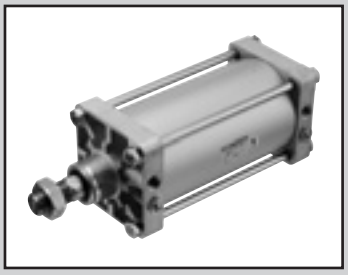
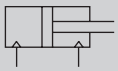


Medium bore size cylinder
Double acting / Single rod outdoor type

SCS2 Series

● Bore size : ø125/ø140/ø160/ø180/ø200/ø250

JIS symbol



WEATHER PROOF RoHS CAD

Specifications

Item		Description					
Bore size mm		ø125	ø140	ø160	ø180	ø200	ø250
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 (However, no freezing) Note					
Port size		Rc 1/2	Rc 3/4				Rc1
Stroke tolerance mm		$^{+1.0}_{0}$ (to 300), $^{+1.4}_{0}$ (to 301)					
Working piston speed mm/s		20 to 1000 (Operate within the absorbed energy.)					
Cushion		Air cushion					
Effective air cushion length mm		21.6	21.6	21.6	21.6	26.6	26.6
Lubrication		Not available					
Allowable absorbed energy J	Cushioned Note	63.5	91.5	116	152	233	362
	Without cushion	0.371	0.386	0.386	0.958	1.08	2.32
		without cushion, Cannot absorb high energy generated by an external load…Uses an external shock absorberthatRecommended.					

Note: The temperature range of the cushion packing is -5 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)
ø125	50/ 75/ 100/ 150/ 200/ 250/ 300	800	1
ø140			
ø160			
ø180		900	
ø200		945	
ø250		751	

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

Cylinder weight

(Unit: kg)

Item/mounting / Bore size (mm)	Product weight when stroke (S) = 0 mm			S=100mm Additional weight per
	Basic (00)	Axial foot (LB)	Flange (FA / FB)	
ø125	7.22	8.72	10.52	1.54
ø140	9.35	11.35	14.75	1.78
ø160	12.35	15.45	19.25	2.22
ø180	16.75	21.25	28.75	2.96
ø200	22.78	28.48	36.48	3.54
ø250	40.51	48.91	66.41	5.38

(Example) Product weight of SCS2-N-LB-125B-300-W
- ● Product weight for S = 0 mm stroke.....8.72 kg
- ● Additional weight for S = 300 mm stroke.....1.54 x $\frac{300}{100}$ = 4.62 kg
- ● Product weight .....8.72+4.62=13.34kg

