

Standard

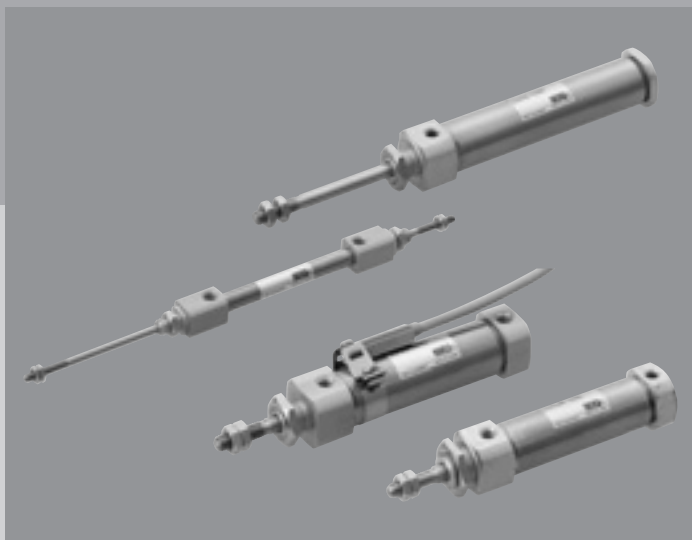
Overview

The lightest miniature series with the smallest bore size ($\varnothing 6$ to $\varnothing 16$) among general purpose cylinders.

SCP*3

Pencil shaped cylinder

$\varnothing 6/\varnothing 10/\varnothing 16$



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SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

Series variation

Pencil shaped cylinder SCP*3 Series

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVPIN2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

Variation	Model No. JIS symbol	Bore size (mm)	Standard stroke (mm)			
			15	30	45	60
Double acting/ single rod	SCPD3 SCPD3-L	ø6	●	●	●	●
		ø10	●	●	●	●
		ø16	●	●	●	●
Single acting/push	SCPS3 SCPS3-L	ø6	●	●	●	●
		ø10/ø16	●	●	●	●
Single acting/pull	SCPH3 SCPH3-L	ø6	●	●	●	●
		ø10/ø16	●	●	●	●
Double acting/heat resistant	SCPD3-T	ø6	●	●	●	●
		ø10	●	●	●	●
		ø16	●	●	●	●
Double acting/ rubber-air cushioned	SCPD3-*C SCPD3-L-*C	ø6	●	●	●	●
		ø10	●	●	●	●
		ø16	●	●	●	●
Double acting/fine speed	SCPD3-F SCPD3-LF	ø6	●	●	●	●
		ø10	●	●	●	●
		ø16	●	●	●	●
Double acting/low speed	SCPD3-O SCPD3-OL	ø6	●	●	●	●
		ø10	●	●	●	●
		ø16	●	●	●	●
Double acting/ double rod	SCPD3-D SCPD3-DL	ø6	●	●	●	●
		ø10/ø16	●	●	●	●
Single acting/ rotation-stop	SCPS3-M SCPS3-ML	ø10/ø16	●	●	●	●
Double acting/ rotation-stop	SCPD3-M SCPD3-ML	ø10	●	●	●	●
		ø16	●	●	●	●

Made to order

The following variations are also available.

Variation	Model No.	Bore size (mm)	Page	Variation	Model No.	Bore size (mm)	Page
Double acting/ with valve	SCPD3-V SCPD3-VL	ø10	70	Double acting/ with speed controller	SCPD3-Z SCPD3-ZL	ø10	50
		ø16				ø16	
Single acting/ with valve	SCPS3-V SCPS3-VL	ø10	70	Double acting/ double rod/heat resistance	SCPD3-DT	ø6	44
		ø16				ø10	
Double acting/ high load	SCPD3-K SCPD3-KL	ø6	64			Double acting/ clean-room specifications	
		ø10		Catalog No. CB-033SA			
		ø16					

●: Standard, ◎: Option, ○: Made to order, ■: Not available

	Min. stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Custom stroke (per mm)	Mounting					Option	Accessory				Switch	Page
					Basic	Two-sided axial foot	Axial foot (one side) Rod side	Rod side flange	Clevis bracket	Copper and PTFE free	Rod eye	Rod clevis	Eye bracket	Clevis bracket		
5	100	105	1	●	■	●	●	■	●	■	○	○	○	○	◎	8
	200	210		●	■	●	●	●	●	○	○	○	○			
	260	270		●	■	●	●	●	●	○	○	○	○			
5	100	105	1	●	■	●	●	■	●	■	○	○	○	○	◎	16
	120	120		●	■	●	●	●	●	○	○	○	○			
5	100	105	1	●	■	●	●	■	●	■	○	○	○	○	◎	16
	120	120		●	■	●	●	●	●	○	○	○	○			
5	100	100	1	●	■	●	●	■	■	■	○	○	○	○	■	26
	200	200		●	■	●	●	●	■	○	○	○	○			
	260	260		●	■	●	●	●	■	○	○	○	○			
5	100	100	1	●	■	●	●	■	●	●	○	○	○	○	◎	28
	200	200		●	■	●	●	●	●	○	○	○	○			
	260	260		●	■	●	●	●	●	○	○	○	○			
5	100	100	1	●	■	●	●	■	■	■	○	○	○	○	◎	34
	200	200		●	■	●	●	●	■	○	○	○	○			
	260	260		●	■	●	●	●	■	○	○	○	○			
5	100	100	1	●	■	●	●	■	■	■	○	○	○	○	◎	40
	200	200		●	■	●	●	●	■	○	○	○	○			
	260	260		●	■	●	●	●	■	○	○	○	○			
5	60	60	1	●	●	●	●	■	●	■	○	○	○	○	◎	44
	120	120		●	●	●	●	■	●	○	○	○	○			
5	120	120	1	●	■	●	●	●	●	●	○	○	○	○	◎	56
5	200	210	1	●	■	●	●	●	●	●	○	○	○	○	◎	56
	260	270		●	■	●	●	●	●	○	○	○	○			

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/

COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/

MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd

Contr

Ending

Variation and option combination selection table

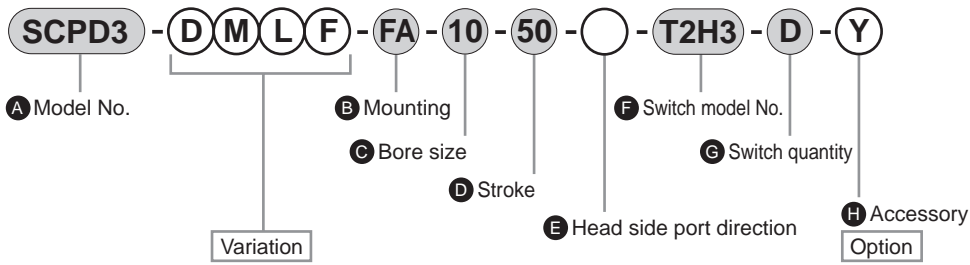
⊙: Option
 ○: Available (made-to-order product)
 △: Available depending on conditions (Contact CKD.)
 x: Not available

Category	Code	Variation												Port thread		Cushion		Option									
		None	S	H	D	M	Z	V	L	K	T	O	F	N	G	C	M	O	P6	P7	P71	N*					
SSG	Double acting single rod	SCPD3	*1	*1													x	x			○	⊙	*5	○	○	○	
SSG	Single acting push	SCPS3			x	⊙	x	○	⊙	x	x	x	x				x	x	x		○	⊙	*5	x	x	○	
SSG	Single acting pull	SCPH3				x	x	x	⊙	x	x	x	x				x	x	x		○	x	*5	x	x	○	
SSD	Double acting double rod	SCPD3-D					⊙	○	x	⊙	○	○	*2	*2			x	x	○		○	x	*5	○	○	○	
CAT	Rotation-stop	M						x	○	⊙	x	x	*2	x			x	x	○		○	⊙	*5	x	x	○	
MVC	With speed controller	Z						x	○	○	x	x	○	x			x	x	x		○	○	*5	x	x	○	
MVC	With valve	V							○	○	x	x	x	x			x	x	x		○	*6	○	x	x	○	
MVC	With cylinder switch	L								○	x	⊙	⊙				x	x	⊙		○	○	*5	○	○	○	
MVC	High load	K									x	*2	*2				x	x	○		○	○	x	x	x	○	
MVC	Heat resistance (120°C)	T										x	x				x	x	x		○	⊙	x	x	x	○	
SMG	Low speed	O											x				x	x	*4		○	⊙	x	*2	○	○	
SMG	Fine speed	F															x	x	*4		○	○	x	*2	○	○	
FC*	NPT	N															x		x		x	x	x	x	x	x	
FC*	G	G																x			x	x	x	x	x	x	
STK	Rubber-air cushioned	C																			○	⊙	*5	○	○	○	
SRG3	Rod nut material stainless steel	M																			○	○	○	○	○	*3	
SRM3	Axial port position	O																				⊙		○	○	○	
SRT3	Copper and PTFE free	P6																						x	x	○	
SRT3	Clean-room specifications (exhaust port)	P7																							x	○	
SRT3	Clean-room specifications (vacuum treatment)	P71																								○	
MRL2	Specify piston rod end form	N**																								○	
MRG2	Cylinder switch	Listed separately	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	x	⊙	⊙						⊙	⊙	⊙	○	○	⊙
SM-25	Rod eye	I	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○						⊙	⊙	⊙	x	x	*3
ShkAbs	Rod clevis	Y	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○						⊙	⊙	⊙	x	x	*3
ShkAbs	B1 bracket	B1	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○						⊙	⊙	⊙	x	x	⊙
ShkAbs	B2 bracket	B2	⊙	⊙	⊙	⊙	⊙	○	○	○	○	○	○	○	○	○						⊙	⊙	⊙	x	x	⊙

Caution

- *1 : Available when the single acting (S/H) is used as double acting. The total length will be longer if the single acting is used as reference.
- *2 : The friction resistance will be higher than that of the standard low speed (or fine speed).
Check the working conditions and consult with CKD.
- *3 : Consult with CKD if the piston rod end thread size changes.
- *4 : The expected low speed performance cannot be obtained in the cushion area.
- *5 : Copper and PTFE free as standard. (P6 code is not required.)
- *6 : The type with valve is available only for the axial port position. (O code is not required.)
- *7 : For P7 and P71 clean room specifications, refer to "Components for clean room specifications" (catalog No. CB-033SA).

[Example of model No.]



* Indicate codes from left to right in the left table.
 * For fine speed, insert "F" after the switch code.

Indicate codes from left to right in the left table.

- A** Model No. : Pencil shaped cylinder
 ● Variation : Double rod/rotation-stop/with switch/fine speed
 - B** Mounting : Rod side flange
 - C** Bore size : $\phi 10$ mm
 - D** Stroke : 50 mm
 - E** Head side port direction : Vertical direction
 - F** Switch model No. : Proximity switch T2H, lead wire length 3 m
 - G** Switch quantity : 2 pcs. included
 - H** Accessory : Rod clevis
- * Option: None

Product introduction

Renewal!

Space saving with compact standard switch "T Series"

New

[SCP*2 M type switch]

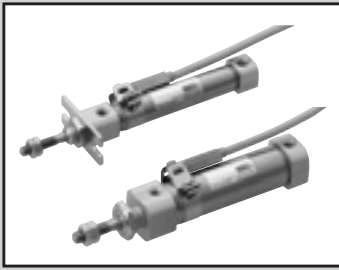
[SCP*3 T type switch]

Compatible with SCP*2 Series

The cylinder installation dimensions and rod end thread size are compatible with those of SCP*2 Series.

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/COVP/N2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd Contr
Ending

SCP*3
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS2
 CKV2
 CAV2/
 COVPIN2
 SSD2
 SSG
 SSD
 CAT
 MDC2
 MVC
 SMG
 MSD/
 MSDG
 FC*
 STK
 SRL3
 SRG3
 SRM3
 SRT3
 MRL2
 MRG2
 SM-25
 ShkAbs
 FJ
 FK
 Spd
 Contr
 Ending



Pencil shaped cylinder/double acting/single rod

SCPD3 Series

● Bore size: $\varnothing 6/\varnothing 10/\varnothing 16$

JIS symbol



Specifications

Item	SCPD3 SCPD3-L			
	mm	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Bore size	mm	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Actuation		Double acting		
Working fluid		Compressed air		
Max. working pressure	MPa	1.0 (≈ 150 psi, 10 bar)		
Min. working pressure	MPa	0.15 (≈ 22 psi, 1.5 bar)	0.1 (≈ 15 psi, 1 bar)	
Proof pressure	MPa	1.6 (≈ 230 psi, 16 bar)		
Ambient temperature	$^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)		
Port size		M5		
Stroke tolerance	mm	+1.0 0		
Working piston speed	mm/s	50 to 750		
Cushion		Rubber cushion		
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)		
Allowable absorbed energy	J	0.012	0.041	0.162

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)
	$\varnothing 10$	200	210	
	$\varnothing 16$	260	270	

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

Min. stroke with switch

	1		2	
	Sketch			
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Min. stroke	5 mm		10 mm	28 mm
	3			
	Sketch			
	Different surface mounting	Same surface mounting		
Min. stroke	38 mm	54 mm		

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed			
	T0H/T0V		T5H/T5V	
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection	
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator	LED (Lit when ON)		No indicator lamp	
Leakage current	0 mA		0 mA	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

(Unit: g)

Item	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10 mm stroke	Switch weight (per switch)	Mounting bracket weight
	Bore size (mm)	Foot L S	Flange FA				
ø6	6	4	-	13	1	Refer to the weight in the switch specifications.	2
ø10	6	4	4	21	2		
ø16	15	12	10	42	3		

(Example) Product weight of SCPD3-L-LS-10-30-T0H-D

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 21 g
- Additional weight for 30 mm stroke 2x30/10=6 g
- Switch weight 2x(18+2)=40 g
- Product weight 6+21+6+40=73 g

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
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8	17.0	19.1	21.2
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²	1.61x10 ²	1.81x10 ²	2.01x10 ²
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCP*3 How to order
 No switch (without magnet for switch)
SCPD3 - 00 - 10 - 15 - O ————— **Y**

CMA2 With switch (built-in magnet for switch)
SCPD3-L - 00 - 10 - 15 - O - T2H - R - Y

A Model No.

B Mounting
*1

C Bore size

D Stroke

E Head side port direction
*1

F Switch model No.
*3, *6
* indicates the lead wire length.

G Switch quantity

H Accessory
*4

Precautions for model No. selection

- *1 : The "CB" mounting is not available when the port direction is "O" (axial direction).
- *2 : Refer to page 8 for the min. stroke with switch.
- *3 : Magnet is not built into the type without switch.
- *4 : "I" and "Y" cannot be selected together.
- *5 : Copper and PTFE free as standard.
- *6 : Switches are shipped with the product.

[Example of model No.]
SCPD3-L-00-10-30-O-T2H-R-I
 Model: Pencil shaped cylinder

- A** Model No. : Double acting
- B** Mounting : Basic
- C** Bore size : $\varnothing 10$ mm
- D** Stroke : 30 mm
- E** Head side port direction : Axial direction
- F** Switch model No. : Proximity switch T2H, lead wire 1 m
- G** Switch quantity : 1 on rod side
- H** Accessory : Rod eye

Code	Description
A Model No.	
SCPD3	Double acting
SCPD3-L	Double acting/with switch

B Mounting				
Bore size (\varnothing)		6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket (pin and snap ring incl.)		●	●

C Bore size (mm)	
6	$\varnothing 6$
10	$\varnothing 10$
16	$\varnothing 16$

D Stroke (mm)			
Bore size	Stroke *2	Available stroke	Custom stroke
$\varnothing 6$	5 to 100	105	In 1 mm increments
$\varnothing 10$	5 to 200	210	
$\varnothing 16$	5 to 260	270	

E Head side port direction	
Blank	Vertical
O	Axial direction

F Switch model No.						
Lead wire Straight	Lead wire L-shaped	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	2-color LED	3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T3WH*	T3WV*		●	2-color LED	3-wire	

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Accessory				
Bore size (\varnothing)		6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin and snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

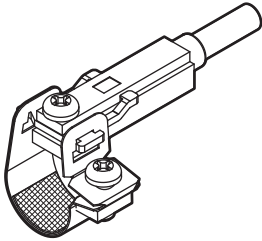
How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item ③ on page 10)

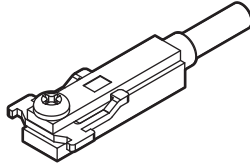
Switch model No.
(Item ④ on page 10)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item ④ on page 10)

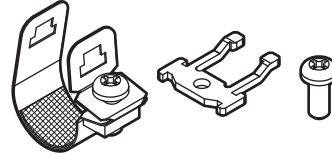


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item ③ on page 10)

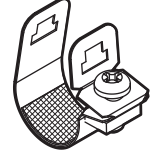


When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - T - 6

Bore size
(Item ③ on page 10)



When 20 pcs or more are ordered, they will be packed together.

How to order mounting bracket

Bore size (mm)	ø6	ø10	ø16
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

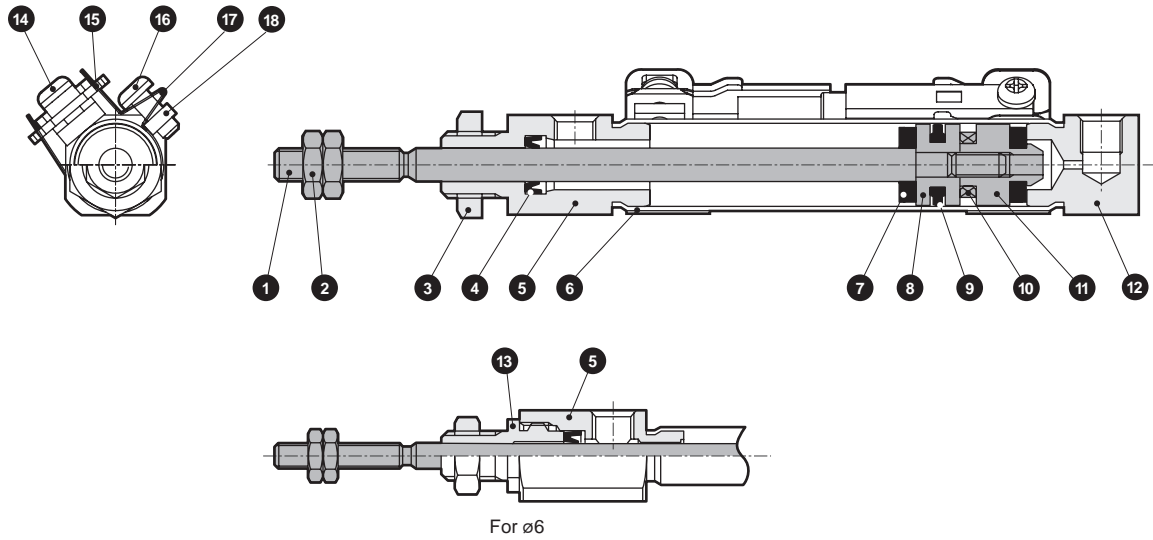
FK

Spd
Contr

Ending

SCP*3 Internal structure and parts list

- Double acting SCPD3-(L)



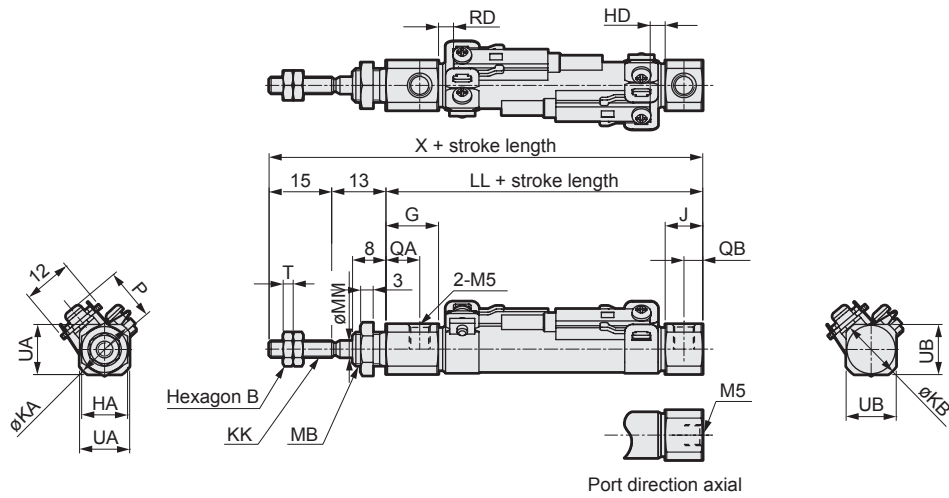
Cannot be disassembled

- This product cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		10	Magnet	-	With switch only
2	Rod nut	Steel	Nickeling	11	Spacer	Aluminum alloy	
3	Hexagon nut	Steel	Nickeling	12	Head cover	Aluminum alloy	Hard alumite
4	Rod packing	Nitrile rubber		13	Rod metal	Aluminum alloy	Hard alumite
5	Rod cover	Aluminum alloy	Hard alumite	14	Phillips pan head machine screw	Stainless steel	With switch only
6	Cylinder tube	Stainless steel		15	Fixing bracket	Stainless steel	With switch only
7	Cushion rubber	Urethane rubber		16	Phillips pan head machine screw	Stainless steel	With switch only
8	Piston	Aluminum alloy		17	Band	Stainless steel	With switch only
9	Piston packing	Nitrile rubber		18	Fixing nut	Stainless steel	With switch only

Dimensions

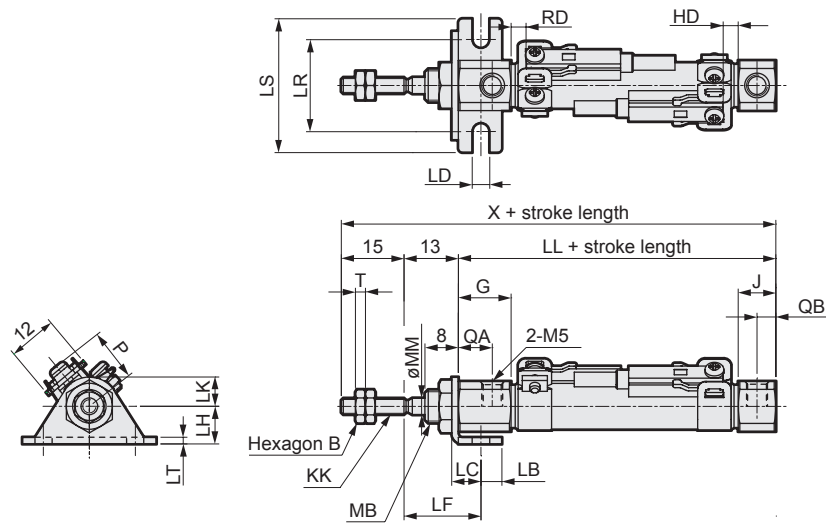
● SCPD3-(L) Basic (00)



- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.
- *4 : Values shown in () are for the type with axial port direction.

Code	Basic (00) Basic dimensions															With switch						
	Bore size (mm)	B	G	HA	J	KA	KB	KK	LL	MB	MM	QA	QB	T	UA	UB	X	T0, T5, T2, T3		T2W, T3W		P
		RD	HD	RD	HD																	
$\phi 6$	5.5	17	8	8	13.5	13.5(10)	M3	47	M6	3	13	4	1.8	11	11(9)	75	2	2	4	3.5	11.5	
$\phi 10$	7	12.5	11	9	14.5	14.5	M4	46	M8x1.0	4	8	4.5	2.4	12	12	74	3.5	2.5	5.5	4	13.5	
$\phi 16$	8	13	14	9	21.5	21.5	M5	46	M10x1.0	5	8.5	4.5	3.2	18	18	74	2	3.5	3.5	5	17.0	

● Axial foot (single) (LS)



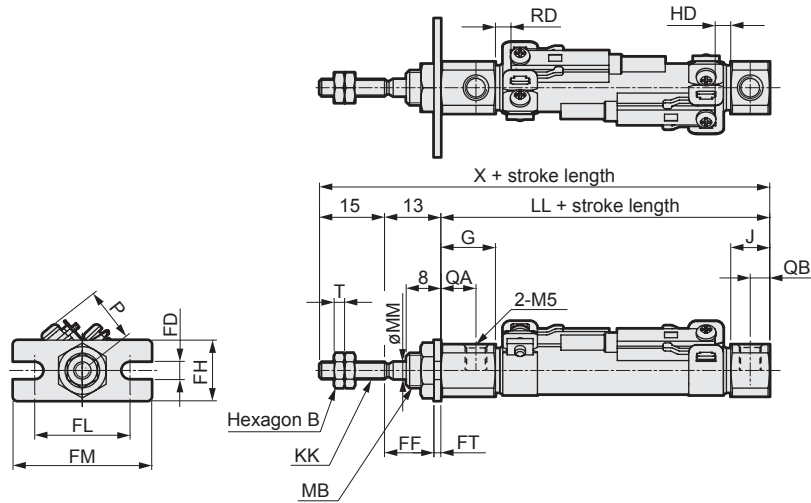
- *1 : The dimensions are the same in the without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Axial foot (single) (LS) Basic dimensions										Mounting dimensions										With switch					
	Bore size (mm)	B	G	J	KK	MB	MM	QA	QB	T	X	LB	LC	LD	LF	LL	LH	LK	LR	LS	LT	T0, T5, T2, T3		T2W, T3W		P
		RD	HD	RD	HD																					
$\phi 6$	5.5	17	8	M3	M6	3	13	4	1.8	75	5	7	4.2	18.4	47	9	7	22	32	1.6	2	2	4	3.5	11.5	
$\phi 10$	7	12.5	9	M4	M8x1.0	4	8	4.5	2.4	74	5	7	4.2	18.4	46	9	7	22	32	1.6	3.5	2.5	5.5	4	13.5	
$\phi 16$	8	13	9	M5	M10x1.0	5	8.5	4.5	3.2	74	6	9	5.2	19.7	46	14	10	29	42	2.3	2	3.5	3.5	5	17.0	

Dimensions

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

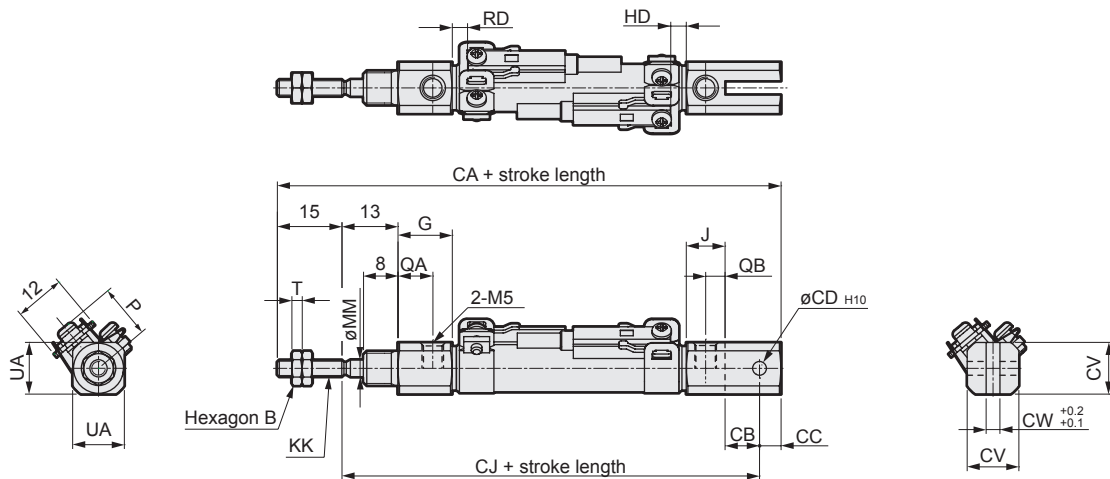
● Rod side flange (FA)



- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA)	Basic dimensions										Mounting dimensions						With switch						
		Bore size (mm)		B	G	J	KK	LL	MM	QA	QB	T	X	FD	FF	FH	FL	FM	FT	T0, T5, T2, T3		T2W, T3W		P
		RD	HD	RD	HD																			
$\phi 6$		5.5	17	8	M3	47	M6	3	13	4	1.8	75	4.2	11.4	14	22	32	1.6	2	2	4	3.5	11.5	
$\phi 10$		7	12.5	9	M4	46	M8x1.0	4	8	4.5	2.4	74	4.2	11.4	14	22	32	1.6	3.5	2.5	5.5	4	13.5	
$\phi 16$		8	13	9	M5	46	M10x1.0	5	8.5	4.5	3.2	74	5.2	10.7	20	29	42	2.3	2	3.5	3.5	5	17.0	

● Clevis bracket (CB)

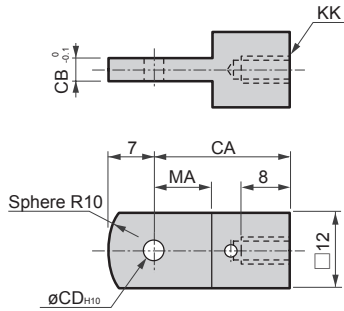


- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : A pin and retaining bracket are included.
- *4 : For the dimensions of the accessories, refer to page 15.

