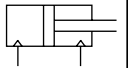
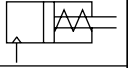
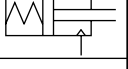
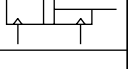
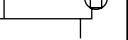


●: Standard, ◎: Option, ○: Custom order, ■: Not available

Variation	Model no. JIS symbol	Bore size (mm)	Standard stroke length (mm)								Min. stroke length (mm) (Note 1)	Max. stroke length (mm)	Custom stroke length (per mm)	Mounting style			Option	Switch	Page
			5	10	15	20	25	30	40	50				Rod end mounting type	Head end mounting type	High rigid mounting type	Copper and PTFE free		
			DA	DB	DC	P6													
Double acting single rod type with switch	SMD2 SMD2-L 	$\phi 6, \phi 10, \phi 16$	●	●	●	●	●	●	○	○	1	60	1	◎	◎	◎	●	◎	1006
		$\phi 20, \phi 25, \phi 32$	●	●	●	●	●	●	●	●				●	◎	◎	◎		
Single acting extend type with switch	SMD2-X SMD2-XL 	$\phi 6, \phi 10, \phi 16$	●	●	●	■	■	■	■	■	1	15	1	◎	◎	◎	●	◎	1014
		$\phi 20, \phi 25, \phi 32$	●	●	●	■	■	■	■	■				■	◎	◎	◎		
Single acting retract type with switch	SMD2-Y SMD2-YL 	$\phi 6, \phi 10, \phi 16$	●	●	●	■	■	■	■	■	1	15	1	◎	◎	◎	●	◎	1014
		$\phi 20, \phi 25, \phi 32$	●	●	●	■	■	■	■	■				■	◎	◎	◎		
Double acting fine speed type with switch	SMD2-F SMD2-LF 	$\phi 6, \phi 10, \phi 16$	●	●	●	●	●	●	○	○	1	60	1	◎	◎	◎	■	◎	1026
		$\phi 20, \phi 25, \phi 32$	●	●	●	●	●	●	●	●				●	◎	◎	◎		
Double acting non-rotating type with switch	SMD2-M SMD2-ML 	$\phi 6, \phi 10, \phi 16$	●	●	●	●	●	●	■	■	1	30	1	■	■	■	●	◎	1030
		$\phi 20, \phi 25, \phi 32$	●	●	●	●	●	●	●	●				●	■	■	■		

Note 1: Refer to pages 1006, 1014, 1026, 1030 for min. stroke length with switch.

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

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

Compact cylinder  
Space saving structure

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

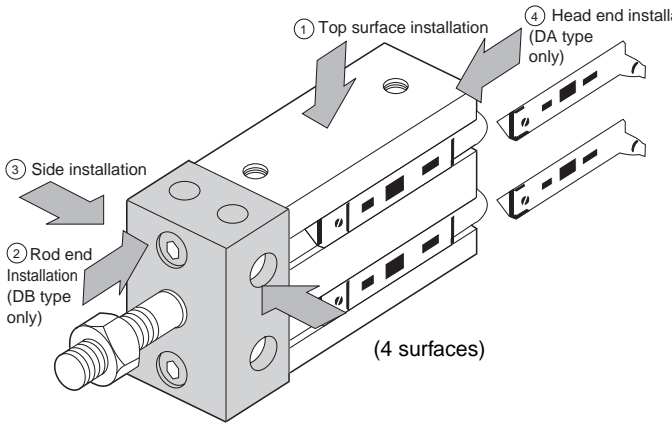
# Convenient four surfaces installation

Three types of mounting style are available with an easy operation.

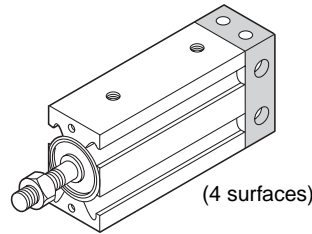
Four surfaces direct mount is possible. Small, square shaped, and compact cylinder ( $\phi 6$  to  $\phi 32$ )

Three types of mounting style  
Flexible 4 direct installation surfaces

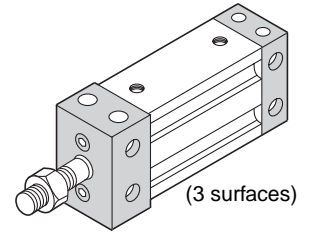
Two types of detecting switch  
Axial and radial lead wire directions



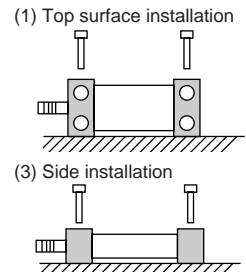
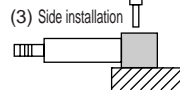
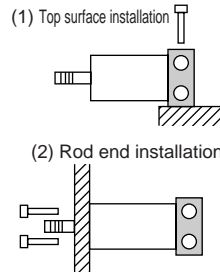
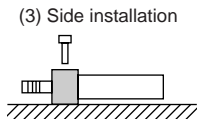
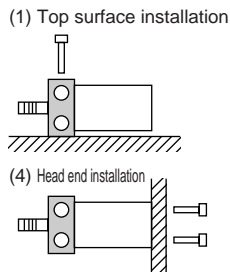
● DA rod side mounting type



● DB head side mounting type



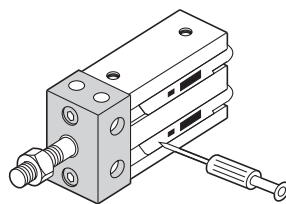
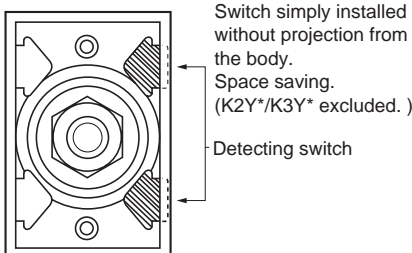
● DC high rigid mounting type



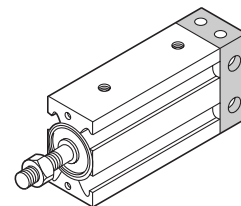
Detecting switch simply integrated

Switch position adjustment is possible at the front

Accurate alignment with socket and spigot



Easy position adjustment.



