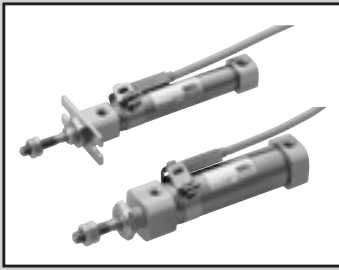


SCP\*3  
 CMK2  
 CMA2  
 SCM  
 SCG  
 SCA2  
 SCS2  
 CKV2  
 CAV2/  
 COVPIN2  
 SSD2  
 SSG  
 SSD  
 CAT  
 MDC2  
 MVC  
 SMG  
 MSD/  
 MSDG  
 FC\*  
 STK  
 SRL3  
 SRG3  
 SRM3  
 SRT3  
 MRL2  
 MRG2  
 SM-25  
 ShkAbs  
 FJ  
 FK  
 Spd  
 Contr  
 Ending



Pencil shaped cylinder/double acting/single rod

# SCPD3 Series

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

JIS symbol



## Specifications

Item	SCPD3 SCPD3-L			
		$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Bore size	mm	$\varnothing 6$	$\varnothing 10$	$\varnothing 16$
Actuation		Double acting		
Working fluid		Compressed air		
Max. working pressure	MPa	1.0 ( $\approx 150$ psi, 10 bar)		
Min. working pressure	MPa	0.15 ( $\approx 22$ psi, 1.5 bar)	0.1 ( $\approx 15$ psi, 1 bar)	
Proof pressure	MPa	1.6 ( $\approx 230$ 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	0.012	0.041	0.162

## Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)	
					SCPD3
	$\varnothing 10$		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 LS	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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.61x10 <sup>2</sup>	1.81x10 <sup>2</sup>	2.01x10 <sup>2</sup>
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

# SCPD3 Series

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
<b>A Model No.</b>	
SCPD3	Double acting
SCPD3-L	Double acting/with switch

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

<b>C Bore size (mm)</b>	
<b>6</b>	$\varnothing 6$
<b>10</b>	$\varnothing 10$
<b>16</b>	$\varnothing 16$

<b>D Stroke (mm)</b>			
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	

<b>E Head side port direction</b>	
<b>Blank</b>	Vertical
<b>O</b>	Axial direction

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

<b>* Lead wire length</b>	
<b>Blank</b>	1 m (standard)
<b>3</b>	3 m (option)
<b>5</b>	5 m (option)

<b>G Switch quantity</b>	
<b>R</b>	1 on rod side
<b>H</b>	1 on head side
<b>D</b>	2
<b>T</b>	3

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

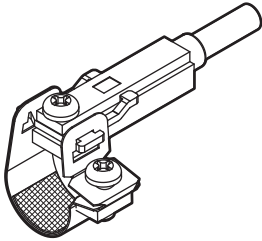
### How to order switch

● Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item ③ on page 10)

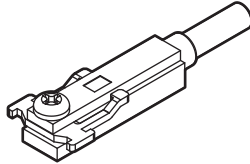
Switch model No.  
(Item ④ on page 10)



● Switch body (with fixing bracket)

**SCPD3 - T0H**

Switch model No.  
(Item ④ on page 10)

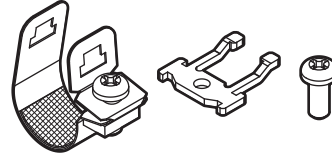


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

**SCPD3 - TS - 6**

Bore size  
(Item ③ on page 10)

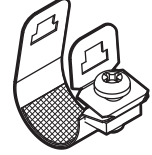


When 20 pcs or more are ordered, they will be packed together.

● 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

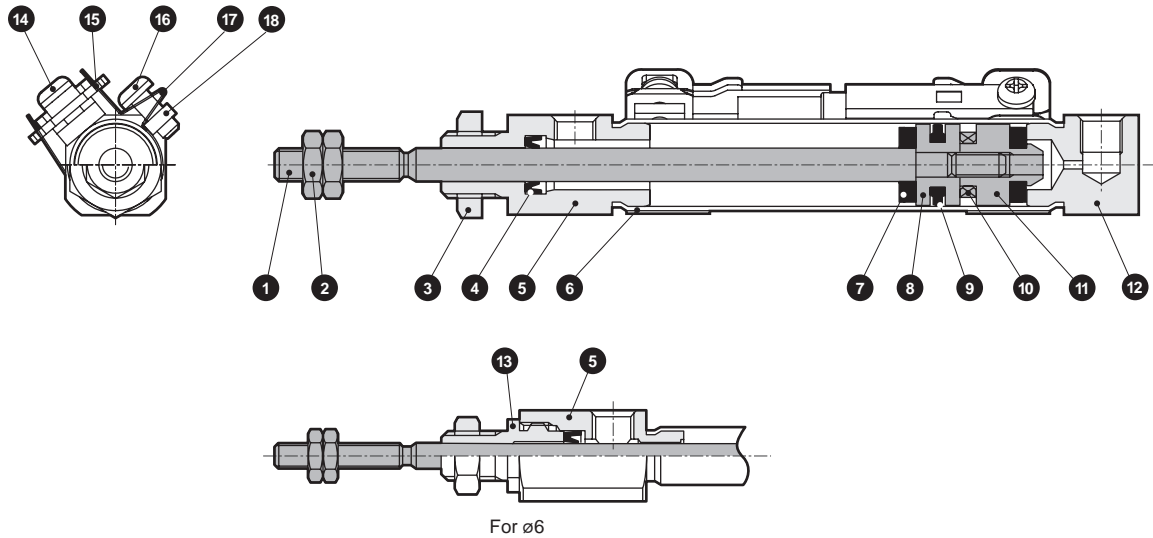
FK

Spd  
Contr

Ending

## Internal structure and parts list

- Double acting SCPD3-(L)



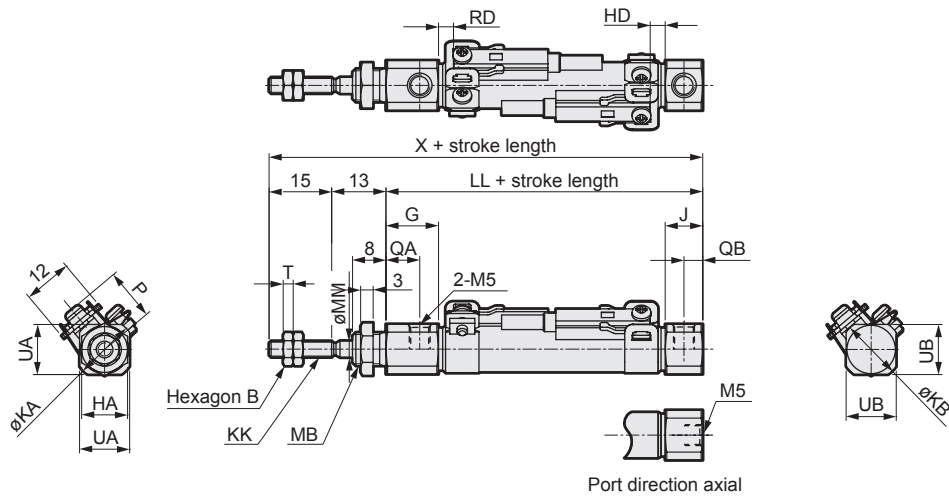
**Cannot be disassembled**

- 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

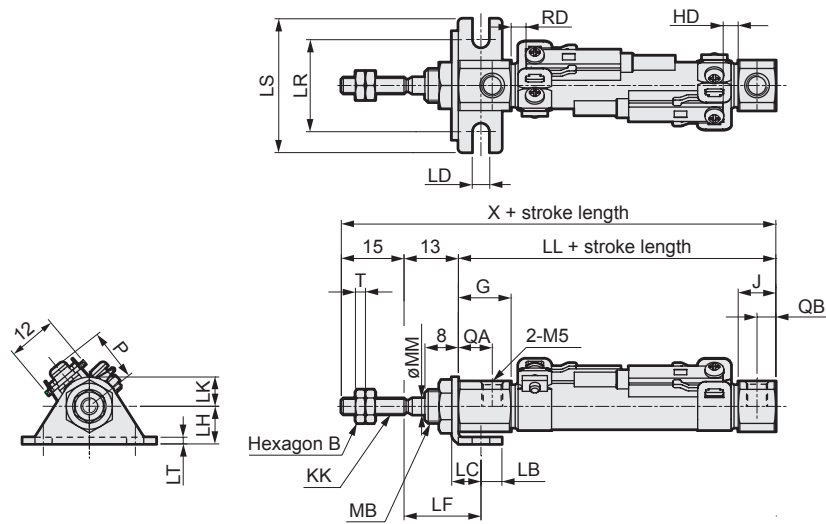
### ● SCPD3-(L) Basic (00)



- \*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)



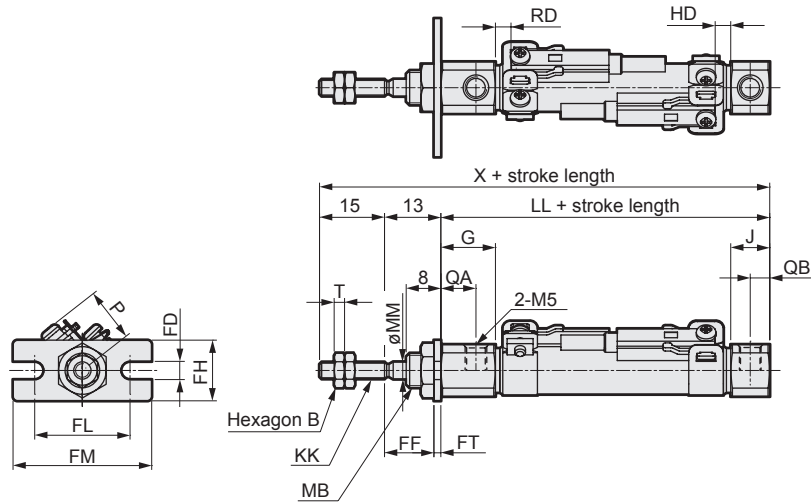
- \*1 : The dimensions are the same in the without switch. (Magnet is not built in.)
- \*2 : As the thread depth of  $\phi 6/\phi 10$  port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- \*3 : For the dimensions of the accessories, refer to page 15.

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)



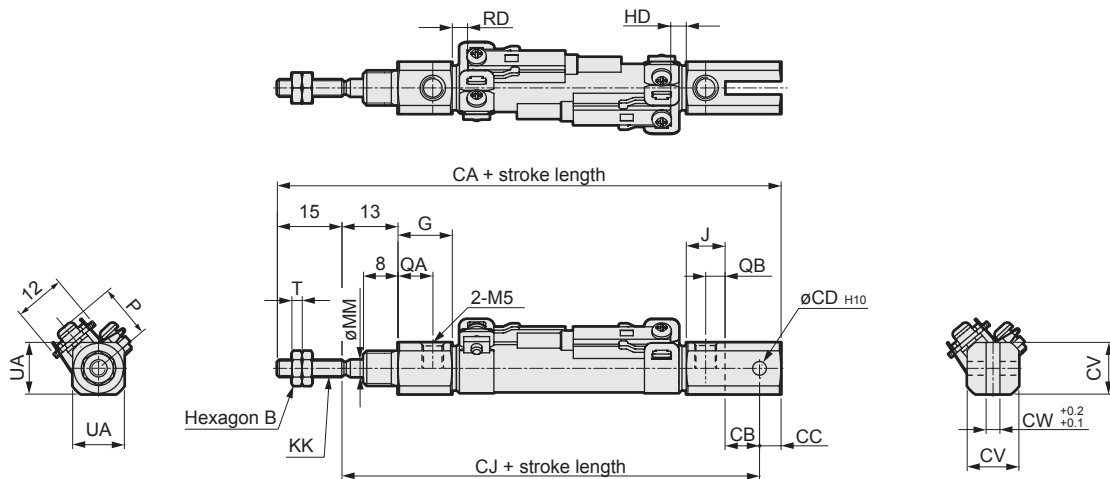
\*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

\*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				
																			T0, T5, T2, T3				P
		B	G	J	KK	LL	MM	QA	QB	T	X	FD	FF	FH	FL	FM	FT	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.

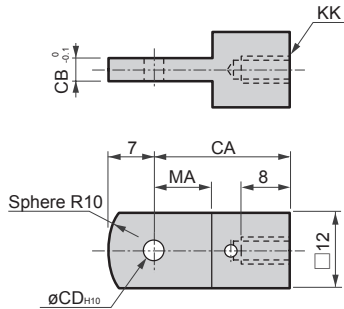
\*3 : A pin and retaining bracket are included.

\*4 : For the dimensions of the accessories, refer to page 15.

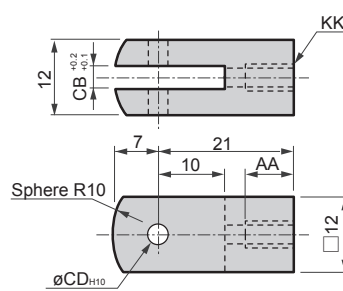
Code	Clevis bracket (CB)	Basic dimensions											Mounting dimensions						With switch				
																			T0, T5, T2, T3				P
		B	G	J	KK	MM	QA	QB	T	UA	CA	CB	CC	CD	CJ	CV	CW	RD	HD	RD	HD		
$\phi 10$		7	12.5	9	M4	4	8	4.5	2.4	12	87	8	5	3.2	67	12	3.2	3.5	2.5	5.5	4	13.5	
$\phi 16$		8	13	9	M5	5	8.5	4.5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

### Dimensions

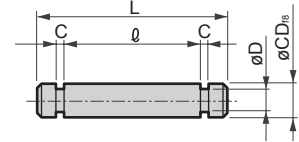
- Rod eye (I) Material: Steel  
Zinc chromate treatment



- 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.

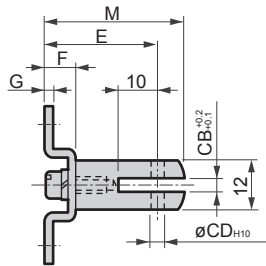
Note: A pin and a snap ring are included.

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

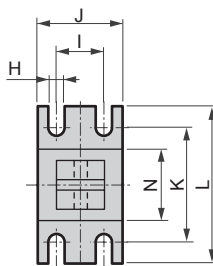
Model No.	AA	CB	CD	KK	Wt. (g)
P2-Y-10	8	3.2	3.2	M4	25
P2-Y-16	11	6.5	5	M5	20

Model No.	Bore size (mm)	Applicable	C	D	CD	$\ell$	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					16	20
P2-P-16	16	Rod eye/bracket	0.7	4	5	13	18	3.0
P2-P-16A		Clevis					19	24

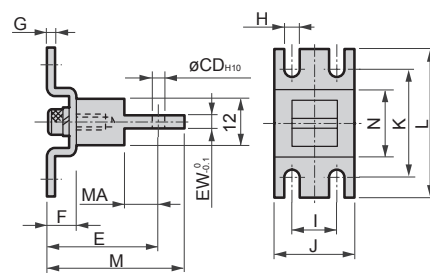
- Clevis bracket (B2) Material: Steel  
Zinc chromate treatment



- 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.

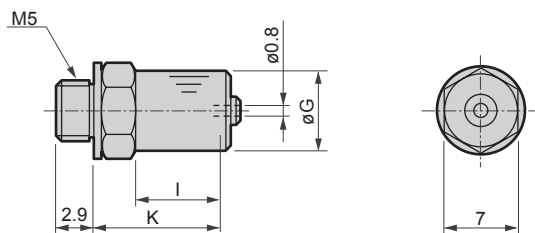
Model No.	Bore size (mm)	CD	E	CB	F	G	H	I	J	K	L	M	N	Wt. (g)
P2-B2-10	10	3.2	29	3.2	8	2	4.2	12	22	30.2	40	36	18	44
P2-B2-16	16	5	31	6.5	10	2.3	5.2	16	28	35.2	48	38	20	44

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

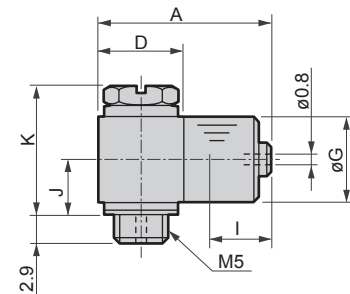
- Hose nipple for pencil shaped cylinder (sales unit is 10 pcs./bag)

- Barbed fitting

Straight/FCS



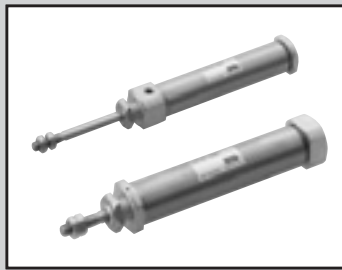
Elbow/FCL



Model No.	Compatible tube O.D.	G	I	K	Weight (g)	Eff. X-sectional area (mm <sup>2</sup> )
FCS4-M5P	4	7	4.3	11.7	3.2	0.35
FCS6-M5P	6	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 <sup>2</sup> )
FCL4-M5P	4	16.1	8	7	4.3	5.1	11.6	6.8	0.35
FCL6-M5P	6	17.8	9	9	5	6.1	13.6	10.1	0.35

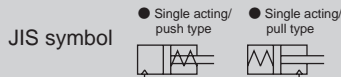




Pencil shaped cylinder Single acting/push and single acting/pull

# 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 ( $\approx 150$ psi, 10 bar)							
Min. working pressure	MPa	0.35 ( $\approx 51$ psi, 3.5 bar)	0.3 ( $\approx 44$ psi)	0.15 ( $\approx 22$ psi, 1.5 bar)	0.39 ( $\approx 57$ psi)	0.2 ( $\approx 29$ psi, 2 bar)			
Proof pressure	MPa	1.6 ( $\approx 230$ psi, 16 bar)							
Ambient temperature	$^{\circ}\text{C}$	-10 ( $14^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ ) (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	$1.5 \times 10^{-4}$	$4 \times 10^{-4}$	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				
	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		

## 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

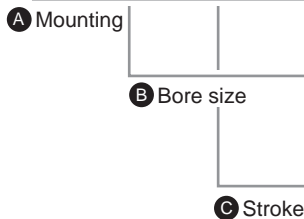
Bore size (mm)	Working pressure MPa									
	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø6	-	-	4.8	7.6	10.4	13.3	16.1	18.9	21.7	24.6
ø10	6.2	8.2	16.1	23.9	31.8	39.6	47.5	55.3	63.2	71.0
ø16	19.0	25.3	45.4	65.5	85.6	105.7	125.8	145.9	166.1	186.2

#### ● 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



Code	Description		
<b>A Mounting</b>			
00	Basic		
<b>B Bore size (mm)</b>			
2.5	ø2.5		
4	ø4		
<b>C Stroke (mm)</b>			
	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

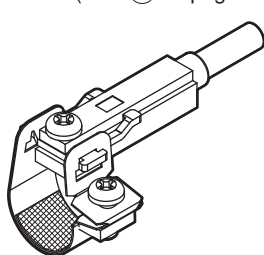
## How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size  
(Item C on page 19)

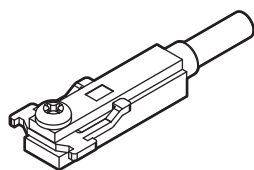
Switch model No.  
(Item F on page 19)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.  
(Item F on page 19)

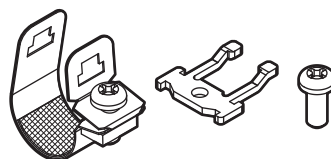


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

SCPD3 - TS - 6

Bore size  
(Item C on page 19)

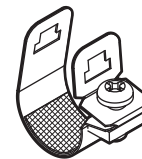


When 20 pcs or more are ordered, they will be packed together.

