79)	99 (99)	99 (99)	41	47
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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
$\varnothing 32$	9	17	34	51	9	54 (31)	84 (62)	115 (92)	100 (100)	100 (100)	191 (161)	191 (161)	45	45
$\varnothing 40$	9	18	36	54	9	54 (31)	84 (62)	115 (92)	87 (87)	87 (87)	178 (148)	178 (148)	41	41
$\varnothing 50$	9	18	36	54	9	18	36	54	116 (116)	116 (116)	121 (121)	121 (121)	54	55
$\varnothing 63$	10	19	38	57	10	19	38	57	89 (77)	89 (77)	99 (99)	99 (99)	44	44
$\varnothing 80$	10	20	39	59	10	20	39	59	100 (75)	100 (75)	111 (111)	111 (111)	43	49
$\varnothing 100$	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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire).

*2: When the stroke 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 (L-shaped lead wire). T2YD does not have an L-shaped lead wire (V).

*2: When the stroke 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 LED/for AC magnetic field proof

Item	2-wire proximity	2-wire proximity			3-wire proximity				2-wire reed						2-wire proximity	
	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	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)		No 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							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				0.07	0.13
ø50	1.16	1.32	1.64	1.56	1.57	1.64	0.23				0.20	0.30
ø63	1.42	1.76	2.18	1.97	1.99	2.29	0.25				0.20	0.30
ø80	2.69	3.12	4.26	3.96	3.96	4.18	0.40				0.52	0.94
ø100	3.80	4.66	6.12	5.52	5.55	6.37	0.51				0.48	0.92

How to order

No 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

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 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 : 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 (mm)							
Bore size		Stroke *2	Available stroke	Custom stroke			
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		Indicator	Lead wire	
			AC	DC			
TOH*	T0V*	Reed	●	●	1-color LED	2-wire	
T5H*	T5V*		●	●	No indicator lamp		
T8H*	T8V*		●	●	1-color LED		
T1H*	T1V*	Proximity	●		1-color LED	2-wire	
T2H*	T2V*			●			
T3H*	T3V*			●		3-wire	
T3PH*	T3PV*			●	1-color LED	3-wire	
T2WH*	T2WV*			●	2-color LED	2-wire	
T2YH*	T2YV*			●			
T3WH*	T3WV*			●			3-wire
T3YH*	T3YV*			●			
T2YD*	-			●	2-color LED	2-wire	
T2YDT*	-			●	for AC magnetic field		
T2JH*	T2JV*		●	1-color LED 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)						
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.

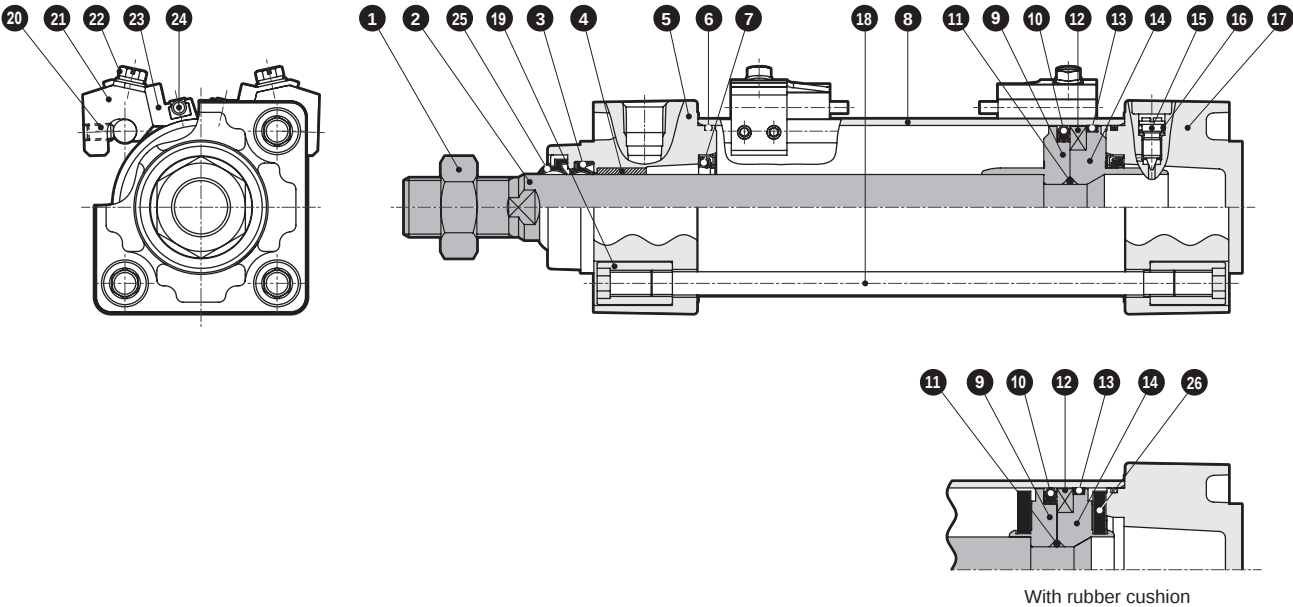
*2: All mounting brackets are supplied with mounting bolts.

