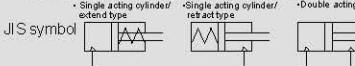




Pencil shaped cylinder
Single acting/extend type, Single acting/retract type, Double acting/single rod type, Double acting/low speed type, Double acting/heat resistance type

SCP* 2 Series

• Bore size: 2.5, 4, 6, 10, 16 mm



CAD DATA AVAILABLE.

Specifications

Descriptions	SCPS		SCPS2 SCPS2-L			SCPH2 SCPH2-L			SCPD2 SCPD2-L			SCPD2-O SCPD2-OL			SCPD2-T		
Bore size mm	2.5 dia.	4 dia.	6 dia.	10 dia.	16 dia.	6 dia.	10 dia.	16 dia.	6 dia.	10 dia.	16 dia.	6 dia.	10 dia.	16 dia.	6 dia.	10 dia.	16 dia.
Actuation	Single acting/extend					Single acting/retract			Double acting			Double acting/low speed			Double acting/heat resistance		
Working fluid	Compressed air																
Max. working pressure MPa	1.0																
Min. working pressure MPa	0.35		0.3		0.15	0.39		0.2	0.15	0.1	0.15		0.1		0.15		0.1
Withstanding pressure MPa	1.6																
Ambient temperature °C	-10 to 60 (to be unfrozen)														5 to 120		
Port size	Joint (tube 2.5 X 4 dia.)											M5					
Stroke tolerance mm	+0.6 0																
Working piston speed mm/s	50 to 300					50 to 500						10 to 200			50 to 500		
Cushion	None					Rubber cushion											
Lubrication	Not required (When lubrication, use turbine oil Class 1 ISOVG32.)											Oil free			Oil free		
Allowable energy absorption J	1.5 X 10 ⁻⁴	4 X 10 ⁻⁴	0.011	0.041	0.162	0.011	0.041	0.162	0.011	0.041	0.162	0.011	0.041	0.162	0.011	0.041	0.162

Note 1: Do not leave a single acting cylinder after elevated pressure. Failure to observe this may result that the piston rod does not return by spring force when pressure is released.

Stroke length

	Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length with switch (mm) *
SCPS	2.5 dia.	5, 10	10	Switch installation not available
	4 dia.	5, 10, 15, 20	20	
SCPS2	6 dia.	15, 30, 45, 60	100	10
	10 dia.		120	
SCPH2	16 dia.			
SCPD2	6 dia.		200	
SCPD2-O	10 dia.		260	
SCPD2-T	16 dia.		Heat resistance type switch is not available.	

* For types with switch, minimum stroke length varies depending on installation method. Refer to the table below.

Min. stroke length of types with switch

	One		Two	
Rough sketch				
	Rod side installation	Head side installation	When different surface installation	When same surface installation
Min. stroke	5mm		10mm	28mm

Switch specifications

Descriptions	Proximity 2 wire		Proximity 3 wire	
	M2V	M2VV (2 color indicator)	M3V	M3VV (2 color indicator)
Applications	Programmable controller		Programmable controller, relay, IC circuit, small solenoid valve	
Power voltage	—		DC4.5 to 28V	DC10 to 28V
Load voltage/ current	DC10 to 30V, 5 to 20mA		DC30V or less, 200mA or less	DC30V or less, 150mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)
Descriptions	Reed 2 wire			
	M0V		M5V	
Applications	Programmable controller, relay		Programmable controller, relay, IC circuit (without indicator light), serial connection	
Load voltage/ current	5 to 50mA at DC12/24V, 7 to 20mA at AC110V		50mA or less at DC5/12/24V, 20mA or less at AC110V	
Light	LED (ON lighting)		Without indicator light	

Single acting spring load (SCPS/SCPS2/SCPH2) (Unit: N)

Bore size (mm)	0 stroke	Full stroke
2.5 dia.	0.73	1.17
4 dia.	1.76	2.84
6 dia.	2.25	4.70
10 dia.	2.84	6.37
16 dia.	5.19	11.5