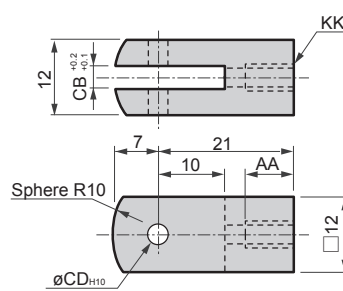
Code	Clevis bracket (CB)	Basic dimensions										Mounting dimensions						With switch						
		Bore size (mm)		B	G	J	KK	MM	QA	QB	T	UA	CA	CB	CC	CD	CJ	CV	CW	T0, T5, T2, T3		T2W, T3W		P
		RD	HD	RD	HD																			
$\phi 10$		7	12.5	9	M4	4	8	4.5	2.4	12	87	8	5	3.2	67	12	3.2	3.5	2.5	5.5	4	13.5		
$\phi 16$		8	13	9	M5	5	8.5	4.5	3.2	18	94	10	10	5	69	18	6.5	2	3.5	3.5	5	17.0		

Dimensions

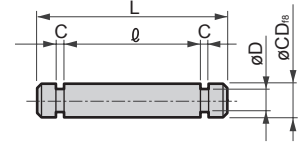
- Rod eye (I) Material: Steel
Zinc chromate treatment



- Rod clevis (Y) Material: Steel
Zinc chromate treatment



- Rod eye Pin (P) for bracket
Clevis Material: Stainless steel



*1: A pin and a retaining bracket for rod clevis use are included with the product.
*2: A snap ring is included.

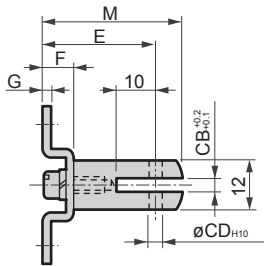
Note: A pin and a snap ring are included.

Model No.	Bore size (mm)	CA	CB	CD	KK	MA	Wt. (g)
P2-I-10	ø10	21	3.1	3.2	M4	9	17
P2-I-16	ø16	25	6.4	5	M5	14	21

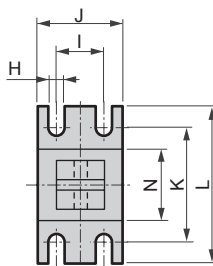
Model No.	AA	CB	CD	KK	Wt. (g)
P2-Y-10	8	3.2	3.2	M4	25
P2-Y-16	11	6.5	5	M5	20

Model No.	Bore size (mm)	Applicable	C	D	CD	ℓ	L	Wt. (g)
P2-P-10	10	Rod eye/bracket/clevis	0.6	2.5	3.2	13	17	1.2
P2-P-10Z		Clevis for Z						
P2-P-16	16	Rod eye/bracket	0.7	4	5	13	18	3.0
P2-P-16A		Clevis						

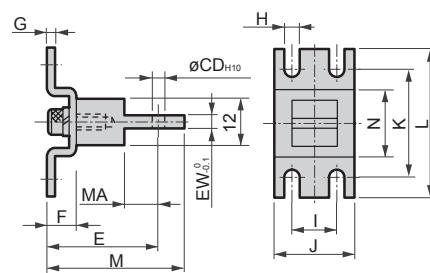
- Clevis bracket (B2) Material: Steel
Zinc chromate treatment



- Eye bracket (B1) Material: Steel
Zinc chromate treatment



- Eye bracket (B1) Material: Steel
Zinc chromate treatment



Note: A pin and a snap ring are included.

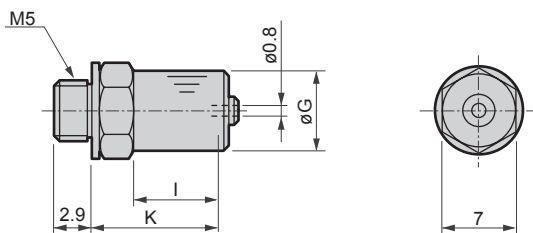
Model No.	Bore size (mm)	CD	E	CB	F	G	H	I	J	K	L	M	N	Wt. (g)
P2-B2-10	ø10	3.2	29	3.2	8	2	4.2	12	22	30.2	40	36	18	44
P2-B2-16	ø16	5	31	6.5	10	2.3	5.2	16	28	35.2	48	38	20	44

Model No.	Bore size (mm)	CD	E	EW	F	G	H	I	J	K	L	M	N	MA	Wt. (g)
P2-B1-10	ø10	3.2	29	3.1	8	2	4.2	12	22	30.2	40	36	18	9	37
P2-B1-16	ø16	5	35	6.4	10	2.3	5.2	16	28	35.2	48	42	20	14	48

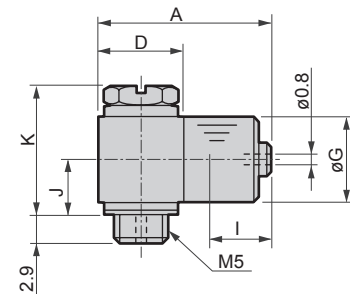
- Hose nipple for pencil shaped cylinder (sales unit is 10 pcs./bag)

- Barbed fitting

Straight/FCS

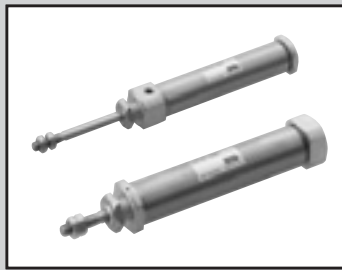


Elbow/FCL



Model No.	Compatible tube O.D.	G	I	K	Weight (g)	Eff. X-sectional area (mm ²)
FCS4-M5P	ø4	7	4.3	11.7	3.2	0.35
FCS6-M5P	ø6	9	5	12.4	4.5	0.35

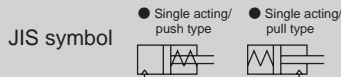
Model No.	Tube O.D.	A	D	G	I	J	K	Weight (g)	Eff. X-sectional area (mm ²)
FCL4-M5P	ø4	16.1	8	7	4.3	5.1	11.6	6.8	0.35
FCL6-M5P	ø6	17.8	9	9	5	6.1	13.6	10.1	0.35



Pencil shaped cylinder Single acting/push and single acting/pull

SCPS/SCPS3/SCPH3 Series

● Bore size: $\varnothing 2.5/\varnothing 4/\varnothing 6/\varnothing 10/\varnothing 16$



Specifications

1 MPa = 10 bar

Item	SCPS		SCPS3 SCPS3-L			SCPH3 SCPH3-L			
	mm	$\varnothing 2.5$	$\varnothing 4$	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Bore size	mm	$\varnothing 2.5$	$\varnothing 4$	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Actuation		Single acting/push					Single acting/pull		
Working fluid		Compressed air							
Max. working pressure	MPa	1.0 (≈ 150 psi, 10 bar)							
Min. working pressure	MPa	0.35 (≈ 51 psi, 3.5 bar)	0.3 (≈ 44 psi)	0.15 (≈ 22 psi, 1.5 bar)	0.39 (≈ 57 psi)	0.2 (≈ 29 psi, 2 bar)			
Proof pressure	MPa	1.6 (≈ 230 psi, 16 bar)							
Ambient temperature	$^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)							
Port size		Fitting for tube (tube $\varnothing 2.5 \times \varnothing 4$)				M5			
Stroke tolerance	mm	+0.5 0			+1.0 0				
Working piston speed	mm/s	50 to 300			50 to 750				
Cushion		None			Rubber cushion				
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)							
Allowable absorbed energy	J	1.5×10^{-4}	4×10^{-4}	0.012	0.041	0.162	0.012	0.041	0.162

*1: Do not leave the single acting cylinder pressurized for long periods. If it is left pressurized for long periods, the piston rod may not return due to spring load when the pressure is released.

Stroke

	Bore size (mm)	Standard stroke (mm)		Max. stroke (mm)		Min. stroke (mm)	
SCPS	$\varnothing 2.5$	5/10		10		5	
	$\varnothing 4$	15/10/15/20		20			
SCPS3 SCPH3	$\varnothing 6$	15/30/45/60		100			
	$\varnothing 10$			120			
	$\varnothing 16$			120			

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

Min. stroke with switch

	1		2	
	Sketch	Min. stroke	Sketch	Min. stroke
Sketch		5 mm		10 mm
	Rod side installation		Head side installation	
Min. stroke	5 mm		10 mm	28 mm
	3			
Sketch		38 mm		54 mm
	Different surface mounting		Same surface mounting	
Min. stroke	38 mm		54 mm	

Spring load of single acting (SCPS/SCPS3/SCPH3)

(Unit: N)

Bore size (mm)	At stroke of 0 mm	At full stroke operation
$\varnothing 2.5$	0.73	1.17
$\varnothing 4$	1.76	2.84
$\varnothing 6$	1.7	3.7
$\varnothing 10$	3.2	7.5
$\varnothing 16$	6.4	14.9

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed			
	T0H/T0V		T5H/T5V	
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection	
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator	LED (Lit when ON)		No indicator lamp	
Leakage current	0 mA		0 mA	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

● SCPS3/SCPH3

Item	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10 mm stroke	Switch weight (per switch)	Mounting bracket weight
	Bore size (mm)	Foot LS	Flange FA				
ø6	6	4	-	9	2	Refer to the weight in the switch specifications.	2
ø10	6	4	4	20	4		
ø16	15	12	10	35	8		

(Unit: g) ● SCPS

(Unit: g)

Stroke	5st	10st
ø2.5	1.6	1.7
ø4	7	8

(Example) Product weight of SCPS3-L-LS-10-30-T0H-D

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 20 g
- Additional weight for 30 mm stroke 4x30/10=12 g
- Switch weight 2x(18+2)=40 g
- Product weight 6+20+12+40=78 g

Theoretical thrust table

● SCPS

(Unit: N)

Bore size (mm)	Working pressure MPa							
	0.35	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø2.5	0.694	0.793	1.28	1.78	2.27	2.76	3.25	3.74
ø4	1.92	2.19	3.44	4.70	5.96	7.21	8.47	9.73

● SCPS3

Bore size (mm)	Working pressure MPa									
	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	-	-	4.8	7.6	10.4	13.3	16.1	18.9	21.7	24.6
ø10	6.2	8.2	16.1	23.9	31.8	39.6	47.5	55.3	63.2	71.0
ø16	19.0	25.3	45.4	65.5	85.6	105.7	125.8	145.9	166.1	186.2

● SCPH3

Bore size (mm)	Working pressure MPa									
	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
ø6	-	-	4.8	6.9	9.0	11.1	13.3	15.4	17.5	
ø10	5.7	12.3	18.9	25.5	32.1	38.7	45.3	51.9	58.5	
ø16	21.4	39.5	57.7	75.8	94.0	112.1	130.2	148.4	166.5	

How to order

SCPS - 00 - 2.5 - 5

A Mounting

B Bore size

C Stroke

Code	Description		
A Mounting			
00	Basic		
B Bore size (mm)			
2.5	ø2.5		
4	ø4		
C Stroke (mm)			
	Bore size	ø2.5	ø4
5	5	●	●
10	10	●	●
15	15		●
20	20		●

[Example of model No.]

SCPS-00-2.5-5

Model: Pencil shaped cylinder Single acting/push

- A Mounting : Basic
- B Bore size : ø2.5 mm
- C Stroke : 5 mm

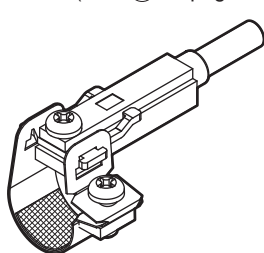
How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item C on page 19)

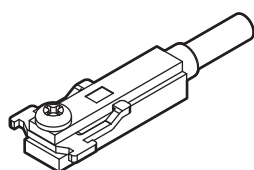
Switch model No.
(Item F on page 19)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item F on page 19)

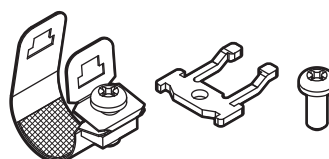


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item C on page 19)

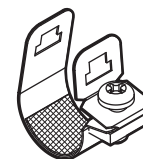


When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - T - 6

Bore size
(Item C on page 19)



When 20 pcs or more are ordered, they will be packed together.

How to order mounting bracket

Bore size (mm)	ø6	ø10	ø16
Mounting bracket			
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

How to order

No switch (without magnet for switch)

SCPS3 - 00 - 10 - 15 - O ————— Y

With switch (built-in magnet for switch)

SCPS3-L - 00 - 10 - 15 - O - T2H - R - Y

A Model No.

--	--	--	--	--	--

B Mounting
*1

--	--	--	--

C Bore size

--	--	--

D Stroke

--	--	--

E Head side port direction
*1

--	--

F Switch model No.
*3, *6
* indicates the lead wire length.

--	--	--

G Switch quantity

H Accessory
*4

Code	Description
A Model No.	
SCPS3	Single acting/push
SCPS3-L	Single acting/push/with switch
SCPH3	Single acting/pull
SCPH3-L	Single acting/pull/with switch

B Mounting				
Bore size (ø)		6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket (pin and snap ring included)		●	●

C Bore size (mm)	
6	ø6
10	ø10
16	ø16

D Stroke (mm)			
Bore size	Stroke *2	Available stroke	Custom stroke
ø6	5 to 100	105	In 1 mm increments
ø10	5 to 120	120	
ø16	5 to 120	120	

E Head side port direction	
Blank	Vertical
O	Axial direction "not available for SCPH3(-L)"

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●		
T2WH*	T2WV*			●	2-color LED	2-wire
T3WH*	T3WV*			●		

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Accessory				
Bore size (ø)		6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin and snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

⚠ Precautions for model No. selection

*1 : The "CB" mounting is not available when the port direction is "O" (axial direction).

*2 : Refer to page 16 for the min. stroke with switch.

*3 : Magnet is not built into the type without switch.

*4 : "I" and "Y" cannot be selected together.

*5 : Copper and PTFE free as standard.

*6 : Switches are shipped with the product.

[Example of model No.]
SCPS3-L-00-10-30-O-T2H-R-I
Model: Pencil shaped cylinder

- A** Model No. : Single acting/push
- B** Mounting : Basic
- C** Bore size : ø10 mm
- D** Stroke : 30 mm
- E** Head side port direction : Axial direction
- F** Switch model No. : Proximity switch T2H, lead wire 1 m
- G** Switch quantity : 1 on rod side
- H** Accessory : Rod eye

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

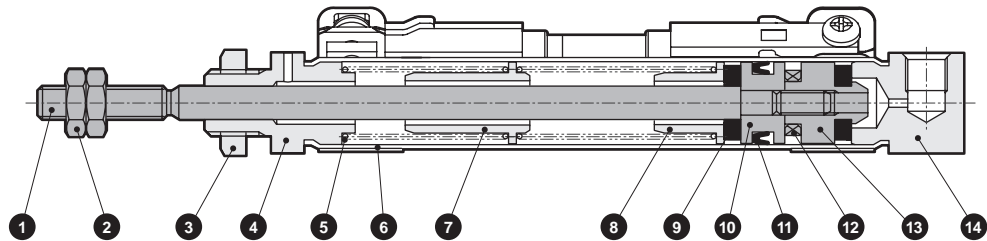
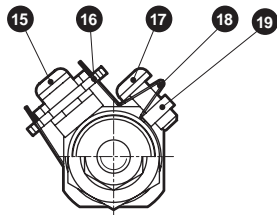
Spd
Contr

Ending

SCPS3/SCPH3 Series

Internal structure and parts list

- Single acting push
SCPS3
SCPS3-L (with switch)

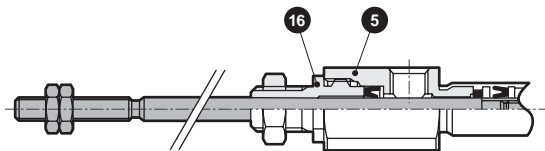
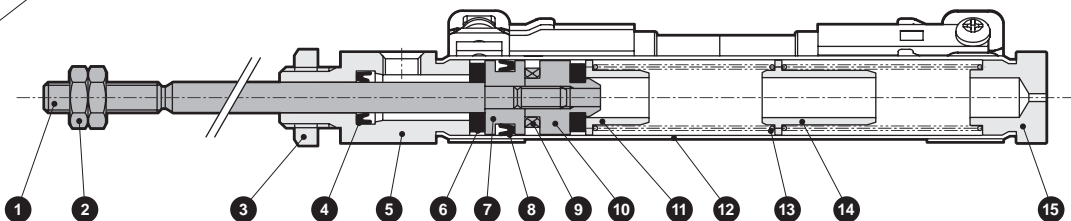
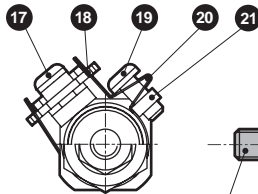


Cannot be disassembled

- This product cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		11	Piston packing	Nitrile rubber	
2	Rod nut	Steel	Nickeling	12	Magnet	-	With switch only
3	Hexagon nut	Steel	Nickeling	13	Spacer	Aluminum alloy	
4	Rod cover	Aluminum alloy	Hard alumite	14	Head cover	Aluminum alloy	Hard alumite
5	Coil spring	Piano wire	Zinc chromate	15	Phillips pan head machine screw	Stainless steel	With switch only
6	Cylinder tube	Stainless steel		16	Fixing bracket	Stainless steel	With switch only
7	Spring holder (A)	Aluminum alloy		17	Phillips pan head machine screw	Stainless steel	With switch only
8	Spring holder (B)	Aluminum alloy		18	Band	Stainless steel	With switch only
9	Cushion rubber	Urethane rubber		19	Fixing nut	Stainless steel	With switch only
10	Piston	Aluminum alloy					

- Single acting pull
SCPH3
SCPH3-L (with switch)



For ø6

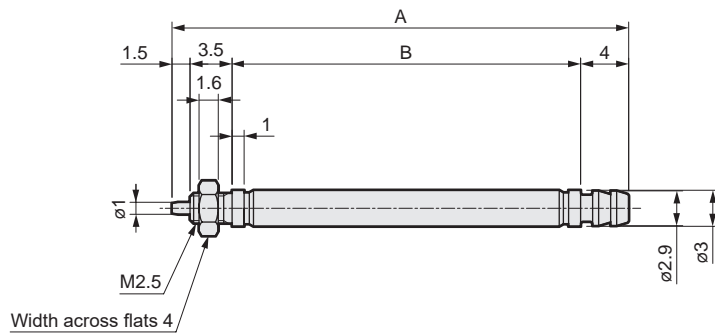
Cannot be disassembled

- This product cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		12	Cylinder tube	Stainless steel	
2	Rod nut	Steel	Nickeling	13	Coil spring	Piano wire	Zinc chromate
3	Hexagon nut	Steel	Nickeling	14	Spring holder (B)	Aluminum alloy	
4	Rod packing	Nitrile rubber		15	Head cover	Aluminum alloy	Hard alumite
5	Rod cover	Aluminum alloy	Hard alumite	16	Rod metal	Aluminum alloy	Hard alumite
6	Cushion rubber	Urethane rubber		17	Phillips pan head machine screw	Stainless steel	With switch only
7	Piston	Aluminum alloy		18	Fixing bracket	Stainless steel	With switch only
8	Piston packing	Nitrile rubber		19	Phillips pan head machine screw	Stainless steel	With switch only
9	Magnet	-	With switch only	20	Band	Stainless steel	With switch only
10	Spacer	Aluminum alloy		21	Fixing nut	Stainless steel	With switch only
11	Spring holder (A)	Aluminum alloy					

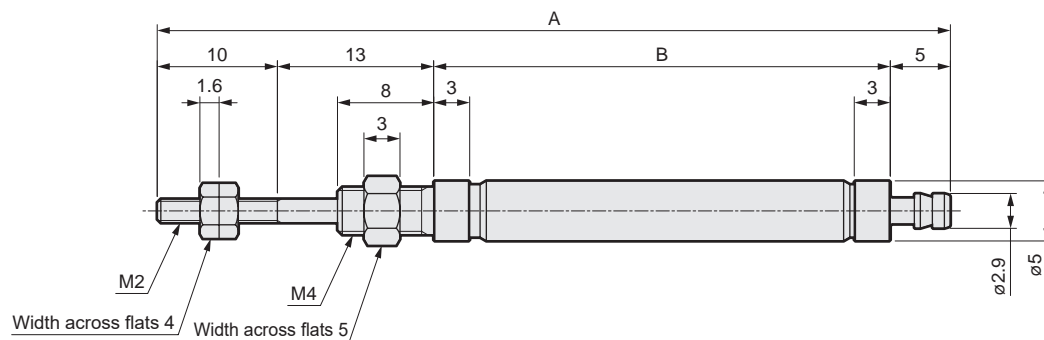
Dimensions

● SCPS Basic (00) $\varnothing 2.5$



Code	A	B
Stroke (mm)		
5	33	24
10	38	29

● SCPS Basic (00) $\varnothing 4$



Code	A	B
Stroke (mm)		
5	60.5	32.5
10	65.5	37.5
15	81.0	53.0
20	86.0	58.0

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

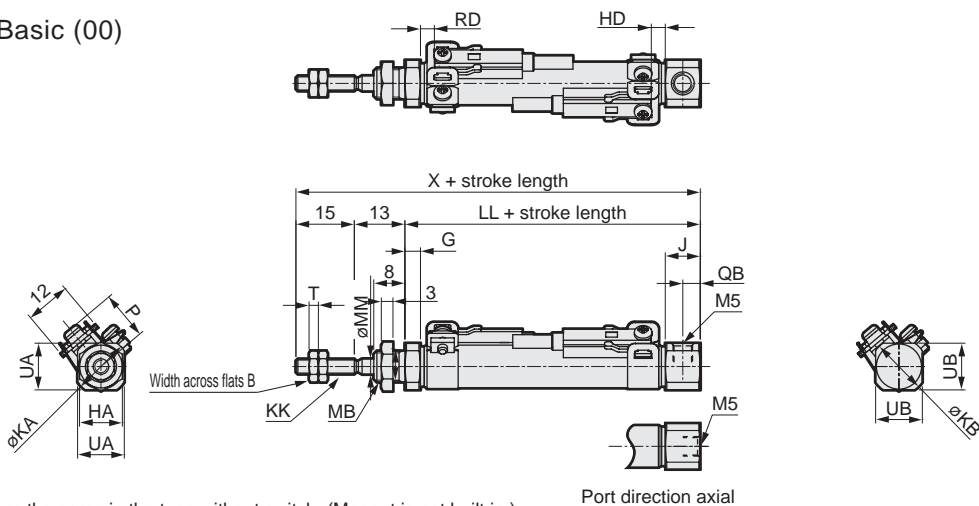
Spd
Contr

Ending

SCPS3 Series

SCP*3 Dimensions

● SCPS3-(L) Basic (00)

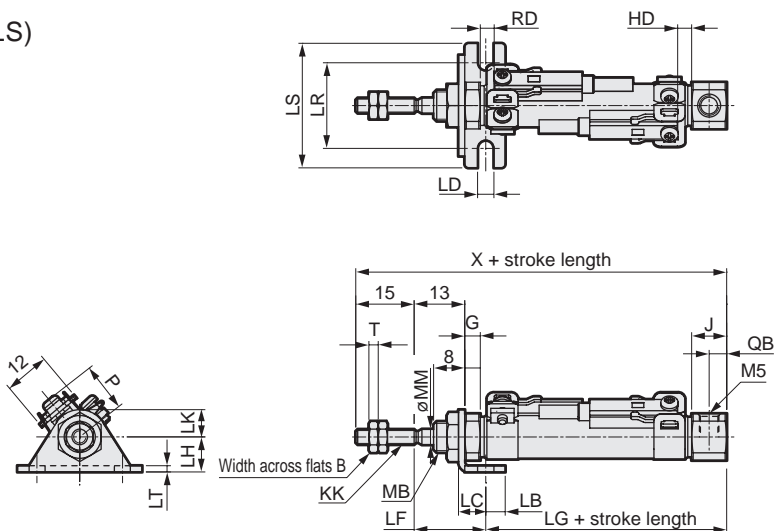


- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : Dimensions shown in () are for when the head side port direction is "O" (axial direction).
- *4 : For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions																										
	Bore size (mm)	B	G	HA	J	KA	KB	KK	LL								MB	MM	QB	T	UA	UB	X				
									≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120								15 or less	Over 15 to 30	Over 30 to 45	
ø6	5.5	3	8	8	10.5	13.5(10.5)	M3	43.5	48.5	63.5	68.5	83.5	88.5	103.5	-	M6	3	4	1.8	9	11(9)	71.5	76.5	91.5			
ø10	7	4	11	9	14.5	14.5	M4	47	52	62	67	77	82	92	97	M8x1.0	4	4.5	2.4	12	12	75	80	90			
ø16	8	4	14	9	21.5	21.5	M5	47	52	62	67	77	82	92	97	M10x1.0	5	4.5	3.2	18	18	75	80	90			

Code	With switch																							
	Bore size (mm)	X						T0, T5, T2, T3						HD	T2W, T3W						P			
		RD						RD							RD									
	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	HD		
ø6	96.5	111.5	116.5	131.5	-	12	17	32	37	52	57	72	-	2	14	19	34	39	54	59	74	-	3.5	11.5
ø10	95	105	110	120	125	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
ø16	95	105	110	120	125	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

● Axial foot (single) (LS)



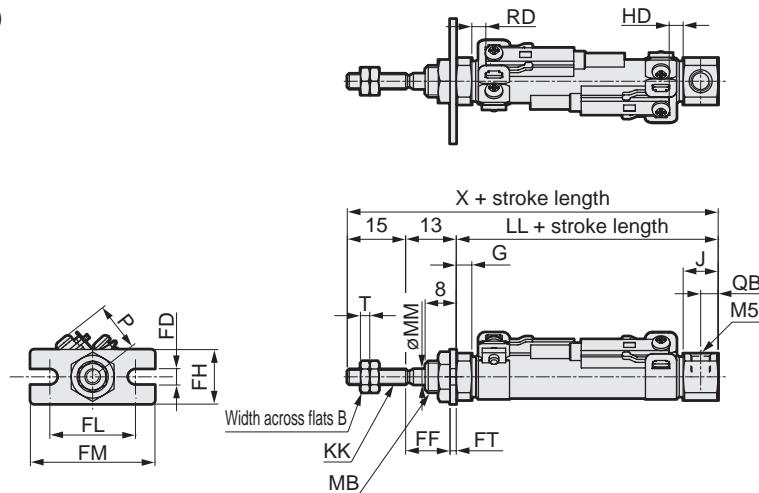
- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Axial foot (single) (LS) Basic dimensions														Mounting dimensions										
	Bore size (mm)	B	G	KK	MB	MM	QB	T	X								LB	LC	LD	LF	LG				
								≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120					≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90
ø6	5.5	3	M3	M6	3	4	1.8	71.5	76.5	91.5	96.5	111.5	116.5	131.5	-	5	7	4.2	18.4	38.1	43.1	58.1	63.1	78.1	83.1
ø10	7	4	M4	M8x1.0	4	4.5	2.4	75	80	90	95	105	110	120	125	5	7	4.2	18.4	41.6	46.6	56.6	61.6	71.6	76.6
ø16	8	4	M5	M10x1.0	5	4.5	3.2	75	80	90	95	105	110	120	125	6	9	5.2	19.7	40.3	45.3	55.3	60.3	70.3	75.3

Code	With switch																									
	Bore size (mm)	LG						T0, T5, T2, T3						HD	T2W, T3W						P					
		Over 90 to 105	Over 105 to 120	LH	LK	LR	LS	LT	RD						RD											
							≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	HD			
ø6	98.1	-	9	7	22	32	1.6	12	17	32	37	52	57	72	-	2	14	19	34	39	54	59	74	-	3.5	11.5
ø10	86.6	91.6	9	7	22	32	1.6	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
ø16	85.3	90.3	14	10	29	42	2.3	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

Dimensions

● Rod side flange (FA)

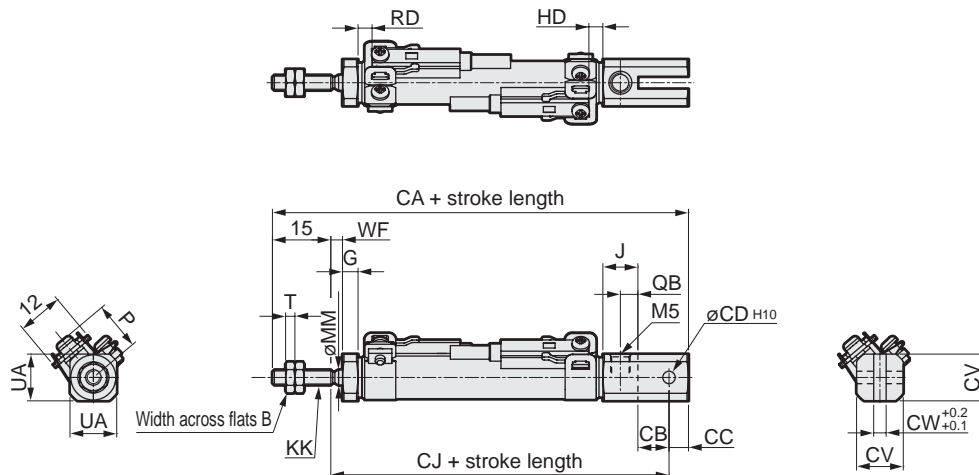


- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3: For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA) Basic dimensions																							
	Mounting dimensions				Basic dimensions																			
	B	G	J	KK	LL								MB	MM	QB	T	X							
Bore size (mm)					≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120					≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120
ø6	5.5	3	8	M3	43.5	48.5	63.5	68.5	83.5	88.5	103.5	-	M6	3	4	1.8	71.5	76.5	91.5	96.5	111.5	116.5	131.5	-
ø10	7	4	9	M4	47	52	62	67	77	82	92	97	M8x1.0	4	4.5	2.4	75	80	90	95	105	110	120	125
ø16	8	4	9	M5	47	52	62	67	77	82	92	97	M10x1.0	5	4.5	3.2	75	80	90	95	105	110	120	125

Code	Mounting dimensions						With switch																		
	Bore size (mm)	FD	FF	FH	FL	FM	FT	T0, T5, T2, T3								HD	T2W, T3W								P
								RD									RD								
								≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120		≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	
ø6	4.2	11.4	14	22	32	1.6	12	17	32	37	52	57	72	-	2	14	19	34	39	54	59	74	-	3.5	11.5
ø10	4.2	11.4	14	22	32	1.6	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
ø16	5.2	10.7	20	29	42	2.3	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

● Clevis bracket (CB)



- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : A pin and retaining bracket are included.
- *3: For the dimensions of the accessories, refer to page 15.