● 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
<b>Mounting bracket</b>			
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

--	--	--	--

### ⚠ 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 :  $\varnothing 10$  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					
<b>A Model No.</b>						
SCPS3	Single acting/push					
SCPS3-L	Single acting/push/with switch					
SCPH3	Single acting/pull					
SCPH3-L	Single acting/pull/with switch					
<b>B Mounting</b>						
	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>C Bore size (mm)</b>						
6	$\varnothing 6$					
10	$\varnothing 10$					
16	$\varnothing 16$					
<b>D Stroke (mm)</b>						
Bore size	Stroke *2	Available stroke	Custom stroke			
$\varnothing 6$	5 to 100	105	In 1 mm increments			
$\varnothing 10$	5 to 120	120				
$\varnothing 16$	5 to 120	120				
<b>E Head side port direction</b>						
Blank	Vertical					
O	Axial direction "not available for SCPH3(-L)"					
<b>F Switch model No.</b>						
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*			●		
<b>* Lead wire length</b>						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
<b>G Switch quantity</b>						
R	1 on rod side					
H	1 on head side					
D	2					
T	3					
<b>H Accessory</b>						
	Bore size ( $\varnothing$ )	6	10	16		
I	Rod eye		●	●		
Y	Rod clevis (pin and snap ring included)		●	●		
B1	Eye bracket		●	●		
B2	Clevis bracket		●	●		

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

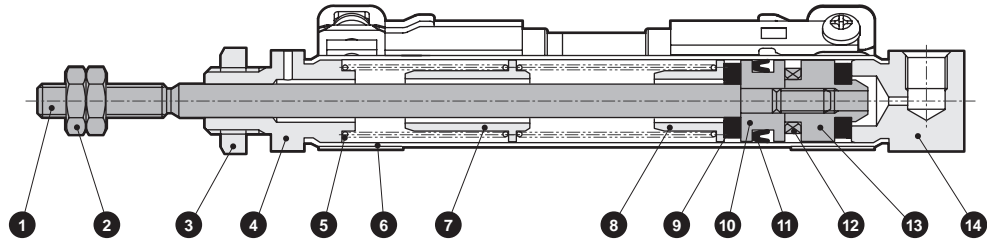
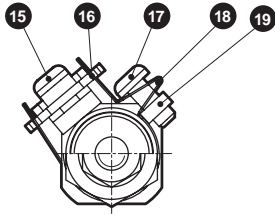
Spd  
Contr

Ending

# SCPS3/SCPH3 Series

## SCP\*3 Internal structure and parts list

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

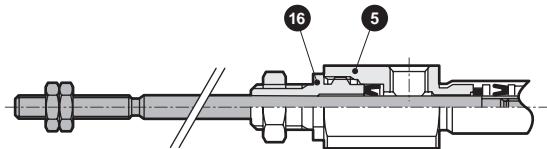
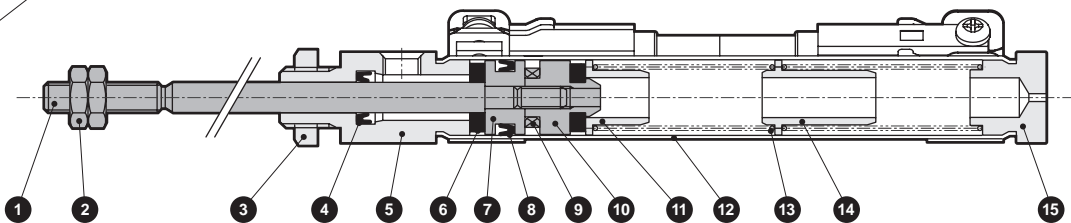
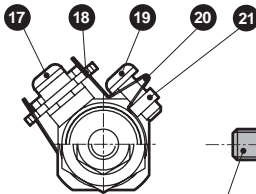


Cannot be disassembled

- 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

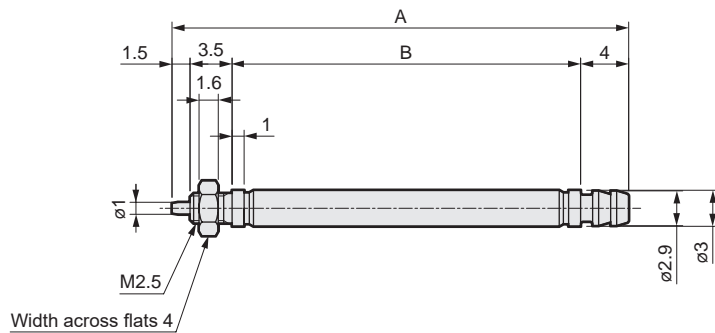
Cannot be disassembled

- 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					

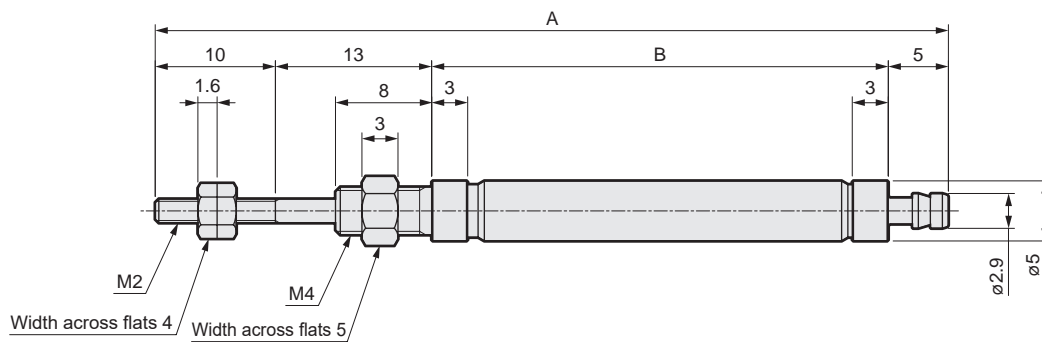
## Dimensions

### ● 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

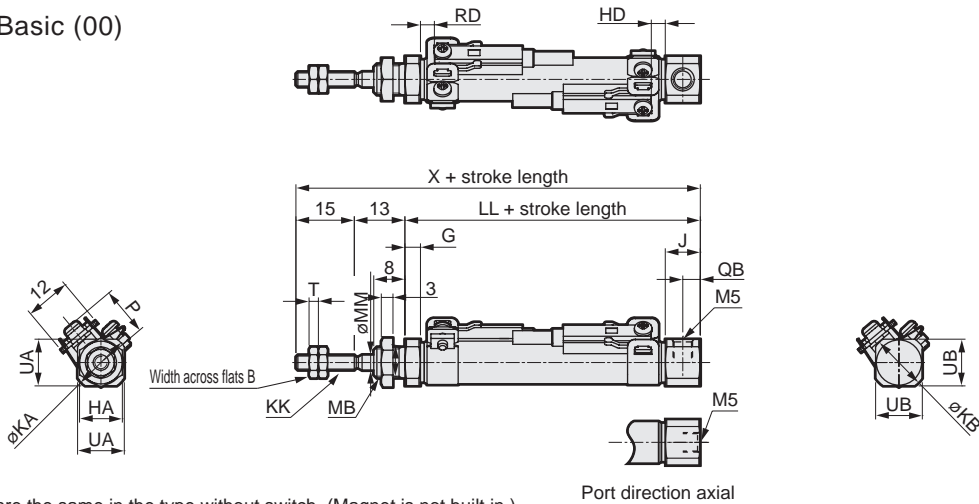
Spd  
Contr

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).

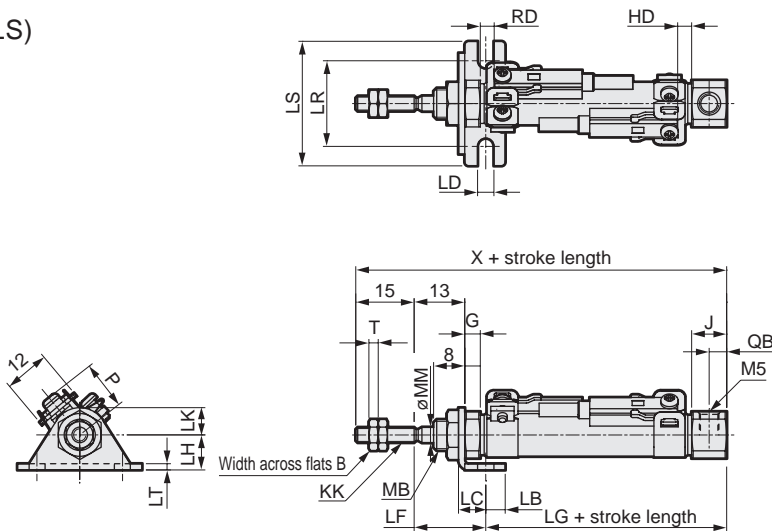
\*4 : For the dimensions of the accessories, refer to page 15.

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
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	P	
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.

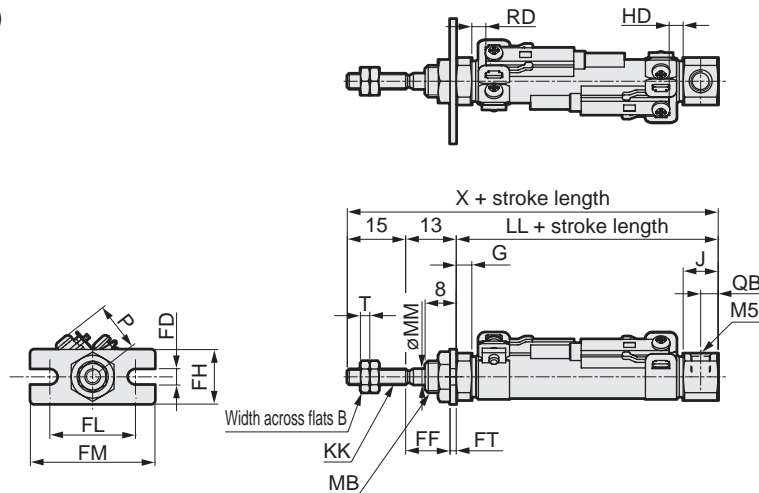
Code	Axial foot (single) (LS) Basic dimensions																		Mounting dimensions						
	Bore size (mm)	B	G	KK	MB	MM	QB	T	X								LB	LC	LD	LF	LG				
									≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120					≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75
ø6	5.5	3	M3	M6	3	4	1.8	71.5	76.5	91.5	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	P		
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)



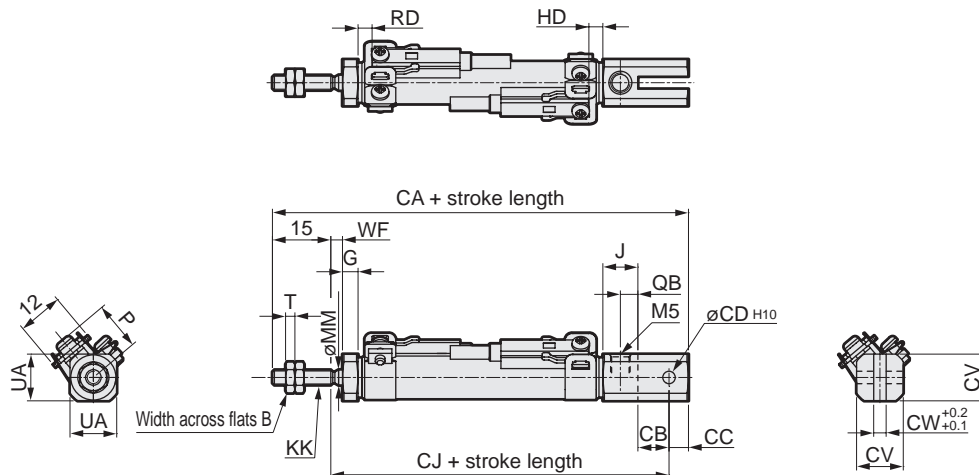
- \*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- \*2 : As the thread depth of  $\phi 6/\phi 10$  port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- \*3: For the dimensions of the accessories, refer to page 15.

Code	Rod side flange (FA) Basic dimensions																							
Bore size (mm)	B	G	J	KK	LL								MB	MM	QB	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	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	HD
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																	
Bore size (mm)	B	G	J	KK	MM	QB	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	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

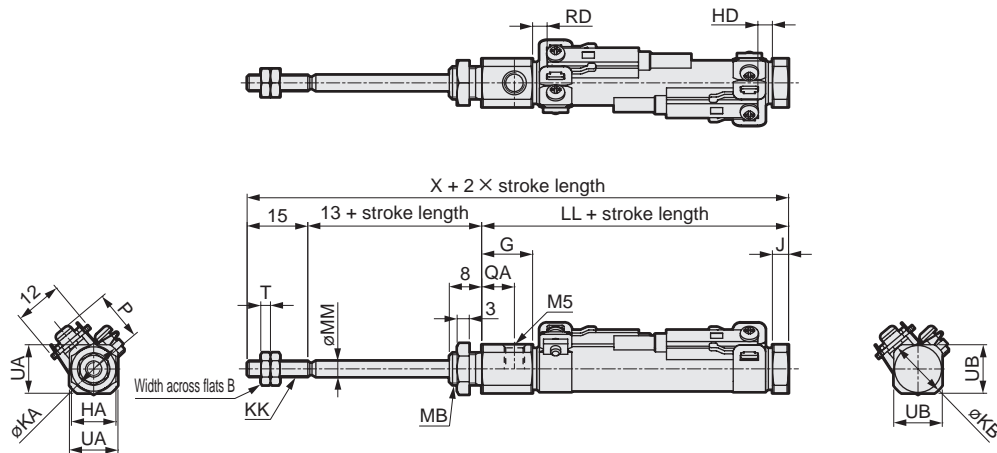
Code	With switch																											
Bore size (mm)	CW	WF							T0, T5, T2, T3							HD	T2W, T3W							P				
		RD							RD																			
		≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90	91 ≤ 105	106 ≤ 120	≤ 15	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90		91 ≤ 105	106 ≤ 120	HD									
ø10	3.2	5	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)



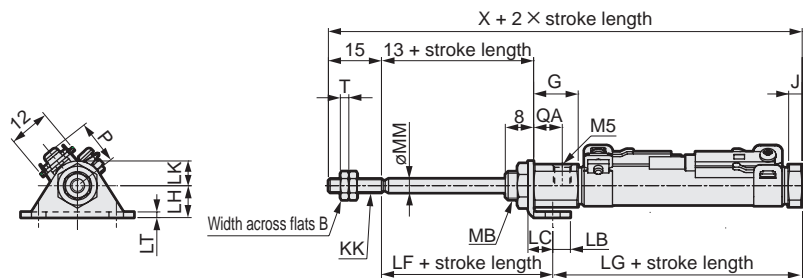
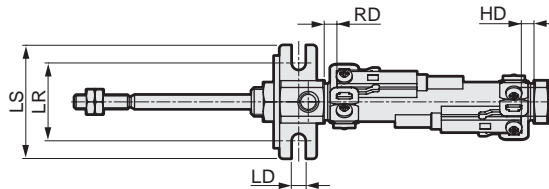
- \*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- \*2 : As the thread depth of  $\phi 6/\phi 10$  port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- \*3 : For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions																								
	Bore size (mm)	B	G	HA	J	KA	KB	KK	LL								MB	MM	QA	T	UA	UB	X		
$\leq 15$									$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	$\leq 15$							$16 \leq 30$	$31 \leq 45$	
	$\phi 6$	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	$\leq 15$	$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	RD	$\leq 15$	$16 \leq 30$	$31 \leq 45$	$46 \leq 60$		$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	
	$\phi 6$	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.

