

Round shaped cylinder SGM Series



ROUND SHAPED CYLINDER SGM SERIES

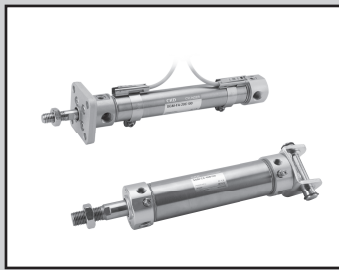


Silver appearance, bright and elegant

Diverse mounting styles, easy operation

Switch is mounted by band for easy adjustment





Round shaped cylinder
Double acting, single rod

SGM Series

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

JIS symbol • Double acting, single rod



Specifications

Item		SGM				
Bore size		mm	φ20	φ25	φ32	φ40
Actuation			Double acting			
Working fluid			Compressed air			
Max. working pressure		MPa	1.0			
Min. working pressure		MPa	0.1			
Withstanding pressure		MPa	1.5			
Ambient temperature		°C	-10 to 60 (no freezing)			
Port size	With rubber cushion		Rc1/8			
	Rubber-air cushioned		Rc1/8			
	With air cushion		M5		Rc1/8	
Stroke tolerance		mm	^{+2.0} ₀ (Up to 200), ^{+2.4} ₀ (More than 200)			
Working piston speed		mm/s	50 to 1000			
Cushion			Optional rubber cushion, rubber-air cushion or air cushion			
Effective air cushion length			8.1	8.1	8.6	8.6
Lubrication			Not required (when lubrication, use turbine oil Class 1 ISO VG32)			
Allowable absorbed energy J	With rubber cushion		0.166	0.308	0.424	0.639
	Rubber-air cushioned		0.089	0.137	0.179	0.278
	With air cushion		0.8	1.2	2.5	3.7

Stroke length

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
φ20	25,50,75,100, 150,200,250,300	750	15
φ25		1000	
φ32			
φ40			

Note: Custom stroke lengths are available in 1 mm increments.

Min. stroke with switch

(Unit: mm)

Switch quantity	1						2						3					
	Proximity			Reed			Proximity			Reed			Proximity			Reed		
	T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8		T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8		T2, T3	T2W, T3W	T1, T*Y*	T0, T5	T8	
$\phi 20$			15				25	30	35	25	35		50	55	55	50	55	
$\phi 25$			15				25	30	35	25	35		50	55	55	50	55	
$\phi 32$			15				25	30	35	25	35		50	55	55	50	55	
$\phi 40$			15				25	30	35	25	35		50	55	55	50	55	

*1: Up to 3 switches can be mounted.

Switch specifications

- 1-color/2-color display

Item	Proximity 2-wire				Proximity 3-wire				Reed 2-wire						
	T1H, T1V	T2H, T2V, T2JH, T2JV	T2YH, T2YV	T2WH, T2WV	T3H, T3V	T3PH, T3PV (custom order)	T3YH, T3YV	T3WH, T3WV	T0H, T0V	T5H, T5V		T8H, T8V			
Applications	Programmable controller, relay and small solenoid valve	Programmable controller			Programmable controller, relay				Programmable controller, relay	For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Programmable controller, relay			
Output mode	-				NPN output	PNP output	NPN output	NPN output	-						
Power voltage	-				DC 10 to 28V				-						
Load voltage	AC 85 to 265V	DC 10 to 30V		DC 24 V±10%	DC 30V or less				DC 12/24V	AC 100/110V	DC 5/12/24V	AC 100/110V	DC 12/24V	AC 110V	AC 220V
Load current	5 to 100mA	5 to 20mA (*2)			100mA or less		50mA or less		5 to 50mA	7 to 20mA	50 mA or less	20mA or less	5 to 50mA	7 to 20mA	7 to 10mA
Light	LED (On lighting)	LED (On lighting)	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 (On lighting)	Without indicator		LED (On lighting)			
Leaking current	1mA or less with 100 VAC, 2mA or less with 200 VAC	1mA or less			10µA or less				0mA						
Weight g	1m: 33 3m: 87 5m: 142	1m: 18 3m: 49 5m: 80	1m: 33 3m: 87 5m: 142	1m: 18 3m: 49 5m: 80	1m: 18 3m: 49 5m: 80		1m: 33 3m: 87 5m: 142	1m: 18 3m: 49 5m: 80	1m: 18 3m: 49 5m: 80				1m: 33 3m: 87 5m: 142		

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

*2: The T0/T5 switch can also be used with 220 VAC. Contact CKD about working conditions.

Cylinder mass

(Unit: kg)

Item/Mounting style	Product weight when stroke length (S) = 0mm					Switch weight (per 1 pc.)	Additional weight per 10mm stroke	Switch rail + band weight
Bore size (mm)	Basic (00)	Axial foot (LB)	Flange (FA/FB)	Rod eye type (CA)	Trunnion (TA/TB)			
φ20	0.10	0.21	0.13	0.15	0.11	Refer to the weight in the switch specifications.	0.01	0.005
φ25	0.17	0.30	0.21	0.25	0.19		0.014	0.005
φ32	0.26	0.42	0.32	0.41	0.29		0.018	0.009
φ40	0.41	0.63	0.49	0.64	0.46		0.03	0.009

(Example)

Product weight of SGM-LB-40B-100-T2H-D

Product weight when S = 0 mm ... 0.63 kg

Additional weight when S = 100 mm $0.032 \times \frac{100}{10} = 0.32$ kg

Weight of 2 switches ... $0.018 \times 2 = 0.036$ kg

Product weight ... $0.63 + 0.32 + 0.036 = 0.986$ kg

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
φ20	Extension	31.4	47.1	62.8	94.2	1.26×10^2	1.57×10^2	1.88×10^2	2.20×10^2	2.51×10^2	2.83×10^2	3.14×10^2
	Retraction	26.4	39.6	52.8	79.2	1.06×10^2	1.32×10^2	1.58×10^2	1.85×10^2	2.11×10^2	2.38×10^2	2.64×10^2
φ25	Extension	49.1	73.6	98.2	1.47×10^2	1.96×10^2	2.45×10^2	2.95×10^2	3.44×10^2	3.93×10^2	4.42×10^2	4.91×10^2
	Retraction	41.2	61.9	82.5	1.24×10^2	1.65×10^2	2.06×10^2	2.47×10^2	2.89×10^2	3.30×10^2	3.71×10^2	4.12×10^2
φ32	Extension	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
	Retraction	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
φ40	Extension	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
	Retraction	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

How to order

SGM - 00 - 40 - B - 100 - T0H - R - M - Y

A Mounting style

B Bore size

C Port thread type

D Cushion

E Stroke length

F Switch model No.

G Switch quantity

*1

H Option

I Attachment

*3

⚠ Cautions for model (No. selective)

- *1: Up to three switches can be installed. If four or more switches are required, switch mounting brackets for the extra switches must be prepared separately.
- *2: For 20 or 25 bore size, the rod is stainless steel as standard and the rod nut is not stainless steel. If a stainless steel rod nut is necessary, select the "M" option code.
- *3: "I" and "Y" cannot be selected together.

