



Medium bore size cylinder
Double acting / Single rod outdoor type

SCA2 Series

● Bore size: ø40/ø50/ø63/ø80/ø100

JIS symbol



Specifications

Item		Description				
Bore size mm		ø40	ø50	ø63	ø80	ø100
Actuation		Double acting				
Working fluid		Compressed air				
Max. working pressure MPa		1.0				
Min. working pressure MPa		0.05				
Proof pressure MPa		1.6				
Ambient temperature °C		-20 to 60 (no freezing) Note				
Port size		Rc 1/4	Rc 3/8		Rc 1/2	
Stroke tolerance mm		^{+0.9} ₀ (up to 360), ^{+1.4} ₀ (up to 800)				
Working piston speed mm/s		50 to 1000 (Operate within the allowable absorbed energy.)				
Cushion		Air cushion				
Effective air cushion length mm		14.6	16.6	16.6	20.6	23.6
Lubrication		Not available				
Allowable absorbed energy J	With cushion Note	4.29	8.37	15.8	27.9	49.8
	Without cushion	0.067	0.079	0.079	0.201	0.301
		Without a cushion, large energy generated by the external load cannot be absorbed. We recommend using an external shock absorber.				

Note: The temperature range of the cushion packing is -10 to 60°C. When using in a low-temperature environment, select the type without cushion and if necessary, use an external shock absorber.

Stroke

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

*1: The custom strokes are available in 1 mm increments.

Cylinder weight

(Unit: kg)

Bore size (mm)	Product weight when Stroke (S) = 0 mm			Per S = 100 mm Additional weight
	Basic (00)	Foot (LB)	Flange (FA, FB)	
ø40	0.92	1.04	1.28	0.39
ø50	1.29	1.49	1.73	0.46
ø63	1.69	2.01	2.73	0.50
ø80	2.88	3.48	4.60	0.90
ø100	4.48	5.25	7.08	1.12

(Example) Product weight of SCA2-LB-50B-200-W ————

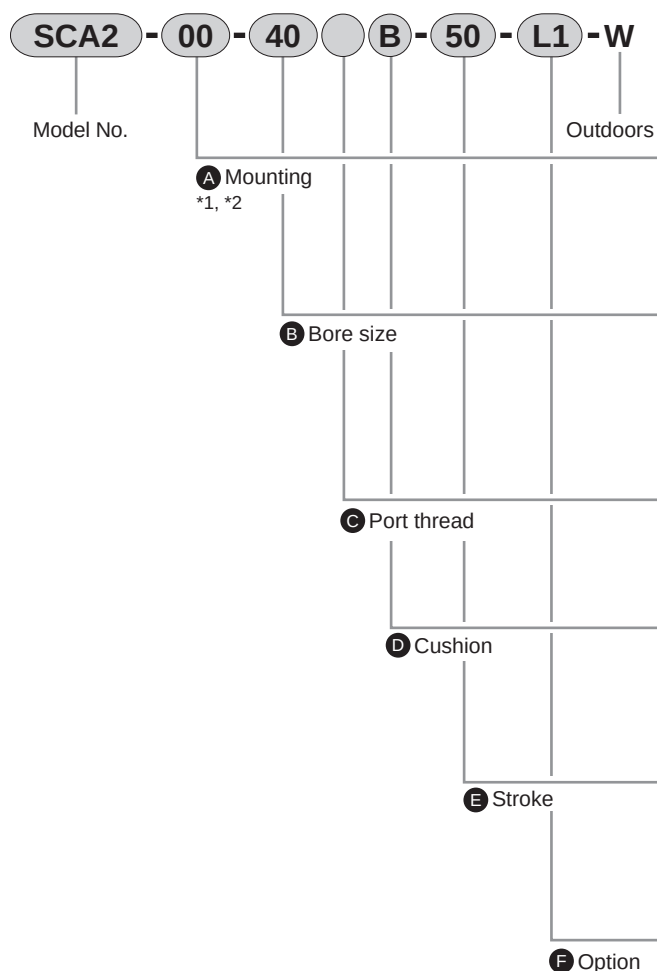
Product weight for stroke 0 mm.....1.49 kg
Additional weight for 200 mm stroke..... 0.46x $\frac{200}{100}$ = 0.92 kg
Product weight.....1.49+0.92=2.41kg