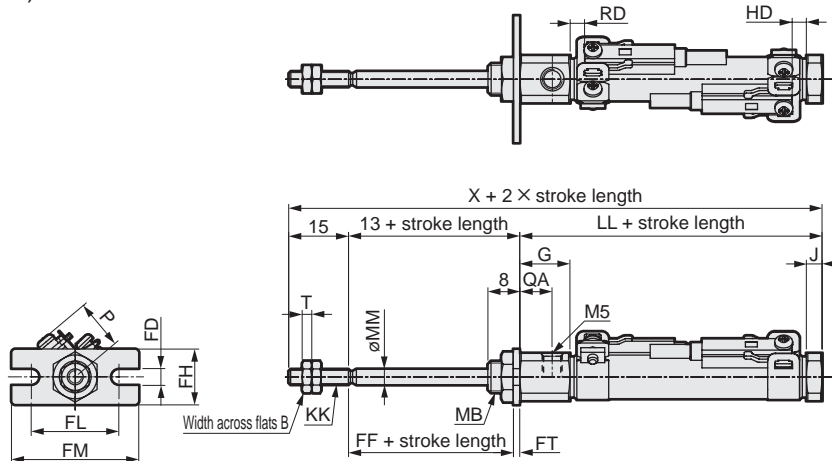
Code	Axial foot (single) (LS) Basic dimensions																		Mounting dimensions									
	Bore size (mm)	B	G	J	KK	MB	MM	QA	T	X								LB	LC	LD	LF	LG						
$\leq 15$										$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	$\leq 15$					$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$		
	$\phi 6$	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	$\leq 15$	$16 \leq 30$	$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	RD	$\leq 15$	$16 \leq 30$		$31 \leq 45$	$46 \leq 60$	$61 \leq 75$	$76 \leq 90$	$91 \leq 105$	$106 \leq 120$	
	$\phi 6$	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

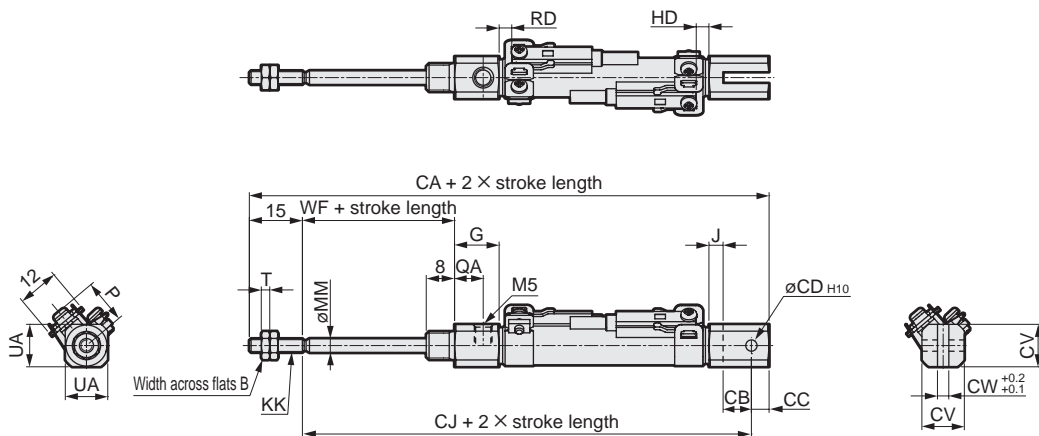
### ● Rod side flange (FA)



- \*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)	Code	Mounting dimensions						With switch																			
		B	G	J	KK	MM	QA	T0, T5, T2, T3							T2W, T3W							P					
$\phi 6$		5.5	17	3	M3	52.5	57.5	72.5	77.5	92.5	97.5	112.5	-	M6	3	13	1.8	X							-		
$\phi 10$		7	12.5	4	M4	51	56	66	71	81	86	96	101	M8x1.0	4	8	2.4	79	84	94	99	105.5	105.5	120.5	125.5	140.5	129
$\phi 16$		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	129	129

### ● 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)	Code	WF						CA				CB			CC			CJ							CV				
		B	G	J	KK	MM	QA	T	UA	CA				CB	CC	CD	CJ							CV					
$\phi 10$		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
$\phi 16$		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

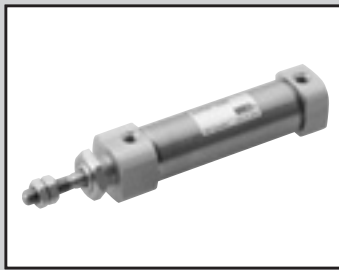
Code		With switch																											
Bore size (mm)	Code	WF						With switch																					
		CW	WF						T0, T5, T2, T3							T2W, T3W							P						
$\phi 10$		3.2	15	22	24	31	33	40	42	49	3.5	12	17	27	32	42	47	57	62	5.5	14	19	29	34	44	49	59	64	13.5
$\phi 16$		6.5	15	22	24	31	33	40	42	49	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 ( $\approx 150$ psi, 10 bar)		
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar)	0.1 ( $\approx 15$ psi, 1 bar)	
Proof pressure MPa	1.6 ( $\approx 230$ psi, 16 bar)		
Ambient temperature $^{\circ}\text{C}$	5 (41 $^{\circ}\text{F}$ ) to 120 (248 $^{\circ}\text{F}$ )		
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

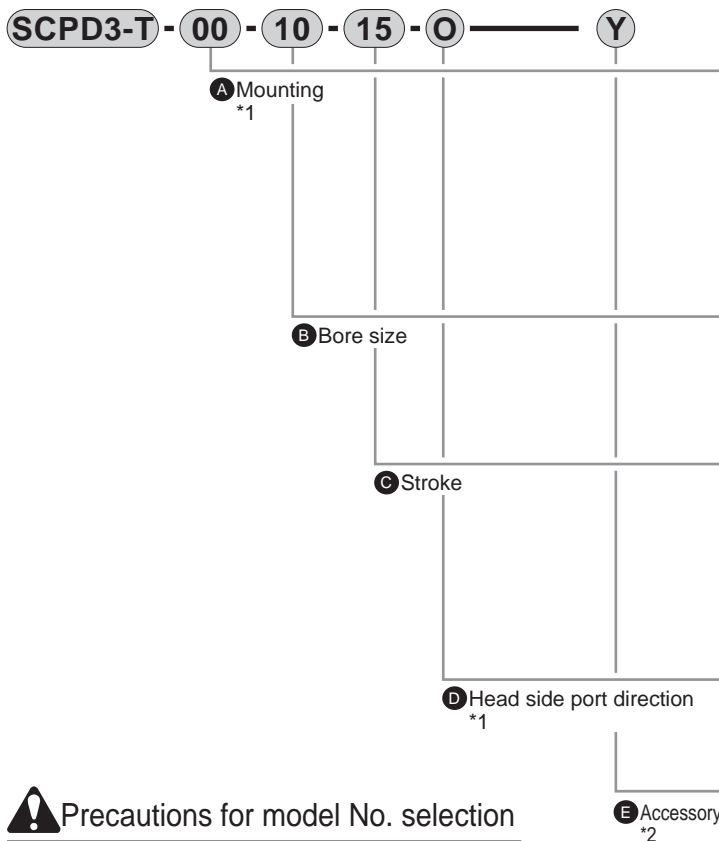
(Unit: N)

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	$1.01 \times 10^2$	$1.21 \times 10^2$	$1.41 \times 10^2$	$1.61 \times 10^2$	$1.81 \times 10^2$	$2.01 \times 10^2$
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	$1.09 \times 10^2$	$1.27 \times 10^2$	$1.45 \times 10^2$	$1.63 \times 10^2$	$1.81 \times 10^2$

## Dimensions

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

### How to order



Code	Description			
<b>A Mounting</b>				
	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>B Bore size (mm)</b>				
6	ø6			
10	ø10			
16	ø16			
<b>C Stroke (mm)</b>				
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		
<b>D Head side port direction</b>				
Blank	Vertical			
O	Axial direction			
<b>E Accessory</b>				
	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

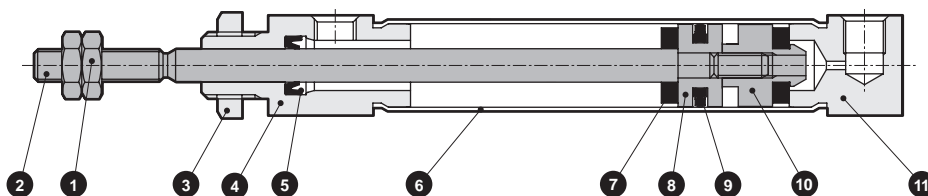
- A** Mounting : Basic
- B** Bore size : ø10 mm
- C** Stroke : 30 mm
- D** Head side port direction : Axial direction
- E** Accessory : Rod eye

### How to order mounting bracket

Bore size (mm)	ø6	ø10	ø16
<b>Mounting bracket</b>			
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.

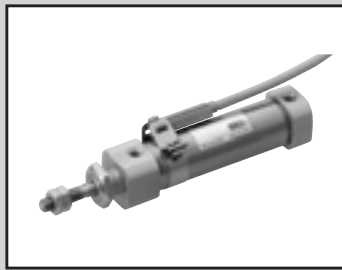
### Internal structure and parts list



**Cannot be disassembled**

● This product is a caulked and cannot be disassembled.

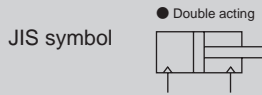
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Rod nut	Steel	Nickeling	7	Cushion rubber	Fluoro rubber	
2	Piston rod	Stainless steel		8	Piston	Aluminum alloy	
3	Hexagon nut	Steel	Nickeling	9	Piston packing	Fluoro rubber	
4	Rod cover	Aluminum alloy	Hard alumite	10	Spacer	Aluminum alloy	
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 ( $\approx 150$ psi, 10 bar)		
Min. working pressure MPa	0.3 ( $\approx 44$ psi, 3 bar)	0.2 ( $\approx 29$ psi, 2 bar)	
Proof pressure MPa	1.6 ( $\approx 230$ 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 (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

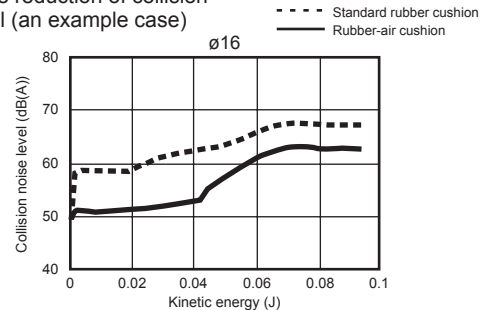
Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
$\phi 6$	15/30/45/60	100	5
$\phi 10$		200	
$\phi 16$		260	

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

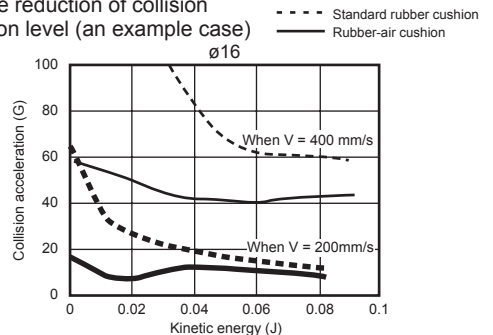
## Min. stroke with switch

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

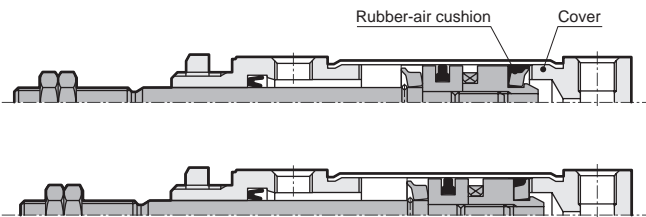
Data of the reduction of collision noise level (an example case)



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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.61x10 <sup>2</sup>	1.81x10 <sup>2</sup>	2.01x10 <sup>2</sup>
	Pull	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

# 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

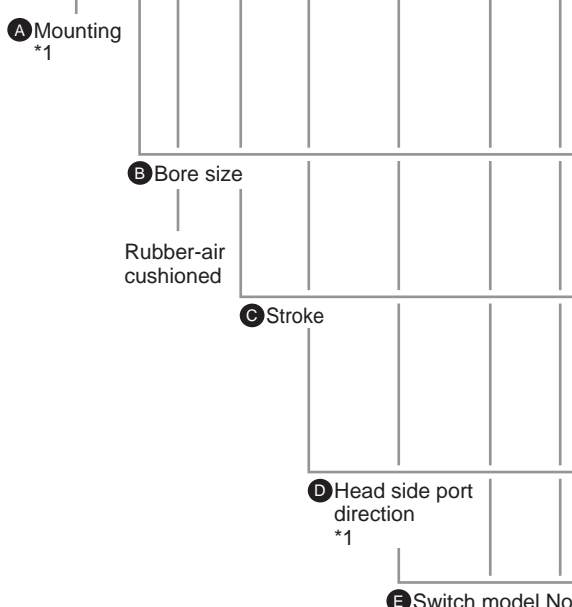
## How to order

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



## 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 :  $\phi 10$  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

Options/  
accessories  
\*4

Code	Description			
<b>A Mounting</b>				
Bore size ( $\phi$ )		6	10	16
00	Basic	●	●	●
LS	Axial foot (one side) (rod side)	●	●	●
FA	Rod side flange	●	●	●
CB	Clevis bracket		●	●

B 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	

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 ( $\phi$ )		6	10	16
I	Rod eye		●	●
Y	Rod clevis (pin and snap ring included)		●	●
B1	Eye bracket		●	●
B2	Clevis bracket		●	●

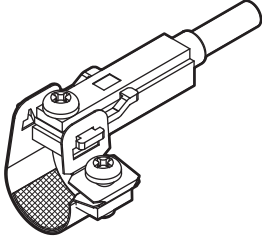
### How to order switch

- Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item (B) on page 30)

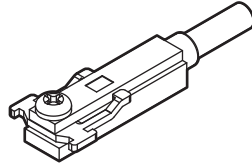
Switch model No.  
(Item (E) on page 30)



- Switch body (with fixing bracket)

**SCPD3 - T0H**

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

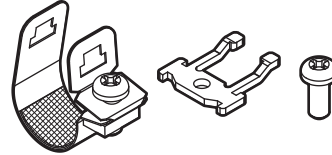


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

- Mounting bracket set + fixing bracket

**SCPD3 - TS - 6**

Bore size  
(Item (B) on page 30)

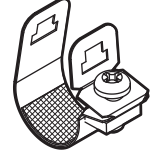


When 20 pcs or more are ordered, they will be packed together.

- 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

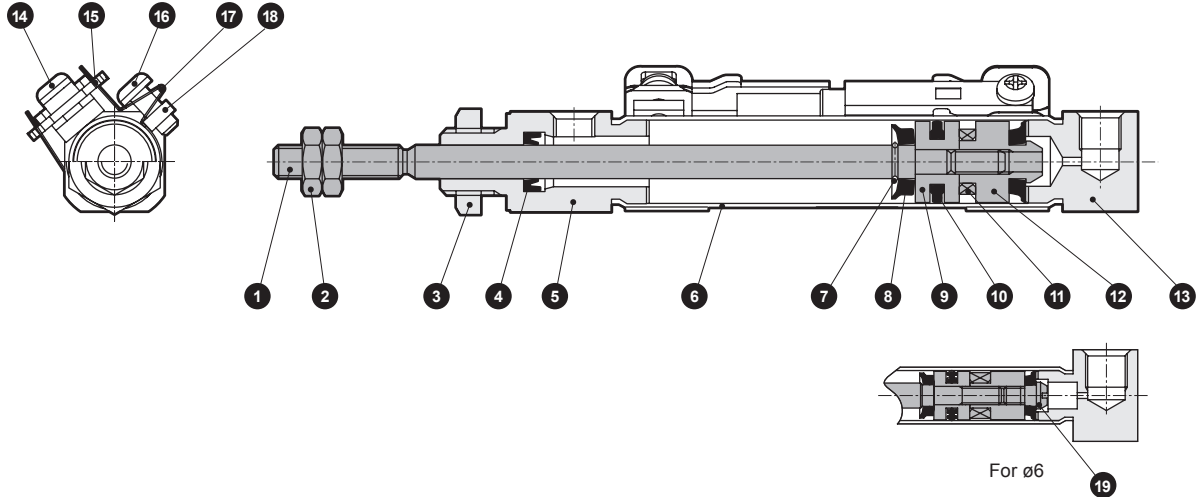
Ending



# 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.

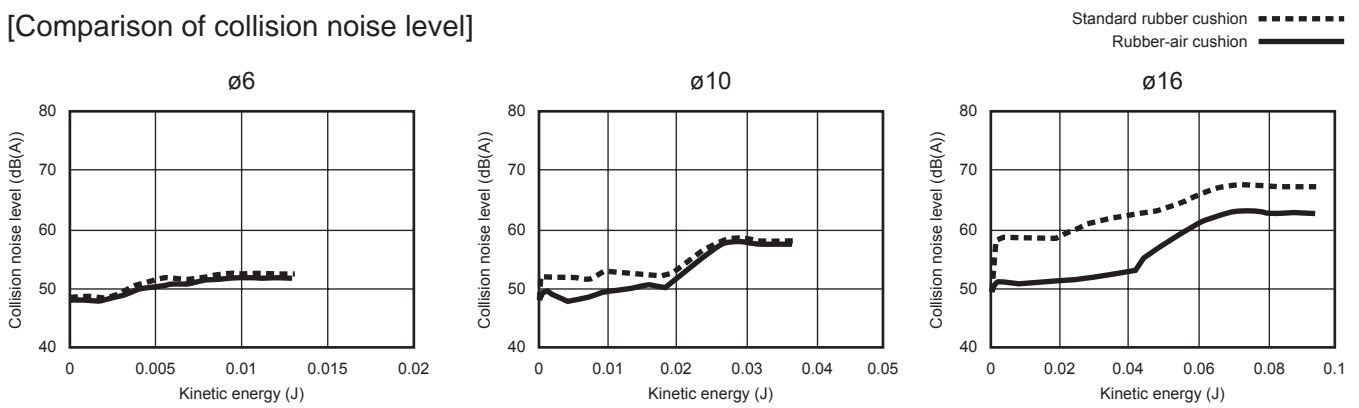
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		11	Magnet	-	With switch only
2	Rod nut	Steel	Nickeling	12	Spacer	Aluminum alloy	
3	Hexagon nut	Steel	Nickeling	13	Head cover	Aluminum alloy	Hard alumite
4	Rod packing	Nitrile rubber		14	Phillips pan head machine 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

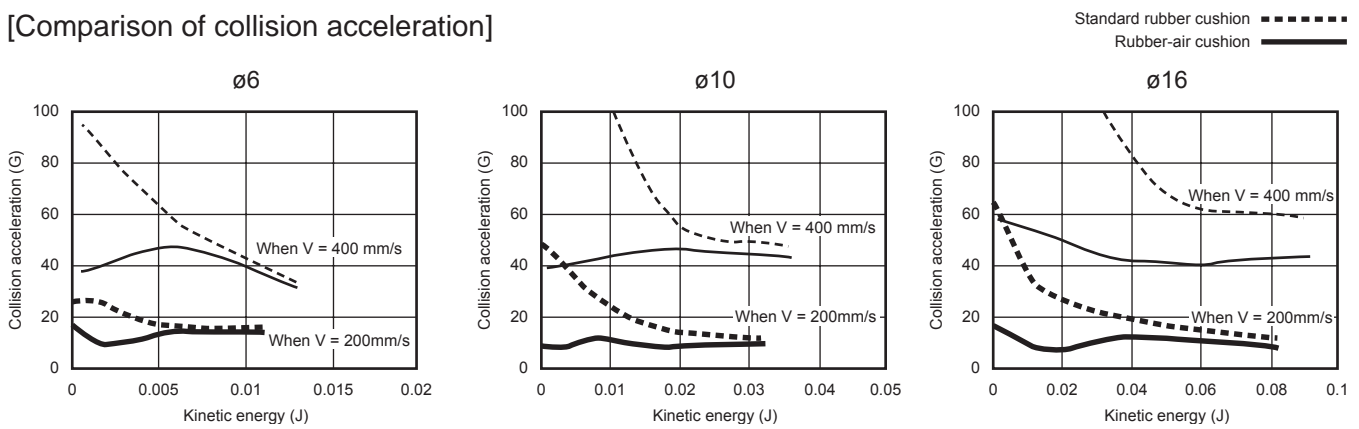
Same as those of SCPD3 Series (double acting/single rod). Refer to pages 13 and 14.