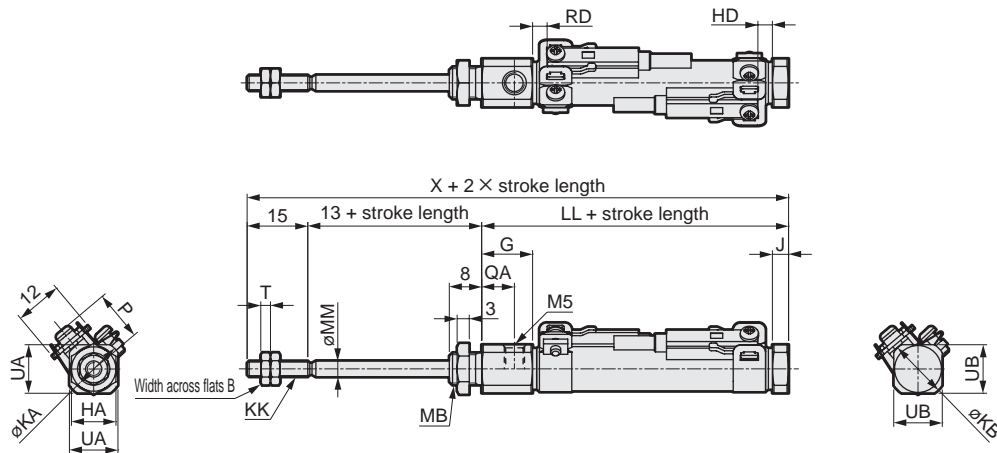
Code	Clevis bracket (CB) Basic dimensions										Mounting dimensions																						
	Mounting dimensions				Basic dimensions						CA								CB			CC			CJ								CV
	B	G	J	KK	MM	QB	T	UA	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	CV
ø10	7	4	9	M4	4	4.5	2.4	12	80	92	104	116	128	140	152	164	8	5	3.2	60	72	84	96	108	120	132	144	12					
ø16	8	4	9	M5	5	4.5	3.2	18	87	99	111	123	135	147	159	171	10	10	5	62	74	86	98	110	122	134	146	18					

Code	With switch																											
	Bore size (mm)	CW	WF						T0, T5, T2, T3								HD	T2W, T3W								P		
			RD								RD																	
			≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90		91 ≤ 105	106 ≤ 120									
ø10	3.2	5	12	14	21	23	30	32	39	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
ø16	6.5	5	12	14	21	23	30	32	39	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

SCPH3 Series

SCPH3 Dimensions

● SCPH3-(L) Basic (00)

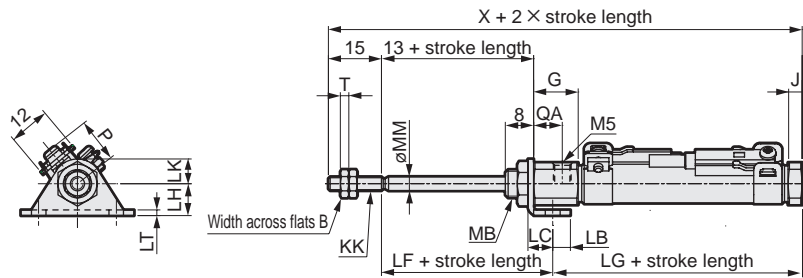
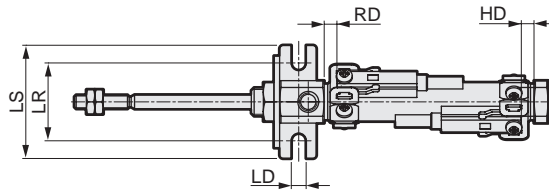


- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions																							
	Bore size (mm)	B	G	HA	J	KA	KB	KK	LL								MB	MM	QA	T	UA	UB	X	
≤ 15									$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	≤ 15							$16 \leq 30$	$31 \leq 45$
$\phi 6$	5.5	17	8	3	13.5	10.5	M3	52.5	57.5	72.5	77.5	92.5	97.5	112.5	-	M6	3	13	1.8	11	9	80.5	85.5	100.5
$\phi 10$	7	12.5	11	4	14.5	14.5	M4	51	56	66	71	81	86	96	101	M8x1.0	4	8	2.4	12	12	79	84	94
$\phi 16$	8	13	14	4	21.5	21.5	M5	51	56	66	71	81	86	96	101	M10x1.0	5	8.5	3.2	18	18	79	84	94

Code	With switch																							
	Bore size (mm)	X					T0, T5, T2, T3								T2W, T3W								P	
$46 \leq 60$		$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	RD	≤ 15	$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	RD	≤ 15	$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$		$106 \leq 120$
$\phi 6$	105.5	120.5	125.5	140.5	-	2	12	17	32	37	52	57	72	-	4	13.5	18.5	33.5	38.5	53.5	58.5	73.5	-	11.5
$\phi 10$	99	109	114	124	129	3.5	12	17	27	32	42	47	57	62	5.5	14	19	29	34	44	49	59	64	13.5
$\phi 16$	99	109	114	124	129	2	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	3.5	15	20	30	35	45	50	60	65	17.0

● Axial foot (one side) (LS)



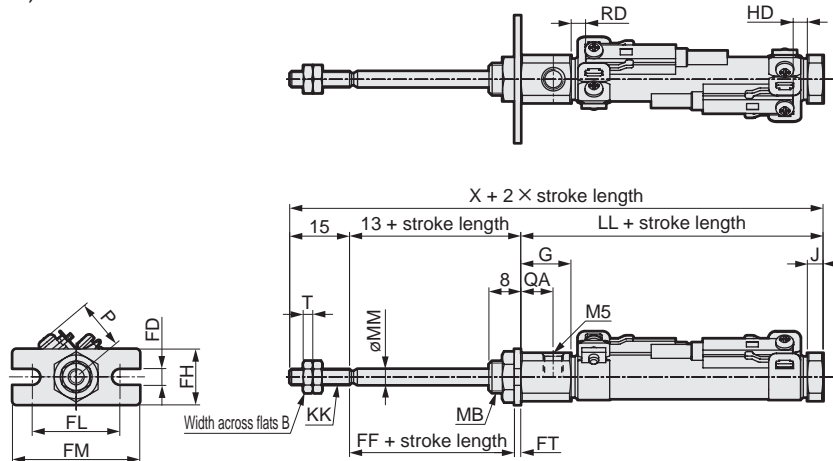
- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Axial foot (single) (LS) Basic dimensions																		Mounting dimensions							
	Bore size (mm)	B	G	J	KK	MB	MM	QA	T	X								LB	LC	LD	LF	LG				
≤ 15										$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	≤ 15					$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$
$\phi 6$	5.5	17	3	M3	M6	3	13	1.8	80.5	85.5	100.5	105.5	120.5	125.5	140.5	-	5	7	4.2	18.4	47.1	52.1	67.1	72.1	87.1	92.1
$\phi 10$	7	12.5	4	M4	M8x1.0	4	8	2.4	79	84	94	99	109	114	124	129	5	7	4.2	18.4	45.6	50.6	60.6	65.6	75.6	80.6
$\phi 16$	8	13	4	M5	M10x1.0	5	8.5	3.2	79	84	94	99	109	114	124	129	6	9	5.2	19.7	44.3	49.3	59.3	64.3	74.3	79.3

Code	With switch																									
	Bore size (mm)	LG						T0, T5, T2, T3								T2W, T3W								P		
$91 \leq 105$		$106 \leq 120$	LH	LK	LR	LS	LT	RD	≤ 15	$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	RD	≤ 15	$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$		$91 \leq 105$	$106 \leq 120$
$\phi 6$	107.1	-	9	7	22	32	1.6	2	12	17	32	37	52	57	72	-	4	13.5	18.5	33.5	38.5	53.5	58.5	73.5	-	11.5
$\phi 10$	90.6	95.6	9	7	22	32	1.6	3.5	12	17	27	32	42	47	57	62	5.5	14	19	29	34	44	49	59	64	13.5
$\phi 16$	89.3	94.3	14	10	29	42	2.3	2	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	3.5	15	20	30	35	45	50	60	65	17.0

Dimensions

● Rod side flange (FA)

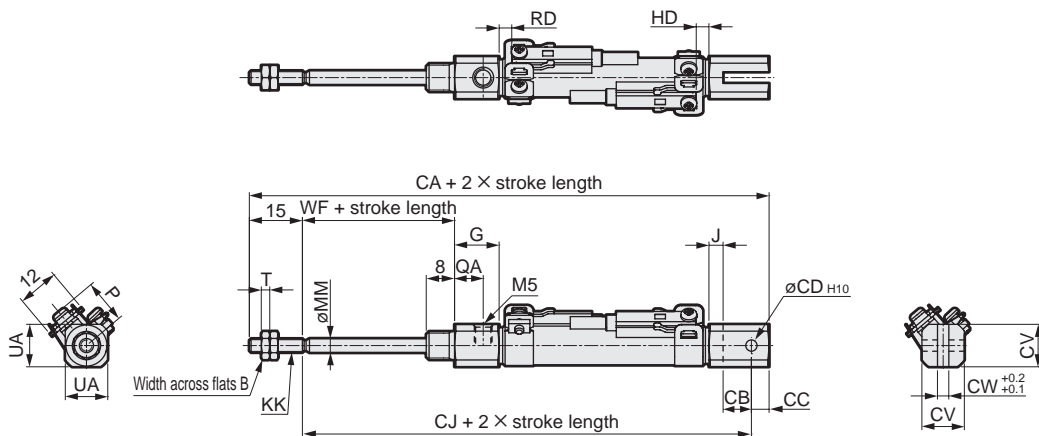


- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Rod side flange basic dimensions																							
Bore size (mm)	B	G	J	KK	LL								MB	MM	QA	T	X							
					≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120					≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120
ø6	5.5	17	3	M3	52.5	57.5	72.5	77.5	92.5	97.5	112.5	-	M6	3	13	1.8	80.5	85.5	100.5	105.5	120.5	125.5	140.5	-
ø10	7	12.5	4	M4	51	56	66	71	81	86	96	101	M8x1.0	4	8	2.4	79	84	94	99	109	114	124	129
ø16	8	13	4	M5	51	56	66	71	81	86	96	101	M10x1.0	5	8.5	3.2	79	84	94	99	109	114	124	129

Code	Mounting dimensions						With switch																		
Bore size (mm)	FD	FF	FH	FL	FM	FT	T0, T5, T2, T3										T2W, T3W						P		
							RD	HD								RD	HD								
								≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120		≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90		91 ≤ 105	106 ≤ 120
ø6	4.2	11.4	14	22	32	1.6	2	12	17	32	37	52	57	72	-	4	13.5	18.5	33.5	38.5	53.5	58.5	73.5	-	11.5
ø10	4.2	11.4	14	22	32	1.6	3.5	12	17	27	32	42	47	57	62	5.5	14	19	29	34	44	49	59	64	13.5
ø16	5.2	10.7	20	29	42	2.3	2	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	3.5	15	20	30	35	45	50	60	65	17.0

● Clevis bracket (CB)



- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : A pin and retaining bracket are included.
- *4 : For the dimensions of the accessories, refer to page 15.

Code	Clevis bracket (CB) Basic								Mounting dimensions																			
Bore size (mm)	B	G	J	KK	MM	QA	T	UA	CA								CB	CC	CD	CJ						CV		
									≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120				≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90		91 ≤ 105	106 ≤ 120
ø10	7	12.5	4	M4	4	8	2.4	12	94	106	118	130	142	154	166	178	8	5	3.2	74	86	98	110	122	134	146	158	12
ø16	8	13	4	M5	5	8.5	3.2	18	101	113	125	137	149	161	173	185	10	10	5	76	88	100	112	124	136	148	160	18

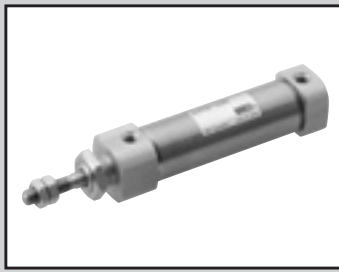
Code	With switch																											
Bore size (mm)	CW	WF						T0, T5, T2, T3										T2W, T3W						P				
		RD	HD								RD	HD																
			≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120		≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120									
ø10	3.2	15	22	24	31	33	40	42	49	3.5	12	17	27	32	42	47	57	62	5.5	14	19	29	34	44	49	59	64	13.5
ø16	6.5	15	22	24	31	33	40	42	49	2	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	3.5	15	20	30	35	45	50	60	65	17.0

Pencil shaped cylinder Double acting/heat resistance

SCPD3-T Series

● Bore size: $\phi 6/\phi 10/\phi 16$

JIS symbol



Specifications

Item	SCPD3-T		
Bore size mm	$\phi 6$	$\phi 10$	$\phi 16$
Actuation	Double acting/heat resistant		
Working fluid	Compressed air		
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)		
Min. working pressure MPa	0.15 (≈ 22 psi, 1.5 bar)	0.1 (≈ 15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)		
Ambient temperature $^{\circ}\text{C}$	5 (41°F) to 120 (248°F)		
Port size	M5		
Stroke tolerance mm	+1.0 0		
Working piston speed mm/s	50 to 750		
Cushion	Rubber cushion		
Lubrication	Not available		
Allowable absorbed energy J	0.012	0.041	0.162

Stroke

Bore size (mm)	Standard stroke (mm)		Max. stroke (mm)		Min. stroke (mm)	
	$\phi 6$	15/30/45/60		100		5
$\phi 10$			200			
$\phi 16$			260			

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

Cylinder weight

(Unit: g)

Type	Item Bore size (mm)	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10 mm stroke
		Foot LS	Flange FA	Clevis CB		
SCPD3-T	$\phi 6$	6	4	-	13	1
	$\phi 10$	6	4	4	21	2
	$\phi 16$	15	12	10	42	3

(Example) Product weight of SCPD3-T-LS-10-30

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 21 g
- Additional weight for 30 mm stroke $2 \times 30/10 = 6$ g
- Product weight $6 + 21 + 6 = 33$ g

Theoretical thrust table

(Unit: N)

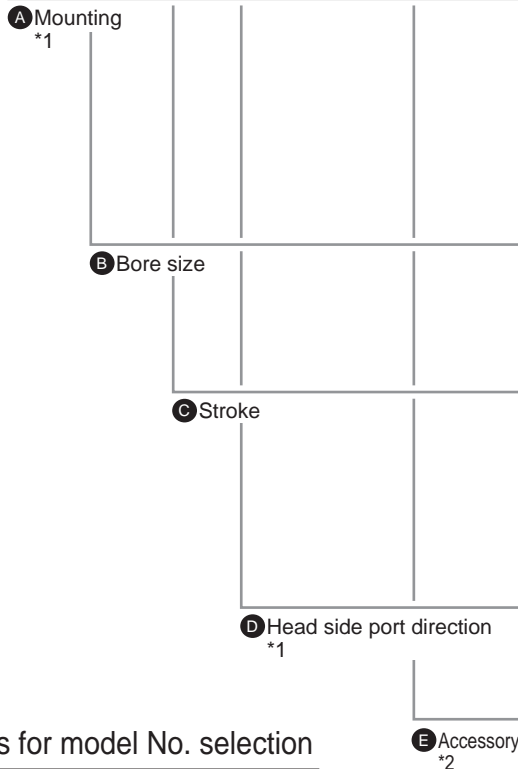
Bore size (mm)	Operating direction	Working pressure MPa										
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
$\phi 6$	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8	17.0	19.1	21.2
$\phi 10$	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
$\phi 16$	Push	20.1	30.2	40.2	60.3	80.4	1.01×10^2	1.21×10^2	1.41×10^2	1.61×10^2	1.81×10^2	2.01×10^2
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09×10^2	1.27×10^2	1.45×10^2	1.63×10^2	1.81×10^2

Dimensions

Same as those of double acting SCPD3 Series. Refer to pages 13 and 14.

How to order

SCPD3-T - 00 - 10 - 15 - O - Y



Code	Description			
A Mounting				
	Bore size (ø)	6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket (pin and snap ring included)		●	●
B Bore size (mm)				
6	ø6			
10	ø10			
16	ø16			
C Stroke (mm)				
Bore size	Stroke	Available stroke	Custom stroke	
ø6	5 to 100	100	In 1 mm increments	
ø10	5 to 200	200		
ø16	5 to 260	260		
D Head side port direction				
Blank	Vertical			
O	Axial direction			
E Accessory				
	Bore size (ø)	6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin and snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

⚠ Precautions for model No. selection

*1: The "CB" mounting is not available when the port direction is "O" (axial direction).
 *2: "I" and "Y" cannot be selected together.

[Example of model No.]

SCPD3-T-00-10-30-O-I

Model: Pencil shaped cylinder Heat resistance

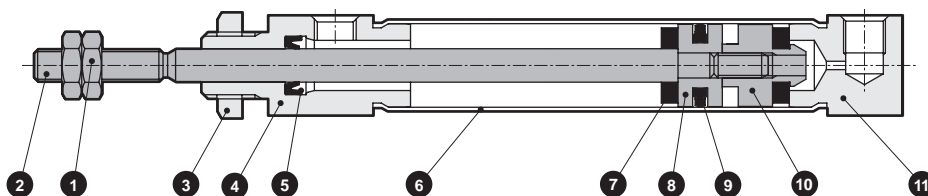
- A Mounting : Basic
- B Bore size : ø10 mm
- C Stroke : 30 mm
- D Head side port direction : Axial direction
- E Accessory : Rod eye

How to order mounting bracket

Bore size (mm)	ø6	ø10	ø16
Mounting bracket			
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

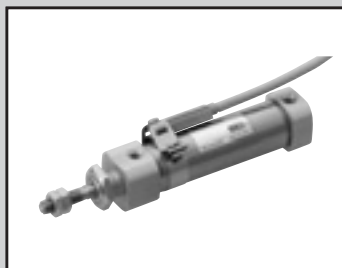
Internal structure and parts list



Cannot be disassembled

● This product is a caulked and cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	7	Cushion rubber	Fluoro rubber	
2	Piston rod	Stainless steel		8	Piston	Aluminum alloy	
3	Hexagon nut	Steel	Nickeling	9	Piston packing	Fluoro rubber	
4	Rod cover	Aluminum alloy	Hard alumite	10	Spacer	Aluminum alloy	
5	Rod packing	Fluoro rubber		11	Head cover	Aluminum alloy	Hard alumite
6	Cylinder tube	Stainless steel					



Pencil shaped cylinder Double acting/rubber-air cushioned

SCPD3-*C Series

● Bore size: $\phi 6/\phi 10/\phi 16$



Specifications

Item	SCPD3-*C, SCPD3-L-*C		
Bore size mm	$\phi 6$	$\phi 10$	$\phi 16$
Actuation	Double acting		
Working fluid	Compressed air		
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)		
Min. working pressure MPa	0.3 (≈ 44 psi, 3 bar)	0.2 (≈ 29 psi, 2 bar)	
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)		
Ambient temperature $^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)		
Port size	M5		
Stroke tolerance mm	+1.0 0		
Working piston speed mm/s	50 to 750 (Operate within the allowable absorbed energy.)		
Cushion	Rubber-air cushion		
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)		
Allowable absorbed energy J	0.012	0.041	0.162

Stroke

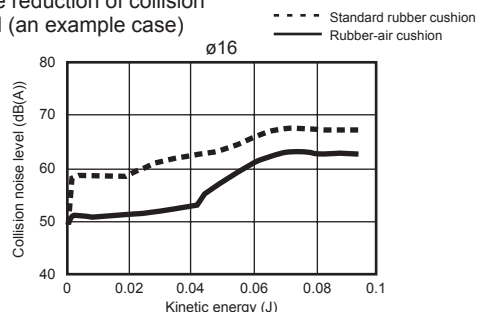
Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 6$	15/30/45/60	100	5
$\phi 10$		200	
$\phi 16$		260	

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

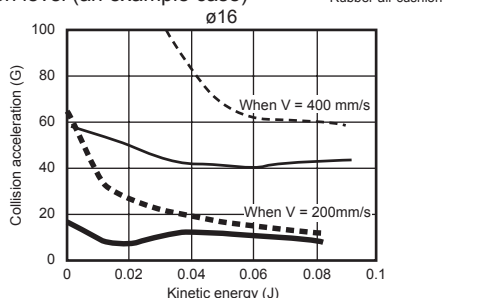
Min. stroke with switch

Sketch	1		2	
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Min. stroke	5 mm		10 mm	28 mm
Sketch	3			
	Different surface mounting	Same surface mounting		
Min. stroke	38 mm	54 mm		

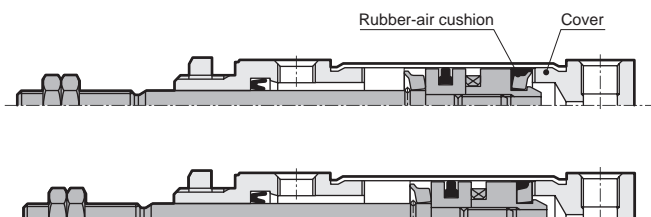
Data of the reduction of collision noise level (an example case)



Data of the reduction of collision acceleration level (an example case)



Rubber-air cushion mechanism



When pulled

An airtight space is created in the ████ area when the piston operates and the rubber-air cushion and cover make contact. Air in the airtight area is further compressed, absorbing energy as the piston operates. At the end of the stroke, energy generated by compression distortion of the air cushion is also added.

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed	
	T0H/T0V	T5H/T5V
Applications	For programmable controller, relay	For programmable controller, relay, IC circuit (without indicator lamp), serial connection
Load voltage	12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA
Indicator	LED (Lit when ON)	No indicator lamp
Leakage current	0 mA	0 mA
Weight g	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

(Unit: g)

Type	Item Bore size (mm)	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10mm stroke	Switch weight (per switch)	Mounting bracket weight
		Foot LS	Flange FA	Clevis CB				
SCPD3-*C	ø6	6	4	-	13	1	Refer to the weight in the switch specifications.	2
	ø10	6	4	4	21	2		
	ø16	15	12	10	42	3		

(Example) Product weight of SCPD3-L-LS-10C-30-T0H-D

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 21 g
- Additional weight for 30 mm stroke 2x30/10=6 g
- Switch weight 2x(18+2)=40 g
- Product weight 6+21+6+40=73 g

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	Push	-	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	6.36	8.48	10.6	12.7	14.8	17.0	19.1	21.2
ø10	Push	-	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	-	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ø16	Push	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²	1.61x10 ²	1.81x10 ²	2.01x10 ²
	Pull	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCPD3-*C Series

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

How to order

No switch (without magnet for switch)

SCPD3 - 00 - 10C - 15 - O - I

With switch (built-in magnet for switch)

SCPD3-L - 00 - 10C - 15 - O - T2H - R - I

A Mounting
*1

B Bore size

Rubber-air
cushioned

C Stroke

D Head side port
direction
*1

E Switch model No.
*3, *6
* indicates the
lead wire length.

F Switch
quantity

G Options/
accessories
*4

Precautions for model No. selection

*1 : The "CB" mounting is not available when the port direction is "O" (axial direction).

*2 : Refer to page 28 for the min. stroke with switch.

*3 : Magnet is not built into the type without switch.

*4 : "I" and "Y" cannot be selected together.

*5 : Copper and PTFE free as standard.

*6 : Switches are shipped with the product.

[Example of model No.]

SCPD3-L-00-10C-15-O-T2H-R-I

Model: Pencil shaped cylinder Double acting/rubber-air cushioned

- A Mounting : Basic
- B Bore size : $\varnothing 10$ mm
- C Stroke : 15 mm
- D Head side port direction : Axial direction
- E Switch model No. : Proximity switch T2H, lead wire 1 m
- F Switch quantity : 1 on rod side
- G Accessory : Rod eye

Code	Description			
A Mounting				
Bore size (\varnothing)		6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket		●	●

B Bore size (mm)	
6	$\varnothing 6$
10	$\varnothing 10$
16	$\varnothing 16$

C Stroke (mm)		
Bore size	Stroke *2	Custom stroke
$\varnothing 6$	5 to 100	In 1 mm increments
$\varnothing 10$	5 to 200	
$\varnothing 16$	5 to 260	

D Head side port direction	
Blank	Vertical
O	Axial direction

E Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	LED	3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T3WH*	T3WV*		●	LED	3-wire	

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

F Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

G Options/accessories				
Bore size (\varnothing)		6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin and snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

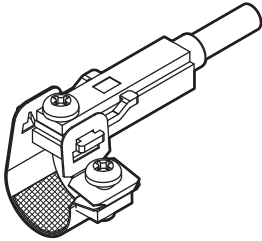
How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item (B) on page 30)

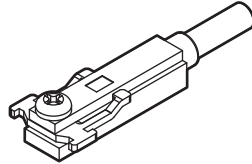
Switch model No.
(Item (E) on page 30)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item (E) on page 30)

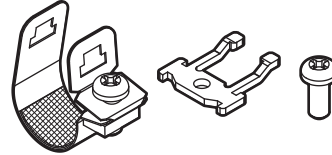


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item (B) on page 30)

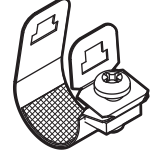


When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - T - 6

Bore size
(Item (B) on page 30)



When 20 pcs or more are ordered, they will be packed together.

How to order mounting bracket

Bore size (mm)	ø6	ø10	ø16
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

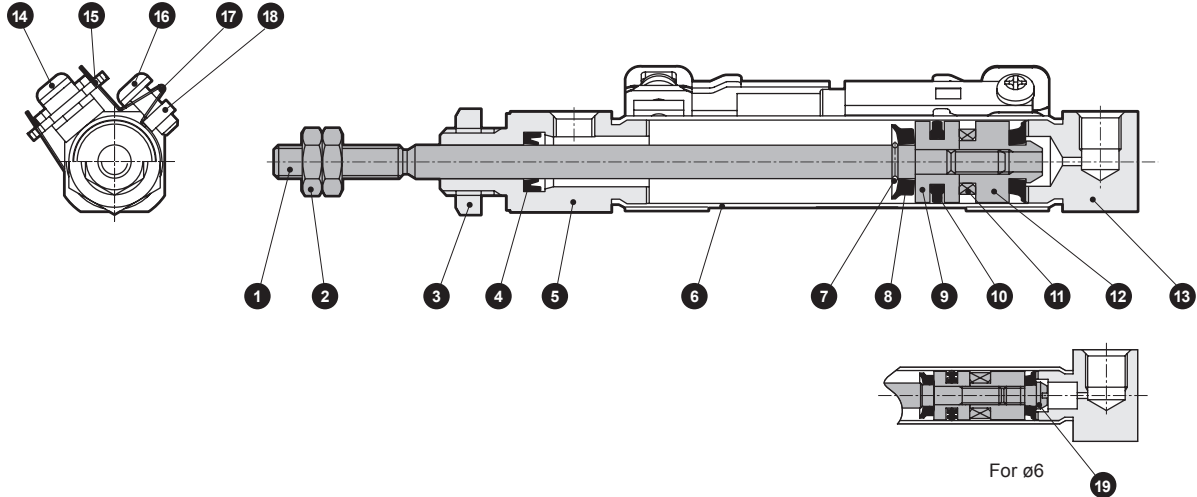
Spd
Contr

Ending

SCPD3-*C Series

Internal structure and parts list

- Rubber-air cushioned
SCPD3-*C
SCPD3-L-*C (with switch)



Cannot be disassembled

- This product cannot be disassembled.