Cylinder mass

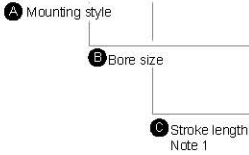
Type	Stroke length Bore size (mm)	Without switch								With switch (2 switches)				Switch mass (per switch)	(Unit: g)
		5st	10st	15st	20st	30st	45st	60st	15st	30st	45st	60st			
SCPS	2.5 dia.	1.6	1.7	-	-	-	-	-	-	-	-	-	-	-	24
	4 dia.	7	8	9	10	-	-	-	-	-	-	-	-		
SCPS2	6 dia.	-	-	12	-	16	20	24	58	62	66	70	-		
	10 dia.	-	-	26	-	33	40	47	72	79	86	93	-		
	16 dia.	-	-	48	-	62	76	90	96	110	124	138	-		
SCPH2	6 dia.	-	-	15	-	18	21	24	61	64	67	70	-		
	10 dia.	-	-	26	-	32	38	44	72	78	84	90	-		
	16 dia.	-	-	51	-	63	76	88	99	101	124	136	-		
SCPD2	6 dia.	-	-	15	-	17	19	21	61	63	65	67	-		
	10 dia.	-	-	24	-	27	31	34	70	73	77	80	-		
	16 dia.	-	-	47	-	52	57	62	95	100	105	110	-		

Mounting bracket mass (Unit: g)

Applicable bore size	Mounting style		
	Foot type LS	Flange type FA	Clevis type CB
6 dia.	6	4	-
10 dia.	6	4	4
16 dia.	15	12	10

How to order

SCPS - 00 - 2.5 - 5



Symbol	Descriptions	
A Mounting style		
00	Basic type	
B Bore size (mm)		
2.5	2.5 dia.	
4	4 dia.	
C Stroke length (mm)		
	Bore size	2.5 dia. 4 dia.
5	5	● ●
10	10	● ●
15	15	● ●
20	20	● ●

<Example of model number>

SCPS-00-2.5-5

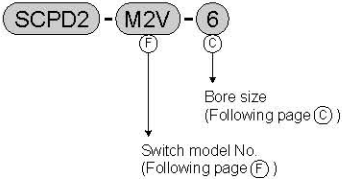
Model: Pencil shaped cylinder single acting/extend type

- A** Mounting style: Basic type
- B** Bore size : 2.5mm
- C** Stroke length : 5mm

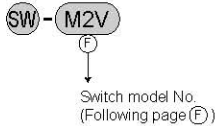
• 1. 6 pcs. per carton

How to order switch

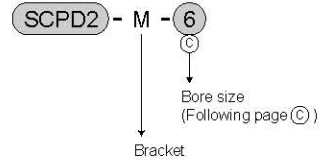
• Switch main body + mounting bracket



• Switch only



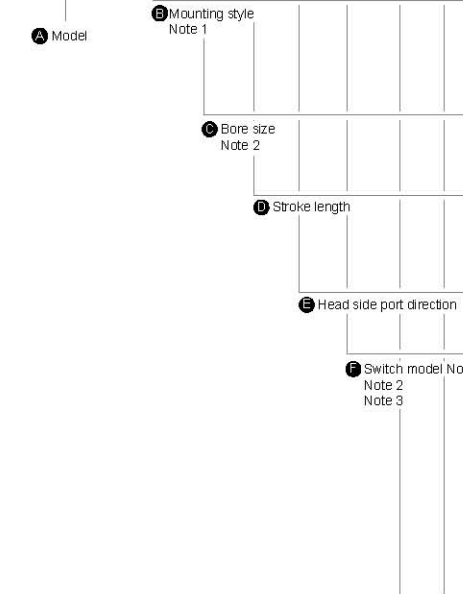
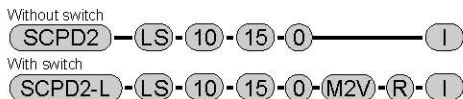
• Mounting bracket



How to order mounting bracket

Bore size (mm)	6 dia.	10 dia.	16 dia.
Mounting bracket			
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

How to order



- ⚠ Caution for model No. selection**
- Note 1: For axial port direction "0", mounting style "CB" is not available.
 - Note 2: For types without switch, magnet is not integrated.
 - Note 3: Custom switches are available other than F Switch model No. Please refer to Ending 1 about details.
 - Note 4: For SCP2, SCP2 and SCPD2, copper and PTFE free specifications are provided as standard.
 - Note 5: Please refer to Ending 81 about custom specifications of rod end form.
 - Note 6: Please refer to Page 6 about variation/optional combination.