<Example of model number>

SGM-00-40B-100-T0H-R-MY

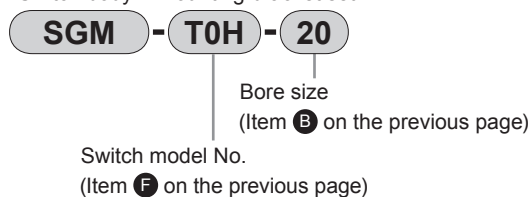
Model: Round shaped cylinder, double acting, basic type

- A Mounting style : Basic
- B Bore size : $\phi 40\text{mm}$
- C Port thread type : Rc thread
- D Cushion : Two-sided rubber cushion
- E Stroke length : 100mm
- F Switch model No. : Reed T0H switch, lead wire length 1m
- G Switch quantity : 1 on rod side
- H Option : Stainless steel piston rod
- I Accessory : Rod clevis

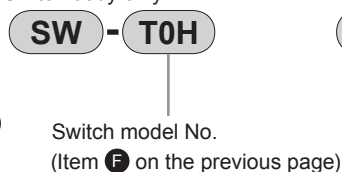
Code	Description		
A Mounting style			
00	Basic		
LB	Axial foot		
FA	Rod side flange		
FB	Head side flange		
CA	Clevis		
TA	Rod side trunnion type		
TB	Head side trunnion type		
B Bore size (mm)			
20	φ20	*2	
25	φ25	*2	
32	φ32		
40	φ40		
C Port thread type			
Blank	Rc thread		
D Cushion			
D	Two-sided rubber cushion		
C	With two-sided rubber-air cushion		
B	Two-sided air cushion		
R	Rod side air cushion		
H	Head side air cushion		
E Stroke length (mm)			
Bore size	Standard stroke	Max. stroke	
φ20	25, 50, 75, 100, 150,	φ20, φ25: 750	
φ25			
φ32	200, 250, 300	φ32, φ40: 1000	
φ40			
F Switch model No.			
Lead wire Straight type	Lead wire L-type	Contact	Display
T0H*	T0V*	Reed	2-wire
T5H*	T5V*		
T8H*	T8V*		
T1H*	T1V*		
T2H*	T2V*		
T3H*	T3V*		
T3PH*	T3PV*	Proximity	3-wire
T2YH*	T2YV*		
T3YH*	T3YV*		2-wire
T2YFH*	T2YFV*		3-wire
T3YFH*	T3YFV*		4-wire
T2YMH*	T2YMV*		3-wire
T3YMH*	T3YMV*		4-wire
T2JH*	T2JV*		2-wire
*Lead wire length			
Blank	1m (standard)		
3	3m (option)		
5	5m (option)		
G Switch quantity			
R	One on rod side		
H	One on head side		
D	Two		
T	Three		
H Option			
M	Stainless steel piston rod *2		
I Accessory			
I	Rod eye		
Y	Rod clevis (pin and snap ring attached)		
B2	Clevis bracket		

How to order switch

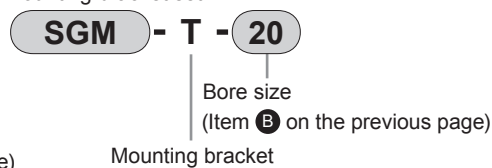
- Switch body + mounting bracket set



- Switch body only



- Mounting bracket set



How to order mounting bracket

Bore size (mm)	φ20	φ25	φ32	φ40
Mounting bracket				
Axial foot (LB)	SGM-LB-20	SGM-LB-25	SGM-LB-32	SGM-LB-40
Flange (FA/FB)	SGM-FA-20	SGM-FA-25	SGM-FA-32	SGM-FA-40
Trunnion (TA/TB)	SGM-TA-20	SGM-TA-25	SGM-TA-32	SGM-TA-40
Clevis (CA)	SGM-CA-20	SGM-CA-25	SGM-CA-32	SGM-CA-40

*1: All mounting brackets have mounting bolts attached.

*2: The axial foot is provided as 2 pcs./set.

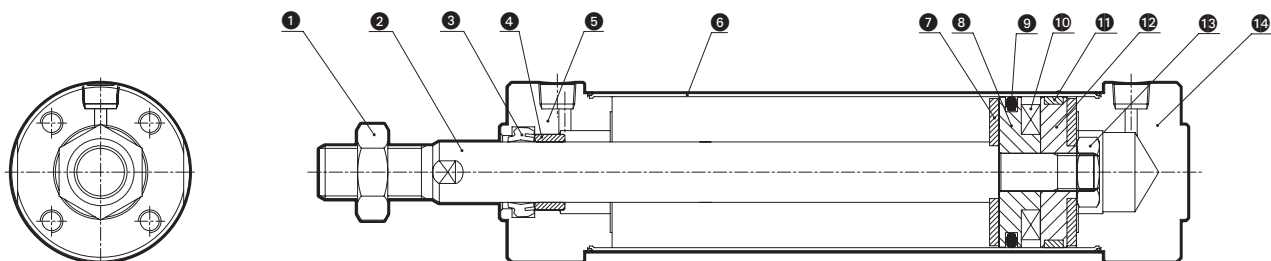
Material of mounting bracket

Mounting style	Material
LB	Steel
FA/FB	Aluminum alloy
TA/TB	Steel
CA	Steel

Note: The mounting bracket is assembled before shipment.

Internal structure and parts list (with rubber cushion)

• SGM-20D to SGM-40D

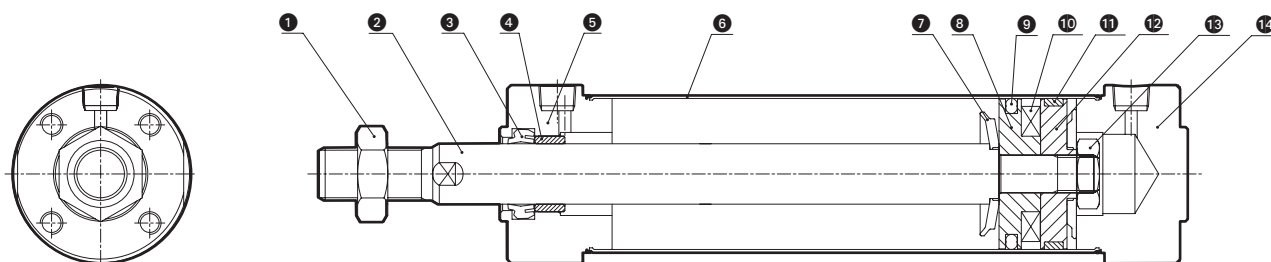


Cannot be disassembled

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod side nut	Steel	Nickel plated ($\phi 20$) Zinc plated ($\phi 25$ to $\phi 40$)	7	Cushion rubber	Urethane rubber	
2	Piston rod	$\phi 20$, $\phi 25$: Stainless steel $\phi 32$, $\phi 40$: Steel	Industrial chrome plated	8	Piston A	Aluminum alloy	
3	Piston rod packing seal	Nitrile rubber		9	Piston packing seal	Nitrile rubber	
4	Bushing	$\phi 20$, $\phi 25$, $\phi 32$: Steel, copper, resin alloy $\phi 40$: Copper-based		10	Piston magnet	Magnetic plastic	
5	Rod cover	Aluminum alloy	Hard anodized	11	Support ring	Resin	
6	Cylinder tube	Stainless steel		12	Piston B	Aluminum alloy	
				13	Hexagon nut	Steel	Zinc plated
				14	Intermediate cover	Aluminum alloy	Hard anodized

Internal structure and parts list (with rubber-air cushion)

• SGM-20C to SGM-40C

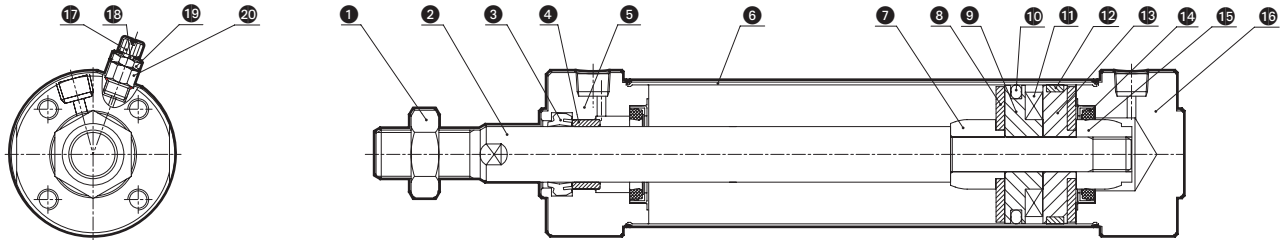


Cannot be disassembled

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod side nut	Steel	Nickel plated ($\phi 20$) Zinc plated ($\phi 25$ to $\phi 40$)	7	Cushion rubber	Urethane rubber	
2	Piston rod	$\phi 20$, $\phi 25$: Stainless steel $\phi 32$, $\phi 40$: Steel	Industrial chrome plated	8	Piston A	Aluminum alloy	
3	Piston rod packing seal	Nitrile rubber		9	Piston packing seal	Nitrile rubber	
4	Bushing	$\phi 20$, $\phi 25$, $\phi 32$: Steel, copper, resin alloy $\phi 40$: Copper-based		10	Piston magnet	Magnetic plastic	
5	Rod cover	Aluminum alloy	Hard anodized	11	Support ring	Resin	
6	Cylinder tube	Stainless steel		12	Piston B	Aluminum alloy	
				13	Hexagon nut	Steel	Zinc plated
				14	Intermediate cover	Aluminum alloy	Hard anodized

