

# Discontinue

Pencil shaped cylinder

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

## SCP\* 2 Series

• Bore size: 2.5, 4, 6, 10, 16 mm

• Single acting cylinder/extend type • Single acting cylinder/retract type • Double acting

JIS symbol



CAD DATA AVAILABLE.

## Specifications

| Descriptions                  | SCPS                       |                      | SCPS2<br>SCPS2-L                                     |         | SCPH2<br>SCPH2-L      |        | SCPD2<br>SCPD2-L |         | SCPD2-O<br>SCPD2-OL     |         | SCPD2-T                       |        |         |         |
|-------------------------------|----------------------------|----------------------|------------------------------------------------------|---------|-----------------------|--------|------------------|---------|-------------------------|---------|-------------------------------|--------|---------|---------|
| Bore size mm                  | 2.5 dia.                   | 4 dia.               | 6 dia.                                               | 10 dia. | 16 dia.               | 6 dia. | 10 dia.          | 16 dia. | 6 dia.                  | 10 dia. | 16 dia.                       | 6 dia. | 10 dia. | 16 dia. |
| Actuation                     | Single acting/extend       |                      |                                                      |         | Single acting/retract |        | Double acting    |         | Double acting/low speed |         | Double acting/heat resistance |        |         |         |
| Working fluid                 | Compressed air             |                      |                                                      |         |                       |        |                  |         |                         |         |                               |        |         |         |
| Max. working pressure MPa     | 1.0                        |                      |                                                      |         |                       |        |                  |         |                         |         |                               |        |         |         |
| Min. working pressure MPa     | 0.35                       |                      | 0.3                                                  | 0.15    | 0.39                  | 0.2    | 0.15             | 0.1     | 0.15                    | 0.1     | 0.15                          | 0.1    |         |         |
| Withstanding pressure MPa     | 1.6                        |                      |                                                      |         |                       |        |                  |         |                         |         |                               |        |         |         |
| Ambient temperature °C        | -10 to 60 (to be unfrozen) |                      |                                                      |         |                       |        |                  |         |                         |         | 5 to 120                      |        |         |         |
| Port size                     | Joint (tube 2.5 X 4 dia.)  |                      | M5                                                   |         |                       |        |                  |         |                         |         |                               |        |         |         |
| Stroke tolerance mm           | +0.5<br>0                  |                      | +1.0<br>0                                            |         |                       |        |                  |         |                         |         |                               |        |         |         |
| Working piston speed mm/s     | 50 to 300                  |                      | 50 to 500                                            |         |                       |        | 10 to 200        |         |                         |         | 50 to 500                     |        |         |         |
| Cushion                       | None                       |                      | Rubber cushion                                       |         |                       |        |                  |         |                         |         |                               |        |         |         |
| Lubrication                   | Not required               |                      | (When lubrication, use turbine oil Class 1 ISOVG32.) |         |                       |        |                  |         | Oil free                |         | Oil free                      |        |         |         |
| Allowable energy absorption J | 1.5 X 10 <sup>-4</sup>     | 4 X 10 <sup>-4</sup> | 0.011                                                | 0.041   | 0.162                 | 0.011  | 0.041            | 0.162   | 0.011                   | 0.041   | 0.162                         | 0.011  | 0.041   | 0.162   |

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

## Stroke length

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

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

## Min. stroke length of types with switch

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

## Switch specifications

| Descriptions             | Proximity 2 wire                              |                             | Proximity 3 wire                                                                        |                                 |
|--------------------------|-----------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------|---------------------------------|
|                          | M2V                                           | M2WV<br>(2 color indicator) | M3V                                                                                     | M3WV<br>(2 color indicator)     |
| Applications             | Programmable controller                       |                             | Programmable controller, relay, IC circuit, small solenoid valve                        |                                 |
| Power voltage            | —                                             |                             | DC4.5 to 28V                                                                            | DC10 to 28V                     |
| Load voltage/<br>current | DC10 to 30V,<br>5 to 20mA                     |                             | DC30V or less,<br>200mA or less                                                         | DC30V or less,<br>150mA or less |
| Light                    | LED (ON lighting)                             | Red/green LED (ON lighting) | LED (ON lighting)                                                                       | Red/green LED (ON lighting)     |
| Descriptions             | Reed 2 wire                                   |                             |                                                                                         |                                 |
|                          | M0V                                           |                             | M5V                                                                                     |                                 |
| Applications             | Programmable controller, relay                |                             | Programmable controller, relay, IC circuit (without indicator light), serial connection |                                 |
| Load voltage/<br>current | 5 to 50mA at DC12/24V,<br>7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V,<br>20mA or less at AC110V                                   |                                 |
| Light                    | LED (ON lighting)                             |                             | Without indicator light                                                                 |                                 |

## Single acting spring load (SCPS/SCPS2/SCPH2)

(Unit: N)

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

## Cylinder mass

(Unit: g)

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

## Mounting bracket mass

(Unit: g)

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

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/  
COV \* 2

CAT

MDC2

MVC

SMD2

MSD/  
MSDG

SSD

SSD  
(large)

FC \*

ULKP/  
ULKJSK2/  
JSM2JSC3  
(medium)JSC3  
(large)

JSB3

UCAC

STS/  
STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

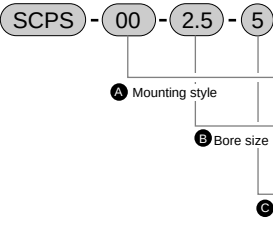
SRM

SRT

SRB2

Standard type  
Pencil shaped cylinder

How to order



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

<Example of model number>

SCPS-00-2.5-5

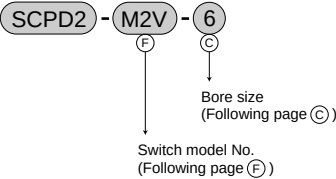
Model: Pencil shaped cylinder single acting/extend type

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

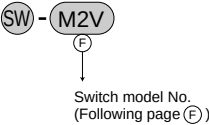
• 1. 6 pcs. per carton

How to order switch

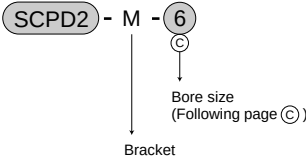
• Switch main body + mounting bracket



• Switch only



• Mounting bracket



How to order mounting bracket

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

#### How to order

Without switch

SCP2 - LS - 10 - 15 - 0 - I

With switch

SCP2-L - LS - 10 - 15 - 0 - M2V - R - I

A Model

B Mounting style

Note 1

C Bore size

Note 2

D Stroke length

E Head side port direction

F Switch model No.

Note 2

Note 3

G Switch quantity

H Accessory

#### Caution for model No. selection

Note 1: For axial port direction "0", mounting style "CB" is not available.

Note 2: For types without switch, magnet is not integrated.

Note 3: Custom switches are available other than F Switch model No.

Please refer to Ending 1 about details.

Note 4: For SCP2, SCP2H and SCP2D, copper and PTFE free specifications are provided as standard.

Note 5: Please refer to Ending 81 about custom specifications of rod end form.

Note 6: Please refer to Page 6 about variation/optional combination.

#### <Example of model number>

SCP2D-OL-LS-10-15-0-M2V-R-I

Model: Pencil shaped cylinder

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

#### Head cover side port direction

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

|                            |                                   | A Model                        |                                |               |           |         |    |   |                 |    |   |    |    |
|----------------------------|-----------------------------------|--------------------------------|--------------------------------|---------------|-----------|---------|----|---|-----------------|----|---|----|----|
|                            |                                   | Single acting<br>spring return | Single acting<br>spring extend | Double acting | Low speed |         |    |   | Heat resistance |    |   |    |    |
| Symbol                     | Descriptions                      | SCPS2                          | SCPH2                          | SCP2D         | SCP2D-0   | SCP2D-T |    |   |                 |    |   |    |    |
| B Mounting style           |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| Bore size                  |                                   | 6                              | 10                             | 16            | 6         | 10      | 16 | 6 | 10              | 16 | 6 | 10 | 16 |
| 00                         | Basic type                        | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| LS                         | Single axial foot type (rod side) | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| FA                         | Rod side flange type              | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| CB                         | Clevis bracket                    | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| C Bore size (mm)           |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| 6                          | 6 dia.                            | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 10                         | 10 dia.                           | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 16                         | 16 dia.                           | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| D Stroke length (mm)       |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| 15                         | 15                                | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 30                         | 30                                | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 45                         | 45                                | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 60                         | 60                                | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| E Head side port direction |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| Blank                      | Vertical                          | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 0                          | Axial                             | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| F Switch model No.         |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| Radial lead wire           | Contact                           | Display                        | Lead wire                      |               |           |         |    |   |                 |    |   |    |    |
| M2V *                      | Proximity                         | 1 color indicator              | 2 wire                         | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| M2VV *                     | Proximity                         | 2 color indicator              |                                | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| M3V *                      | Proximity                         | 1 color indicator              | 3 wire                         | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| M3VV *                     | Proximity                         | 2 color indicator              |                                | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| M3VW *                     | Reed                              | 1 color indicator              | 2 wire                         | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| MOV *                      | Reed                              | 1 color indicator              |                                | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| M5V *                      | Reed                              | 1 color indicator              | 2 wire                         | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| *Lead wire length          |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| Blank                      | 1m (standard)                     | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 3                          | 3m (Option)                       | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| 5                          | 5m (Option)                       | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| G Switch quantity          |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| R                          | One on rod side                   | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| H                          | One on head side                  | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| D                          | Two                               | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| T                          | Three                             | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| H Accessory                |                                   |                                |                                |               |           |         |    |   |                 |    |   |    |    |
| Bore size                  |                                   | 6                              | 10                             | 16            | 6         | 10      | 16 | 6 | 10              | 16 | 6 | 10 | 16 |
| I                          | Rod eye                           | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| Y                          | Rod clevis                        | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| B1                         | Eye bracket                       | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |
| B2                         | Clevis bracket                    | ●                              | ●                              | ●             | ●         | ●       | ●  | ● | ●               | ●  | ● | ●  | ●  |

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/

COV \* 2

CAT

MDC2

MVC

SMD2

MSD/

MSDG

SSD

SSD

(large)

FC \*

ULKP/

ULK

JSK2/

JSM2

JSC3

(medium)

JSC3

(large)

JSB3

UCAC

STS/

STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

SRB2

Standard type

Pencil shaped cylinder

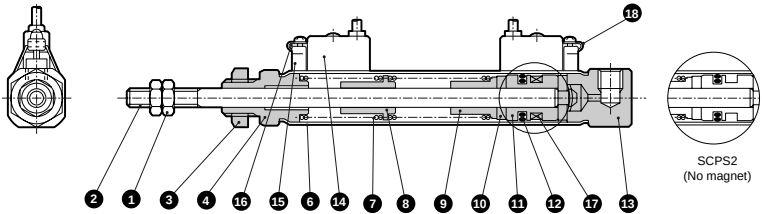
#### Port size of 6 mm bore cylinder

For 6 mm bore cylinder, M3 port is available.

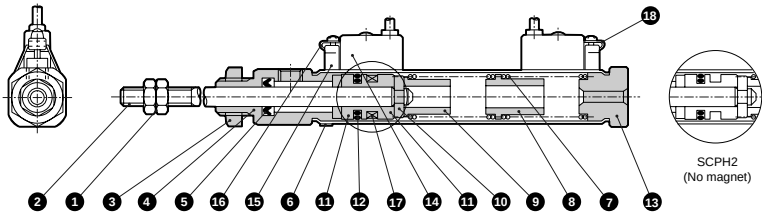
Basic model - M3

Internal structure and parts list

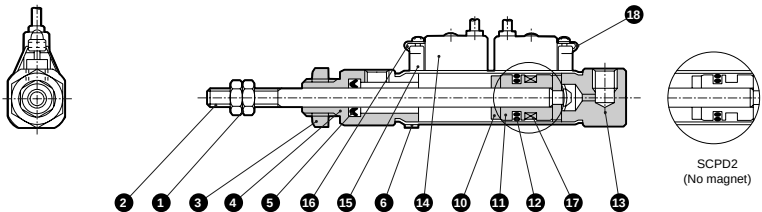
- Single acting spring return type
- SCP52
  - SCP52-L (with switch)



- Single acting spring extend type
- SCPH2
  - SCPH2-L (with switch)



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

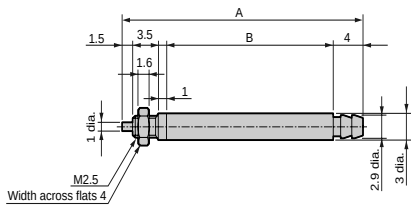


• Can't be disassembled.

| No. | Parts name           | Material         | Remarks                                       | No.         | Parts name             | Material         | Remarks                                       |
|-----|----------------------|------------------|-----------------------------------------------|-------------|------------------------|------------------|-----------------------------------------------|
| 1   | Rod nut              | Steel            |                                               | 11          | Piston                 | Special aluminum |                                               |
| 2   | Piston rod           | Stainless steel  |                                               | 12          | Piston seal            | Nitrile rubber   | (fluoro rubber only for heat resistance type) |
| 3   | Mounting nut         | Steel            | Nickeling                                     | 13          | Head cover             | Special aluminum | Black alumite                                 |
| 4   | Rod cover            | Special aluminum | Black alumite                                 | With switch |                        |                  |                                               |
| 5   | Rod packing          | Nitrile rubber   | (fluoro rubber only for heat resistance type) | 14          | Switch main body       | -                |                                               |
| 6   | Cylinder tube        | Stainless steel  |                                               | 15          | Band                   | Stainless steel  |                                               |
| 7   | Spring               | Piano wire       |                                               | 16          | Pan head machine screw | Steel            |                                               |
| 8   | Spring receiving (A) | Special aluminum |                                               | 17          | Piston magnet          | Plastic magnet   | With switch only                              |
| 9   | Spring receiving (B) | Special aluminum |                                               | 18          | Bracket                | Stainless steel  |                                               |
| 10  | Cushion packing seal | Urethane rubber  | (fluoro rubber only for heat resistance type) |             |                        |                  |                                               |

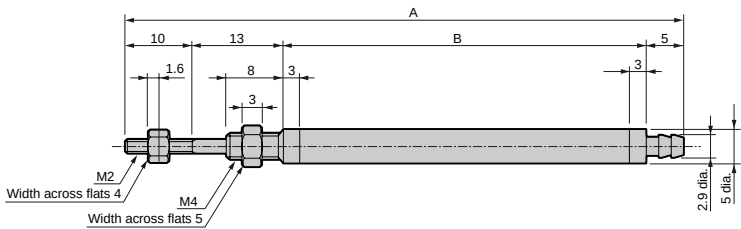
Dimensions

- SCPS basic type (00) 2.5 mm bore  (File name: Page 72 or Ending 110)



| Symbol             | A  | B  |
|--------------------|----|----|
| Stroke length (mm) |    |    |
| 5                  | 33 | 24 |
| 10                 | 38 | 29 |

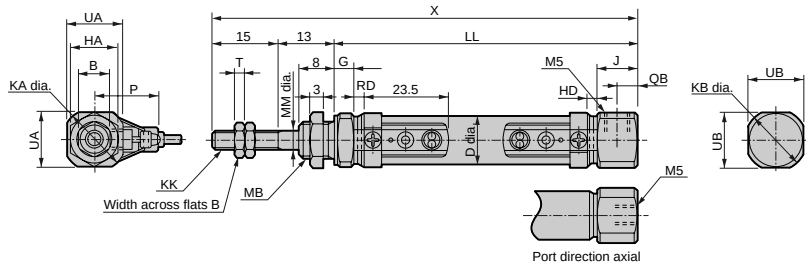
- SCPS basic type (00) 4 mm bore  (File name: Page 72 or Ending 110)



| Symbol             | A    | B    |
|--------------------|------|------|
| Stroke length (mm) |      |      |
| 5                  | 60.5 | 32.5 |
| 10                 | 65.5 | 37.5 |
| 15                 | 81.0 | 53.0 |
| 20                 | 86.0 | 58.0 |

Dimensions

• SCPS2- (L) basic type (00)  (File name: Page 72 or Ending 110)

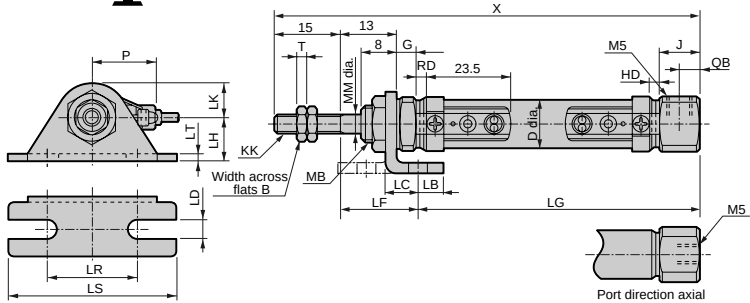


- Please refer to Page 71 about X and LL dimensions of custom stroke length.
  - Dimensions of types without switch are same. (Magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore cylinder. For 6 mm bore cylinder, the value when 100mm stroke is shown.
  - Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.
  - Note 3: For axial head side port direction "O", refer to dimensions in ( ).

| Symbol         | Basic type (00) basic dimensions |      |   |    |   |      |         |    |      |      |      |      |      |      |                 |       |           |    |     |     |  |  |  |
|----------------|----------------------------------|------|---|----|---|------|---------|----|------|------|------|------|------|------|-----------------|-------|-----------|----|-----|-----|--|--|--|
| Bore size (mm) | B                                | D    | G | HA | J | KA   | KB      | KK | LL   |      |      |      |      |      |                 |       | MB        | MM | QB  | T   |  |  |  |
|                |                                  |      |   |    |   |      |         |    | 15st | 30st | 45st | 60st | 75st | 90st | 105st           | 120st |           |    |     |     |  |  |  |
| 6 dia.         | 5.5                              | 6.8  | 3 | 8  | 8 | 9    | 13.5(9) | M3 | 60   | 87   | 114  | 141  | 168  | 195  | 217<br>(Note 1) | -     | M6        | 3  | 4   | 1.8 |  |  |  |
| 10 dia.        | 7                                | 11   | 4 | 11 | 9 | 14.5 | 14.5    | M4 | 64   | 91   | 118  | 145  | 172  | 199  | 226             | 253   | M 8 X 1.0 | 4  | 4.5 | 2.4 |  |  |  |
| 16 dia.        | 8                                | 17.4 | 4 | 14 | 9 | 21.5 | 21.5    | M5 | 64   | 91   | 118  | 145  | 172  | 199  | 226             | 253   | M10 X 1.0 | 5  | 4.5 | 3.2 |  |  |  |

| Symbol         |    |       |      |      |      |      |      |      |                 |       | With switch |      |      |      |      |      |                  |       |    |     |                |
|----------------|----|-------|------|------|------|------|------|------|-----------------|-------|-------------|------|------|------|------|------|------------------|-------|----|-----|----------------|
| Bore size (mm) | UA | UB    | X    |      |      |      |      |      |                 |       | RD          |      |      |      |      |      |                  |       | P  | HD  |                |
|                |    |       | 15st | 30st | 45st | 60st | 75st | 90st | 105st           | 120st | 15st        | 30st | 45st | 60st | 75st | 90st | 105st            | 120st |    |     |                |
| 6 dia.         | 8  | 11(8) | 88   | 115  | 142  | 169  | 196  | 223  | 245<br>(Note 1) | -     | 13.5        | 25.5 | 37.5 | 49.5 | 61.5 | 73.5 | 85.5<br>(Note 1) | -     | 14 | 1.0 | Value in ( )   |
| 10 dia.        | 12 | 12    | 92   | 119  | 146  | 173  | 200  | 227  | 254             | 281   | 14.5        | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5             | 98.5  | 16 | 1.5 | for axial port |
| 16 dia.        | 18 | 18    | 92   | 119  | 146  | 173  | 200  | 227  | 254             | 281   | 14.5        | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5             | 98.5  | 19 | 1.5 | direction type |

• Single axial foot type (LS)  (File name: Page 72 or Ending 110)



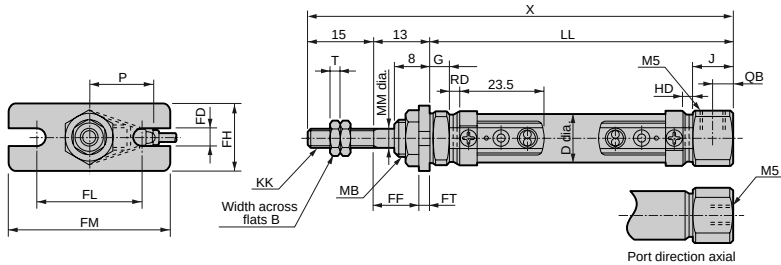
- Please refer to Page 71 about X and LG dimensions of custom stroke length.
  - For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore cylinder. For 6 mm bore cylinder, the value when 100mm stroke is shown.
  - Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Single axial foot type (LS) basic dimensions |      |      |      |           |      |       |       |      |      |     |     |     |     |                 |     | Mounting dimensions |    |     |      |      |      |
|----------------|----------------------------------------------|------|------|------|-----------|------|-------|-------|------|------|-----|-----|-----|-----|-----------------|-----|---------------------|----|-----|------|------|------|
| Bore size (mm) | B                                            | G    | L    | KK   | MB        | MM   | QB    | T     | X    |      |     |     |     |     |                 |     | LB                  | LC | LD  | LF   | LG   |      |
|                | 15st                                         | 30st | 45st | 60st | 75st      | 90st | 105st | 120st | 15st | 30st |     |     |     |     |                 |     |                     |    |     |      |      |      |
| 6 dia.         | 5.5                                          | 3    | 8    | M3   | M6        | 3    | 4     | 1.8   | 88   | 115  | 142 | 169 | 196 | 223 | 245<br>(Note 1) | -   | 5                   | 7  | 4.2 | 18.4 | 54.6 | 81.6 |
| 10 dia.        | 7                                            | 4    | 9    | M4   | M8 X 1.0  | 4    | 4.5   | 2.4   | 92   | 119  | 146 | 173 | 200 | 227 | 254             | 281 | 5                   | 7  | 4.2 | 18.4 | 58.6 | 85.6 |
| 16 dia.        | 8                                            | 4    | 9    | M5   | M10 X 1.0 | 5    | 4.5   | 3.2   | 92   | 119  | 146 | 173 | 200 | 227 | 254             | 281 | 6                   | 9  | 5.2 | 19.7 | 57.3 | 84.3 |

| Symbol         | LG    |       |       |       |                   |       |    |    |    |    | With switch |      |      |      |      |      |      |                  | P    | HD | D   |       |
|----------------|-------|-------|-------|-------|-------------------|-------|----|----|----|----|-------------|------|------|------|------|------|------|------------------|------|----|-----|-------|
|                | 45st  | 60st  | 75st  | 90st  | 105st             | 120st | LH | LK | LR | LS | LT          | 15st | 30st | 45st | 60st | 75st | 90st | 105st            |      |    |     | 120st |
| Bore size (mm) | 108.6 | 135.6 | 162.6 | 189.6 | 211.6<br>(Note 1) | -     | 9  | 7  | 22 | 32 | 1.6         | 13.5 | 25.5 | 37.5 | 49.5 | 61.5 | 73.5 | 85.5<br>(Note 1) | -    | 14 | 1.0 | 6.8   |
| 6 dia.         | 112.6 | 139.6 | 166.6 | 193.6 | 220.6             | 247.6 | 9  | 7  | 22 | 32 | 1.6         | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5             | 98.5 | 16 | 1.5 | 11    |
| 10 dia.        | 111.3 | 138.3 | 165.3 | 192.3 | 219.3             | 246.3 | 14 | 10 | 29 | 42 | 2.3         | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5             | 98.5 | 19 | 1.5 | 17.4  |
| 16 dia.        |       |       |       |       |                   |       |    |    |    |    |             |      |      |      |      |      |      |                  |      |    |     |       |

## Dimensions

- Rod side flange type (FA)  (File name: Page 72 or Ending 110)

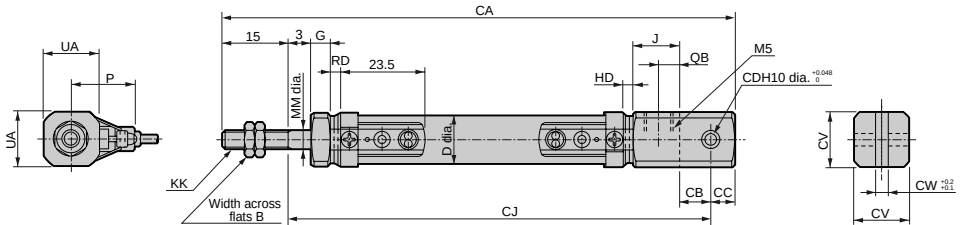


- Note 1: Port size M3 type is available for 6 mm bore cylinder.  
For 6 mm bore cylinder, the value when 100 mm stroke is shown.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

- Please refer to Page 71 about X and LL dimensions of custom stroke length.  
• For types without switch, dimensions are same. (magnet is not integrated.)

| Symbol         | Rod side flange type (FA) basic dimensions |      |                 |       |                     |      |       |       |     |     |                 |             |           |      |      |      |                  |       |     |     |      |
|----------------|--------------------------------------------|------|-----------------|-------|---------------------|------|-------|-------|-----|-----|-----------------|-------------|-----------|------|------|------|------------------|-------|-----|-----|------|
| Bore size (mm) | B                                          | G    | J               | KK    | LL                  |      |       |       |     |     |                 |             | MB        | MM   | QB   | T    | X                |       |     |     |      |
|                | 15st                                       | 30st | 45st            | 60st  | 75st                | 90st | 105st | 120st |     |     |                 |             |           | 15st | 30st | 45st | 60st             |       |     |     |      |
| 6 dia.         | 5.5                                        | 3    | 8               | M3    | 60                  | 87   | 114   | 141   | 168 | 195 | 217<br>(Note 1) | -           | M6        | 3    | 4    | 1.8  | 88               | 115   | 142 | 169 |      |
| 10 dia.        | 7                                          | 4    | 9               | M4    | 64                  | 91   | 118   | 145   | 172 | 199 | 226             | 253         | M 8 X 1.0 | 4    | 4.5  | 2.4  | 92               | 119   | 146 | 173 |      |
| 16 dia.        | 8                                          | 4    | 9               | M5    | 64                  | 91   | 118   | 145   | 172 | 199 | 226             | 253         | M10 X 1.0 | 5    | 4.5  | 3.2  | 92               | 119   | 146 | 173 |      |
| Symbol         |                                            |      |                 |       | Mounting dimensions |      |       |       |     |     |                 | With switch |           |      |      |      |                  |       |     |     |      |
| Bore size (mm) | X                                          |      |                 |       | FD                  | FF   | FH    | FL    | FM  | FT  | RD              |             |           |      |      |      |                  |       | P   | HD  | D    |
|                | 75st                                       | 90st | 105st           | 120st |                     |      |       |       |     |     | 15st            | 30st        | 45st      | 60st | 75st | 90st | 105st            | 120st |     |     |      |
| 6 dia.         | 196                                        | 223  | 245<br>(Note 1) | -     | 4.2                 | 11.4 | 14    | 22    | 32  | 1.6 | 13.5            | 25.5        | 37.5      | 49.5 | 61.5 | 73.5 | 85.5<br>(Note 1) | -     | 14  | 1.0 | 6.8  |
| 10 dia.        | 200                                        | 227  | 254             | 281   | 4.2                 | 11.4 | 14    | 22    | 32  | 1.6 | 14.5            | 26.5        | 38.5      | 50.5 | 62.5 | 74.5 | 86.5             | 98.5  | 16  | 1.5 | 11   |
| 16 dia.        | 200                                        | 227  | 254             | 281   | 5.2                 | 10.7 | 20    | 29    | 42  | 2.3 | 14.5            | 26.5        | 38.5      | 50.5 | 62.5 | 74.5 | 86.5             | 98.5  | 19  | 1.5 | 17.4 |

- Clevis bracket (CB)  (File name: Page 72 or Ending 110)



- Please refer to Page 71 about CA and CJ dimensions of custom stroke length.  
• For types without switch, dimensions are same. (magnet is not integrated.)

- Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.
- Note 2: A pin and a snap ring are attached.

| Symbol         | Clevis bracket (CB) basic dimensions |      |      |      |      |       |       |    | Mounting dimensions |      |      |      |      |      |       |       |       |    |     |      |
|----------------|--------------------------------------|------|------|------|------|-------|-------|----|---------------------|------|------|------|------|------|-------|-------|-------|----|-----|------|
|                | B                                    | G    | J    | KK   | MM   | QB    | T     | UA | CA                  |      |      |      |      |      |       |       | CB    | CC | CD  | CJ   |
| Bore size (mm) |                                      |      |      |      |      |       |       |    | 15st                | 30st | 45st | 60st | 75st | 90st | 105st | 120st |       |    |     |      |
| 10 dia.        | 7                                    | 4    | 9    | M4   | 4    | 4.5   | 2.4   | 12 | 95                  | 122  | 149  | 176  | 203  | 230  | 257   | 284   | 8     | 5  | 3.2 | 75   |
| 16 dia.        | 8                                    | 4    | 9    | M5   | 5    | 4.5   | 3.2   | 18 | 102                 | 129  | 156  | 183  | 210  | 237  | 264   | 291   | 10    | 10 | 5   | 77   |
| Symbol         |                                      |      |      |      |      |       |       |    | With switch         |      |      |      |      |      |       |       |       |    |     |      |
|                | CJ                                   |      |      |      |      |       |       |    | CV                  | CW   | RD   |      |      |      |       |       |       |    | P   | HD   |
| Bore size (mm) | 30st                                 | 45st | 60st | 75st | 90st | 105st | 120st |    |                     | 15st | 30st | 45st | 60st | 75st | 90st  | 105st | 120st |    |     |      |
| 10 dia.        | 102                                  | 129  | 156  | 183  | 210  | 237   | 264   | 12 | 3.2                 | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5  | 86.5  | 98.5  | 16 | 1.5 | 11   |
| 16 dia.        | 104                                  | 131  | 158  | 185  | 212  | 239   | 266   | 18 | 6.5                 | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5  | 86.5  | 98.5  | 19 | 1.5 | 17.4 |

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/

COV \* 2

CAT

MDC2

MVC

SMD2

MSD/

MSDG

SSD

SSD

(large)

FC \*

ULKP/

ULK

JSK2/

JSM2

JSC3

(medium)

JSC3

(large)

JSB3

UCAC

STS/

STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

SRB2

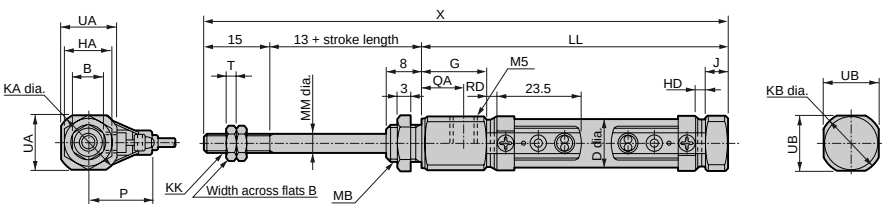
Standard type

Pencil shaped cylinder



Dimensions

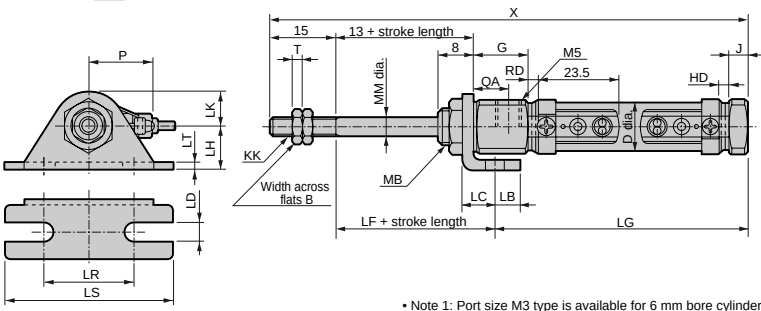
• SCPH2- (L) basic type (00)  (File name: Page 72 or Ending 110)



- Please refer to Page 71 about X and LL dimensions of custom stroke length.
- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore cylinder. For 6 mm bore cylinder, the value when 100mm stroke is shown.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Basic type (00) basic dimensions |      |      |      |      |      |       |       |     |                 |     |     |     |      |                 |      |           |      |      |                |      |
|----------------|----------------------------------|------|------|------|------|------|-------|-------|-----|-----------------|-----|-----|-----|------|-----------------|------|-----------|------|------|----------------|------|
| Bore size (mm) | B                                | D    | G    | HA   | J    | KA   | KB    | KK    | LL  |                 |     |     |     |      |                 |      | MB        |      | MM   | QA             |      |
|                | 15st                             | 30st | 45st | 60st | 75st | 90st | 105st | 120st |     |                 |     |     |     |      |                 |      |           |      |      |                |      |
| 6 dia.         | 5.5                              | 6.8  | 17   | 8    | 3    | 13.5 | 9     | M3    | 69  | 96              | 123 | 150 | 177 | 204  | 226<br>(Note 1) | -    | M6        | 3    | 13   |                |      |
| 10 dia.        | 7                                | 11   | 12.5 | 11   | 4    | 14.5 | 14.5  | M4    | 68  | 95              | 122 | 149 | 176 | 203  | 230             | 257  | M 8 X 1.0 | 4    | 8    |                |      |
| 16 dia.        | 8                                | 17.4 | 13   | 14   | 4    | 21.5 | 21.5  | M5    | 68  | 95              | 122 | 149 | 176 | 203  | 230             | 257  | M10 X 1.0 | 5    | 8.5  |                |      |
| Symbol         | With switch                      |      |      |      |      |      |       |       |     |                 |     |     |     |      |                 |      |           |      |      |                |      |
| Bore size (mm) | T                                | UA   | UB   | X    |      |      |       |       |     |                 |     | RD  | P   | HD   |                 |      |           |      |      |                |      |
|                | 15st                             | 30st | 45st | 60st | 75st | 90st | 105st | 120st |     |                 |     |     |     |      |                 |      |           |      |      |                |      |
| 6 dia.         | 1.8                              | 11   | 8    | 112  | 154  | 196  | 238   | 280   | 322 | 354<br>(Note 1) | -   | 2   | 14  | 12   | 24              | 36   | 48        | 60   | 72   | 84<br>(Note 1) | -    |
| 10 dia.        | 2.4                              | 12   | 12   | 111  | 153  | 195  | 237   | 279   | 321 | 363             | 405 | 3   | 16  | 13   | 25              | 37   | 49        | 61   | 73   | 85             | 97   |
| 16 dia.        | 3.2                              | 18   | 18   | 111  | 153  | 195  | 237   | 279   | 321 | 363             | 405 | 2.5 | 19  | 13.5 | 25.5            | 37.5 | 49.5      | 61.5 | 73.5 | 85.5           | 97.5 |

• Single axial foot type (LS)  (File name: Page 72 or Ending 110)



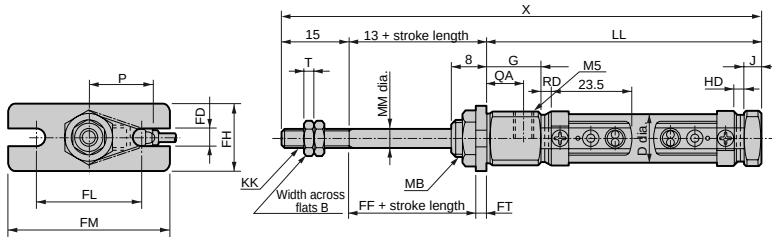
- Please refer to Page 71 about X and LL dimensions of custom stroke length.
- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore cylinder. For 6 mm bore cylinder, the value when 100mm stroke is shown.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Single axial foot type (LS) basic dimensions |      |      |      |           |      |       |       |      |      |     |     |     |     | Mounting dimensions |     |    |    |     |      |      |      |
|----------------|----------------------------------------------|------|------|------|-----------|------|-------|-------|------|------|-----|-----|-----|-----|---------------------|-----|----|----|-----|------|------|------|
| Bore size (mm) | B                                            | G    | J    | KK   | MB        | MM   | QA    | T     | X    |      |     |     |     |     |                     |     | LB | LC | LD  | LF   | LG   |      |
|                | 15st                                         | 30st | 45st | 60st | 75st      | 90st | 105st | 120st | 15st | 30st |     |     |     |     |                     |     |    |    |     |      |      |      |
| 6 dia.         | 5.5                                          | 17   | 3    | M3   | M6        | 3    | 13    | 1.8   | 112  | 154  | 196 | 238 | 280 | 322 | 354<br>(Note 1)     | -   | 5  | 7  | 4.2 | 18.4 | 63.6 | 90.6 |
| 10 dia.        | 7                                            | 12.5 | 4    | M4   | M8 X 1.0  | 4    | 8     | 2.4   | 111  | 153  | 195 | 237 | 279 | 321 | 363                 | 405 | 5  | 7  | 4.2 | 18.4 | 62.6 | 89.6 |
| 16 dia.        | 8                                            | 13   | 4    | M5   | M10 X 1.0 | 5    | 8.5   | 3.2   | 111  | 153  | 195 | 237 | 279 | 321 | 363                 | 405 | 6  | 9  | 5.2 | 19.7 | 61.3 | 88.3 |

| Symbol         | With switch |       |       |       |                   |       |    |    |    |    |     | HD  |    |      |      |      |      |      |      |                |      |       |       |
|----------------|-------------|-------|-------|-------|-------------------|-------|----|----|----|----|-----|-----|----|------|------|------|------|------|------|----------------|------|-------|-------|
| Bore size (mm) | LG          |       |       |       |                   |       | LH | LK | LR | LS | LT  | RD  | P  |      |      |      |      |      |      | D              |      |       |       |
|                | 45st        | 60st  | 75st  | 90st  | 105st             | 120st |    |    |    |    |     |     |    | 15st | 30st | 45st | 60st | 75st | 90st |                |      | 105st | 120st |
| 6 dia.         | 117.6       | 144.6 | 171.6 | 198.6 | 220.6<br>(Note 1) | -     | 9  | 7  | 22 | 32 | 1.6 | 2   | 14 | 12   | 24   | 36   | 48   | 60   | 72   | 84<br>(Note 1) | -    | 6.8   |       |
| 10 dia.        | 116.6       | 143.6 | 170.6 | 197.6 | 224.6             | 251.6 | 9  | 7  | 22 | 32 | 1.6 | 3   | 16 | 13   | 25   | 37   | 49   | 61   | 73   | 85             | 97   | 11    |       |
| 16 dia.        | 115.3       | 142.3 | 169.3 | 196.3 | 223.3             | 250.3 | 14 | 10 | 29 | 42 | 2.3 | 2.5 | 19 | 13.5 | 25.5 | 37.5 | 49.5 | 61.5 | 73.5 | 85.5           | 97.5 | 17.4  |       |

## Dimensions

- Rod side flange type (FA)  (File name: Page 72 or Ending 110)

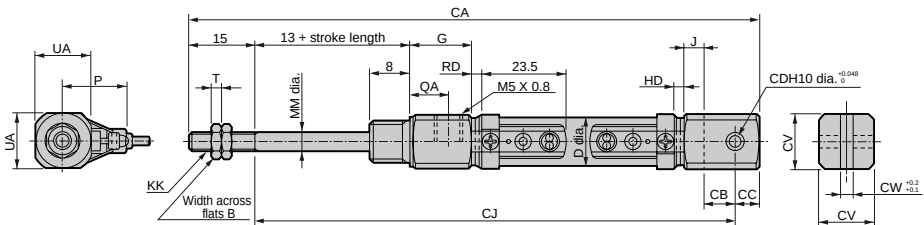


- Please refer to Page 71 about X and LL dimensions of custom stroke length.  
• For types without switch, dimensions are same. (magnet is not integrated.)

- Note 1: Port size M3 type is available for 6 mm bore cylinder. For 6 mm bore cylinder, the value when 100mm stroke is shown.  
• Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         |  | Rod side flange type basic dimensions |      |                 |       |                     |      |       |       |     |     |                 |     |           |      |      |      |      |      |                |       |      |
|----------------|--|---------------------------------------|------|-----------------|-------|---------------------|------|-------|-------|-----|-----|-----------------|-----|-----------|------|------|------|------|------|----------------|-------|------|
|                |  | B                                     | G    | J               | KK    | LL                  |      |       |       |     |     |                 |     | MB        | MM   | QA   | T    | X    |      |                |       |      |
| Bore size (mm) |  | 15st                                  | 30st | 45st            | 60st  | 75st                | 90st | 105st | 120st |     |     |                 |     |           |      |      | 15st | 30st | 45st | 60st           |       |      |
| 6 dia.         |  | 5.5                                   | 17   | 3               | M3    | 69                  | 96   | 123   | 150   | 177 | 204 | 226<br>(Note 1) | -   | M6        |      | 3    | 13   | 1.8  | 112  | 154            | 196   | 238  |
| 10 dia.        |  | 7                                     | 12.5 | 4               | M4    | 68                  | 95   | 122   | 149   | 176 | 203 | 230             | 257 | M 8 X 1.0 | 4    | 8    | 2.4  | 111  | 153  | 195            | 237   |      |
| 16 dia.        |  | 8                                     | 13   | 4               | M5    | 68                  | 95   | 122   | 149   | 176 | 203 | 230             | 257 | M10 X 1.0 | 5    | 8.5  | 3.2  | 111  | 153  | 195            | 237   |      |
| Symbol         |  | X                                     |      |                 |       | Mounting dimensions |      |       |       |     |     | With switch     |     |           |      | HD   |      |      |      |                |       | D    |
|                |  | 75st                                  | 90st | 105st           | 120st | FD                  | FF   | FH    | FL    | FM  | FT  | RD              | P   | 15st      | 30st | 45st | 60st | 75st | 90st | 105st          | 120st |      |
| Bore size (mm) |  | 280                                   | 322  | 354<br>(Note 1) | -     | 4.2                 | 11.4 | 14    | 22    | 32  | 1.6 | 2               | 14  | 12        | 24   | 36   | 48   | 60   | 72   | 84<br>(Note 1) | -     | 6.8  |
| 6 dia.         |  | 279                                   | 321  | 363             | 405   | 4.2                 | 11.4 | 14    | 22    | 32  | 1.6 | 3               | 16  | 13        | 25   | 37   | 49   | 61   | 73   | 85             | 97    | 11   |
| 10 dia.        |  | 279                                   | 321  | 363             | 405   | 5.2                 | 10.7 | 20    | 29    | 42  | 2.3 | 2.5             | 19  | 13.5      | 25.5 | 37.5 | 49.5 | 61.5 | 73.5 | 85.5           | 97.5  | 17.4 |
| 16 dia.        |  | 279                                   | 321  | 363             | 405   | 5.2                 | 10.7 | 20    | 29    | 42  | 2.3 | 2.5             | 19  | 13.5      | 25.5 | 37.5 | 49.5 | 61.5 | 73.5 | 85.5           | 97.5  | 17.4 |

- Clevis bracket (CB)  (File name: Page 72 or Ending 110)

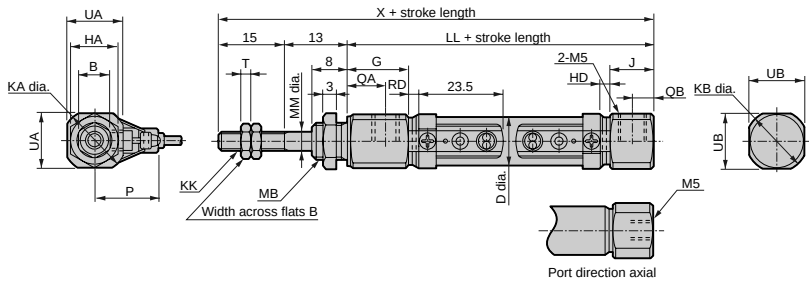


- Please refer to Page 71 about CA and C dimensions of custom stroke length.  
• For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: For 6 mm bore, the value is at 100mm.  
• Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.  
• Note 3: A pin and a snap ring are attached.

| Symbol         | Clevis bracket (CB) basic dimensions |      |      |      |      |       |       |       | Mounting dimensions |      |      |      |      |      |       |       |      |      |      |      |  |  |  |  |
|----------------|--------------------------------------|------|------|------|------|-------|-------|-------|---------------------|------|------|------|------|------|-------|-------|------|------|------|------|--|--|--|--|
|                | B                                    | G    | J    | KK   | MM   | QA    | T     | UA    | CA                  |      |      |      |      |      |       |       | CB   | CC   | CD   | CJ   |  |  |  |  |
| Bore size (mm) | 15st                                 | 30st | 45st | 60st | 75st | 90st  | 105st | 120st | 15st                | 30st | 45st | 60st | 75st | 90st | 105st | 120st | CB   | CC   | CD   | CJ   |  |  |  |  |
| 10 dia.        | 7                                    | 12.5 | 4    | M4   | 4    | 8     | 2.4   | 12    | 124                 | 166  | 208  | 250  | 292  | 334  | 376   | 418   | 8    | 5    | 3.2  | 104  |  |  |  |  |
| 16 dia.        | 8                                    | 13   | 4    | M5   | 5    | 8.5   | 3.2   | 18    | 131                 | 173  | 215  | 257  | 299  | 341  | 383   | 425   | 10   | 10   | 5    | 106  |  |  |  |  |
| Symbol         | CJ                                   |      |      |      |      |       |       |       | With switch         |      |      |      |      |      |       |       |      |      |      |      |  |  |  |  |
|                | 30st                                 | 45st | 60st | 75st | 90st | 105st | 120st | CV    | CW                  | RD   | P    | HD   |      |      |       |       |      |      |      | D    |  |  |  |  |
| Bore size (mm) | 15st                                 | 30st | 45st | 60st | 75st | 90st  | 105st | 120st | 15st                | 30st | 45st | 60st | 75st | 90st | 105st | 120st | D    |      |      |      |  |  |  |  |
| 10 dia.        | 146                                  | 188  | 230  | 272  | 314  | 356   | 398   | 12    | 3.2                 | 3    | 16   | 13   | 25   | 37   | 49    | 61    | 73   | 85   | 97   | 11   |  |  |  |  |
| 16 dia.        | 148                                  | 190  | 232  | 274  | 316  | 358   | 400   | 18    | 6.5                 | 2.5  | 19   | 13.5 | 25.5 | 37.5 | 49.5  | 61.5  | 73.5 | 85.5 | 97.5 | 17.4 |  |  |  |  |

Dimensions

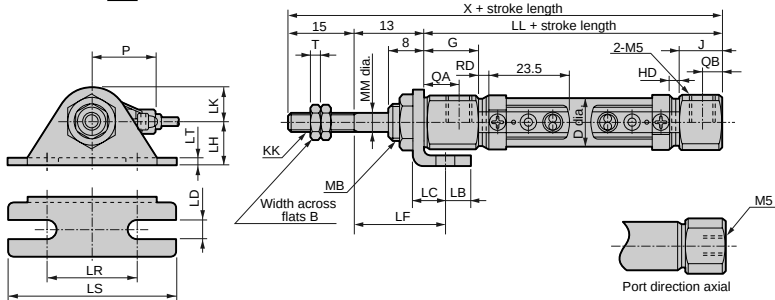
• SCPD2- (L) basic type (00)  (File name: Page 73 or Ending 111)



- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Basic type (00) basic dimensions |      |      |     |                                            |      |         |    |    |           |    |     |     |     |    |       |
|----------------|----------------------------------|------|------|-----|--------------------------------------------|------|---------|----|----|-----------|----|-----|-----|-----|----|-------|
| Bore size (mm) | B                                | D    | G    | HA  | J                                          | KA   | KB      | KK | LL | MB        | MM | QA  | QB  | T   | UA | UB    |
| 6 dia.         | 5.5                              | 6.8  | 17   | 8   | 8                                          | 13.5 | 13.5(9) | M3 | 47 | M6        | 3  | 13  | 4   | 1.8 | 11 | 11(8) |
| 10 dia.        | 7                                | 11   | 12.5 | 11  | 9                                          | 14.5 | 14.5    | M4 | 46 | M8 X 1.0  | 4  | 8   | 4.5 | 2.4 | 12 | 12    |
| 16 dia.        | 8                                | 17.4 | 13   | 14  | 9                                          | 21.5 | 21.5    | M5 | 46 | M10 X 1.0 | 5  | 8.5 | 4.5 | 3.2 | 18 | 18    |
| Symbol         | With switch                      |      |      |     |                                            |      |         |    |    |           |    |     |     |     |    |       |
| Bore size (mm) | X                                | RD   | P    | HD  | Value in ( ) for axial port direction type |      |         |    |    |           |    |     |     |     |    |       |
| 6 dia.         | 75                               | 1.5  | 14   | 1.5 |                                            |      |         |    |    |           |    |     |     |     |    |       |
| 10 dia.        | 74                               | 3    | 16   | 1.5 |                                            |      |         |    |    |           |    |     |     |     |    |       |
| 16 dia.        | 74                               | 2.5  | 19   | 1.5 |                                            |      |         |    |    |           |    |     |     |     |    |       |

• Single axial foot type (LS)  (File name: Page 73 or Ending 111)

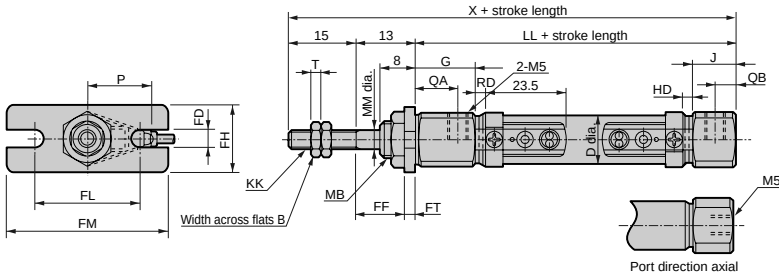


- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Single axial foot type (LS) basic dimensions |      |     |     |           |     |      |     |     |    | Mounting dimensions |    |     |      |    |    |    |
|----------------|----------------------------------------------|------|-----|-----|-----------|-----|------|-----|-----|----|---------------------|----|-----|------|----|----|----|
| Bore size (mm) | B                                            | G    | J   | KK  | MB        | MM  | QA   | QB  | T   | X  | LB                  | LC | LD  | LF   | LL | LH | LK |
| 6 dia.         | 5.5                                          | 17   | 8   | M3  | M6        | 3   | 13   | 4   | 1.8 | 75 | 5                   | 7  | 4.2 | 18.4 | 47 | 9  | 7  |
| 10 dia.        | 7                                            | 12.5 | 9   | M4  | M8 X 1.0  | 4   | 8    | 4.5 | 2.4 | 74 | 5                   | 7  | 4.2 | 18.4 | 46 | 9  | 7  |
| 16 dia.        | 8                                            | 13   | 9   | M5  | M10 X 1.0 | 5   | 8.5  | 4.5 | 3.2 | 74 | 6                   | 9  | 5.2 | 19.7 | 46 | 14 | 10 |
| Symbol         | With switch                                  |      |     |     |           |     |      |     |     |    |                     |    |     |      |    |    |    |
| Bore size (mm) | LR                                           | LS   | LT  | RD  | P         | HD  | D    |     |     |    |                     |    |     |      |    |    |    |
| 6 dia.         | 22                                           | 32   | 1.6 | 1.5 | 14        | 1.5 | 6.8  |     |     |    |                     |    |     |      |    |    |    |
| 10 dia.        | 22                                           | 32   | 1.6 | 3   | 16        | 1.5 | 11   |     |     |    |                     |    |     |      |    |    |    |
| 16 dia.        | 29                                           | 42   | 2.3 | 2.5 | 19        | 1.5 | 17.4 |     |     |    |                     |    |     |      |    |    |    |