Socket and spigot provided at bush section enables easy alignment.  
(DB type only)

### Variation and option selection table

- ⊙ : Option
- : Available (custom order)
- △ : Available depending on condition (consult with CKD)
- X : Not available

Code	Code	Code		Variation						Port thread		Option					
		Symbol	No	X	Y	M	L	F	N	G	P6	P7	P71	P72	P73	N**	
Variation	Double acting basic type	Blank	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	Single acting extend type	Y		⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	Single acting retract type	X		⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	Non-rotating type	M			⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	With cylinder switch	L					⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	Fine speed type	F							⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
Port thread	NPT	N							⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	
	G	G								⊙	⊙	⊙	⊙	⊙	⊙	⊙	
Option	Copper and PTFE free type	P6									⊙	⊙	⊙	⊙	⊙	⊙	
	Clean room specifications (exhaust treatment)	P7										⊙	⊙	⊙	⊙	⊙	
	Clean room specifications (vacuum treatment)	P71											⊙	⊙	⊙	⊙	
	Clean room specifications (exhaust treatment)	P72												⊙	⊙	⊙	
	Clean room specifications (vacuum treatment)	P73													⊙	⊙	
	Customized piston rod end form	N**															⊙
Accessory	Cylinder switch	Listed on Ending	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	Rod eye	I	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	Rod clevis	Y	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	B1 bracket	B1	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	B2 bracket	B2	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙

#### Cautions

Note 1. If the size of the screw at the piston rod end is changed, this combination does not apply. Consult with CKD.

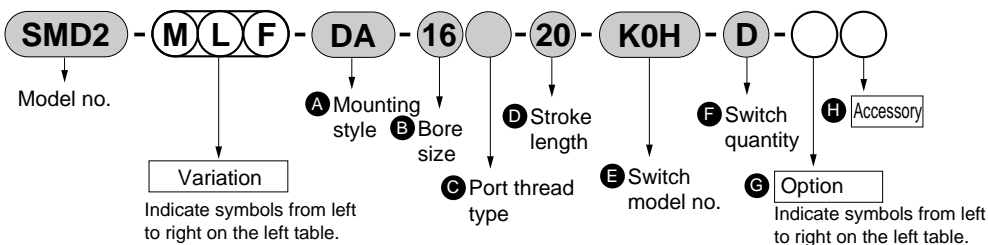
Note 2. Refer to the "Clean Component System (catalog No. CB-033SA)" for clean room specifications P7\*.

Note 3. P6 specifications are available as standard. (Required no indication for P6)

Note 4: When combining the clean specifications with the nonrotating type, the guide bar will slide separately from the piston rod.

There are dust generating sections other than the piston rod, so this will be handled with separate symbols (P72 (exhaust treatment) and P73 (vacuum sweep)).

#### <Example of model number>



Model no.: Compact cylinder

● Variation: Non-rotating with switch fine speed type

- Ⓐ Mounting style : Rod end mounting type
- Ⓑ Bore size :  $\phi$  16 mm
- Ⓒ Port thread type : Rc thread
- Ⓓ Stroke length : 20 mm
- Ⓔ Switch model no. : Reed K0H switch, lead wire 1 m
- Ⓕ Switch quantity : 2
- Ⓖ Option : None
- Ⓗ Accessory : None

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

Ending

Compact cylinder  
Space saving structure



## Pneumatic components

# Safety precautions

Always read this section before starting use.

Refer to Intro 71 for general details on the cylinder, and to Intro 78 for details on the cylinder.

### Compact cylinder SMD2 Series

## Design & Selection

### 1. Fine speed type SMD2-F

#### CAUTION

- Use with oil-free specifications.

Lubrication may change characteristics.

- Assemble the flow control valve near the cylinder.

Adjustments become unstable if assembled away from the cylinder.

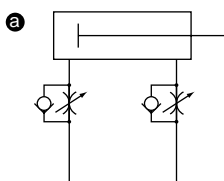
Use the SC-M3/M5, SC3W, SCD-M3/M5, SC3WU Series speed control valve.

- Generally, the higher air pressure, and the smaller load pressure result in the more stable operation.

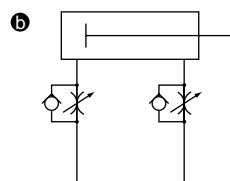
Keep the load factor at 50% or less.

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

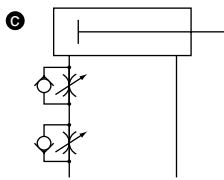
When driving the single rod cylinder at fine speed with the operation direction set to PUSH, popping-out may occur if operation is started when load resistance is small. As a countermeasure, use (b), (c), or (d) circuit. Note that the (d) circuit is the most stable.



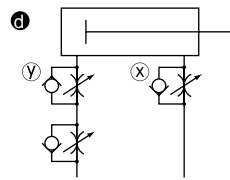
PUSH: meter-out  
PULL: meter-out



PUSH: meter-in  
PULL: meter-in



PUSH: meter-in  
PULL: meter-out



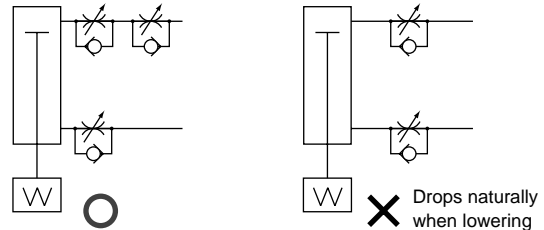
PUSH: meter-in/out  
PULL: meter-out

#### Speed adjustment method of PUSH operation of circuit:

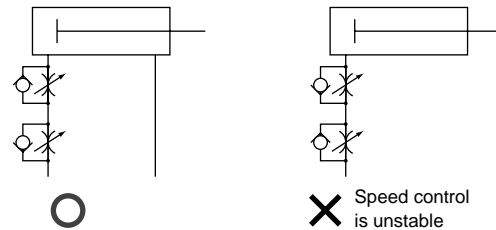
1. Set the speed with the x speed control valve
2. Lower the flow rate with the y speed control valve until popping out no longer occurs
3. Reconfirm speed

(Note 1) When b, c and d are compared, d circuit operation is most stable.

(Note 2) When installed vertically, the load will drop naturally if the meter-in circuit is used. Use the meter-out circuit in this case.



(Note 3) Connect the speed control valve in the parallel with the following circuit.