Internal structure and parts list (with air cushion)

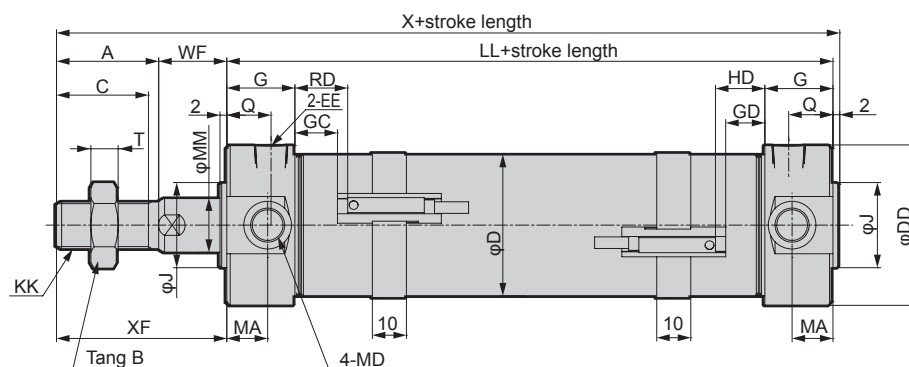
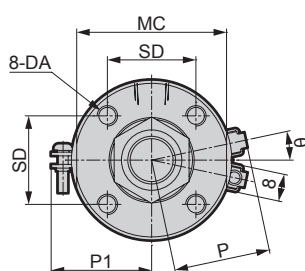
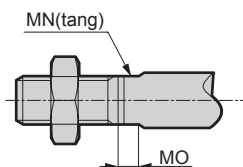
- SGM-20B to SGM-40B



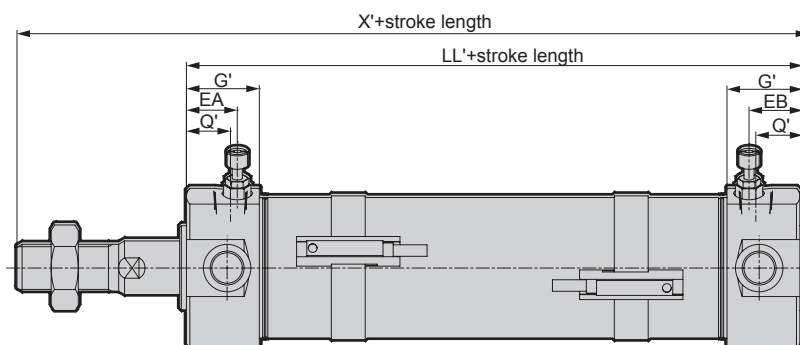
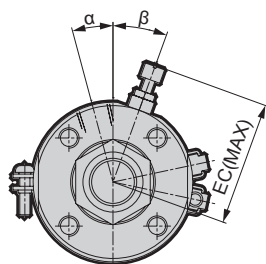
Cannot be disassembled

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod side nut	Steel	Nickel plated (φ20) Zinc plated (φ25 to φ40)	10	Piston packing seal	Nitrile rubber	
2	Piston rod	φ20, φ25: Stainless steel φ32, φ40: Steel	Industrial chrome plated	11	Piston magnet	Magnetic plastic	
3	Piston rod packing seal	Nitrile rubber		12	Support ring	Resin	
4	Bushing	φ20, φ25, φ32: Steel, copper, resin alloy φ40: Copper-based		13	Piston B	Aluminum alloy	
5	Rod cover	Aluminum alloy	Hard anodized	14	Cushion packing seal	Nitrile rubber, steel	
6	Cylinder tube	Stainless steel		15	Cushion block B	Aluminum alloy	
7	Cushion block A	Aluminum alloy		16	Intermediate cover	Aluminum alloy	Hard anodized
8	Cushion rubber	Urethane rubber		17	Knob	Aluminum alloy	Chromate treatment
9	Piston A	Aluminum alloy		18	Needle valve	Stainless steel	
				19	Lock nut	Steel	Nickeling
				20	Needle holder	Aluminum alloy	

- Basic(00) $\phi 20$ to $\phi 40$
<With rubber cushion>/<With rubber-air cushion>



<With air cushion>



Code	Basic (00) common dimensions																				
	A	B	C	D	DA	EE(*1)	G	J	LL	KK	MA	MC	MD	MM	MN	MO					
Bore size (mm)																					
φ20	18	13	16	21.4	M4 depth 6.5	Rc1/8	19	12	69	M8×1.25	11	24	M5	8	6	4					
φ25	22	17	20	26.4	M5 depth 6.5	Rc1/8	17.5	14	69	M10×1.25	10	29	M6	10	8	5					
φ32	22	17	20	33.6	M5 depth 7.5	Rc1/8	18.5	18	71	M10×1.25	11	36	M8	12	10	5					
φ40	30	22	27	41.6	M6 depth 12	Rc1/8	20	25	78	M14×1.5	12	44	M10	16	14	6					
Code	Basic (00) common dimensions									With switch (*2)											
	Q	SD	T	WF	X	XF	DD	RD	HD	(Stroke length ≤ 35mm)		(Stroke length > 35mm)		θ	P	P1					
										GC	GD	GC	GD								
Bore size (mm)																					
φ20	12	14	5	17	106	35	26	7.25	6.25	3.25	2.25	7.25	6.25	22	17.3	19.5					
φ25	11	16.5	6	18	111	40	31	8.75	7.75	4.75	3.75	8.75	7.75	18	19.8	22					
φ32	12	20	6	18	113	40	38	8.75	7.75	4.75	3.75	8.75	7.75	15	24.3	25.5					
φ40	13	26	8	20	130	50	46.5	11	10	7	6	11	10	12	28.3	29.5					
Code	With air cushion										*1: Piping port (EE) of φ20 and φ25 is different. Refer to the dimensions (EE*) of the type with air cushion. *2: The switches in the table are 1-color display ones. Contact CKD for detailed mounting dimensions of 2-color display switches. *3: For the dimensions of the accessories, refer to pages 14 to 15.										
	EA	EC	α	β	EE*	G'	Q'	LL'	X'												
Bore size (mm)																					
φ20	14.25	26	20	30	M5	21	12	73	110												
φ25	15.5	28.5	10	30	M5	21	12	76	118												
φ32	14	31.8	10	25	Rc1/8	20.5	12	75	117												
φ40	15	35.6	15	20	Rc1/8	21.5	13	81	133												

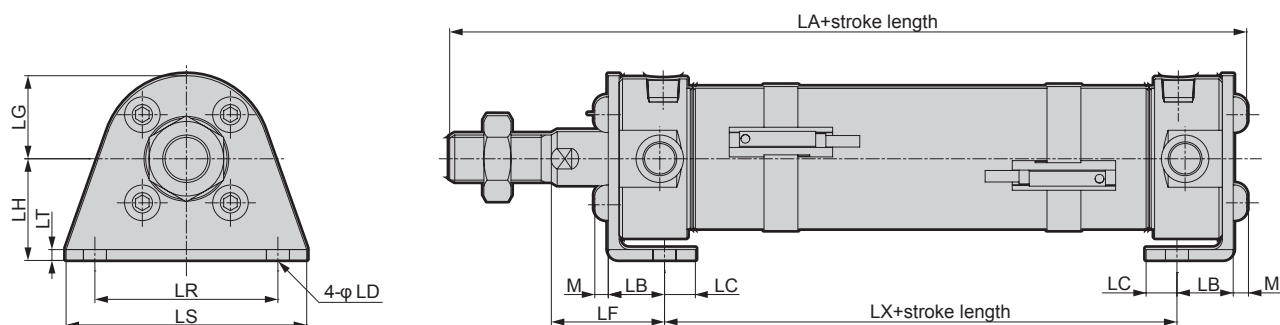
1: Piping port (EE) of $\phi 20$ and $\phi 25$ is different. Refer to the dimensions (EE) of the type with air cushion.