## Dimensions

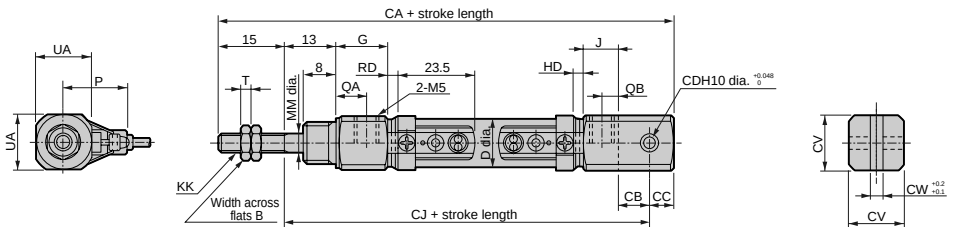
- Rod side flange type (FA)  (File name: Page 73 or Ending 111)



- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Rod type flange type (FA) basic dimensions |      |     |      |    |           |    |     |     |     |    | Mounting dimensions |      |    |    |    |     |
|----------------|--------------------------------------------|------|-----|------|----|-----------|----|-----|-----|-----|----|---------------------|------|----|----|----|-----|
| Bore size (mm) | B                                          | G    | J   | KK   | LL | MB        | MM | QA  | QB  | T   | X  | FD                  | FF   | FH | FL | FM | FT  |
| 6 dia.         | 5.5                                        | 17   | 8   | M3   | 47 | M6        | 3  | 13  | 4   | 1.8 | 75 | 4.2                 | 11.4 | 14 | 22 | 32 | 1.6 |
| 10 dia.        | 7                                          | 12.5 | 9   | M4   | 46 | M8 X 1.0  | 4  | 8   | 4.5 | 2.4 | 74 | 4.2                 | 11.4 | 14 | 22 | 32 | 1.6 |
| 16 dia.        | 8                                          | 13   | 9   | M5   | 46 | M10 X 1.0 | 5  | 8.5 | 4.5 | 3.2 | 74 | 5.2                 | 10.7 | 20 | 29 | 42 | 2.3 |
| Symbol         | With switch                                |      |     |      |    |           |    |     |     |     |    |                     |      |    |    |    |     |
| Bore size (mm) | RD                                         | P    | HD  | D    |    |           |    |     |     |     |    |                     |      |    |    |    |     |
| 6 dia.         | 1.5                                        | 14   | 1.5 | 6.8  |    |           |    |     |     |     |    |                     |      |    |    |    |     |
| 10 dia.        | 3                                          | 16   | 1.5 | 11   |    |           |    |     |     |     |    |                     |      |    |    |    |     |
| 16 dia.        | 2.5                                        | 19   | 1.5 | 17.4 |    |           |    |     |     |     |    |                     |      |    |    |    |     |

- Clevis bracket (CB)  (File name: Page 73 or Ending 111)



- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.
- Note 3: A pin and a snap ring are attached.

| Symbol         |  | Clevis (CB) basic dimensions |      |    |     |      |     |     |     |    | Mounting dimensions |    |    |     |    |    |
|----------------|--|------------------------------|------|----|-----|------|-----|-----|-----|----|---------------------|----|----|-----|----|----|
| Bore size (mm) |  | B                            | G    | J  | KK  | MM   | QA  | QB  | T   | UA | CA                  | CB | CC | CD  | CJ | CV |
| 10 dia.        |  | 7                            | 12.5 | 9  | M4  | 4    | 8   | 4.5 | 2.4 | 12 | 87                  | 8  | 5  | 3.2 | 67 | 12 |
| 16 dia.        |  | 8                            | 13   | 9  | M5  | 5    | 8.5 | 4.5 | 3.2 | 18 | 94                  | 10 | 10 | 5   | 69 | 18 |
| Symbol         |  | With switch                  |      |    |     |      |     |     |     |    |                     |    |    |     |    |    |
| Bore size (mm) |  | CW                           | RD   | P  | HD  | D    |     |     |     |    |                     |    |    |     |    |    |
| 10 dia.        |  | 3.2                          | 3    | 16 | 1.5 | 11   |     |     |     |    |                     |    |    |     |    |    |
| 16 dia.        |  | 6.5                          | 2.5  | 19 | 1.5 | 17.4 |     |     |     |    |                     |    |    |     |    |    |



# Discontinue

Pencil shaped cylinder  
Fine speed type

## SCPD2-F Series

• Bore size: 6, 10, 16 mm

• Double acting

JIS symbol



### Specifications

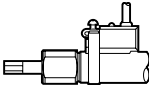
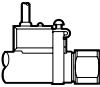
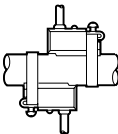
| Descriptions                |     | SCPD2-F/SCPD2-LF (with switch) |         |         |
|-----------------------------|-----|--------------------------------|---------|---------|
| Bore size                   | mm  | 6 dia.                         | 10 dia. | 16 dia. |
| Actuation                   |     | Double acting                  |         |         |
| Working fluid               |     | Compressed air                 |         |         |
| Max. working pressure       | MPa | 1.0                            |         |         |
| Min. working pressure       | MPa | 0.15                           | 0.1     |         |
| Withstanding pressure       | MPa | 1.6                            |         |         |
| Ambient temperature         | °C  | 5 to 60                        |         |         |
| Port size                   |     | M5                             |         |         |
| Stroke tolerance            | mm  | +1.0<br>0                      |         |         |
| Working piston speed        |     | mm/s<br>1 to 200               |         |         |
| Cushion                     |     | Rubber cushion                 |         |         |
| Lubrication                 |     | Must be oil free               |         |         |
| Allowable energy absorption | J   | 0.011                          | 0.041   | 0.162   |

### Stroke length

| Model               | Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | Min. stroke length (mm) |
|---------------------|----------------|-----------------------------|-------------------------|-------------------------|
| SCPD2-F<br>SCPD2-LF | 6 dia.         | 15 ,30 ,45, 60              | 100                     | 10 (Note 1)             |
|                     | 10 dia.        |                             | 200                     |                         |
|                     | 16 dia.        |                             | 260                     |                         |

Note 1: For types with switch, minimum stroke length varies depending on installation method. Refer to the table below.

### Min. stroke length of types with switch

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

### Switch specifications

| Descriptions         | Proximity 2 wire                           |                             | Proximity 3 wire                                                                        |                              |
|----------------------|--------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------|------------------------------|
|                      | M2V                                        | M2WV (2 color indicator)    | M3V                                                                                     | M3WV (2 color indicator)     |
| Applications         | Programmable controller                    |                             | Programmable controller, relay, IC circuit, small solenoid valve                        |                              |
| Power voltage        | —                                          |                             | DC4.5 to 28V                                                                            | DC10 to 28V                  |
| Load voltage/current | DC10 to 30V, 5 to 20mA                     |                             | DC30V or less, 200mA or less                                                            | DC30V or less, 150mA or less |
| Light                | LED (ON lighting)                          | Red/green LED (ON lighting) | LED (ON lighting)                                                                       | Red/green LED (ON lighting)  |
| Descriptions         | Reed 2 wire                                |                             | Reed 3 wire                                                                             |                              |
|                      | M0V                                        | M0WV                        | M5V                                                                                     | M5WV                         |
| Applications         | Programmable controller, relay             |                             | Programmable controller, relay, IC circuit (without indicator light), serial connection |                              |
| Load voltage/current | 5 to 50mA at DC12/24V, 7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V, 20mA or less at AC110V                                      |                              |
| Light                | LED (ON lighting)                          |                             | Without indicator light                                                                 |                              |

### Dimensions

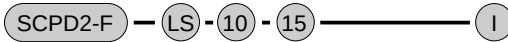
Double acting/single rod type, as same as SCPD2 series. Refer to Page 20 to 21.

### Technical data

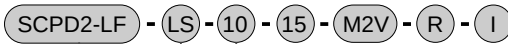
Please refer to Page 741 about technical data of measuring method.

#### How to order

- Without switch



- With switch



Model

A Mounting style

B Bore size

C Stroke length

D Switch model No.

E Switch quantity

F Accessory

#### ⚠ Caution for model No. selection

Note 1: Please refer to Ending 81 about custom specifications of rod end form.

Note 2: Please refer to Page 6 about variation/optional combination.

#### <Example of model number>

SCPD2-F-LS-10-15-M2V-R-I

Model: Pencil shaped cylinder, fine speed type

A Mounting style : Single axial foot type (rod side)

B Bore size : 10mm

C Stroke length : 15mm

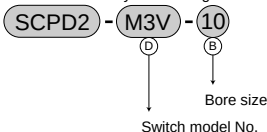
D Switch model No: Proximity switch M2V, lead wire 1m

E Switch quantity : One on rod side

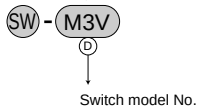
F Accessory : Rod eye

#### How to order switch

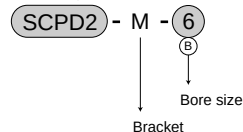
- Switch main body + mounting bracket



- Switch only



- Mounting bracket



| Symbol               | Descriptions                      |                   |           |    |
|----------------------|-----------------------------------|-------------------|-----------|----|
| A Mounting style     |                                   |                   |           |    |
| Bore size            |                                   | 6                 | 10        | 16 |
| 00                   | Basic type                        | ●                 | ●         | ●  |
| LS                   | Single axial foot type (rod side) | ●                 | ●         | ●  |
| FA                   | Rod side flange type              | ●                 | ●         | ●  |
| CB                   | Clevis bracket                    |                   | ●         | ●  |
| B Bore size (mm)     |                                   |                   |           |    |
| 6                    | 6 dia.                            |                   |           |    |
| 10                   | 10 dia.                           |                   |           |    |
| 16                   | 16 dia.                           |                   |           |    |
| C Stroke length (mm) |                                   |                   |           |    |
| 15                   | 15                                |                   |           |    |
| 30                   | 30                                |                   |           |    |
| 45                   | 45                                |                   |           |    |
| 60                   | 60                                |                   |           |    |
| D Switch model No.   |                                   |                   |           |    |
| Radial lead wire     | Contact                           | Display           | Lead wire |    |
| M2V *                | Proximity                         | 1 color indicator | 2 wire    |    |
| M2WV *               |                                   |                   | 3 wire    |    |
| M3V *                |                                   |                   |           |    |
| M3WV *               |                                   |                   |           |    |
| M0V *                | Reed                              |                   | 2 wire    |    |
| M5V *                |                                   |                   |           |    |
| *Lead wire length    |                                   |                   |           |    |
| Blank                | 1m (standard)                     |                   |           |    |
| 3                    | 3m (Option)                       |                   |           |    |
| 5                    | 5m (Option)                       |                   |           |    |
| E Switch quantity    |                                   |                   |           |    |
| R                    | One on rod side                   |                   |           |    |
| H                    | One on head side                  |                   |           |    |
| D                    | Two                               |                   |           |    |
| T                    | Three                             |                   |           |    |
| F Accessory          |                                   |                   |           |    |
| Bore size            |                                   | 6                 | 10        | 16 |
| I                    | Rod eye                           |                   | ●         | ●  |
| Y                    | Rod clevis                        |                   | ●         | ●  |
| B1                   | Eye bracket                       |                   | ●         | ●  |
| B2                   | Clevis bracket                    |                   | ●         | ●  |

|               |
|---------------|
| SCP * 2       |
| CMK2          |
| CMA2          |
| SCM           |
| SCA2          |
| SCS           |
| CKV2          |
| CAV2/COV * 2  |
| CAT           |
| MDC2          |
| MVC           |
| SMD2          |
| MSD/MSDG      |
| SSD           |
| SSD (large)   |
| FC *          |
| ULKP/ULK      |
| JSK2/JSM2     |
| JSC3 (medium) |
| JSC3 (large)  |
| JSB3          |
| UCAC          |
| STS/STL       |
| LCS           |
| LCY           |
| STR2          |
| UCA2          |
| STK           |
| USSD          |
| USC           |
| MFC           |
| GLC           |
| SHC           |
| CAC3          |
| HCM           |
| HCA           |
| MRL2          |
| SRL2          |
| SRG           |
| SRM           |
| SRT           |
| SRB2          |

Standard type  
Pencil shaped cylinder

# Discontinue

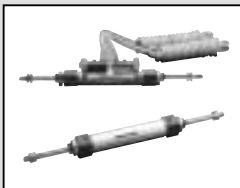
Pencil shaped cylinder mark 2 type  
Double acting/double rod type

## SCPD2-D Series

• Bore size: 6, 10, 16 mm

• Double acting/double rod type

JIS symbol



### Specifications

| Descriptions                  | SCPD2-D<br>SCPD2-DL                                               |         |         | SCPD2-DT                                      |         |         |
|-------------------------------|-------------------------------------------------------------------|---------|---------|-----------------------------------------------|---------|---------|
| Bore size mm                  | 6 dia.                                                            | 10 dia. | 16 dia. | 6 dia.                                        | 10 dia. | 16 dia. |
| Actuation                     | Double acting/double rod type                                     |         |         | Double acting/double rod/heat resistance type |         |         |
| Working fluid                 | Compressed air                                                    |         |         |                                               |         |         |
| Max. working pressure MPa     | 1.0                                                               |         |         |                                               |         |         |
| Min. working pressure MPa     | 0.2                                                               | 0.1     |         | 0.2                                           | 0.1     |         |
| Withstanding pressure MPa     |                                                                   |         |         | 1.6                                           |         |         |
| Ambient temperature °C        | -10 to 60 (to be unfrozen)                                        |         |         | 5 to 120                                      |         |         |
| Port size                     |                                                                   |         |         | M5                                            |         |         |
| Stroke tolerance mm           |                                                                   |         |         | +1.0<br>0                                     |         |         |
| Working piston speed mm/s     | 50 to 500                                                         |         |         | 50 to 500                                     |         |         |
| Cushion                       | Rubber cushion                                                    |         |         |                                               |         |         |
| Lubrication                   | Not required (when lubrication, use turbine oil Class 1 ISO VG32) |         |         | Not available                                 |         |         |
| Allowable energy absorption J | 0.011                                                             | 0.041   | 0.162   | 0.011                                         | 0.041   | 0.162   |

### Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | Min. stroke length (mm)<br>(with switch) * |
|----------------|-----------------------------|-------------------------|--------------------------------------------|
| 6 dia.         | 15, 30, 45, 60              | 60                      | 10                                         |
| 10 dia.        |                             | 120                     |                                            |
| 16 dia.        |                             |                         |                                            |

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

### Min. stroke length of types with switch

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

Switch specifications

| Descriptions             | Proximity 2 wire                              |                             | Proximity 3 wire                                                                           |                                 |
|--------------------------|-----------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------|---------------------------------|
|                          | M2V                                           | M2WV<br>(2 color indicator) | M3V                                                                                        | M3WV<br>(2 color indicator)     |
| Applications             | Programmable controller                       |                             | Programmable controller, relay,<br>IC circuit, small solenoid valve                        |                                 |
| Power voltage            | —                                             |                             | DC4.5 to 28V                                                                               | DC10 to 28V                     |
| Load voltage/<br>current | DC10 to 30V,<br>5 to 20mA                     |                             | DC30V or less,<br>200mA or less                                                            | DC30V or less,<br>150mA or less |
| Light                    | LED (ON lighting)                             | Red/green LED (ON lighting) | LED (ON lighting)                                                                          | Red/green LED (ON lighting)     |
| Descriptions             | Reed 2 wire                                   |                             |                                                                                            |                                 |
|                          | M0V                                           |                             | M5V                                                                                        |                                 |
| Applications             | Programmable controller, relay                |                             | Programmable controller, relay, IC circuit<br>(without indicator light), serial connection |                                 |
| Load voltage/<br>current | 5 to 50mA at DC12/24V,<br>7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V,<br>20mA or less at AC110V                                      |                                 |
| Light                    | LED (ON lighting)                             |                             | Without indicator light                                                                    |                                 |

Cylinder mass Value in ( ) for mass of types with two switches

(Unit: g)

| Bore size<br>(mm) | Base mass |         |         |         | Mounting bracket mass |                  | Switch mass<br>(per switch) |
|-------------------|-----------|---------|---------|---------|-----------------------|------------------|-----------------------------|
|                   | 15st      | 30st    | 45st    | 60st    | Foot (LS)             | Flange type (FA) |                             |
| 6 dia.            | 21(69)    | 24(72)  | 26(74)  | 29(77)  | 6                     | 4                | 24                          |
| 10 dia.           | 33(81)    | 38(86)  | 43(91)  | 48(96)  | 6                     | 4                |                             |
| 16 dia.           | 63(111)   | 71(119) | 79(127) | 86(134) | 15                    | 12               |                             |

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/  
COV \* 2

CAT

MDC2

MVC

SMD2

MSD/  
MSDG

SSD

SSD  
(large)

FC \*

ULKP/  
ULK

JSK2/  
JSM2

JSC3  
(medium)

JSC3  
(large)

JSB3

UCAC

ST/  
STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

SRB2

Standard type  
Pencil shaped cylinder



How to order

Without switch



With switch



A Model

B Mounting style

C Bore size

D Stroke length

E Switch model No.  
Note 1

F Switch quantity

G Accessory

Caution for model No. selection

Note 1: Custom switches are available other than E Switch model No.  
Please refer to Ending 1 about details.

Note 2: For SCPD2-D, copper and PTFE free specifications are  
provided as standard.

Note 3: Please refer to Ending 81 about custom specifications of rod  
end form.

Note 4: Please refer to Page 6 about variation/optional combination.

<Example of model number>

SCPD2-DL-LS-10-15-M2V-R-I

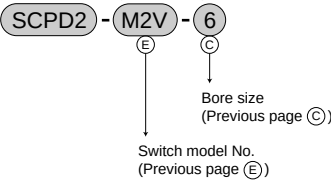
- A Model : Pencil shaped cylinder double rod type
- B Mounting style : Single axial foot type (rod side)
- C Bore size : 10mm
- D Stroke length : 15mm
- E Switch model No: Proximity switch M2V
- F Switch quantity : One on rod side
- G Accessory : Rod eye

| A Model         |                                 |
|-----------------|---------------------------------|
| Double rod type | Double rod heat resistance type |

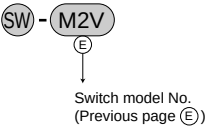
| Symbol                   | Descriptions                      |                   | SCPD2-D   | SCPD2-DT |         |        |         |         |
|--------------------------|-----------------------------------|-------------------|-----------|----------|---------|--------|---------|---------|
| ● Mounting style         |                                   |                   |           |          |         |        |         |         |
| 00                       | Basic type                        |                   | ●         | ●        |         |        |         |         |
| LS                       | Single axial foot type (rod side) |                   | ●         | ●        |         |        |         |         |
| LB                       | Both sides axial foot type        |                   | ●         | ●        |         |        |         |         |
| FA                       | Rod side flange type              |                   | ●         | ●        |         |        |         |         |
| ● Bore size (mm)         |                                   |                   |           |          |         |        |         |         |
| 6                        | 6 dia.                            |                   | ●         | ●        |         |        |         |         |
| 10                       | 10 dia.                           |                   | ●         | ●        |         |        |         |         |
| 16                       | 16 dia.                           |                   | ●         | ●        |         |        |         |         |
| ● Stroke length (mm)     |                                   |                   |           |          |         |        |         |         |
| 15                       | 15                                |                   | ●         | ●        |         |        |         |         |
| 30                       | 30                                |                   | ●         | ●        |         |        |         |         |
| 45                       | 45                                |                   | ●         | ●        |         |        |         |         |
| 60                       | 60                                |                   | ●         | ●        |         |        |         |         |
| ● Switch model No.       |                                   |                   |           |          |         |        |         |         |
| Lead wire<br>Radial type | Contact                           | Display           | Lead wire |          |         |        |         |         |
| M2V *                    | Proximity                         | 1 color indicator | 2 wire    | ●        |         |        |         |         |
| M2WV *                   |                                   | 2 color indicator |           | ●        |         |        |         |         |
| M3V *                    |                                   | 1 color indicator | 3 wire    | ●        |         |        |         |         |
| M3WV *                   |                                   | 2 color indicator |           | ●        |         |        |         |         |
| M0V *                    | Reed                              | 1 color indicator | 2 wire    | ●        |         |        |         |         |
| M5V *                    |                                   |                   |           | ●        |         |        |         |         |
| *Lead wire length        |                                   |                   |           |          |         |        |         |         |
| Blank                    | 1m (standard)                     |                   | ●         |          |         |        |         |         |
| 3                        | 3m (Option)                       |                   | ●         |          |         |        |         |         |
| 5                        | 5m (Option)                       |                   | ●         |          |         |        |         |         |
| ● Switch quantity        |                                   |                   |           |          |         |        |         |         |
| R                        | One on rod side                   |                   | ●         |          |         |        |         |         |
| H                        | One on head side                  |                   | ●         |          |         |        |         |         |
| D                        | Two                               |                   | ●         |          |         |        |         |         |
| T                        | Three                             |                   | ●         |          |         |        |         |         |
| ● Accessory              |                                   |                   |           |          |         |        |         |         |
| Bore size                |                                   |                   | 6 dia.    | 10 dia.  | 16 dia. | 6 dia. | 10 dia. | 16 dia. |
| I                        | Rod eye                           |                   |           | ●        | ●       |        | ●       | ●       |
| Y                        | Rod clevis                        |                   |           | ●        | ●       |        | ●       | ●       |

How to order switch

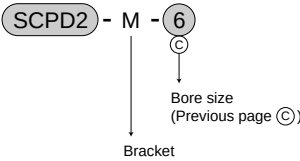
• Switch main body + mounting bracket



• Switch only



• Mounting bracket



How to order mounting bracket

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

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/  
COV \* 2

CAT

MDC2

MVC

SMD2

MSD/  
MSG

SSD

SSD  
(large)

FC \*

ULKP/  
ULK

JSK2/  
JSM2

JSC3  
(medium)

JSC3  
(large)

JSB3

UCAC

STS/  
STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

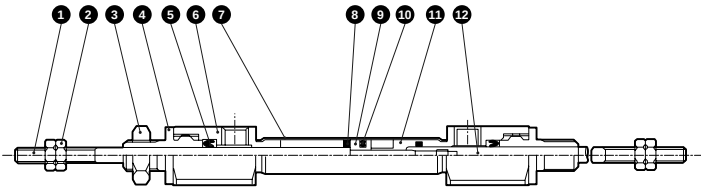
SRT

SRB2

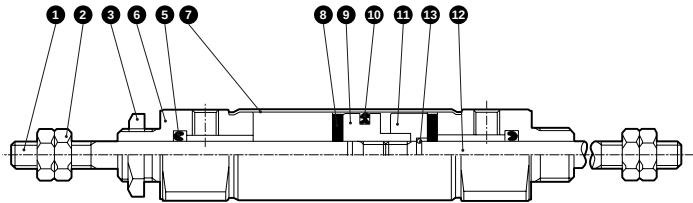
Standard type  
Pencil shaped cylinder

Internal structure and parts list

• SCPD2-D (6 mm bore)



• SCPD2-D (10, 16 mm bore)

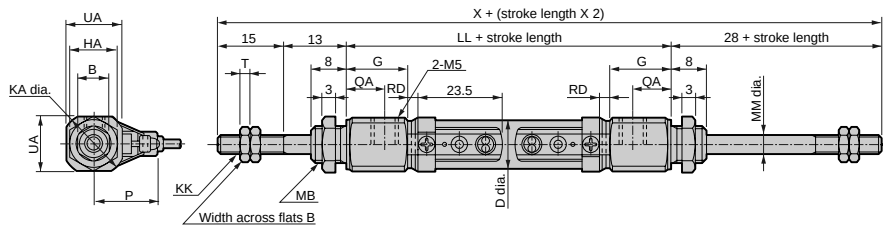


• Note: This caulking type cannot be disassembled.

| No. | Parts name   | Material         | Remarks | No. | Parts name   | Material         | Remarks |
|-----|--------------|------------------|---------|-----|--------------|------------------|---------|
| 1   | Piston rod 1 | Stainless steel  |         | 8   | Cushion R    | Urethane rubber  |         |
| 2   | Top nut      | Steel            |         | 9   | Piston       | Special aluminum |         |
| 3   | Hexagon nut  | Steel            |         | 10  | Piston seal  | Nitrile rubber   |         |
| 4   | Rod bushing  | Special aluminum |         | 11  | Spacer       | Special aluminum |         |
| 5   | Rod packing  | Nitrile rubber   |         | 12  | Piston rod 2 | Stainless steel  |         |
| 6   | Rod cover    | Special aluminum |         | 13  | Snap ring    | Stainless steel  |         |
| 7   | Tube         | Stainless steel  |         |     |              |                  |         |

Dimensions

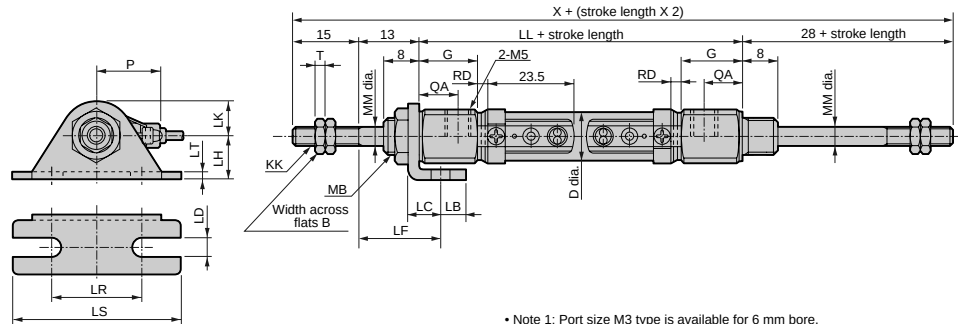
• SCPD2-D (L) basic type (00)



- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Basic type (00) basic dimensions |      |      |    |      |    |      |           |    |     |     |    |       |
|----------------|----------------------------------|------|------|----|------|----|------|-----------|----|-----|-----|----|-------|
| Bore size (mm) | B                                | D    | G    | HA | KA   | KK | LL   | MB        | MM | QA  | T   | UA | X     |
| 6 dia.         | 5.5                              | 6.8  | 17   | 8  | 13.5 | M3 | 56   | M6        | 3  | 13  | 1.8 | 11 | 112   |
| 10 dia.        | 7                                | 11   | 12.5 | 11 | 14.5 | M4 | 54.5 | M8 X 1.0  | 4  | 8   | 2.4 | 12 | 110.5 |
| 16 dia.        | 8                                | 17.4 | 13   | 14 | 21.5 | M5 | 55   | M10 X 1.0 | 5  | 8.5 | 3.2 | 18 | 111   |
| Symbol         | With switch                      |      |      |    |      |    |      |           |    |     |     |    |       |
| Bore size (mm) | RD                               | P    |      |    |      |    |      |           |    |     |     |    |       |
| 6 dia.         | 1.5                              | 14   |      |    |      |    |      |           |    |     |     |    |       |
| 10 dia.        | 4.5                              | 16   |      |    |      |    |      |           |    |     |     |    |       |
| 16 dia.        | 4.5                              | 19   |      |    |      |    |      |           |    |     |     |    |       |

• Single axial foot type (LS)



- Note 1: Port size M3 type is available for 6 mm bore.
- Note 2: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

• For types without switch, dimensions are same. (magnet is not integrated.)

| Symbol         | Single axial foot type (LS) basic dimensions |      |    |      |           |    |      |     |       |  | Mounting dimensions |    |     |      |    |
|----------------|----------------------------------------------|------|----|------|-----------|----|------|-----|-------|--|---------------------|----|-----|------|----|
| Bore size (mm) | B                                            | G    | KK | LL   | MB        | MM | QA   | T   | X     |  | LB                  | LC | LD  | LF   | LH |
| 6 dia.         | 5.5                                          | 17   | M3 | 56   | M6        | 3  | 13   | 1.8 | 112   |  | 5                   | 7  | 4.2 | 18.4 | 9  |
| 10 dia.        | 7                                            | 12.5 | M4 | 54.5 | M8 X 1.0  | 4  | 8    | 2.4 | 110.5 |  | 5                   | 7  | 4.2 | 18.4 | 9  |
| 16 dia.        | 8                                            | 13   | M5 | 55   | M10 X 1.0 | 5  | 8.5  | 3.2 | 111   |  | 6                   | 9  | 5.2 | 19.7 | 14 |
| Symbol         | With switch                                  |      |    |      |           |    |      |     |       |  |                     |    |     |      |    |
| Bore size (mm) | LK                                           | LR   | LS | LT   | RD        | P  | D    |     |       |  |                     |    |     |      |    |
| 6 dia.         | 7                                            | 22   | 32 | 1.6  | 1.5       | 14 | 6.8  |     |       |  |                     |    |     |      |    |
| 10 dia.        | 7                                            | 22   | 32 | 1.6  | 4.5       | 16 | 11   |     |       |  |                     |    |     |      |    |
| 16 dia.        | 10                                           | 29   | 42 | 2.3  | 4.5       | 19 | 17.4 |     |       |  |                     |    |     |      |    |



# Discontinue

Pencil shaped cylinder  
Double acting/flow control valve

## SCPD2-Z Series

- Bore size: 10, 16 mm



### Specifications

| Descriptions                | SCPD2-Z<br>SCPD2-ZL                                       |                                                   |
|-----------------------------|-----------------------------------------------------------|---------------------------------------------------|
| Bore size                   | mm                                                        | 10 dia. 16 dia.                                   |
| Actuation                   | Double acting/flow control valve                          |                                                   |
| Working fluid               | Compressed air                                            |                                                   |
| Max. working pressure       | MPa                                                       | 1.0                                               |
| Min. working pressure       | MPa                                                       | 0.1                                               |
| Withstanding pressure       | MPa                                                       | 1.6                                               |
| Ambient temperature         | °C                                                        | -10 to 60 (to be unfrozen)                        |
| Port size                   | M5                                                        |                                                   |
| Stroke tolerance            | mm                                                        | $\begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$ |
| Working piston speed        | mm/s                                                      | 50 to 500                                         |
| Cushion                     | Rubber cushion                                            |                                                   |
| Lubrication                 | Not required (When lubrication, use turbine oil ISOVG32.) |                                                   |
| Allowable energy absorption | J                                                         | 0.041 0.162                                       |

### Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | Min. stroke length (mm)<br>(with switch) * |
|----------------|-----------------------------|-------------------------|--------------------------------------------|
| 10 dia.        | 15/30/45/60                 | 120                     | 10                                         |
| 16 dia.        |                             |                         |                                            |

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

### Min. stroke length of types with switch

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

Switch specifications

| Descriptions             | Proximity 2 wire                              |                             | Proximity 3 wire                                                                        |                                 |
|--------------------------|-----------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------|---------------------------------|
|                          | M2V                                           | M2WV<br>(2 color indicator) | M3V                                                                                     | M3WV<br>(2 color indicator)     |
| Applications             | Programmable controller                       |                             | Programmable controller, relay, IC circuit, small solenoid valve                        |                                 |
| Power voltage            | —                                             |                             | DC4.5 to 28V                                                                            | DC10 to 28V                     |
| Load voltage/<br>current | DC10 to 30V,<br>5 to 20mA                     |                             | DC30V or less,<br>200mA or less                                                         | DC30V or less,<br>150mA or less |
| Light                    | LED (ON lighting)                             | Red/green LED (ON lighting) | LED (ON lighting)                                                                       | Red/green LED (ON lighting)     |
| Descriptions             | Reed 2 wire                                   |                             |                                                                                         |                                 |
|                          | M0V                                           |                             | M5V                                                                                     |                                 |
| Applications             | Programmable controller, relay                |                             | Programmable controller, relay, IC circuit (without indicator light), serial connection |                                 |
| Load voltage/<br>current | 5 to 50mA at DC12/24V,<br>7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V,<br>20mA or less at AC110V                                   |                                 |
| Light                    | LED (ON lighting)                             |                             | Without indicator light                                                                 |                                 |

Cylinder mass Value in ( ) for mass of types with two switches

(Unit: g)

| Bore size<br>(mm) | Base mass |          |          |          | Mounting bracket mass |                  | Switch mass<br>(per switch) |
|-------------------|-----------|----------|----------|----------|-----------------------|------------------|-----------------------------|
|                   | 15st      | 30st     | 45st     | 60st     | Foot (LS)             | Flange type (FA) |                             |
| 10 dia.           | 36(84)    | 41(89)   | 46(94)   | 51(99)   | 6                     | 4                | 24                          |
| 16 dia.           | 66 (114)  | 74 (167) | 82 (175) | 89 (812) | 15                    | 12               |                             |

|                                         |
|-----------------------------------------|
| SCP * 2                                 |
| CMK2                                    |
| CMA2                                    |
| SCM                                     |
| SCA2                                    |
| SCS                                     |
| CKV2                                    |
| CAV2/<br>COV * 2                        |
| CAT                                     |
| MDC2                                    |
| MVC                                     |
| SMD2                                    |
| MSD/<br>MSDG                            |
| SSD                                     |
| SSD<br>(large)                          |
| FC *                                    |
| ULKP/<br>ULK                            |
| JSK2/<br>JSM2                           |
| JSC3<br>(medium)                        |
| JSC3<br>(large)                         |
| JSB3                                    |
| UCAC                                    |
| ST/<br>STL                              |
| LCS                                     |
| LCY                                     |
| STR2                                    |
| UCA2                                    |
| STK                                     |
| USSD                                    |
| USC                                     |
| MFC                                     |
| GLC                                     |
| SHC                                     |
| CAC3                                    |
| HCM                                     |
| HCA                                     |
| MRL2                                    |
| SRL2                                    |
| SRG                                     |
| SRM                                     |
| SRT                                     |
| SRB2                                    |
| Standard type<br>Pencil shaped cylinder |

How to order

Without switch



With switch



A

Mounting style

B

Bore size

C

Stroke length

D

Switch model No.

Note 1

E

Switch quantity

F

Accessory

| Symbol               | Descriptions                      |                   |           |
|----------------------|-----------------------------------|-------------------|-----------|
| A Mounting style     |                                   |                   |           |
| 00                   | Basic type                        |                   |           |
| LS                   | Single axial foot type (rod side) |                   |           |
| FA                   | Rod side flange type              |                   |           |
| CB                   | Clevis bracket                    |                   |           |
| B Bore size (mm)     |                                   |                   |           |
| 10                   | 10 dia.                           |                   |           |
| 16                   | 16 dia.                           |                   |           |
| C Stroke length (mm) |                                   |                   |           |
| 15                   | 15                                |                   |           |
| 30                   | 30                                |                   |           |
| 45                   | 45                                |                   |           |
| 60                   | 60                                |                   |           |
| D Switch model No.   |                                   |                   |           |
| Radial lead wire     | Contact                           | Display           | Lead wire |
| M2V *                | Proximity                         | 1 color indicator | 2 wire    |
| M2WV *               |                                   | 2 color indicator |           |
| M3V *                |                                   | 1 color indicator | 3 wire    |
| M3WV *               | 2 color indicator                 |                   |           |
| M0V *                | Reed                              | 1 color indicator | 2 wire    |
| M5V *                |                                   |                   |           |
| *Lead wire length    |                                   |                   |           |
| Blank                | 1m (standard)                     |                   |           |
| 3                    | 3m (Option)                       |                   |           |
| 5                    | 5m (Option)                       |                   |           |
| E Switch quantity    |                                   |                   |           |
| R                    | One on rod side                   |                   |           |
| H                    | One on head side                  |                   |           |
| D                    | Two                               |                   |           |
| T                    | Three                             |                   |           |
| F Accessory          |                                   |                   |           |
| I                    | Rod eye                           |                   |           |
| Y                    | Rod clevis                        |                   |           |

⚠ Caution for model No. selection

Note 1: Custom switches are available other than **D** switch model No.

Please refer to Ending 1 about details.

**Note 2: Please refer to Ending 81 about custom specifications of rod end form.**

Note 3: Please refer to Page 6 about variation/optional combination.

<Example of model number>

SCPD2-ZL-00-10-15-M2V-R-I

Model: Pencil shaped cylinder double acting flow control valve

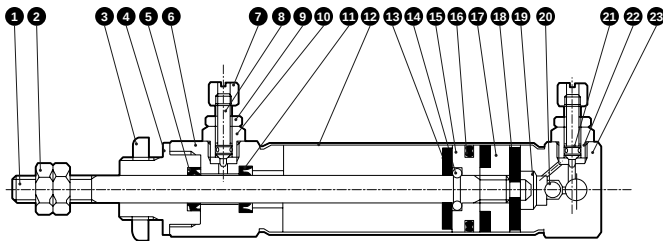
- A** Mounting style : Basic type
- B** Bore size : 10mm
- C** Stroke length : 15mm
- D** Switch model No: Proximity switch M2V
- E** Switch quantity : One on rod side
- F** Accessory : Rod eye





Internal structure and parts list

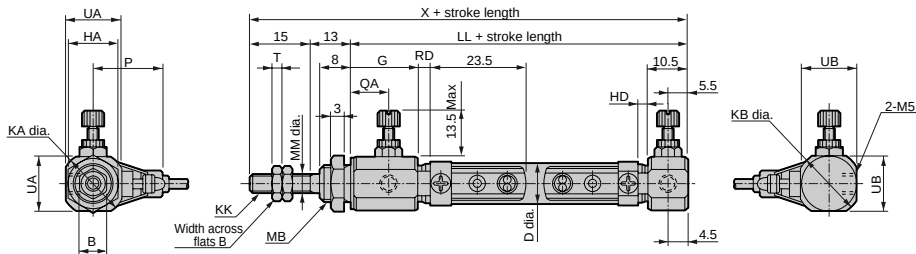
• SCPD2-Z



| No. | Parts name         | Material        | Remarks       | No. | Parts name        | Material        | Remarks       |
|-----|--------------------|-----------------|---------------|-----|-------------------|-----------------|---------------|
| 1   | Piston rod         | Stainless steel |               | 13  | Cushion rubber R  | Urethane rubber |               |
| 2   | Rod nut            | Rolled steel    |               | 14  | Snap ring         | Stainless steel |               |
| 3   | Hexagon nut        | Rolled steel    | Nickeling     | 15  | Piston            | Aluminum alloy  |               |
| 4   | Rod bushing        | Aluminum alloy  | Black alumite | 16  | Piston seal       | Nitrile rubber  |               |
| 5   | Rod packing        | Nitrile rubber  |               | 17  | Spacer            | Aluminum alloy  |               |
| 6   | Rod cover          | Aluminum alloy  | Black alumite | 18  | Cushion rubber H  | Urethane rubber |               |
| 7   | Knob               | Aluminum alloy  |               | 19  | Check ball holder | Aluminum alloy  |               |
| 8   | Needle B           | Stainless steel |               | 20  | Check ball        | Urethane rubber |               |
| 9   | Lock nut           | Aluminum alloy  |               | 21  | O ring            | Nitrile rubber  |               |
| 10  | Needle holder      | Aluminum alloy  | Black alumite | 22  | O ring            | Nitrile rubber  |               |
| 11  | Check packing seal | Nitrile rubber  |               | 23  | Head cover        | Aluminum alloy  | Black alumite |
| 12  | Cylinder tube      | Stainless steel |               |     |                   |                 |               |

Dimensions

• SCPD2-Z(L) basic type (00)

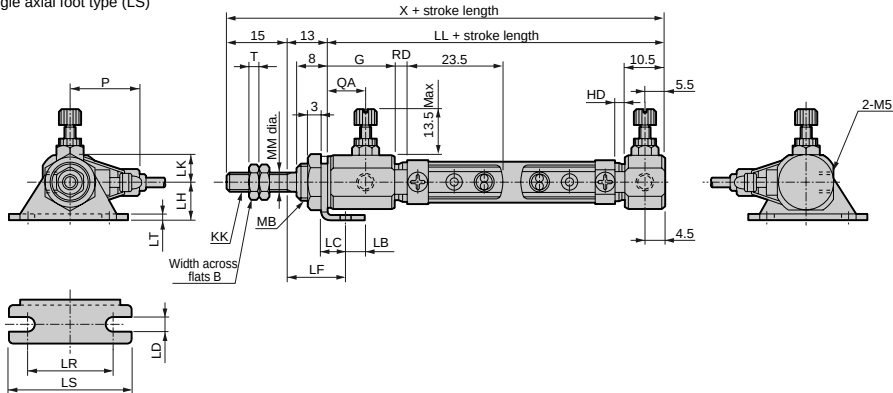


• For types without switch, dimensions are same. (magnet is not integrated.)

• Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Basic type (00) basic dimensions |      |      |    |      |      |    |      |           |    |      |     |    |    |      |  |
|----------------|----------------------------------|------|------|----|------|------|----|------|-----------|----|------|-----|----|----|------|--|
| Bore size (mm) | B                                | D    | G    | HA | KA   | KB   | KK | LL   | MB        | MM | QA   | T   | UA | UB | X    |  |
| 10 dia.        | 7                                | 11   | 17.5 | 14 | 17   | 17   | M4 | 52.5 | M10 X 1.0 | 4  | 10.5 | 2.4 | 15 | 15 | 80.5 |  |
| 16 dia.        | 8                                | 17.4 | 18.0 | 17 | 21.5 | 21.5 | M5 | 52.5 | M12 X 1.0 | 5  | 11.0 | 3.2 | 18 | 18 | 80.5 |  |
| Symbol         | With switch                      |      |      |    |      |      |    |      |           |    |      |     |    |    |      |  |
| Bore size (mm) | RD                               | P    | HD   |    |      |      |    |      |           |    |      |     |    |    |      |  |
| 10 dia.        | 3                                | 16   | 1.5  |    |      |      |    |      |           |    |      |     |    |    |      |  |
| 16 dia.        | 2.5                              | 19   | 1.5  |    |      |      |    |      |           |    |      |     |    |    |      |  |

• Single axial foot type (LS)



• For types without switch, dimensions are same. (magnet is not integrated.)

• Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Single axial foot type (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 |
| 10 dia.        | 7                                            | 17.5 | M4 | M10 X 1.0 | 4  | 10.5 | 2.4 | 80.5 | 6                   | 9  | 5.2 | 19.7 | 52.5 | 14 | 10 | 29 | 42 |
| 16 dia.        | 8                                            | 18.0 | M5 | M12 X 1.0 | 5  | 11.0 | 3.2 | 80.5 | 6                   | 9  | 5.2 | 19.7 | 52.5 | 14 | 10 | 29 | 42 |
| Symbol         | With switch                                  |      |    |           |    |      |     |      |                     |    |     |      |      |    |    |    |    |
| Bore size (mm) | LT                                           | RD   | P  | HD        |    |      |     |      |                     |    |     |      |      |    |    |    |    |
| 10 dia.        | 2.3                                          | 3    | 16 | 1.5       |    |      |     |      |                     |    |     |      |      |    |    |    |    |
| 16 dia.        | 2.3                                          | 2.5  | 19 | 1.5       |    |      |     |      |                     |    |     |      |      |    |    |    |    |



# Discontinue

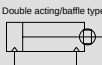
Pencil shaped cylinder

Single acting/extend/  
non-rotating type

Double acting/  
non-rotating type

• Bore size: 10, 16 mm

JIS symbol



## SCPS2-M Series SCPD2-M Series

### Specifications

| Descriptions                      | SCPS2-M<br>SCPS2-ML             |                                                                   | SCPD2-M<br>SCPD2-ML             |         |         |
|-----------------------------------|---------------------------------|-------------------------------------------------------------------|---------------------------------|---------|---------|
| Bore size                         | mm                              | 10 dia.                                                           | 16 dia.                         | 10 dia. | 16 dia. |
| Actuation                         | Single acting/non-rotating type |                                                                   | Double acting/non-rotating type |         |         |
| Working fluid                     | Compressed air                  |                                                                   |                                 |         |         |
| Max. working pressure             | MPa                             | 1.0                                                               |                                 |         |         |
| Min. working pressure             | MPa                             | 0.15                                                              | 0.1                             |         |         |
| Withstanding pressure             | MPa                             | 1.6                                                               |                                 |         |         |
| Ambient temperature               | ℃                               | -10 to 60 (to be unfrozen)                                        |                                 |         |         |
| Port size                         |                                 | M5                                                                |                                 |         |         |
| Stroke tolerance                  | mm                              | +1.0<br>0                                                         |                                 |         |         |
| Working piston speed              | mm/s                            | 50 to 500                                                         |                                 |         |         |
| Cushion                           |                                 | Rubber cushion                                                    |                                 |         |         |
| Lubrication                       |                                 | Not required (when lubrication, use turbine oil Class 1 ISO VG32) |                                 |         |         |
| Revolvable angle tolerance (Note) |                                 | ± 2°                                                              |                                 |         |         |
| Allowable energy absorption       | J                               | 0.041                                                             | 0.162                           | 0.041   | 0.162   |

(Note): This is the value when 0 mm stroke. (deflection of piston rod excluded)

### Stroke length

| Bore size (mm) |         | Standard stroke length (mm) | Max. stroke length (mm) | Min. stroke length (mm)<br>(with switch) * |
|----------------|---------|-----------------------------|-------------------------|--------------------------------------------|
| SCPS2-M        | 10 dia. | 15, 30, 45, 60              | 120                     | 10                                         |
|                | 16 dia. |                             |                         |                                            |
| SCPD2-M        | 10 dia. |                             | 200                     |                                            |
|                | 16 dia. |                             | 260                     |                                            |

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

### Min. stroke length of types with switch

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

Switch specifications

| Descriptions             | Proximity 2 wire                              |                             | Proximity 3 wire                                                                           |                                 |
|--------------------------|-----------------------------------------------|-----------------------------|--------------------------------------------------------------------------------------------|---------------------------------|
|                          | M2V                                           | M2WV<br>(2 color indicator) | M3V                                                                                        | M3WV<br>(2 color indicator)     |
| Applications             | Programmable controller                       |                             | Programmable controller, relay,<br>IC circuit, small solenoid valve                        |                                 |
| Power voltage            | ————                                          |                             | DC4.5 to 28V                                                                               | DC10 to 28V                     |
| Load voltage/<br>current | DC10 to 30V,<br>5 to 20mA                     |                             | DC30V or less,<br>200mA or less                                                            | DC30V or less,<br>150mA or less |
| Light                    | LED (ON lighting)                             | Red/green LED (ON lighting) | LED (ON lighting)                                                                          | Red/green LED (ON lighting)     |
| Descriptions             | Reed 2 wire                                   |                             |                                                                                            |                                 |
|                          | M0V                                           |                             | M5V                                                                                        |                                 |
| Applications             | Programmable controller, relay                |                             | Programmable controller, relay, IC circuit<br>(without indicator light), serial connection |                                 |
| Load voltage/<br>current | 5 to 50mA at DC12/24V,<br>7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V,<br>20mA or less at AC110V                                      |                                 |
| Light                    | LED (ON lighting)                             |                             | Without indicator light                                                                    |                                 |

Note 1: Please refer to Ending 1 about other switches specifications.

Single acting spring load  
(SCPS2-M) (Unit: N)

| Bore size<br>(mm) | 0 stroke | Full stroke |
|-------------------|----------|-------------|
| 10 dia.           | 2.84     | 6.37        |
| 16 dia.           | 5.19     | 11.5        |

Cylinder mass (Unit: g)

| Bore size (mm) |         | Base mass |         |         |         | Mounting bracket mass |                  |            | Switch mass<br>(per switch) |
|----------------|---------|-----------|---------|---------|---------|-----------------------|------------------|------------|-----------------------------|
|                |         | 15st      | 30st    | 45st    | 60st    | Foot type(LS)         | Flange type (FA) | Clevis(CB) |                             |
| SCPS2-M        | 10 dia. | 26(74)    | 33(81)  | 41(89)  | 49(97)  | 6                     | 4                | 4          | 24                          |
|                | 16 dia. | 48(86)    | 64(112) | 81(129) | 98(146) | 15                    | 12               | 10         |                             |
| SCPD2-M        | 10 dia. | 24(72)    | 27(75)  | 32(80)  | 36(84)  | 6                     | 4                | 4          |                             |
|                | 16 dia. | 47(95)    | 54(102) | 62(110) | 70(118) | 15                    | 12               | 10         |                             |

Value in ( ) for mass of types with two switches

SCP \* 2  
CMK2  
CMA2  
SCM  
SCA2  
SCS  
CKV2  
CAV2/  
COV \* 2  
CAT  
MDC2  
MVC  
SMD2  
MSD/  
MSDG  
SSD  
SSD  
(large)  
FC \*  
ULKP/  
ULK  
JSK2/  
JSM2  
JSC3  
(medium)  
JSC3  
(large)  
JSB3  
UCAC  
STS/  
STL  
LCS  
LCY  
STR2  
UCA2  
STK  
USSD  
USC  
MFC  
GLC  
SHC  
CAC3  
HCM  
HCA  
MRL2  
SRL2  
SRG  
SRM  
SRT  
SRB2  
Standard type  
Pencil shaped cylinder

## How to order

Without switch

SCP<sub>D</sub>2-M - LS - 10 - 15 - 0 - I

With switch

SCP<sub>D</sub>2-ML - LS - 10 - 15 - 0 - M2V - R - I

A Model

B Mounting style

C Bore size

D Stroke length

E Head side port direction  
Note 2

F Switch model No.  
Note 3

G Switch quantity

H Accessory

## Caution for model No. selection

Note 1: For types without switch, magnet is not integrated.

Note 2: For axial port direction "0", mounting style "CB" is not available.

Note 3: Custom switches are available other than F Switch model No.

Please refer to Ending 1 about details.

Note 4: Copper and PTFE free specifications are provided as standard.

Note 5: Please refer to Ending 81 about custom specifications of rod end form.

