



Medium bore size cylinder  
Double acting, rubber scraper type

# SCA2-G Series

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

JIS symbol



## Specifications

Descriptions		SCA2-G (rubber scraper type)				
Bore size	mm	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$
Actuation		Double acting				
Working fluid		Compressed air				
Max. working pressure	MPa	1.0				
Min. working pressure	MPa	0.05				
Withstanding pressure	MPa	1.6				
Ambient temperature	°C	-10 to 60 (no freezing)				
Port size		Rc1/4	Rc3/8		Rc1/2	
Stroke tolerance	mm	$^{+0.9}_0$ (Up to 360), $^{+1.4}_0$ (Up to 800)				
Working piston speed	mm/s	50 to 1000 (use within the allowable energy absorption.)				
Cushion		Air cushion				
Effective cushion length	mm	14.6	16.6	16.6	20.6	23.6
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISO VG32.)				
Allowable energy absorption	Cushioned	4.29	8.37	15.8	27.9	49.8
	No cushion	0.067	0.079	0.079	0.201	0.301
If "No cushion" is selected, the large energy generated by the external load cannot be absorbed. So an external shock absorber should be used.						

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Available stroke length (mm)	Min. stroke length (mm)
$\phi 40$	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450 500	600	1600	1
$\phi 50$			2000	
$\phi 63$		700	2500	
$\phi 80$				
$\phi 100$				

Note 1: Custom stroke length is available per 1 mm increment.

## Min. stroke length of type with switch

● T0/T5 type min. stroke length with switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation	Head end trunnion installation
	1	2	3	4	1	2	3	4	1	2	3	4	A position can not be detected at rod side stroke end.	A position can not be detected at head side stroke end.
$\phi 40$	20 (10)	20 (20)	40 (40)	60 (60)	20 (10)	60 (45)	105 (75)	150 (105)	110 (110)	110 (110)	175 (145)	175 (145)	50 (50)	50 (50)
$\phi 50$	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	65 (50)	65 (60)	135 (135)	135 (135)	135 (135)	135 (135)	60 (60)	60 (60)
$\phi 63$	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	20 (20)	70 (55)	70 (60)	110 (95)	110 (95)	110 (100)	110 (100)	50 (45)	50 (45)
$\phi 80$	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	115 (85)	115 (85)	115 (105)	115 (105)	55 (40)	55 (40)
$\phi 100$	15 (15)	25 (25)	45 (45)	70 (70)	15 (15)	25 (25)	70 (55)	70 (70)	125 (95)	125 (95)	125 (115)	125 (115)	60 (45)	60 (45)

Note 1: Value in ( ) for T\*V (Radial lead wire).

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

● T8 type min. stroke length with switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation	Head end trunnion installation
	1	2	3	4	1	2	3	4	1	2	3	4	A position can not be detected at rod side stroke end.	A position can not be detected at head side stroke end.
$\phi 40$	15 (10)	20 (20)	40 (40)	60 (60)	15 (10)	50 (35)	95 (65)	140 (95)	95 (85)	95 (85)	155 (125)	155 (125)	45 (40)	45 (40)
$\phi 50$	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	115 (115)	115 (115)	135 (135)	135 (135)	50 (50)	50 (50)
$\phi 63$	10 (10)	20 (20)	40 (40)	60 (60)	10 (10)	20 (20)	70 (55)	70 (60)	95 (75)	95 (75)	110 (110)	110 (110)	45 (35)	45 (35)
$\phi 80$	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	100 (70)	100 (70)	115 (115)	115 (115)	50 (35)	50 (35)
$\phi 100$	15 (15)	25 (25)	45 (45)	65 (65)	15 (15)	25 (25)	70 (55)	70 (65)	110 (80)	110 (80)	125 (125)	125 (125)	55 (40)	55 (40)

Note 1: Value in ( ) for T\*V (Radial lead wire).

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

### Min. stroke length of type with switch

● T2/T3 type min. stroke length with switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
φ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
φ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (75)	105 (75)	45 (30)	45 (30)
φ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (85)	110 (85)	50 (35)	50 (35)
φ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	115 (85)	115 (85)	115 (90)	115 (90)	55 (40)	55 (40)
φ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	125 (95)	125 (95)	125 (100)	125 (100)	60 (45)	60 (45)

Note 1: Value in ( ) for T\*V (Radial lead wire).