*2: The switches in the table are 1-color display ones. Contact CKD for detailed mounting dimensions of 2-color display switches.

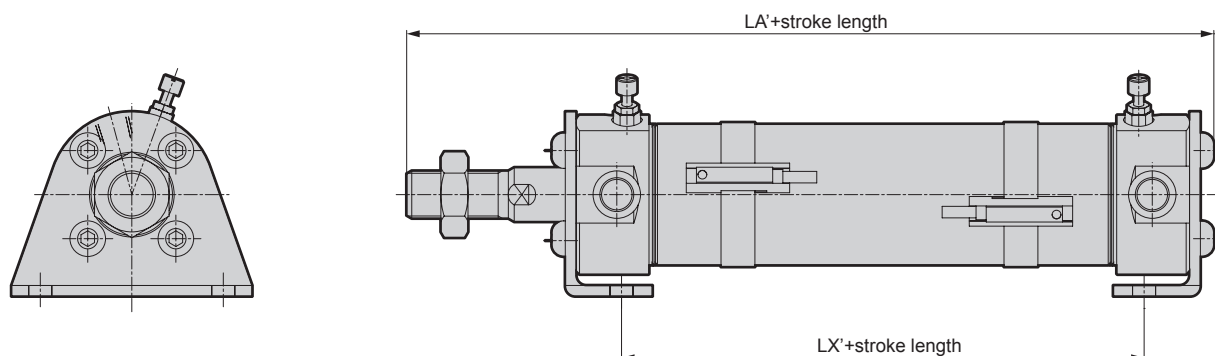
*3: For the dimensions of the accessories, refer to pages 14 to 15.

Dimensions

- Axial foot (LB)
<With rubber cushion>/<With rubber-air cushion>



<With air cushion>

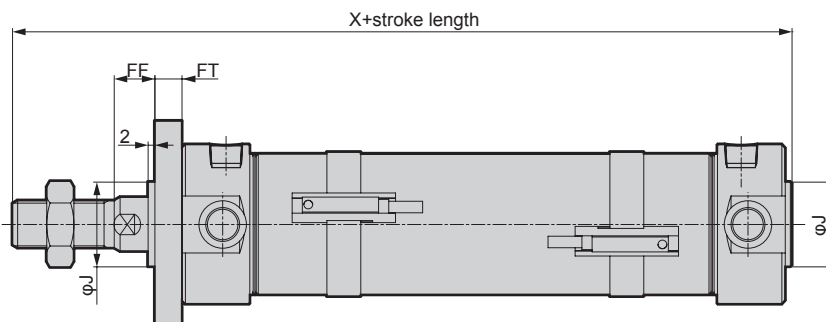
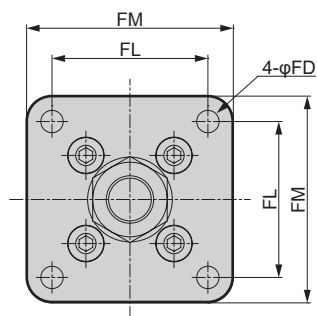


Code	Axial foot (LB) common dimensions											
Bore size (mm)	LA	LB	LC	LD	LF	LG	LH	LR	LS	LT	LX	M
φ20	109.8	15.1	7.1	5.7	28.9	14	20	32	44	3.2	45.2	2.6
φ25	115.6	15.1	7.1	5.7	29.9	17	22	36	49	3.2	45.2	3.4
φ32	117.6	16.1	8.1	6.8	30.9	20	25	44	58	3.2	45.2	3.4
φ40	135.2	16.6	9.1	6.8	33.4	24.5	30	54	71	3.2	51.2	4
Code	With air cushion											
Bore size (mm)	LA'	LX'										
φ20	113.8	49.2										
φ25	122.6	52.2										
φ32	121.6	49.2										
φ40	138.2	54.2										

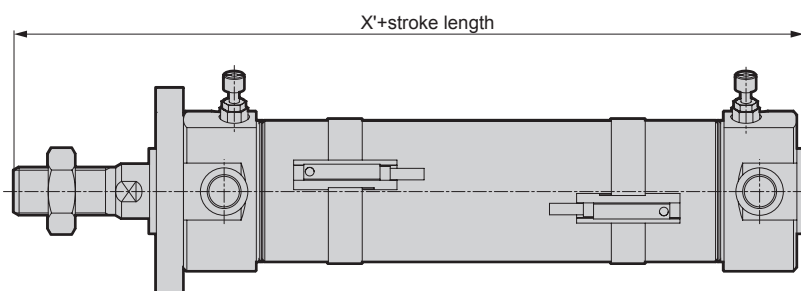
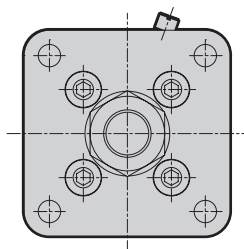
*1: The dimensions of each mounting style are the same as those of the basic type. Refer to Page 7.

Dimensions

- Rod side flange type (FA)
<With rubber cushion>/<With rubber-air cushion>



<With air cushion>

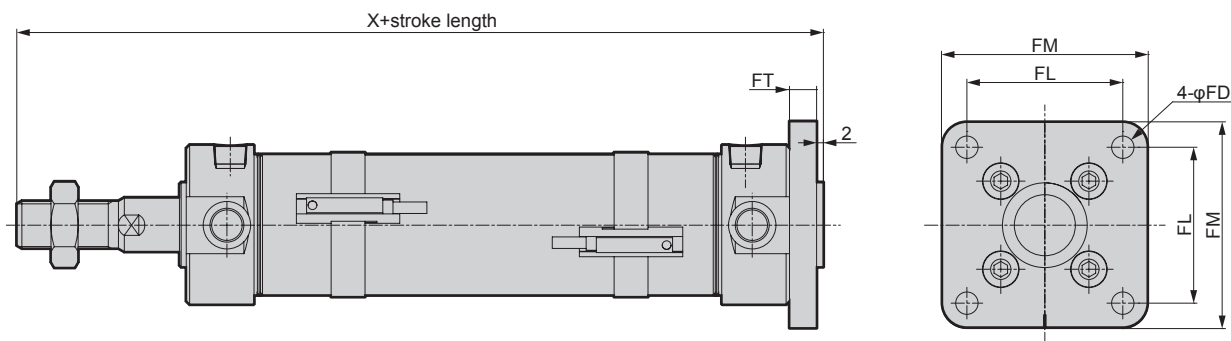


Code	Rod side flange (FA) common dimensions							With air cushion
	FD	FF	FL	FM	FT	J	X	X'
Bore size (mm)								
φ20	5.5	11	28	40	6	12	106	110
φ25	5.5	11	32	44	7	14	111	118
φ32	6.6	11	38	53	7	18	113	117
φ40	6.6	12	46	61	8	25	130	133

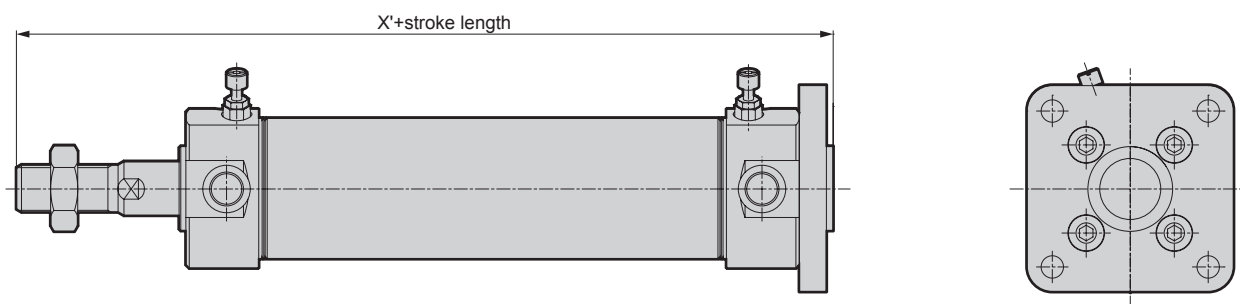
*1: The dimensions of each mounting style are the same as those of the basic type. Refer to Page 7.