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	1.21x10 ²	1.61x10 ²	2.41x10 ²	3.22x10 ²	4.02x10 ²	4.83x10 ²	5.63x10 ²	6.43x10 ²	7.24x10 ²	8.04x10 ²
	Pull	69.1	1.04x10 ²	1.38x10 ²	2.07x10 ²	2.76x10 ²	3.46x10 ²	4.15x10 ²	4.84x10 ²	5.53x10 ²	6.22x10 ²	6.91x10 ²
ø40	Push	1.26x10 ²	1.88x10 ²	2.51x10 ²	3.77x10 ²	5.03x10 ²	6.28x10 ²	7.54x10 ²	8.80x10 ²	1.01x10 ³	1.13x10 ³	1.26x10 ³
	Pull	1.06x10 ²	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²	8.44x10 ²	9.50x10 ²	1.06x10 ³
ø50	Push	1.96x10 ²	2.95x10 ²	3.93x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³	1.57x10 ³	1.77x10 ³	1.96x10 ³
	Pull	1.65x10 ²	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push	3.12x10 ²	4.68x10 ²	6.23x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³	2.49x10 ³	2.81x10 ³	3.12x10 ³
	Pull	2.80x10 ²	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 ³
ø80	Push	5.03x10 ²	7.54x10 ²	1.01x10 ³	1.51x10 ³	2.01x10 ³	2.51x10 ³	3.02x10 ³	3.52x10 ³	4.02x10 ³	4.52x10 ³	5.03x10 ³
	Pull	4.54x10 ²	6.80x10 ²	9.07x10 ²	1.36x10 ³	1.81x10 ³	2.27x10 ³	2.72x10 ³	3.17x10 ³	3.63x10 ³	4.08x10 ³	4.54x10 ³
ø100	Push	7.85x10 ²	1.18x10 ³	1.57x10 ³	2.36x10 ³	3.14x10 ³	3.93x10 ³	4.71x10 ³	5.50x10 ³	6.28x10 ³	7.07x10 ³	7.85x10 ³
	Pull	7.15x10 ²	1.07x10 ³	1.43x10 ³	2.14x10 ³	2.86x10 ³	3.57x10 ³	4.29x10 ³	5.00x10 ³	5.72x10 ³	6.43x10 ³	7.15x10 ³

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

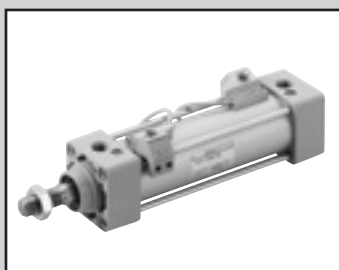
Bore size (mm)	Kit No.	Repair parts No.
ø32	SCG-G-32DK	3 6 10 13
ø40	SCG-G-40DK	
ø50	SCG-G-50DK	
ø63	SCG-G-63DK	
ø80	SCG-G-80DK	16 25 26
ø100	SCG-G-100DK	

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.



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

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)
ø40	25/50/75/100	600	800	1
ø50			1200	
ø63	150/200/250		1200	
ø80	300/350/400	700	1400	
ø100	450/500	800	1500	

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

*2: If the max. stroke 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 (L-shaped lead wire).

*2: When the stroke 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	2-wire proximity	3-wire proximity
	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	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						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	1.26x10 ²	1.88x10 ²	2.51x10 ²	3.77x10 ²	5.03x10 ²	6.28x10 ²	7.54x10 ²	8.80x10 ²	1.01x10 ³	1.13x10 ³	1.26x10 ³
	Pull	1.06x10 ²	1.58x10 ²	2.11x10 ²	3.17x10 ²	4.22x10 ²	5.28x10 ²	6.33x10 ²	7.39x10 ²	8.44x10 ²	9.50x10 ²	1.06x10 ³
ø50	Push	1.96x10 ²	2.95x10 ²	3.93x10 ²	5.89x10 ²	7.85x10 ²	9.82x10 ²	1.18x10 ³	1.37x10 ³	1.57x10 ³	1.77x10 ³	1.96x10 ³
	Pull	1.65x10 ²	2.47x10 ²	3.30x10 ²	4.95x10 ²	6.60x10 ²	8.25x10 ²	9.90x10 ²	1.15x10 ³	1.32x10 ³	1.48x10 ³	1.65x10 ³
ø63	Push	3.12x10 ²	4.68x10 ²	6.23x10 ²	9.35x10 ²	1.25x10 ³	1.56x10 ³	1.87x10 ³	2.18x10 ³	2.49x10 ³	2.81x10 ³	3.12x10 ³
	Pull	2.80x10 ²	4.20x10 ²	5.61x10 ²	8.41x10 ²	1.12x10 ³	1.40x10 ³	1.68x10 ³	1.96x10 ³	2.24x10 ³	2.52x10 ³	2.80x10 ³
ø80	Push	5.03x10 ²	7.54x10 ²	1.01x10 ³	1.51x10 ³	2.01x10 ³	2.51x10 ³	3.02x10 ³	3.52x10 ³	4.02x10 ³	4.52x10 ³	5.03x10 ³
	Pull	4.54x10 ²	6.80x10 ²	9.07x10 ²	1.36x10 ³	1.81x10 ³	2.27x10 ³	2.72x10 ³	3.17x10 ³	3.63x10 ³	4.08x10 ³	4.54x10 ³
ø100	Push	7.85x10 ²	1.18x10 ³	1.57x10 ³	2.36x10 ³	3.14x10 ³	3.93x10 ³	4.71x10 ³	5.50x10 ³	6.28x10 ³	7.07x10 ³	7.85x10 ³
	Pull	7.15x10 ²	1.07x10 ³	1.43x10 ³	2.14x10 ³	2.86x10 ³	3.57x10 ³	4.29x10 ³	5.00x10 ³	5.72x10 ³	6.43x10 ³	7.15x10 ³