### Technical data

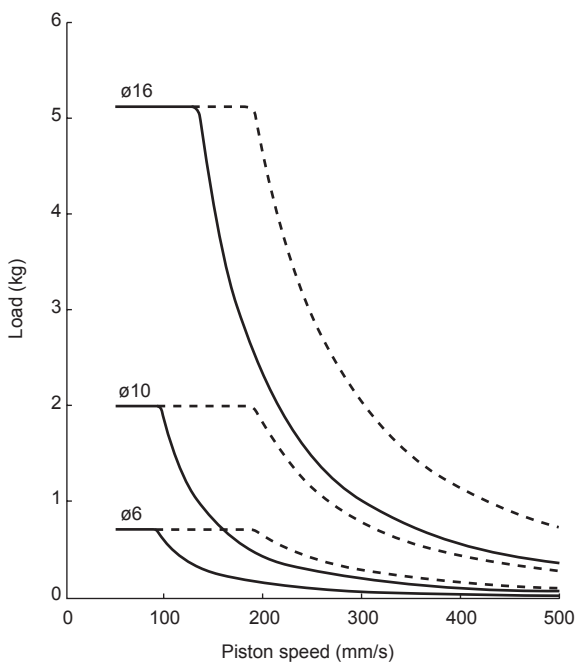
#### [Comparison of collision noise level]



#### [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

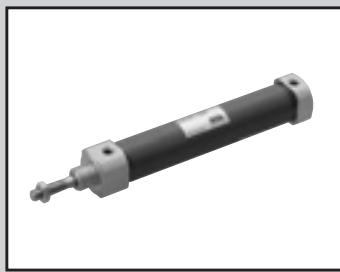
Pencil shaped cylinder Double acting/fine speed

# SCPD3-F Series

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

JIS symbol

● Double acting



## 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 ( $\approx 150$ psi, 10 bar)		
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar)	0.1 ( $\approx 15$ psi, 1 bar)	
Proof pressure MPa	1.6 ( $\approx 230$ psi, 16 bar)		
Ambient temperature $^{\circ}\text{C}$	5 (41 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ )		
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	$\varnothing 6$	15/30/45/60	100	5
	$\varnothing 10$		200	
	$\varnothing 16$		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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.61x10 <sup>2</sup>	1.81x10 <sup>2</sup>	2.01x10 <sup>2</sup>
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

# 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 :  $\phi 10$  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			
<b>A Mounting</b>				
Bore size ( $\phi$ )		6	10	16
<b>00</b>	Basic	●	●	●
<b>LS</b>	Axial foot (one side) (rod side)	●	●	●
<b>FA</b>	Rod side flange	●	●	●
<b>CB</b>	Clevis bracket (pin and snap ring included)		●	●

<b>B Bore size (mm)</b>	
<b>6</b>	$\phi 6$
<b>10</b>	$\phi 10$
<b>16</b>	$\phi 16$

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

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

<b>* Lead wire length</b>	
<b>Blank</b>	1 m (standard)
<b>3</b>	3 m (option)
<b>5</b>	5 m (option)

<b>E Switch quantity</b>	
<b>R</b>	1 on rod side
<b>H</b>	1 on head side
<b>D</b>	2
<b>T</b>	3

<b>F Accessory</b>				
Bore size ( $\phi$ )		6	10	16
<b>I</b>	Rod eye		●	●
<b>Y</b>	Rod clevis (pin and snap ring included)		●	●
<b>B1</b>	Eye bracket		●	●
<b>B2</b>	Clevis bracket		●	●

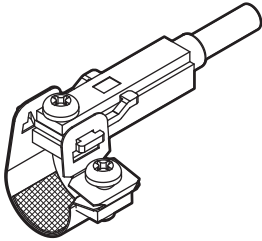
### How to order switch

- Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item ③ on page 36)

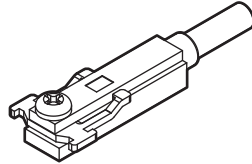
Switch model No.  
(Item ④ on page 36)



- Switch body (with fixing bracket)

**SCPD3 - T0H**

Switch model No.  
(Item ④ on page 36)

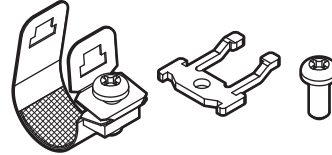


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

- Mounting bracket set + fixing bracket

**SCPD3 - TS - 6**

Bore size  
(Item ③ on page 36)

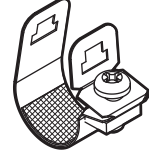


When 20 pcs or more are ordered, they will be packed together.

- 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

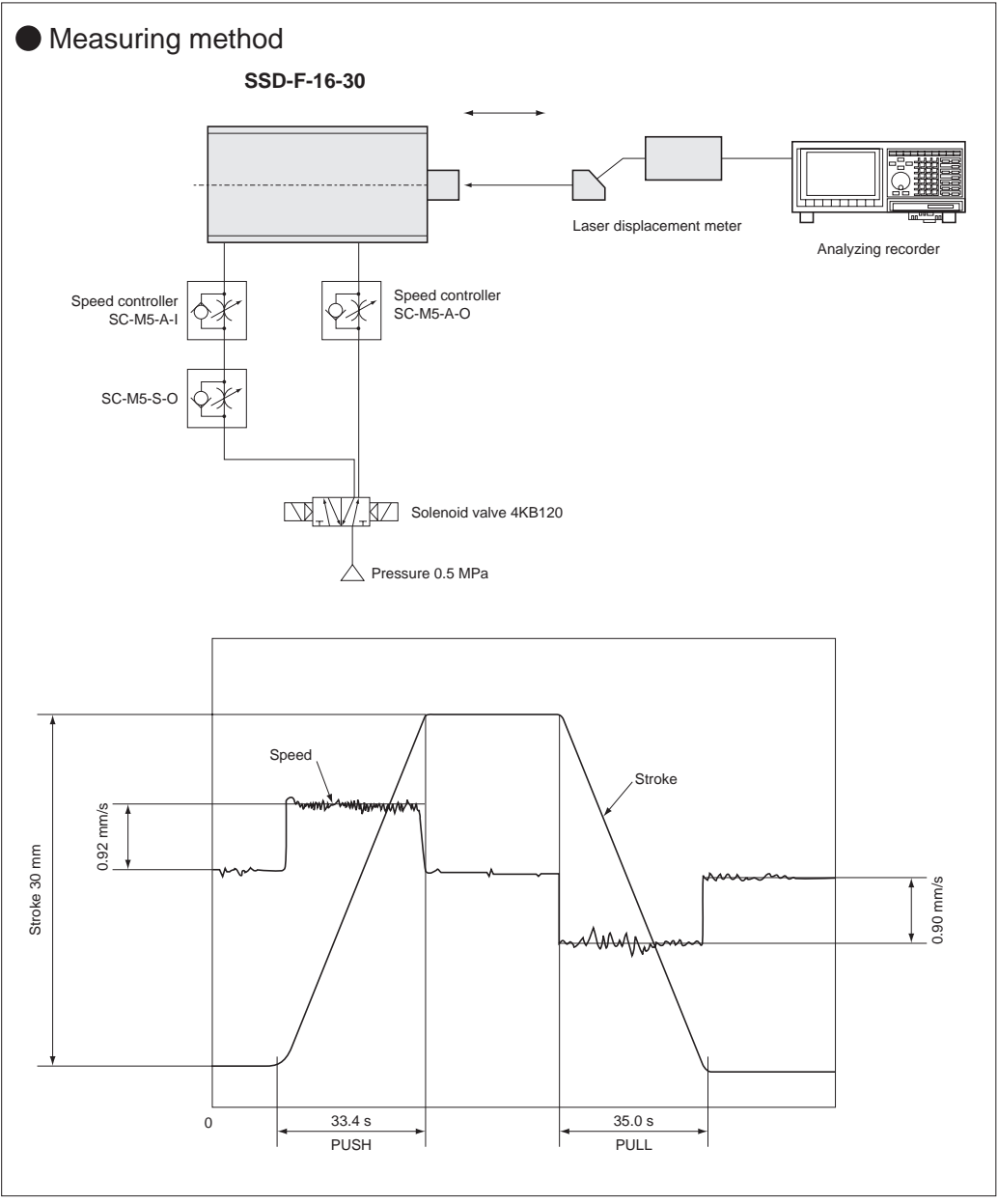
FJ

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

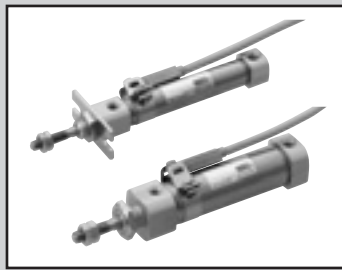
FJ

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 ( $\approx 150$ psi, 10 bar)		
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar)	0.1 ( $\approx 15$ psi, 1 bar)	
Proof pressure MPa	1.6 ( $\approx 230$ 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	SCPD3-OL	
$\varnothing 6$	15/30/45/60	100		5
$\varnothing 10$		200		
$\varnothing 16$		260		

\*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	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

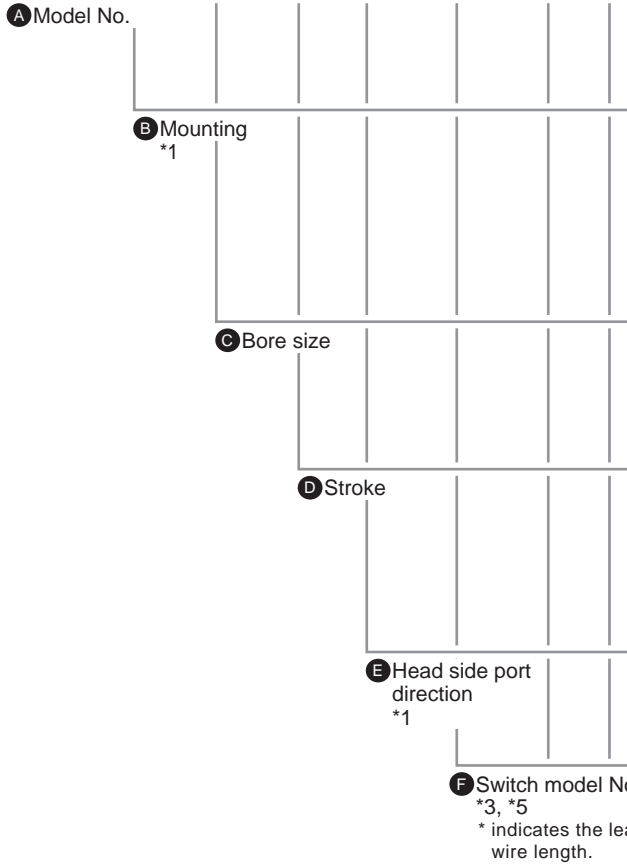
(Unit: N)

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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.61x10 <sup>2</sup>	1.81x10 <sup>2</sup>	2.01x10 <sup>2</sup>
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

# 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**



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

<b>B Mounting</b>				
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>C Bore size (mm)</b>	
6	ø6
10	ø10
16	ø16

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

<b>E Head side port direction</b>	
Blank	Vertical
O	Axial direction

<b>F Switch model No.</b>						
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-color LED	2-wire
T3WH*	T3WV*		●	2-color LED	3-wire	

<b>* Lead wire length</b>	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

<b>G Switch quantity</b>	
R	1 on rod side
H	1 on head side
D	2
T	3

<b>H Accessory</b>				
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 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 : 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

**G** Switch quantity

**H** Accessory \*4

## 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.

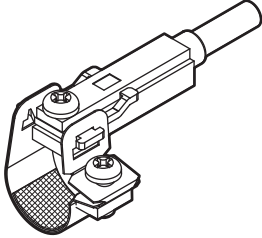
### How to order switch

● Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item ③ on page 42)

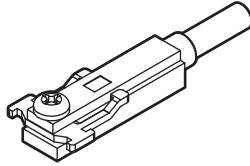
Switch model No.  
(Item ⑤ on page 42)



● Switch body (with fixing bracket)

**SCPD3 - T0H**

Switch model No.  
(Item ⑤ on page 42)

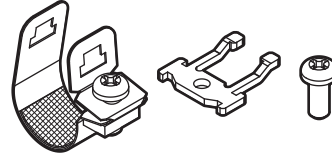


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● Mounting bracket set + fixing bracket

**SCPD3 - TS - 6**

Bore size  
(Item ③ on page 42)

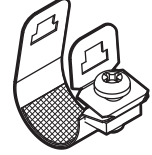


When 20 pcs or more are ordered, they will be packed together.

● 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

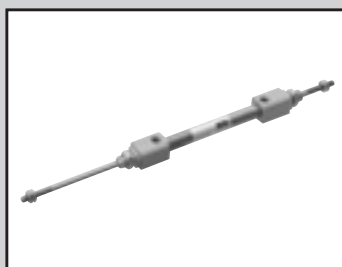
ShkAbs

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 ( $\approx 150$ psi, 10 bar)					
Min. working pressure	MPa	0.2 ( $\approx 29$ psi)	0.1 ( $\approx 15$ psi, 1 bar)		0.2 ( $\approx 29$ psi)	0.1 ( $\approx 15$ psi, 1 bar)	
Proof pressure	MPa	1.6 ( $\approx 230$ psi, 16 bar)					
Ambient temperature	$^{\circ}\text{C}$	-10 ( $14^{\circ}\text{F}$ ) to 60 ( $140^{\circ}\text{F}$ ) (no freezing)			5 ( $41^{\circ}\text{F}$ ) to 120 ( $248^{\circ}\text{F}$ )		
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
	Rod side installation	Head side installation	Different surface mounting	Same surface mounting
Min. stroke	5 mm		10 mm	28 mm
	3			
	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 g	1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80	

Item	2-wire reed	
	TOH/TOV	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	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 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

# 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.

Double rod	Double rod heat resistance
SCP3-D	SCP3-DT

B Mounting

A Model No.

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

Code	Description	SCP3-D	SCP3-DT
<b>B Mounting</b>			
00	Basic	●	●
LS	Axial foot (one side) (rod side)	●	●
LB	Two-sided axial foot	●	●
FA	Rod side flange	●	●

C Bore size (mm)		SCP3-D	SCP3-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*		●	●	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 ( $\phi$ )				
		$\phi 6$	$\phi 10$	$\phi 16$	$\phi 6$	$\phi 10$ $\phi 16$
I	Rod eye		●	●		●
Y	Rod clevis (pin and snap ring included)		●	●		●

## How to order mounting bracket

Bore size (mm)	$\phi 6$	$\phi 10$	$\phi 16$
<b>Mounting bracket</b>			
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.

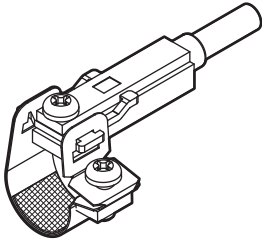
### How to order switch

- Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item C on page 46)

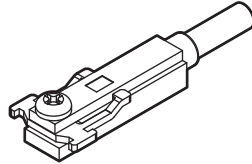
Switch model No.  
(Item E on page 46)



- Switch body (with fixing bracket)

**SCPD3 - T0H**

Switch model No.  
(Item E on page 46)

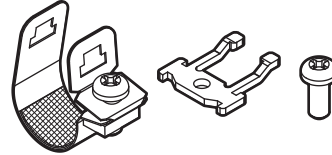


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

- Mounting bracket set + fixing bracket

**SCPD3 - TS - 6**

Bore size  
(Item C on page 46)

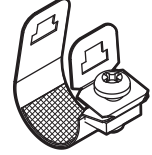


When 20 pcs or more are ordered, they will be packed together.