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
ø125	Push	6.14 x 10^2	1.23 x 10^3	1.84 x 10^3	2.45 x 10^3	3.68 x 10^3	4.91 x 10^3	6.14 x 10^3	7.36 x 10^3	8.59 x 10^3	9.82 x 10^3	1.10 x 10^4	1.23 x 10^4
	Pull	5.73 x 10^2	1.15 x 10^3	1.72 x 10^3	2.29 x 10^3	3.44 x 10^3	4.59 x 10^3	5.73 x 10^3	6.88 x 10^3	8.03 x 10^3	9.17 x 10^3	1.03 x 10^4	1.15 x 10^4
ø140	Push	7.70 x 10^2	1.54 x 10^3	2.31 x 10^3	3.08 x 10^3	4.62 x 10^3	6.16 x 10^3	7.70 x 10^3	9.24 x 10^3	1.08 x 10^4	1.23 x 10^4	1.39 x 10^4	1.54 x 10^4
	Pull	7.29 x 10^2	1.46 x 10^3	2.19 x 10^3	2.92 x 10^3	4.38 x 10^3	5.84 x 10^3	7.29 x 10^3	8.75 x 10^3	1.02 x 10^4	1.17 x 10^4	1.31 x 10^4	1.46 x 10^4
ø160	Push	1.01 x 10^3	2.01 x 10^3	3.02 x 10^3	4.02 x 10^3	6.03 x 10^3	8.04 x 10^3	1.01 x 10^4	1.21 x 10^4	1.41 x 10^4	1.61 x 10^4	1.81 x 10^4	2.01 x 10^4
	Pull	9.42 x 10^2	1.88 x 10^3	2.83 x 10^3	3.77 x 10^3	5.65 x 10^3	7.54 x 10^3	9.42 x 10^3	1.13 x 10^4	1.32 x 10^4	1.51 x 10^4	1.70 x 10^4	1.88 x 10^4
ø180	Push	1.27 x 10^3	2.54 x 10^3	3.82 x 10^3	5.09 x 10^3	7.63 x 10^3	1.02 x 10^4	1.27 x 10^4	1.53 x 10^4	1.78 x 10^4	2.04 x 10^4	2.29 x 10^4	2.54 x 10^4
	Pull	1.19 x 10^3	2.39 x 10^3	3.58 x 10^3	4.77 x 10^3	7.16 x 10^3	9.54 x 10^3	1.19 x 10^4	1.43 x 10^4	1.67 x 10^4	1.91 x 10^4	2.15 x 10^4	2.39 x 10^4
ø200	Push	1.57 x 10^3	3.14 x 10^3	4.71x 10^3	6.28 x 10^3	9.42 x 10^3	1.26 x 10^4	1.57 x 10^4	1.88 x 10^4	2.20 x 10^4	2.51 x 10^4	2.83 x 10^4	3.14 x 10^4
	Pull	1.47 x 10^3	2.95 x 10^3	4.42 x 10^3	5.89 x 10^3	8.84 x 10^3	1.18 x 10^4	1.47 x 10^4	1.77 x 10^4	2.06 x 10^4	2.36 x 10^4	2.65 x 10^4	2.95 x 10^4
ø250	Push	2.45 x 10^3	4.91 x 10^3	7.36 x 10^3	9.82 x 10^3	1.47 x 10^4	1.96 x 10^4	2.45 x 10^4	2.95 x 10^4	3.44 x 10^4	3.93 x 10^4	4.42 x 10^4	4.91 x 10^4
	Pull	2.31 x 10^3	4.63 x 10^3	6.94 x 10^3	9.25 x 10^3	1.39 x 10^4	1.85 x 10^4	2.31 x 10^4	2.78 x 10^4	3.24 x 10^4	3.70 x 10^4	4.16 x 10^4	4.63 x 10^4

How to order

SCS2 - N - 00 - 125 [ ] B - 50 - L1 - W

Model No. | Outdoors

Code	Description
A Mounting	
00	Basic
LB	Axial foot
FA	Rod side flange
FB	Head side flange
B Bore size (mm)	
125	ø125
140	ø140
160	ø160
180	ø180
200	ø200
250	ø250
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
ø125 to ø160	**1 to 800**	**In 1 mm increments**
ø180	**1 to 900**	
ø200	**1 to 945**	
ø250	**1 to 751**	

Code	Description	
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 (standard)	Standard T R S
R	Cushion needle position R	
S	Cushion needle position S	
T	Cushion needle position T	

A Mounting *2
B Bore size
C Port thread
D Cushion
E Stroke *3
F Option

⚠ 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: Outdoor type does not support class 2 pressure vessel.