Dimensions

- Head side flange type (FB)
<With rubber cushion>/<With rubber-air cushion>



<With air cushion>



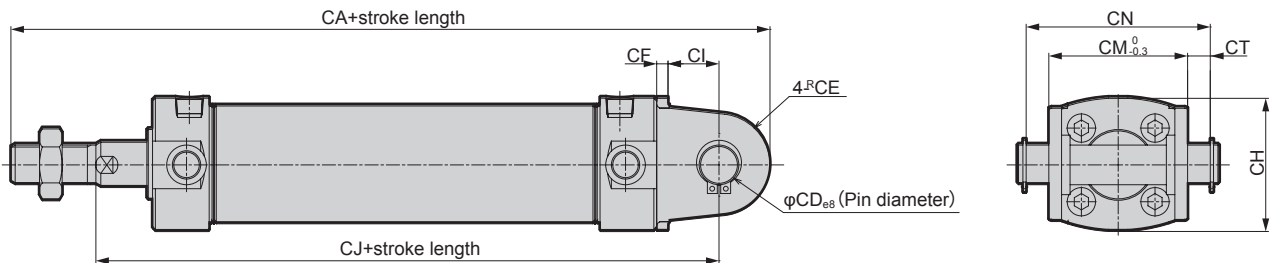
Code	Head side flange (FB) common dimensions					With air cushion
	FD	FL	FM	FT	X	X'
φ20	5.5	28	40	6	112	116
φ25	5.5	32	44	7	118	125
φ32	6.6	38	53	7	120	124
φ40	6.6	46	61	8	138	141

*1: The dimensions of each mounting style are the same as those of the basic type. Refer to Page 7.

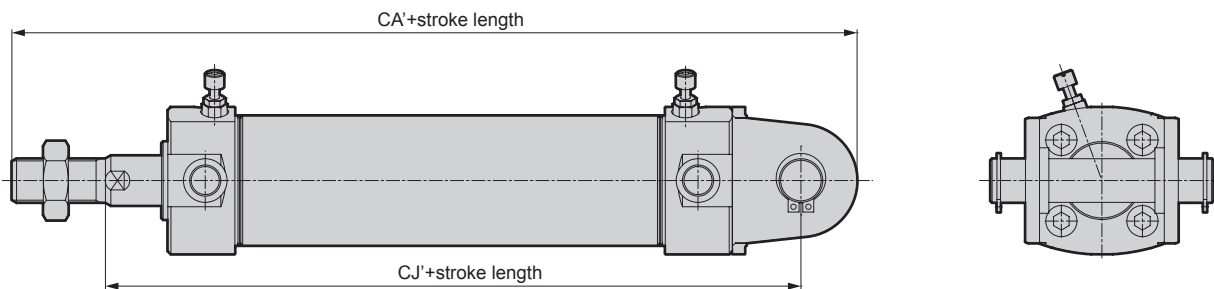
Dimensions (φ20 to φ40)



- Clevis (CA)
<With rubber cushion>/<With rubber-air cushion>



<With air cushion>

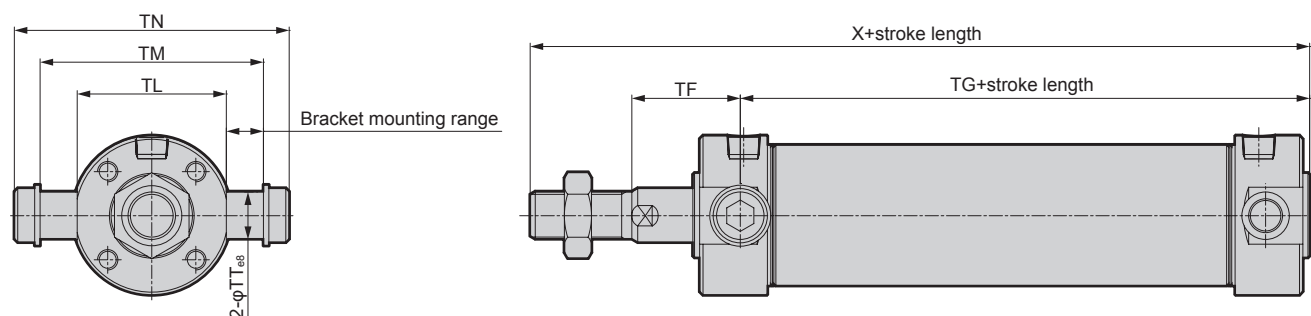


Code	Clevis (CA) common dimensions									With air cushion	
	CA	CD	CE	CF	CT	CI	CJ	CM	CN	CA'	CJ'
Bore size (mm)											
φ20	129	8	11	3	3.2	10.8	100	29	38.6	133	104
φ25	138	10	13	3	3.2	12.8	103	33	42.6	145	110
φ32	145.5	12	15	4	4.5	15.5	108.5	40	54	149.5	112.5
φ40	167.5	14	18	4	4.5	17.5	119.5	49	65	170.5	122.5

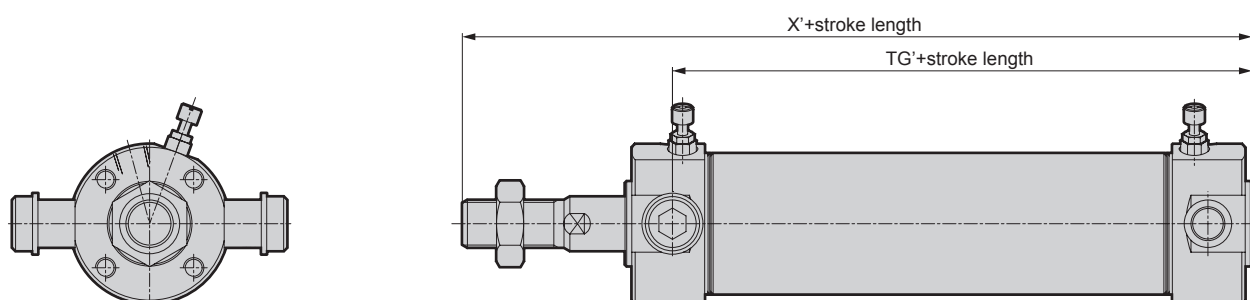
*1: The dimensions of each mounting style are the same as those of the basic type. Refer to Page 7.