#### (Cause of popping out)

- Reduce the flow rate to reach a fine speed at the exhaust side in a meter-out circuit. This results in the same pressure level on the both sides immediately after valve switched. The thrust caused by the differential of pressurized area of piston is applied to the PUSH direction and a popping-out of piston rod occurs.

#### (Guide for popping out occurrence)

- Popping out occurs when: the piston rod area x air pressure > load resistance.

- Do not apply lateral load a cylinder.

Install the cylinder to avoid the sliding guide to be twisted.

The presence of load or resistance variation may result in unstable operations.

Operation of a guide having a large difference in stationary and moving friction may become unstable.

- Avoid use with vibration.

The product would be adversely affected by vibration and operation may become unstable.

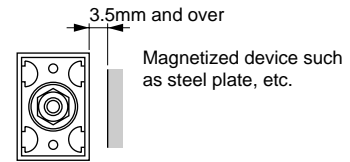
## Installation & Adjustment

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

### 1. Common

#### ⚠ CAUTION

- The cylinder may malfunction if a magnetic substance, such as a steel plate, is nearby. Move the magnetic substance to at least 3.5mm from the cylinder.
- (Same clearance for all bore sizes)



- When installing cylinders adjacently, provide the following installation pitch to prevent switches from malfunctioning.

Unit: mm

Adjacent conditions		Switch model no.	φ6	φ10	φ16	φ20	φ25	φ32	Remarks		
2 cylinders in parallel	Horizontal installation 	A	K0, K5	27	29	37	45	55	67		
		B	K2, K3	4.5							
	Vertical installation Install the switch on the opposite side of the cylinder at the side. 	A	K0, K5	18	21	25	33	41	46		Note that when the cylinder is installed, the switch position cannot be adjusted if the driver length is longer than the B dimension.
		B	K2, K3	5.5	5.5	5.5	6.5	8.5	5.5		
	Vertical installation Install switch at side of adjacent cylinder. 	A	K0, K5	14	16	21	27	33	41		
		B	K2, K3	0.5							
3 or more cylinders in parallel	Horizontal installation 	A	K0, K5	27	29	37	45	55	67		
		B	K2, K3	4.5							
	Vertical installation 	A	K0, K5	19	22	26	34	42	47		Note that when the cylinder is installed, the switch position cannot be adjusted if the driver length is longer than the B dimension.
		B	K2, K3	6.5	6.5	6.5	7.5	9.5	6.5		
		A	K0, K5	27	29	35	44	51	56		
		B	K2, K3	13.5	13.5	14.5	17.5	18.5	15.5		

### 2. Single acting SMD2-X/Y

#### ⚠ CAUTION

- Do not leave the single acting cylinder in the pressurized state.
- If left pressurized, the piston rod may not return with spring power when pressure is released.

### 3. Fine speed type SMD2-F

#### ⚠ CAUTION

- Adjust the core, etc., so lateral load is not applied to the cylinder.
- Adjust and install so the sliding guide is not twisted.
- Operation may become unstable due to fluctuations and load resistance.
  - Operation of a guide having a large difference in stationary and moving friction may become unstable.

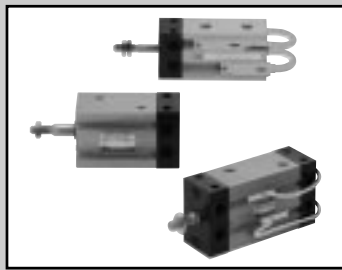
## During Use & Maintenance

### 1. Non-rotating type SMD2-M

#### ⚠ CAUTION

- Do not place fingers between the baffle non-rotating plate and cylinder tube.
- Fingers may get caught between the non-rotating plate and cylinder tube when the piston rod is pulled in. Do not place fingers here.

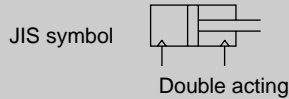
Compact cylinder  
Space saving structure



Compact cylinder, double acting single rod type

# SMD2 Series

● Bore size:  $\phi 6$ ,  $\phi 10$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$



## Specifications

Descriptions	SMD2 SMD2-L (with switch)						
	mm	$\phi 6$	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Bore size	mm	$\phi 6$	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	0.7					
Min. working pressure	MPa	0.15		0.1			
Withstanding pressure	MPa	1.05					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		M5					Rc1/8
Stroke tolerance	mm	+1.5 0					
Working piston speed	mm/s	50 to 500					
Cushion		Rubber cushioned					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISO VG32.)					
Allowable energy absorption	J	0.005	0.036	0.1	0.1	0.19	0.5

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 6$	5, 10, 15, 20, 25, 30	60	1
$\phi 10$			
$\phi 16$			
$\phi 20$	5, 10, 15, 20, 25, 30, 40, 50	100	
$\phi 25$			
$\phi 32$			

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

## Min. stroke length with switch

Model	Bore size	1 color indicator type		2 color indicator type		With preventive maintenance output	
		K*H	K*V	K*YH	K*YV	K*Y*H	K*Y*V
SMD2-L-DA	$\phi 6$	5		5		1	
	$\phi 10$						
	$\phi 16$						
	$\phi 20$						
	$\phi 25$						
	$\phi 32$						
SMD2-L-DB/DC	$\phi 6$	15	5	15	10	10	
	$\phi 10$	10		15	10	10	
	$\phi 16$	10		10	10	10	
	$\phi 20$	10		10	5	5	
	$\phi 25$	5		5	5	5	
	$\phi 32$	5		5	5	5	

### Switch specifications

- 1 color/2 color indicator

Descriptions	Proximity 2-wire		Proximity 3-wire			Reed 2-wire			
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V	
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (w/o indicator light), serial connection	
Output method	-		NPN output	PNP output	NPN output	-			
Power voltage	-		10 to 28 VDC			-			
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC /24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less	20mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-	
Leakage current	1mA or less		10 μA or less			0mA			

Note 1: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60°C)

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire			
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V			
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay			
Output method	NPN output									
Light	Red/green LED (ON lighting)									
	Installation position adjustment		-				Yellow LED (ON lighting)		-	
Output	Preventive maintenance output		-		-		-		-	
	Power voltage		10 to 28 VDC		-		10 to 28 VDC		-	
	Load voltage		30 VDC or less		10 to 30 VDC		30 VDC or less		-	
	Load current		50mA or less		5 to 20mA		50mA or less		-	
Preventive maintenance output	Leakage current		10 μA or less		1.2mA or less		10 μA or less		-	
	Load voltage		30 VDC or less						-	
	Load current		20mA or less		50mA or less		5 to 20mA or less		50mA or less	
Leakage current		10 μA or less								