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
ø40	Push	62.8	1.26 x 10 ²	1.88 x 10 ²	2.51 x 10 ²	3.77 x 10 ²	5.03 x 10 ²	6.28 x 10 ²	7.54 x 10 ²	8.80 x 10 ²	1.01 x 10 ³	1.13 x 10 ³	1.26 x 10 ³
	Pull	52.8	1.06 x 10 ²	1.58 x 10 ²	2.11 x 10 ²	3.17 x 10 ²	4.22 x 10 ²	5.28 x 10 ²	6.33 x 10 ²	7.39 x 10 ²	8.44 x 10 ²	9.50 x 10 ²	1.06 x 10 ³
ø50	Push	98.2	1.96 x 10 ²	2.95 x 10 ²	3.93 x 10 ²	5.89 x 10 ²	7.85 x 10 ²	9.82 x 10 ²	1.18 x 10 ³	1.37 x 10 ³	1.57 x 10 ³	1.77 x 10 ³	1.96 x 10 ³
	Pull	82.5	1.65 x 10 ²	2.47 x 10 ²	3.30 x 10 ²	4.95 x 10 ²	6.60 x 10 ²	8.25 x 10 ²	9.90 x 10 ²	1.15 x 10 ³	1.32 x 10 ³	1.48 x 10 ³	1.65 x 10 ³
ø63	Push	1.56 x 10 ²	3.12 x 10 ²	4.68 x 10 ²	6.23 x 10 ²	9.35 x 10 ²	1.25 x 10 ³	1.56 x 10 ³	1.87 x 10 ³	2.18 x 10 ³	2.49 x 10 ³	2.81 x 10 ³	3.12 x 10 ³
	Pull	1.40 x 10 ²	2.80 x 10 ²	4.20 x 10 ²	5.61 x 10 ²	8.41 x 10 ²	1.12 x 10 ³	1.40 x 10 ³	1.68 x 10 ³	1.96 x 10 ³	2.24 x 10 ³	2.52 x 10 ³	2.80 x 10 ³
ø80	Push	2.51 x 10 ²	5.03 x 10 ²	7.54 x 10 ²	1.01 x 10 ³	1.51 x 10 ³	2.01 x 10 ³	2.51 x 10 ³	3.02 x 10 ³	3.52 x 10 ³	4.02 x 10 ³	4.52 x 10 ³	5.03 x 10 ³
	Pull	2.27 x 10 ²	4.54 x 10 ²	6.80 x 10 ²	9.07 x 10 ²	1.36 x 10 ³	1.81 x 10 ³	2.27 x 10 ³	2.72 x 10 ³	3.17 x 10 ³	3.63 x 10 ³	4.08 x 10 ³	4.54 x 10 ³
ø100	Push	3.93 x 10 ²	7.85 x 10 ²	1.18 x 10 ³	1.57 x 10 ³	2.36 x 10 ³	3.14 x 10 ³	3.93 x 10 ³	4.71 x 10 ³	5.50 x 10 ³	6.28 x 10 ³	7.07 x 10 ³	7.85 x 10 ³
	Pull	3.57 x 10 ²	7.15 x 10 ²	1.07 x 10 ³	1.43 x 10 ³	2.14 x 10 ³	2.86 x 10 ³	3.57 x 10 ³	4.29 x 10 ³	5.00 x 10 ³	5.72 x 10 ³	6.43 x 10 ³	7.15 x 10 ³

How to order



Code		Description
A Mounting		
00	Basic *3	
LB	Axial foot	
FA	Rod side flange	
FB	Head side flange	
B Bore size (mm)		
40	ø40	
50	ø50	
63	ø63	
80	ø80	
100	ø100	
C Port thread		
Blank	Rc thread	
N	NPT thread (made to order)	
G	G thread (made-to-order product)	
D Cushion		
B	Both sides cushioned	
R	Rod side cushioned	
H	Head side cushioned	
N	Without cushion	
E Stroke (mm)		
Bore size	Stroke	Custom Stroke
ø40 to ø63	1 to 600	In 1 mm increments
ø80	1 to 700	
ø100	1 to 800	
F Option		
L1	With silicone bellows (external metal ring stainless steel) Max. ambient temperature: 250°C / instantaneous max. temperature: 400°C	
Blank	Cushion needle position R (standard)	
S	Cushion needle position S	
T	Cushion needle position T	

⚠ Precautions for model No. selection

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

*2: Consult with CKD for mounting type for oscillation.

*3: For 00 mounting, remove the hexagon socket button head bolt and plain washer of the round nut screw hole used for cylinder assembly.

[Example of model No.]