Dimensions (φ20 to φ40)

- Rod side trunnion (TA)
<With rubber cushion>/<With rubber-air cushion>



<With air cushion>



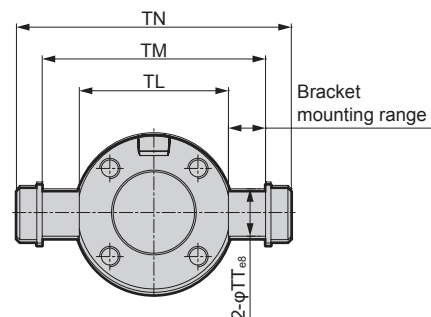
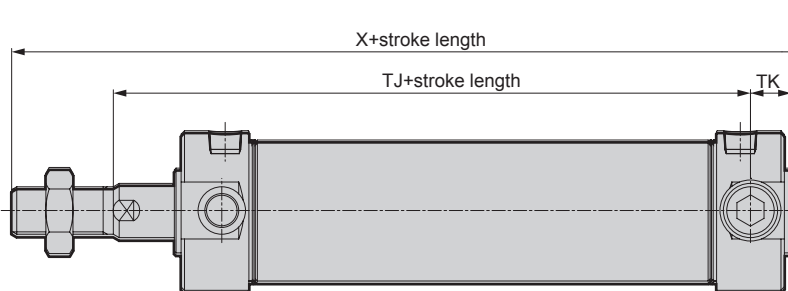
Code	Rod side trunnion (TA) common dimensions							With air cushion	
	TF	TG	TL	TM	TN	TT	X	X'	TG'
φ20	28	60	24	39	47.6	8	106	110	64
φ25	28	61	29	43	52.6	10	111	118	67
φ32	29	62	36	54.5	66.9	12	113	117	66
φ40	32	68	44	65.9	81.1	14	130	133	71

*1: The dimensions of each mounting style are the same as those of the basic type. Refer to Page 7.

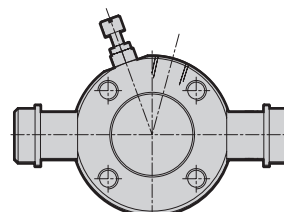
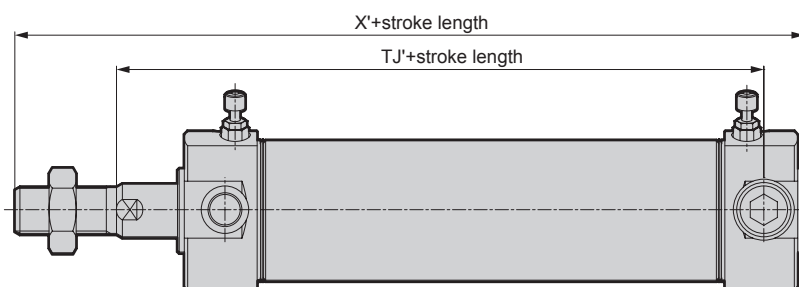
Dimensions (φ20 to φ40)



- Head side trunnion (TB)
<With rubber cushion>/<With rubber-air cushion>



<With air cushion>



Code	Head side trunnion (TB) common dimensions							With air cushion	
	TJ	TK	TL	TM	TN	TT	X	TJ'	X'
Bore size (mm)									
φ20	75	13	24	39	47.6	8	106	79	110
φ25	77	12	29	43	52.6	10	111	84	118
φ32	78	13	36	54.5	66.9	12	113	82	117
φ40	86	14	44	65.9	81.1	14	130	89	133

*1: The dimensions of each mounting style are the same as those of the basic type. Refer to Page 7.

Accessory dimensions



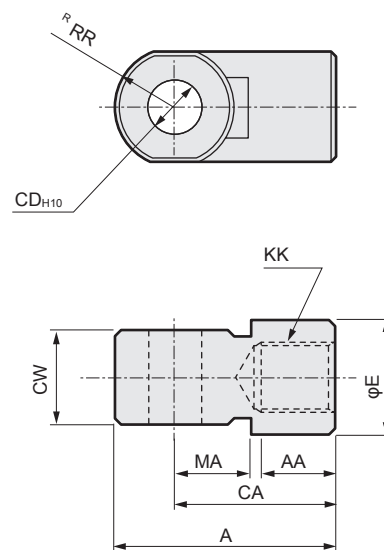
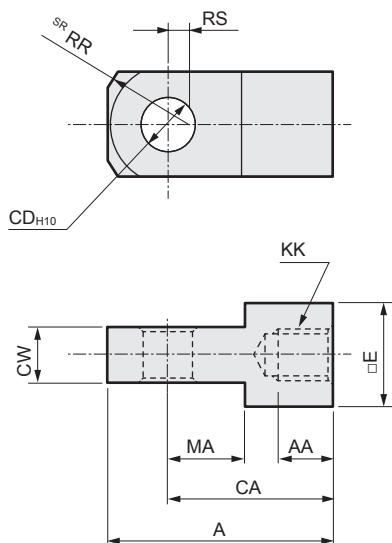
• Rod eye

- SGM-I-φ20 to φ32

Material: Steel
Chromate treatment

- SGM-I-φ40

Material: Cast iron
Painting



Model	Applicable bore size (mm)	A	AA	CA	CD	CW	E	KK	MA	RR	RS	Weight (g)
SGM-I-20	20	34	8.5	25	8	8 ^{-0.2} _{-0.4}	16	M8	11.5	13.4	3.1	39
SGM-I-25	25, 32	41	10.5	30	10	10 ^{-0.2} _{-0.4}	20	M10×1.25	14	17.1	4.5	72
SGM-I-40	40	42	14	30	10	18 ^{-0.3} _{-0.5}	22	M14×1.5	14	12	—	152

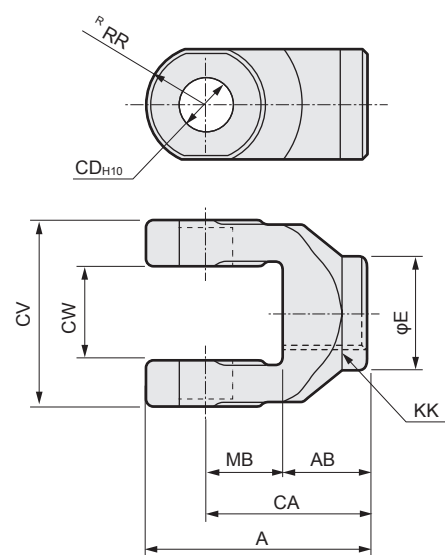
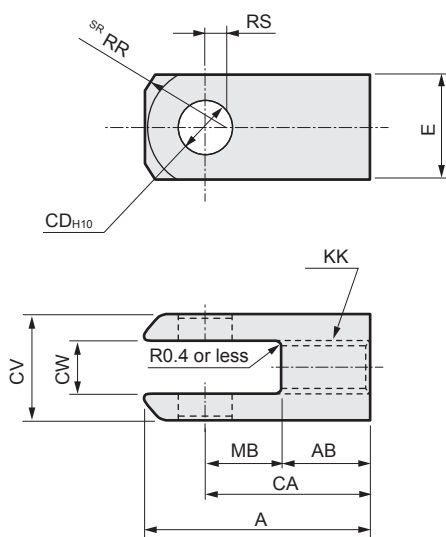
• Rod clevis

- SGM-Y-φ20 to φ32

Material: Steel
Chromate treatment

- SGM-Y-φ40

Material: Cast iron
Painting



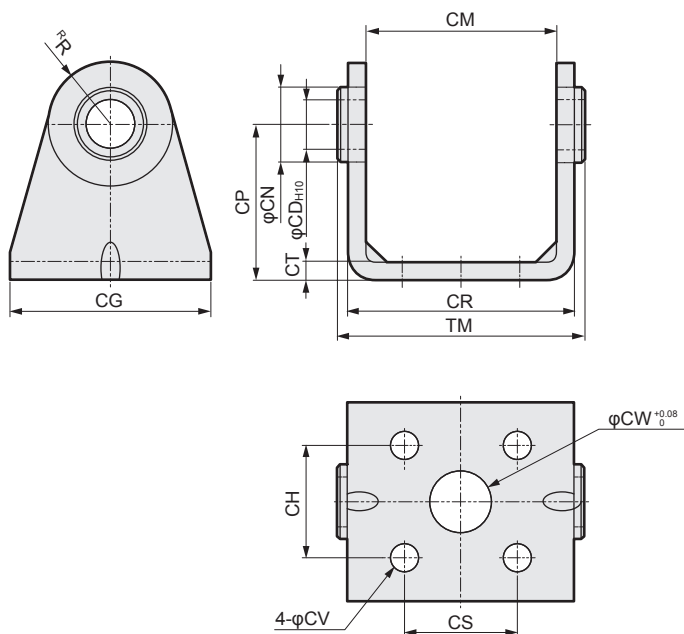
Model	Applicable bore size (mm)	A	AB	CA	CD	CV	CW	E	KK	MB	RR	RS	Applicable pin No.	Weight (g)
SGM-Y-20	20	34	13.5	25	8	16	8 ^{+0.4} _{+0.2}	16	M8	11.5	13.4	3.1	SGM-P-20	46
SGM-Y-25	25, 32	41	16	30	10	20	10 ^{+0.4} _{+0.2}	20	M10×1.25	14	17.1	4.5	SGM-P-25	85
SGM-Y-40	40	42	16	30	10	36	18 ^{+0.5} _{+0.3}	22	M14×1.5	14	12	—	SGM-P-40	122

Note: A pin and a snap ring are attached.