How to order

No 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

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 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 : 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 (mm)			
Bore size	Stroke *2	Available stroke	Custom stroke
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	Indicator	Lead wire
T2YLH*	T2YLV*	Proximity		2-color LED	2-wire
T3YLH*	T3YLV*				3-wire

* 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)

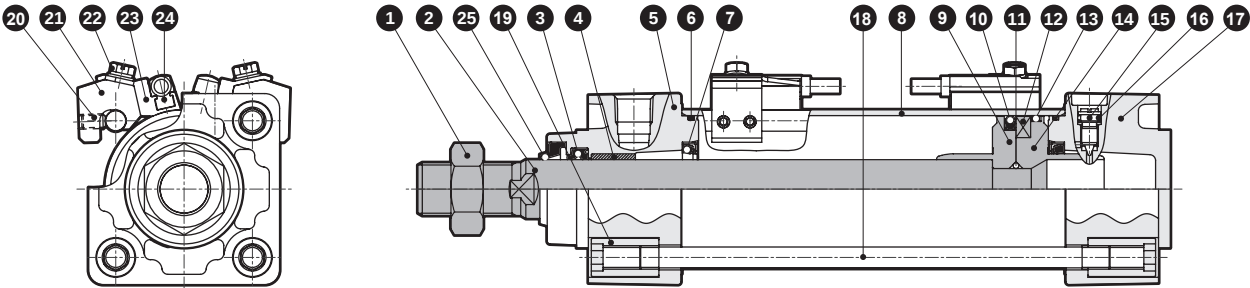
How to order mounting bracket

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 G3 Fluoro rubber		14	Piston H	ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	Chromate treatment
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 G3 Fluoro rubber	
6	Cylinder gasket	G2 Nitrile rubber G3 Fluoro rubber		17	Head cover	Aluminum alloy die-casting	Paint
7	Cushion packing	G2 Nitrile rubber, steel G3 Fluoro rubber, steel	With air cushion only	18	Tie rod	Steel	Zinc chromate treatment
8	Cylinder tube	Aluminum alloy	Hard alumite treatment	19	Round nut	Steel	Zinc chromate treatment
9	Piston R	ø40: Aluminum alloy ø50 to ø100: Aluminum alloy die-casting	Chromate treatment	20	Hexagon socket set screw	Stainless steel	
10	Piston packing	G2 Nitrile rubber G3 Fluoro rubber		21	Switch mounting base	Aluminum alloy	Alodine treatment
11	Piston gasket	G2 Nitrile rubber G3 Fluoro rubber		22	Slotted hex head bolt, captive washer	Stainless steel	
				23	Switch holder	Aluminum alloy	Alodine treatment
				24	Cylinder switch		
				25	Dust wiper	G2 Nitrile rubber, steel 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