### Cylinder weight

Unit (g)

Model no.	Bore size	Product weight when stroke length S = 0mm		Additional weight per S = 5mm
		SMD2 Double acting	SMD2-L Double acting/with switch	
φ6	DA	26	26	3
	DB	25	25	
	DC	34	34	
φ10	DA	37	37	4
	DB	36	36	
	DC	48	48	
φ16	DA	70	87	6
	DB	68	84	
	DC	97	113	
φ20	DA	137	166	11
	DB	131	160	
	DC	178	207	
φ25	DA	229	275	17
	DB	220	265	
	DC	291	337	
φ32	DA	445	515	26
	DB	427	497	
	DC	574	644	

### Discrete cylinder switch weight

Unit (g)

Name	Model no.	Lead wire length		
		1m	3m	5m
Cylinder switch	K0	18	52	86
	K2	18	52	86
	K3	18	52	86
	K5	18	52	86

(Example) Product weight

- SMD2-L-DA-16-10-K2-D
- Product weight at stroke length = 0mm ... 87g
- Additional weight when S=10mm ... 6g x 10/5 = 12g
- Weight of two cylinder switches ... 18g x 2 = 36g
- Product weight ... 87g + 12g + 36g = 135g

### Clean room specifications

(Catalog No. CB-033SA)

- Dust generation preventing structure for use in clean room

SMD2 ..... **P7\***

SMD2 ..... **P5\***

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

Compact cylinder  
Space saving structure



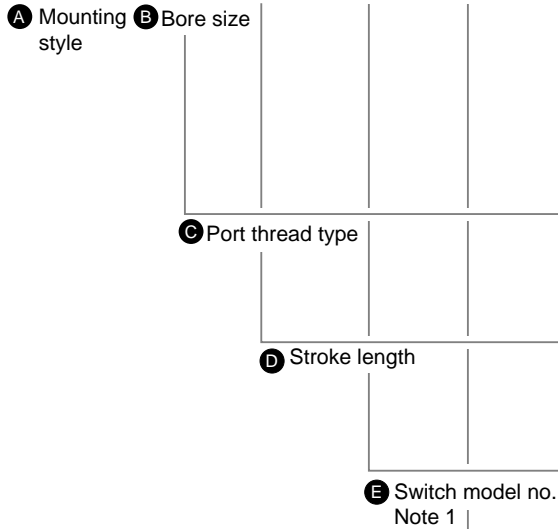
- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2**
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
-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

## How to order Without switch

**SMD2** - **DA** - **6** - **15**

## With switch

**SMD2-L** - **DA** - **6** - **15** - **K2H** - **R**



Symbol	Descriptions
<b>A Mounting style</b>	
DA	Rod end mounting type
DB	Head end mounting type
DC	High rigid mounting type

<b>B Bore size (mm)</b>	
6	φ6
10	φ10
16	φ16
20	φ20
25	φ25
32	φ32

<b>C Port thread type</b>	
Blank	Rc thread
NN	NPT thread (only φ 32) custom order
GN	G thread (only φ 32) custom order

<b>D Stroke length (mm)</b>		
Bore size	Stroke length Note 2	Custom stroke length
φ6 to φ16	1 to 60	By 1 mm increment
φ20 to φ32	1 to 100	

<b>E Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
K0H*	K0V*	Reed	1 color indicator type Without indicator light	2-wire
K5H*	K5V*			
K2H*	K2V*		Proximity	1 color indicator type
K3H*	K3V*	3-wire		
K3PH*	K3PV*	1 color indicator type (custom order)		3-wire
K2YH*	K2YV*	2 color indicator type		2-wire
K3YH*	K3YV*			3-wire
K2YFH*	K2YFV*	2 color indicator type (W/o indicator light for preventive maintenance output)		3-wire
K3YFH*	K3YFV*			4-wire
K2YMH*	K2YMV*	2 color indicator type (W/ indicator light for preventive maintenance output (1 color))		3-wire
K3YMH*	K3YMV*		4-wire	

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

<b>F Switch quantity</b>	
R	1 on rod end
H	1 on head end
D	Two

## ⚠ Note on model no. selection

Note 1: For mounting style "DB" or "DC", if "X" indicated on "Switch selection table", K\* H type (axial lead wire) cannot be installed. Please use K\*V type (radial lead wire).

Switch selection table

Bore size	DB (head end mounting type)		DC (high rigid mounting type)	
	5 mm stroke	10 mm stroke	5 mm stroke	10 mm stroke
φ 6	X	X	X	X
φ 10	X		X	
φ 16	X		X	
φ 20	X		X	
φ 25				
φ 32				

Note 2: Refer to page 1006 for min. stroke length with switch.

Note 3: Copper and PTFE free as standard.

## <Example of model number>

**SMD2-L-DA-6-15-K0H-R**

Model: Compact cylinder

- A** Mounting style : Rod end mounting type
- B** Bore size : φ 6mm
- C** Port thread type : Rc thread
- D** Stroke length : 15mm
- E** Switch model no. : Reed switch K0H, lead wire length 1m
- F** Switch quantity : 1 on rod end

## How to order switch

**SW** - **K2H**

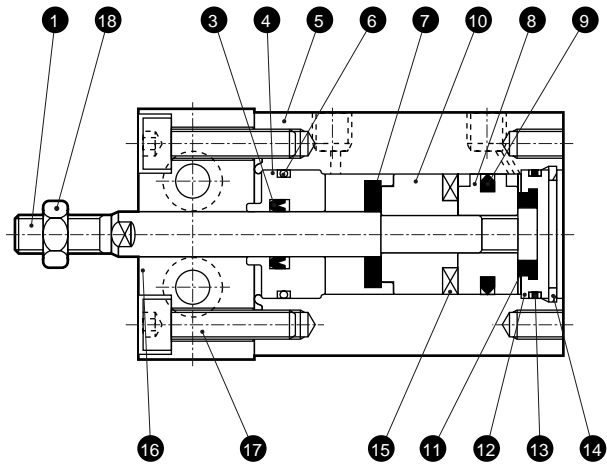
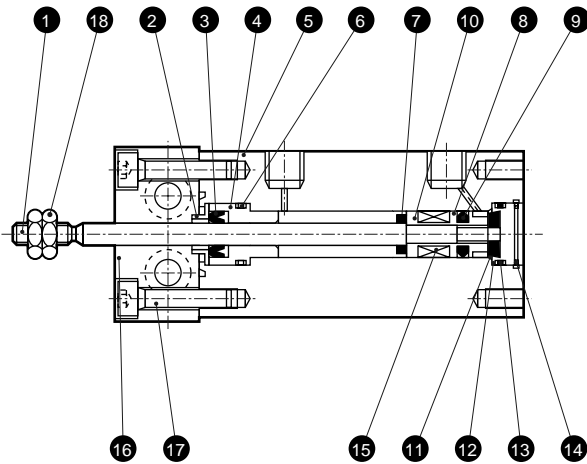
Switch model no.  
(Item **E** above)