<Example of model number>

SCPD2-OL-LS-10-15-0-M2V-R-I

Model: Pencil shaped cylinder

- A Model : Double acting low speed type
- B Mounting style : Single axial foot type (rod side)
- C Bore size : 10mm
- D Stroke length : 15mm
- E Head side port direction: Axial
- F Switch model No : Proximity switch M2V
- G Switch quantity : One on rod side
- H Accessory : Rod eye

Head cover side port direction

For head cover side piping port direction of mounting style 00, LB and FA, 2 types directions such as vertical and horizontal against axial direction can be selected.

Symbol		Descriptions		SCPS2	SCPH2	SCPD2	SCPD2-0	SCPD2-T				
B Mounting style		Bore size		6	10	16	6	10	16	6	10	16
00	Basic type	●	●	●	●	●	●	●	●	●	●	●
LS	Single axial foot type (rod side)	●	●	●	●	●	●	●	●	●	●	●
FA	Rod side flange type	●	●	●	●	●	●	●	●	●	●	●
CB	Clevis bracket	●	●	●	●	●	●	●	●	●	●	●
C Bore size (mm)		6 dia.		●	●	●	●	●	●	●	●	●
10 dia.		●	●	●	●	●	●	●	●	●	●	●
16 dia.		●	●	●	●	●	●	●	●	●	●	●
D Stroke length (mm)		15		●	●	●	●	●	●	●	●	●
30		●	●	●	●	●	●	●	●	●	●	●
45		●	●	●	●	●	●	●	●	●	●	●
60		●	●	●	●	●	●	●	●	●	●	●
E Head side port direction		Blank Vertical		●	●	●	●	●	●	●	●	●
0 Axial		●	●	●	●	●	●	●	●	●	●	●
F Switch model No.		Radial lead wire	Display	Lead wire								
M2V*	Proximity	1 color indicator	2 wire	●	●	●	●	●	●	●	●	●
M2VV*	Proximity	2 color indicator	2 wire	●	●	●	●	●	●	●	●	●
M3V*	Proximity	1 color indicator	3 wire	●	●	●	●	●	●	●	●	●
M3VV*	Proximity	2 color indicator	3 wire	●	●	●	●	●	●	●	●	●
M0V*	Reed	1 color indicator	2 wire	●	●	●	●	●	●	●	●	●
M5V*	Reed	1 color indicator	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 Accessory		Bore size		6	10	16	6	10	16	6	10	16
I	Rod eye	●	●	●	●	●	●	●	●	●	●	●
Y	Rod clevis	●	●	●	●	●	●	●	●	●	●	●
B1	Eye bracket	●	●	●	●	●	●	●	●	●	●	●
B2	Clevis bracket	●	●	●	●	●	●	●	●	●	●	●

SCP* 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/COV*2
CAT
MDC2
MVC
SMD2
MSD/MSDG
SSD
SSD (large)
FC*
ULKP/ULK
JSK2/JSK2M
JSC3 (medium)
JSC3 (large)
JSB3
UCAC
STS/STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