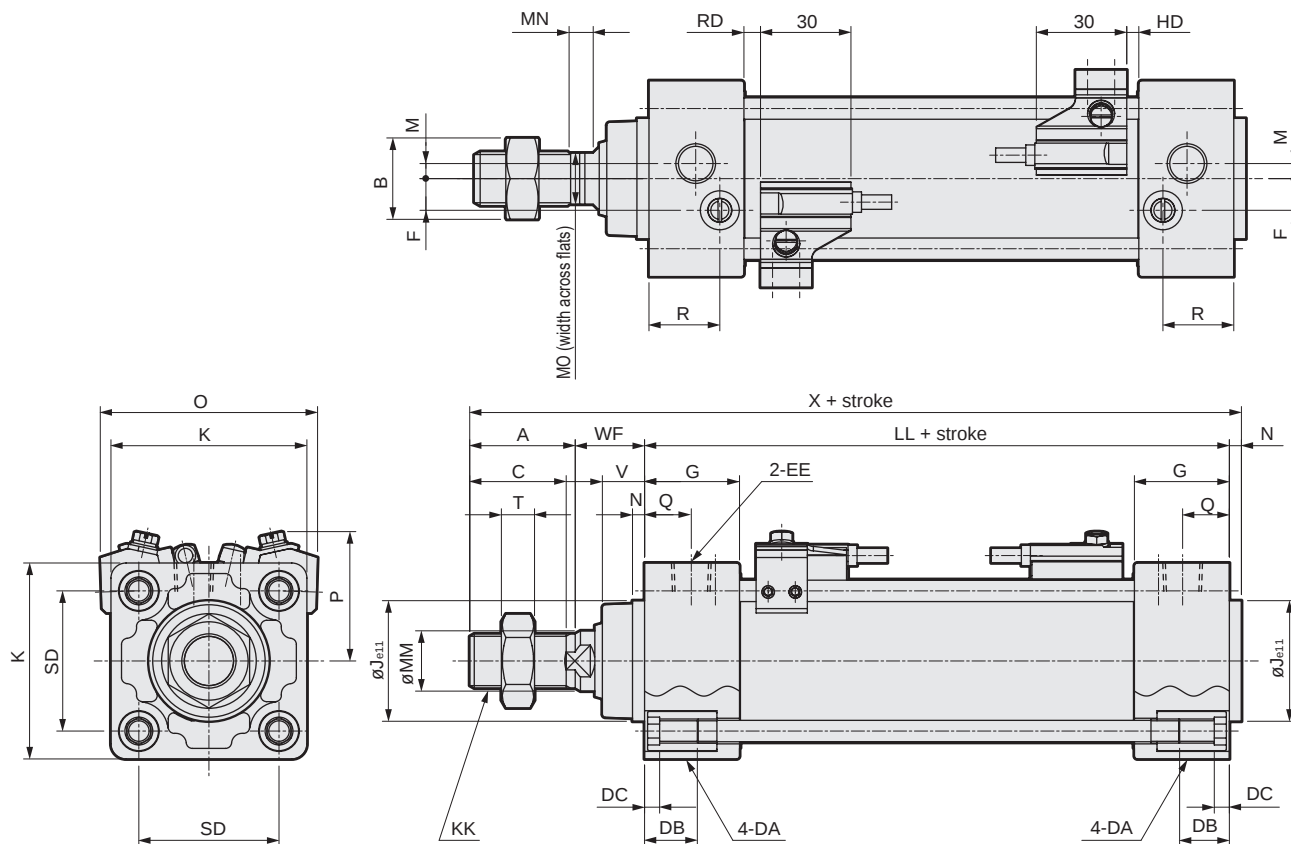
Mounting	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

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

Dimensions



● Basic (00)

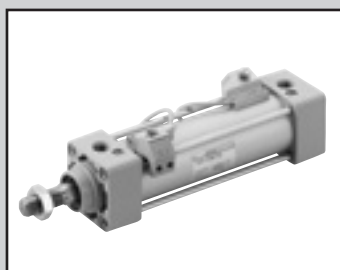


*1: Mounting dimensions of each mounting form are the same as SCG (double acting/single rod). Refer to pages 364 to 371.

*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: $\varnothing 32/\varnothing 40/\varnothing 50/\varnothing 63/\varnothing 80/\varnothing 100$

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

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

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

*2: If the max. stroke 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
$\varnothing 32$	6	11	22	33	6	62	92	123	86	86	177	177	38	38
$\varnothing 40$	6	11	22	33	6	62	92	123	91	91	182	182	43	43
$\varnothing 50$	6	12	24	36	6	12	24	36	93	93	93	93	42	43
$\varnothing 63$	6	12	24	36	6	12	24	36	99	99	99	99	48	49
$\varnothing 80$	7	13	25	38	7	13	25	38	110	110	110	110	48	54
$\varnothing 100$	7	13	26	39	7	13	26	39	115	115	115	115	54	60

*1: When the stroke 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	2-wire proximity		
	T2YD	T2YDT	
Applications	Dedicated for programmable controller		
Indicator	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						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

No 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

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 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 : 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 (mm)			
Bore size	Stroke *2	Available stroke	Custom stroke
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	Indicator	Lead wire
T2YD*	Proximity	2-color LED 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

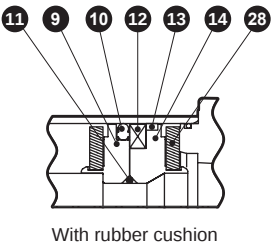
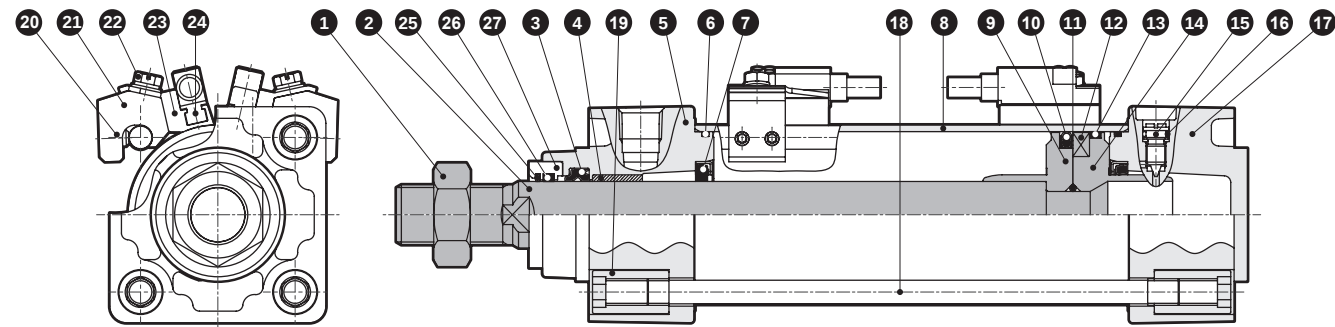
FK