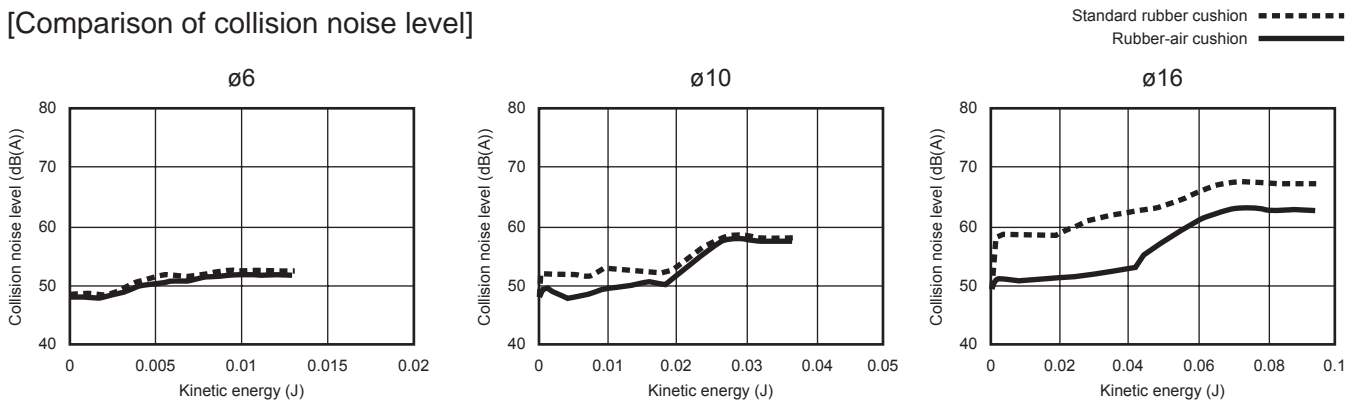
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		11	Magnet	-	With switch only
2	Rod nut	Steel	Nickeling	12	Spacer	Aluminum alloy	
3	Hexagon nut	Steel	Nickeling	13	Head cover	Aluminum alloy	Hard alumite
4	Rod packing	Nitrile rubber		14	Phillips pan head machine screw	Stainless steel	With switch only
5	Rod cover	Aluminum alloy	Hard alumite	15	Fixing bracket	Stainless steel	With switch only
6	Cylinder tube	Stainless steel		16	Phillips pan head machine screw	Stainless steel	With switch only
7	Retaining ring	Stainless steel		17	Band	Stainless steel	With switch only
8	Rubber-air cushion	Special rubber		18	Fixing nut	Stainless steel	With switch only
9	Piston	Aluminum alloy		19	Pin	Stainless steel	ø6 only
10	Piston packing	Nitrile rubber					

Dimensions

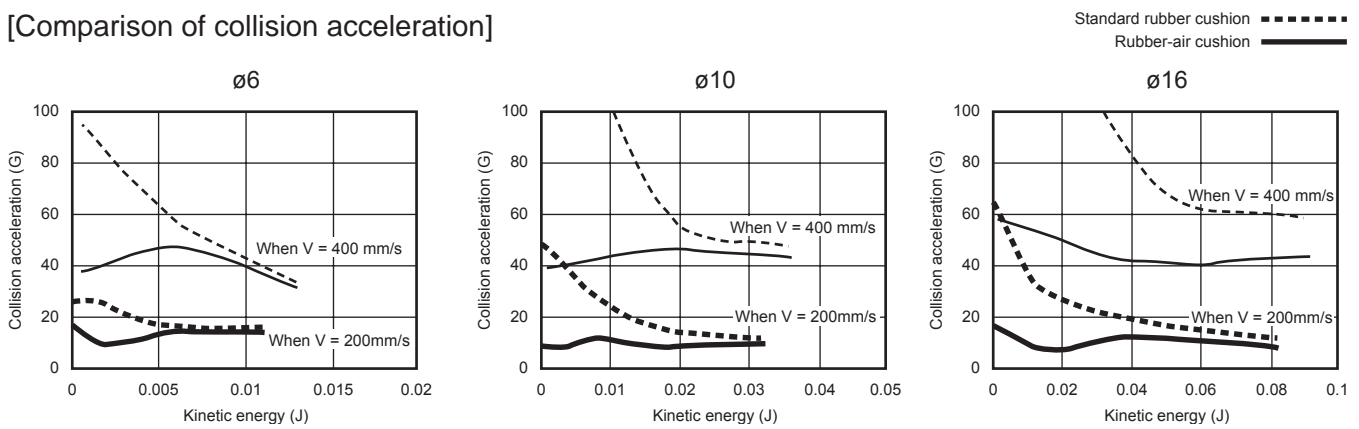
Same as those of SCPD3 Series (double acting/single rod). Refer to pages 13 and 14.

Technical data

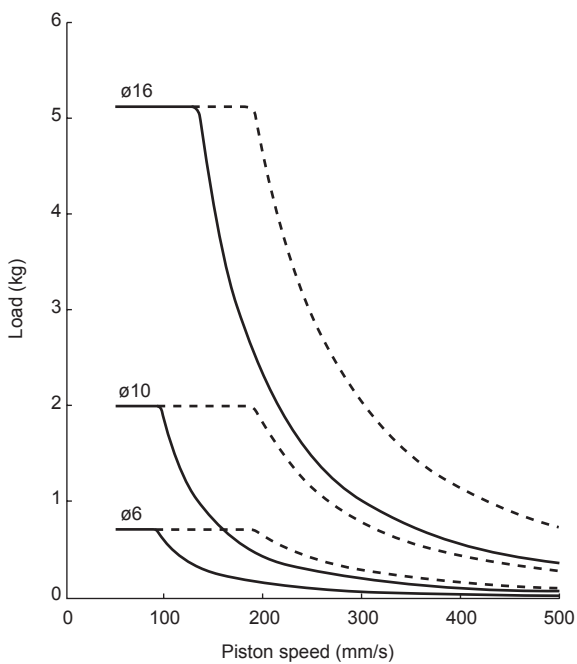
[Comparison of collision noise level]



[Comparison of collision acceleration]



[Recommended energy range]



Usable in the range below and to the left of the curve.

Although it can also be used in the range marked with --- in the figure, we recommend use within the range marked with a solid line to maximize the noise reduction effect and damping effect.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

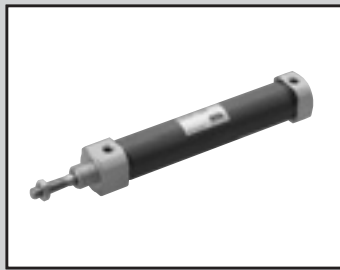
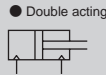
Ending

Pencil shaped cylinder Double acting/fine speed

SCPD3-F Series

● Bore size: $\varnothing 6/\varnothing 10/\varnothing 16$

JIS symbol



Specifications

Item	SCPD3-F/SCPD3-LF (with switch)		
Bore size mm	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Actuation	Double acting		
Working fluid	Compressed air		
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)		
Min. working pressure MPa	0.15 (≈ 22 psi, 1.5 bar)	0.1 (≈ 15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)		
Ambient temperature $^{\circ}\text{C}$	5 (41°F) to 60 (140°F)		
Port size	M5		
Stroke tolerance mm	+1.0 0		
Working piston speed mm/s	1 to 200		
Cushion	Rubber cushion		
Lubrication	Not available		
Allowable absorbed energy J	0.012	0.041	0.162

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
SCPD3-F SCPD3-LF	15/30/45/60	100	5
$\varnothing 6$		200	
$\varnothing 10$		260	

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

Min. stroke with switch

Sketch	1		2	
Min. stroke	5 mm		10 mm	28 mm
Sketch	3			
Min. stroke	38 mm	54 mm		

Dimensions

Same as SCPD3 Series (double acting/single rod). Refer to pages 13 and 14.

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed	
	T0H/T0V	T5H/T5V
Applications	For programmable controller, relay	For programmable controller, relay, IC circuit (without indicator lamp), serial connection
Load voltage	12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA
Indicator	LED (Lit when ON)	No indicator lamp
Leakage current	0 mA	0 mA
Weight g	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

(Unit: g)

Type	Item Bore size (mm)	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10 mm stroke	Switch weight (per switch)	Switch mounting bracket weight
		Foot LS	Flange FA	Clevis CB				
SCPD3-F	ø6	6	4	-	13	1	Refer to the weight in the switch specifications.	2
	ø10	6	4	4	21	2		
	ø16	15	12	10	42	3		

(Example) Product weight of SCPD3-LF-LS-10-30-T0H-D

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 21 g
- Additional weight for 30 mm stroke 2x30/10=6 g
- Switch weight 2x(18+2)=40 g
- Product weight 6+21+6+40=73 g

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
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8	17.0	19.1	21.2
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²	1.61x10 ²	1.81x10 ²	2.01x10 ²
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCPD3-F Series

- SCP*3
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS2
- CKV2
- CAV2/
COVPIN2
- SSD2
- SSG
- SSD
- CAT
- MDC2
- MVC
- SMG
- MSD/
MSDG
- FC*
- STK
- SRL3
- SRG3
- SRM3
- SRT3
- MRL2
- MRG2
- SM-25
- ShkAbs
- FJ
- FK
- Spd
Contr
- Ending

How to order

No switch (without magnet for switch)

SCPD3-F - LS - 10 - 15 - I

With switch (built-in magnet for switch)

SCPD3-LF - LS - 10 - 15 - T2H - R - I

Model No.

A Mounting

B Bore size

C Stroke

D Switch model No.
*2, *4
* indicates the lead wire length.

E Switch quantity

F Accessory
*3

⚠ Precautions for model No. selection

- *1 : Refer to page 34 for the min. stroke with switch.
- *2 : Magnet is not built into the type without switch.
- *3 : "I" and "Y" cannot be selected together.
- *4 : Switches are shipped with the product.

[Example of model No.]

SCPD3-LF-LS-10-15-T2H-R-I

Model: Pencil shaped cylinder Fine speed

- A** Mounting : Axial foot (single) (rod side)
- B** Bore size : $\varnothing 10$ mm
- C** Stroke : 15 mm
- D** Switch model No. : Proximity switch T2H, lead wire 1 m
- E** Switch quantity : 1 on rod side
- F** Accessory : Rod eye

Code	Description	6	10	16
A Mounting				
Bore size (\varnothing)		6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket (pin and snap ring included)		●	●

B Bore size (mm)	
6	$\varnothing 6$
10	$\varnothing 10$
16	$\varnothing 16$

C Stroke (mm)		
Bore size	Stroke *1	Custom stroke
$\varnothing 6$	5 to 100	In 1 mm increments
$\varnothing 10$	5 to 200	
$\varnothing 16$	5 to 260	

D Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	LED	3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T3WH*	T3WV*			●	LED	3-wire

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

E Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

F Accessory		6	10	16
Bore size (\varnothing)		6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin and snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

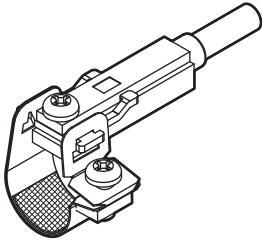
How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item ③ on page 36)

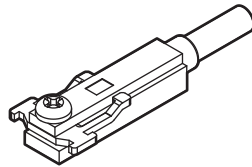
Switch model No.
(Item ④ on page 36)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item ④ on page 36)

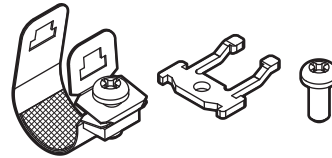


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item ③ on page 36)



When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - T - 6

Bore size
(Item ③ on page 36)



When 20 pcs or more are ordered, they will be packed together.

How to order mounting bracket

Bore size (mm)	ø6	ø10	ø16
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

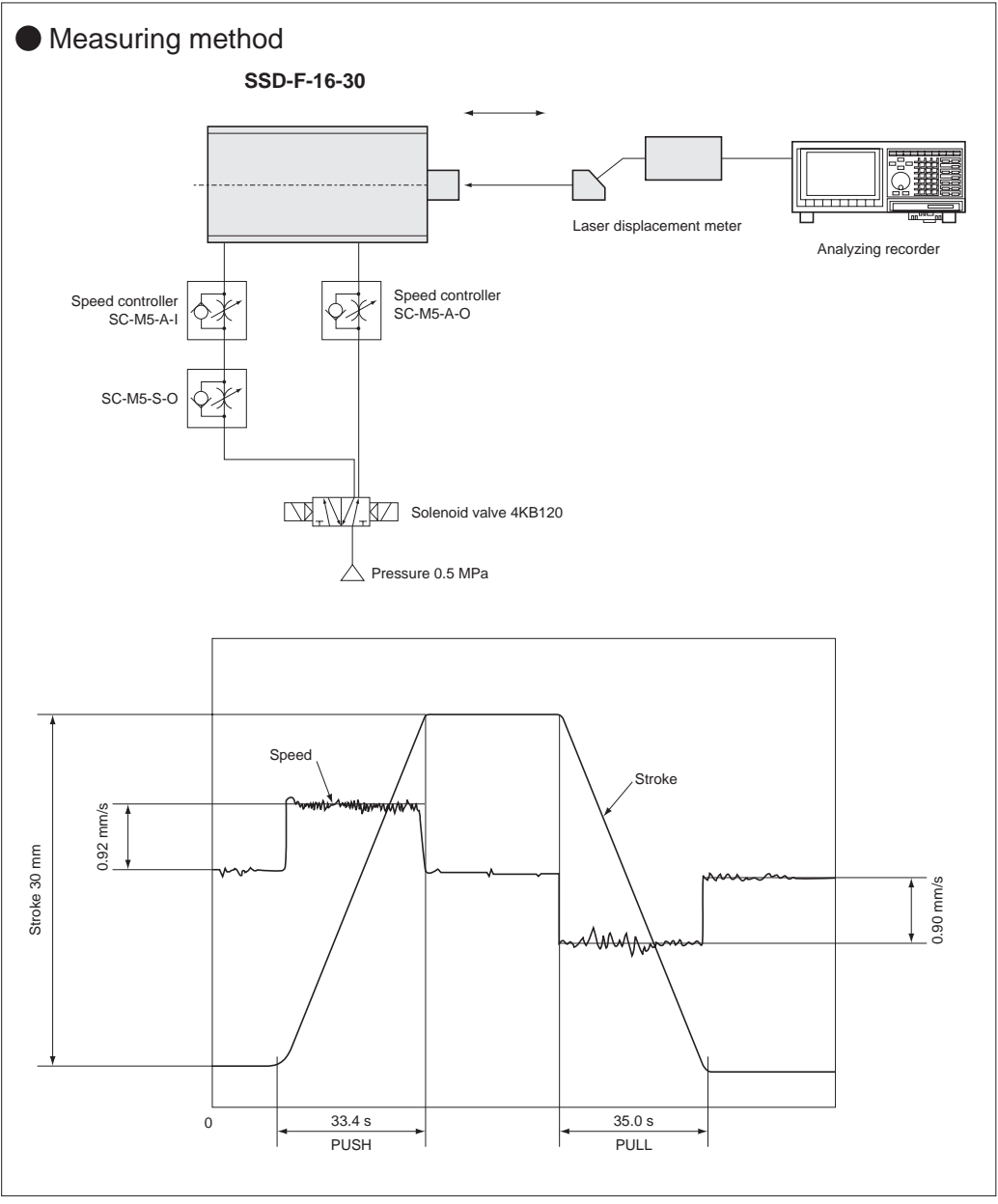
FJ

FK

Spd
Contr

Ending

SCP*3	Measurement data
CMK2	
CMA2	
SCM	
SCG	
SCA2	
SCS2	
CKV2	
CAV2/ COVPIN2	
SSD2	
SSG	
SSD	
CAT	
MDC2	
MVC	
SMG	
MSD/ MSDG	
FC*	
STK	
SRL3	
SRG3	
SRM3	
SRT3	
MRL2	
MRG2	
SM-25	
ShkAbs	
FJ	
FK	
Spd Contr	
Ending	



SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

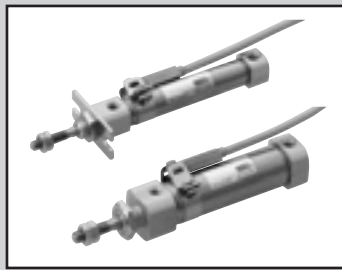
ShkAbs

FJ

FK

Spd
Contr

Ending



Pencil shaped cylinder Double acting/low speed

SCPD3-O Series

● Bore size: $\varnothing 6/\varnothing 10/\varnothing 16$

JIS symbol



Specifications

Item	SCPD3-O SCPD3-OL		
	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Bore size mm	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Actuation	Double acting/low speed		
Working fluid	Compressed air		
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)		
Min. working pressure MPa	0.15 (≈ 22 psi, 1.5 bar)	0.1 (≈ 15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)		
Ambient temperature $^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing)		
Port size	M5		
Stroke tolerance mm	+1.0 0		
Working piston speed mm/s	10 to 200		
Cushion	Rubber cushion		
Lubrication	Not available		
Allowable absorbed energy J	0.012	0.041	0.162

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
SCPD3-O $\varnothing 10$	200		
$\varnothing 16$	260		

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

Min. stroke with switch

	1		2	
	Sketch			
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Min. stroke	5 mm		10 mm	28 mm
	3			
	Sketch			
	Different surface mounting	Same surface mounting		
Min. stroke	38 mm	54 mm		

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed			
	T0H/T0V		T5H/T5V	
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection	
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator	LED (Lit when ON)		No indicator lamp	
Leakage current	0 mA		0 mA	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

(Unit: g)

Type	Item Bore size (mm)	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10 mm stroke	Switch weight (per switch)	Switch mounting bracket weight
		Foot LS	Flange FA	Clevis CB				
SCPD3-O	ø6	6	4	-	13	1	Refer to the weight in the switch specifications.	2
	ø10	6	4	4	21	2		
	ø16	15	12	10	42	3		

(Example) Product weight of SCPD3-OL-LS-10-30-T0H-D

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 21 g
- Additional weight for 30 mm stroke 2x30/10=6 g
- Switch weight 2x(18+2)=40 g
- Product weight 6+21+6+40=73 g

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
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8	17.0	19.1	21.2
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²	1.61x10 ²	1.81x10 ²	2.01x10 ²
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCPD3-O Series

SCP*3 How to order
 No switch (without magnet for switch)
SCPD3-O - 00 - 10 - 15 - O ————— **Y**

With switch (built-in magnet for switch)
SCPD3-OL - 00 - 10 - 15 - O - T2H - R - Y

A Model No.

B Mounting
*1

C Bore size

D Stroke

E Head side port direction
*1

F Switch model No.
*3, *5
* indicates the lead wire length.

G Switch quantity

H Accessory
*4

Precautions for model No. selection

- *1 : The "CB" mounting is not available when the port direction is "O" (axial direction).
- *2 : Refer to page 40 for the min. stroke with switch.
- *3 : Magnet is not built into the type without switch.
- *4 : "I" and "Y" cannot be selected together.
- *5 : Switches are shipped with the product.

[Example of model No.]
SCPD3-OL-00-10-30-O-T2H-R-I
 Model: Pencil shaped cylinder

- A** Model No. : Double acting/low speed
- B** Mounting : Basic
- C** Bore size : $\phi 10$ mm
- D** Stroke : 30 mm
- E** Head side port direction : Axial direction
- F** Switch model No. : Proximity switch T2H, lead wire 1 m
- G** Switch quantity : 1 on rod side
- H** Accessory : Rod eye

Head cover port direction

For the OO, LB and FA mounting, the head cover port direction can be selected from two options: perpendicular and horizontal to the axial direction.

Code	Description
A Model No.	
SCPD3-O	Double acting/low speed
SCPD3-OL	Double acting/low speed/with switch

B Mounting				
Bore size (ϕ)		6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket (pin and snap ring included)		●	●

C Bore size (mm)	
6	$\phi 6$
10	$\phi 10$
16	$\phi 16$

C Stroke (mm)		
Bore size	Stroke *2	Custom stroke
$\phi 6$	5 to 100	In 1 mm increments
$\phi 10$	5 to 200	
$\phi 16$	5 to 260	

E Head side port direction	
Blank	Vertical
O	Axial direction

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	2-color LED	3-wire
T2WH*	T2WV*			●		2-wire
T3WH*	T3WV*			●		3-wire

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Accessory				
Bore size (ϕ)		6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin and snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

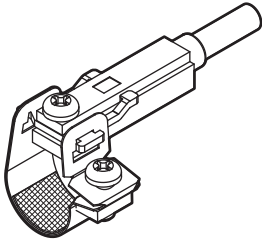
How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item ③ on page 42)

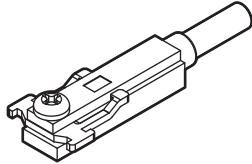
Switch model No.
(Item ⑤ on page 42)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item ⑤ on page 42)

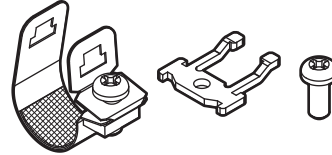


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item ③ on page 42)



When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - T - 6

Bore size
(Item ③ on page 42)



When 20 pcs or more are ordered, they will be packed together.

How to order mounting bracket

Bore size (mm)	ø6	ø10	ø16
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

Dimensions

Same as those of double acting SCPD3 Series. Refer to pages 13 and 14.

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

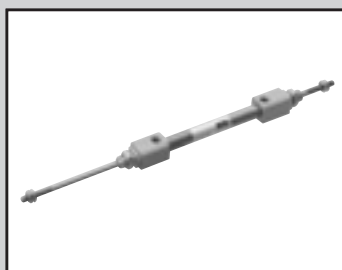
ShkAbs

FJ

FK

Spd
Contr

Ending



Pencil shaped cylinder Double acting/double rod

SCPD3-D/SCPD3-DT Series

● Bore size: $\varnothing 6/\varnothing 10/\varnothing 16$

DT: Made to order

JIS symbol

● Double acting double rod



Specifications

1 MPa = 10 bar

Item	SCPD3-D SCPD3-DL			SCPD3-DT			
	mm	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Bore size	mm	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Actuation		Double acting/double rod			Double acting/double rod heat resistance		
Working fluid		Compressed air					
Max. working pressure	MPa	1.0 (≈ 150 psi, 10 bar)					
Min. working pressure	MPa	0.2 (≈ 29 psi)	0.1 (≈ 15 psi, 1 bar)		0.2 (≈ 29 psi)	0.1 (≈ 15 psi, 1 bar)	
Proof pressure	MPa	1.6 (≈ 230 psi, 16 bar)					
Ambient temperature	$^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)			5 (41°F) to 120 (248°F)		
Port size		M5					
Stroke tolerance	mm	+1.0 0					
Working piston speed	mm/s	50 to 750			50 to 750		
Cushion		Rubber cushion					
Lubrication		Not required (use turbine oil ISO VG32 if necessary for lubrication)			Not available		
Allowable absorbed energy	J	0.012	0.041	0.162	0.012	0.041	0.162

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\varnothing 6$	15/30/45/60	60	5
$\varnothing 10$		120	
$\varnothing 16$			

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

Min. stroke with switch

	1		2	
	Sketch	Sketch	Sketch	Sketch
Sketch				
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Min. stroke	5 mm		10 mm	28 mm
	3			
	Sketch	Sketch		
Sketch				
	Different surface mounting	Same surface mounting		
Min. stroke	38 mm	54 mm		

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed			
	T0H/T0V		T5H/T5V	
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection	
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator	LED (Lit when ON)		No indicator lamp	
Leakage current	0 mA		0 mA	
Weight	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

(Unit: g)

Type	Item Bore size (mm)	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10 mm stroke	Switch weight (per switch)	Switch mounting bracket weight
		Foot LS	Foot LB	Flange FA				
SCPD3-D SCPD3-DT	ø6	6	12	4	18	2	Refer to the weight in the switch specifications.	2
	ø10	6	12	4	28	3		
	ø16	15	30	12	55	5		

(Example) Product weight of SCPD3-DL-LS-10-30-TOH-D

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 28 g
- Additional weight for 30 mm stroke 2x3/10=9 g
- Switch weight 2x(18+2)=40 g
- Product weight 6+28+9+40=83 g

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
ø6	Push/Pull	-	-	4.24	6.36	8.48	10.6	12.7	14.8	17.0	19.1	21.2
ø10	Push/Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ø16	Push/Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCPD3-D Series

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

How to order

No switch (without magnet for switch)

SCPD3-D - LS - 10 - 15 - I

With switch (built-in magnet for switch)

SCPD3-DL - LS - 10 - 15 - T2H - R - I

A Model No.

B Mounting

C Bore size

D Stroke

E Switch model No.
*2, *4
* indicates the lead wire length.

F Switch quantity

G Accessory

Precautions for model No. selection

- *1 : Refer to page 44 for the min. stroke with switch.
- *2 : Magnet is not built into the type without switch.
- *3 : SCPD3-D is copper and PTFE free as standard.
- *4 : Switches are shipped with the product.

[Example of model No.]

SCPD3-DL-LS-10-15-T2H-R-I

- A** Model No. : Pencil shaped cylinder/double rod
- B** Mounting : Axial foot (single) (rod side)
- C** Bore size : $\phi 10$ mm
- D** Stroke : 15 mm
- E** Switch model No. : Proximity switch T2H, lead wire 1 m
- F** Switch quantity : 1 on rod side
- G** Accessory : Rod eye

A Model No.

Double rod	Double rod heat resistance
SCPD3-D	SCPD3-DT

Code	Description	SCPD3-D	SCPD3-DT
B Mounting			
00	Basic	●	●
LS	Axial foot (one side) (rod side)	●	●
LB	Two-sided axial foot	●	●
FA	Rod side flange	●	●

C Bore size (mm)		SCPD3-D	SCPD3-DT
6	$\phi 6$	●	●
10	$\phi 10$	●	●
16	$\phi 16$	●	●

D Stroke (mm)		
Bore size	Stroke *1	Custom stroke
$\phi 6$	5 to 60	In 1 mm increments
$\phi 10$	5 to 120	
$\phi 16$	5 to 120	

E Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*	Reed	●	●	No indicator lamp	2-wire
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	LED	3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T3WH*	T3WV*		●	LED	3-wire	3-wire

* Lead wire length		
Blank	1 m (standard)	●
3	3 m (option)	●
5	5 m (option)	●

F Switch quantity		
R	1 on rod side	●
H	1 on head side	●
D	2	●
T	3	●

G Accessory						
		Bore size (ϕ)				
		$\phi 6$	$\phi 10$	$\phi 16$	$\phi 6$	$\phi 10$ $\phi 16$
I	Rod eye		●	●		●
Y	Rod clevis (pin and snap ring included)		●	●		●

How to order mounting bracket

Bore size (mm)	$\phi 6$	$\phi 10$	$\phi 16$
Mounting bracket			
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Foot (LB)	P2-LB-6	P2-LB-10	P2-LB-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

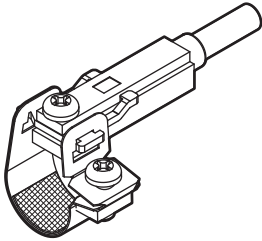
How to order switch

- Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item ③ on page 46)

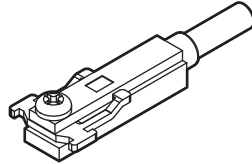
Switch model No.
(Item ⑤ on page 46)



- Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item ⑤ on page 46)

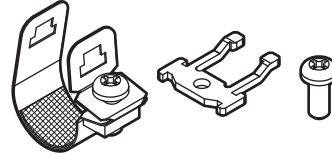


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

- Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item ③ on page 46)

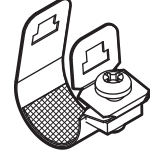


When 20 pcs or more are ordered, they will be packed together.

- Mounting bracket set

SCPD3 - T - 6

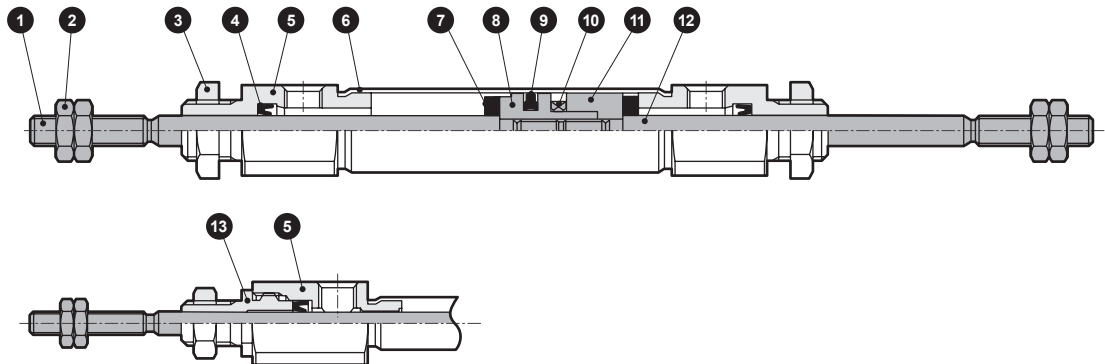
Bore size
(Item ③ on page 46)



When 20 pcs or more are ordered, they will be packed together.