### Internal structure and parts list

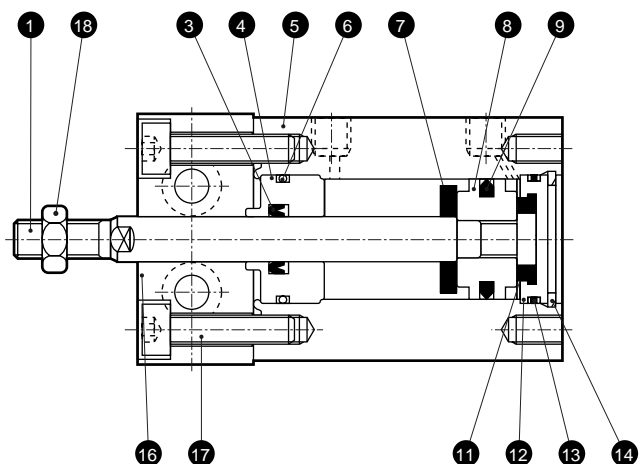
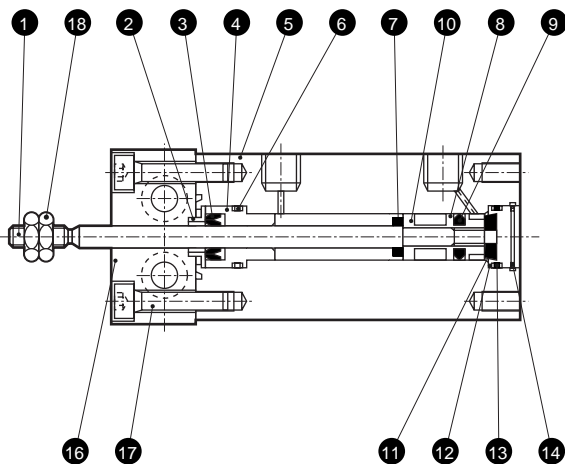
● Double acting/with switch, magnet built-in type SMD2-L  
 $\phi$  6,  $\phi$  10

$\phi$  16,  $\phi$  20,  $\phi$  25,  $\phi$  32



● Double acting SMD2  
 $\phi$  6,  $\phi$  10

$\phi$  16,  $\phi$  20,  $\phi$  25,  $\phi$  32



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Piston rod	Stainless steel	$\phi$ 20, $\phi$ 25, $\phi$ 32 industrial chrome plating	10	Spacer	Aluminum alloy	
2	Cap	Aluminum alloy		11	Cushion rubber (H)	Urethane rubber	
3	Rod packing seal	Nitrile rubber		12	Base plate	Aluminum alloy	Chromate
4	Rod bushing	Aluminum alloy	Alumite	13	Gasket	Nitrile rubber	
5	Cylinder body	Aluminum alloy	Hard alumite	14	C type snap ring	Steel	Phosphoric acid zinc
6	Gasket	Nitrile rubber		15	Magnet	Plastic	
7	Cushion rubber (R)	Urethane rubber		16	Mount	Aluminum alloy	Black alumite
8	Piston	Aluminum alloy		17	Hexagon socket head cap bolt	Alloy steel	Blackening
9	Piston packing seal	Nitrile rubber		18	Hexagon nut	Steel	Nickeling

### Repair parts list

Bore size (mm)	Kit No.	Repair parts number	Bore size (mm)	Kit No.	Repair parts number
$\phi$ 6	SMD2-6K		$\phi$ 20	SMD2-20K	
$\phi$ 10	SMD2-10K	3 7 9 11 13	$\phi$ 25	SMD2-25K	3 7 9 11 13
$\phi$ 16	SMD2-16K		$\phi$ 32	SMD2-32K	

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

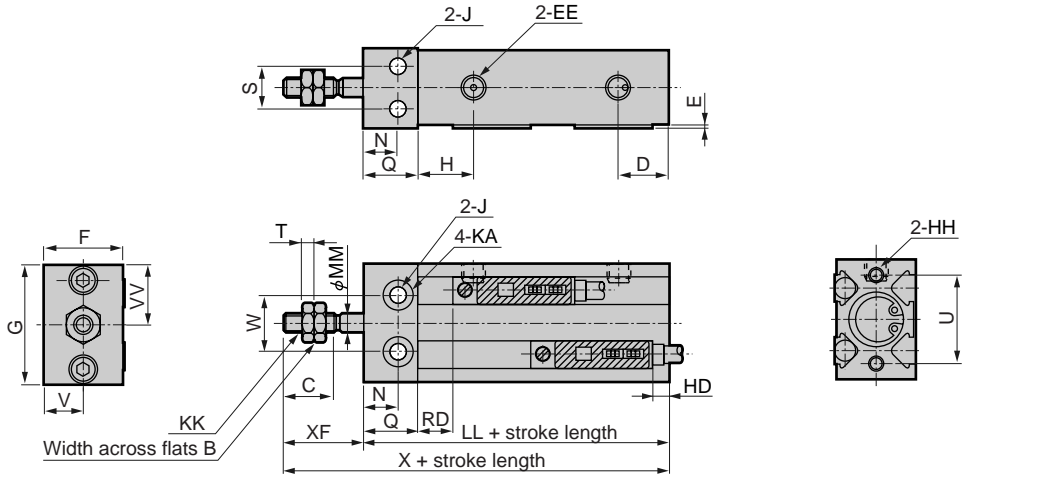
Compact cylinder  
Space saving structure