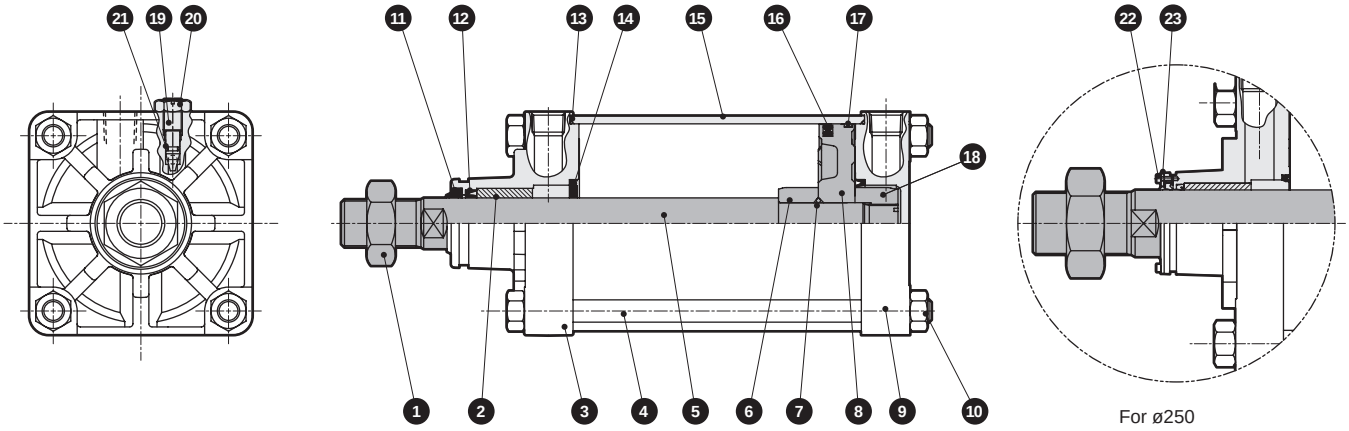
[Example of model No.]

SCS2-N-LB-125B-50-L1-W

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

A Mounting : Axial foot
B Bore size : ø125 mm
C Port thread : Rc thread
D Cushion : Both sides cushioned
E Stroke : 50mm
F Option : With the silicone bellows, Max. ambient temperature: 250 °C

Internal structure and parts list



Note: The parts 14, 19, 20, and 21 are not required for the type without cushion.

Part No.	Part name	Material	Remarks	Part No.	Part name	Material	Remarks
1	Hexagon nut	Stainless steel		13	Cylinder gasket	Nitrile rubber	
2	Bush	Iron-copper oil impregnated bearing alloy		14	Cushion packing	Nitrile rubber/steel	
3	Rod cover	Aluminum alloy casting	Chromate	15	Cylinder tube	Aluminum alloy	Hard alumite
4	Tie rod	Stainless steel		16	Piston packing	Hydrogenated nitrile rubber	
5	Piston rod	Stainless steel	Industrial chrome plating	17	Wear ring	Polyacetal resin	
6	Cushion ring A	Steel	Zinc chromate	18	Cushion ring B	Steel	Zinc chromate
7	Piston gasket	Nitrile rubber		19	Cushion needle	Copper alloy	
8	Piston	Aluminum alloy casting		20	Hexagon nut	Stainless steel	
9	Head cover	Aluminum alloy casting	Chromate	21	Needle gasket	Nitrile rubber	
10	Hexagon nut	Stainless steel		22	Hexagon socket head cap screw	Stainless steel	ø250 only
11	Scraper	Nitrile rubber/steel		23	Retainer plate	Stainless steel	ø250 only
12	Rod packing	Hydrogenated nitrile rubber					

Consumable parts list

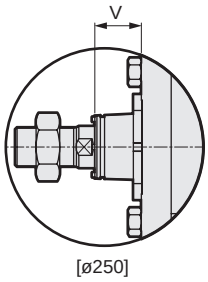
Bore size (mm)	Kit No.	Consumable parts No.
ø125	SCS2-N-125K-W	11 12 13 14 16 17 21
ø140	SCS2-N-140K-W	
ø160	SCS2-N-160K-W	
ø180	SCS2-N-180K-W	
ø200	SCS2-N-200K-W	
ø250	SCS2-N-250K-W	

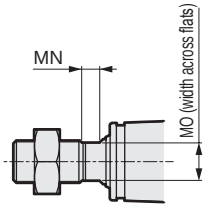
Dimensions

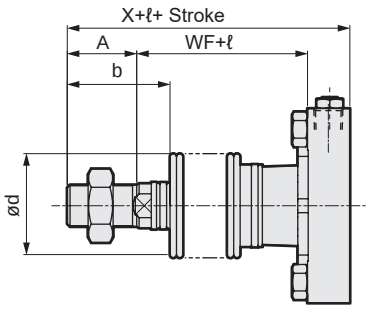
Same as double acting/rubber scraper SCS2-G. Refer to the SCS2-G dimensions in "Pneumatic Cylinders (No. CB-029SA)".