Standard type
Pencil shaped cylinder

Port size of 6 mm bore cylinder

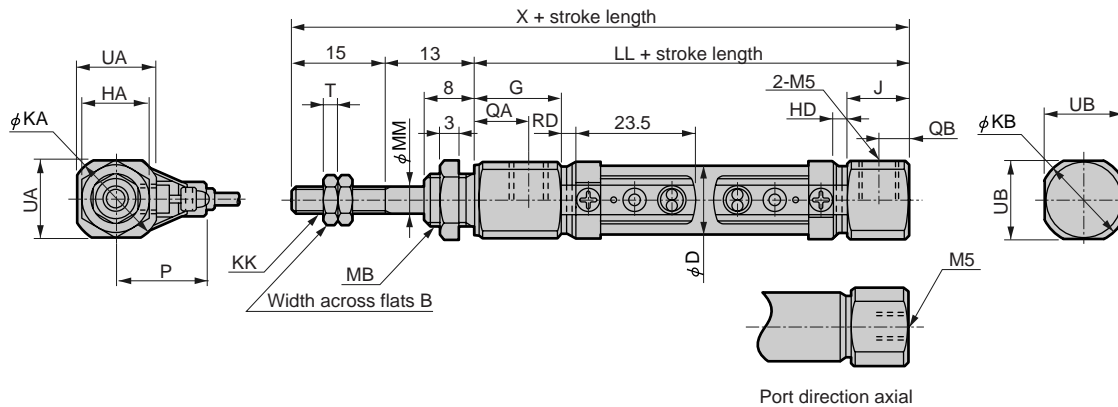
For 6 mm bore cylinder, M3 port is available.



Dimensions



● SCPD2-(L) basic type (00)



Note 1: Without switch dimensions are also same. (Magnet is not integrated.)

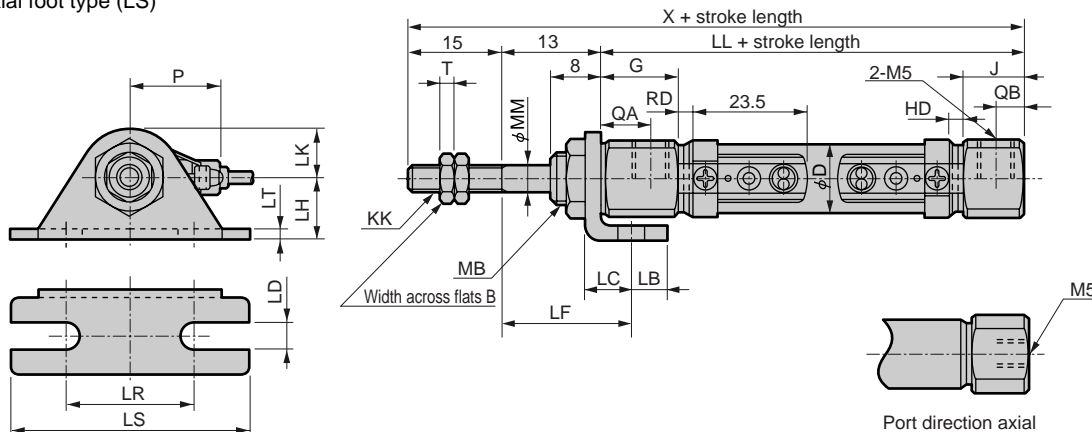
Note 2: The φ6 and φ10 port thread depth is 3.8 mm. When using a joint, prepare a joint with a thread length of 3.8 mm or less.

Note 3: Refer to page 78 for dimensions drawings of accessories.

Symbol	Basic type (00) basic dimensions															
Bore size (mm)	B	D	G	HA	J	KA	KB	KK	LL	MB	MM	QA	QB	T	UA	UB
φ6	5.5	6.8	17	8	8	13.5	13.5 (9)	M3	47	M6	3	13	4	1.8	11	11 (8)
φ10	7	11	12.5	11	9	14.5	14.5	M4	46	M8 x 1.0	4	8	4.5	2.4	12	12
φ16	8	17.4	13	14	9	21.5	21.5	M5	46	M10 x 1.0	5	8.5	4.5	3.2	18	18

Symbol	With switch				The axial direction port is shown in parentheses.
Bore size (mm)	X	RD	P	HD	
φ6	75	1.5	14	1.5	
φ10	74	3	16	1.5	
φ16	74	2.5	19	1.5	

● Single axial foot type (LS)



Note 1: Without switch dimensions are also same. (Magnet is not integrated.)

Note 2: Port size M3 type is available for φ6 cylinder.

Note 3: The φ6 and φ10 port thread depth is 3.8 mm. When using a joint, prepare a joint with a thread length of 3.8 mm or less.

Note 4: Refer to page 78 for dimensions drawings of accessories.