## Dimensions

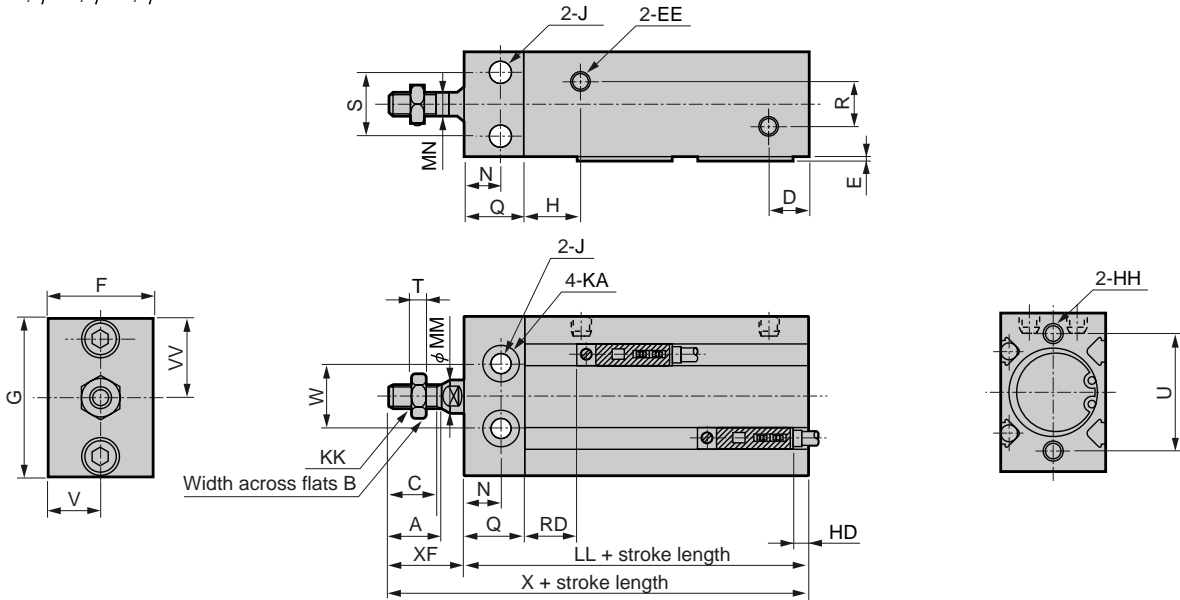


● Double acting/with switch, rod end mounting type SMD2-(L)-DA

φ6, φ10



φ16, φ20, φ25, φ32



Symbol	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U
Symbol																				
Bore size (mm)																				
φ6	-	5.5	7	10	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	7	11	-	7	1.8	17
φ10	-	7	10	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	7	11	-	9	2.4	18
φ16	12.5	8	11	10	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24
φ20	13.5	10	12	10	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30
φ25	17.5	13	15.5	10	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	10	15	13	20	5	38
φ32	21	17	19.5	11	Rc1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	11	20	17	24	6	48
Symbol	V	VV	W	XF	LL		X		With switch											
Bore size (mm)					W/o switch	W/ switch	W/o switch	W/ switch	E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V				
										HD	RD	HD	RD	HD	RD	HD	RD			
φ6	6.7	11.2	10	13	38	38	51	51	1.0	-2.0	5.0	-3.0	6.0	-5.0	5.0	-6.0	6.0			
φ10	7.7	12.2	11	16	41	41	57	57	1.0	0.5	5.5	-1.0	7.0	-2.5	5.5	-4.0	7.0			
φ16	10.2	16.2	14	16	40	50	56	66	0.5	1.5	10.0	0.5	11.0	-1.5	10.0	-2.5	11.0			
φ20	13.2	20.2	16	19	46	56	65	75	0.5	5.5	12.5	4.5	13.5	2.5	12.5	1.5	13.5			
φ25	16.2	25.2	20	23	50	60	73	83	0.5	8.5	12.5	7.5	13.5	5.5	12.5	4.5	13.5			
φ32	20.2	31.2	24	27	62	72	89	99	0.5	9.0	19.0	8.0	20.0	6.0	19.0	5.0	20.0			

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

Note 2: Negative dimension shows dimensions of projecting section of switch from main body.

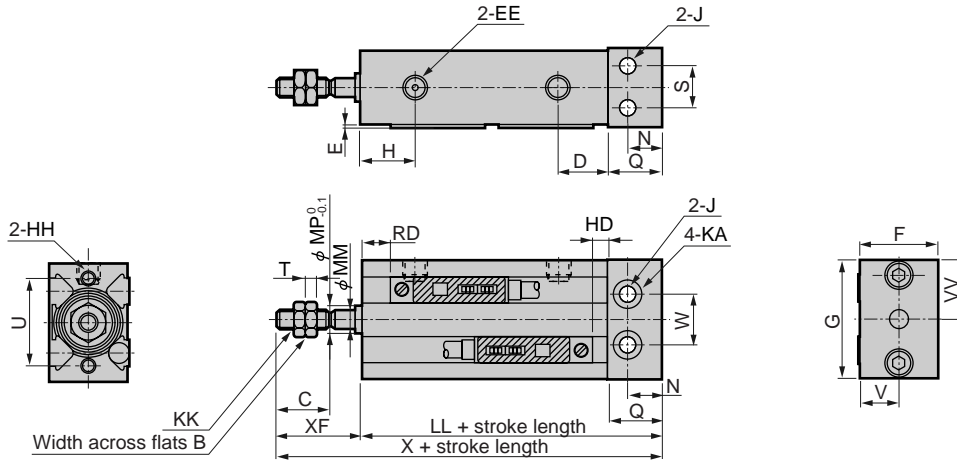
Note 3: Refer to page 1036 for HD, RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