Spd
Contr

Ending

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	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

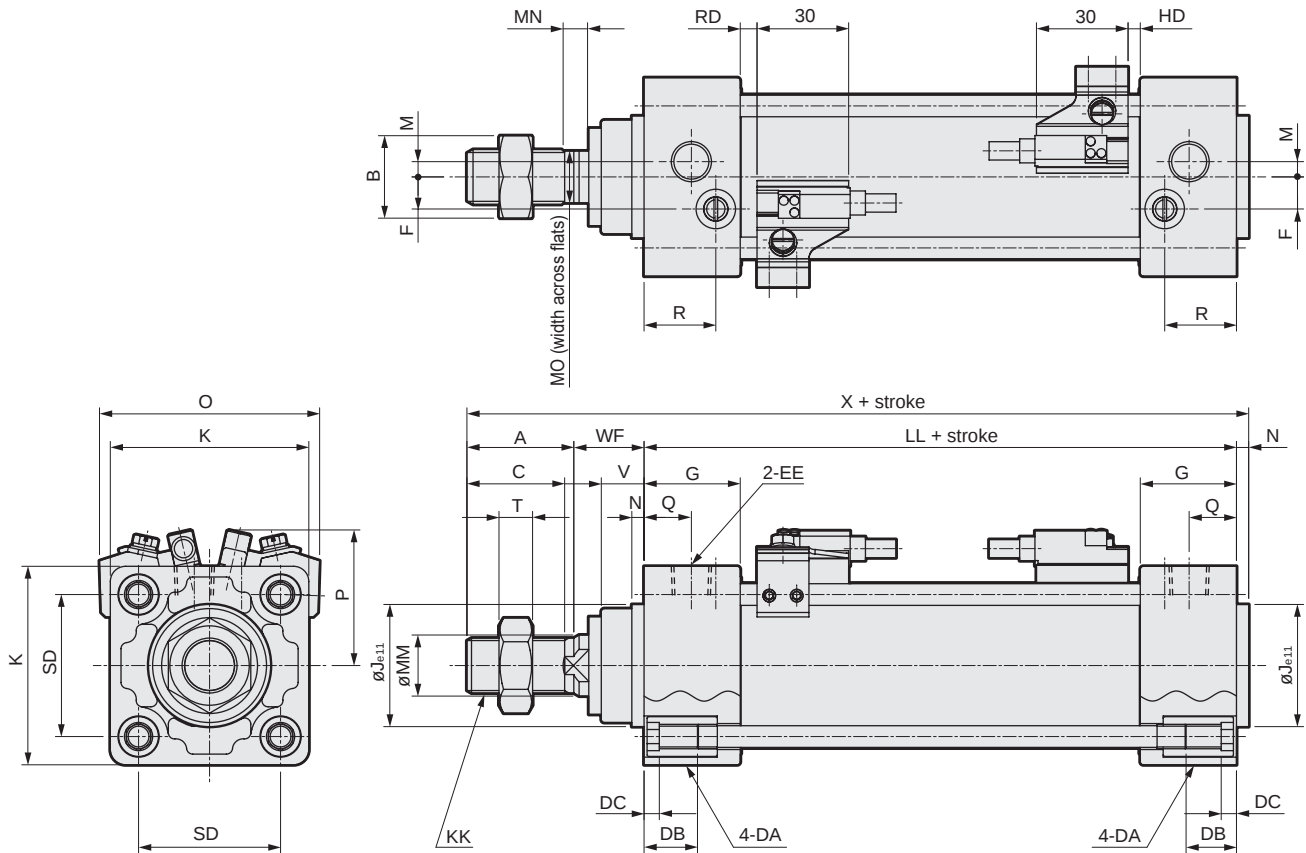
Mounting	Material	Remarks
LB	Steel	Nickel plating
FA/FB	Steel	Paint
CA/CB	Cast iron	Paint
TA/TB/TC	Cast iron	Paint

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.

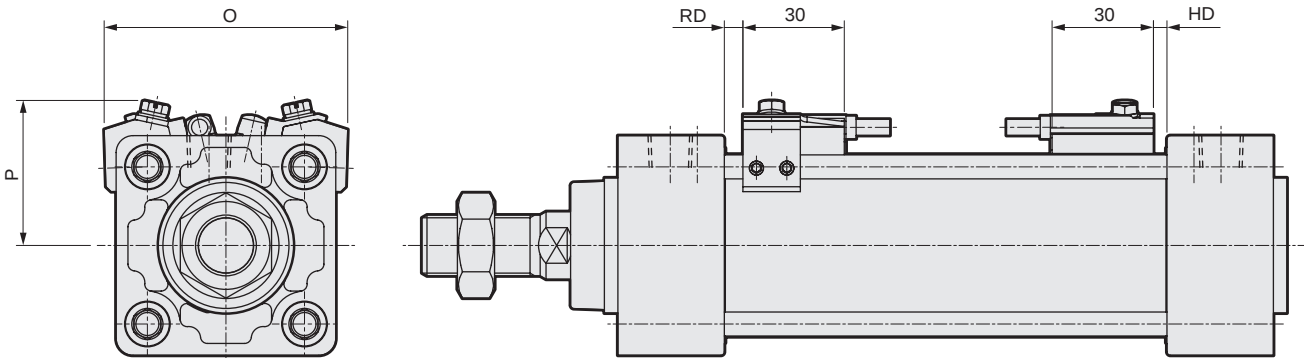
*2: Mounting dimensions of each mounting form are the same as SCG (double acting/single rod). Refer to pages 364 to 371.