Internal structure and parts list

- Double rod
SCPD3-D
SCPD3-DL (with switch)



For ø6

Cannot be disassembled

- This product cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod 1	Stainless steel		8	Piston	Aluminum alloy	
2	Rod nut	Steel	Nickeling	9	Piston packing	Nitrile rubber	
3	Hexagon nut	Steel	Nickeling	10	Magnet	-	With switch only
4	Rod packing	Nitrile rubber		11	Spacer	Aluminum alloy	
5	Rod cover	Aluminum alloy	Hard alumite	12	Piston rod 2	Stainless steel	
6	Cylinder tube	Stainless steel		13	Rod metal	Aluminum alloy	Hard alumite
7	Cushion rubber	Urethane rubber					

SCP3*

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

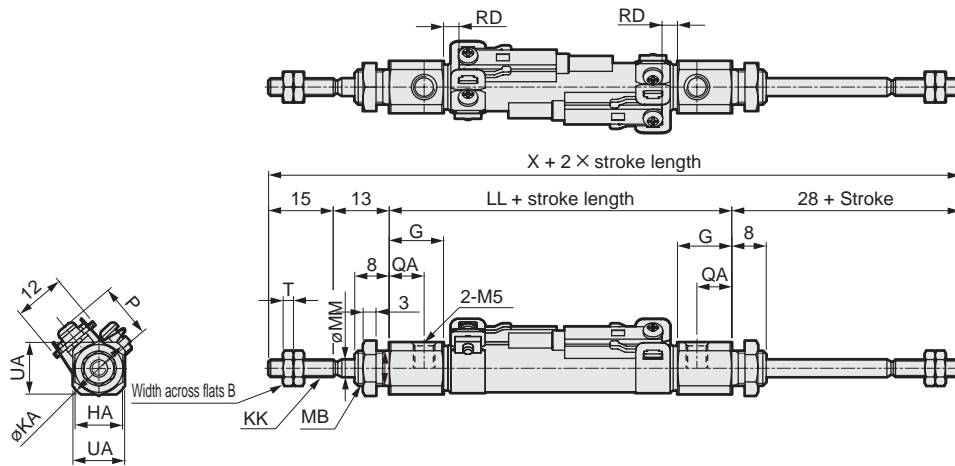
Spd
Contr

Ending

SCPD3-D Series

Dimensions

● SCPD3-D (L) Basic (00)



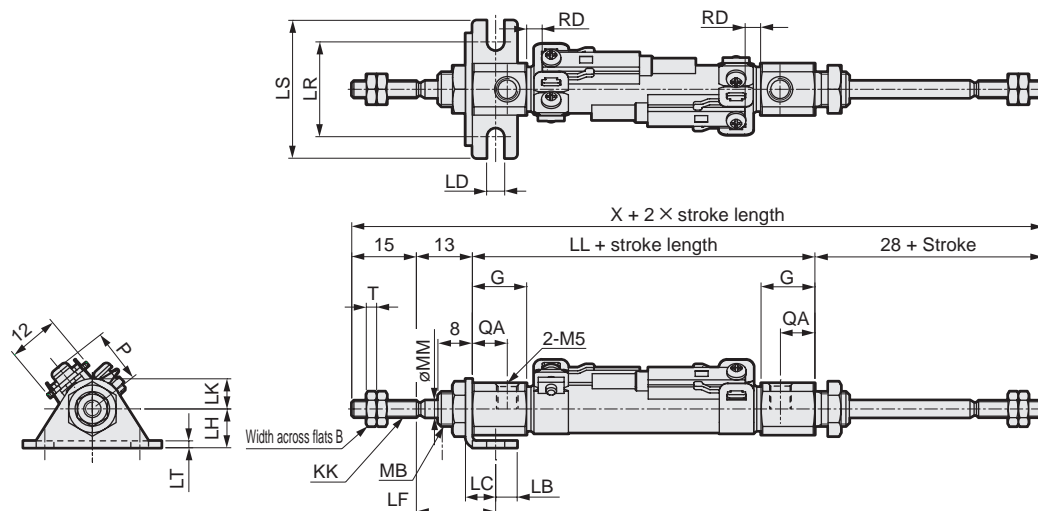
*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

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

Code	Basic (00) Basic dimensions												With switch		
	B	G	HA	KA	KK	LL	MB	MM	QA	T	UA	X	T0, T5, T2, T3	T2W, T3W	P
Bore size (mm)													RD	RD	
$\phi 6$	5.5	17	8	13.5	M3	56	M6	3	13	1.8	11	112	2	4	11.5
$\phi 10$	7	12.5	11	14.5	M4	54.5	M8x1.0	4	8	2.4	12	110.5	5.5	7.5	13.5
$\phi 16$	8	13	14	21.5	M5	55	M10x1.0	5	8.5	3.2	18	111	4	6	17.0

● Axial foot (one side) (LS)



*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

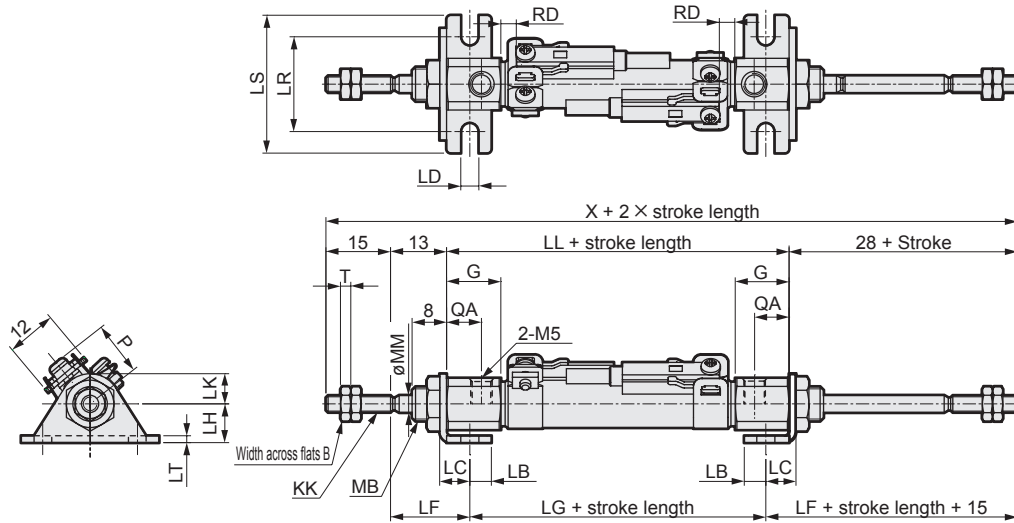
*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

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

Code	Axial foot (single) (LS) Basic dimensions										Mounting dimensions							With switch			
	B	G	KK	LL	MB	MM	QA	T	X	LB	LC	LD	LF	LH	LK	LR	LS	LT	T0, T5, T2, T3	T2W, T3W	P
Bore size (mm)																			RD	RD	
$\phi 6$	5.5	17	M3	56	M6	3	13	1.8	112	5	7	4.2	18.4	9	7	22	32	1.6	2	4	11.5
$\phi 10$	7	12.5	M4	54.5	M8x1.0	4	8	2.4	110.5	5	7	4.2	18.4	9	7	22	32	1.6	5.5	7.5	13.5
$\phi 16$	8	13	M5	55	M10x1.0	5	8.5	3.2	111	6	9	5.2	19.7	14	10	29	42	2.3	4.0	6	17.0

Dimensions

● Two-sided axial foot (LB)



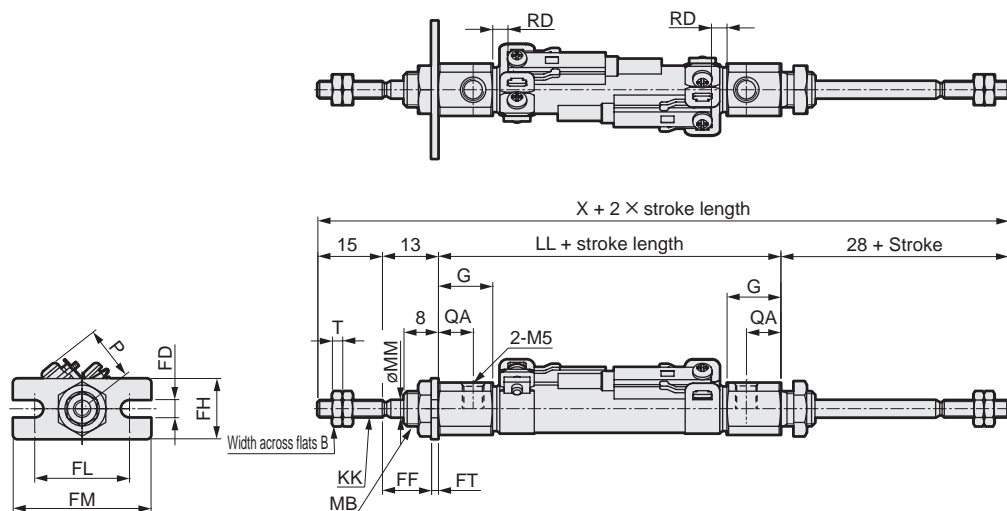
*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

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

Code	Two-sided axial foot (LB) Basic dimensions									Mounting dimensions									With switch			
	B	G	KK	LL	MB	MM	QA	T	X	LB	LC	LD	LF	LH	LG	LK	LR	LS	LT	T0, T5, T2, T3	T2W, T3W	P
$\phi 6$	5.5	17	M3	56	M6	3	13	1.8	112	5	7	4.2	18.4	9	45.2	7	22	32	1.6	RD	RD	11.5
$\phi 10$	7	12.5	M4	54.5	M8x1.0	4	8	2.4	110.5	5	7	4.2	18.4	9	43.7	7	22	32	1.6	5.5	7.5	13.5
$\phi 16$	8	13	M5	55	M10x1.0	5	8.5	3.2	111	6	9	5.2	19.7	14	41.6	10	29	42	2.3	4	6	17.0

● Rod side flange (FA)



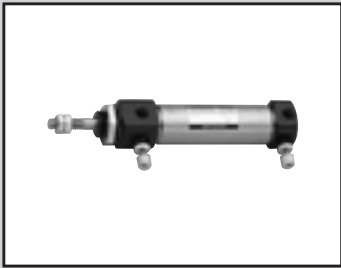
*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

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

Code	Rod side flange (FA) Basic dimensions									Mounting dimensions						With switch		
	B	G	KK	LL	MB	MM	QA	T	X	FD	FF	FH	FL	FM	FT	T0, T5, T2, T3	T2W, T3W	P
$\phi 6$	5.5	17	M3	56	M6	3	13	1.8	112	4.2	11.4	14	22	32	1.6	RD	RD	11.5
$\phi 10$	7	12.5	M4	54.5	M8x1.0	4	8	2.4	110.5	4.2	11.4	14	22	32	1.6	5.5	7.5	13.5
$\phi 16$	8	13	M5	55	M10x1.0	5	8.5	3.2	111	5.2	10.7	20	29	42	2.3	4	6	17.0

SCP*3
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS2
 CKV2
 CAV2/
 COVPIN2
 SSD2
 SSG
 SSD
 CAT
 MDC2
 MVC
 SMG
 MSD/
 MSDG
 FC*
 STK
 SRL3
 SRG3
 SRM3
 SRT3
 MRL2
 MRG2
 SM-25
 ShkAbs
 FJ
 FK
 Spd
 Contr
 Ending



Pencil shaped cylinder
 Double acting/with speed controller

SCPD3-Z Series

● Bore size: $\varnothing 10/\varnothing 16$

Made to order



Specifications



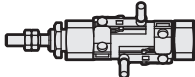
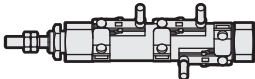
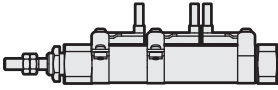
Item	SCPD3-Z	
	SCPD3-Z	SCPD3-ZL
Bore size mm	$\varnothing 10$	$\varnothing 16$
Actuation	Double acting/with speed controller	
Working fluid	Compressed air	
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)	
Min. working pressure MPa	0.1 (≈ 15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)	
Ambient temperature $^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing)	
Port size	M5	
Stroke tolerance mm	$^{+1.0}$ $_0$	
Working piston speed mm/s	50 to 750	
Cushion	Rubber cushion	
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)	
Allowable absorbed energy J	0.041	0.162

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\varnothing 10$	15/30/45/60	200	5
$\varnothing 16$		260	

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

Min. stroke with switch

	1		2	
	Sketch			
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Min. stroke	5 mm		10 mm	28 mm
	3			
	Sketch			
	Different surface mounting	Same surface mounting		
Min. stroke	38 mm	54 mm		

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC \pm 10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 μ A or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed	
	T0H/T0V	T5H/T5V
Applications	For programmable controller, relay	
Load voltage	12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA
Indicator	LED (Lit when ON)	
Leakage current	0 mA	
Weight g	1 m:18 3 m:49 5 m:80	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

(Unit: g)

Type	Stroke Bore size (mm)	No switch				With switch (2 switches)				Switch mounting bracket	Switch weight (per switch)
		15st	30st	45st	60st	15st	30st	45st	60st		
SCPD3-Z	ϕ 10	36	41	46	51	84	89	94	99	2	Refer to the weight in the switch specifications.
	ϕ 16	66	74	82	90	114	122	130	138		

Mounting bracket weight

(Unit: g)

Applicable bore size	Mounting		
	Foot LS	Flange FA	Clevis CB
ϕ 10	6	4	4
ϕ 16	15	12	10

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
ϕ 10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ϕ 16	Push	20.1	30.2	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²	1.61x10 ²	1.81x10 ²	2.01x10 ²
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCPD3-Z Series

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

How to order

No switch (without magnet for switch)

SCPD3-Z - **LS** - **10** - **15** - **I**

With switch (built-in magnet for switch)

SCPD3-ZL - **LS** - **10** - **15** - **T2H** - **R** - **I**

A Mounting

B Bore size

C Stroke

D Switch model No.

E Switch quantity

F Accessory
*2

⚠ Precautions for model No. selection

- *1: Refer to page 50 for the min. stroke with switch.
- *2: "I" and "Y" cannot be selected together.
- *3: Refer to Ending Page 85 for custom specifications of rod end form.
- *4: Refer to page 6 for combination of variations/options.

[Example of model No.]

SCPD3-ZL-00-10-15-T2H-R-I

Model: Pencil shaped cylinder Double acting with speed controller

- A** Mounting : Basic
- B** Bore size : $\phi 10$ mm
- C** Stroke : 15 mm
- D** Switch model No. : Proximity switch T2H
- E** Switch quantity : 1 included (on rod side)
- F** Accessory : Rod eye

Code	Description
A Mounting	
00	Basic
LS	Axial foot (one side) (rod side)
FA	Rod side flange
CB	Clevis bracket (pin and snap ring included)

B Bore size (mm)	
10	$\phi 10$
16	$\phi 16$

C Stroke (mm)		
Bore size	Stroke *1	Custom stroke
$\phi 10$	5 to 200	In 1 mm increments
$\phi 16$	5 to 260	

D Switch model No.						
Axial lead wire	Radial lead wire	Reed Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	●	●	●	1-color LED	2-wire
T5H*	T5V*	●	●	●	No indicator lamp	
T2H*	T2V*	Proximity	●	●	1-color LED	2-wire
T3H*	T3V*		●	●	LED	3-wire
T2WH*	T2WV*		●	●	2-color LED	2-wire
T3WH*	T3WV*	●	●	LED	LED	3-wire

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

E Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

F Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring included)

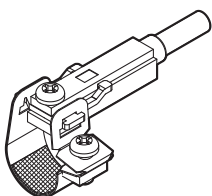
How to order switch

● Switch body + mounting bracket set

SCPD3 - **T0H** - **6**

Bore size
(Item **B** above)

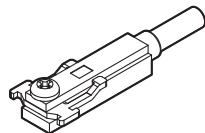
Switch model No.
(Item **D** above)



● Switch body (with fixing bracket)

SCPD3 - **T0H**

Switch model No.
(Item **D** above)

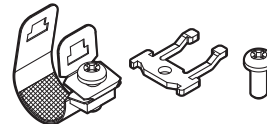


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - **TS** - **6**

Bore size
(Item **B** above)



When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - **T** - **6**

Bore size
(Item **B** above)



When 20 pcs or more are ordered, they will be packed together.

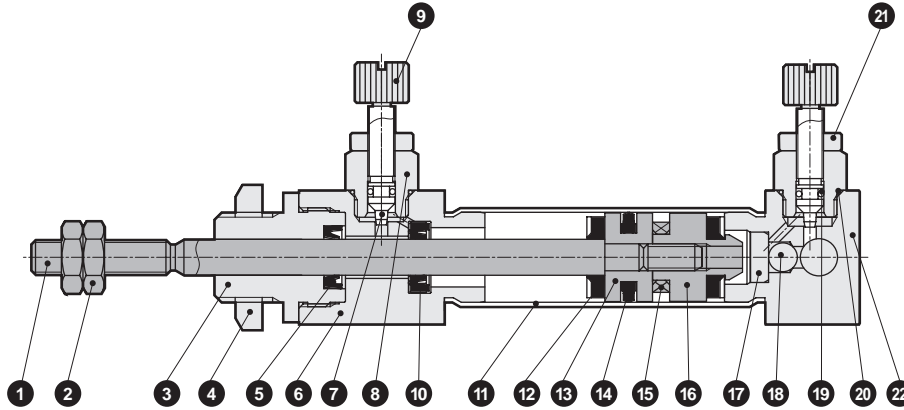
How to order mounting bracket

Bore size (mm)	$\phi 10$	$\phi 16$
Mounting bracket		
Foot (LS)	P2-LS-10M	P2-LS-16M
Flange (FA)	P2-FA-10M	P2-FA-16M

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

Internal structure and parts list

● SCPD3-Z



Cannot be disassembled

* This product is a caulked and cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		12	Cushion rubber	Urethane rubber	
2	Rod nut	Steel	Nickeling	13	Piston	Aluminum alloy	
3	Rod metal	Aluminum alloy	Hard alumite	14	Piston packing	Nitrile rubber	
4	Hexagon nut	Steel	Nickeling	15	Magnet	-	With switch only
5	Rod packing	Nitrile rubber		16	Spacer	Aluminum alloy	
6	Rod cover	Aluminum alloy	Hard alumite	17	Check ball holder	Aluminum alloy	
7	Needle B	Stainless steel		18	Check ball	Urethane rubber	
8	Needle holder	Aluminum alloy	Hard alumite	19	O-ring	Nitrile rubber	
9	Knob	Aluminum alloy	Chromate	20	O-ring	Nitrile rubber	
10	Check packing	Nitrile rubber		21	Lock nut	Aluminum alloy	Chromate
11	Cylinder tube	Stainless steel		22	Head cover	Aluminum alloy	Hard alumite

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

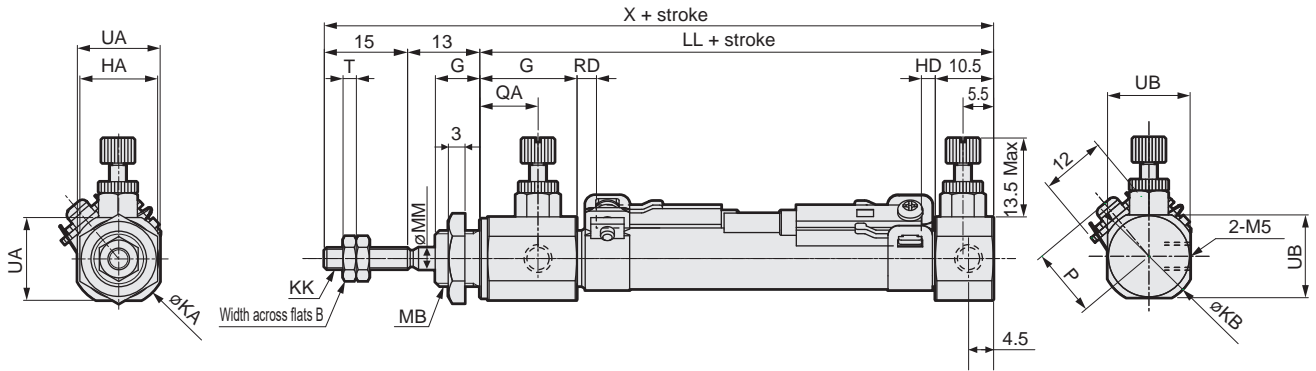
Ending

SCPD3-Z Series

Dimensions



● SCPD3-Z(L) Basic (OO)



*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

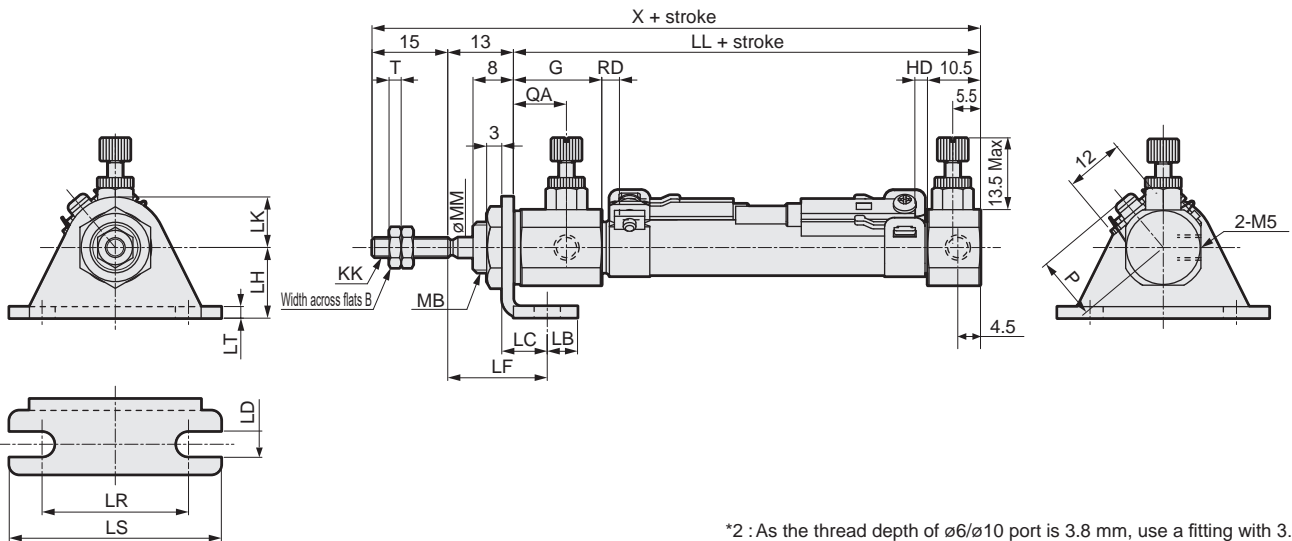
*3 : For the dimensions of the accessories, refer to page 15.

*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

Code		Basic (00) Basic dimensions													
Bore size (mm)		B	G	HA	KA	KB	KK	LL	MB	MM	QA	T	UA	UB	X
$\phi 10$		7	17.5	14	17.5	17.5	M4	52.5	M10x1.0	4	10.5	2.4	15	15	80.5
$\phi 16$		8	18	17	21.5	21.5	M5	52.5	M12x1.0	5	11	3.2	18	18	80.5

Code		With switch				
Bore size (mm)		T0, T5, T2, T3		T2W, T3W		P
		RD	HD	RD	HD	
$\phi 10$		3.5	2.5	5.5	4	13.5
$\phi 16$		2	3.5	3.5	5	17

● Axial foot (one side) (LS)



*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

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

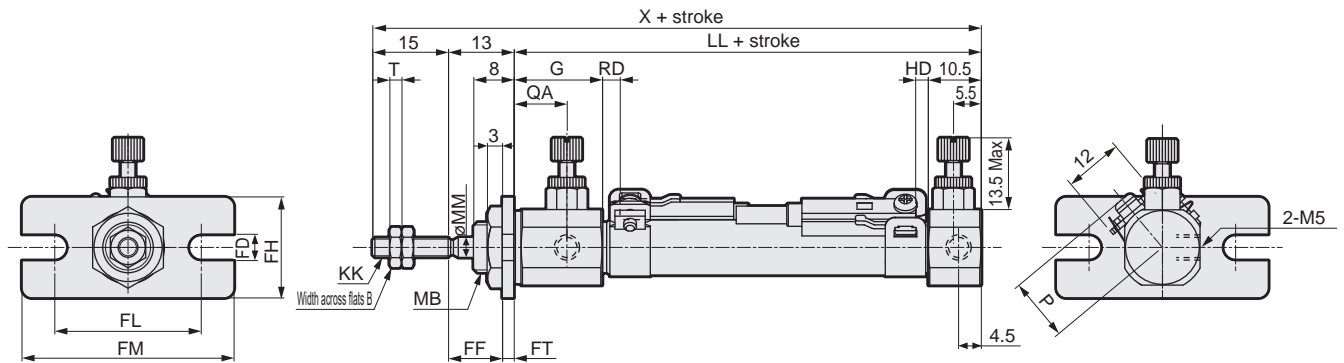
*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

Code		Axial foot (single) (LS) Basic dimensions							Mounting dimensions									
Bore size (mm)		B	G	KK	MB	MM	QA	T	X	LB	LC	LD	LF	LL	LH	LK	LR	LS
$\phi 10$		7	17.5	M4	M10x1.0	4	10.5	2.4	80.5	6	9	5.2	19.7	52.5	14	10	29	42
$\phi 16$		8	18	M5	M12x1.0	5	11	3.2	80.5	6	9	5.2	19.7	52.5	14	10	29	42

Code		With switch					
Bore size (mm)		LT	T0, T5, T2, T3		T2W, T3W		P
			RD	HD	RD	HD	
$\phi 10$		2.3	3.5	2.5	5.5	4	13.5
$\phi 16$		2.3	2	3.5	3.5	5	17

Dimensions

● Rod side flange (FA)



*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

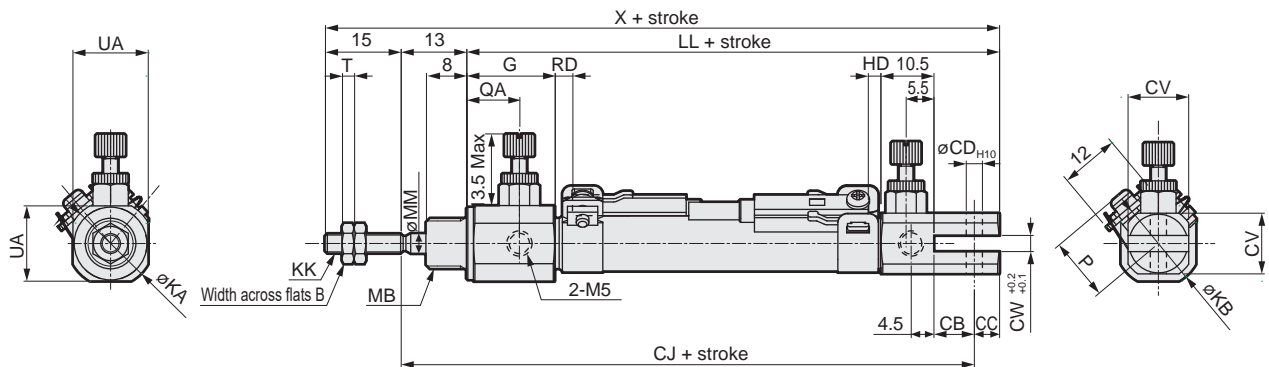
*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

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

Code	Rod side flange (FA) Basic dimensions										Mounting dimensions				
	B	G	KK	LL	MB	MM	QA	T	X	FD	FF	FH	FL	FM	
$\phi 10$	7	17.5	M4	52.5	M10x1.0	4	10.5	2.4	80.5	5.2	10.7	20	29	42	
$\phi 16$	8	18	M5	52.5	M12x1.0	5	11	3.2	80.5	5.2	10.7	20	29	42	

Code	Bore size (mm)	FT	With switch					
			T0, T5, T2, T3			T2W, T3W		P
			RD	HD	RD	HD		
$\phi 10$	2.3	3.5	2.5	5.5	4	13.5		
$\phi 16$	2.3	2	3.5	3.5	5	17		

● Clevis bracket (CB)



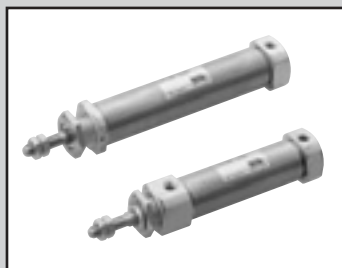
*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

*2 : As the thread depth of $\phi 6/\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

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

Code	Clevis bracket (CB) Basic dimensions											Mounting dimensions		
	B	G	KA	KB	KK	LL	MB	MM	QA	T	UA	CA	CB	CC
$\phi 10$	7	17.5	17.5	17.5	M4	65.5	M10x1.0	4	10.5	2.4	15	93.5	8	5
$\phi 16$	8	18	21.5	21.5	M5	72.5	M12x1.0	5	11	3.2	18	100.5	10	10

Code	Bore size (mm)	CD	CJ	CV	CW	With switch				
						T0, T5, T2, T3		T2W, T3W		P
						RD	HD	RD	HD	
$\phi 10$	3.2	73.5	15	3.2	3.5	2.5	5.5	4	13.5	
$\phi 16$	5	75.5	18	6.5	2	3.5	3.5	5	17	



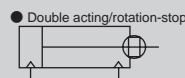
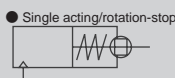
Pencil shaped cylinder

Single acting/push/rotation-stop

Double acting/rotation-stop

● Bore size: $\varnothing 10/\varnothing 16$

JIS symbol



SCPS3-M Series

SCPD3-M Series



Specifications

Item	SCPS3-M SCPS3-ML		SCPD3-M SCPD3-ML	
	$\varnothing 10$	$\varnothing 16$	$\varnothing 10$	$\varnothing 16$
Bore size mm	$\varnothing 10$	$\varnothing 16$	$\varnothing 10$	$\varnothing 16$
Actuation	Single acting/rotation-stop		Double acting/rotation-stop	
Working fluid	Compressed air			
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)			
Min. working pressure MPa	0.15 (≈ 22 psi, 1.5 bar)		0.1 (≈ 15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)			
Ambient temperature $^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)			
Port size	M5			
Stroke tolerance mm	+1.0 0			
Working piston speed mm/s	50 to 750			
Cushion	Rubber cushion			
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)			
Non-rotating accuracy ^(Note)	$\pm 2^{\circ}$			
Allowable absorbed energy J	0.041	0.162	0.041	0.162

(Note): Value for 0 mm stroke. (excluding sag of piston rod)

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\varnothing 10$	15/30/45/60	120	5
$\varnothing 16$		200	
$\varnothing 10$		260	
$\varnothing 16$			

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

Min. stroke with switch

	1		2	
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Sketch				
Min. stroke	5 mm		10 mm	28 mm
	3			
	Different surface mounting	Same surface mounting		
Sketch				
Min. stroke	38 mm	54 mm		

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed	
	T0H/T0V	T5H/T5V
Applications	For programmable controller, relay	For programmable controller, relay, IC circuit (without indicator lamp), serial connection
Load voltage	12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA
Indicator	LED (Lit when ON)	No indicator lamp
Leakage current	0 mA	0 mA
Weight g	1 m:18 3 m:49 5 m:80	1 m:18 3 m:49 5 m:80

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Single acting spring load (SCPS3-M)

(Unit: N)

Bore size (mm)	At stroke of 0 mm	At full stroke operation
ø10	3.2	7.5
ø16	6.4	14.9

Cylinder weight

(Unit: g)

Type	Item Bore size (mm)	Mounting bracket weight			Product weight when at 0 mm stroke	Additional weight per 10 mm stroke	Switch weight (per switch)	Mounting bracket weight
		Foot LS	Flange FA	Clevis CB				
SCPS3-M	ø10	6	4	4	20	4	Refer to the weight in the switch specifications.	2
	ø16	15	12	10	35	8		
SCPD3-M	ø10	6	4	4	21	2		
	ø16	15	12	10	42	3		

(Example) Product weight of SCPS3-ML-LS-10-30-T0H-D

- Mounting bracket weight (foot) 6 g
- Product weight for 0 mm stroke 20 g
- Additional weight for 30 mm stroke..... 4x30/10=12 g
- Switch weight 2x(18+2)=40 g
- Product weight 6+20+12+40=78 g

Theoretical thrust table

● SCPS3-M

(Unit: N)

Bore size (mm)	Working pressure MPa									
	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø10	7.01	9.34	17.2	25.0	32.9	40.8	48.6	56.5	64.3	72.2
ø16	21.5	28.7	48.8	68.9	89.0	1.09x10 ²	1.29x10 ²	1.49x10 ²	1.69x10 ²	1.90x10 ²

● SCPD3-M

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
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²	1.61x10 ²	1.81x10 ²	2.01x10 ²
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCP_D3-M Series

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

How to order

No switch (without magnet for switch)

SCPD3-M - **LS** - **10** - **15** - **O** - **I**

With switch (built-in magnet for switch)

SCPD3-ML - **LS** - **10** - **15** - **O** - **T2H** - **R** - **I**

A Model No.