SCA2-LB-40B-100-L1-W

Model: Medium bore size cylinder, double acting/single rod

- A** Mounting : Axial foot
- B** Bore size : ø40 mm
- C** Port thread : Rc thread
- D** Cushion : Both sides cushioned
- E** Stroke : 100mm
- F** Option : With the silicone bellows, Max. ambient temperature: 250 °C

Internal structure and parts list

Drain separator
F.R.L. unit

Pneumatic auxiliary
components

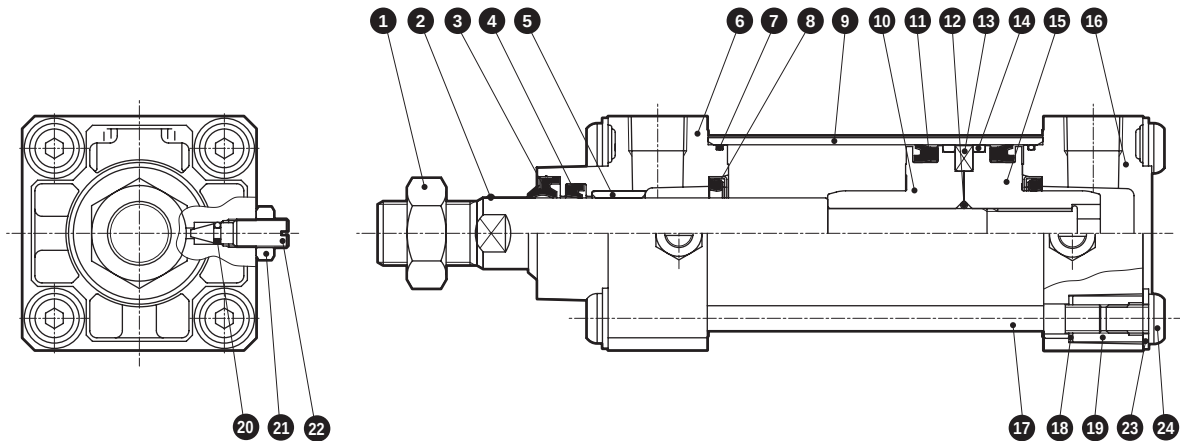
Pneumatic
valves

Fluid control
valves

Pneumatic
cylinders

Related
products

Safety
precautions



Part No.	Part name	Material	Remarks	Part No.	Part name	Material	Remarks
1	Rod nut	Stainless steel		13	Magnet	Plastic	
2	Piston rod	Stainless steel	Industrial chrome plating	14	Wear ring	Polyacetal resin	
3	Scraper	Nitrile rubber		15	Piston H	Aluminum alloy die-casting	
4	Rod packing	Hydrogenated nitrile rubber		16	Head cover	Aluminum alloy die-casting	Painted
5	Bush	Oil-impregnated bearing alloy		17	Tie rod	Stainless steel	
6	Rod cover	Aluminum alloy die-casting	Painted	18	Conical spring washer	Steel	Black finish
7	Cylinder gasket	Nitrile rubber		19	Round nut	Steel	Zinc chromate
8	Cushion packing	Nitrile rubber/steel		20	Needle gasket	Nitrile rubber	
9	Cylinder tube	Aluminum alloy	Hard alumite	21	Needle nut	Copper alloy	Nickel plating
10	Piston R	Aluminum alloy die-casting		22	Cushion needle	Copper alloy	Nickel plating
11	Piston packing	Hydrogenated nitrile rubber		23	Flat washer	Stainless steel	
12	Piston gasket	Nitrile rubber		24	Hexagon socket button head bolt	Stainless steel	