*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 with common switch Dimensions

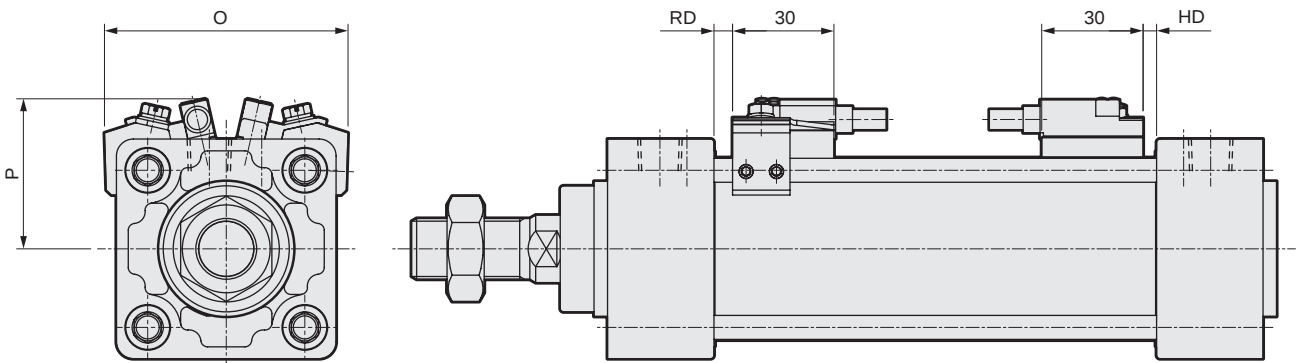
● With T2Y, T3Y, T2J, T8 switches



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	HD
ø32	59	38	4 (7)	4 (7)
ø40	66	41	4 (7)	4 (7)
ø50	72	44	5.5 (9.5)	4 (8)
ø63	83	50	5.5 (9.5)	4 (8)
ø80	104	57	11.5 (16.5)	5 (10)
ø100	121	64	11 (16)	5.5 (10.5)

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

MEMO

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



Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Tie rod cylinders SCG Series

Design/selection

1. Common

CAUTION

- Mount a speed controller on the cylinder.
Mount the speed controller on the cylinder.
Use within the working piston speed range of each series.

CAUTION

- As a cushion mechanism integrated in the cylinder, the rubber cushion and the air cushion are available. The purpose of the air cushion is to absorb the piston's kinetic energy by using air compressibility, avoiding collisions of piston and cover at the stroke end. Thus, the cushion is not used to decelerate the piston speed (deceleration action) near the stroke end. The following table shows the kinetic energy that can be absorbed by the cushion. If the kinetic energy exceeds these values, or if bouncing caused by the air compressibility is to be avoided, consider using another shock absorber.

Bore size (mm)	Rubber cushion	Air cushion	
	Allowable absorbed energy J	Effective air cushion length (mm)	Allowable absorbed energy J
ø32	0.5	8.6	2.5
ø40	0.9	8.6	3.7
ø50	1.6	13.4	8.0
ø63	1.6	13.4	14.4
ø80	3.3	15.4	25.4
ø100	5.8	15.4	45.6

Kinetic energy (J) =

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

(Note) Calculating kinetic energy

Average cylinder speed is obtained with $V_a = \frac{L}{T}$.

V_a : Average speed (m/s)
 L : Cylinder stroke (m)
 T : Operating time (s)

With respect to this, the cylinder speed just before rushing into the cushion can be obtained with the following simple formula.

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

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

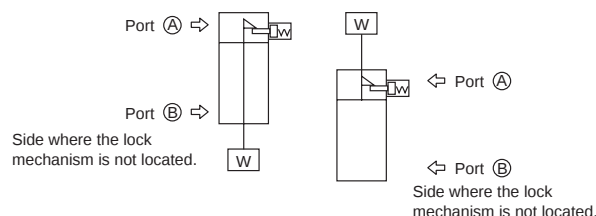
ω : Cylinder load factor (%)

Use this V_m value as speed to calculate kinetic energy.

2. Position locking SCG-Q

WARNING

- If pressure is supplied to the port (A) when both ports are not pressurized and the piston is locked, the lock may not be released or the piston rod may suddenly pop out just after the lock is released. This can be extremely hazardous. To release the lock mechanism, make sure to supply pressure to port (B). Check that load is not applied to the lock mechanism.