Note 6: Please refer to Page 6 about variation/optional combination.

| Symbol                     | Descriptions                      | SCPS2-M | SCPD2-M |   |
|----------------------------|-----------------------------------|---------|---------|---|
| B Mounting style           |                                   |         |         |   |
| 00                         | Basic type                        | ●       | ●       |   |
| LS                         | Single axial foot type (rod side) | ●       | ●       |   |
| FA                         | Rod side flange type              | ●       | ●       |   |
| CB                         | Clevis bracket                    | ●       | ●       |   |
| C Bore size (mm)           |                                   |         |         |   |
| 10                         | 10 dia.                           | ●       | ●       |   |
| 16                         | 16 dia.                           | ●       | ●       |   |
| D Stroke length (mm)       |                                   |         |         |   |
| 15                         | 15                                | ●       | ●       |   |
| 30                         | 30                                | ●       | ●       |   |
| 45                         | 45                                | ●       | ●       |   |
| 60                         | 60                                | ●       | ●       |   |
| E Head side port direction |                                   |         |         |   |
| Blank                      | Vertical                          | ●       | ●       |   |
| 0                          | Axial                             | ●       | ●       |   |
| F Switch model No.         |                                   |         |         |   |
| M2V *                      | Proximity                         | 2 wire  | ●       | ● |
| M2WV *                     |                                   |         | ●       | ● |
| M3V *                      |                                   | 3 wire  | ●       | ● |
| M3WV *                     | Reed                              |         | ●       | ● |
| M0V *                      |                                   | 2 wire  | ●       | ● |
| M5V *                      |                                   |         | ●       | ● |
| *Lead wire length          |                                   |         |         |   |
| Blank                      | 1m (standard)                     | ●       | ●       |   |
| 3                          | 3m (Option)                       | ●       | ●       |   |
| 5                          | 5m (Option)                       | ●       | ●       |   |
| G Switch quantity          |                                   |         |         |   |
| R                          | One on rod side                   | ●       | ●       |   |
| H                          | One on head side                  | ●       | ●       |   |
| D                          | Two                               | ●       | ●       |   |
| T                          | Three                             | ●       | ●       |   |
| H Accessory                |                                   |         |         |   |
| I                          | Rod eye                           | ●       | ●       |   |
| Y                          | Rod clevis                        | ●       | ●       |   |
| B1                         | Eye bracket                       | ●       | ●       |   |
| B2                         | Clevis bracket                    | ●       | ●       |   |

## <Example of model number>

SCPS2-ML-LS-10-15-0-M2V-R-I

Model: Pencil shaped cylinder

A Model : Single acting/extend/non-rotating type

B Mounting style : Single axial foot type (rod side)

C Bore size : 10mm

D Stroke length : 15mm

E Head side port direction: Axial

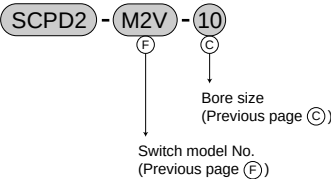
F Switch model No : Proximity switch M2V

G Switch quantity : One on rod side

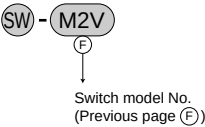
H Accessory : Rod eye

How to order switch

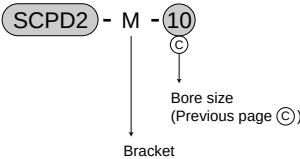
• Switch main body + mounting bracket



• Switch only



• Mounting bracket



How to order mounting bracket

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

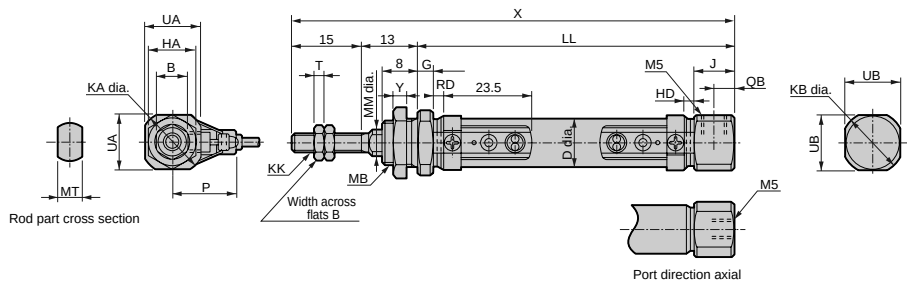
|                  |
|------------------|
| SCP * 2          |
| CMK2             |
| CMA2             |
| SCM              |
| SCA2             |
| SCS              |
| CKV2             |
| CAV2/<br>COV * 2 |
| CAT              |
| MDC2             |
| MVC              |
| SMD2             |
| MSD/<br>MSDG     |
| SSD              |
| SSD<br>(large)   |
| FC *             |
| ULKP/<br>ULK     |
| JSK2/<br>JSM2    |
| JSC3<br>(medium) |
| JSC3<br>(large)  |
| JSB3             |
| UCAC             |
| STS/<br>STL      |
| LCS              |
| LCY              |
| STR2             |
| UCA2             |
| STK              |
| USSD             |
| USC              |
| MFC              |
| GLC              |
| SHC              |
| CAC3             |
| HCM              |
| HCA              |
| MRL2             |
| SRL2             |
| SRG              |
| SRM              |
| SRT              |
| SRB2             |

Standard type  
Pencil shaped cylinder



Dimensions

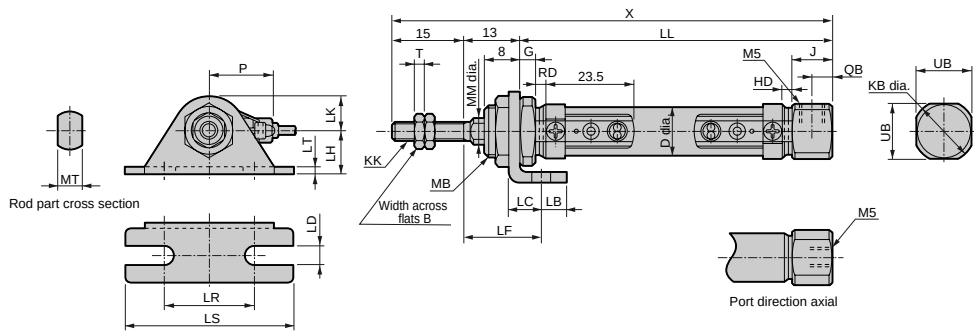
- SCPS2-M(L) basic type (00)



- Please refer to Page 71 about X and LL dimensions of custom stroke length.
- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         | Basic type (00) basic dimensions |      |      |      |      |      |      |    |      |      |      |      |           |     |    |     |
|----------------|----------------------------------|------|------|------|------|------|------|----|------|------|------|------|-----------|-----|----|-----|
| Bore size (mm) | B                                | D    | G    | HA   | J    | KA   | KB   | KK | LL   |      |      |      | MB        | MM  | MT | QB  |
|                | 15st                             | 30st | 45st | 60st |      |      |      |    |      |      |      |      |           |     |    |     |
| 10 dia.        | 7                                | 11   | 4    | 14   | 9    | 17   | 14.5 | M4 | 64   | 91   | 118  | 145  | M10 X 1.0 | 5   | 4  | 4.5 |
| 16 dia.        | 8                                | 17.4 | 4    | 17   | 9    | 21.5 | 21.5 | M5 | 64   | 91   | 118  | 145  | M12 X 1.0 | 6   | 5  | 4.5 |
| Symbol         | With switch                      |      |      |      |      |      |      |    |      |      |      |      |           |     |    |     |
| Bore size (mm) | T                                | UA   | UB   | X    |      |      |      | Y  | RD   |      |      |      | P         | HD  |    |     |
|                | 15st                             | 30st | 45st | 60st | 15st | 30st | 45st |    | 60st |      |      |      |           |     |    |     |
| 10 dia.        | 2.4                              | 15   | 12   | 92   | 119  | 146  | 173  | 3  | 14.5 | 26.5 | 38.5 | 50.5 | 16        | 1.5 |    |     |
| 16 dia.        | 3.2                              | 18   | 18   | 92   | 119  | 146  | 173  | 3  | 14.5 | 26.5 | 38.5 | 50.5 | 19        | 1.5 |    |     |

- Single axial foot type (LS)

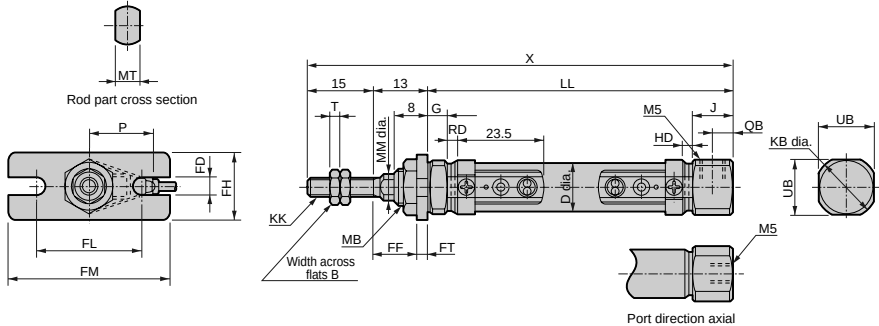


- Please refer to Page 71 about X and LL dimensions of custom stroke length.
- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         |  | Single axial (LS) basic dimensions |    |     |      |    |      |      |      |      |           |             |      |      |     |      |      |      |      |
|----------------|--|------------------------------------|----|-----|------|----|------|------|------|------|-----------|-------------|------|------|-----|------|------|------|------|
| Bore size (mm) |  | B                                  | G  | J   | KB   | KK | LL   |      |      |      | MB        | MM          | MT   | QB   | T   | X    |      |      |      |
|                |  |                                    |    |     |      |    | 15st | 30st | 45st | 60st |           |             |      |      |     | 15st | 30st | 45st | 60st |
| 10 dia.        |  | 7                                  | 4  | 9   | 14.5 | M4 | 64   | 91   | 118  | 145  | M10 X 1.0 | 5           | 4    | 4.5  | 2.4 | 92   | 119  | 146  | 173  |
| 16 dia.        |  | 8                                  | 4  | 9   | 21.5 | M5 | 64   | 91   | 118  | 145  | M12 X 1.0 | 6           | 5    | 4.5  | 3.2 | 92   | 119  | 146  | 173  |
| Symbol         |  | Mounting dimensions                |    |     |      |    |      |      |      |      |           | With switch |      |      |     |      |      |      |      |
| Bore size (mm) |  | LB                                 | LC | LD  | LF   | LH | LK   | LR   | LS   | LT   | RD        |             |      |      | P   | HD   | D    | UB   |      |
|                |  |                                    |    |     |      |    |      |      |      |      | 15st      | 30st        | 45st | 60st |     |      |      |      |      |
| 10 dia.        |  | 6                                  | 9  | 5.2 | 19.7 | 14 | 10   | 29   | 42   | 2.3  | 14.5      | 26.5        | 38.5 | 50.5 | 16  | 1.5  | 11   | 12   |      |
| 16 dia.        |  | 6                                  | 9  | 5.2 | 19.7 | 14 | 10   | 29   | 42   | 2.3  | 14.5      | 26.5        | 38.5 | 50.5 | 19  | 1.5  | 17.4 | 18   |      |

## Dimensions

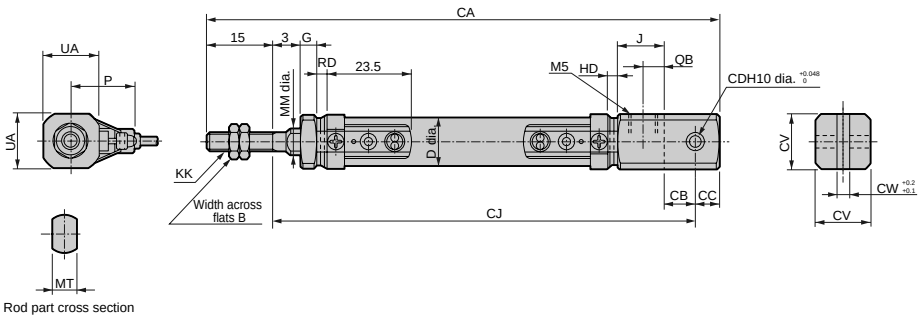
## • Rod side flange type (FA)



- Please refer to Page 71 about X and LL dimensions of custom stroke length.
- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         |  | Rod side flange type (FA) basic dimensions |      |    |    |      |      |             |      |           |      |    |     |      |      |      |      |      |
|----------------|--|--------------------------------------------|------|----|----|------|------|-------------|------|-----------|------|----|-----|------|------|------|------|------|
| Bore size (mm) |  | B                                          | G    | J  | KK | LL   |      |             |      | MB        | MM   | MT | QB  | T    | X    |      |      |      |
|                |  |                                            |      |    |    | 15st | 30st | 45st        | 60st |           |      |    |     |      | 15st | 30st | 45st | 60st |
| 10 dia.        |  | 7                                          | 4    | 9  | M4 | 64   | 91   | 118         | 145  | M10 X 1.0 | 5    | 4  | 4.5 | 2.4  | 92   | 119  | 146  | 173  |
| 16 dia.        |  | 8                                          | 4    | 9  | M5 | 64   | 91   | 118         | 145  | M12 X 1.0 | 6    | 5  | 4.5 | 3.2  | 92   | 119  | 146  | 173  |
| Symbol         |  | Mounting dimensions                        |      |    |    |      |      | With switch |      |           |      |    |     |      |      |      |      |      |
| Bore size (mm) |  | FD                                         | FF   | FH | FL | FM   | FT   | RD          |      |           |      | P  | HD  | D    | UB   |      |      |      |
|                |  |                                            |      |    |    |      |      | 15st        | 30st | 45st      | 60st |    |     |      |      |      |      |      |
| 10 dia.        |  | 5.2                                        | 10.7 | 20 | 29 | 42   | 2.3  | 14.5        | 26.5 | 38.5      | 50.5 | 16 | 1.5 | 11   | 12   |      |      |      |
| 16 dia.        |  | 5.2                                        | 10.7 | 20 | 29 | 42   | 2.3  | 14.5        | 26.5 | 38.5      | 50.5 | 19 | 1.5 | 17.4 | 18   |      |      |      |

## • Clevis bracket (CB) pin

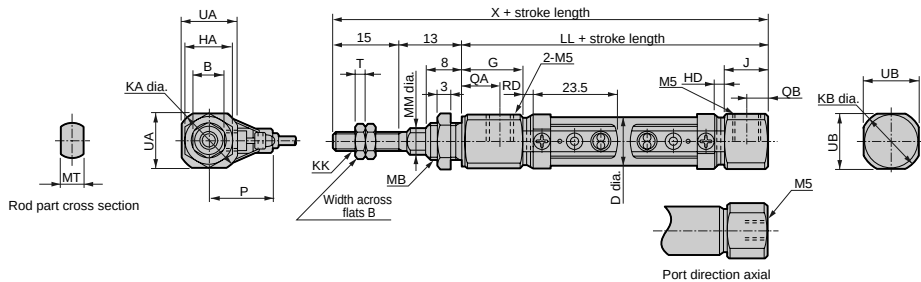


- Please refer to Page 71 about CA and CJ dimensions of custom stroke length.
- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Since thread length of 6 and 10 mm bore cylinder is 3.8 mm, when using joints, use ones whose thread length is less than 3.8 mm.

| Symbol         |  | Clevis (CB) basic dimensions |      |      |      |             |      |      |      |    | Mounting dimensions |      |      |      |    |    |     |    |     |
|----------------|--|------------------------------|------|------|------|-------------|------|------|------|----|---------------------|------|------|------|----|----|-----|----|-----|
| Bore size (mm) |  | B                            | G    | J    | KK   | MM          | MT   | QB   | T    | UA | CA                  |      |      |      | CB | CC | CD  | CJ |     |
|                |  | 15st                         | 30st | 45st | 60st | 15st        | 30st |      |      |    |                     |      |      |      |    |    |     |    |     |
| 10 dia.        |  | 7                            | 4    | 9    | M4   | 5           | 4    | 4.5  | 2.4  | 15 | 95                  | 122  | 149  | 176  | 8  | 5  | 3.2 | 75 | 102 |
| 16 dia.        |  | 8                            | 4    | 9    | M5   | 6           | 5    | 4.5  | 3.2  | 18 | 102                 | 129  | 156  | 183  | 10 | 10 | 5   | 77 | 104 |
| Symbol         |  |                              |      |      |      | With switch |      |      |      |    |                     |      |      |      |    |    |     |    |     |
| Bore size (mm) |  | CJ                           |      | CV   | CW   | RD          |      |      |      | P  | HD                  | D    |      |      |    |    |     |    |     |
|                |  | 45st                         | 60st |      |      | 15st        | 30st | 45st | 60st |    |                     |      | 15st | 30st |    |    |     |    |     |
| 10 dia.        |  | 129                          | 156  | 12   | 3.2  | 14.5        | 26.5 | 38.5 | 50.5 | 16 | 1.5                 | 11   |      |      |    |    |     |    |     |
| 16 dia.        |  | 131                          | 158  | 18   | 6.5  | 14.5        | 26.5 | 38.5 | 50.5 | 19 | 1.5                 | 17.4 |      |      |    |    |     |    |     |

Dimensions

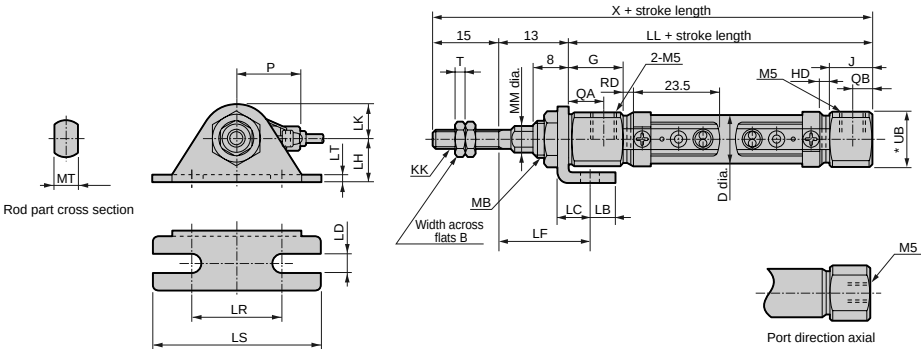
• SCPD2-M(L) basic type (00)



• Note: For 6 mm bore cylinder, M3 port is available.

| Symbol         | Basic type (00) basic dimensions |      |    |      |     |      |      |    |    |           |    |    |     |     |
|----------------|----------------------------------|------|----|------|-----|------|------|----|----|-----------|----|----|-----|-----|
| Bore size (mm) | B                                | D    | HA | G    | J   | KA   | KB   | KK | LL | MB        | MM | MT | QA  | QB  |
| 10 dia.        | 7                                | 11   | 14 | 12.5 | 9   | 17   | 14.5 | M4 | 46 | M10 X 1.0 | 5  | 4  | 8   | 4.5 |
| 16 dia.        | 8                                | 17.4 | 17 | 13.0 | 9   | 21.5 | 21.5 | M5 | 46 | M12 X 1.0 | 6  | 5  | 8.5 | 4.5 |
| Symbol         | With switch                      |      |    |      |     |      |      |    |    |           |    |    |     |     |
| Bore size (mm) | T                                | UA   | UB | X    | RD  | P    | HD   |    |    |           |    |    |     |     |
| 10 dia.        | 2.4                              | 15   | 12 | 74   | 3   | 16   | 1.5  |    |    |           |    |    |     |     |
| 16 dia.        | 3.2                              | 18   | 18 | 74   | 2.5 | 19   | 1.5  |    |    |           |    |    |     |     |

• Single axial foot type (LS)

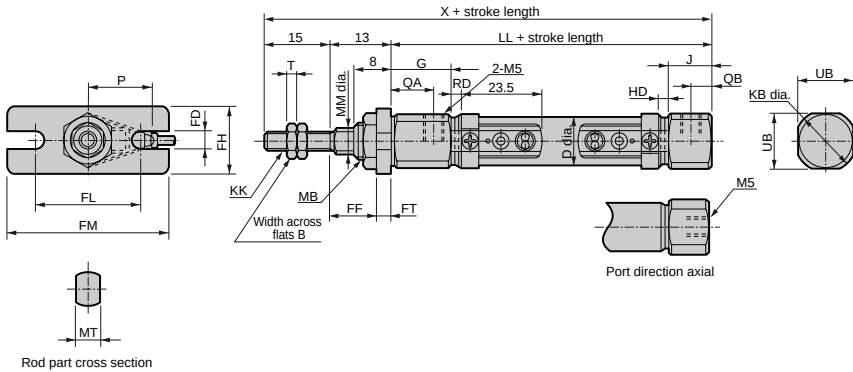


• Note: For 6 mm bore cylinder, M3 port is available.

| Symbol         | Single axial foot type (LS) basic dimensions |      |    |    |           |      |    |     |     |     |    | Mounting dimensions |    |    |
|----------------|----------------------------------------------|------|----|----|-----------|------|----|-----|-----|-----|----|---------------------|----|----|
| Bore size (mm) | B                                            | G    | J  | KK | MB        | MM   | MT | QA  | QB  | T   | X  | LD                  | LH | LB |
| 10 dia.        | 7                                            | 12.5 | 9  | M4 | M10 X 1.0 | 5    | 4  | 8   | 4.5 | 2.4 | 74 | 5.2                 | 14 | 6  |
| 16 dia.        | 8                                            | 13.0 | 9  | M5 | M12 X 1.0 | 6    | 5  | 8.5 | 4.5 | 3.2 | 74 | 5.2                 | 14 | 6  |
| Symbol         | With switch                                  |      |    |    |           |      |    |     |     |     |    |                     |    |    |
| Bore size (mm) | LT                                           | LC   | LK | LR | LS        | LF   | LL | RD  | P   | HD  | UB | D                   |    |    |
| 10 dia.        | 2.3                                          | 9    | 10 | 29 | 42        | 19.7 | 46 | 3   | 16  | 1.5 | 12 | 11                  |    |    |
| 16 dia.        | 2.3                                          | 9    | 10 | 29 | 42        | 19.7 | 46 | 2.5 | 19  | 1.5 | 18 | 17.4                |    |    |

#### Dimensions

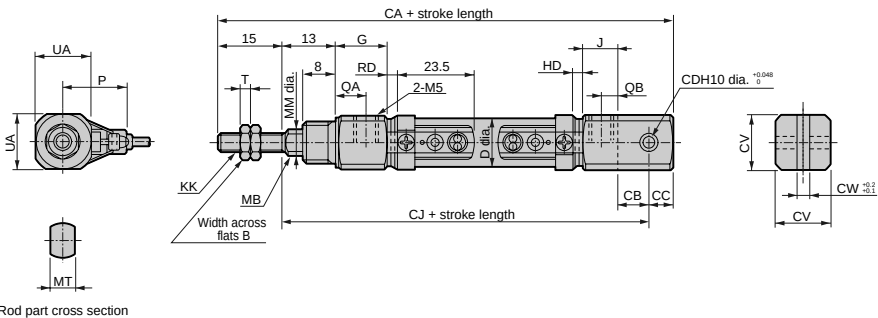
##### • Rod side flange type (FA)



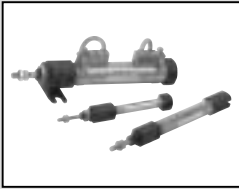
• Note: For 6 mm bore cylinder, M3 port is available.

| Symbol         |  | Rod type flange type (FA) basic dimensions |      |    |      |     |           |     |      |     |     |     |    | Mounting dimensions |     |
|----------------|--|--------------------------------------------|------|----|------|-----|-----------|-----|------|-----|-----|-----|----|---------------------|-----|
| Bore size (mm) |  | B                                          | G    | J  | KK   | LL  | MB        | MM  | MT   | QA  | QB  | T   | X  | FH                  | FD  |
| 10 dia.        |  | 7                                          | 12.5 | 9  | M4   | 46  | M10 X 1.0 | 5   | 4    | 8.0 | 4.5 | 2.4 | 74 | 20                  | 5.2 |
| 16 dia.        |  | 8                                          | 13.0 | 9  | M5   | 46  | M12 X 1.0 | 6   | 5    | 8.5 | 4.5 | 3.2 | 74 | 20                  | 5.2 |
| Symbol         |  | With switch                                |      |    |      |     |           |     |      |     |     |     |    |                     |     |
| Bore size (mm) |  | FT                                         | FL   | FM | FF   | RD  | P         | HD  | D    | UB  |     |     |    |                     |     |
| 10 dia.        |  | 2.3                                        | 29   | 42 | 10.7 | 3   | 16        | 1.5 | 11   | 12  |     |     |    |                     |     |
| 16 dia.        |  | 2.3                                        | 29   | 42 | 10.7 | 2.5 | 19        | 1.5 | 17.4 | 18  |     |     |    |                     |     |

##### • Clevis bracket (CB) pin



| Symbol         |  | Clevis bracket (CB) basic dimensions |      |    |    |             |           |     |      |     |     |    | Mounting dimensions |     |     |
|----------------|--|--------------------------------------|------|----|----|-------------|-----------|-----|------|-----|-----|----|---------------------|-----|-----|
| Bore size (mm) |  | B                                    | G    | J  | KK | MM          | MB        | MT  | QA   | QB  | T   | UA | CV                  | CW  | CD  |
| 10 dia.        |  | 7                                    | 12.5 | 9  | M4 | 5           | M10 X 1.0 | 4   | 8    | 4.5 | 2.4 | 15 | 12                  | 3.2 | 3.2 |
| 16 dia.        |  | 8                                    | 13.0 | 9  | M5 | 6           | M12 X 1.0 | 5   | 8.5  | 4.5 | 3.2 | 18 | 18                  | 6.5 | 5   |
| Symbol         |  |                                      |      |    |    | With switch |           |     |      |     |     |    |                     |     |     |
| Bore size (mm) |  | CB                                   | CC   | CJ | CA | RD          | P         | HD  | D    |     |     |    |                     |     |     |
| 10 dia.        |  | 8                                    | 5    | 67 | 87 | 3           | 16        | 1.5 | 11   |     |     |    |                     |     |     |
| 16 dia.        |  | 10                                   | 10   | 69 | 94 | 2.5         | 19        | 1.5 | 17.4 |     |     |    |                     |     |     |



# Discontinue

Pencil shaped cylinder, double acting/high load type

## SCPD2-K Series

- Port size: M5
  - Bore size: 6, 10, 16 mm
- JIS symbol



CAD DATA AVAILABLE.

### Specifications

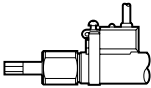
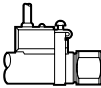
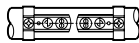
| Descriptions                | SCPD2-K<br>SCPD2-KL                                               |                            |       |         |         |
|-----------------------------|-------------------------------------------------------------------|----------------------------|-------|---------|---------|
| Bore size                   | mm                                                                | 6 dia.                     |       | 10 dia. | 16 dia. |
| Actuation                   | Double acting/high load type                                      |                            |       |         |         |
| Working fluid               | Compressed air                                                    |                            |       |         |         |
| Max. working pressure       | MPa                                                               | 1.0                        |       |         |         |
| Min. working pressure       | MPa                                                               | 0.15                       | 0.1   |         |         |
| Withstanding pressure       | MPa                                                               | 1.6                        |       |         |         |
| Ambient temperature         | °C                                                                | -10 to 60 (to be unfrozen) |       |         |         |
| Port size                   | M5                                                                |                            |       |         |         |
| Stroke tolerancemm          | +1.0<br>0                                                         |                            |       |         |         |
| Working piston speed        | mm/s                                                              | 50 to 500                  |       |         |         |
| Cushion                     | Rubber cushion                                                    |                            |       |         |         |
| Lubrication                 | Not required (when lubrication, use turbine oil Class 1 ISO VG32) |                            |       |         |         |
| Allowable energy absorption | J                                                                 | 0.011                      | 0.041 |         | 0.162   |

### Stroke length

| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | With switch minimum stroke length (mm) |
|----------------|-----------------------------|-------------------------|----------------------------------------|
| 6 dia.         | 15, 30, 45, 60              | 100                     | 10                                     |
| 10 dia.        |                             | 200                     |                                        |
| 16 dia.        |                             | 260                     |                                        |

Note 1: For types with switch, minimum stroke length varies depending on installation method. Refer to the table below.