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

● T1/T2Y/T3Y/T2YD type min. stroke length with switch

Switch quantity	Different surface installation				Same surface installation				Center trunnion installation				Rod end trunnion installation A position can not be detected at rod side stroke end.	Head end trunnion installation A position can not be detected at head side stroke end.
	1	2	3	4	1	2	3	4	1	2	3	4	1	1
φ40	20 (10)	20 (15)	25 (25)	40 (40)	20 (10)	60 (45)	105 (75)	150 (105)	105 (75)	105 (75)	165 (135)	165 (135)	50 (35)	50 (35)
φ50	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	100 (70)	100 (70)	100 (75)	100 (75)	45 (30)	45 (30)
φ63	15 (10)	15 (15)	25 (25)	40 (40)	15 (10)	15 (15)	60 (45)	60 (45)	105 (75)	105 (75)	105 (85)	105 (85)	50 (35)	50 (35)
φ80	15 (10)	15 (15)	30 (30)	45 (45)	15 (10)	15 (15)	60 (45)	60 (45)	110 (80)	110 (80)	110 (90)	110 (90)	55 (40)	55 (40)
φ100	10 (10)	15 (15)	30 (30)	45 (45)	10 (10)	15 (15)	60 (45)	60 (45)	120 (90)	120 (90)	120 (100)	120 (100)	60 (45)	60 (45)

Note 1: Value in ( ) for T\*V (Radial lead wire). Note that radial lead wire (V) is not available for T2YD.

Note 2: When stroke length is shorter than 15 mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

SCP*2
CMK2
CMA2
SCM
SCG
<b>SCA2</b>
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder  
Standard type

## Switch specifications (T type switch)

\* The T0/T5 switch can be used with 220 VAC.  
Contact CKD for working conditions.

● 1color / 2 color indicator, strong magnetic field proof

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire				Proximity 2-wire				
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV (Custom order)	T3YH/T3YV	T0H/T0V	T5H/T5V	T8H/T8V		T2YD				
Applications	Programmable controller relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay		Programmable controller dedicated			
Output method	-			NPN output	PNP output	NPN output	-								
Power voltage	-			10 to 28 VDC			-								
Load voltage	85 to 265 VAC	10 to 30 VDC		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 (Note 1)		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
Light	LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Without indicator light		LED (ON lighting)		Red/green LED (ON lighting)			
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA						1 mA or less		

● With preventive maintenance output

Descriptions	Proximity 3-wire			Proximity 4-wire			Proximity 3-wire			Proximity 4-wire					
	T2YFH/V			T3YFH/V			T2YMH/V			T3YMH/V					
Applications	Programmable controller dedicated			Programmable controller, relay			Programmable controller dedicated			Programmable controller, relay					
Output method	NPN output														
Light	Red/green LED (ON lighting)														
	Installation position adjustment			-									Yellow LED (ON lighting)		
Regular output	Preventive maintenance output														
	Power voltage			10 to 28 VDC			-			10 to 28 VDC					
	Load voltage			30 VDC or less			10 to 30 VDC			30 VDC or less					
	Load current			50 mA or less			5 to 20 mA			50 mA or less					
Preventive maintenance output	Leakage current			1 mA or less			10 μA or less			1.2 mA or less			10 μA or less		
	Load voltage														
	30 VDC or less														
Preventive maintenance output	Load current			20 mA or less			50 mA or less			5 to 20 mA or less			50 mA or less		
	Leakage current														
10 μA or less															

Note 1: Refer to Ending 1 for other switch specifications.

Note 2: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10 mA at 60 °C)

### Cylinder weight

Bore size (mm)	Product weight when stroke length (S) = 0 mm						Weight per switch (including mounting bracket)			Additional weight per S = 100 mm
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Eye bracket type (CA)	Clevis bracket type (CB)	Trunnion type (TA, TB, TC)	T type	T2YD type		
								1 m	3 m	
φ40	0.83	1.00	1.24	1.15	1.19	1.21	0.018	0.08	0.17	0.39
φ50	1.20	1.45	1.69	1.58	1.61	1.74				0.46
φ63	1.60	1.97	2.69	2.17	2.22	2.45				0.50
φ80	2.60	3.34	4.46	3.87	4.08	3.94				0.90
φ100	4.20	5.11	6.94	5.84	6.02	6.77				1.12