Symbol	Single axial foot type (LS) basic dimensions											Installation dimensions					
Bore size (mm)	B	D	G	J	KK	MB	MM	QA	QB	T	X	LB	LC	LD	LF	LL	LH
φ6	5.5	6.8	17	8	M3	M6	3	13	4	1.8	75	5	7	4.2	18.4	47	9
φ10	7	11	12.5	9	M4	M8 x 1.0	4	8	4.5	2.4	74	5	7	4.2	18.4	46	9
φ16	8	17.4	13	9	M5	M10 x 1.0	5	8.5	4.5	3.2	74	6	9	5.2	19.7	46	14

Symbol	With switch						
Bore size (mm)	LK	LR	LS	LT	RD	P	HD
φ6	7	22	32	1.6	1.5	14	1.5
φ10	7	22	32	1.6	3	16	1.5
φ16	10	29	42	2.3	2.5	19	1.5

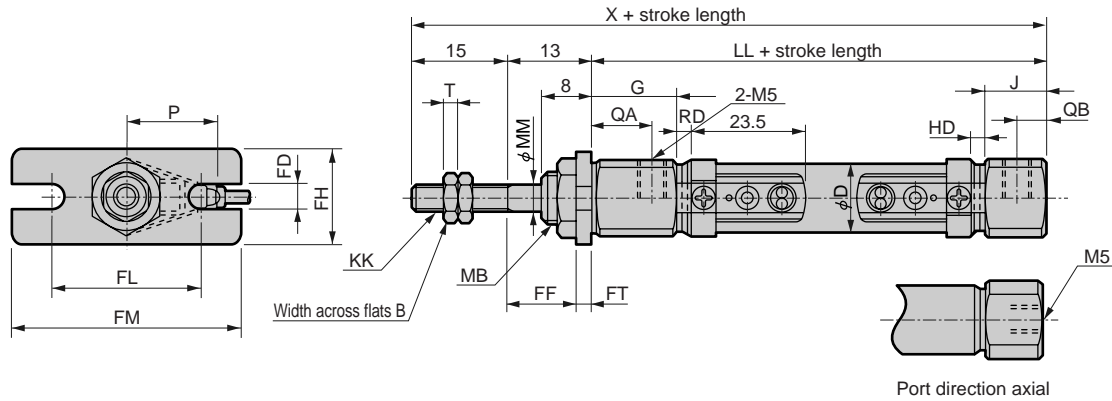
SCPD2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Pencil shaped cylinder
Standard type

Dimensions



● Rod side flange type (FA)



Note 1: Without switch dimensions are also same. (Magnet is not integrated.)

Note 2: Port size M3 type is available for φ6 cylinder.

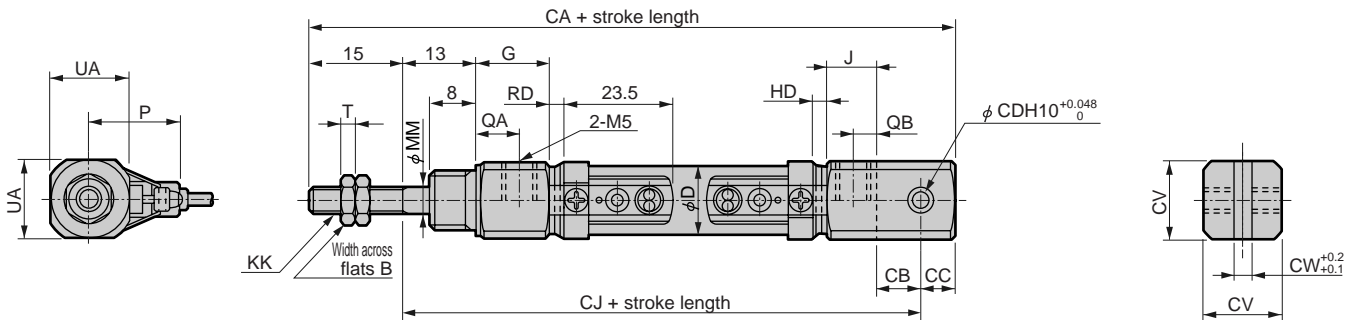
Note 3: The φ6 and φ10 port thread depth is 3.8 mm. When using a joint, prepare a joint with a thread length of 3.8 mm or less.