### Min. stroke length of types with switch

| Rough sketch | One                                                                                 |                                                                                     | Two                                                                                 |                                                                                     |
|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|              |  |  |  |  |
| Min. stroke  | 5mm                                                                                 |                                                                                     | 10mm                                                                                | 28mm                                                                                |

Switch specifications

| Descriptions             | Proximity 2 wire                             |                             | Proximity 3 wire                                                                          |                                 |
|--------------------------|----------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------|---------------------------------|
|                          | M2V                                          | M2WV<br>(2 color indicator) | M3V                                                                                       | M2WV<br>(2 color indicator)     |
| Applications             | Programmable controller                      |                             | Programmable controller, relay,<br>IC circuit, small solenoid valve                       |                                 |
| Power voltage            | -                                            |                             | DC4.5 to 28V                                                                              | DC10 to 28V                     |
| Load voltage/<br>current | DC10 to 30V,<br>5 to 20mA                    |                             | DC30V or less,<br>200mA or less                                                           | DC30V or less,<br>150mA or less |
| Light                    | LED (ON lighting)                            | Red/green LED (ON lighting) | LED (ON lighting)                                                                         | Red/green LED (ON lighting)     |
| Descriptions             | Reed 2 wire                                  |                             |                                                                                           |                                 |
|                          | M0V                                          |                             | M5V                                                                                       |                                 |
| Applications             | Programmable controller, relay               |                             | Programmable controller, relay IC circuit<br>(without indicator light), serial connection |                                 |
| Load voltage/<br>current | 5 to 50mA at DC12/24V<br>7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V,<br>20mA or less at AC110V                                     |                                 |
| Light                    | LED (ON lighting)                            |                             | Without indicator light                                                                   |                                 |

Note 1: Please refer to Ending 1 about other switches specifications.

Cylinder mass

[Unit: g]

| Type    | Stroke length  | Without switch   |                  |                  |                  | With switch (2 switches) |                  |                  |                  | Switch mass<br>(switch per unit) |
|---------|----------------|------------------|------------------|------------------|------------------|--------------------------|------------------|------------------|------------------|----------------------------------|
|         | Bore size (mm) | 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> |                                  |
| SCPD2-K | 6 dia.         | 15               | 17               | 19               | 21               | 65                       | 67               | 69               | 71               | 24                               |
|         | 10 dia.        | 27               | 30               | 33               | 36               | 80                       | 83               | 86               | 89               |                                  |
|         | 16 dia.        | 64               | 69               | 74               | 79               | 118                      | 123              | 128              | 133              |                                  |

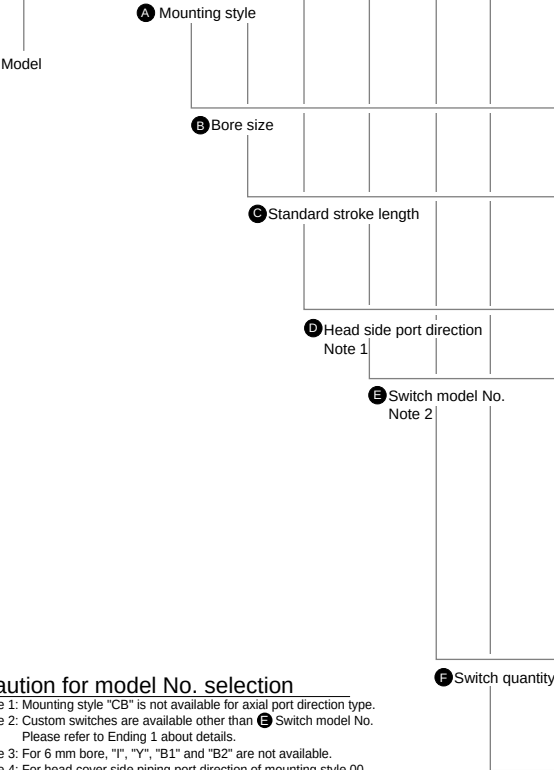
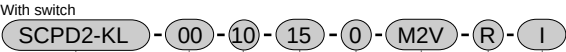
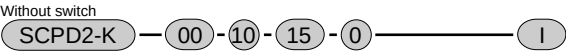
Allowable lateral load

[Unit: g]

| Type    | Bore size<br>(mm) | Stroke length    |                  |                  |                  |
|---------|-------------------|------------------|------------------|------------------|------------------|
|         |                   | 15 <sup>st</sup> | 30 <sup>st</sup> | 45 <sup>st</sup> | 60 <sup>st</sup> |
| SCPD2-K | 6 dia.            | 132              | 109              | 93               | 81               |
|         | 10 dia.           | 338              | 277              | 234              | 203              |
|         | 16 dia.           | 861              | 705              | 597              | 518              |

SCP \* 2  
CMK2  
CMA2  
SCM  
SCA2  
SCS  
CKV2  
CAV2/  
COV \* 2  
CAT  
MDC2  
MVC  
SMD2  
MSD/  
MSDG  
SSD  
SSD  
(large)  
FC \*  
ULKP/  
ULK  
JSK2/  
JSM2  
JSC3  
(medium)  
JSC3  
(large)  
JSB3  
UCAC  
ST/  
STL  
LCS  
LCY  
STR2  
UCA2  
STK  
USSD  
USC  
MFC  
GLC  
SHC  
CAC3  
HCM  
HCA  
MRL2  
SRL2  
SRG  
SRM  
SRT  
SRB2  
Standard type  
Pencil shaped cylinder

How to order



**Caution for model No. selection**

Note 1: Mounting style "CB" is not available for axial port direction type.  
Note 2: Custom switches are available other than E Switch model No.  
Please refer to Ending 1 about details.

Note 3: For 6 mm bore, "I", "Y", "B1" and "B2" are not available.  
Note 4: For head cover side piping port direction of mounting style 00, LB and FA, 2 types directions such as vertical and horizontal against axial direction can be selected.  
Note 5: For 6 mm bore, port size M3 type is available.  
**Note 6: Please refer to Ending 81 about custom specifications of rod end form.**  
Note 7: Please refer to Page 6 about variation/optional combination.

| Symbol                        | Descriptions                      |                   |           |
|-------------------------------|-----------------------------------|-------------------|-----------|
| A Mounting style              |                                   |                   |           |
| 00                            | Basic type                        |                   |           |
| LS                            | Single axial foot type (rod side) |                   |           |
| FA                            | Rod side flange type              |                   |           |
| CB                            | Clevis (10, 16 mm bore)           |                   |           |
| B Bore size (mm)              |                                   |                   |           |
| 6                             | 6 dia.                            |                   |           |
| 10                            | 10 dia.                           |                   |           |
| 16                            | 16 dia.                           |                   |           |
| C Standard stroke length (mm) |                                   |                   |           |
| 15                            | 15                                |                   |           |
| 30                            | 30                                |                   |           |
| 45                            | 45                                |                   |           |
| 60                            | 60                                |                   |           |
| D Head side port direction    |                                   |                   |           |
| Blank                         | Vertical                          |                   |           |
| 0                             | Axial                             |                   |           |
| E Switch model No.            |                                   |                   |           |
| Radial lead wire              | Contact                           | Display           | Lead wire |
| M2V *                         | Proximity                         | 1 color indicator | 2 wire    |
| M2WV *                        |                                   | 2 color indicator |           |
| M3V *                         |                                   | 1 color indicator | 3 wire    |
| M3WV *                        | 2 color indicator                 |                   |           |
| M0V *                         | Reed                              | 1 color indicator | 2 wire    |
| M5V *                         |                                   |                   |           |
| *Lead wire length             |                                   |                   |           |
| Blank                         | 1m (standard)                     |                   |           |
| 3                             | 3m (Option)                       |                   |           |
| 5                             | 5m (Option)                       |                   |           |
| F Switch quantity             |                                   |                   |           |
| R                             | One on rod side                   |                   |           |
| H                             | One on head side                  |                   |           |
| D                             | Two                               |                   |           |
| T                             | Three                             |                   |           |
| G Accessory                   |                                   |                   |           |
| I                             | Rod eye (10, 16 dia.)             |                   |           |
| Y                             | Rod clevis (10, 16 dia.)          |                   |           |
| B1                            | Eye bracket (10, 16 dia.)         |                   |           |
| B2                            | Clevis bracket (10, 16 dia.)      |                   |           |

<Example of model number>

SCPD2-K-00-10-15-0-M2V-R-I

Model: Pencil shaped cylinder, double acting/high load type

A Mounting style : Basic type

B Bore size : 10mm

C Standard stroke length : 15mm

D Head side port direction: Axial

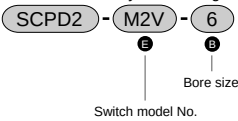
E Switch model No : Proximity switch M2V

F Switch quantity : One on rod side

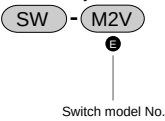
G Accessory : Rod eye

How to order switch

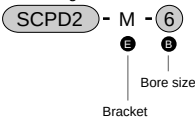
- Switch main body + mounting bracket



- Switch only



- Mounting bracket



How to order mounting bracket

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

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/

COV \* 2

CAT

MDC2

MVC

SMD2

MSD/

MSDG

SSD

SSD

(large)

FC \*

ULKP/

ULK

JSK2/

JSM2

JSC3

(medium)

JSC3

(large)

JSB3

UCAC

STS/

STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

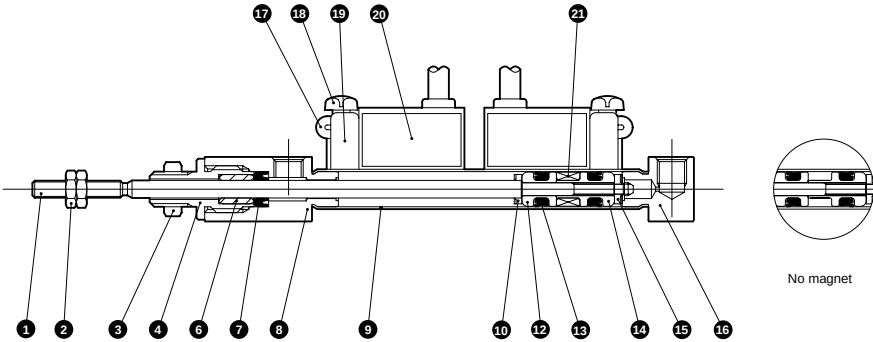
SRB2

Standard type  
Pencil shaped cylinder

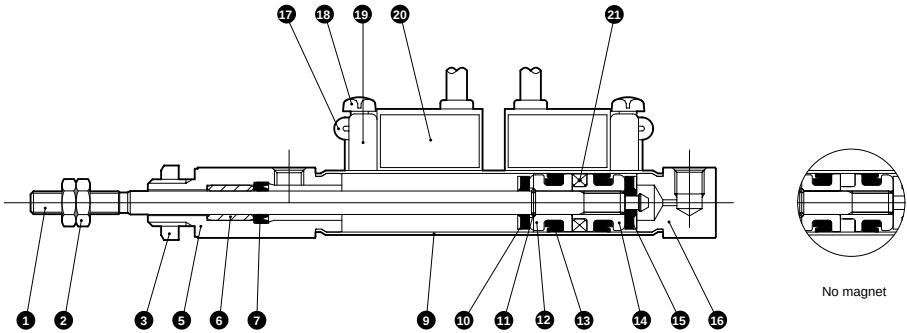


Internal structure and parts list

• SCPD2-K (6 mm bore)



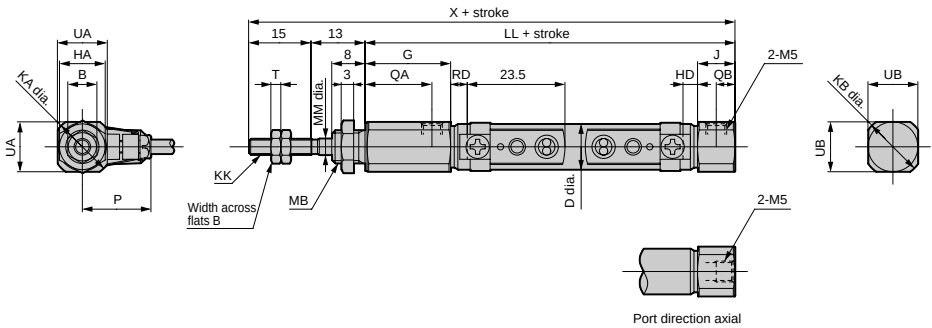
• SCPD2-K (10, 16 mm bore)



| No. | Parts name    | Material                   | Comment       | No.         | Parts name             | Material         | Comment          |
|-----|---------------|----------------------------|---------------|-------------|------------------------|------------------|------------------|
| 1   | Piston rod    | Stainless steel            |               | 12          | Piston R               | Special aluminum | Chromate         |
| 2   | Rod nut       | Steel                      |               | 13          | Piston seal            | Nitrile rubber   |                  |
| 3   | Mounting nut  | Steel                      | Nickeling     | 14          | Piston H               | Special aluminum | Chromate         |
| 4   | Rod bushing   | Special aluminum           | Black alumite | 15          | Cushion H              | Urethane rubber  |                  |
| 5   | Rod cover     | Special aluminum           | Black alumite | 16          | Head cover             | Special aluminum | Black alumite    |
| 6   | Bush          | DU dry bearing             |               | With switch |                        |                  |                  |
| 7   | Rod packing   | Nitrile rubber             |               | 17          | Bracket                | Stainless steel  |                  |
| 8   | Rod cover     | Special aluminum           | Black alumite | 18          | Pan head machine screw | Steel            |                  |
| 9   | Cylinder tube | Stainless steel            |               | 19          | Band                   | Stainless steel  |                  |
| 10  | Cushion R     | Urethane rubber            |               | 20          | Switch main body       |                  |                  |
| 11  | Snap ring     | Stainless steel for spring |               | 21          | Piston magnet          | Plastic magnet   | With switch only |

### Dimensions

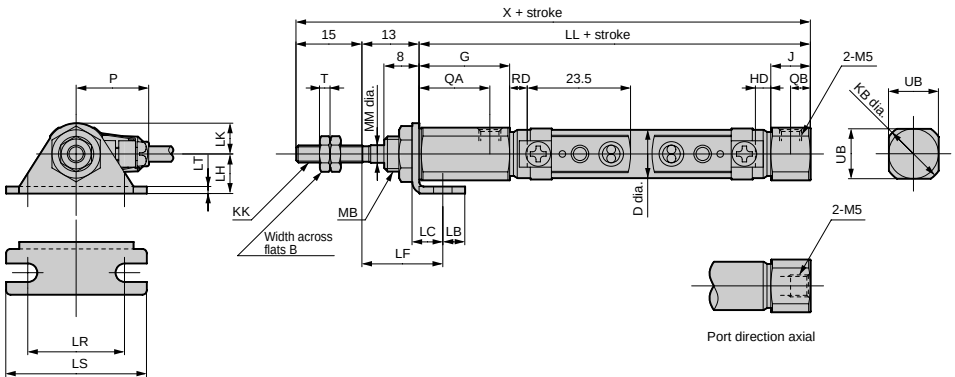
- Basic type (00)  (File name: Page 73 or Ending 111)



| Symbol         | B   | D    | G    | HA | J | KA   | KB      | KK | LL | MB        | MM | QA   | QB  | T   | UA | UB    | X  | With switch |    |     |
|----------------|-----|------|------|----|---|------|---------|----|----|-----------|----|------|-----|-----|----|-------|----|-------------|----|-----|
| Bore size (mm) |     |      |      |    |   |      |         |    |    |           |    |      |     |     |    |       |    | RD          | P  | HD  |
| 6 dia.         | 5.5 | 6.8  | 20   | 8  | 8 | 13.5 | 13.5(9) | M3 | 55 | M6        | 3  | 16   | 4   | 1.8 | 11 | 11(8) | 83 | 2.5         | 14 | 3.5 |
| 10 dia.        | 7   | 11   | 20.5 | 11 | 9 | 14.5 | 14.5    | M4 | 59 | M8 X 1.0  | 4  | 16   | 4.5 | 2.4 | 12 | 12    | 87 | 4           | 16 | 3.5 |
| 16 dia.        | 8   | 17.4 | 21   | 14 | 9 | 21.5 | 21.5    | M5 | 62 | M10 X 1.0 | 5  | 16.5 | 4.5 | 3.2 | 18 | 18    | 90 | 4.5         | 19 | 4.5 |

(Note) For axial head side port direction "O" type, refer to dimensions in ( ).

- Single axial foot type (LS)  (File name: Page 73 or Ending 111)

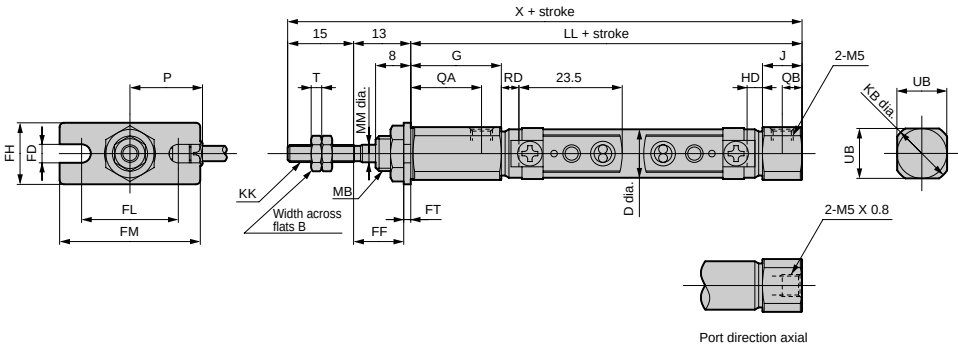


| Symbol<br>Bore size (mm) | B   | D    | G    | J  | KK | LL | MB        | MM | QA   | QB  | T   | X  | Mounting dimensions |   |     |      |    |    |    |    | With switch |     |    |     |
|--------------------------|-----|------|------|----|----|----|-----------|----|------|-----|-----|----|---------------------|---|-----|------|----|----|----|----|-------------|-----|----|-----|
|                          | LB  | LC   | LD   | LF | LH | LK | LR        | LS | LT   | RD  | P   | HD |                     |   |     |      |    |    |    |    |             |     |    |     |
| 6 dia.                   | 5.5 | 6.8  | 20   | 8  | M3 | 55 | M6        | 3  | 16   | 4   | 1.8 | 83 | 5                   | 7 | 4.2 | 18.4 | 9  | 7  | 22 | 32 | 1.6         | 2.5 | 14 | 3.5 |
| 10 dia.                  | 7   | 11   | 20.5 | 9  | M4 | 59 | M8 X 1.0  | 4  | 16   | 4.5 | 2.4 | 87 | 5                   | 7 | 4.2 | 18.4 | 9  | 7  | 22 | 32 | 1.6         | 4   | 16 | 3.5 |
| 16 dia.                  | 8   | 17.4 | 21   | 9  | M5 | 62 | M10 X 1.0 | 5  | 16.5 | 4.5 | 3.2 | 90 | 6                   | 9 | 5.2 | 19.7 | 14 | 10 | 29 | 42 | 2.3         | 4.5 | 19 | 4.5 |

Standard type  
Pencil shaped cylinder

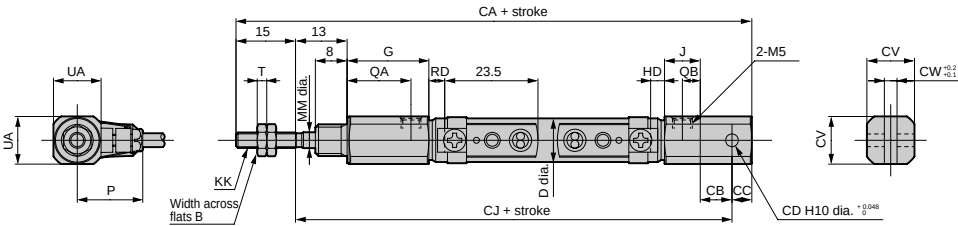
Dimensions

• Rod side flange type (FA)  (File name: Page 73 or Ending 111)

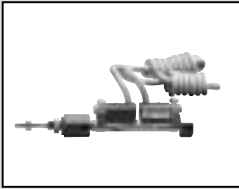


| Symbol<br>Bore size (mm) | B   | D    | G    | J | KK | LL | MB        | MM | QA   | QB  | T   | X  | Mounting dimensions |      |    |    |    |     | With switch |    |     |
|--------------------------|-----|------|------|---|----|----|-----------|----|------|-----|-----|----|---------------------|------|----|----|----|-----|-------------|----|-----|
|                          |     |      |      |   |    |    |           |    |      |     |     |    | FD                  | FF   | FH | FL | FM | FT  | RD          | P  | HD  |
| 6 dia.                   | 5.5 | 6.8  | 20   | 8 | M3 | 55 | M6        | 3  | 16   | 4   | 1.8 | 83 | 4.2                 | 11.4 | 14 | 22 | 32 | 1.6 | 2.5         | 14 | 3.5 |
| 10 dia.                  | 7   | 11   | 20.5 | 9 | M4 | 59 | M8 X 1.0  | 4  | 16   | 4.5 | 2.4 | 87 | 4.2                 | 11.4 | 14 | 22 | 32 | 1.6 | 4           | 16 | 3.5 |
| 16 dia.                  | 8   | 17.4 | 21   | 9 | M5 | 62 | M10 X 1.0 | 5  | 16.5 | 4.5 | 3.2 | 90 | 5.2                 | 10.7 | 20 | 29 | 42 | 2.3 | 4.5         | 19 | 4.5 |

• Clevis bracket (CB)  (File name: Page 73 or Ending 111)



| Symbol<br>Bore size (mm) | B | D    | G    | J | KK | MM | QA   | QB  | T   | UA | Mounting dimensions |    |    |     |    |    | With switch |     |    |     |
|--------------------------|---|------|------|---|----|----|------|-----|-----|----|---------------------|----|----|-----|----|----|-------------|-----|----|-----|
|                          |   |      |      |   |    |    |      |     |     |    | CA                  | CB | CC | CD  | CJ | CV | CW          | RD  | P  | HD  |
| 10 dia.                  | 7 | 11   | 20.5 | 9 | M4 | 4  | 16   | 4.5 | 2.4 | 12 | 100                 | 8  | 5  | 3.2 | 80 | 12 | 3.2         | 4   | 16 | 3.5 |
| 16 dia.                  | 8 | 17.4 | 21   | 9 | M5 | 5  | 16.5 | 4.5 | 3.2 | 18 | 110                 | 10 | 10 | 5   | 85 | 18 | 6.5         | 4.5 | 19 | 4.5 |

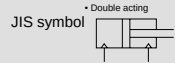


# Discontinue

Pencil shaped cylinder  
Double acting/rubber and air cushioned

## SCDP2- \* C Series

- Bore size: 6, 10, 16 mm
- Port size: M5



### Specifications

• Custom order

| Descriptions                  | SCDP2                                                              |         |         |
|-------------------------------|--------------------------------------------------------------------|---------|---------|
| Bore size mm                  | 6 dia.                                                             | 10 dia. | 16 dia. |
| Actuation                     | Double acting                                                      |         |         |
| Working fluid                 | Compressed air                                                     |         |         |
| Max. working pressure MPa     | 1.0                                                                |         |         |
| Min. working pressure MPa     | 0.3                                                                |         | 0.2     |
| Withstanding pressure MPa     | 1.6                                                                |         |         |
| Ambient temperature °C        | -10 to 60 (to be unfrozen)                                         |         |         |
| Port size                     | M5                                                                 |         |         |
| Stroke tolerance mm           | +1.0<br>0                                                          |         |         |
| Working piston speed mm/s     | 50 to 500 (use this within allowable energy absorption range.)     |         |         |
| Cushion                       | Rubber-air cushion                                                 |         |         |
| Lubrication                   | Not required (When lubrication, use turbine oil Class 1 ISO VG32.) |         |         |
| Allowable energy absorption J | 0.011                                                              | 0.041   | 0.162   |

### Stroke length

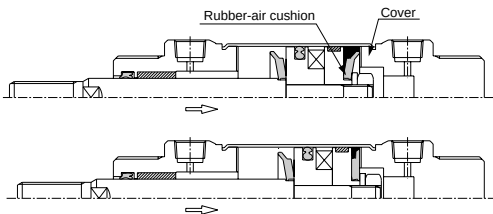
| Bore size (mm) | Standard stroke length (mm) | Max. stroke length (mm) | Min. stroke length (mm) with switch |
|----------------|-----------------------------|-------------------------|-------------------------------------|
| 6 dia.         | 15, 30, 45, 60              | 100                     | 10 (Note 1)                         |
| 10 dia.        |                             | 200                     |                                     |
| 16 dia.        |                             | 260                     |                                     |

Note 1: For types with switch, minimum stroke length varies depending on installation method. Refer to the table below.

### Min. stroke length of types with switch

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

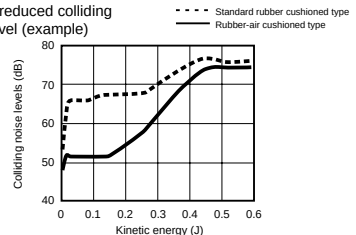
### • Rubber-air cushion mechanism



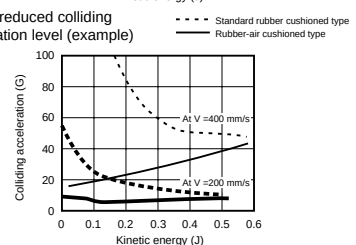
### Explanation at Pulled state.