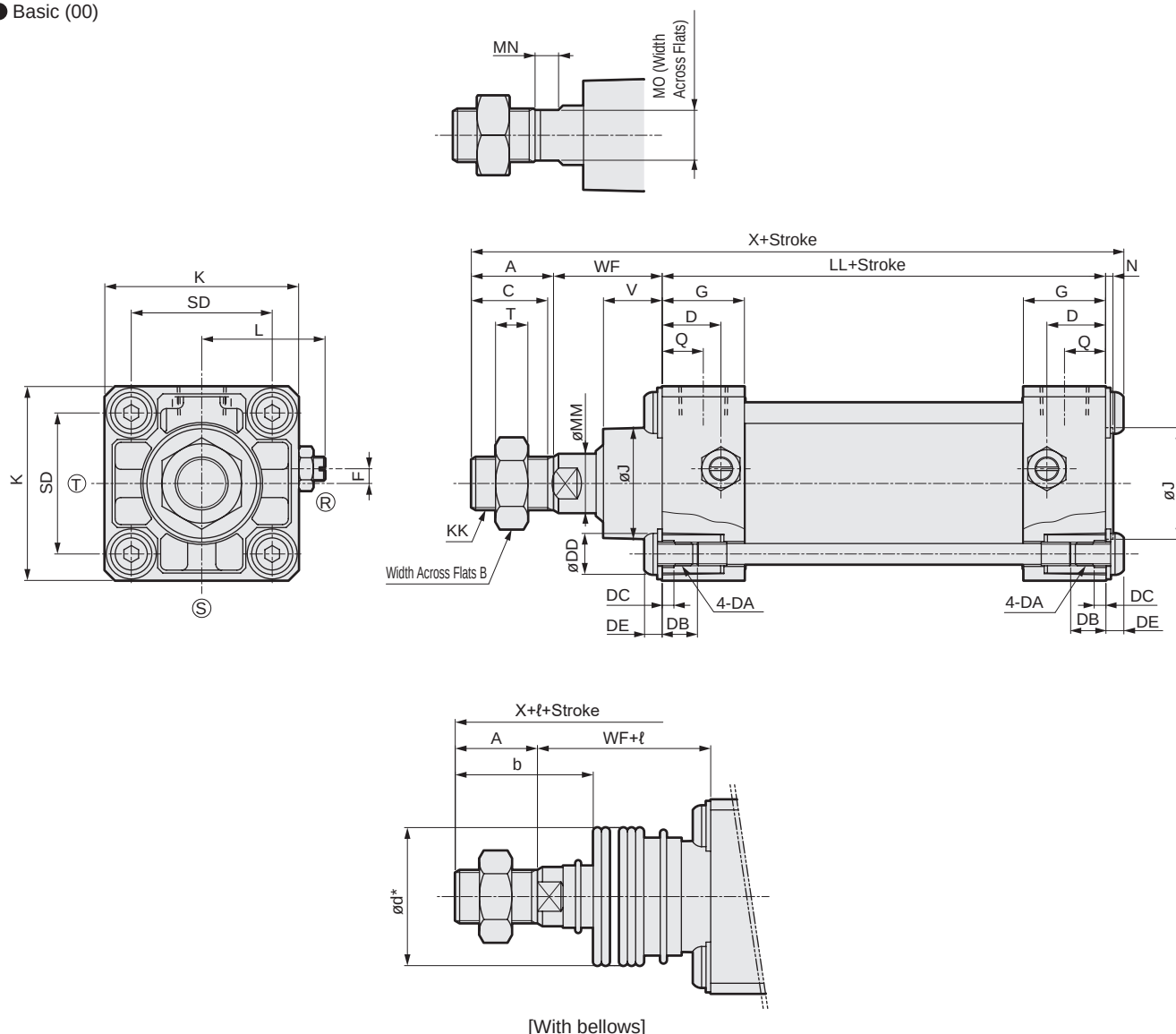
Consumable parts list

Bore size (mm)	Kit No.	Consumable parts No.
ø40	SCA2-40K-W	3 4 7 8 11 14 20
ø50	SCA2-50K-W	
ø63	SCA2-63K-W	
ø80	SCA2-80K-W	
ø100	SCA2-100K-W	

*1: Specify the kit No. when placing an order.

Dimensions

● Basic (00)



Code	Basic (00)																				
Bore size (mm)	A	B	C	D	DA	DB	DC	DD	DE	EE	F	G	J	K	KK	L	LL	MM	MN	MO	N
ø40	22	22	20	18	M8	12	4	14	6	Rc1/4	7.5	26	31	57	M 14 x 1.5	38 to 39.5	93	16	8	14	2
ø50	28	27	26	20	M8	12	4	14	6	Rc3/8	0	28	38	66	M 18 x 1.5	41 to 43.5	101	20	8	17	2.5
ø63	28	27	26	22	M8	12	4	14	6	Rc3/8	0	30	38	80	M 18 x 1.5	47.5 to 50.0	105	20	8	17	3
ø80	36	32	34	26	M12	16	5	21	9	Rc1/2	0	34	43	98	M 22 x 1.5	56 to 59	116	25	11	22	3.5
ø100	45	41	43	28	M12	16	5	21	9	Rc1/2	0	36	51	118	M 26 x 1.5	66 to 69	128	30	13	27	4

Code											With bellows						
Bore size (mm)	Q	SD	T	V	WF	X	b	d*	ℓ								
									50 or less	Over 50 to 100	Over 100 150 or less	Over 150 200 or less	Over 200 to 300	Over 300 to 400	Over 400 to 500	*1 Over 500	
ø40	13	40.5	8	17	33.5	154.5	41	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(stroke/3.0) + 8	
ø50	14	48	11	20	37	172	47	48	22	36	49	63	90	119	146	(stroke/3.6) + 7.5	
ø63	15	59	11	20.5	35	174	45	48	22	36	49	63	90	119	146	(stroke/3.6) + 7.5	
ø80	17	74	13	23	48	209	58.5	55	14	26	38	49	72	96	119	(stroke/4.3) + 2.5	
ø100	18	90	16	30.5	53	235	69.5	65	20	32	42	53	76	98	120	(stroke/4.5) + 9	

*1: ℓ dimensions should be rounded up to the nearest whole number.

*Installation dimensions of other mounting types are the same as those of the SCA2 (standard). Refer to the SCA2 (standard) Dimensions in "Pneumatic General Catalog (No. CB-029SA)".