### Dimensions

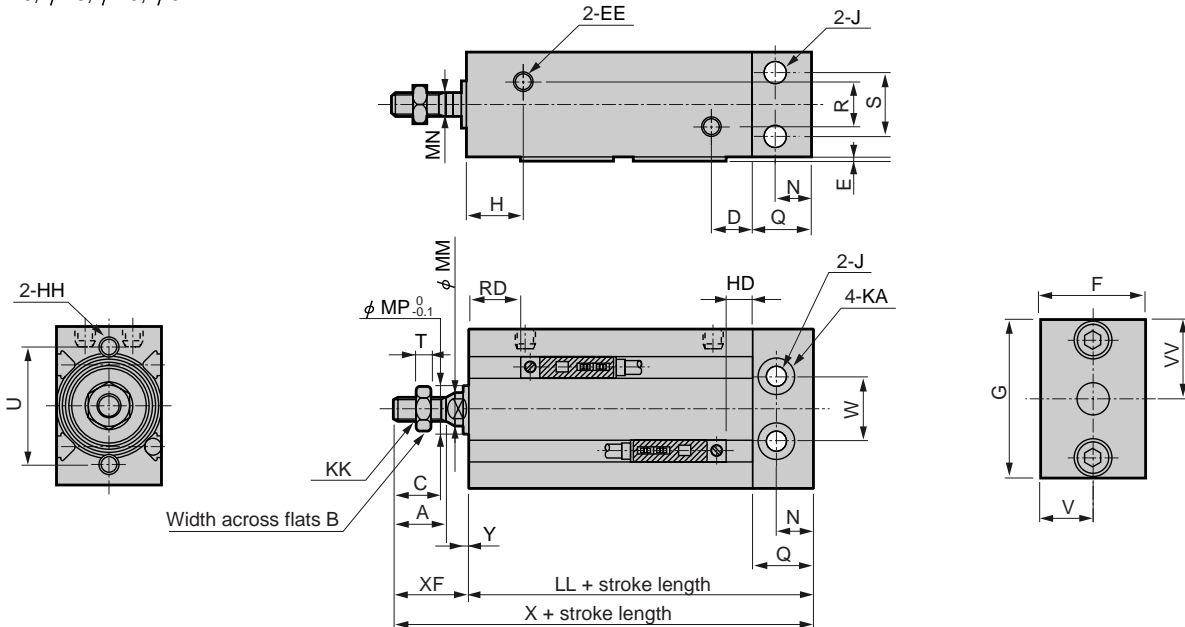


● Double acting/with switch, head end mounting type SMD2-(L)-DB

φ6, φ10



φ16, φ20, φ25, φ32



Symbol	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	MP	N	Q	R	S	T	U
φ6	-	5.5	7	10	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	5	7	11	-	7	1.8	17
φ10	-	7	10	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	6	7	11	-	9	2.4	18
φ16	12.5	8	11	10	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	8	7	15	5	12	3.2	24
φ20	13.5	10	12	10	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	12	9	15	12	16	3.6	30
φ25	17.5	13	15.5	10	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	14	10	15	13	20	5	38
φ32	21	17	19.5	11	Rc1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	16	11	20	17	24	6	48

Symbol	V	VV	W	XF	Y	LL		X		With switch								
						W/o switch	W/ switch	W/o switch	W/ switch	E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
						HD	RD	HD	RD		HD	RD	HD	RD				
φ6	6.7	11.2	10	14	1	38	38	52	52	1.0	1.5	5.0	2.5	6.0	1.5	5.0	2.5	6.0
φ10	7.7	12.2	11	17	1	41	41	58	58	1.0	3.5	5.5	4.5	7.0	3.5	5.5	4.5	7.0
φ16	10.2	16.2	14	16	1	40	50	56	66	0.5	5.0	10.0	6.0	11.0	5.0	10.0	6.0	11.0
φ20	13.2	20.2	16	19	1.5	46	56	65	75	0.5	8.5	12.5	9.5	13.5	8.5	12.5	9.5	13.5
φ25	16.2	25.2	20	23	2	50	60	73	83	0.5	11.5	12.5	12.5	13.5	11.5	12.5	12.5	13.5
φ32	20.2	31.2	24	27	2	62	72	89	99	0.5	12.0	19.0	13.5	20.0	12.0	19.0	13.5	20.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.  
 Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.  
 Note 3: For 5, 10 mm stroke cylinders, use K\*V switch because K\*H switch cannot be installed.  
 Note 4: For 5 mm stroke cylinder, use K\*V switch because K\*H switch cannot be installed.

Note 5: Refer to page 1037 for HD/RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

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

Ending

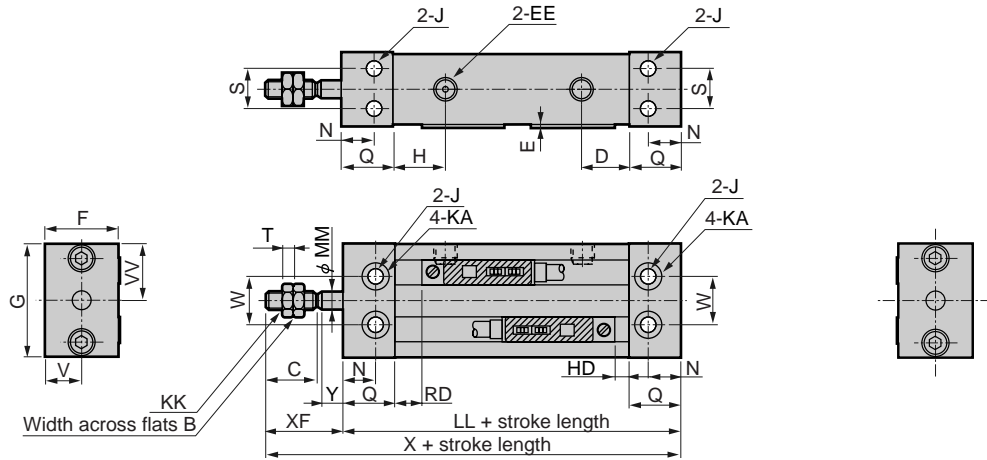
Compact cylinder  
Space saving structure