- Mounting bracket set

**SCPD3 - T - 6**

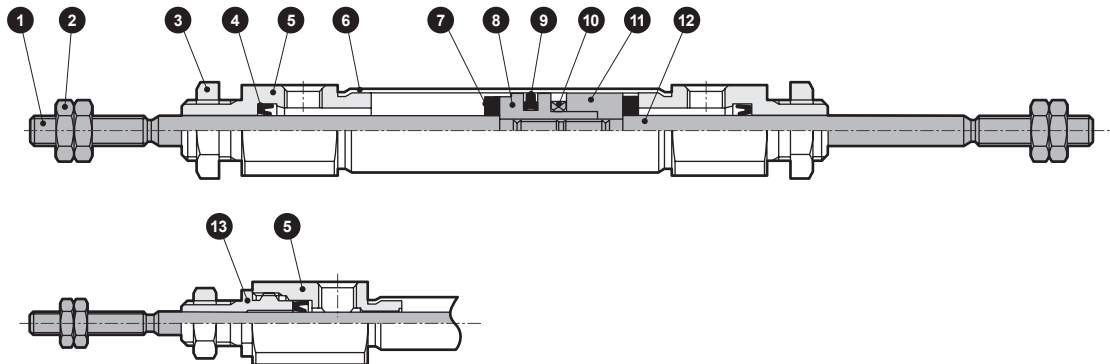
Bore size  
(Item C on page 46)



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  $\phi 6$

**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

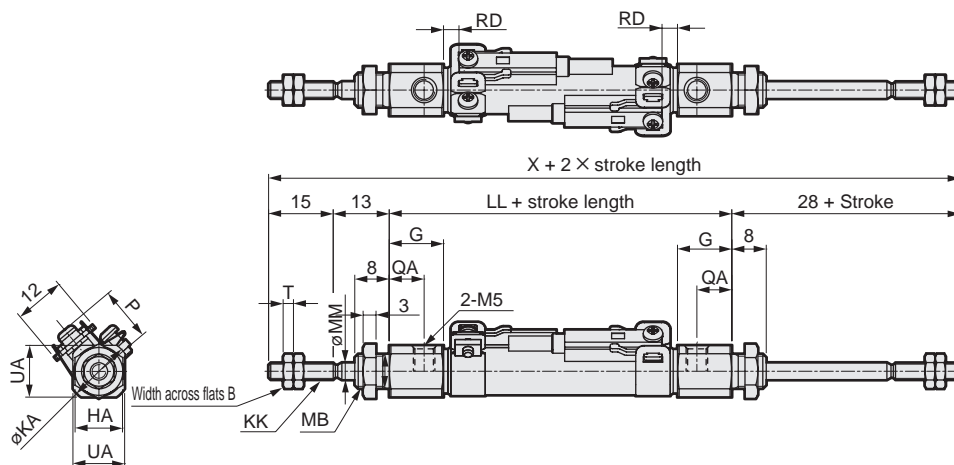
Ending



# SCPD3-D Series

## Dimensions

### ● SCPD3-D (L) Basic (00)



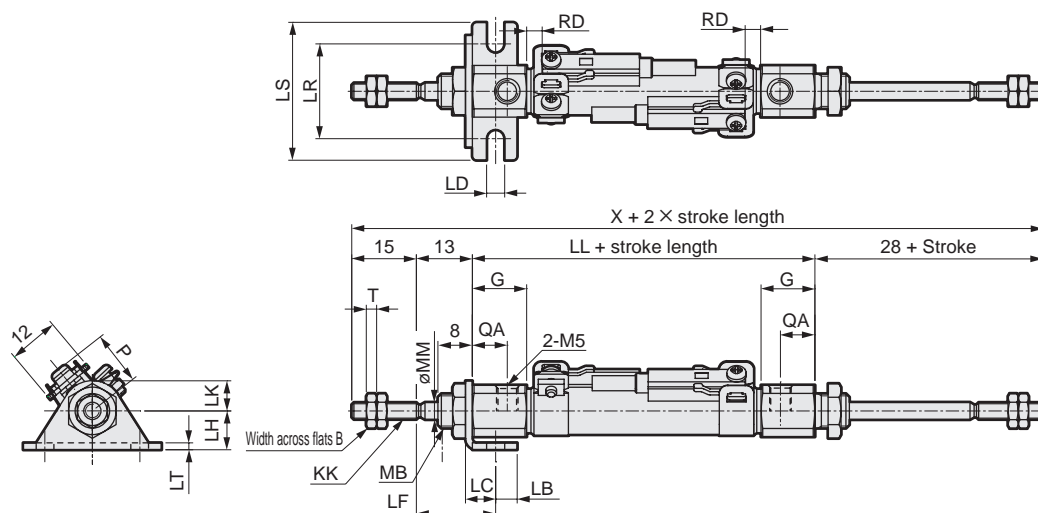
\*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

\*2 : As the thread depth of ø6/ø10 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
ø6	5.5	17	8	13.5	M3	56	M6	3	13	1.8	11	112	RD	RD	RD
ø10	7	12.5	11	14.5	M4	54.5	M8x1.0	4	8	2.4	12	110.5	5.5	7.5	13.5
ø16	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.)

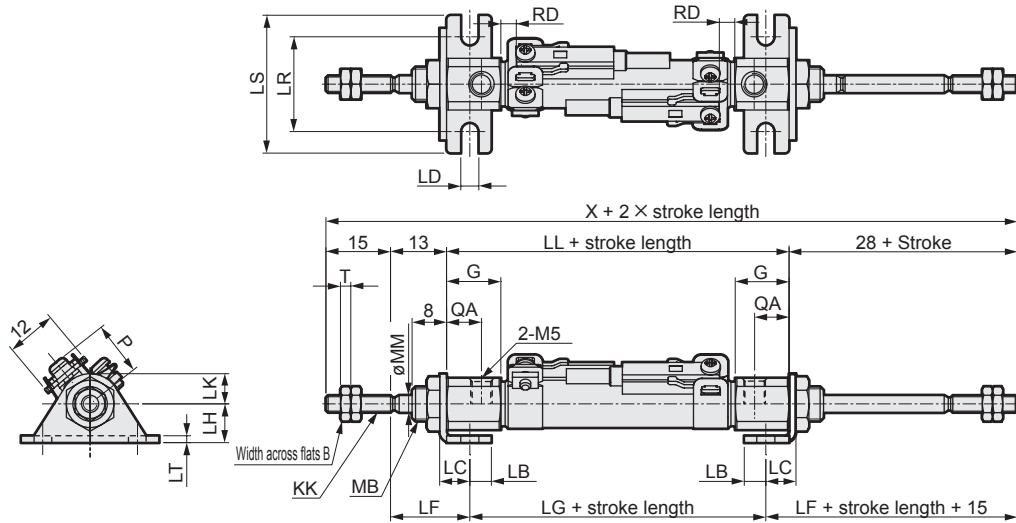
\*2 : As the thread depth of ø6/ø10 port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

\*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
ø6	5.5	17	M3	56	M6	3	13	1.8	112	5	7	4.2	18.4	9	7	22	32	1.6	RD	RD	RD
ø10	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
ø16	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)



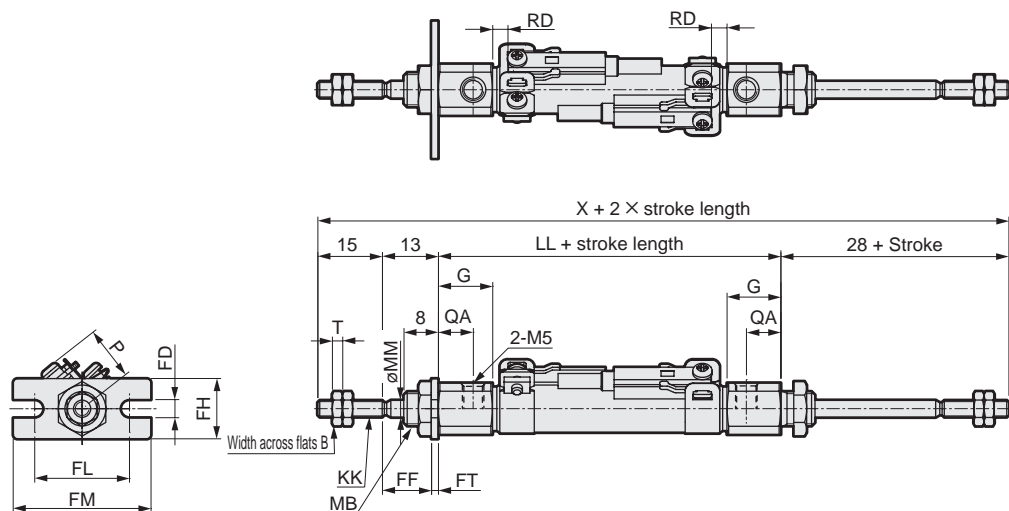
\*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

\*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	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	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)



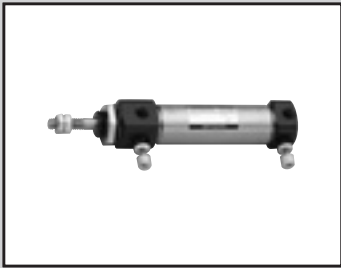
\*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

\*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	2	4	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



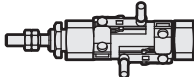
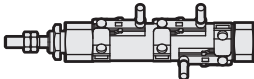
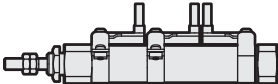
Item	SCPD3-Z	
	SCPD3-Z	SCPD3-ZL
Bore size mm	$\varnothing 10$	$\varnothing 16$
Actuation	Double acting/with speed controller	
Working fluid	Compressed air	
Max. working pressure MPa	1.0 ( $\approx 150$ psi, 10 bar)	
Min. working pressure MPa	0.1 ( $\approx 15$ psi, 1 bar)	
Proof pressure MPa	1.6 ( $\approx 230$ 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 ±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	
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	ø10	36	41	46	51	84	89	94	99	2	Refer to the weight in the switch specifications.
	ø16	66	74	82	90	114	122	130	138		

## Mounting bracket weight

(Unit: g)

Applicable bore size	Mounting		
	Foot LS	Flange FA	Clevis CB
ø10	6	4	4
ø16	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
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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.61x10 <sup>2</sup>	1.81x10 <sup>2</sup>	2.01x10 <sup>2</sup>
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

# 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
<b>A Mounting</b>	
00	Basic
LS	Axial foot (one side) (rod side)
FA	Rod side flange
CB	Clevis bracket (pin and snap ring included)

<b>B Bore size (mm)</b>	
10	$\phi 10$
16	$\phi 16$

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

<b>D Switch model No.</b>						
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	

<b>* Lead wire length</b>	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

<b>E Switch quantity</b>	
R	1 on rod side
H	1 on head side
D	2
T	3

<b>F Accessory</b>	
I	Rod eye
Y	Rod clevis (pin and snap ring included)

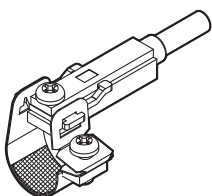
## How to order switch

● Switch body + mounting bracket set

SCPD3 - T0H - 6

Bore size  
(Item B above)

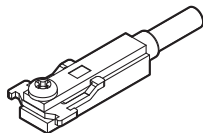
Switch model No.  
(Item D above)



● Switch body (with fixing bracket)

SCPD3 - T0H

Switch model No.  
(Item D above)

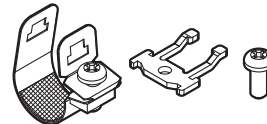


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● 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.

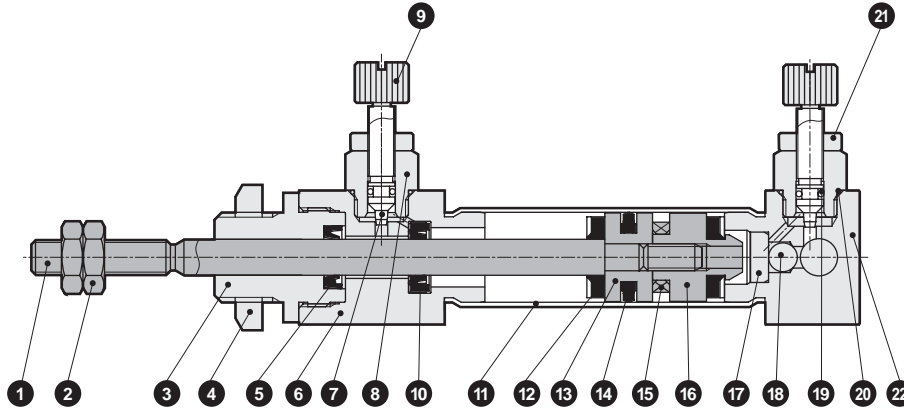
## How to order mounting bracket

Bore size (mm)	$\phi 10$	$\phi 16$
<b>Mounting bracket</b>		
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

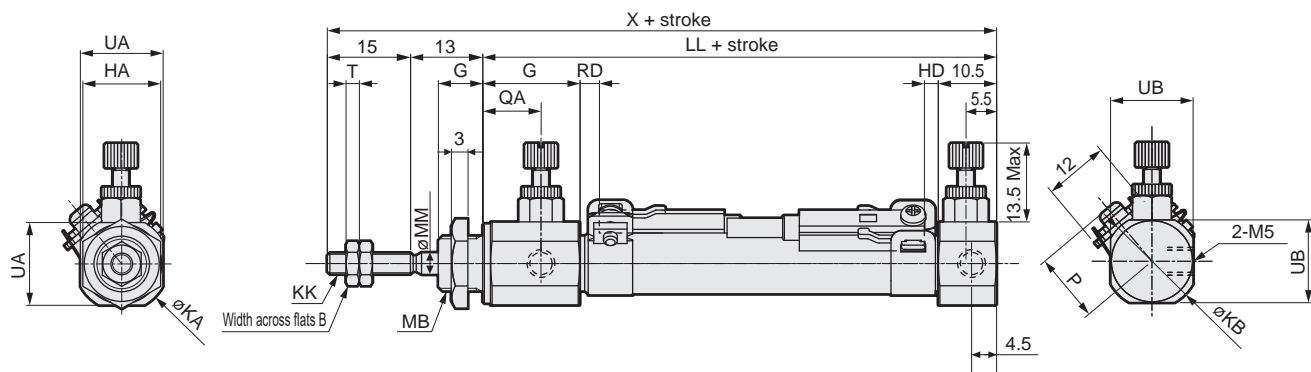
Ending

# 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.

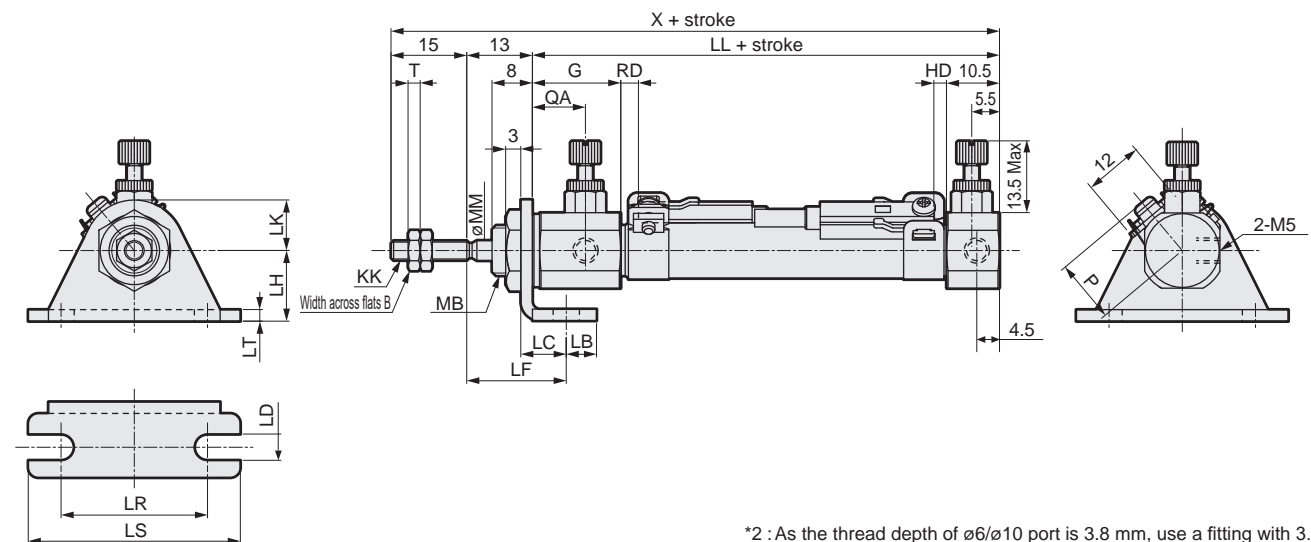
\*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)

Code	Basic (00) Basic dimensions														
	Bore size (mm)	B	G	HA	KA	KB	KK	LL	MB	MM	QA	T	UA	UB	X
CAT	$\phi 10$	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					
	T0, T5, T2, T3		T2W, T3W		P	
	RD	HD	RD	HD		
MVC	$\phi 10$	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.)

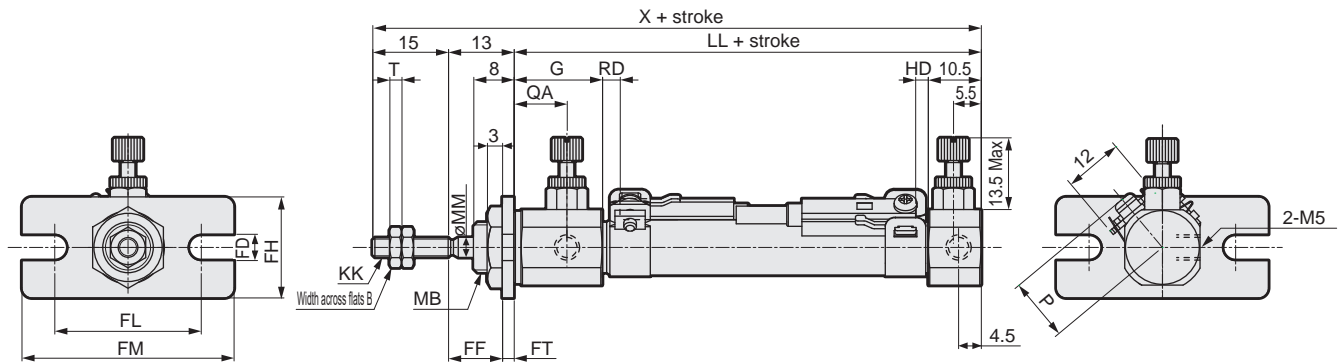
Code	Axial foot (single) (LS) Basic dimensions								Mounting dimensions									
	Bore size (mm)	B	G	KK	MB	MM	QA	T	X	LB	LC	LD	LF	LL	LH	LK	LR	LS
FJ	$\phi 10$	7	17.5	M4	M10x1.0	4	10.5	2.4	80.5	6	9	5.2	19.7	52.5	14	10	29	42
	$\phi 16$	8	18	M5	M12x1.0	5	11	3.2	80.5	6	9	5.2	19.7	52.5	14	10	29	42

Code	With switch						
	LT	T0, T5, T2, T3		T2W, T3W		P	
		RD	HD	RD	HD		
Spd Contr	$\phi 10$	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.