Accessory dimensions

- Clevis bracket (B2)
SGM-B2- $\phi 20$ to $\phi 40$

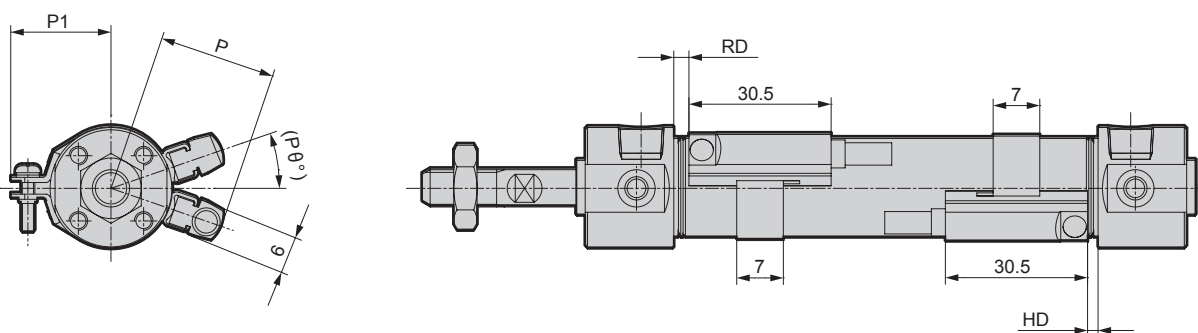
Material: Steel
Chromate treatment



Model	Applicable bore size (mm)	CD	CG	CH	CM	CN	CP	CR	CS	CT	CV	CW	R	TM	Weight (g)
SGM-B2-20	20	8	42	28	29 ^{+0.4} _{+0.1}	13	25	35.8	16	3.2	5.5	10	11	38	72
SGM-B2-25	25	10	42	28	33 ^{+0.4} _{+0.1}	15	30	39.8	20	3.2	5.5	10	13	42	90
SGM-B2-32	32	12	48	28	40 ^{+0.5} _{+0.1}	17	35	49.4	22	4.5	6.6	10	15	53.4	166
SGM-B2-40	40	14	56	30	49 ^{+0.5} _{+0.1}	21	40	58.4	30	4.5	6.6	10	18	64.4	239

SGM Series common dimensions (with T1*, T8*, 2-color display switches)

- SGM-**-**-T₃²YH/V



2-color display switch mounting dimensions

Code	1-color display (T1, T8) 2-color display (T ₃ ² Y)							
	RD		HD		P		P1	(P θ)°
	T1, T ₃ ² Y	T8	T1, T ₃ ² Y	T8	T1	T ₃ ² Y, T8		
$\phi 20$	6.25	1.25	5.25	0.25	28.5	23.1	19.5	22
$\phi 25$	7.75	2.75	6.75	0.75	31.0	25.6	22.0	18
$\phi 32$	7.75	2.75	6.75	0.75	35.5	30.1	25.5	15
$\phi 40$	10	5	9	4	39.5	34.1	29.5	12



Safety Precautions

Be sure to read this section before use.

When using CKD's product to design and manufacture any device, the customer is obliged to check and confirm the safety of the device's mechanical mechanism, pneumatic control circuit or fluid control circuit, as well as the safety of the entire system that operates through electrical control of such mechanism and circuits, and manufacture a safe device on this basis.

It is important to select, use, handle, and maintain CKD products appropriately to ensure their safe usage. Observe warnings and precautions to ensure device safety. Check that device safety is ensured, and manufacture a safe device.



WARNING

- 1 This product is designed and manufactured as a general industrial machine part. Therefore, it must be handled by an operator with sufficient knowledge and experience.**
 - 2 Use the product within the specifications range.**

This product must be used within its stated specifications. In addition, never modify or additionally machine this product. This product is intended for use in general industrial machinery equipment or parts. It is not intended for use outdoors or for use under the following conditions or environments. (Note that this product can be used when CKD is consulted prior to its usage and the customer consents to the CKD product specifications. The customer should provide safety measures to avoid danger in the event of problems.)

 - (1) Use in applications which require safety such as nuclear energy, railways, aircraft, marine vessels, vehicles, medicinal devices, devices or applications that come into contact with beverages or foodstuffs, amusement devices, emergency shutoff circuits, press machines, brake circuits, or other safety measures.
 - (2) Use for applications where life or assets could be significantly affected, and special safety measures are required.
 - 3 Observe industrial standards and legal regulations, etc., pertaining to the safety of equipment design and management.**

ISO4414, JIS B 8370 (General Rules for Pneumatic Systems)
JFPS2008 (Cylinder Selection and Usage Guide)
High Pressure Gas Safety Law, Labor Safety and Health Law and other relevant safety standards, industry standards, laws and regulations, etc.
 - 4 Unless safety is confirmed, never perform operation of this product or removal of piping and equipment.**
 - (1) Inspect and service the machine and devices after confirming the safety of the entire system related to this product.
 - (2) Note that there may be hot or charged sections even after operation is stopped.
 - (3) When inspecting or servicing the device, turn OFF the energy source (gas supply or water supply), and turn OFF power to the facility. Discharge any compressed air from the system, and pay enough attention to possible water leakage and leakage of electricity.
 - (4) When starting or restarting a machine or device that incorporates pneumatic components, make sure to secure system safety, such as pop-out prevention measures. Always work with caution.
 - 5 Observe the warnings and cautions on the following pages to prevent accidents.**
- Precautions are ranked as "DANGER", "WARNING", and "CAUTION" in this section.



Danger: In the case where mishandled product operation may lead to fatalities or serious injuries, and the urgency of a dangerous situation is high.



Warning: A dangerous situation may occur due to incorrect handling, leading to fatal or serious injuries.



Caution: A dangerous situation may occur due to incorrect handling, leading to minor injuries or property damage.

Note that some items indicated with "CAUTION" may lead to serious results depending on the conditions. All items contain important information and must be observed.

Disclaimer regarding orders

- 1 Warranty period**

This warranty is valid for one (1) year after delivery to the customer's designated site.
- 2 Scope of warranty**

In case any defect clearly attributable to CKD is found during the warranty period, CKD shall, at its own discretion, repair the defect or replace the relevant product in whole or in part and at no cost, according to its own judgment.

Note that the following failures are excluded from the warranty scope:

 - (1) When used outside of conditions/environment described in product specifications;
 - (2) Failures resulting from factors other than these delivered products;
 - (3) Failures caused by improper use of the product;
 - (4) Faults incurred due to modification or repair not related to CKD;
 - (5) Failures caused by matters that could not be predicted with the technologies in practice when the product was delivered;
 - (6) Faults incurred due to natural disasters not attributable to CKD's responsibility.
- 3 Compatibility check**

The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines, and equipment.



Safety Precautions

Be sure to read this section before use.

Product-specific cautions: Round shaped cylinder SGM Series

Mounting, installation and adjustment

1. General precautions

⚠ CAUTION

■ Do not rotate the cover.