- For usage where the drop rate is increased using the quick exhaust valve, the lock may not release normally because the cylinder body starts operating before the lock pin. For the position locking cylinder, do not use the quick manual exhaust.
- Do not use 3-position valves.
Do not use the cylinder in combination with 3-position (especially closed center metal seal) valves. If the port at the side where the lock mechanism is located is pressurized, the lock cannot be engaged. Even if it is locked once, the air leaked from the solenoid valve may enter the cylinder, and the lock may be released after a certain period of time.

CAUTION

- Cylinder load factor must be 50% or less.
If the load factor is high, the lock may not be released, or the lock section may be damaged.
- If back pressure is applied to the locking mechanism, the lock may be released. Use a single solenoid valve, or an individual exhaust manifold.
- Do not use multiple synchronized cylinders.
Do not use so that 1 workpiece is moved by synchronizing 2 or more position locking cylinders. Lock release may fail for one of the cylinders.

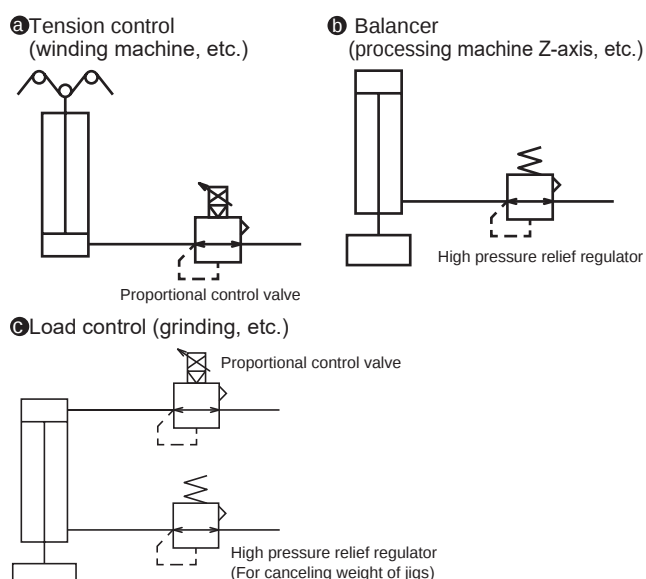
3. Low friction SCG-U

⚠ WARNING

- Durability differs based on working conditions and model characteristics.
This cylinder has internal leakage.
Refer to specifications (page 402) for amount of leakage.

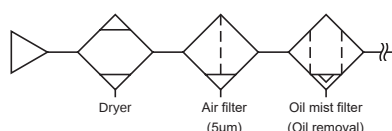
⚠ CAUTION

- When using the cylinder for a balancer, etc., it may be advisable not to mount a speed controller in order to improve the supply and exhaust efficiency. Depending on the application, circuits **a** to **c** below are recommended.



* To improve the supply and exhaust efficiency, make the volume of piping as large as possible.

- Do not lubricate. The properties fluctuate.
- Because poor quality air worsens the characteristics and adversely affects the durability, use clean air with the piping below.



- Mount the speed controller near the cylinder.
When installed at a distant place from the cylinder, the adjustment becomes unstable.
- In general, the speed is more stable at higher air pressure and lower load factor.
Use at a 50% or less load factor.

4. Coolant proof SCG-G2/G3

⚠ CAUTION

- Do not apply an eccentric load to the piston rod.
The service life of the scraper or bearing could be shortened.
- In the case that the G2 or G3 Series are not exposed to splattering of coolant or water, the lubrication of the piston rod will run out and the service life will be shortened. Use the G Series in this case.

5. Anti-spatter adherence SCG-G4

⚠ WARNING

- The durability of this cylinder series is improved in comparison to standard cylinders when used in an atmosphere exposed to spatter. But durability may be shorter than the standard cylinder when used in other atmospheres.

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

Mounting, installation and adjustment

1. Common

⚠ CAUTION

Caution for mounting the switch

■ Fixing the switch

For screw fixing when using T2, T3, T0, or T5, use a flathead screwdriver (clockwork screwdriver, precision screwdriver, etc.) with a grip diameter of 5 to 6 mm, a 2.4 mm or smaller tip, and a thickness of 0.3 mm or less to tighten the screws with a tightening torque of 0.1 to 0.2 N·m.

When using T2J, T2Y, or T3Y, tighten the screw with a tightening torque of 0.5 to 0.7 N·m.

2. Position locking SCG-Q

⚠ CAUTION

■ The lock mechanism functions at the stroke end, so that if the stopper is engaged during the stroke by the external stopper, the lock mechanism may not work and the piston could fall. When setting a load, make sure to check that the lock mechanism functions before installing the product.

■ Supply pressure equal to or higher than the min. working pressure to the port on the lock mechanism side.

■ When the piping at the side, where the lock mechanism is located, is long and thin, or when the speed controller is far away from the cylinder port, note that it takes time to engage the lock. Clogging in the silencer mounted on the EXH port of the valve may cause the same result.

3. Low friction SCG-U

⚠ CAUTION

■ Do not apply a lateral load to the cylinder.

Install the sliding guide so that it is not twisted.

- When the load or the resistance fluctuates, operation becomes unstable.
- For the long stroke, the piston rod's own weight causes the speed to become unstable. Install the guide before use.
- With a large difference between static friction and kinematic friction of the guide, operation becomes unstable.

■ Avoid using this product where vibration is present.