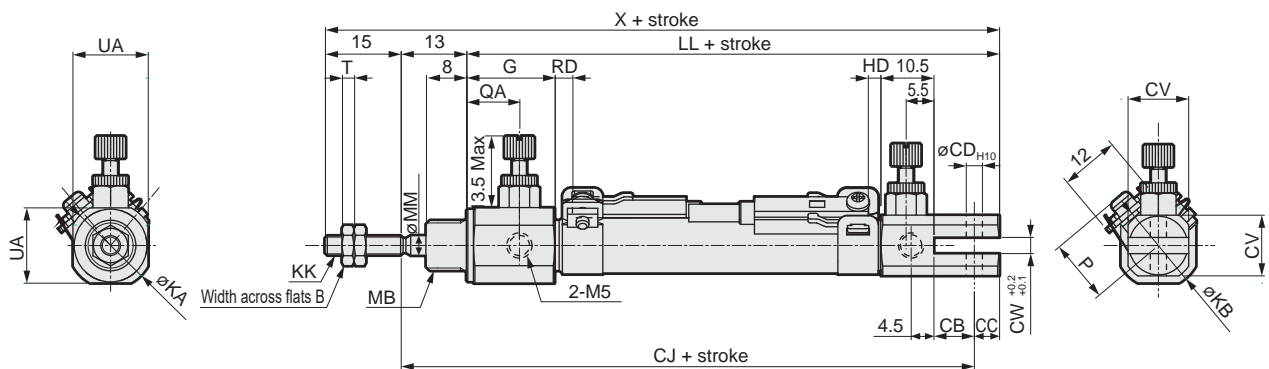
\*3: For the dimensions of the accessories, refer to page 15.

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.

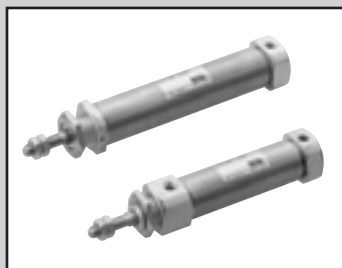
\*3: For the dimensions of the accessories, refer to page 15.

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	





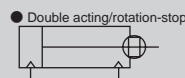
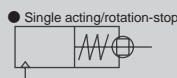
Pencil shaped cylinder

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		
	mm	$\varnothing 10$	$\varnothing 16$	$\varnothing 10$	$\varnothing 16$
Bore size					
Actuation	Single acting/rotation-stop		Double acting/rotation-stop		
Working fluid	Compressed air				
Max. working pressure MPa	1.0 ( $\approx 150$ psi, 10 bar)				
Min. working pressure MPa	0.15 ( $\approx 22$ psi, 1.5 bar)		0.1 ( $\approx 15$ psi, 1 bar)		
Proof pressure MPa	1.6 ( $\approx 230$ 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)				
Non-rotating accuracy <sup>(Note)</sup>	$\pm 2^{\circ}$				
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)
SCPS3-M	15/30/45/60	120	5
SCPD3-M		200	
	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		

## 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 <sup>2</sup>	1.29x10 <sup>2</sup>	1.49x10 <sup>2</sup>	1.69x10 <sup>2</sup>	1.90x10 <sup>2</sup>

● 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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.61x10 <sup>2</sup>	1.81x10 <sup>2</sup>	2.01x10 <sup>2</sup>
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

# SCP<sub>D</sub>3-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
<b>A Model No.</b>	
<b>SCPS3-M</b>	Single acting push/rotation-stop
<b>SCPD3-M</b>	Double acting/rotation-stop

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

<b>C Bore size (mm)</b>	
<b>10</b>	$\phi$ 10
<b>16</b>	$\phi$ 16

<b>D Stroke (mm)</b>			
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.

<b>E Head side port direction</b>	
<b>Blank</b>	Vertical
<b>O</b>	Axial direction

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

<b>* Lead wire length</b>	
<b>Blank</b>	1 m (standard)
<b>3</b>	3 m (option)
<b>5</b>	5 m (option)

<b>G Switch quantity</b>	
<b>R</b>	1 on rod side
<b>H</b>	1 on head side
<b>D</b>	2
<b>T</b>	3

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

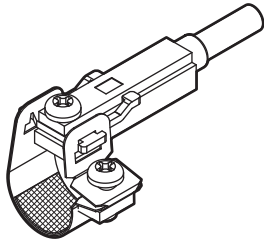
### How to order switch

- Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item C on page 58)

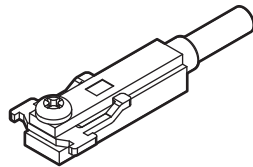
Switch model No.  
(Item F on page 58)



- Switch body (with fixing bracket)

**SCPD3 - T0H**

Switch model No.  
(Item F on page 58)

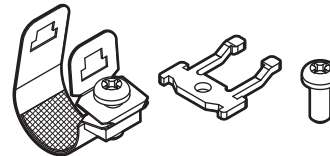


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

- Mounting bracket set + fixing bracket

**SCPD3 - TS - 6**

Bore size  
(Item C on page 58)

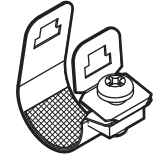


When 20 pcs or more are ordered, they will be packed together.

- Mounting bracket set

**SCPD3 - T - 6**

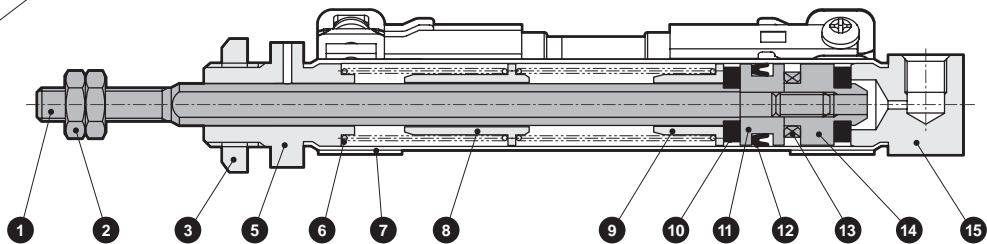
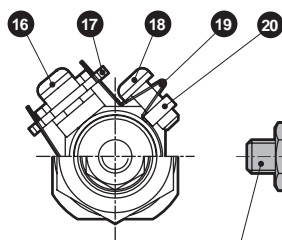
Bore size  
(Item C on page 58)



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

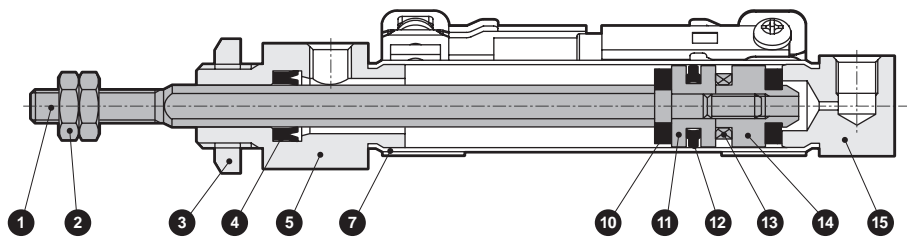
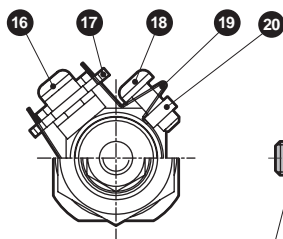
### Internal structure and parts list

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



**Cannot be disassembled**

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



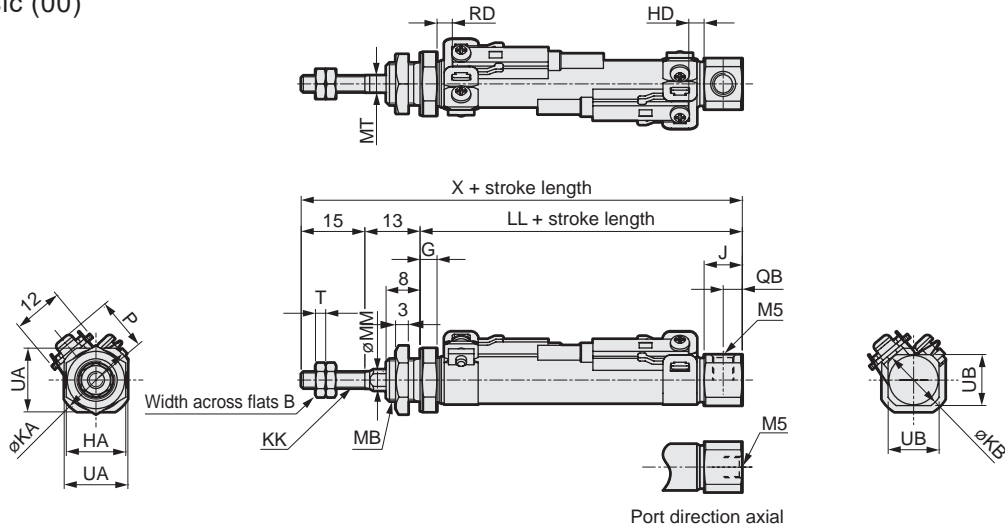
- This product cannot be disassembled.

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)



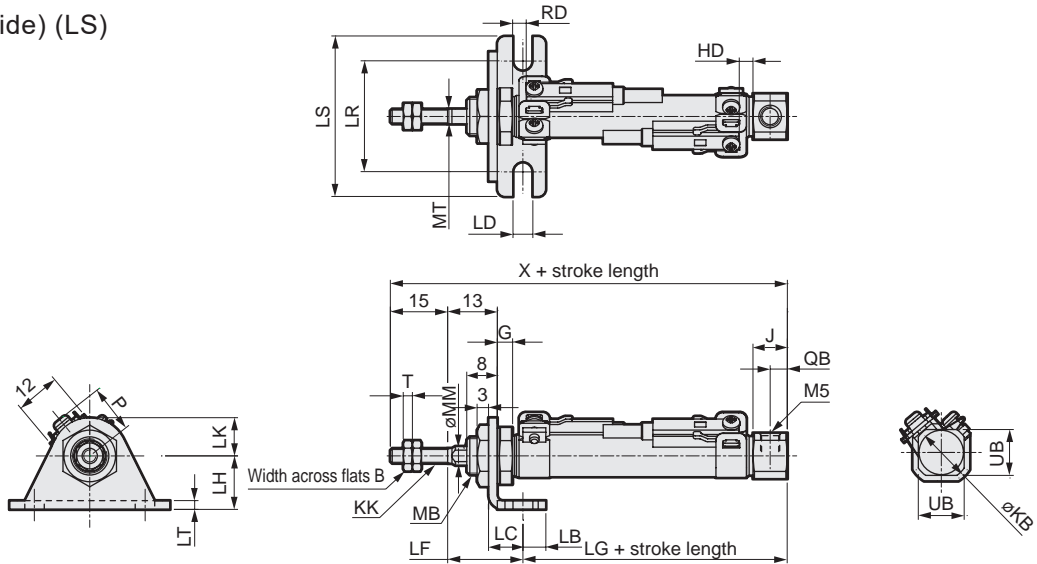
- \*1 : The dimensions are the same in the type without switch. (Magnet is not built in.)
- \*2 : As the thread depth of  $\phi 10$  port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.
- \*3 : For the dimensions of the accessories, refer to page 15.

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.

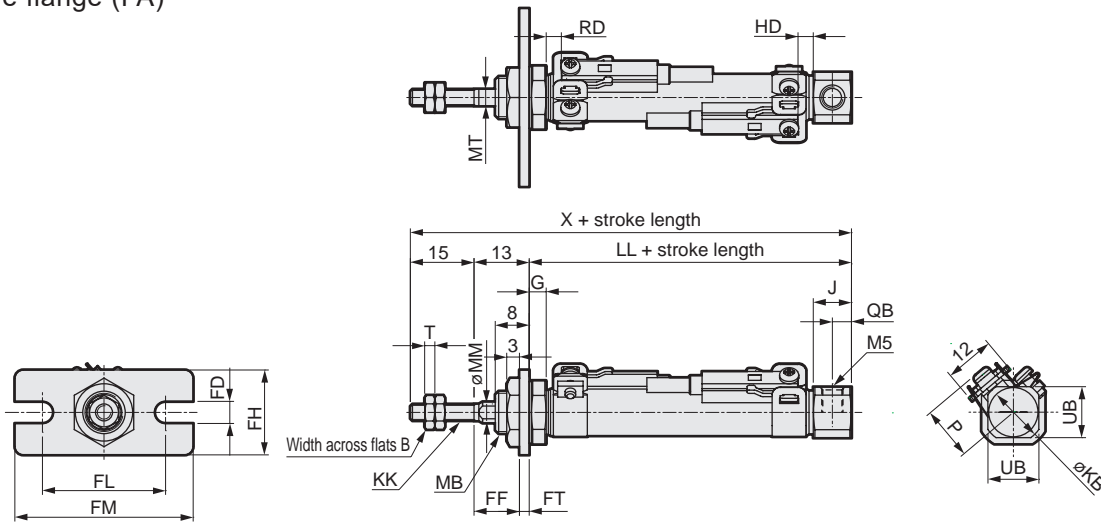
Code	Axial direction (LS) Basic dimensions															Mounting dimensions													
	Bore size (mm)		B	G	J	KB	KK	MB	MM	MT	QB	T	UB	X					LB	LC	LD	LF	LG						
	$\phi 10$	$\phi 16$	7	4	9	14.5	M4	M10x1.0	5	4	4.5	2.4	12	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	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 ø10 port is 3.8 mm, use a fitting with 3.8 mm or less thread length if necessary.

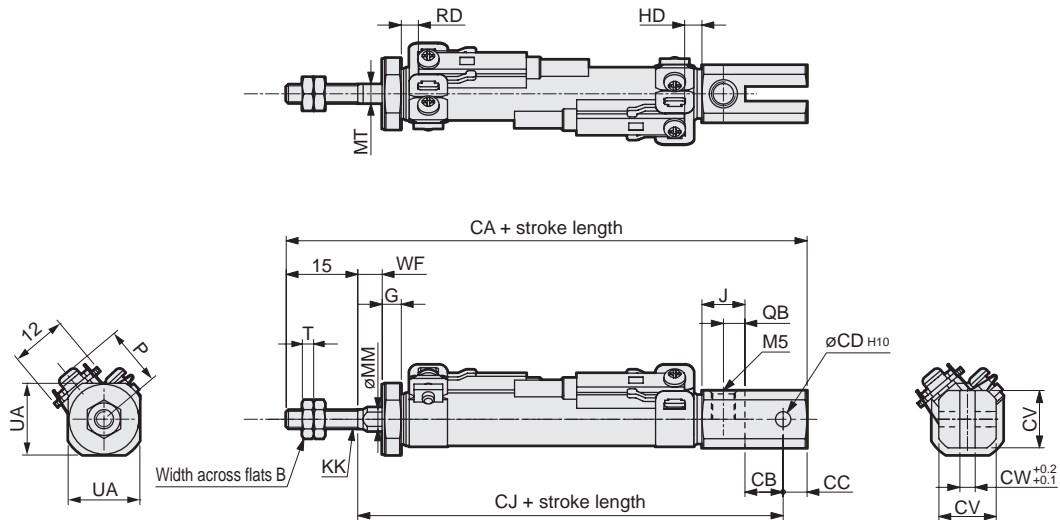
\*3: For the dimensions of the accessories, refer to page 15.