- When mounting the cylinder and screwing the pipe joint into the port, damage may occur firstly to the end cover joint part if the end cover is rotated.

2. Rubber air-cushioned SGM-*C

⚠ CAUTION

- Note that, structurally, the stroke end position cannot be retained if air supply is cut off. When detecting the stroke end by switch, set the switch position with pneumatic pressure applied, as otherwise the position may be out of the detection range.

Use and maintenance

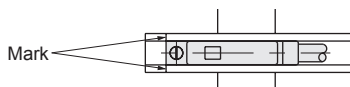
1. Common (with T switch)

⚠ CAUTION

■ When moving the switch position to the stroke length direction

- The 1-color display switch can be fine-tuned by ± 3 mm from the default. For adjustment amount in excess of ± 3 mm and fine position adjustment of a 2-color indicator switch, please move the band position.
- Loosen the switch fixing screw, shift the switch along the rail, then tighten at the specified position. 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 T1, T*C, T2J, T2Y, T3Y or T8, tighten the screw with a tightening torque of 0.5 to 0.7 N·m.

- The switch bracket rail has a marking 4 mm from the rail end. Use it as a reference for mounting position during switch replacement. The mark of switch rail is set at the factory set maximum sensitivity position of the switch. When the switch type is changed or the band is moved, the maximum sensitivity position will become different, so adjust the position accordingly.

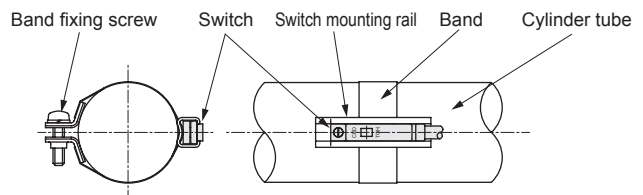


■ When moving the switch position to the circumferential direction

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

■ When the band position shifts

- Loosen the band fixing screw, move the switch rail and band along the cylinder tube, and tighten the screw at a desired position. Tightening torque is 0.6 to 0.8 N·m.



2. Rubber air-cushioned SGM-*C

⚠ CAUTION

- Do not rapidly discharge air from the cylinder after performing low speed operation outside the catalog specifications range. (Example: Removing piping or coupler, etc.) Otherwise the rubber-air cushion may fall. The possibility of occurrence of this may increase, especially when the air pressure is high. Be careful.

MEMO



CKD Corporation

Website <http://www.ckd.co.jp/>

U.S.A.

CKD USA CORPORATION

- CHICAGO HEADQUARTERS
4080 Winnetka Avenue, Rolling Meadows, IL 60008, USA
PHONE +1-847-368-0539 FAX +1-847-788-0575
- CINCINNATI OFFICE
- SAN ANTONIO OFFICE
- SAN JOSE OFFICE
- DETROIT OFFICE

Mexico

CKD MEXICO, S. DE R.L. DE C.V.

- Cerrada la Noria No. 200 Int. A-01, Querétaro Park II,
Parque Industrial Querétaro, Santa Rosa Jáuregui,
Querétaro, C.P. 76220, México
PHONE +52-442-161-0624

Europe

CKD EUROPE B.V.

- Beechavenue 125A, 1119 RB Schiphol-Rijk, The Netherlands
PHONE +31-23-554-1490
- GERMANY OFFICE

CKD CORPORATION EUROPE BRANCH

- SALES HEADQUARTERS
Beechavenue 125A, 1119 RB Schiphol-Rijk, The Netherlands
PHONE +31-23-554-1490
- CZECH OFFICE
- UK OFFICE

Malaysia

M-CKD PRECISION SDN.BHD.

- HEAD OFFICE
Lot No.6,Jalan Modal 23/2, Seksyen 23, Kawasan MIEL,
Fasa 8, 40300 Shah Alam, Selangor Darul Ehsan, Malaysia
PHONE +60-(0)3-5541-1468 FAX +60-(0)3-5541-1533
- JOHOR BAHRU BRANCH OFFICE
- PENANG BRANCH OFFICE

Thailand

CKD THAI CORPORATION LTD.

- SALES HEADQUARTERS
Suwan Tower, 14/1 Soi Saladaeng 1, North Sathorn Road,
Kwaeng Silom, Khet Bangrak, Bangkok 10500, Thailand
PHONE +66-(0)2-267-6300 FAX +66-(0)2-267-6305
- RAYONG OFFICE
- NAVANAKORN OFFICE
- EASTERN SEABOARD OFFICE
- LAMPHUN OFFICE
- KORAT OFFICE
- AMATANAKORN OFFICE
- PRACHINBURI OFFICE
- SARABURI OFFICE

□ 2-250, Oujii, Komaki City, Aichi, 485-8551 Japan

□ PHONE+81-(0)568-74-1338 FAX +81-(0)568-77-3461

Singapore

CKD SINGAPORE PTE. LTD.

- No.33 Tannery Lane #04-01 Hoesteel Industrial
Building, Singapore 347789, Singapore
PHONE +65-67442623 FAX +65-67442486

CKD CORPORATION BRANCH OFFICE

- No.33 Tannery Lane #04-01 Hoesteel Industrial
Building, Singapore 347789, Singapore
PHONE +65-67447260 FAX +65-68421022

India

CKD INDIA PRIVATE LTD.

- Unit No. 607, 6th Floor, Welldone Tech Park, Sector 48,
Sohna Road, Gurgaon-122018, Haryana, India
PHONE +91-(0)124-418-8212

CKD INDIA PRIVATE LTD. BANGALORE BRANCH

- No. 201/B, 2nd Floor, Museum Terraces Apartment, No. 29,
Museum Road, Bangalore-560001, Karnataka, India
PHONE +91-(0)80-4212-7008/7009 FAX +91-(0)80-4212-7007

Indonesia

PT CKD TRADING INDONESIA

- SALES HEADQUARTERS
Menara Bidakara 2, 18th Floor, Jl. Jend. Gatot Subroto Kav.
71-73, Pancoran, Jakarta 12870, Indonesia
PHONE +62 21-2938-6601 FAX +62 21-2906-9470
- SURABAYA OFFICE
- BEKASI OFFICE
- KARAWANG OFFICE

Vietnam

CKD VIETNAM ENGINEERING CO.,LTD.

- 18th Floor, CMC Tower, Duy Tan Street, Cau Giay
District, Hanoi, Vietnam
PHONE +84-4-37957631 FAX +84-4-37957637

Taiwan

TAIWAN CKD CORPORATION

- 16F-3, No. 7, Sec. 3, New Taipei Blvd., Xinzhuang Dist.,
New Taipei City 242, Taiwan
PHONE +886-(0)2-8522-8198 FAX +886-(0)2-8522-8128
- HSINCHU OFFICE
- TAICHUNG OFFICE
- TAINAN OFFICE

China

CKD(SHANGHAI)CORPORATION

- SALES HEADQUARTERS / SHANGHAI PUXI OFFICE
Room 601, 6th Floor, Yuanzhongkeyan Building, No. 1905
Hongmei Road, Xuhui District, Shanghai 200233, China
PHONE +86-(0)21-61911888 FAX +86-(0)21-60905356
- SHANGHAI PUDONG OFFICE
- WUXI OFFICE
- HANGZHOU OFFICE
- NINGBO OFFICE
- NANJING OFFICE
- SUZHOU OFFICE
- KUNSHAN OFFICE
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- GUANGZHOU OFFICE
- WEST SHENZHEN OFFICE
- EAST SHENZHEN OFFICE
- DONGGUAN OFFICE
- XIAMEN OFFICE

Korea

CKD KOREA CORPORATION

- HEADQUARTERS
(3rd Floor), 44, Sinsu-ro, Mapo-gu, Seoul 121-856, Korea
PHONE +82-(0)2-783-5201 to 5203 FAX +82-(0)2-783-5204
- SUWON OFFICE
- CHEONAN OFFICE
- ULSAN OFFICE

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