(E.g.) Product weight of SCA2-G-LB-50B-200-R0-D

Product weight when stroke length (S) = 0 mm ... 1.45 kg.  
 Additional weight at stroke length 200 mm ...  $0.46 \times \frac{200}{100} = 0.92$  kg.  
 Weight of two switches ...  $0.018 \times 2 = 0.036$  kg.  
 Product weight ...  $1.45 + 0.92 + 0.036$  kg = 2.406 kg

SCP*2
CMK2
CMA2
SCM
SCG
<b>SCA2</b>
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder  
Standard type

## How to order

Without switch

SCA2-G - LB - 40 - B - 100 - S - I

With switch

SCA2-G - LB - 40 - B - 100 - T0 - R - S - I

**A** Mounting style  
Note 1

**B** Bore size

**C** Port thread type

**D** Cushion

**E** Stroke length  
Note 2

**F** Switch model no.

**G** Switch quantity  
Note 4

**H** Option

**I** Accessory  
Note 5

### ⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.  
However, trunnion type is attached to the product when shipped.

Note 2: If the maximum stroke is exceeded, refer to Ending 74.

Note 3: Refer to page 558 for min. stroke length.

Note 4: When selecting TA or TB for mounting, the number of switches is limited to "H" (one on head side) for TA, and "R" (one on rod side) for TB.

Note 5: "I" and "Y" can not be selected at the same time.

Note 6: Refer to Ending 89 for custom specifications of rod end form.

Note 7: Refer to page 436 for variation and option combination.

<Example of model number>

**SCA2-G-LB-40B-100-T0-R-SI**

Model: Medium bore size cylinder double acting powerful scraper type

**A** Mounting style : Axial foot type

**B** Bore size :  $\phi$  40 mm

**C** Port thread type : Rc thread

**D** Cushion : Both sides cushioned

**E** Stroke length : 100 mm

**F** Switch model no. : Reed T0 switch, lead wire length 1 m

**G** Switch quantity : One on rod end

**H** Option : Cushion needle position S

**I** Accessory : Rod eye

Symbol	Descriptions		
<b>A Mounting style</b>			
00	Basic type		
LB	Axial foot type		
FA	Rod end flange type		
FB	Head end flange type		
FC	Special head end flange type		
CA	Eye bracket type		
CB	Clevis bracket type (pin and snap ring attached)		
TC	Center trunnion type		
TA	Rod end trunnion type		
TB	Head end trunnion type		
TF	Intermediate supporting hole ( $\phi$ 40 cannot be selected)		
TD	Rod end supporting hole ( $\phi$ 40 cannot be selected)		
TE	Head end supporting hole ( $\phi$ 40 cannot be selected)		
<b>B Bore size (mm)</b>			
40	40		
50	50		
63	63		
80	80		
100	100		
<b>C Port thread type</b>			
Blank	Rc thread		
N	NPT thread (custom order)		
G	G thread (custom order)		
<b>D Cushion</b>			
B	Both sides cushioned		
R	Rod end cushion		
H	Head end cushion		
N	No cushion		
<b>E Stroke length (mm)</b>			
Bore size	Stroke length Note 3	Available stroke length	Custom stroke length
40	1 to 600	1600	Per 1 mm increment
50	1 to 600	2000	
63	1 to 600	2500	
80	1 to 700		
100	1 to 800		
<b>F Switch model no.</b>			
Refer to the switch model no. table on the following page.			
<b>*Lead wire length</b>			
Blank	1m (standard)		
3	3m (option)		
5	5m (option)		
<b>G Switch quantity</b>			
R	One on rod end		
H	One on head end		
D	Two		
T	Three		
<b>H Option</b>			
M	Piston rod material (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
P6	Copper and PTFE free (custom order)		
<b>I Accessory</b>			
I	Rod eye		
Y	Rod clevis (pin and snap ring attached)		
B1	Eye bracket		
B2	Clevis bracket (pin and snap ring attached)		
B3	Eye bracket		
B4	Trunnion type No. 2 bracket		

## How to order mounting bracket

Bore size (mm)	$\phi$ 40	$\phi$ 50	$\phi$ 63	$\phi$ 80	$\phi$ 100
Mounting bracket					
Foot (LB)	S1-LB-40	S1-LB-50	S1-LB-63	S1-LB-80	S1-LB-100
Flange (FA/FB)	S1-FA-40	S1-FA-50	S1-FA-63	S1-FA-80	S1-FA-100
Eye (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis (CB)	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

Note 1: Refer to page 448 for the mounting bracket material.

Note 2: The foot type bracket is 2 pcs./set.