Operating the piston, and contacting the rubber cushion dumper and the caver generates air closed room in the section. The air closed in this room absorbs energy according to piston operation. The energy is additionally absorbed by compressed strain of rubber cushion dumper at the stroke limit.

Data of reduced colliding noise level (example)



Data of reduced colliding acceleration level (example)



Switch specifications

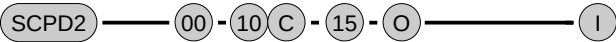
| Descriptions             | Proximity 2 wire                              |                             | Proximity 3 wire                                                                        |                                 |
|--------------------------|-----------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------|---------------------------------|
|                          | M2V                                           | M2WV<br>(2 color indicator) | M3V                                                                                     | M3WV<br>(2 color indicator)     |
| Applications             | Programmable controller                       |                             | Programmable controller, relay, IC circuit, small solenoid valve                        |                                 |
| Power voltage            | —————                                         |                             | DC4.5 to 28V                                                                            | DC10 to 28V                     |
| Load voltage/<br>current | DC10 to 30V,<br>5 to 20mA                     |                             | DC30V or less,<br>200mA or less                                                         | DC30V or less,<br>150mA or less |
| Light                    | LED (ON lighting)                             | Red/green LED (ON lighting) | LED (ON lighting)                                                                       | Red/green LED (ON lighting)     |
| Descriptions             | Reed 2 wire                                   |                             |                                                                                         |                                 |
|                          | M0V                                           |                             | M5V                                                                                     |                                 |
| Applications             | Programmable controller, relay                |                             | Programmable controller, relay, IC circuit (without indicator light), serial connection |                                 |
| Load voltage/<br>current | 5 to 50mA at DC12/14V,<br>7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V,<br>20mA or less at AC110V                                   |                                 |
| Light                    | LED (ON lighting)                             |                             | Without indicator light                                                                 |                                 |

|                  |
|------------------|
| SCP * 2          |
| CMK2             |
| CMA2             |
| SCM              |
| SCA2             |
| SCS              |
| CKV2             |
| CAV2/<br>COV * 2 |
| CAT              |
| MDC2             |
| MVC              |
| SMD2             |
| MSD/<br>MSDG     |
| SSD              |
| SSD<br>(large)   |
| FC *             |
| ULKP/<br>ULK     |
| JSK2/<br>JSM2    |
| JSC3<br>(medium) |
| JSC3<br>(large)  |
| JSB3             |
| UCAC             |
| STS/<br>STL      |
| LCS              |
| LCY              |
| STR2             |
| UCA2             |
| STK              |
| USSD             |
| USC              |
| MFC              |
| GLC              |
| SHC              |
| CAC3             |
| HCM              |
| HCA              |
| MRL2             |
| SRL2             |
| SRG              |
| SRM              |
| SRT              |
| SRB2             |

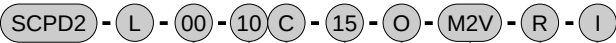
Standard type  
Pencil shaped cylinder

How to order

• Without switch



• With switch



A Mounting style  
Note 1

B Bore size

Rubber and air  
cushioned

C Stroke length

D Head side port direction  
Note 2

E Switch model No.

F Switch quantity

G Option/accessory  
Note 3

**⚠ Cautions for model No. selection**

Note 1: For 6 mm bore, "CB" is not available.

Note 2: For port direction "O", "CB" is not available.

Note 3: For 6 mm bore, "I", "Y", "B1" and "B2" are not available.

Note 4: Please refer to Ending 81 about custom specifications of rod end form.

Note 5: Please refer to Page 6 about variation/optional combination.

<Example of model number>

SCPD2-L-00-10C-15-0-M2V-R-I

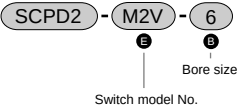
Model: Pencil shaped cylinder double acting/rubber and air cushioned

- A Mounting style : Basic type  
B Bore size : 10mm  
C Stroke length : 15mm  
D Head side port direction: Axial  
E Switch model No : Proximity switch M2V  
F Switch quantity : One on rod side  
G Accessory : Rod eye

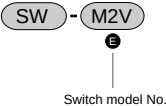
| Symbol                     | Descriptions                      |                   |           |
|----------------------------|-----------------------------------|-------------------|-----------|
| A Mounting style           |                                   |                   |           |
| 00                         | Basic type                        |                   |           |
| LS                         | Single axial foot type (rod side) |                   |           |
| FA                         | Rod side flange type              |                   |           |
| CB                         | Clevis bracket (10, 16 mm bore)   |                   |           |
| B Bore size (mm)           |                                   |                   |           |
| 6                          | 6 dia.                            |                   |           |
| 10                         | 10 dia.                           |                   |           |
| 16                         | 16 dia.                           |                   |           |
| C Stroke length (mm)       |                                   |                   |           |
| Standard stroke length     | Max. stroke length                |                   |           |
|                            | Bore size                         | Stroke length     |           |
|                            | 15                                | 100               |           |
|                            | 30                                | 100               |           |
|                            | 45                                | 200               |           |
| 60                         | 16 dia.                           | 260               |           |
| D Head side port direction |                                   |                   |           |
| Blank                      | Vertical                          |                   |           |
| O                          | Axial                             |                   |           |
| E Switch model No.         |                                   |                   |           |
| Radial lead wire           | Contact                           | Display           | Lead wire |
| M2V *                      | Proximity                         | 1 color indicator | 2 wire    |
| M2VV *                     |                                   |                   |           |
| M3V *                      |                                   |                   | 3 wire    |
| M3VV *                     |                                   |                   |           |
| M0V *                      | Reed                              |                   | 2 wire    |
| M5V *                      |                                   |                   |           |
| *Lead wire length          |                                   |                   |           |
| Blank                      | 1m (standard)                     |                   |           |
| 3                          | 3m (option)                       |                   |           |
| 5                          | 5m (option)                       |                   |           |
| F Switch quantity          |                                   |                   |           |
| R                          | One on rod side                   |                   |           |
| H                          | One on head side                  |                   |           |
| D                          | Two                               |                   |           |
| T                          | Three                             |                   |           |
| G Option/accessory         |                                   |                   |           |
| I                          | Rod eye (10, 16 dia.)             |                   |           |
| Y                          | Rod clevis (10, 16 dia.)          |                   |           |
| B1                         | Eye bracket (10, 16 dia.)         |                   |           |
| B2                         | Clevis bracket (10, 16 dia.)      |                   |           |

How to indicate switch model No.

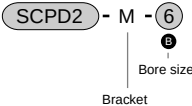
• Switch main body + mounting bracket



• Switch only



• Mounting bracket

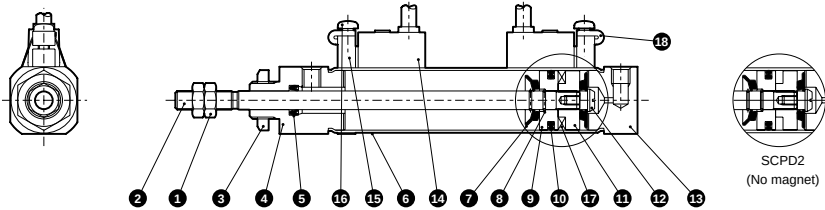


How to order mounting bracket

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

Internal structure and parts list

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



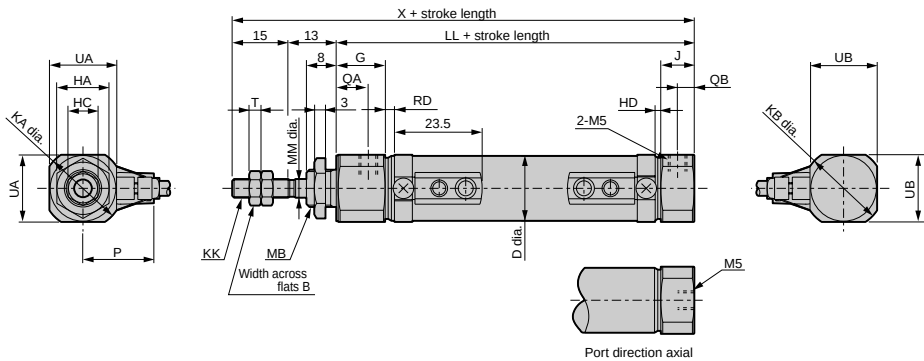
| No. | Parts name         | Material               | Comment               | No.         | Parts name             | Material               | Comment          |
|-----|--------------------|------------------------|-----------------------|-------------|------------------------|------------------------|------------------|
| 1   | Rod nut            | Steel                  | JIS B1181 hexagon nut | 11          | Spacer                 | Special aluminum alloy |                  |
| 2   | Piston rod         | Stainless steel        |                       | 12          | Pin                    | Stainless steel        |                  |
| 3   | Mounting nut       | Steel                  | Nickeling             | 13          | Head cover             | Special aluminum alloy | Black alumite    |
| 4   | Rod cover          | Special aluminum alloy | Black alumite         | With switch |                        |                        |                  |
| 5   | Rod packing        | Nitrile rubber         |                       | 14          | Switch main body       | -                      |                  |
| 6   | Cylinder tube      | Stainless steel        |                       | 15          | Band                   | Stainless steel        |                  |
| 7   | Rubber-air cushion | Special rubber         |                       | 16          | Pan head machine screw | Steel                  |                  |
| 8   | Snap ring          | Stainless steel        |                       | 17          | Magnet                 | Plastic                | With switch only |
| 9   | Piston             | Special aluminum alloy |                       | 18          | Bracket                | Stainless steel        |                  |
| 10  | Piston seal        | Nitrile rubber         |                       |             |                        |                        |                  |

- SCP \* 2
- CMK2
- CMA2
- SCM
- SCA2
- SCS
- CKV2
- CAV2/  
COV \* 2
- CAT
- MDC2
- MVC
- SMD2
- MSD/  
MSDG
- SSD
- SSD  
(large)
- FC \*
- ULKP/  
ULK
- JSK2/  
JSM2
- JSC3  
(medium)
- JSC3  
(large)
- JSB3
- UCAC
- ST/  
STL
- LCS
- LCY
- STR2
- UCA2
- STK
- USSD
- USC
- MFC
- GLC
- SHC
- CAC3
- HCM
- HCA
- MRL2
- SRL2
- SRG
- SRM
- SRT
- SRB2

Standard type  
Pencil shaped cylinder

Dimensions

• SCPD2- (L) basic type (00)



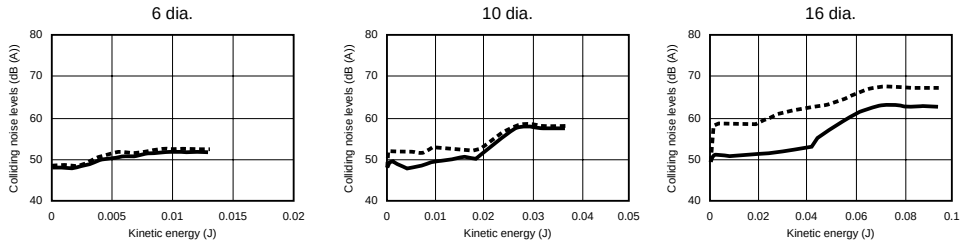
| Symbol         | Basic type (00) basic dimensions |      |      |     |                                            |   |      |         |    |    |           |    |     |     |     |    |       |
|----------------|----------------------------------|------|------|-----|--------------------------------------------|---|------|---------|----|----|-----------|----|-----|-----|-----|----|-------|
| Bore size (mm) | B                                | D    | G    | HA  | HC                                         | J | KA   | KB      | KK | LL | MB        | MM | QA  | QB  | T   | UA | UB    |
| 6 dia.         | 5.5                              | 6.8  | 17   | 8   | 5.5                                        | 8 | 13.5 | 13.5(9) | M3 | 47 | M6        | 3  | 13  | 4   | 1.8 | 11 | 11(8) |
| 10 dia.        | 7                                | 11   | 12.5 | 11  | 7                                          | 9 | 14.5 | 14.5    | M4 | 46 | M8 X 1.0  | 4  | 8   | 4.5 | 2.4 | 12 | 12    |
| 16 dia.        | 8                                | 17.4 | 13   | 14  | 8                                          | 9 | 21.5 | 21.5    | M5 | 46 | M10 X 1.0 | 5  | 8.5 | 4.5 | 3.2 | 18 | 18    |
| Symbol         | With switch                      |      |      |     |                                            |   |      |         |    |    |           |    |     |     |     |    |       |
| Bore size (mm) | X                                | RD   | P    | HD  |                                            |   |      |         |    |    |           |    |     |     |     |    |       |
| 6 dia.         | 75                               | 1.5  | 14   | 1.5 | Value in ( ) for port direction axial type |   |      |         |    |    |           |    |     |     |     |    |       |
| 10 dia.        | 74                               | 3    | 16   | 1.5 |                                            |   |      |         |    |    |           |    |     |     |     |    |       |
| 16 dia.        | 74                               | 2.5  | 19   | 1.5 |                                            |   |      |         |    |    |           |    |     |     |     |    |       |

Note: Please refer to Page 20 to 21 about mounting style other than basic type (00).

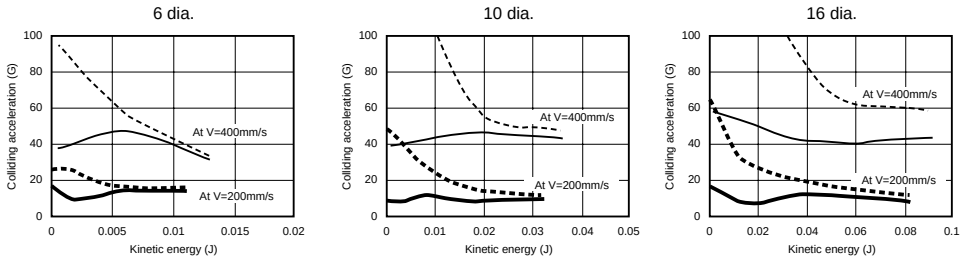


#### Technical data

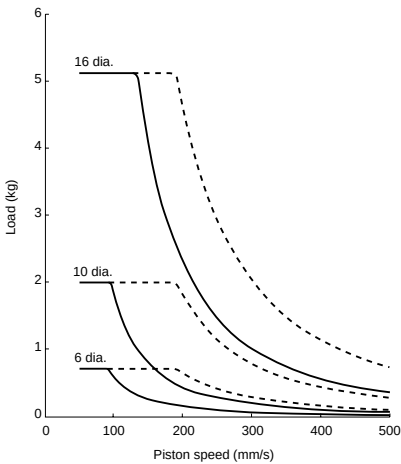
##### [Comparison of colliding noise levels]



##### [Comparison of colliding acceleration]



##### [Allowable energy]



The area left and below from the curve is the usable range.  
This product can be used within the range indicated as - - - on the graph.  
However, to increase the effect of noise reduction and deceleration,  
we recommend to use this product within the range of continuous line.

| SCP * 2          |
|------------------|
| CMK2             |
| CMA2             |
| SCM              |
| SCA2             |
| SCS              |
| CKV2             |
| CAV2/<br>COV * 2 |
| CAT              |
| MDC2             |
| MVC              |
| SMD2             |
| MSD/<br>MSDG     |
| SSD              |
| SSD<br>(large)   |
| FC *             |
| ULKP/<br>ULK     |
| JSK2/<br>JSM2    |
| JSC3<br>(medium) |
| JSC3<br>(large)  |
| JSB3             |
| UCAC             |
| STS/<br>STL      |
| LCS              |
| LCY              |
| STR2             |
| UCA2             |
| STK              |
| USSD             |
| USC              |
| MFC              |
| GLC              |
| SHC              |
| CAC3             |
| HCM              |
| HCA              |
| MRL2             |
| SRL2             |
| SRG              |
| SRM              |
| SRT              |
| SRB2             |

Standard type  
Pencil shaped cylinder

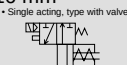
# Discontinue

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

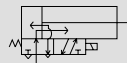
## SCPS2-V Series SCPD2-V Series

• Bore size: 10, 16 mm

JIS symbol



• Double acting/with valve



### Specifications

| Descriptions                  |      | SCPS2-V<br>SCPS2-VL                                               |                                           | SCPD2-V<br>SCPD2-VL                      |                                                                             |
|-------------------------------|------|-------------------------------------------------------------------|-------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------|
| Bore size                     | mm   | 10 dia.                                                           | 16 dia.                                   | 10 dia.                                  | 16 dia.                                                                     |
| Actuation                     |      | Single acting/with solenoid valve                                 |                                           | Double acting/with solenoid valve        |                                                                             |
| Working fluid                 |      | Compressed air                                                    |                                           |                                          |                                                                             |
| Max. working pressure         | MPa  | 1                                                                 |                                           | 0.7                                      |                                                                             |
| Min. working pressure         | MPa  | 0.15                                                              |                                           |                                          |                                                                             |
| Withstanding pressure         | MPa  | 1.5                                                               |                                           | 1.05                                     |                                                                             |
| Ambient temperature           | °C   | -10 to 50 (to be unfrozen)                                        |                                           |                                          |                                                                             |
| Port size                     |      | M5                                                                |                                           |                                          |                                                                             |
| Stroke tolerance              | mm   | <sup>+1.0</sup> / <sub>0</sub> (to 60),                           | <sup>+1.5</sup> / <sub>0</sub> (61 to120) | <sup>+1.0</sup> / <sub>0</sub> (to 120), | <sup>+1.5</sup> / <sub>0</sub> 121 to 200: 10 dia.)<br>121 to 260: 16 dia.) |
| Working piston speed          | mm/s | 50 to 500                                                         |                                           |                                          |                                                                             |
| Cushion                       |      | Rubber cushion                                                    |                                           |                                          |                                                                             |
| Lubrication                   |      | Not required (when lubrication, use turbine oil Class 1 ISO VG32) |                                           |                                          |                                                                             |
| Manual override               |      | Non-locking push type                                             |                                           |                                          |                                                                             |
| Allowable energy absorption   | J    | 0.041                                                             | 0.162                                     | 0.041                                    | 0.162                                                                       |
| Solenoid valve specifications |      |                                                                   |                                           |                                          |                                                                             |
| Rated voltage                 | V    | AC100(50/60Hz)                                                    |                                           | AC200(50/60Hz)                           | 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     |      | ±10%                                                              |                                           |                                          |                                                                             |
| Insulation class              |      | Class B (molded coil)                                             |                                           |                                          |                                                                             |
| Temperature rise              |      | 45°C                                                              |                                           |                                          |                                                                             |

Note: Refer to "Pneumatic valves" CB-23S about valves' details.

### Stroke length

| Bore size (mm) |               |         | Standard stroke length (mm) | Max. stroke length (mm) |
|----------------|---------------|---------|-----------------------------|-------------------------|
| SCPS2-V        | Single acting | 10 dia. |                             |                         |
|                |               | 16 dia. | 15, 30, 45, 60              | 120                     |
| SCPD2-V        | Double acting | 10 dia. | 15, 30, 45, 60              | 200                     |
|                |               | 16 dia. |                             | 260                     |

Switch specifications

| Descriptions             | Proximity 2 wire                              |                             | Proximity 3 wire                                                                        |                                 |
|--------------------------|-----------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------|---------------------------------|
|                          | M2V                                           | M2WV<br>(2 color indicator) | M3V                                                                                     | M3WV<br>(2 color indicator)     |
| Applications             | Programmable controller                       |                             | Programmable controller, relay, IC circuit, small solenoid valve                        |                                 |
| Power voltage            |                                               |                             | DC4.5 to 28V                                                                            | DC10 to 28V                     |
| Load voltage/<br>current | DC10 to 30V,<br>5 to 20mA                     |                             | DC30V or less,<br>200mA or less                                                         | DC30V or less,<br>150mA or less |
| Light                    | LED (ON lighting)                             | Red/green LED (ON lighting) | LED (ON lighting)                                                                       | Red/green LED (ON lighting)     |
| Descriptions             | Reed 2 wire                                   |                             |                                                                                         |                                 |
|                          | M0V                                           |                             | M5V                                                                                     |                                 |
| Applications             | Programmable controller, relay                |                             | Programmable controller, relay, IC circuit (without indicator light), serial connection |                                 |
| Load voltage/<br>current | 5 to 50mA at DC12/24V,<br>7 to 20mA at AC110V |                             | 50mA or less at DC5/12/24V,<br>20mA or less at AC110V                                   |                                 |
| Light                    | LED (ON lighting)                             |                             | Without indicator light                                                                 |                                 |

Cylinder mass

• SCPS2-V/SCPD2-V

(Unit: g)

| Bore size<br>(mm) | Model No. | Stroke length (mm) |     |     |     | Mass per<br>switch |
|-------------------|-----------|--------------------|-----|-----|-----|--------------------|
|                   |           | 15                 | 30  | 45  | 60  |                    |
| 10 dia.           | SCPS2-V   | 163                | 181 | 198 | 216 | 24                 |
|                   | SCPD2-V   | 137                | 140 | 144 | 147 |                    |
| 16 dia.           | SCPS2-V   | 161                | 175 | 189 | 203 |                    |
|                   | SCPD2-V   | 160                | 165 | 170 | 175 |                    |

Single acting spring load

(Unit: N)

| Bore size (mm) | 0 stroke | Full stroke |
|----------------|----------|-------------|
| 10 dia.        | 2.84     | 6.37        |
| 16 dia.        | 5.19     | 11.5        |

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/  
COV \* 2

CAT

MDC2

MVC

SMD2

MSD/  
MSDG

SSD

SSD  
(large)

FC \*

ULKP/  
ULK

JSK2/  
JSM2

JSC3  
(medium)

JSC3  
(large)

JSB3

UCAC

STS/  
STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

SRB2

Standard type  
Pencil shaped cylinder

## How to order

Without switch

SCPD2-V - LS - 10 - 15 - 1 - I

With switch

SCPD2-VL - LS - 10 - 15 - 1 - M2V - R - I

Model

Mounting style

Bore size

Stroke length

Valve voltage

Switch model No.  
Note 1

Switch quantity

Accessory

| Model                                    |                                   |  |  |
|------------------------------------------|-----------------------------------|--|--|
| Single acting/extend with solenoid valve | Double acting/with solenoid valve |  |  |
| SCPS2-V                                  | SCPD2-V                           |  |  |

| Symbol               | Descriptions                 |                   |           |
|----------------------|------------------------------|-------------------|-----------|
| B Mounting style     |                              |                   |           |
| 00                   | Basic type (Without bracket) | ●                 | ●         |
| LS                   | Single axial foot type       | ●                 | ●         |
| LB                   | Both sides axial foot type   | ●                 | ●         |
| FA                   | Rod side flange type         | ●                 | ●         |
| C Bore size (mm)     |                              |                   |           |
| 10                   | 10 dia.                      | ●                 | ●         |
| 16                   | 16 dia.                      | ●                 | ●         |
| D Stroke length (mm) |                              |                   |           |
| 15                   | 15                           | ●                 | ●         |
| 30                   | 30                           | ●                 | ●         |
| 45                   | 45                           | ●                 | ●         |
| 60                   | 60                           | ●                 | ●         |
| E Valve voltage      |                              |                   |           |
| 1                    | AC100V                       | ●                 | ●         |
| 2                    | AC200V                       | ●                 | ●         |
| 3                    | DC24V                        | ●                 | ●         |
| F Switch model No.   |                              |                   |           |
| Radial lead wire     | Contact                      | Display           | Lead wire |
| M2V *                | Proximity                    | 1 color indicator | 2 wire    |
| M2WV *               | Proximity                    | 2 color indicator | 2 wire    |
| M3V *                | Proximity                    | 1 color indicator | 3 wire    |
| M3WV *               | Proximity                    | 2 color indicator | 3 wire    |
| M0V *                | Reed                         | 1 color indicator | 2 wire    |
| M5V *                | Reed                         | 1 color indicator | 2 wire    |
| *Lead wire length    |                              |                   |           |
| Blank                | 1m (standard)                | ●                 | ●         |
| 3                    | 3m (Option)                  | ●                 | ●         |
| 5                    | 5m (Option)                  | ●                 | ●         |
| G Switch quantity    |                              |                   |           |
| R                    | One on rod side              | ●                 | ●         |
| H                    | One on head side             | ●                 | ●         |
| D                    | Two                          | ●                 | ●         |
| H Accessory          |                              |                   |           |
| I                    | Rod eye                      | ●                 | ●         |
| Y                    | Rod clevis                   | ●                 | ●         |
| B1                   | Eye bracket                  | ●                 | ●         |
| B2                   | Clevis bracket               | ●                 | ●         |

## Caution for model No. selection

Note 1: For types without switch, magnet is not integrated.  
 Custom switches are available other than F Switch model No.  
 Please refer to Ending 1 about details.

Note 2: Please refer to Ending 81 about custom specifications of rod end form.

Note 3: Please refer to Page 6 about variation/optional combination.