B Mounting

C Bore size

D Stroke

E Head side port direction
*3

F Switch model No.
*2, *6
* indicates the lead wire length.

G Switch quantity

H Accessory
*4

! Precautions for model No. selection

- *1 : Refer to page 56 for the min. stroke with switch.
- *2 : Magnet is not built into the type without switch.
- *3 : The "CB" mounting is not available when the port direction is "O" (axial direction).
- *4 : "I" and "Y" cannot be selected together.
- *5 : Copper and PTFE free as standard.
- *6 : Switches are shipped with the product.

[Example of model No.]

SCPS3-ML-LS-10-15-O-T2H-R-I

Model: Pencil shaped cylinder rotation-stop

- A** Model No. : Single acting/push rotation-stop
- B** Mounting : Axial foot (single) (rod side)
- C** Bore size : $\phi 10$ mm
- D** Stroke : 15 mm
- E** Head side port direction: Axial direction
- F** Switch model No. : Proximity switch T2H, lead wire 1 m
- G** Switch quantity : 1 on rod side
- H** Accessory : Rod eye

How to order mounting bracket

Bore size (mm)	$\phi 10$	$\phi 16$
Mounting bracket		
Foot (LS)	P2-LS-10M	P2-LS-16M
Flange (FA)	P2-FA-10M	P2-FA-16M

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

Code	Description
A Model No.	
SCPS3-M	Single acting push/rotation-stop
SCPD3-M	Double acting/rotation-stop

B Mounting	
00	Basic
LS	Axial foot (one side) (rod side)
FA	Rod side flange
CB	Clevis bracket (pin and snap ring included)

C Bore size (mm)	
10	$\phi 10$
16	$\phi 16$

D Stroke (mm)			
Bore size	Stroke *1	Available Stroke	Custom stroke
$\phi 10$	5 to 200 (120)	210(120)	In 1 mm increments
$\phi 16$	5 to 260 (120)	270(120)	

* The value in () is for SCPS3-M.

E Head side port direction	
Blank	Vertical
O	Axial direction

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	LED	3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T3WH*	T3WV*			●	LED	3-wire

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

H Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring included)
B1	Eye bracket
B2	Clevis bracket

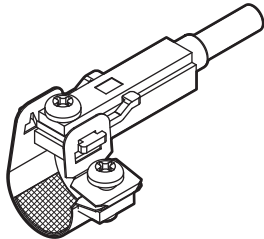
How to order switch

- Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item C on page 58)

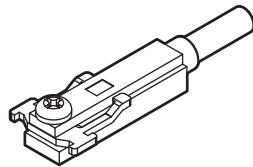
Switch model No.
(Item F on page 58)



- Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item F on page 58)

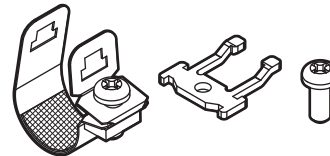


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

- Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item C on page 58)

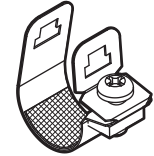


When 20 pcs or more are ordered, they will be packed together.

- Mounting bracket set

SCPD3 - T - 6

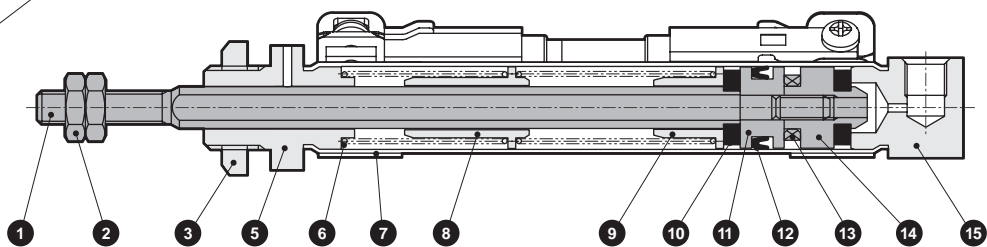
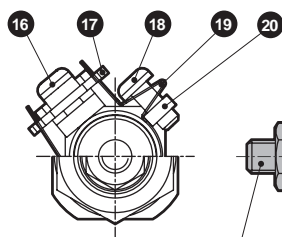
Bore size
(Item C on page 58)



When 20 pcs or more are ordered, they will be packed together.

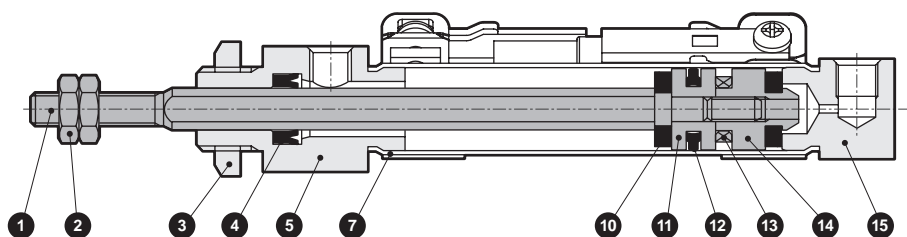
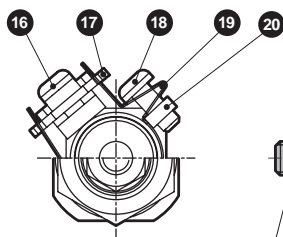
Internal structure and parts list

- Single acting/rotation-stop
SCPS3-M
SCPS3-ML (with switch)



Cannot be disassembled

- Double acting/rotation-stop
SCPD3-M
SCPD3-ML (with switch)



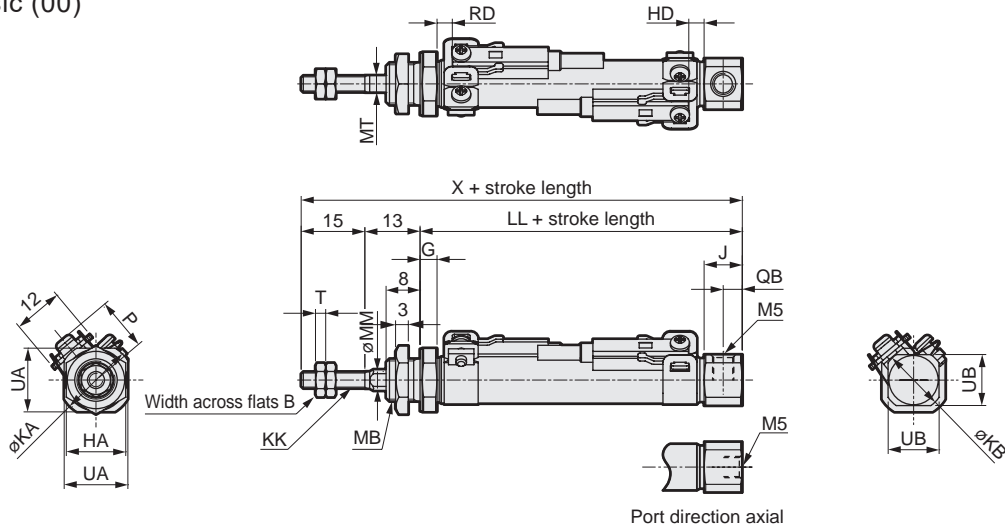
- This product cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		11	Piston	Aluminum alloy	
2	Rod nut	Steel	Nickeling	12	Piston packing	Nitrile rubber	
3	Hexagon nut	Steel	Nickeling	13	Magnet	-	With switch only
4	Rod packing	Nitrile rubber		14	Spacer	Aluminum alloy	
5	Rod cover	Aluminum alloy	Hard alumite	15	Head cover	Aluminum alloy	Hard alumite
6	Coil spring	Piano wire	Zinc chromate	16	Phillips pan head machine screw	Stainless steel	With switch only
7	Cylinder tube	Stainless steel		17	Fixing bracket	Stainless steel	With switch only
8	Spring holder (A)	Aluminum alloy		18	Phillips pan head machine screw	Stainless steel	With switch only
9	Spring holder (B)	Aluminum alloy		19	Band	Stainless steel	With switch only
10	Cushion rubber	Urethane rubber		20	Fixing nut	Stainless steel	With switch only

SCPS3-M Series

Dimensions

● SCPS3-M (L) Basic (00)

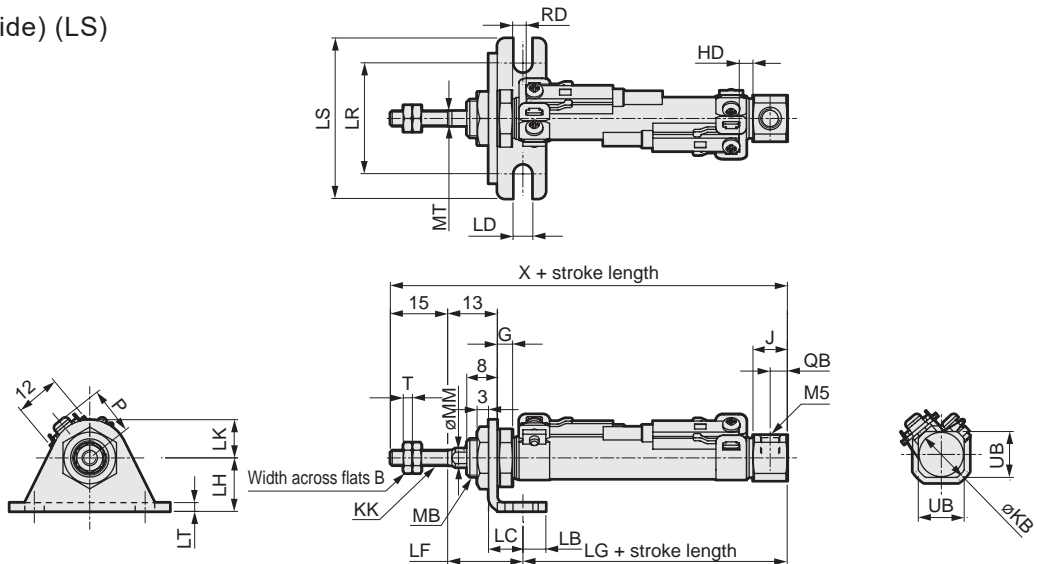


- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions																										
	Bore size (mm)		B	G	HA	J	KA	KB	KK	LL								MB	MM	MT	QB	T	UA	UB	X		
	$\phi 10$	$\phi 16$	7	4	14	9	17.5	14.5	M4	47	52	62	67	77	82	92	97	M10x1.0	5	4	4.5	2.4	15	12	75	80	90
			8	4	17	9	21.5	21.5	M5	47	52	62	67	77	82	92	97	M12x1.0	6	5	4.5	3.2	18	18	75	80	90

Code	With switch																									
	Bore size (mm)		X										T0, T5, T2, T3					T2W, T3W					P			
	$\phi 10$	$\phi 16$											RD					RD					HD			
			Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	HD	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	HD	P
			95	105	110	120	125	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
			95	105	110	120	125	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

● Axial foot (one side) (LS)



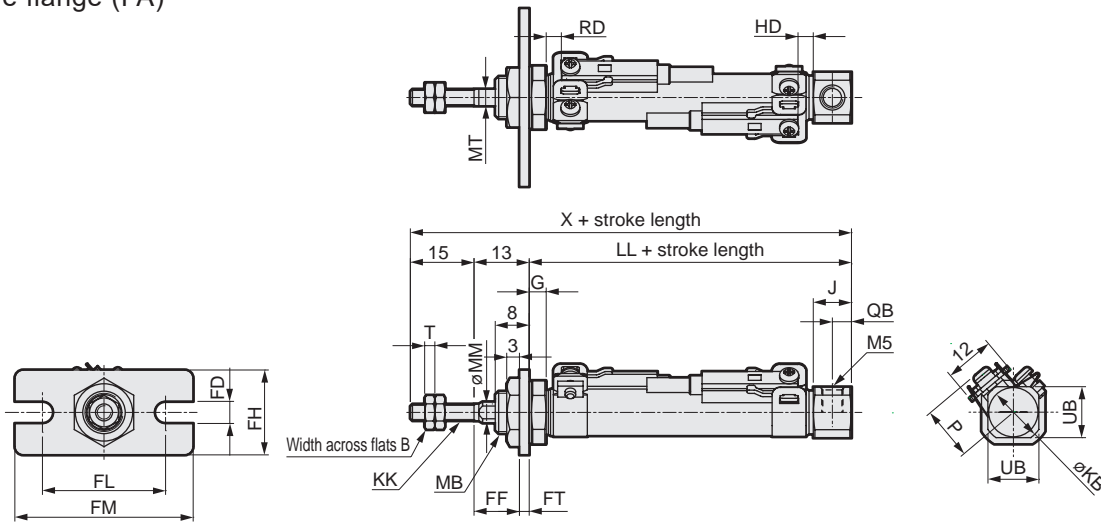
- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

Code	Axial direction (LS) Basic dimensions															Mounting dimensions													
	Bore size (mm)		B	G	J	KB	KK	MB	MM	MT	QB	T	UB	X					LB	LC	LD	LF	LG						
	$\phi 10$	$\phi 16$	7	4	9	14.5	M4	M10x1.0	5	4	4.5	2.4	12	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	6	9	5.2	19.7	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60
			8	4	9	21.5	M5	M12x1.0	6	5	4.5	3.2	18	75	80	90	95	105	110	120	125	6	9	5.2	19.7	40.3	45.3	55.3	60.3

Code	With switch																													
	Bore size (mm)		LG					LH	LK	LR	LS	LT	T0, T5, T2, T3					T2W, T3W					P							
	$\phi 10$	$\phi 16$											RD					RD					HD							
			Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120						15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	HD	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	HD	P
			70.3	75.3	85.3	90.3	14	10	29	42	2.3	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
			70.3	75.3	85.3	90.3	14	10	29	42	2.3	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

Dimensions

● Rod side flange (FA)

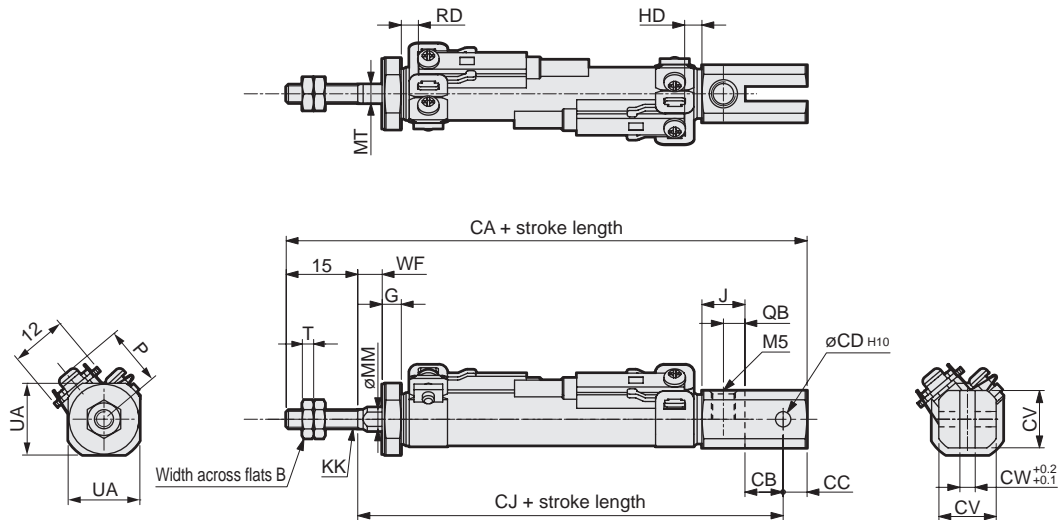


- *1: The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2: As the thread depth of $\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3: For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA) Basic dimensions																											
Bore size (mm)	B	G	J	KB	KK	LL											MB	MM	MT	QB	T	UB	X					
						15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	15 or less	Over 15 to 30	Over 30 to 45							Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	
$\phi 10$	7	4	9	14.5	M4	47	52	62	67	77	82	92	97	M10x1.0	5	4	4.5	2.4	12	75	80	90	95	105	110			
$\phi 16$	8	4	9	21.5	M5	47	52	62	67	77	82	92	97	M12x1.0	6	5	4.5	3.2	18	75	80	90	95	105	110			

Code	Mounting dimensions												With switch														
Bore size (mm)	X		FD	FF	FH	FL	FM	FT	T0, T5, T2, T3						T2W, T3W						HD	P					
	Over 90 to 105	Over 105 to 120							RD			HD			RD			RD									
	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120											
$\phi 10$	120	125	5.2	10.7	20	29	42	2.3	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
$\phi 16$	120	125	5.2	10.7	20	29	42	2.3	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

● Clevis bracket (CB) with pin



- *1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- *2 : As the thread depth of $\phi 10$ port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- *3 : For the dimensions of the accessories, refer to page 15.

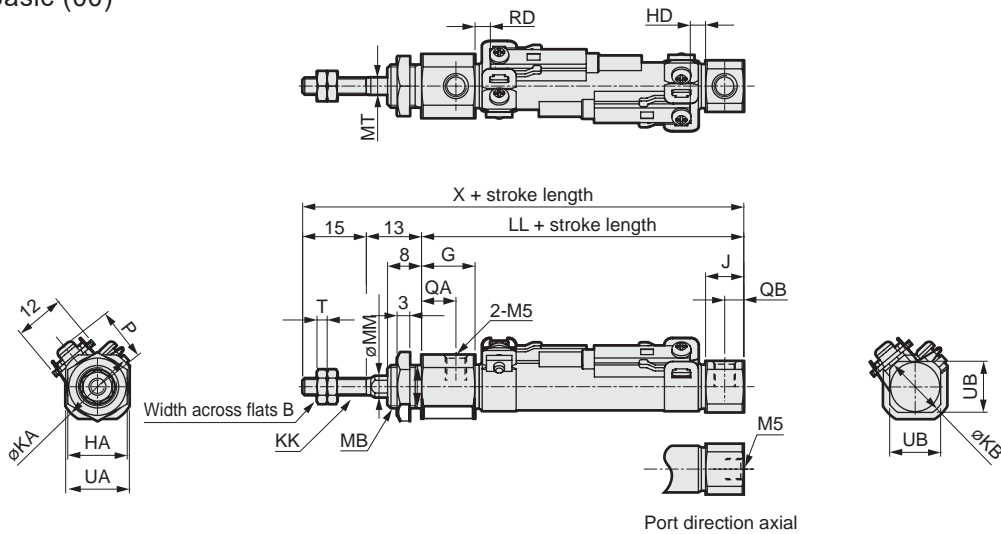
Code	Clevis bracket (CB) Basic										Mounting dimensions																		
Bore size (mm)	B	G	J	KK	MM	MT	QB	T	UA	CA											CB	CC	CD	CJ					
										15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	15 or less	Over 15 to 30	Over 30 to 45				Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	
$\phi 10$	7	4	9	M4	5	4	4.5	2.4	12	80	92	104	116	128	140	152	164	8	5	3.2	60	72	84	96	108	120	132	144	
$\phi 16$	8	4	9	M5	6	5	4.5	3.2	18	87	99	111	123	135	147	159	171	10	10	5	62	74	86	98	110	122	134	146	

Code	With switch																												
Bore size (mm)	CV	CW	WF						T0, T5, T2, T3						T2W, T3W						HD	P							
			RD			HD			RD			RD																	
	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	Over 105 to 120													
$\phi 10$	12	3.2	5	12	14	21	23	30	32	39	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
$\phi 16$	18	6.5	5	12	14	21	23	30	32	39	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17.0

SCPD3-M Series

Dimensions

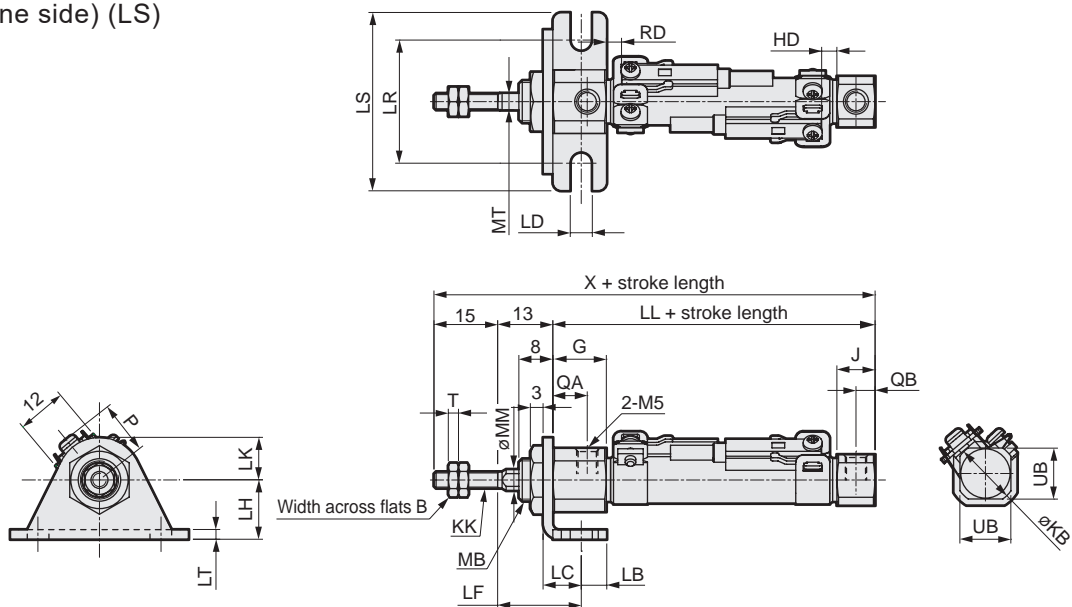
● SCPD3-M (L) Basic (00)



*1: For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions													
	B	HA	G	J	KA	KB	KK	LL	MB	MM	MT	QA	QB	T
Bore size (mm)														
ø10	7	14	12.5	9	17.5	14.5	M4	46	M10x1.0	5	4	8	4.5	2.4
ø16	8	17	13.0	9	21.5	21.5	M5	46	M12x1.0	6	5	8.5	4.5	3.2
Code	With switch													
	UA	UB	X	T0, T5, T2, T3	T2W, T3W	P								
Bore size (mm)														
ø10	15	12	74	RD	HD	RD	HD	13.5						
ø16	18	18	74	2	3.5	3.5	5	17.0						

● Axial foot (one side) (LS)

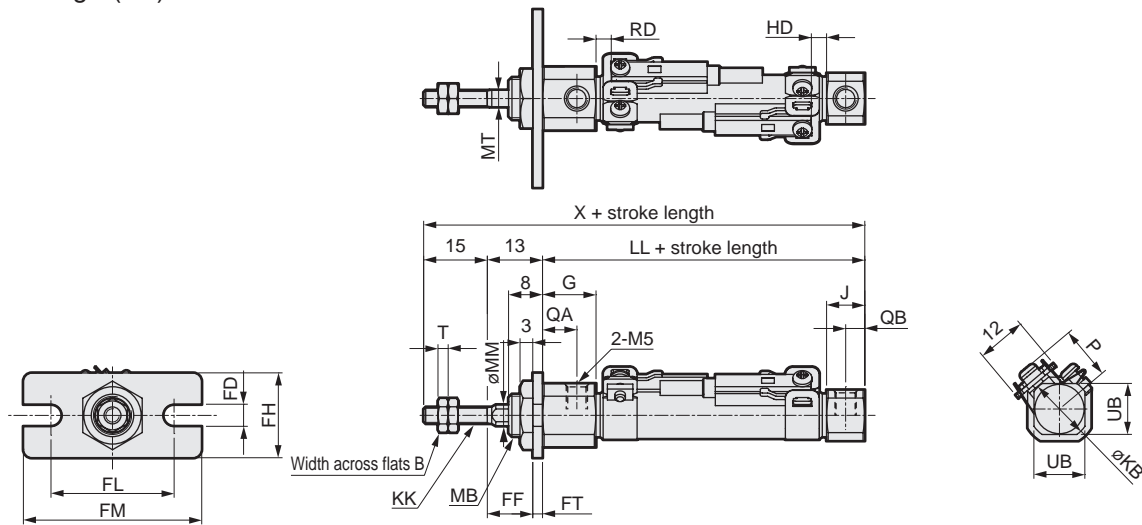


*1: For the dimensions of the accessories, refer to page 15.

Code	Axial foot (single) (LS) Basic dimensions													Mounting dimensions		
	B	G	J	KB	KK	MB	MM	MT	QA	QB	T	UB	X	LD	LH	LB
Bore size (mm)																
ø10	7	12.5	9	14.5	M4	M10x1.0	5	4	8	4.5	2.4	12	74	5.2	14	6
ø16	8	13.0	9	21.5	M5	M12x1.0	6	5	8.5	4.5	3.2	18	74	5.2	14	6
Code	With switch															
	LT	LC	LK	LR	LS	LF	LL	T0, T5, T2, T3	T2W, T3W	P						
Bore size (mm)																
ø10	2.3	9	10	29	42	19.7	46	RD	HD	RD	HD	13.5				
ø16	2.3	9	10	29	42	19.7	46	2	3.5	3.5	5	17.0				

Dimensions

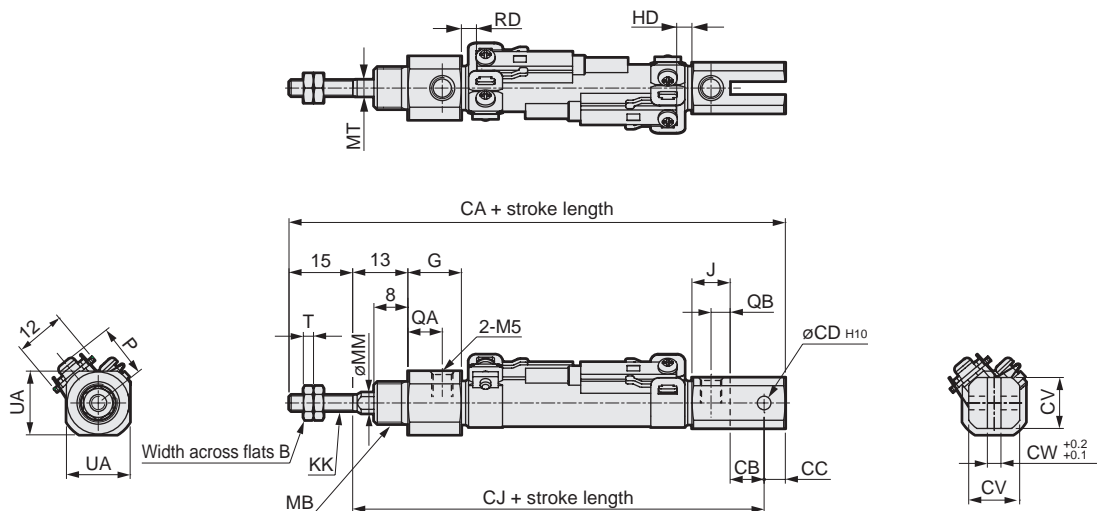
● Rod side flange (FA)



*1: For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA) Basic dimensions													
Bore size (mm)	B	G	J	KB	KK	LL	MB	MM	MT	QA	QB	T	UB	X
ø10	7	12.5	9	14.5	M4	46	M10x1.0	5	4	8.0	4.5	2.4	12	74
ø16	8	13.0	9	21.5	M5	46	M12x1.0	6	5	8.5	4.5	3.2	18	74
Code	Mounting dimensions						With switch							
Bore size (mm)	FH	FD	FT	FL	FM	FF	T0, T5, T2, T3		T2W, T3W		P			
							RD	HD	RD	HD				
ø10	20	5.2	2.3	29	42	10.7	3.5	2.5	5.5	4	13.5			
ø16	20	5.2	2.3	29	42	10.7	2	3.5	3.5	5	17.0			

● Clevis bracket (CB) with pin



*1: For the dimensions of the accessories, refer to page 15.