Dimensions

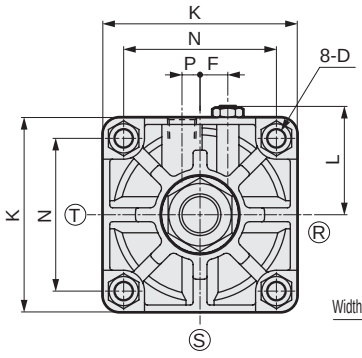
● Basic (00)

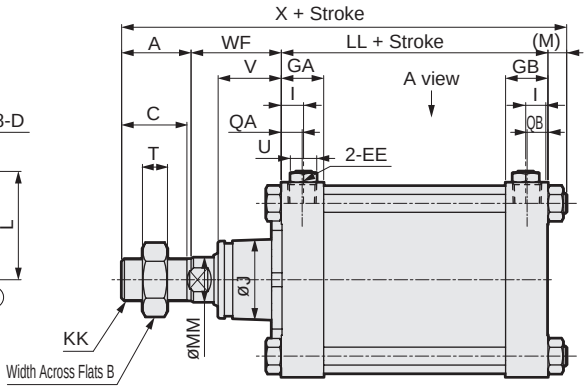


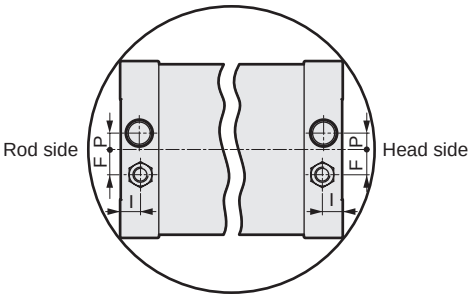




[With bellows]







Port position diagram (A view)

*1: Ⓡ Ⓢ Ⓣ indicate the cushion needle position.
*2: ℓ dimensions below decimal point are rounded up.

Code	Basic (00) Basic dimensions																					
Bore size (mm)	A	B	C	D	EE	GA	GB	F	I	J	K	KK	L	LL	M	MM	MN	MO	N	P	QA	QB
ø125	50	46	47	M 14 x 1.5	Rc1/2	30.5	30.5	20	16	57	140	M 30 x 1.5	78 to 82	92	13.5	32	13	27	110	13	15	15
ø140	50	46	47	M 14 x 1.5	Rc3/4	34.5	34.5	20	20	57	157	M 30 x 1.5	86.5 to 91	103	13.5	32	13	27	124	15	17	17
ø160	56	55	53	M 16 x 1.5	Rc3/4	34.5	34.5	24	20	62	177	M 36 x 1.5	96.5 to 101	106	15.5	40	15	36	142	15	17	17
ø180	63	60	60	M 18 x 1.5	Rc3/4	34.5	34.5	24	20	68	200	M 40 x 1.5	108 to 112	110	17.5	45	17	41	160	15	17	17
ø200	72	70	69	M 20 x 1.5	Rc3/4	37.5	37.5	24	20.5	75	220	M 45 x 1.5	120.5 to 129	123	18.5	50	20	46	175	20	18	18
ø250	88	85	84	M 24 x 1.5	Rc1	42.5	42.5	24	20.5	93	274	M 56 x 2	147.5 to 156	141	21.5	60	22	55	216	22	21	21

Code						With bellows		
Bore size (mm)	T	U	V	WF	X	b	d	ℓ
ø125	18	19	45.5	65	220.5	74	75	(Stroke/4.55) + 11
ø140	18	19	45.5	67	233.5	74	75	(Stroke/4.55) + 9
ø160	21	19	48	71	248.5	82	82	(Stroke/5.15) + 9
ø180	24	19	53	78	268.5	91	91	(Stroke/5.15) + 9
ø200	27	24	60	88	301.5	102	95	(Stroke/5.30) + 9
ø250	34	24	67	94	344.5	120	120	(Stroke/6.40) + 9