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	
ø10	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			
ø16	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												
	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											
ø10	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
ø16	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 ø10 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	
ø10	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	
ø16	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	

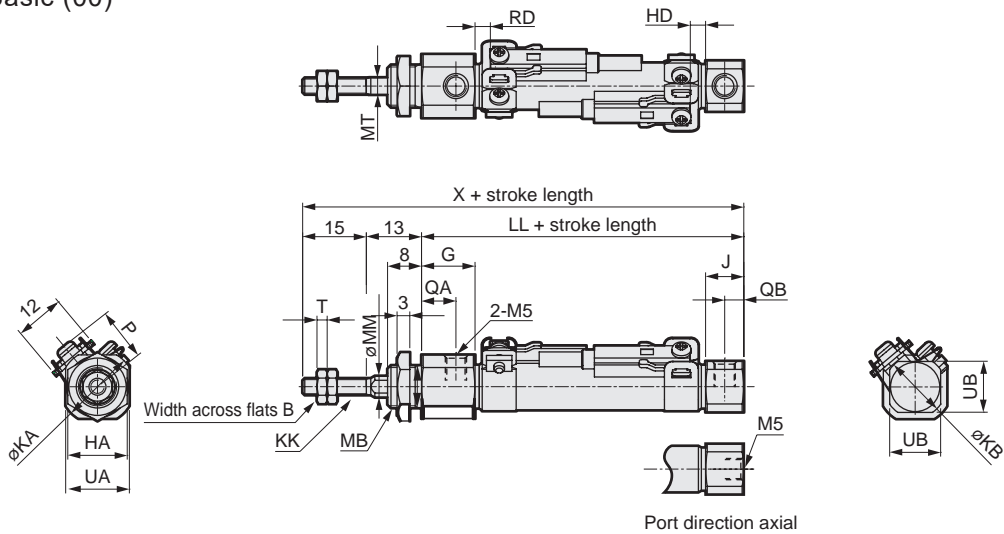
  

Code	With switch																												
Bore size (mm)	CV	CW	WF							T0, T5, T2, T3						T2W, T3W					HD	P							
			15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 60 to 75	Over 75 to 90	Over 90 to 105	RD			RD																
	15 or less	Over 15 to 30	Over 30 to 45	Over 45 to 60	Over 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													
ø10	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
ø16	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

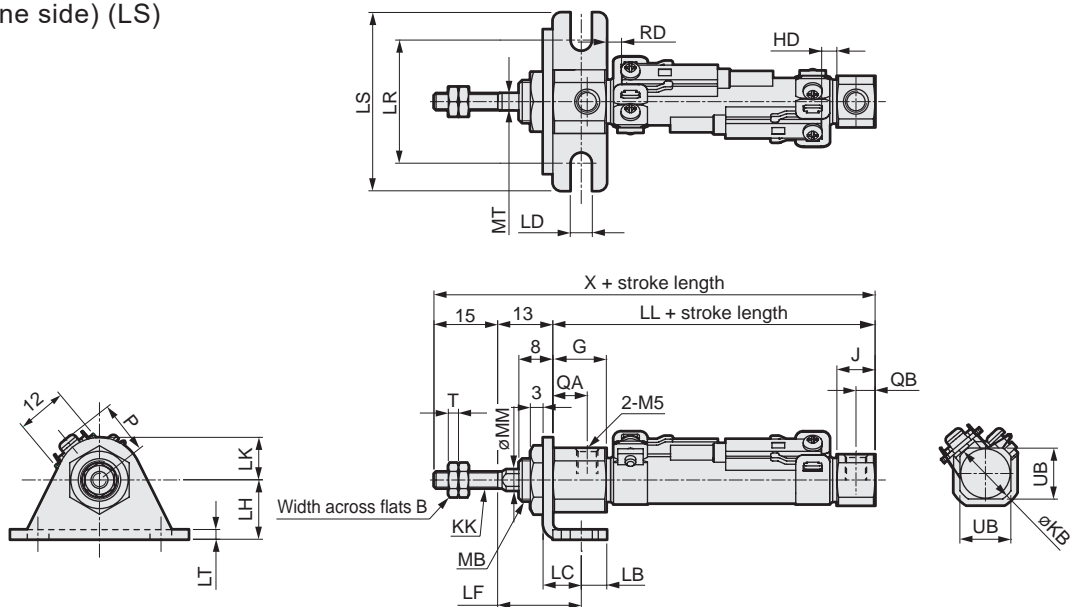
### ● SCPD3-M (L) Basic (00)



\*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	3.5	2.5	5.5	4	13.5						
ø16	18	18	74	2	3.5	3.5	5	17.0						

### ● Axial foot (one side) (LS)

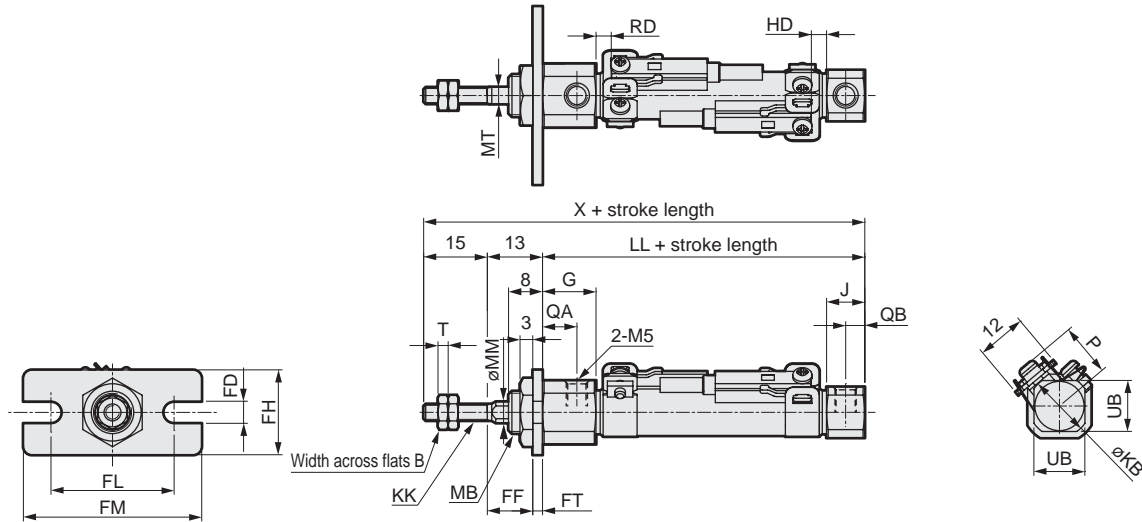


\*1: For the dimensions of the accessories, refer to page 15.

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	3.5	2.5	5.5	4	13.5				
ø16	2.3	9	10	29	42	19.7	46	2	3.5	3.5	5	17.0				

## Dimensions

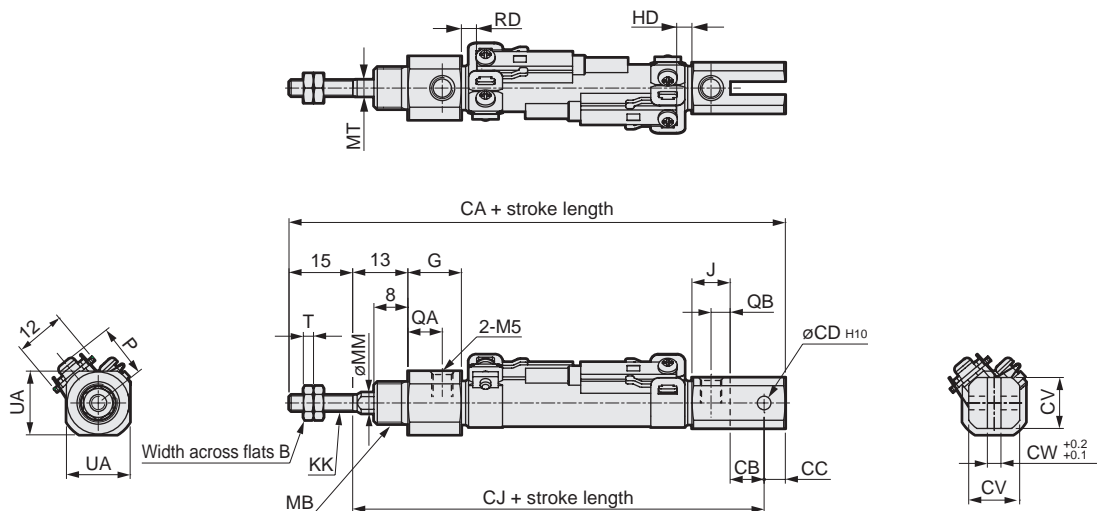
### ● Rod side flange (FA)



\*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			

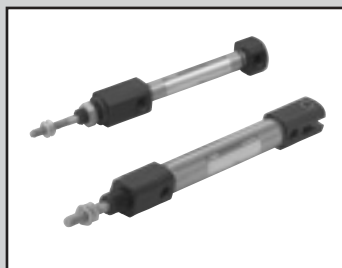
### ● Clevis bracket (CB) with pin



\*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 ( $\approx 150$ psi, 10 bar)		
Min. working pressure MPa	0.15 ( $\approx 22$ psi)	0.1 ( $\approx 15$ psi, 1 bar)	
Proof pressure MPa	1.6 ( $\approx 230$ 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	0.012	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 <sup>st</sup>	30 <sup>st</sup>	45 <sup>st</sup>	60 <sup>st</sup>	15 <sup>st</sup>	30 <sup>st</sup>	45 <sup>st</sup>	60 <sup>st</sup>		
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 <sup>st</sup>	30 <sup>st</sup>	45 <sup>st</sup>	60 <sup>st</sup>
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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>	1.61x10 <sup>2</sup>	1.81x10 <sup>2</sup>	2.01x10 <sup>2</sup>
	Pull	18.1	27.2	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>	1.45x10 <sup>2</sup>	1.63x10 <sup>2</sup>	1.81x10 <sup>2</sup>

SCPD3  
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-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			
<b>A Mounting</b>				
<b>Bore size (ø)</b>		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>B Bore size (mm)</b>	
6	ø6
10	ø10
16	ø16

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

<b>D Head side port direction</b>	
Blank	Vertical
O	Axial direction

<b>E Switch model No.</b>						
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	

<b>* Lead wire length</b>	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

<b>F Switch quantity</b>	
R	1 on rod side
H	1 on head side
D	2
T	3

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

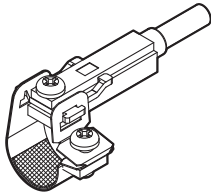
## How to order switch

● Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item B on page 66)

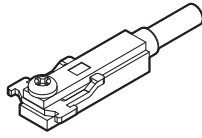
Switch model No.  
(Item E on page 66)



● Switch body (with fixing bracket)

**SCPD3 - T0H**

Switch model No.  
(Item E on page 66)

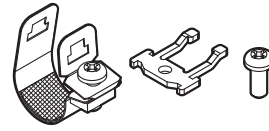


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T standard switch.

● 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.

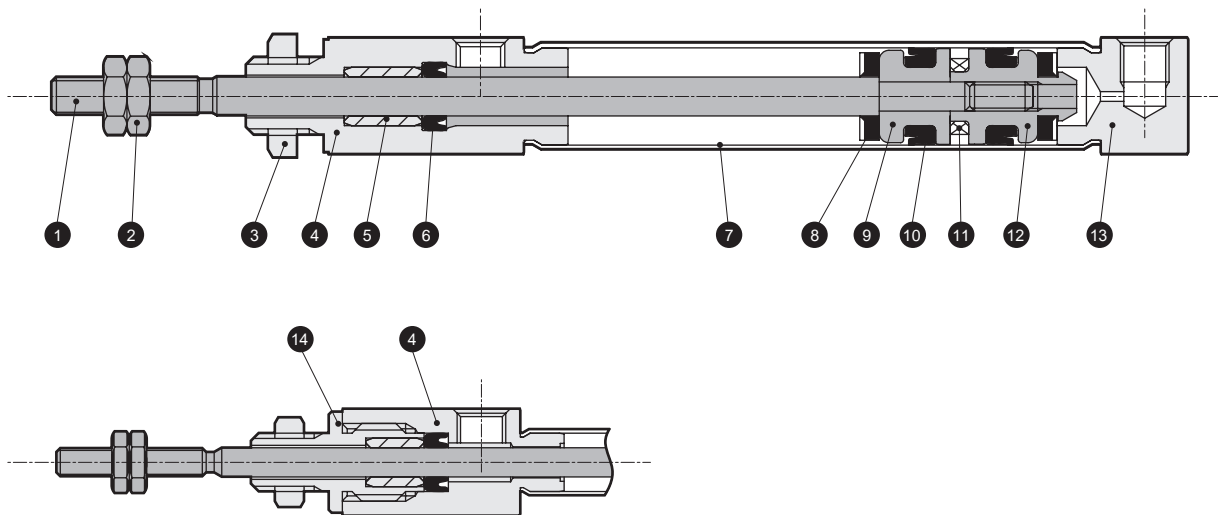
## How to order mounting bracket

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

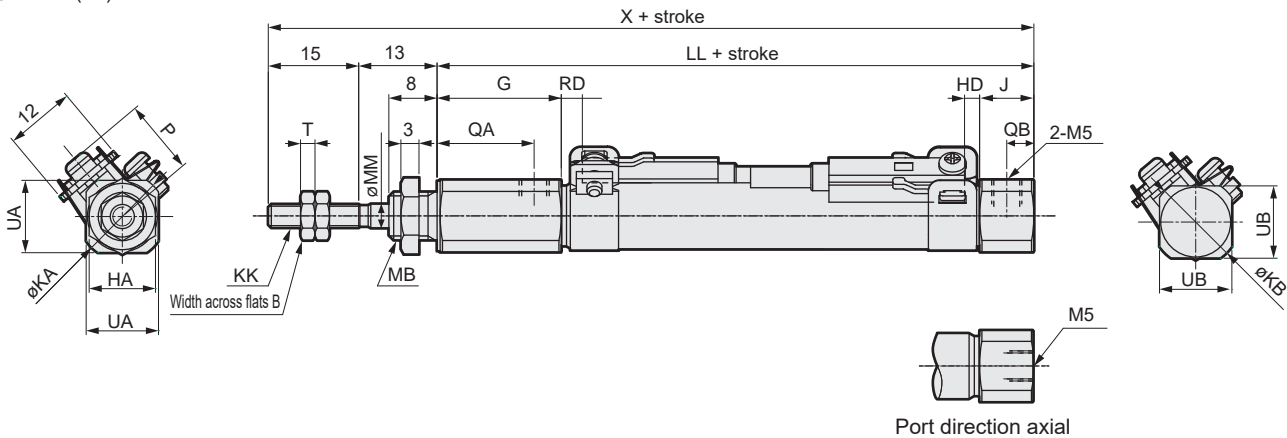
- SCP\*3
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS2
- CKV2
- CAV2/COVP/N2
- SSD2
- SSG
- SSD
- CAT
- MDC2
- MVC
- SMG
- MSD/MSDG
- FC\*
- STK
- SRL3
- SRG3
- SRM3
- SRT3
- MRL2
- MRG2
- SM-25
- ShkAbs
- FJ
- FK
- Spd Contr
- Ending

# SCPD3-K Series



## Dimensions

### ● Basic (00)



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

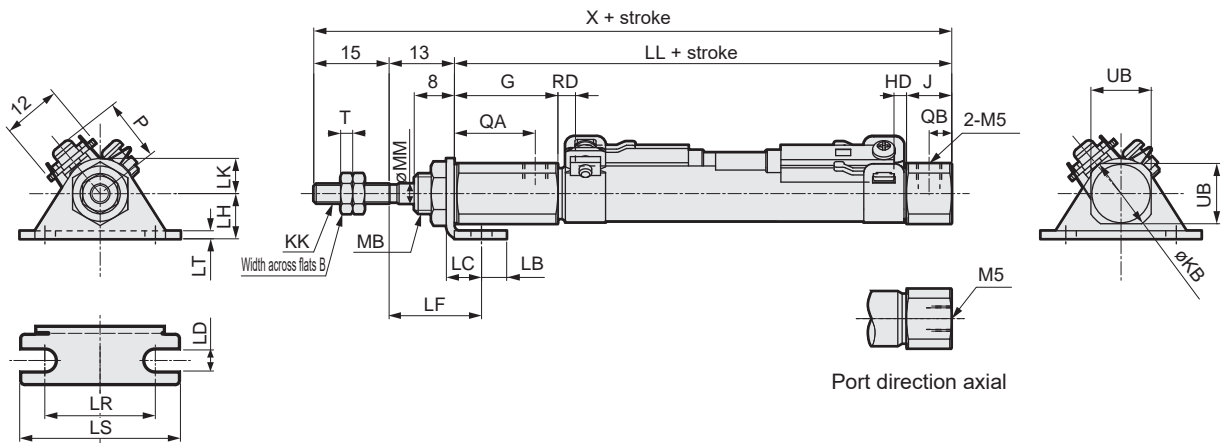
\*2: For the dimensions of the accessories, refer to page 15.

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.

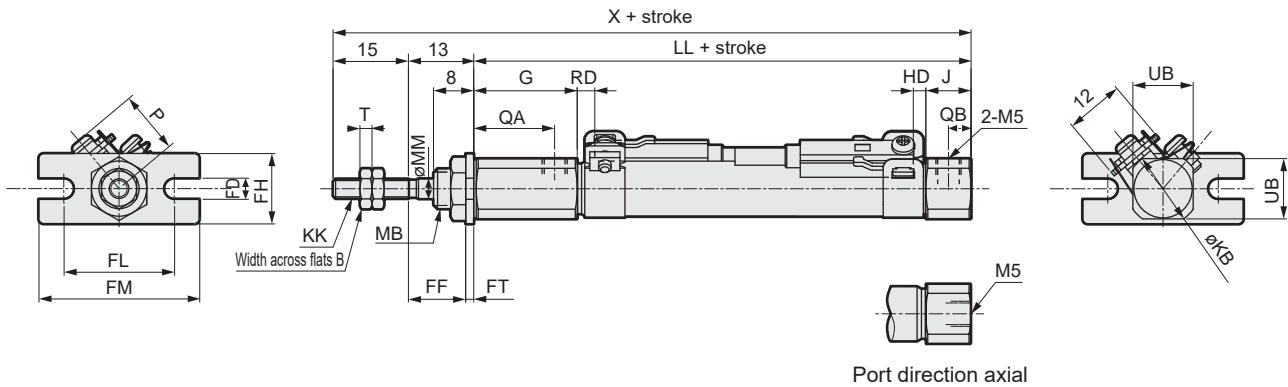
Code	Axial foot (single) (LS) Basic dimensions													Mounting dimensions		
	Bore size (mm)	B	G	J	KB	KK	LL	MB	MM	QA	QB	T	UB	X	LB	LC
ø6	5.5	20	8	13.5	M3	55	M6	3	16	4	1.8	11(8)	83	5	7	4.2
ø10	7	20.5	9	14.5	M4	59	M8x1.0	4	16	4.5	2.4	12	87	5	7	4.2
ø16	8	21	9	21.5	M5	62	M10x1.0	5	16.5	4.5	3.2	18	90	6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



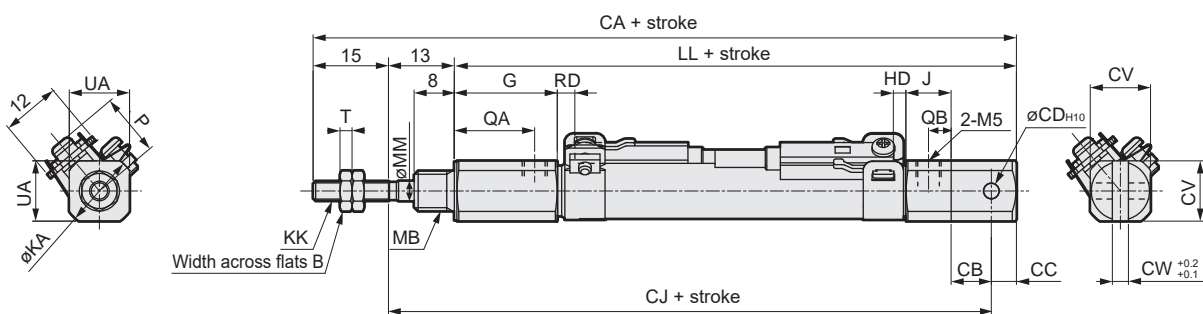
\*1: For the dimensions of the accessories, refer to page 15.