<Example of model number>

**SCPD2-VL-LS-10-15-1-M2V-R-I**

Model: Pencil shaped cylinder

A Model : Double acting/with solenoid valve/with switch

B Mounting style : Single axial Foot type (rod side)

C Bore size : 10mm

D Stroke length : 15mm

E Valve voltage : AC100V

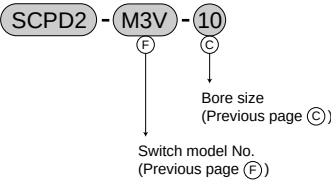
F Switch model No: Proximity switch M2V Lead wire1m

G Switch quantity : One on rod side

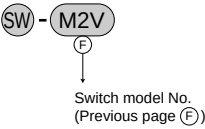
H Accessory : Rod eye

How to order switch

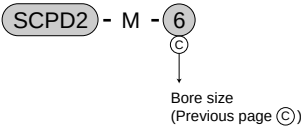
• Switch main body + mounting bracket



• Switch only



• Mounting bracket



How to order mounting bracket

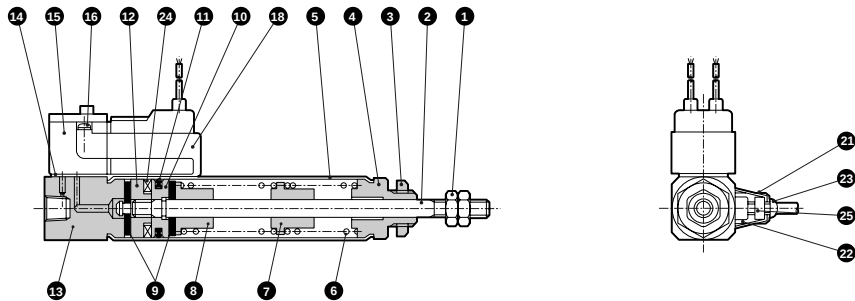
| Bore size (mm)   | 10 dia.  | 16 dia.  |
|------------------|----------|----------|
| Mounting bracket |          |          |
| Foot (LB/LS)     | P2-LS-10 | P2-LS-16 |
| Flange (FA)      | P2-FA-10 | P2-FA-16 |

|                  |
|------------------|
| SCP * 2          |
| CMK2             |
| CMA2             |
| SCM              |
| SCA2             |
| SCS              |
| CKV2             |
| CAV2/<br>COV * 2 |
| CAT              |
| MDC2             |
| MVC              |
| SMD2             |
| MSD/<br>MSDG     |
| SSD              |
| SSD<br>(large)   |
| FC *             |
| ULKP/<br>ULK     |
| JSK2/<br>JSM2    |
| JSC3<br>(medium) |
| JSC3<br>(large)  |
| JSB3             |
| UCAC             |
| STS/<br>STL      |
| LCS              |
| LCY              |
| STR2             |
| UCA2             |
| STK              |
| USSD             |
| USC              |
| MFC              |
| GLC              |
| SHC              |
| CAC3             |
| HCM              |
| HCA              |
| MRL2             |
| SRL2             |
| SRG              |
| SRM              |
| SRT              |
| SRB2             |

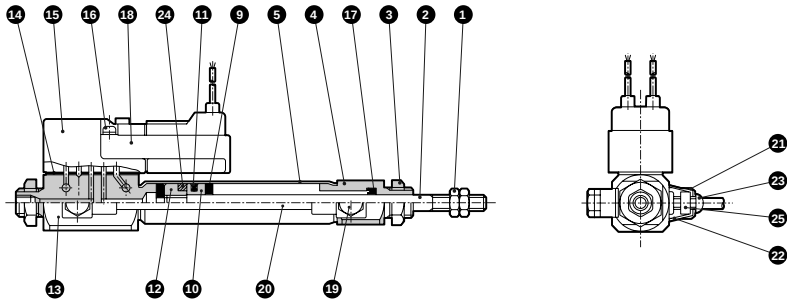
Standard type  
Pencil shaped cylinder

Internal structure and parts list (with switch)

• SCPD2-VL



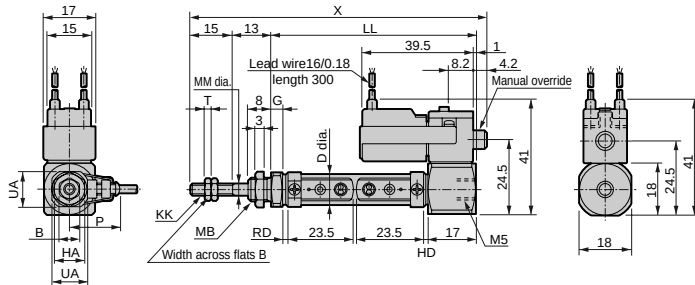
• SCPD2-VL



| No. | Parts name           | Material         | Remarks                | No.         | Parts name             | Material        | Remarks                                                                       |
|-----|----------------------|------------------|------------------------|-------------|------------------------|-----------------|-------------------------------------------------------------------------------|
| 1   | Rod nut              | Steel            | JIS B1181, Hexagon nut | 14          | Gasket                 | Nitrile rubber  |                                                                               |
| 2   | Piston rod           | Stainless steel  |                        | 15          | Solenoid valve         | -               | For single acting type, 3-way valve,<br>while for double acting, 4-way valve. |
| 3   | Hexagon nut          | Steel            | Zinc chromate          | 16          | Pan head machine screw | Steel           | Zinc chromate                                                                 |
| 4   | Rod cover            | Special aluminum | Black alumite          | 17          | Rod packing            | Nitrile rubber  |                                                                               |
| 5   | Cylinder tube        | Stainless steel  |                        | 18          | Shield plate           | Steel sheet     |                                                                               |
| 6   | Spring               | Piano wire       |                        | 19          | By-pass joint          | -               | (FCL4-M5)                                                                     |
| 7   | Collar               | Special aluminum |                        | 20          | By-pass tube           | Nylon           |                                                                               |
| 8   | Spring receiving     | Special aluminum |                        | With switch |                        |                 |                                                                               |
| 9   | Cushion packing seal | Urethane rubber  |                        | 21          | Switch main body       |                 |                                                                               |
| 10  | Piston               | Special aluminum |                        | 22          | Band                   | Stainless steel |                                                                               |
| 11  | Piston seal          | Nitrile rubber   |                        | 23          | Pan head machine screw | Steel           |                                                                               |
| 12  | Spacer               | Special aluminum |                        | 24          | Piston magnet          | Plastic magnet  |                                                                               |
| 13  | Head cover           | Special aluminum |                        | 25          | Bracket                | Stainless steel |                                                                               |

## Dimensions

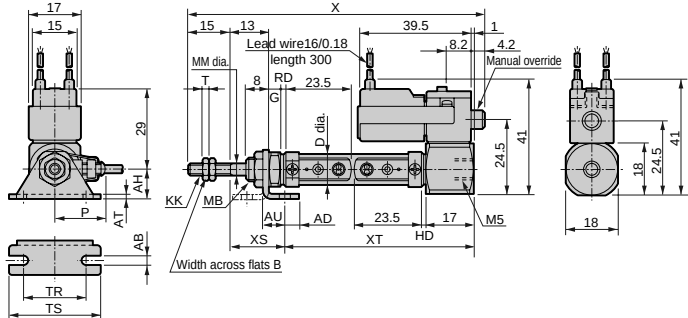
- Basic type (00)



- Please refer to Page 71 about X and LL dimensions of custom stroke length.

| Symbol    | Basic type (00) basic dimensions |      |    |   |    |      |      |      |      |      |      |     |     |           |   |       |       |      | With switch |      |      |      |      |       |       |      |      |      |      |      |      |      |      |       |       |
|-----------|----------------------------------|------|----|---|----|------|------|------|------|------|------|-----|-----|-----------|---|-------|-------|------|-------------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|------|-------|-------|
| Bore size | B                                | D    | HA | G | KK | LL   |      |      |      |      |      | MB  | MM  | T         | U | X     |       |      |             |      |      | RD   |      |       |       |      |      | P    | HD   |      |      |      |      |       |       |
|           |                                  |      |    |   |    | 15st | 30st | 45st | 60st | 75st | 90st |     |     |           |   | 105st | 120st | 15st | 30st        | 45st | 60st | 75st | 90st | 105st | 120st | 15st | 30st |      |      | 45st | 60st | 75st | 90st | 105st | 120st |
| 10 dia.   | 7                                | 11   | 11 | 4 | M4 | 72   | 99   | 126  | 153  | 180  | 207  | 234 | 261 | M8 X 1.0  | 4 | 2.4   | 12    | 103  | 130         | 157  | 184  | 211  | 238  | 265   | 292   | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5 | 98.5 | 16    | 1.5   |
| 16 dia.   | 8                                | 17.4 | 14 | 4 | M5 | 72   | 99   | 126  | 153  | 180  | 207  | 234 | 261 | M10 X 1.0 | 5 | 3.2   | 18    | 103  | 130         | 157  | 184  | 211  | 238  | 265   | 292   | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5 | 98.5 | 19    | 1.5   |

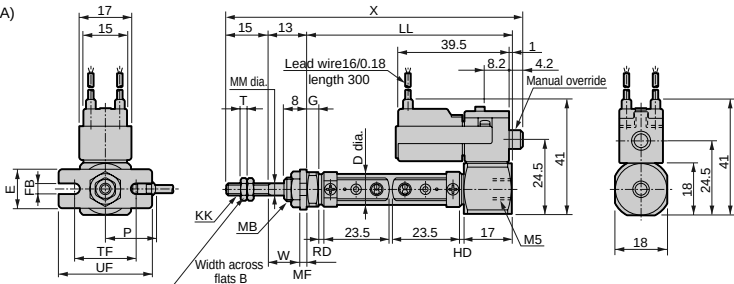
- Single axial foot type (LS)



- Please refer to Page 71 about X and LL dimensions of custom stroke length.

| Symbol    | Single axial foot type (LS) basic dimensions |   |    |           |    |     |      |      |      |      |      |      |       |       | Mounting dimensions |    |    |    |     |    |      |      |      |      |       |       |       |       | With switch |       |      |      |      |      |      |      |      |      |    |     |      |  |
|-----------|----------------------------------------------|---|----|-----------|----|-----|------|------|------|------|------|------|-------|-------|---------------------|----|----|----|-----|----|------|------|------|------|-------|-------|-------|-------|-------------|-------|------|------|------|------|------|------|------|------|----|-----|------|--|
| Bore size | B                                            | G | KK | MB        | MM | T   | X    |      |      |      |      |      |       |       | AB                  | AH | AD | AU | AT  | TR | TS   | XS   | XT   |      |       |       |       |       | RD          |       |      |      |      |      | P    | H    | D    |      |    |     |      |  |
|           |                                              |   |    |           |    |     | 15st | 30st | 45st | 60st | 75st | 90st | 105st | 120st |                     |    |    |    |     |    | 15st | 30st | 45st | 60st | 75st  | 90st  | 105st | 120st |             |       |      |      |      |      |      |      |      |      |    |     |      |  |
| 10 dia.   | 7                                            | 4 | M4 | M8 X 1.0  | 4  | 2.4 | 103  | 130  | 157  | 184  | 211  | 238  | 265   | 292   | 4.2                 | 9  | 5  | 7  | 1.6 | 22 | 32   | 18.4 | 66.5 | 93.5 | 120.5 | 147.5 | 174.4 | 201.4 | 228.4       | 255.4 | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5 | 98.5 | 16 | 1.5 | 11   |  |
| 16 dia.   | 8                                            | 4 | M5 | M10 X 1.0 | 5  | 3.2 | 183  | 210  | 237  | 264  | 291  | 318  | 345   | 372   | 5.2                 | 14 | 6  | 9  | 2.3 | 29 | 42   | 19.7 | 65.5 | 92.5 | 119.5 | 146.5 | 173.4 | 200.4 | 227.4       | 254.4 | 14.5 | 26.5 | 38.5 | 50.5 | 62.5 | 74.5 | 86.5 | 98.5 | 19 | 1.5 | 17.4 |  |

- Rod side flange type (FA)



- Please refer to Page 71 about X and LL dimensions of custom stroke length.

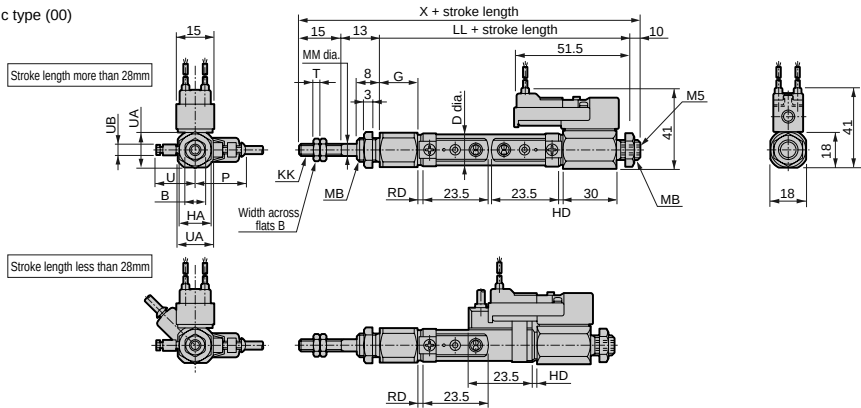
| Symbol    | Rod side flange type (FA) basic dimensions |   |    |           |      |      |      |      |      |       |       |     |     |     |     |      | Mounting dimensions |      |      |      |      |       | With switch |      |      |      |      |      |      |      |      |      |      |       |       |  |  |  |  |  |
|-----------|--------------------------------------------|---|----|-----------|------|------|------|------|------|-------|-------|-----|-----|-----|-----|------|---------------------|------|------|------|------|-------|-------------|------|------|------|------|------|------|------|------|------|------|-------|-------|--|--|--|--|--|
| Bore size | B                                          | G | KK | LL        |      |      |      |      |      |       |       | MB  | MM  | T   | X   |      |                     |      |      |      | E    | FB    | MF          | TF   | UF   | W    | RD   |      |      |      |      |      | P    | HD    | D     |  |  |  |  |  |
|           |                                            |   |    | 15st      | 30st | 45st | 60st | 75st | 90st | 105st | 120st |     |     |     |     | 15st | 30st                | 45st | 60st | 75st | 90st | 105st | 120st       |      |      |      |      | 15st | 30st | 45st | 60st | 75st | 90st | 105st | 120st |  |  |  |  |  |
| 10 dia.   | 7                                          | 4 | M4 | M8 X 1.0  | 4    | 2.4  | 103  | 130  | 157  | 184   | 211   | 238 | 265 | 292 | 1.4 | 4.2  | 1.6                 | 22   | 32   | 11.4 | 14.5 | 26.5  | 38.5        | 50.5 | 62.5 | 74.5 | 86.5 | 98.5 | 16   | 1.5  | 11   | 1.4  | 17.4 |       |       |  |  |  |  |  |
| 16 dia.   | 8                                          | 4 | M5 | M10 X 1.0 | 5    | 3.2  | 103  | 130  | 157  | 184   | 211   | 238 | 265 | 292 | 2.0 | 5.2  | 2.3                 | 29   | 42   | 10.7 | 14.5 | 26.5  | 38.5        | 50.5 | 62.5 | 74.5 | 86.5 | 98.5 | 19   | 1.5  | 17.4 |      |      |       |       |  |  |  |  |  |

SCP \* 2  
CMK2  
CMA2  
SCM  
SCA2  
SCS  
CKV2  
CAV2/  
COV \* 2  
CAT  
MDC2  
MVC  
SMD2  
MSD/  
MSGD  
SSD  
SSD  
(large)  
FC \*  
ULKP/  
ULK  
JSK2/  
JSM2  
JSC3  
(medium)  
JSC3  
(large)  
JSB3  
UCAC  
ST/  
STL  
LCS  
LCY  
STR2  
UCA2  
STK  
USSD  
USC  
MFC  
GLC  
SHC  
CAC3  
HAC  
HCA  
MRL2  
SRL2  
SRG  
SRM  
SRT  
SRB2

Standard type  
Pencil shaped cylinder

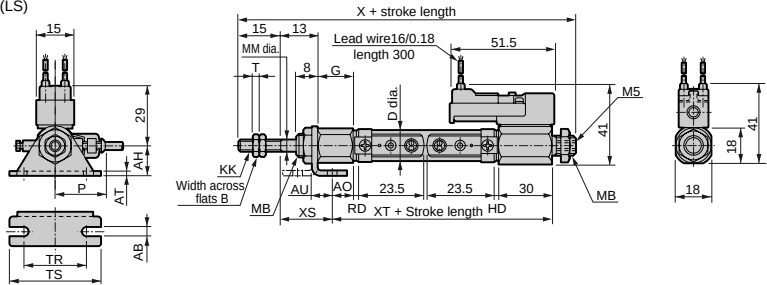
Dimensions

• Basic type (00)



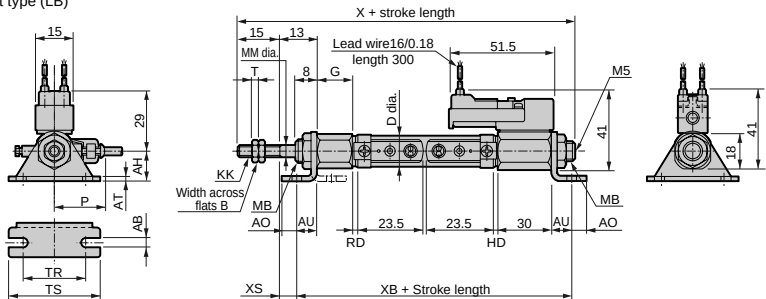
| Symbol    | Basic type (00) basic dimensions |      |    |      |    |    |           |    |     |    |    |    | With switch |     |    |     |
|-----------|----------------------------------|------|----|------|----|----|-----------|----|-----|----|----|----|-------------|-----|----|-----|
| Bore size | B                                | D    | HA | G    | KK | LL | MB        | MM | T   | U  | UA | UB | X           | RD  | P  | HD  |
| 10 dia.   | 7                                | 11   | 11 | 12.5 | M4 | 67 | M8 X 1.0  | 4  | 2.4 | 21 | 12 | 8  | 105         | 3   | 16 | 1.5 |
| 16 dia.   | 8                                | 17.4 | 14 | 13   | M5 | 67 | M10 X 1.0 | 5  | 3.2 | 21 | 18 | 8  | 105         | 2.5 | 19 | 1.5 |

• Single axial foot type (LS)



| Symbol    | Single axial foot type (LS) basic dimensions |      |    |           |    |     |     | Mounting dimensions |    |    |     |    |    |    |      | With switch |     |    |     |      |
|-----------|----------------------------------------------|------|----|-----------|----|-----|-----|---------------------|----|----|-----|----|----|----|------|-------------|-----|----|-----|------|
| Bore size | B                                            | G    | KK | MB        | MM | T   | X   | AB                  | AH | AO | AT  | AU | TR | TS | XS   | XT          | RD  | P  | HD  | D    |
| 10 dia.   | 7                                            | 12.5 | M4 | M8 X 1.0  | 4  | 2.4 | 105 | 4.2                 | 9  | 5  | 1.6 | 7  | 22 | 32 | 18.4 | 61.5        | 3   | 16 | 1.5 | 11   |
| 16 dia.   | 8                                            | 13   | M5 | M10 X 1.0 | 5  | 3.2 | 105 | 5.2                 | 14 | 6  | 2.3 | 9  | 29 | 42 | 19.7 | 60.5        | 2.5 | 19 | 1.5 | 17.4 |

• Both sides axial foot type (LB)

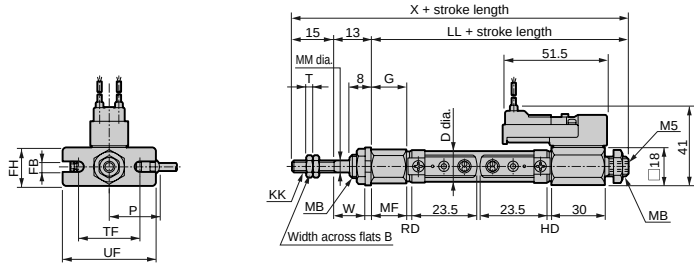


| Symbol    | Both sides axial foot type (LB) basic dimensions |      |    |           |    |     |     | Mounting dimensions |    |    |     |    |    |    |    | With switch |     |    |     |      |  |
|-----------|--------------------------------------------------|------|----|-----------|----|-----|-----|---------------------|----|----|-----|----|----|----|----|-------------|-----|----|-----|------|--|
| Bore size | B                                                | G    | KK | MB        | MM | T   | X   | AB                  | AH | AO | AT  | AU | TR | TS | XB | XS          | RD  | P  | HD  | D    |  |
| 10 dia.   | 7                                                | 12.5 | M4 | M8 X 1.0  | 4  | 2.4 | 105 | 4.2                 | 9  | 5  | 1.6 | 7  | 22 | 32 | 81 | 6           | 3   | 16 | 1.5 | 11   |  |
| 16 dia.   | 8                                                | 13   | M5 | M10 X 1.0 | 5  | 3.2 | 105 | 5.2                 | 14 | 6  | 2.3 | 9  | 29 | 42 | 85 | 4           | 2.5 | 19 | 1.5 | 17.4 |  |



Dimensions

- Rod side flange type (FA)



| Symbol    | Rod side flange type (FA) basic dimensions |      |    |    |           |    |     |     | Mounting dimensions |     |    |     |    |    |      |     | With switch |     |      |  |
|-----------|--------------------------------------------|------|----|----|-----------|----|-----|-----|---------------------|-----|----|-----|----|----|------|-----|-------------|-----|------|--|
| Bore size | B                                          | G    | KK | LL | MB        | MM | T   | X   | E                   | FB  | FH | MF  | TF | UF | W    | RD  | P           | HD  | D    |  |
| 10 dia.   | 7                                          | 12.5 | M4 | 67 | M8 X 1.0  | 4  | 2.4 | 105 | 14                  | 4.2 | 14 | 1.6 | 22 | 32 | 11.4 | 3   | 16          | 1.5 | 11   |  |
| 16 dia.   | 8                                          | 13   | M5 | 67 | M10 X 1.0 | 5  | 3.2 | 105 | 20                  | 5.2 | 20 | 2.3 | 29 | 42 | 10.7 | 2.5 | 19          | 1.5 | 17.4 |  |

SCP \* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/

COV \* 2

CAT

MDC2

MVC

SMD2

MSD/

MSDG

SSD

SSD

(large)

FC \*

ULKP/

ULK

JSK2/

JSM2

JSC3

(medium)

JSC3

(large)

JSB3

UCAC

STS/

STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

SRB2

Standard type

Pencil shaped cylinder

69

# Discontinue

## How to find dimensions of single acting custom stroke length X, LL, and LG

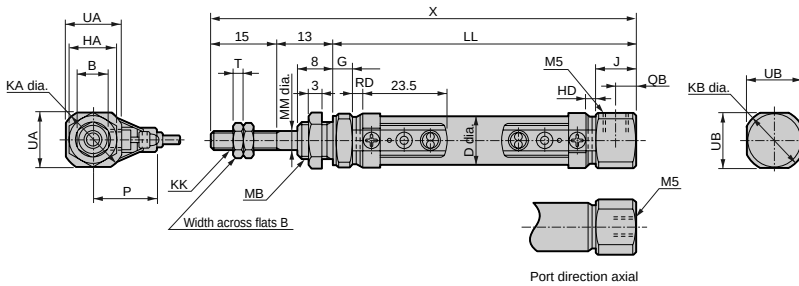
In order to find X, LL and LG dimensions of custom stroke length (CA and CJ dimensions for clevis bracket type), subtract the calculated value from the value of one size longer standard stroke length to reach the required custom length.

(E.g.) Single acting extend type, basic type, 10 mm bore size, 18 mm stroke (SCPD2-00-10-18). Form the table below,

1. X dimension =  $119 - (30 - 18) = 107\text{mm}$
2. LL dimensions =  $91 - (30 - 18) = 79\text{mm}$

## Dimensions (e.g.)

- SCPS2- (L) basic type (00)



- For types without switch, dimensions are same. (magnet is not integrated.)
- Note 1: Port size M3 type is available for 6 mm bore.

| Symbol         | Basic type (00) basic dimensions |      |       |    |     |      |         |             |      |      |      |     |           |                                            |     |
|----------------|----------------------------------|------|-------|----|-----|------|---------|-------------|------|------|------|-----|-----------|--------------------------------------------|-----|
| Bore size (mm) | B                                | D    | G     | HA | J   | KA   | KB      | KK          | LL   |      |      |     | MB        | MM                                         | QB  |
| 6 dia.         | 5.5                              | 6.8  | 3     | 8  | 8   | 9    | 13.5(9) | M3          | 60   | 87   | 114  | 141 | M 6       | 3                                          | 4   |
| 10 dia.        | 7                                | 11   | 4     | 11 | 9   | 14.5 | 14.5    | M4          | 64   | 91   | 118  | 145 | M8 X 1.0  | 4                                          | 4.5 |
| 16 dia.        | 8                                | 17.4 | 4     | 14 | 9   | 21.5 | 21.5    | M5          | 64   | 91   | 118  | 145 | M10 X 1.0 | 5                                          | 4.5 |
| Symbol         |                                  |      |       |    |     |      |         | With switch |      |      |      |     |           |                                            |     |
| Bore size (mm) | T                                | UA   | UB    | X  |     |      |         | RD          |      |      |      | P   | HD        |                                            |     |
| 6 dia.         | 1.8                              | 8    | 11(8) | 88 | 115 | 142  | 169     | 13          | 25   | 37   | 49   | 14  | 1.5       | Value in ( ) for port direction axial type |     |
| 10 dia.        | 2.4                              | 12   | 12    | 92 | 119 | 146  | 173     | 14.5        | 26.5 | 38.5 | 50.5 | 16  | 1.5       |                                            |     |
| 16 dia.        | 3.2                              | 18   | 18    | 92 | 119 | 146  | 173     | 14.5        | 26.5 | 38.5 | 50.5 | 19  | 1.5       |                                            |     |

SCP\* 2

CMK2

CMA2

SCM

SCA2

SCS

CKV2

CAV2/

COV\* 2

CAT

MDC2

MVC

SMD2

MSD/

MSDG

SSD

SSD

SSD

FC \*

ULKP/

ULK

JSK2/

JSM2

JSC3

(medium)

JSC3

(large)

JSB3

UCAC

ST/

STL

LCS

LCY

STR2

UCA2

STK

USSD

USC

MFC

GLC

SHC

CAC3

HCM

HCA

MRL2

SRL2

SRG

SRM

SRT

SRB2

Standard type  
Pencil shaped cylinder