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

■ Avoid using in environments with water vapor or high humidity or in alkaline atmospheres.

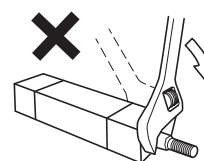
4. Rotation-stop SCG-M

⚠ CAUTION

■ Do not use the product so as to apply rotation torque to the piston rod.

The bushing for the rotation lock may deform and significantly shorten the service life.

■ When fixing a workpiece onto the tip of the piston rod, retract the piston rod to the stroke end and apply a wrench to the section protruding from the rod's parallel section. Tighten so that torque is not applied to the cylinder body.



■ For the rotation-stop cylinder, the rotation torque that can be applied to the piston rod when fixing the workpiece on the end of the piston rod is as shown in the table below.

Note that the piston rod starts to spin around if the rotation torque exceeding this value is applied to the piston rod.

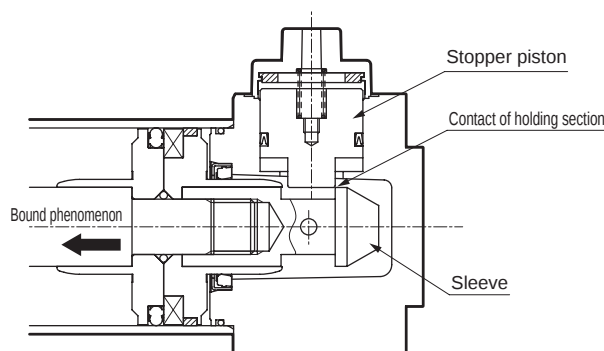
Allowable torque	ø32	ø40	ø50	ø63
N·m	0.25	0.45	0.45	0.45

Use/maintenance

1. Position locking SCG-Q

⚠ WARNING

- For safety purposes, prevent the load from falling under its own weight during maintenance.
- In the case of the cylinder with air cushion, if the air cushion needle at the lock mechanism side is tightened excessively, the piston bounds at the stroke end and the sleeve and stopper piston collide strongly, which may result in damage to the locking mechanism.
Also, if the air cushion needle is opened too much, the piston bounces off at the stroke end, which may similarly damage the mechanism. Adjust the needle of the air cushion so that there is no bound.



When stopping the piston with an external buffer device (shock absorber, etc.), adjust it similarly so that there is no bound.

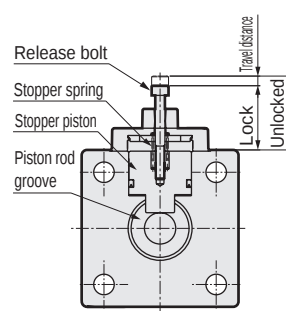
Inspect the piston once or twice a year to make sure there is no damage to the retainer caused by this phenomenon.

⚠ CAUTION

- After the lock mechanism is manually operated, make sure to confirm manual operation and return the mechanism to the original state before use. Do not perform manual operation except for adjustment, as it is dangerous.
- When mounting or adjusting the cylinder, release the lock.
If mounting work, etc., is done while the lock is engaged, the lock part may be damaged.
- Use the speed controller with meter-out.
If the meter-in control is used, the lock may not be able to be released.
- At the side where the lock mechanism is attached, be sure to use the cylinder from the stroke end.
If the cylinder piston does not reach the stroke end, the lock may not be engaged or the lock may not be able to be released.

■ Manual override non-locking release method

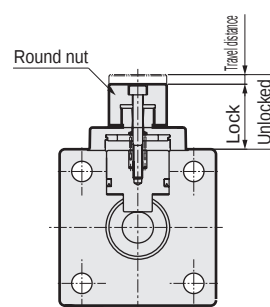
By screwing the release bolt into the stopper piston and pulling the bolt with a force of 20N or more for the distance traveled, the stopper piston will move and the lock will release. (when horizontally installed with no load or with the opposite side port pressurized). When the screw is released, the internal spring causes the stopper piston to return. When it fits into the piston rod groove again, the piston is locked.



Bore size (mm)	Lock	Unlocked	Travel distance	Release bolt
ø32	19.5	22.5	3	M3x25
ø40	18	21	3	M3x25
ø50	26.5	30.5	4	M4x35
ø63	21.5	25.5	4	M4x35
ø80	19	23	4	M4x35
ø100	21.5	25.5	4	M4x35

■ Manual override locking release method

By rotating the round nut leftward (counterclockwise), the stopper piston moves and the lock is released. Rotating the round nut to the right to set it in the locked position causes the stopper piston to return. When it fits into the piston rod groove again, the piston is locked.



Bore size (mm)	Lock	Unlocked	Distance traveled
ø32	20	23	3
ø40	18.5	21.5	3
ø50	27	31	4
ø63	22	26	4
ø80	19.5	23.5	4
ø100	22	26	4

2. Low friction SCG-O

⚠ WARNING

- Smoking with hands smeared with the fluorine grease used for the O Series could generate harmful gases and cause physical harm.

3. Low friction SCG-U

⚠ CAUTION

- Do not disassemble the product. Once disassembled, the performance may not be retained.
For this product, just the repair parts are not available.