Code	Clevis bracket (CB) Basic dimensions												Mounting dimensions		
Bore size (mm)	B	G	J	KB	KK	MM	MB	MT	QA	QB	T	UA	CV	CW	CD
ø10	7	12.5	9	M4	5	M10x1.0	4	8	4.5	2.4	15	12	3.2	3.2	
ø16	8	13.0	9	M5	6	M12x1.0	5	8.5	4.5	3.2	18	18	6.5	5	
Code							With switch								
Bore size (mm)	CB	CC	CJ	CA	T0, T5, T2, T3		T2W, T3W		P						
					RD	HD	RD	HD							
ø10	8	5	67	87	3.5	2.5	5.5	4	13.5						
ø16	10	10	69	94	2	3.5	3.5	5	17.0						



Pencil shaped cylinder double acting/high load

SCPD3-K Series

- Port size: M5
- Bore size: $\phi 6/\phi 10/\phi 16$

JIS symbol



Made to order



Specifications

1 MPa = 10 bar

Item	SCPD3-K SCPD3-KL		
	$\phi 6$	$\phi 10$	$\phi 16$
Bore size mm	$\phi 6$	$\phi 10$	$\phi 16$
Actuation	Double acting/high load		
Working fluid	Compressed air		
Max. working pressure MPa	1.0 (≈ 150 psi, 10 bar)		
Min. working pressure MPa	0.15 (≈ 22 psi)	0.1 (≈ 15 psi, 1 bar)	
Proof pressure MPa	1.6 (≈ 230 psi, 16 bar)		
Ambient temperature $^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing)		
Port size	M5		
Stroke tolerance mm	+1.0 0		
Working piston speed mm/s	50 to 750		
Cushion	Rubber cushion		
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)		
Allowable absorbed energy J	0.012	0.041	0.162

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 6$	15/30/45/60	100	5
$\phi 10$		200	
$\phi 16$		260	

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

Min. stroke with switch

	1		2	
	Sketch			
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Min. stroke	5 mm		10 mm	28 mm
	3			
	Sketch			
	Different surface mounting	Same surface mounting		
Min. stroke	38 mm	54 mm		

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed			
	T0H/T0V		T5H/T5V	
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection	
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator	LED (Lit when ON)		No indicator lamp	
Leakage current	0 mA		0 mA	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

[Unit: g]

Type	Stroke Bore size (mm)	No switch				With switch (2 switches)				Switch mounting bracket	Switch weight (per switch)
		15 st	30 st	45 st	60 st	15 st	30 st	45 st	60 st		
SCPD3-K	ø6	15	17	19	21	65	67	69	71	2	Refer to the weight in the switch specifications.
	ø10	27	30	33	36	80	83	86	89		
	ø16	64	69	74	79	118	123	128	133		

Mounting bracket weight

(Unit: g)

Applicable bore size	Mounting		
	Foot LS	Flange FA	Clevis CB
ø6	6	4	-
ø10	6	4	4
ø16	15	12	10

Allowable lateral load

[Unit: g]

Type	Bore size (mm)	Stroke			
		15 st	30 st	45 st	60 st
SCPD3-K	ø6	132	109	93	81
	ø10	338	277	234	203
	ø16	861	705	597	518

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
ø6	Push	-	4.24	5.65	8.48	11.3	14.1	17.0	19.8	22.6	25.4	28.3
	Pull	-	3.18	4.24	6.36	8.48	10.6	12.7	14.8	17.0	19.1	21.2
ø10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0	62.8	70.7	78.5
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2	52.8	59.4	66.0
ø16	Push	20.1	30.2	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²	1.61x10 ²	1.81x10 ²	2.01x10 ²
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²	1.45x10 ²	1.63x10 ²	1.81x10 ²

SCPD3-K Series

SCP*3
CMK2
CMA2
SCM
SCG
SCA2
SCS2
CKV2
CAV2/
COVPIN2
SSD2
SSG
SSD
CAT
MDC2
MVC
SMG
MSD/
MSDG
FC*
STK
SRL3
SRG3
SRM3
SRT3
MRL2
MRG2
SM-25
ShkAbs
FJ
FK
Spd
Contr
Ending

How to order

No switch (without magnet for switch)

SCPD3-K - 00 - 10 - 15 - O - I

With switch (built-in magnet for switch)

SCPD3-KL - 00 - 10 - 15 - O - T2H - R - I

Model No.

A Mounting
*1

B Bore size

C Standard stroke

D Head side port direction
*1

E Switch model No.

F Switch quantity

G Accessory
*3

⚠ Precautions for model No. selection

- *1 : The "CB" mounting is not available when the port direction is "O" (axial direction).
- *2 : Refer to page 64 for the min. stroke with switch.
- *3 : "I" and "Y" cannot be selected together.
- *4 : For the OO, LS and FA mounting, the head cover port direction can be selected from two options: perpendicular and horizontal to the axial direction.*5 : For ø6, the port size M3 is also available.
- *6 : Refer to Ending Page 85 for custom specifications of rod end form.
- *7 : Refer to page 6 for combination of variations/ options.

[Example of model No.]

SCPD3-K-00-10-15-O-T2H-R-I

Model: Pencil shaped cylinder double acting/high load

- A Mounting : Basic
- B Bore size : ø10 mm
- C Standard stroke : 15 mm
- D Head side port direction : Axial direction
- E Switch model No. : Proximity switch T2H
- F Switch quantity : 1 on rod side
- G Accessory : Rod eye

Code	Description			
A Mounting				
Bore size (ø)		6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket (pin and snap ring incl.)		●	●

B Bore size (mm)	
6	ø6
10	ø10
16	ø16

C Standard stroke (mm)		
Bore size	Stroke *2	Custom stroke
ø6	5 to 100	In 1 mm increments
ø10	5 to 200	
ø16	5 to 260	

D Head side port direction	
Blank	Vertical
O	Axial direction

E Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	LED	3-wire
T2WH*	T2WV*			●	2-color LED	2-wire
T3WH*	T3WV*			●	LED	3-wire

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

F Switch quantity	
R	1 on rod side
H	1 on head side
D	2
T	3

G Accessory				
Bore size (ø)		6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin/snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

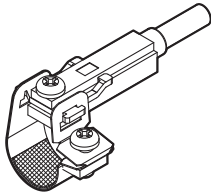
How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item B on page 66)

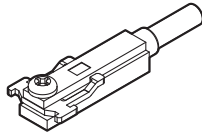
Switch model No.
(Item E on page 66)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item E on page 66)

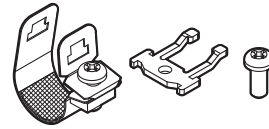


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item B on page 66)



When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - T - 6

Bore size
(Item B on page 66)



When 20 pcs or more are ordered, they will be packed together.

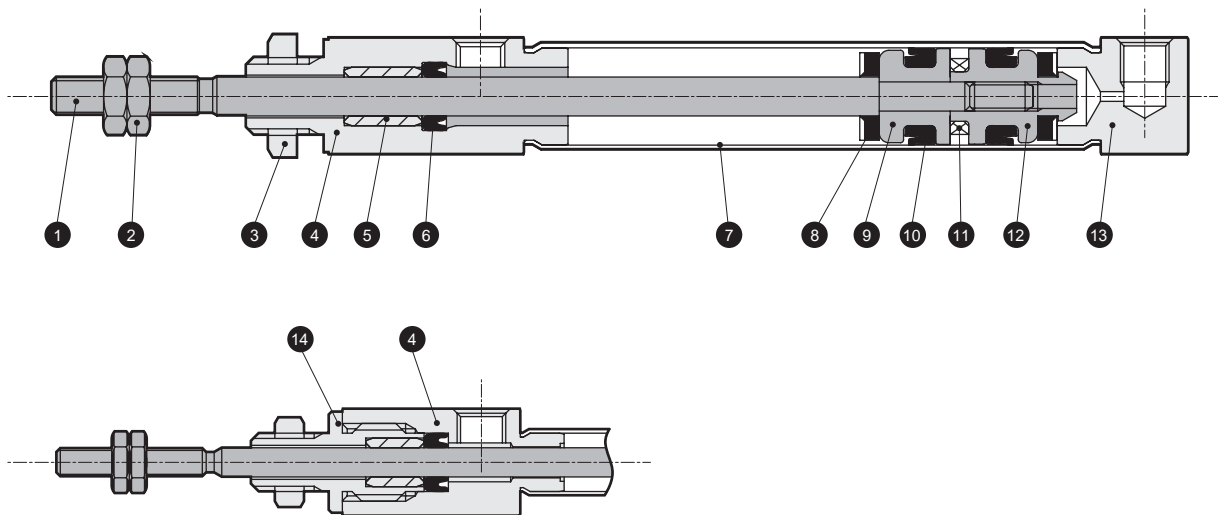
How to order mounting bracket

Bore size	ø6	ø10	ø16
Foot (LS)	P2-LS-6	P2-LS-10	P2-LS-16
Flange (FA)	P2-FA-6	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

Internal structure and parts list

● SCPD3-K(ø6)



For ø6

Cannot be disassembled

* This product is a caulked and cannot be disassembled.

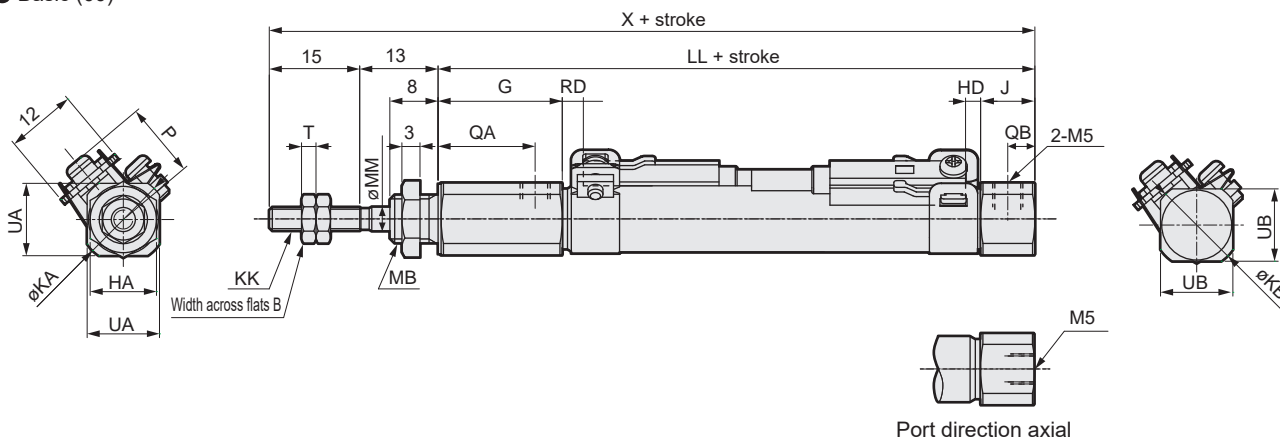
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		8	Cushion rubber	Urethane rubber	
2	Rod nut	Steel	Nickeling	9	Piston (R)	Aluminum alloy	Chromate
3	Hexagon nut	Steel	Nickeling	10	Piston packing	Nitrile rubber	
4	Rod cover	Aluminum alloy	Hard alumite	11	Magnet	-	With switch only
5	Bush	Dry bearing		12	Piston (H)	Aluminum alloy	Chromate
6	Rod packing	Nitrile rubber		13	Head cover	Aluminum alloy	Hard alumite
7	Cylinder tube	Stainless steel		14	Rod metal	Aluminum alloy	Hard alumite

SCPD3-K Series



Dimensions

● Basic (00)



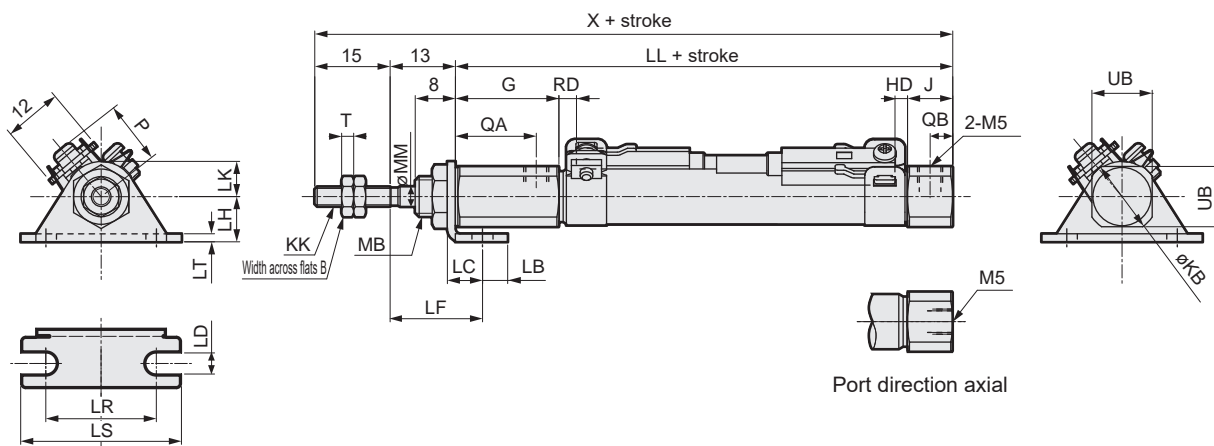
*1 : Dimensions shown in () are for when the head side port direction is "0" (axial direction).

*2: For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions															
	Bore size (mm)	B	G	HA	J	KA	KB	KK	LL	MB	MM	QA	QB	T	UA	UB
ø6	5.5	20	8	8	13.5	13.5	M3	55	M6	3	16	4	1.8	11	11(8)	83
ø10	7	20.5	11	9	14.5	14.5	M4	59	M8x1.0	4	16	4.5	2.4	12	12	87
ø16	8	21	14	9	21.5	21.5	M5	62	M10x1.0	5	16.5	4.5	3.2	18	18	90

Code	With switch				
	T0, T5, T2, T3		T2W, T3W		P
	RD	HD	RD	HD	
ø6	2	2	4	3.5	11.5
ø10	3.5	2.5	5.5	4	13.5
ø16	2	3.5	3.5	5	17

● Axial foot (one side) (LS)



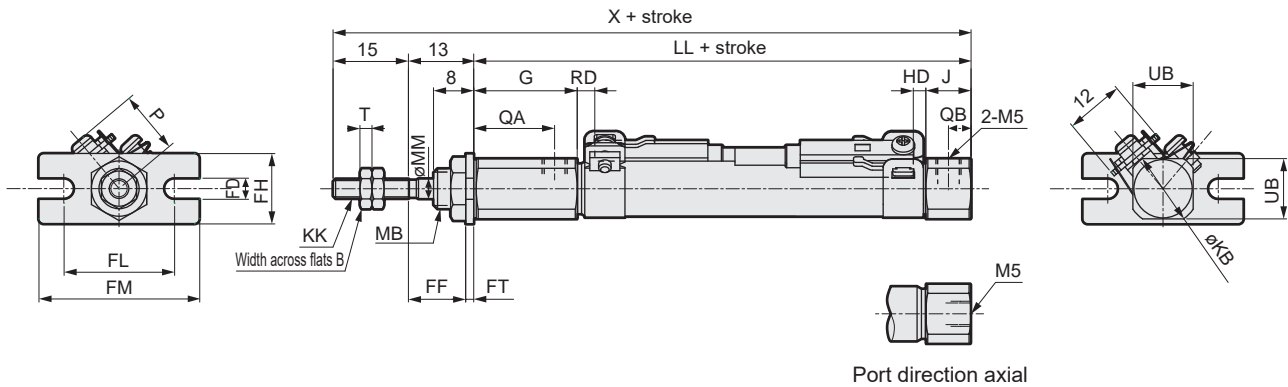
*1: For the dimensions of the accessories, refer to page 15.

Code	Axial foot (single) (LS) Basic dimensions													Mounting dimensions		
	Bore size (mm)	B	G	J	KB	KK	LL	MB	MM	QA	QB	T	UB	X	LB	LC
ø6	5.5	20	8	13.5	M3	55	M6	3	16	4	1.8	11(8)	83	5	7	4.2
ø10	7	20.5	9	14.5	M4	59	M8x1.0	4	16	4.5	2.4	12	87	5	7	4.2
ø16	8	21	9	21.5	M5	62	M10x1.0	5	16.5	4.5	3.2	18	90	6	9	5.2

Code	With switch										
	T0, T5, T2, T3		T2W, T3W		P						
	RD	HD	RD	HD							
ø6	18.4	9	7	22	32	1.6	2	2	4	3.5	11.5
ø10	18.4	9	7	22	32	1.6	3.5	2.5	5.5	4	13.5
ø16	19.7	14	10	29	42	2.3	2	3.5	3.5	5	17

Dimensions

● Rod side flange (FA)

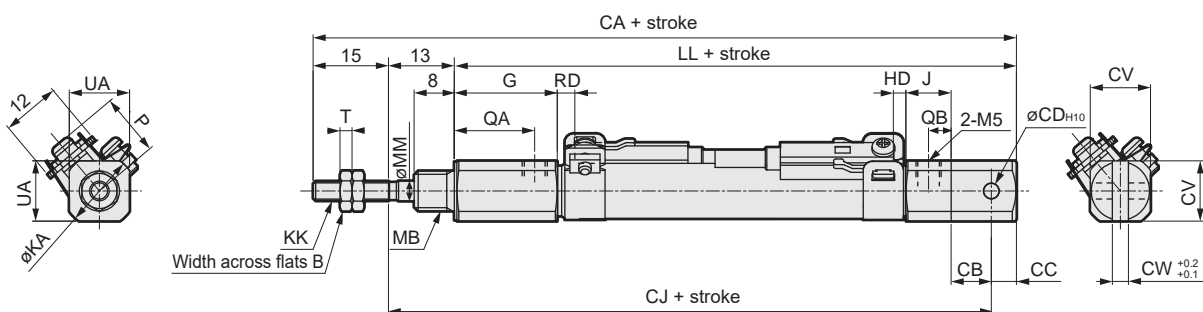


*1: For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA) Basic dimensions													Mounting dimensions		
Bore size (mm)	B	G	J	KB	KK	LL	MB	MM	QA	QB	T	UB	X	FD	FF	FH
ø6	5.5	20	8	13.5	M3	55	M6	3	16	4	1.8	11(8)	83	4.2	11.4	14
ø10	7	20.5	9	14.5	M4	59	M8x1.0	4	16	4.5	2.4	12	87	4.2	11.4	14
ø16	8	21	9	21.5	M5	62	M10x1.0	5	16.5	4.5	3.2	18	90	5.2	10.7	20

Code	With switch							
Bore size (mm)	FL	FM	FT	T0, T5, T2, T3		T2W, T3W		P
				RD	HD	RD	HD	
ø6	22	32	1.6	2	2	4	3.5	11.5
ø10	22	32	1.6	3.5	2.5	5.5	4	13.5
ø16	29	42	2.3	2	3.5	3.5	5	17

● Clevis bracket (CB)



*1: For the dimensions of the accessories, refer to page 15.

Code	Clevis bracket (CB) Basic dimensions											Mounting dimensions				
Bore size (mm)	B	G	J	KA	KK	MB	MM	QA	QB	T	UA	CA	CB	CC	CD	CJ
ø10	7	20.5	9	14.5	M4	M8x1.0	4	16	4.5	2.4	12	100	8	5	3.2	80
ø16	8	21	9	21.5	M5	M10x1.0	5	16.5	4.5	3.2	18	110	10	10	5	85

Code	With switch							
Bore size (mm)	CV	CW	T0, T5, T2, T3		T2W, T3W		P	
			RD	HD	RD	HD		
ø10	12	3.2	3.5	2.5	5.5	4	13.5	
ø16	18	6.5	2	3.5	3.5	5	17	

SCP*3
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS2
 CKV2
 CAV2/
 COVPIN2
 SSD2
 SSG
 SSD
 CAT
 MDC2
 MVC
 SMG
 MSD/
 MSDG
 FC*
 STK
 SRL3
 SRG3
 SRM3
 SRT3
 MRL2
 MRG2
 SM-25
 ShkAbs
 FJ
 FK
 Spd
 Contr
 Ending



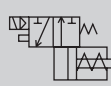
Pencil shaped cylinder single acting/with valve, double acting/with valve

SCPS3-V Series

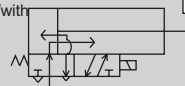
SCPD3-V Series

● Bore size: $\phi 10/\phi 16$

JIS symbol ● Single acting/
with valve



● Double acting/
with valve



Made to order



Specifications

Item	SCPS3-V SCPS3-VL		SCPD3-V SCPD3-VL	
	Bore size mm	$\phi 10$	$\phi 16$	$\phi 10$
Actuation	Single acting/with valve		Double acting/with valve	
Working fluid	Compressed air			
Max. working pressure MPa	1 (≈ 150 psi, 10 bar)		0.7 (≈ 100 psi, 7 bar)	
Min. working pressure MPa	0.15 (≈ 22 psi, 1.5 bar)			
Proof pressure MPa	1.5 (≈ 220 psi, 15 bar)		1.05 (≈ 150 psi, 10.5 bar)	
Ambient temperature $^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$) to 50 (122 $^{\circ}\text{F}$) (no freezing)			
Port size	M5			
Stroke tolerance mm	$^{+1.0}_0$ (to 60), $^{+1.5}_0$ (61 to 120)		$^{+1.0}_0$ (to 120), $^{+1.5}_0$ (121 to 200: $\phi 10$), $^{+1.5}_0$ (121 to 260: $\phi 16$)	
Working piston speed mm/s	50 to 750			
Cushion	Rubber cushion			
Lubrication	Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)			
Manual operating device	Non-locking push type			
Allowable absorbed energy J	0.041	0.162	0.041	0.162
Solenoid valve specifications				
Applicable valve series	P5132(SCPS3-V, SCPS3-VL) P5142(SCPD3-V, SCPD3-VL)			
Rated voltage V	AC100(50/60 Hz)	AC200(50/60 Hz)	DC24	
Starting current A	0.056/0.044	0.034/0.026	0.075	
Holding current A	0.028/0.022	0.017/0.013	0.075	
Power consumption W	1.8/1.4	2.1/1.6	1.8	
Voltage fluctuation range	$\pm 10\%$			
Thermal class	Class B (molded coil)			
Temperature rise $^{\circ}\text{C}$	45			

Note: Refer to "Pneumatic Valves (No. CB-023SA)" for details on valves.

Stroke

Bore size (mm)		Standard stroke (mm)		Max. stroke (mm)	Min. stroke (mm)
SCPS3-V	Single acting	$\phi 10$	15/30/45/60	120	15
		$\phi 16$			
SCPD3-V	Double acting	$\phi 10$	15/30/45/60	200	
		$\phi 16$		260	

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

Min. stroke with switch

	1		2	
	Sketch			
Min. stroke	5 mm		10 mm	28 mm
	3			
	Sketch			
Min. stroke	38 mm	54 mm		

Switch specifications

Item	2-wire proximity		3-wire proximity	
	T2H/T2V	T2WH/T2WV	T3H/T3V	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		100 mA or less	50 mA or less
Indicator	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 µA or less	
Weight g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed	
	T0H/T0V	T5H/T5V
Applications	For programmable controller, relay	For programmable controller, relay, IC circuit (without indicator lamp), serial connection
Load voltage	12/24 VDC	110 VAC
Load current	5 to 50 mA	7 to 20 mA
Indicator	LED (Lit when ON)	
Leakage current	0 mA	
Weight g	1 m:18 3 m:49 5 m:80	

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

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

Cylinder weight

(Unit: g)

Type	Stroke	No switch				With switch (2 switches)				Switch mounting bracket weight	Switch weight (per switch)
	Bore size (mm)	15st	30st	45st	60st	15st	30st	45st	60st		
SCPS3-V	ø10	89	96	103	110	139	146	153	160	2	Refer to the weight in the switch specifications.
	ø16	107	121	135	149	159	173	187	201		
SCPD3-V	ø10	131	134	138	142	181	184	188	192		
	ø16	151	156	161	166	203	208	213	218		

Mounting bracket weight

(Unit: g)

Applicable bore size	Mounting		
	Foot LS	Foot LB	Flange FA
ø10	6	12	4
ø16	15	30	12

Single acting spring load (SCPS3-V)

(Unit: N)

Bore size (mm)	At stroke of 0mm	At full stroke operation
ø10	3.2	7.5
ø16	6.4	14.9

Theoretical thrust table

● SCPS3-V

(Unit: N)

Bore size (mm)	Working pressure MPa									
	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø10	7.01	9.34	17.2	25.0	32.9	40.8	48.6	56.5	64.3	72.2
ø16	21.5	28.7	48.8	68.9	89.0	1.09x10 ²	1.29x10 ²	1.49x10 ²	1.69x10 ²	1.90x10 ²

● SCPD3-V

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa						
		0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø10	Push	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	9.90	13.2	19.8	26.4	33.0	39.6	46.2
ø16	Push	30.2	40.2	60.3	80.4	1.01x10 ²	1.21x10 ²	1.41x10 ²
	Pull	27.2	36.3	54.4	72.6	90.7	1.09x10 ²	1.27x10 ²

SCP_D3-V* Series

SCP*3 How to order

No switch (without magnet for switch)

SCPD3-V - LS - 10 - 15 - 1 - I

With switch (built-in magnet for switch)

SCPD3-VL - LS - 10 - 15 - 1 - T2H - R - I

A Model No.

B Mounting

C Bore size

D Stroke

E Valve voltage

F Switch model No.

G Switch quantity

H Option

I Accessory
*3

⚠ Precautions for model No. selection

*1 : Refer to page 70 for the min. stroke with switch.

*2 : Magnet is not built into the without switch.

*3 : "I" and "Y" cannot be selected together.

*4 : Refer to Ending Page 85 for custom specifications of rod end form.

*5 : Refer to page 6 for combination of variations/options.

*6 : For P6 (copper and PTFE free), check the delivery date as it is a made-to-order product.

*7 : Cannot be selected for single acting push (SCPS3).

[Example of model No.]

SCPD3-VL-LS-10-15-1-T2H-R-I

Model: Pencil shaped cylinder

A Model No. : Double acting/with valve and switch

B Mounting : Axial foot (single) (rod side)

C Bore size : ϕ 10 mm

D Stroke : 15 mm

E Valve voltage : 100 VAC

F Switch model No. : Proximity switch T2H, lead wire 1 m

G Switch quantity : 1 on rod side

H Option : None

I Accessory : Rod eye

Code	Description
A Model No.	
SCPS3-V	Single acting push with valve
SCPD3-V	Double acting with valve

B Mounting	
00	Basic
LS	Axial foot (one side)
LB	Two-sided axial foot *7
FA	Rod side flange

C Bore size (mm)	
10	ϕ 10
16	ϕ 16

D Stroke (mm)		
Bore size	Stroke *1	Custom stroke
ϕ 10	15 to 200(120)	In 1 mm increments
ϕ 16	15 to 260(120)	

* The value in () is for SCPS3-V.

E Valve voltage	
1	100 VAC
2	200 VAC
3	24 VDC

F Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color LED	2-wire
T5H*	T5V*		●	●	No indicator lamp	
T2H*	T2V*	Proximity		●	1-color LED	2-wire
T3H*	T3V*			●	2-color LED	3-wire
T2WH*	T2WV*			●		2-wire
T3WH*	T3WV*			●		3-wire

* Lead wire length	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

G Switch quantity	
R	1 on rod side
H	1 on head side
D	2

H Option	
P6	Copper and PTFE free (made-to-order product)

I Accessory	
I	Rod eye
Y	Rod clevis (pin and snap ring included)
B1	Eye bracket
B2	Clevis bracket

How to order mounting bracket

Bore size (mm)	ϕ 10	ϕ 16
Mounting bracket		
Foot (LS)	P2-LS-10	P2-LS-16
Foot (LB)	P2-LB-10	P2-LB-16
Flange (FA)	P2-FA-10	P2-FA-16

Note: The foot (LS) mounting bracket is provided as 1 pc./set.

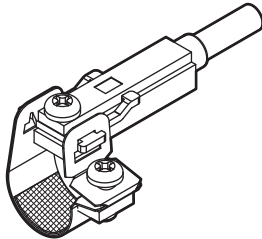
How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size
(Item ③ on page 72)

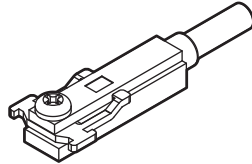
Switch model No.
(Item ⑤ on page 72)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.
(Item ⑤ on page 72)

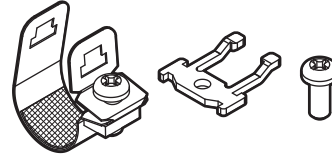


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T type standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size
(Item ③ on page 72)

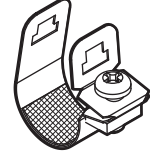


When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

SCPD3 - T - 6

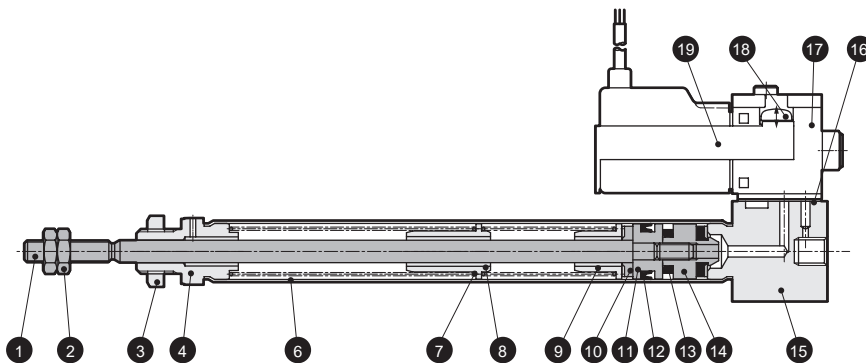
Bore size
(Item ③ on page 72)



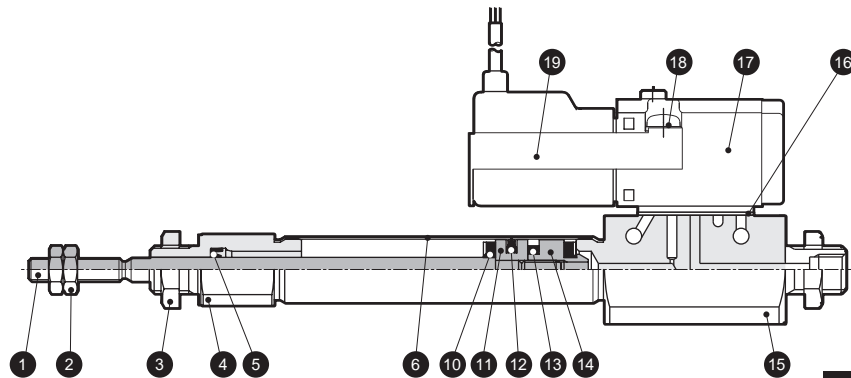
When 20 pcs or more are ordered, they will be packed together.