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



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

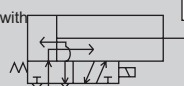
# SCPS3-V Series SCPD3-V Series

● 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	$\phi 10$	$\phi 16$
Actuation		Single acting/with valve		Double acting/with valve
Working fluid		Compressed air		
Max. working pressure	MPa	1 ( $\approx 150$ psi, 10 bar)		0.7 ( $\approx 100$ psi, 7 bar)
Min. working pressure	MPa	0.15 ( $\approx 22$ psi, 1.5 bar)		
Proof pressure	MPa	1.5 ( $\approx 220$ psi, 15 bar)		1.05 ( $\approx 150$ 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
<b>Solenoid valve specifications</b>				
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	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 weight	Switch weight (per switch)
		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 <sup>2</sup>	1.29x10 <sup>2</sup>	1.49x10 <sup>2</sup>	1.69x10 <sup>2</sup>	1.90x10 <sup>2</sup>

### ● 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 <sup>2</sup>	1.21x10 <sup>2</sup>	1.41x10 <sup>2</sup>
	Pull	27.2	36.3	54.4	72.6	90.7	1.09x10 <sup>2</sup>	1.27x10 <sup>2</sup>

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<sub>D</sub>3-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 :  $\phi$ 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
<b>A Model No.</b>	
SCPS3-V	Single acting push with valve
SCPD3-V	Double acting with valve

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

<b>C Bore size (mm)</b>	
10	$\phi$ 10
16	$\phi$ 16

<b>D Stroke (mm)</b>		
Bore size	Stroke *1	Custom stroke
$\phi$ 10	15 to 200(120)	In 1 mm increments
$\phi$ 16	15 to 260(120)	

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

<b>E Valve voltage</b>	
1	100 VAC
2	200 VAC
3	24 VDC

<b>F Switch model No.</b>						
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

<b>* Lead wire length</b>	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

<b>G Switch quantity</b>	
R	1 on rod side
H	1 on head side
D	2

<b>H Option</b>	
P6	Copper and PTFE free (made-to-order product)

<b>I Accessory</b>	
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)	$\phi$ 10	$\phi$ 16
<b>Mounting bracket</b>		
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.

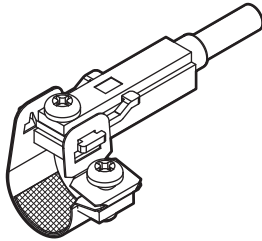
### How to order switch

● Switch body + mounting bracket set

**SCPD3 - T0H - 6**

Bore size  
(Item ③ on page 72)

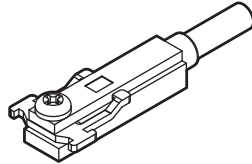
Switch model No.  
(Item ⑤ on page 72)



● Switch body (with fixing bracket)

**SCPD3 - T0H**

Switch model No.  
(Item ⑤ on page 72)

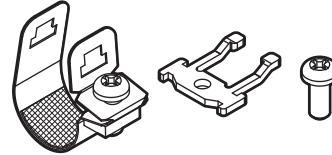


Note) The fixing bracket and cross-recessed pan head machine screw are different from those for the T type standard switch.

● Mounting bracket set + fixing bracket

**SCPD3 - TS - 6**

Bore size  
(Item ③ on page 72)

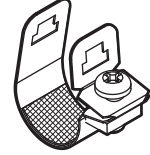


When 20 pcs or more are ordered, they will be packed together.

● Mounting bracket set

**SCPD3 - T - 6**

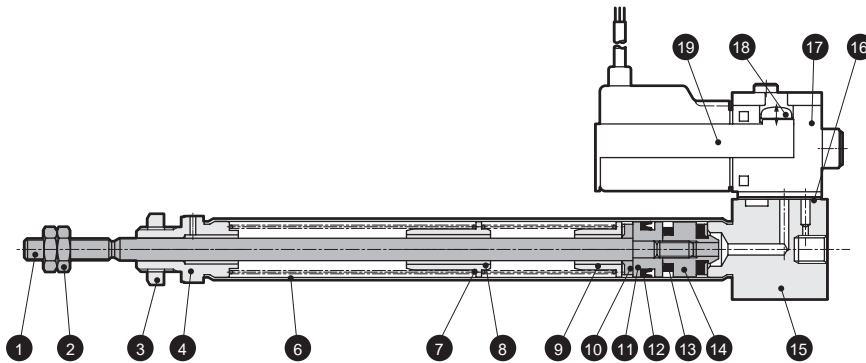
Bore size  
(Item ③ on page 72)



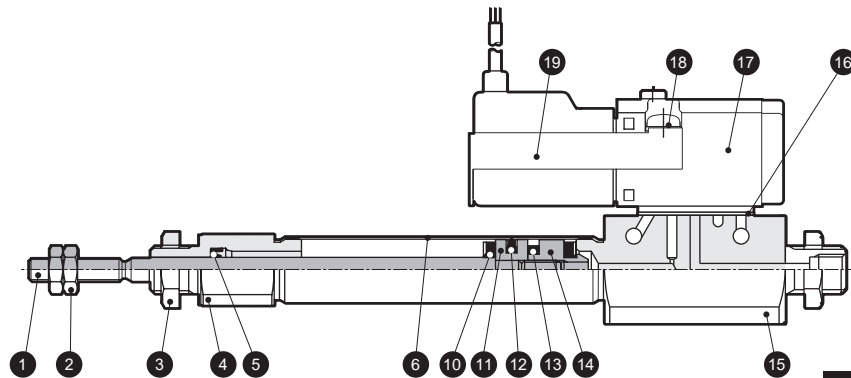
When 20 pcs or more are ordered, they will be packed together.

### Internal structure and parts list (with switch)

● SCPS3-VL



● SCPD3-VL



**Cannot be disassembled**

\* This product is caulked and cannot be disassembled.

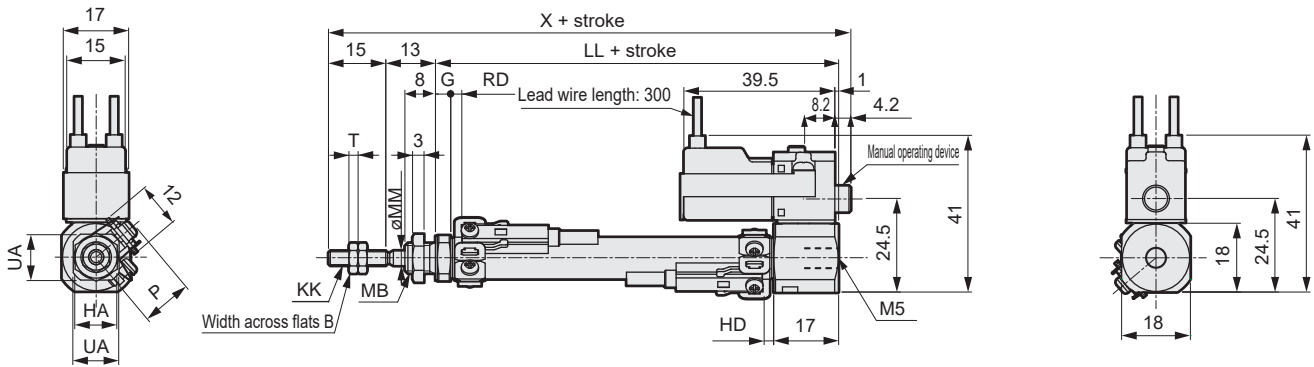
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Piston rod	Stainless steel		11	Piston	Aluminum alloy	
2	Rod nut	Steel	Nickeling	12	Piston packing	Nitrile rubber	
3	Hexagon nut	Steel	Nickeling	13	Magnet	-	With switch only
4	Rod cover	Aluminum alloy	Hard alumite	14	Spacer	Aluminum alloy	
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<sub>VL</sub> Series

## Dimensions



### ● Basic (00)



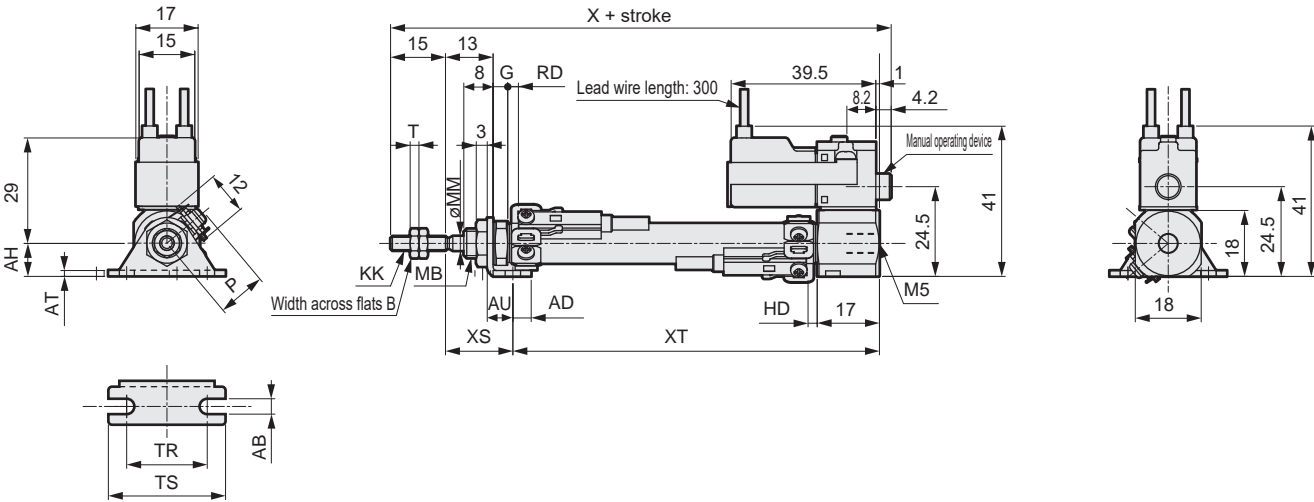
\*1: For the dimensions of the accessories, refer to page 15.

Code	Basic (00) Basic dimensions																							
	Basic dimensions				LL								MB		MM	T	UA	X						
	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
	RD									RD									
Bore size (mm)	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						
	Basic dimensions				X								AB	AH	AD	AU	AT	TR	TS	XS	XT			
	B	G	KK	MB	MM	T	15 or less	16 ≤ 30	31 ≤ 45	46 ≤ 60	61 ≤ 75	76 ≤ 90									91 ≤ 105	106 ≤ 120	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						
	RD									RD															
Bore size (mm)	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

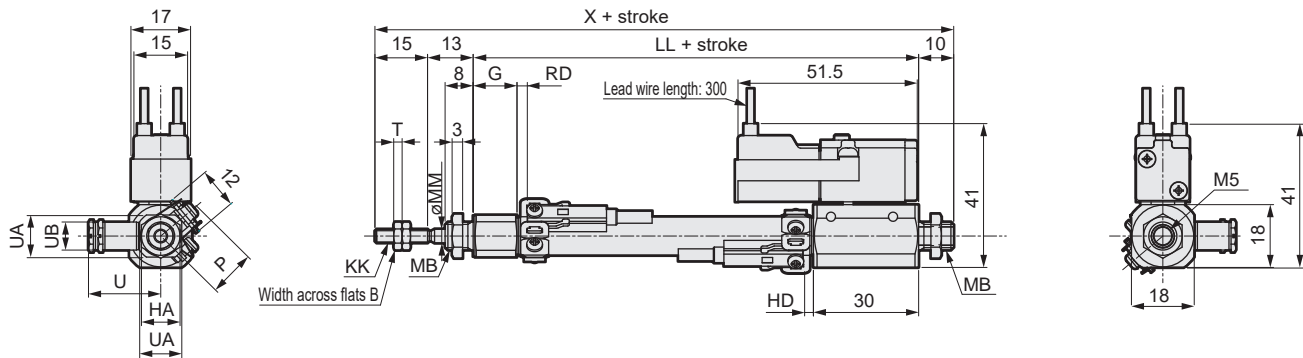


# SCPD3-VL Series



## Dimensions

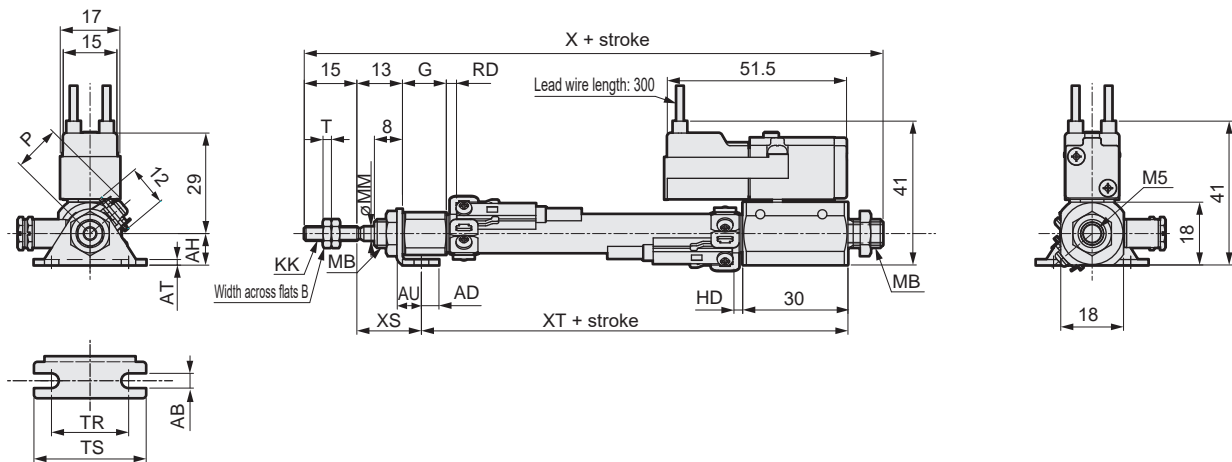
### ● Basic (00)



\*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	∅10	7	11	12.5	M4	67	M8x1.0	4	2.4	21	12	8	105	3.5	2.5	5.5	4	13.5
	∅16	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)

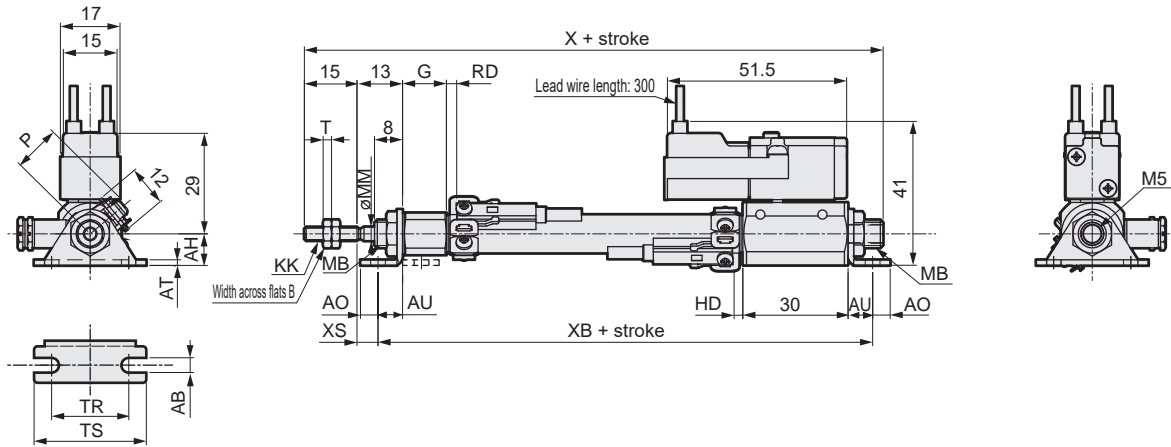


\*1: For the dimensions of the accessories, refer to page 15.

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	∅10	7	12.5	M4	M8x1.0	4	2.4	105	4.2	9	5	1.6	7	22	32	18.4	61.6
FK	∅16	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																
	T0, T5, T2, T3		T2W, T3W		P												
	Bore size	RD	HD	RD		HD											
	∅10	3.5	2.5	5.5	4	13.5											
	∅16	2	3.5	3.5	5	17											

## Dimensions

### ● Two-sided axial foot (LB)



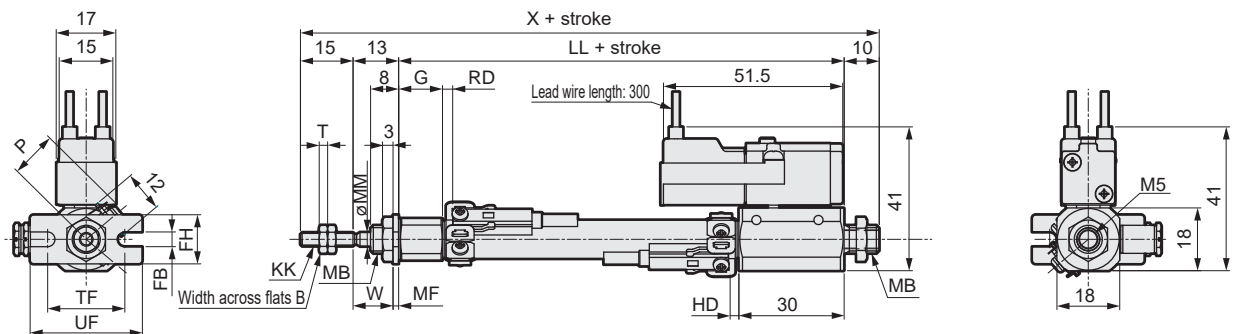
\*1: For the dimensions of the accessories, refer to page 15.

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