Note 4: Refer to page 78 for dimensions drawings of accessories.

Symbol	Rod flange types (FA) basic dimensions												Installation dimensions				
	B	D	G	J	KK	LL	MM	QA	QB	T	X	FD	FF	FH	FL	FM	
Bore size (mm)																	
φ6	5.5	6.8	17	8	M3	47	M6	3	13	4	1.8	75	4.2	11.4	14	22	32
φ10	7	11	12.5	9	M4	46	M8 x 1.0	4	8	4.5	2.4	74	4.2	11.4	14	22	32
φ16	8	17.4	13	9	M5	46	M10 x 1.0	5	8.5	4.5	3.2	74	5.2	10.7	20	29	42

Symbol	With switch			
	FT	RD	P	HD
Bore size (mm)				
φ6	1.6	1.5	14	1.5
φ10	1.6	3	16	1.5
φ16	2.3	2.5	19	1.5

● Clevis bracket type (CB)



Note 1: Without switch dimensions are also same. (Magnet is not integrated.)

Note 2: Port size M3 type is available for φ6 cylinder.

Note 3: The φ6 and φ10 port thread depth is 3.8 mm. When using a joint, prepare a joint with a thread length of 3.8 mm or less.

Note 4: Pin and snap ring are attached.

Note 5: Refer to page 78 for dimensions drawings of accessories.

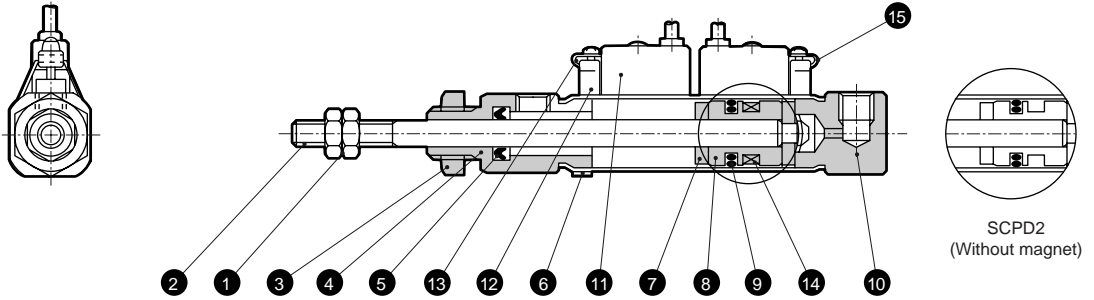
Symbol	Clevis (CB) basic dimensions										Installation dimensions				
	B	D	G	J	KK	MM	QA	QB	T	UA	CA	CB	CC	CD	CJ
Bore size (mm)															
φ10	7	11	12.5	9	M4	4	8	4.5	2.4	12	87	8	5	3.2	67
φ16	8	17.4	13	9	M5	5	8.5	4.5	3.2	18	94	10	10	5	69

Symbol	With switch				
	CV	CW	RD	P	HD
Bore size (mm)					
φ10	12	3.2	3	16	1.5
φ16	18	6.5	2.5	19	1.5

Internal structure and parts list

- SCP*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- 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

Double acting
 ● SCPD2
 ● SCPD2-L (with switch)



*Due to caulking structure, this cylinder can not be disassembled.

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel		9	Piston packing seal	Nitrile rubber	
2	Piston rod	Stainless steel		10	Head cover	Special aluminum	Black alumite
3	Hexagon nut	Steel	Nickeling	With switch			
4	Rod cover	Special aluminum	Black alumite	11	Switch body	-	
5	Rod packing seal	Nitrile rubber		12	Band	Stainless steel	
6	Cylinder tube	Stainless steel		13	Pan head machine screw	Steel	Nickeling
7	Cushion rubber	Urethane rubber		14	Magnet	Plastic	Only with switch
8	Piston	Special aluminum		15	Bracket	Stainless steel	