Internal structure and parts list (with switch)

● SCPS3-VL



● SCPD3-VL



Cannot be disassembled

* This product is caulked and cannot be disassembled.

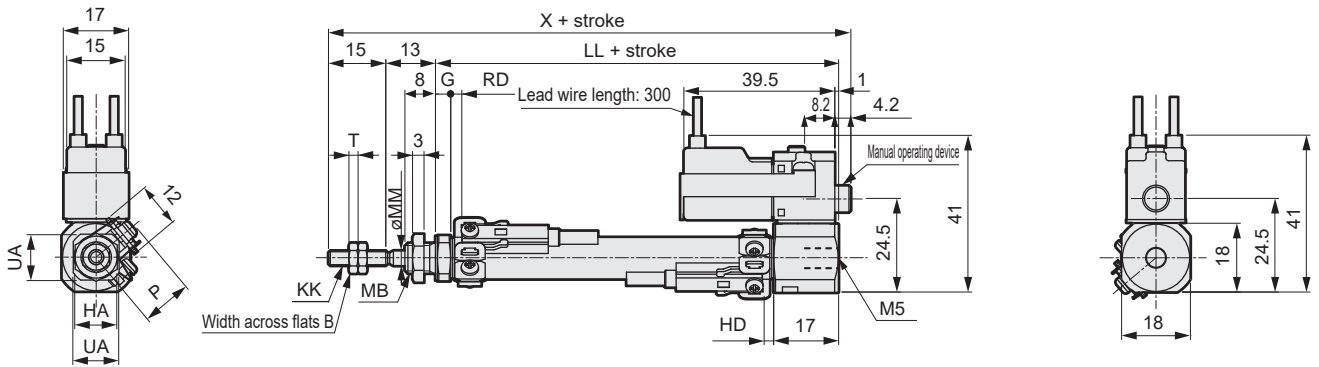
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		11	Piston	Aluminum alloy	
2	Rod nut	Steel	Nickeling	12	Piston packing	Nitrile rubber	
3	Hexagon nut	Steel	Nickeling	13	Magnet	-	With switch only
4	Rod cover	Aluminum alloy	Hard alumite	14	Spacer	Aluminum alloy	
5	Rod packing	Nitrile rubber		15	Head cover	Aluminum alloy	Hard alumite
6	Cylinder tube	Stainless steel		16	Gasket	Nitrile rubber	
7	Spring	Piano wire	Zinc chromate	17	Solenoid valve	-	3-way valve - single acting, 4-way valve - double acting
8	Collar	Aluminum alloy		18	Pan head machine screw	Steel	Zinc chromate
9	Spring holder	Aluminum alloy		19	Shielding plate	Steel	With switch only
10	Cushion rubber	Urethane rubber					

SCPS3-V_{VL} Series

Dimensions



● Basic (00)

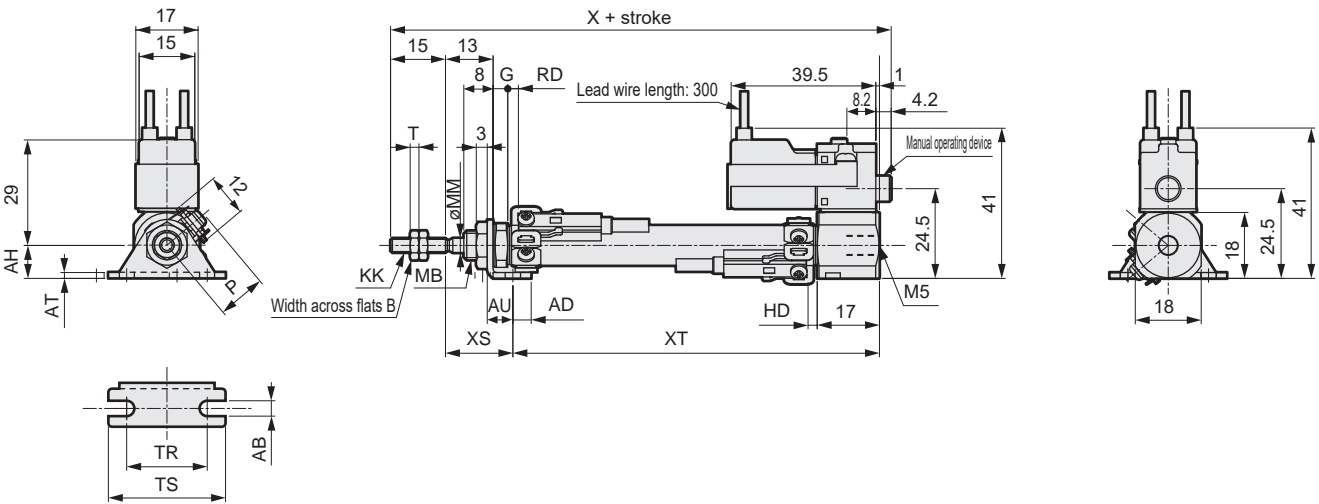


*1: For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions																							
	Bore size				LL								MB		MM		T		X					
Bore size (mm)	B	G	HA	KK	15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120					15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120
∅10	7	4	11	M4	55	60	70	75	85	90	100	105	M8x1.0	4	2.4	12	86.2	91.2	101.2	106.2	116.2	121.2	131.2	136.2
∅16	8	4	14	M5	55	60	70	75	85	90	100	105	M10x1.0	5	3.2	18	86.2	91.2	101.2	106.2	116.2	121.2	131.2	136.2

Code	With switch																		
	T0, T5, T2, T3								HD	T2W, T3W								HD	P
Bore size (mm)	RD									RD									
	15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120			
∅10	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
∅16	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17

● Axial foot (one side) (LS)



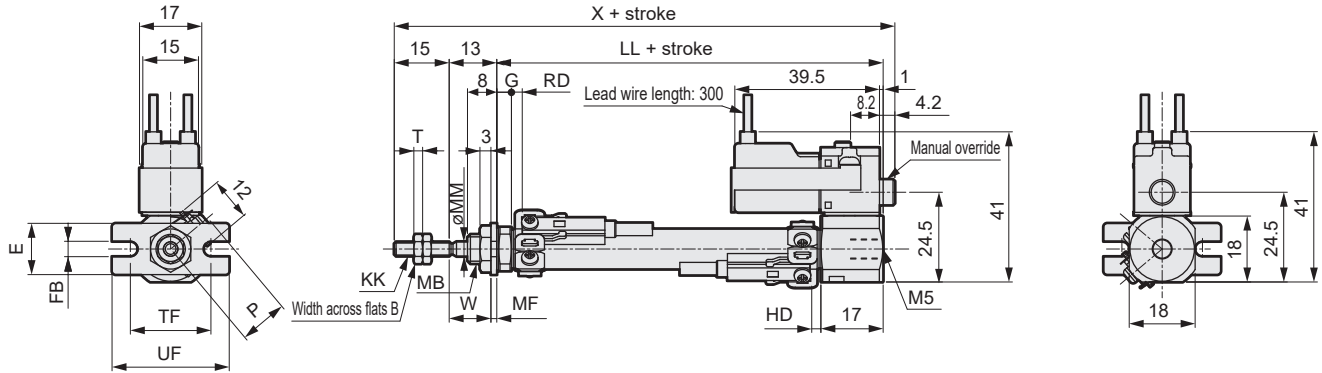
*1: For the dimensions of the accessories, refer to page 15.

Code	Axial foot (one side) (LS) Basic dimensions																	Mounting dimensions								
	Bore size				LL								MB		MM		T		X					XT		
Bore size (mm)	B	G	KK	MB	MM	T	15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120			AB	AH	AD	AU	AT	TR	TS	XS	15 or less	16 ≤ 30
∅10	7	4	M4	M8x1.0	4	2.4	86.2	91.2	101.2	106.2	116.2	121.2	131.2	136.2	4.2	9	5	7	1.6	22	32	18.4	49.6	54.6		
∅16	8	4	M5	M10x1.0	5	3.2	86.2	91.2	101.2	106.2	116.2	121.2	131.2	136.2	5.2	14	6	9	2.3	29	42	19.7	48.3	53.3		

Code	With switch																								
	T0, T5, T2, T3								HD	T2W, T3W								HD	P						
Bore size (mm)	RD									RD															
	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120			
∅10	64.6	69.6	79.6	84.6	94.6	99.6	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
∅16	63.3	68.3	78.3	83.3	93.3	98.3	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17

Dimensions

● Rod side flange (FA)



*1: For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA) Basic dimensions																				Mounting dimensions			
	B	G	KK	LL								MB	MM	T	X								E	FB
				15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120				15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120		
∅10	7	4	M4	55	60	70	75	85	90	100	105	M8x1.0	4	2.4	86.2	91.2	101.2	106.2	116.2	121.2	131.2	136.2	14	4.2
∅16	8	4	M5	55	60	70	75	85	90	100	105	M10x1.0	5	3.2	86.2	91.2	101.2	106.2	116.2	121.2	131.2	136.2	20	5.2

Code	With switch																						
	MF	TF	UF	W	T0, T5, T2, T3								HD	T2W, T3W								HD	P
					RD									RD									
					15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120		15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120		
∅10	1.6	22	32	11.4	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	2.5	15	20	30	35	45	50	60	65	4	13.5
∅16	2.3	29	42	10.7	11.5	16.5	26.5	31.5	41.5	46.5	56.5	61.5	3.5	13.5	18.5	28.5	33.5	43.5	48.5	58.5	63.5	5	17

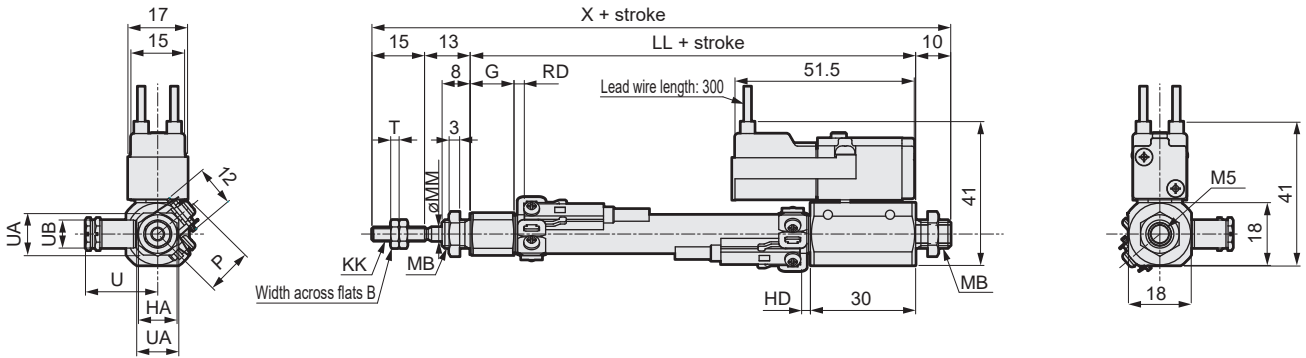
- SCP*3
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS2
- CKV2
- CAV2/
COVP/N2
- SSD2
- SSG
- SSD
- CAT
- MDC2
- MVC
- SMG
- MSD/
MSDG
- FC*
- STK
- SRL3
- SRG3
- SRM3
- SRT3
- MRL2
- MRG2
- SM-25
- ShkAbs
- FJ
- FK
- Spd
Contr
- Ending

SCPD3-VL Series



Dimensions

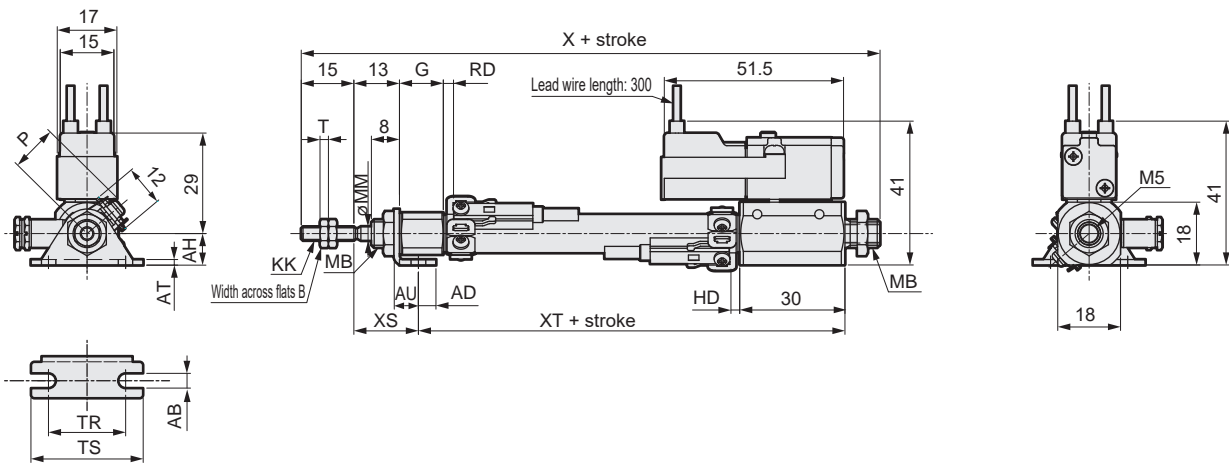
● Basic (00)



*1: For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions												With switch					
	Bore size	B	HA	G	KK	LL	MB	MM	T	U	UA	UB	X	T0, T5, T2, T3		T2W, T3W		P
														RD	HD	RD	HD	
CAT	ø10	7	11	12.5	M4	67	M8x1.0	4	2.4	21	12	8	105	3.5	2.5	5.5	4	13.5
	ø16	8	14	13	M4	67	M10x1.0	5	3.2	21	18	8	105	2	3.5	3.5	5	17

● Axial foot (one side) (LS)

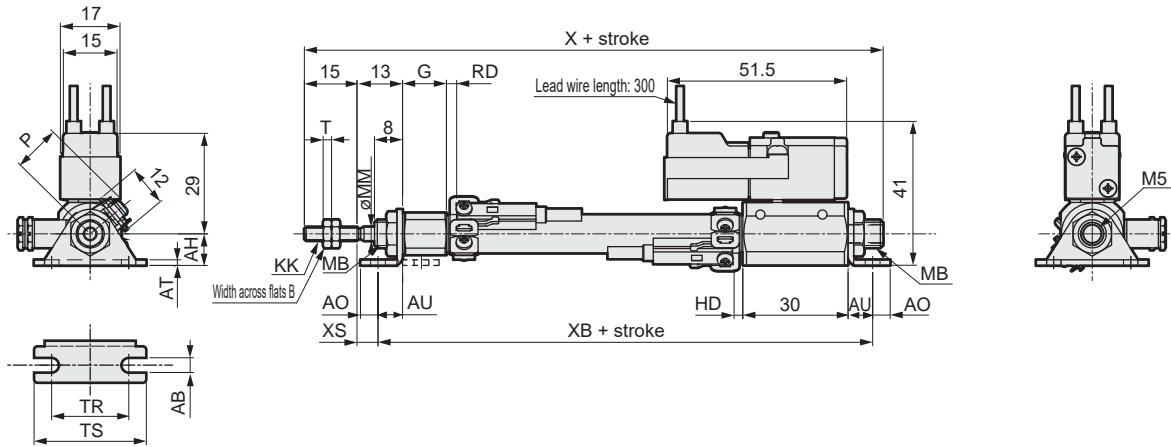


*1: For the dimensions of the accessories, refer to page 15.

Code	Axial foot (one side) (LS) Basic dimensions								Mounting dimensions								
	B	G	KK	MB	MM	T	X	AB	AH	AO	AT	AU	TR	TS	XS	XT	
FJ	ø10	7	12.5	M4	M8x1.0	4	2.4	105	4.2	9	5	1.6	7	22	32	18.4	61.6
FK	ø16	8	13	M5	M10x1.0	5	3.2	105	5.2	14	6	2.3	9	29	42	19.7	60.3
Code	With switch					P											
	T0, T5, T2, T3		T2W, T3W														
Bore size	RD	HD	RD	HD													
	ø10	3.5	2.5	5.5	4	13.5											
	ø16	2	3.5	3.5	5	17											

Dimensions

● Two-sided axial foot (LB)

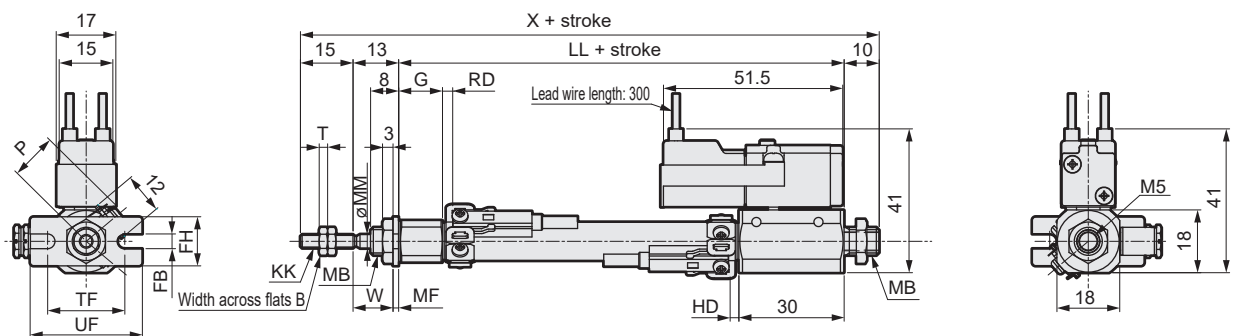


*1: For the dimensions of the accessories, refer to page 15.

Code	Two-sided axial foot (LB) Basic dimensions							Mounting dimensions								
	B	G	KK	MB	MM	T	X	AB	AH	AO	AT	AU	TR	TS	XB	XS
∅10	7	12.5	M4	M8x1.0	4	2.4	105	4.2	9	5	1.6	7	22	32	81	6
∅16	8	13	M5	M10x1.0	5	3.2	105	5.2	14	6	2.3	9	29	42	85	4

Code	With switch				
	T0, T5, T2, T3		T2W, T3W		P
	RD	HD	RD	HD	
∅10	3.5	2.5	5.5	4	13.5
∅16	2	3.5	3.5	5	17

● Rod side flange (FA)



*1: For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA) Basic dimensions								Mounting dimensions						With switch				
	B	G	KK	LL	MB	MM	T	X	FB	FH	MF	TF	UF	W	T0, T5, T2, T3		T2W, T3W		P
	RD	HD	RD	HD															
∅10	7	12.5	M4	67	M8x1.0	4	2.4	105	4.2	14	1.6	22	32	11.4	3.5	2.5	5.5	4	13.5
∅16	8	13	M5	67	M10x1.0	5	3.2	105	5.2	20	2.3	29	42	10.7	2	3.5	3.5	5	17



Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for general cylinder information, and to Intro Page 80 for cylinder switches.

SCP*3

CMK2

Product-specific cautions: Pencil shaped cylinder SCP*3 Series

CMA2

Design/selection

SCM

1. Rubber-air cushioned SCPD3-*C

SCG

CAUTION

SCA2

- Note that, structurally, the stroke end position cannot be retained if air supply is cut off.

SCS2

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.

CKV2

CAV2/
COVPIN2

2. Fine speed SCPD3-F

SSD2

CAUTION

SSG

- Use without lubrication.

- Applying lubrication may cause changes in characteristics.

SSD

- Assemble the speed controller near the cylinder.

- When installed at a distant place from the cylinder, the adjustment becomes unstable.
- For the speed controller, SC-M3/M5-F, SC3W and SCD-M3/M5-F Series are recommended.

CAT

MDC2

MVC

SMG

- At the higher air pressure and the lower load factor, the speed generally becomes more stable.

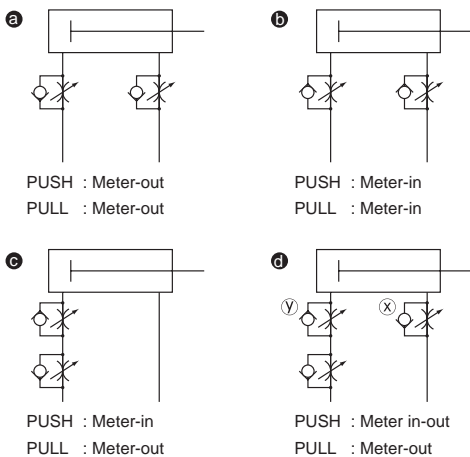
- Use at a 50% or less load factor.

MSD/
MSDG

FC*

- Stable speed control is achieved with a meter-out circuit.

- When fine speed activation is performed with operating direction PUSH for the single rod cylinder, the popping out phenomenon occurs when operation starts if the load resistance is low. As a countermeasure, use a circuit of **b**, **c** or **d**. Note that circuit **d** is the most stable.

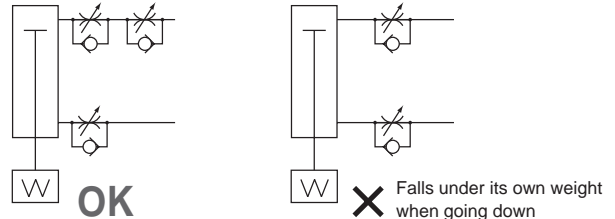


④ Speed adjustment method for PUSH operation of circuit:

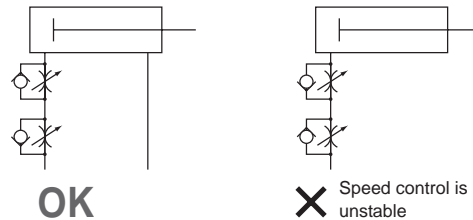
1. Set the speed with the speed controller x.
2. Restrict the speed with the speed controller y until there is no popping out.
3. Check the speed again.

(Note 1) When comparing **b** **c** **d**, the circuit **d** is the most stable.

(Note 2) For vertical mounting, combine the cylinder with a meter-out circuit, as it will fall under its own weight when a meter-in circuit is used.



(Note 3) Use the circuit shown in the figure below for the serial connection of the speed controllers.



(Guidelines for pop-out generation)

Popping out occurs in the following cases.

- Thrust > Resistance

* Resistance: Thrust caused by residual pressure on the exhaust side (in the fine speed, suction pressure = residual pressure)

{ When using horizontally: frictional force caused by load
 When using vertically : load self-weight

- Do not apply a lateral load to the cylinder.

- With a lateral load, operation will become unstable.

- Avoid use in places subject to vibrations.

- The product will be adversely affected by vibration and operation will become unstable.

3. SCP*3-V with valve

CAUTION

- If the energizing time exceeds 20 minutes, the service life may be reduced.

- Do not use the meter-in speed controller.

The product may not operate at the min. working pressure due to the controlled flow rate.

Contact CKD for details.

Ending

Mounting, installation and adjustment

SCP*3

CMK2

CMA2

SCM

SCG

SCA2

SCS2

CKV2

CAV2/
COVP/N2

SSD2

SSG

SSD

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

STK

SRL3

SRG3

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

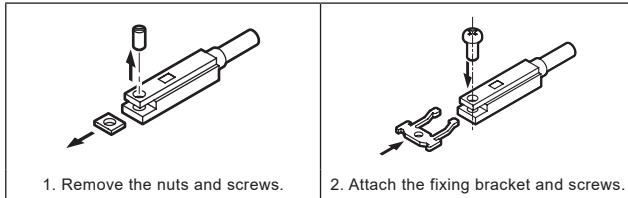
Ending

1. Common

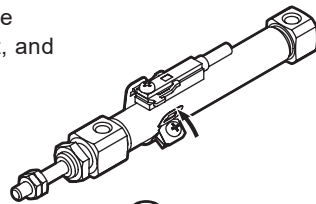
CAUTION

- Mount the T-switch as shown in the following figure.

When using the standard T-switch (SW-T*)

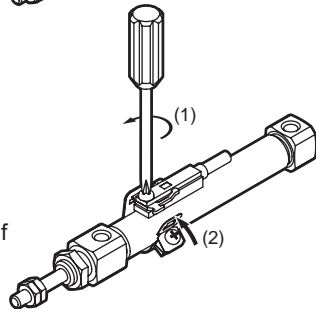


1. Insert the square hole of the band into the fixing bracket, and mount it on the cylinder.

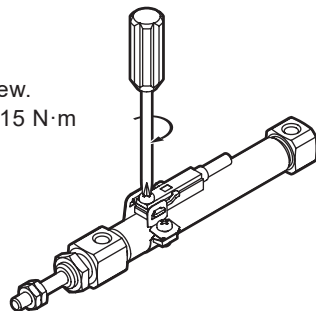


If the mounting is difficult, mount it according to the steps below.

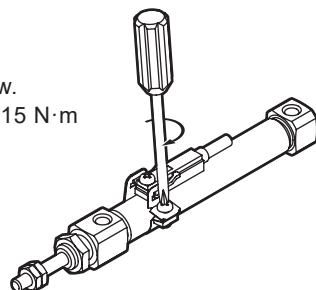
- (1) Loosen the switch-side screw.
- (2) Insert the square hole of the band into the fixing bracket.



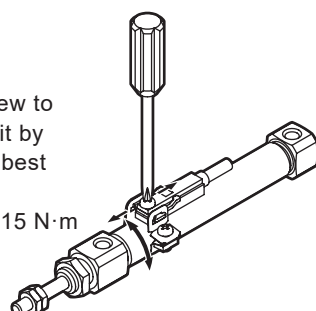
2. Loosen the switch-side screw.
Tightening torque: 0.1 to 0.15 N·m



3. Loosen the band-side screw.
Tightening torque: 0.1 to 0.15 N·m



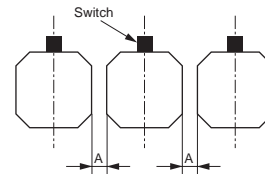
4. When adjusting the switch mounting position
Loosen the switch-side screw to adjust the position, and fix it by tightening the screw at the best position.
Tightening torque: 0.1 to 0.15 N·m



- The cylinder switch could malfunction if cylinders with switch are installed adjacently in parallel. Check that the distances are provided between cylinders according to Table 1 below.

Table 1: Dimension A (mm)

Switch Bore size	T0/T5 Reed	T2/T3 Proximity
ø6	≥ 0 *1	≥ 3
ø10	≥ 0	≥ 3
ø16	≥ 0	≥ 3

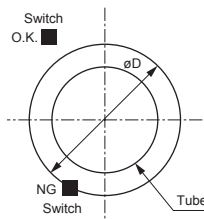


*1 Keep separated by 3 mm or more for SCP5-6 axial port direction.

- The cylinder switch could malfunction if cylinders with switch are installed adjacently in other ways. Check that the distances are provided between cylinders according to Table 2 below.

Table 2: Dimension D (mm)

Switch Bore size	T0/T5 Reed	T2/T3 Proximity
ø6	ø16.5 or more	ø22.5 or more
ø10	ø21 or more	ø26.5 or more
ø16	ø34 or more	ø35 or more



- Avoid strained piping such that a lateral force is applied to the cylinder tube. The cylinder tube is inclined, and this could cause malfunctions.

- When piping, be sure to use a hose nipple (with fixed throttle) or a speed controller. Refer to page 15 for hose nipple.

- Do not turn the cover.
 - If the cover is turned when mounting the cylinder or screwing the pipe fitting into the port, damage from the cover connection could occur.

- When fixing a workpiece onto the end of the piston rod, tighten so that torque is not applied to the cylinder body.

- When tightening the hexagon nut (No. 3 in internal structure and parts list on page 12), use the torque within the tightening torque range as below.

ø6 : 1.46 N·m ± 10%
 ø10 : 4.09 N·m ± 10%
 ø16 : 8.78 N·m ± 10%

SCP*3

CMK2

2. Single acting SCPS/SCPS3/SCPH3

CMA2

⚠ CAUTION

SCM

■ Do not use the single acting cylinder in the way such that a load is applied when the piston rod is pulled for the push or when the piston rod is pushed for the pull type.

SCG

SCA2

Because the built-in spring in the cylinder has only a force for returning the piston rod, the rod cannot be returned to the stroke end when a load is applied.

SCS2

CKV2

■ For the single acting cylinder, because a breathing hole is provided on the cover surface, take care not to block the hole when installing the cylinder.

CAV2/
COVPIN2

SSD2

Otherwise, malfunctions may result.

SSG

■ Do not leave the single acting cylinder pressurized.

SSD

If it is left pressurized for long periods, the piston rod may not return due to spring load when the pressure is released.

CAT

MDC2

MVC

SMG

MSD/
MSDG

FC*

Use/maintenance

STK

1. Common

SRL3

⚠ CAUTION

SRG3

■ Because this cylinder is a non-disassembly type, do not apply excessive force to the end cover or tube.

SRM3

SRT3

MRL2

MRG2

SM-25

ShkAbs

FJ

FK

Spd
Contr

Ending

3. Fine speed SCPD3-F

⚠ CAUTION

■ Perform adjustment such as centering so that a lateral load is not applied to the cylinder. Adjust and install the sliding guide so that it is not twisted.

- When the load or the resistance fluctuates, operation becomes unstable.
- With a large difference between static friction and kinematic friction of the guide, operation becomes unstable.

4. Rotation-stop SCPS3-M/SCPD3-M

⚠ CAUTION

■ For the rotation-stop, install it so that a rotation torque is not applied to the piston rod.

The bushing may be deformed and the service life may be shortened.

■ This product is manufactured so that the direction of the width across flats of the piston rod is parallel to the side surface of the rod cover. However, this is not a guarantee of accuracy.