## Dimensions

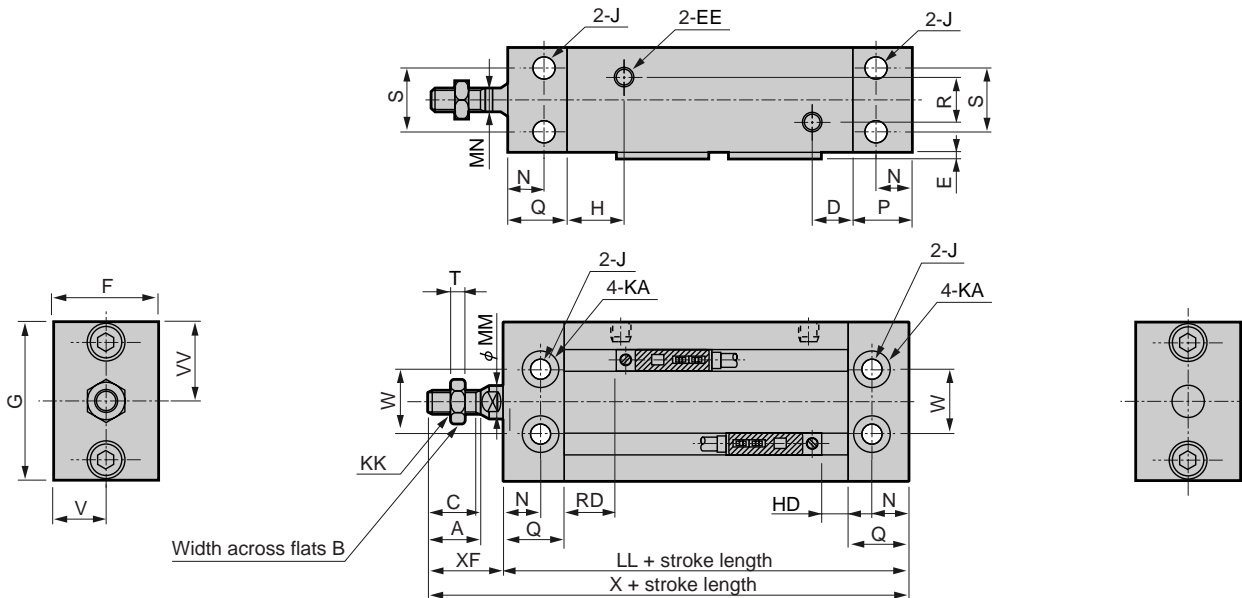


● Double acting/with switch, high rigid mounting type SMD2-(L)-DC

φ 6, φ 10



φ 16, φ 20, φ 25, φ 32

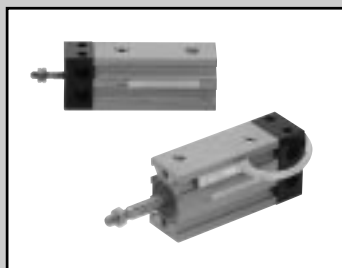


Symbol	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U
Symbol																				
Bore size (mm)																				
φ6	-	5.5	7	10	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	7	11	-	7	1.8	17
φ10	-	7	10	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	7	11	-	9	2.4	18
φ16	12.5	8	11	10	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24
φ20	13.5	10	12	10	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30
φ25	17.5	13	15.5	10	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	10	15	13	20	5	38
φ32	21	17	19.5	11	Rc1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	11	20	17	24	6	48

Symbol	V	VV	W	XF	LL				X				With switch								
					W/o switch		W/ switch		W/o switch		W/ switch		E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
					HD	RD	HD	RD	HD	RD	HD	RD		HD	RD	HD	RD				
φ6	6.7	11.2	10	13	49	49	62	62	1.0	1.5	5.0	2.5	6.0	1.5	5.0	2.5	6.0				
φ10	7.7	12.2	11	16	52	52	68	68	1.0	3.5	5.5	4.5	7.0	3.5	5.5	4.5	7.0				
φ16	10.2	16.2	14	16	55	65	71	81	0.5	5.0	10.0	6.0	11.0	5.0	10.0	6.0	11.0				
φ20	13.2	20.2	16	19	61	71	80	90	0.5	8.5	12.5	9.5	13.5	8.5	12.5	9.5	13.5				
φ25	16.2	25.2	20	23	65	75	88	98	0.5	11.5	12.5	12.5	13.5	11.5	12.5	12.5	13.5				
φ32	20.2	31.2	24	27	82	92	109	119	0.5	12.0	19.0	13.5	20.0	12.0	19.0	13.5	20.0				

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.  
 Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.  
 Note 3: For 5, 10 mm stroke cylinders, use K\*V switch because K\*H switch cannot be installed.  
 Note 4: For 5 mm stroke cylinder, use K\*V switch because K\*H switch cannot be installed.

Note 5: Refer to page 1038 for HD/RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

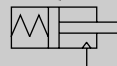
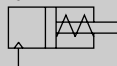


Compact cylinder, single acting extend type/with switch  
single acting retract type/with switch

# SMD2-X Series

● Bore size:  $\phi 6$ ,  $\phi 10$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$

JIS symbol



Single acting, extend type

Single acting, retract type



## Specifications

Descriptions		SMD2-X, SMD2-Y SMD2-XL, SMD2-YL (with switch)					
Bore size	mm	$\phi 6$	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Actuation	SMD2-X (L)	Single acting, extend type					
	SMD2-Y (L)	Single acting, retract type					
Working fluid		Compressed air					
Max. working pressure	MPa	0.7					
Min. working pressure	SMD2-X (L)	0.3					0.15
	SMD2-Y (L)	0.35	0.2				
Withstanding pressure	MPa	1.05					
Ambient temperature	°C	-10 to 60 (no freezing)					
Port size		M5					Rc1/8
Stroke tolerance	mm	$+1.5$ $0$					
Working piston speed	mm/s	50 to 500					
Cushion	SMD2-X (L)	Rubber cushioned at only retract side					
	SMD2-Y (L)	Rubber cushioned at only extend side					
Lubrication		Not required (when lubricating, use turbine oil Class 1 ISO VG32.)					
Allowable energy absorption	J	0.005	0.036	0.1	0.1	0.19	0.5

Note: Do not leave the single acting cylinder in the pressurized state. If left in the pressurized state, the piston rod may not return with spring force when pressure is released.

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 6$	5, 10, 15	15	1
$\phi 10$			
$\phi 16$			
$\phi 20$			
$\phi 25$			
$\phi 32$			

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

## Min. stroke length with switch

Model	Bore size	1 color indicator type		2 color indicator type		With preventive maintenance output	
		K*H	K*V	K*YH	K*YV	K*Y*H	K*Y*V
SMD2-XL-DA SMD2-YL-DA	$\phi 6$	5	5	5	5	5	5
	$\phi 10$						
	$\phi 16$						
	$\phi 20$						
	$\phi 25$						
SMD2-XL-DB/DC	$\phi 6$	15	5	15	10	10	
	$\phi 10$	10		15	10	10	
	$\phi 16$	10		10	10	10	
	$\phi 20$	10		10	5	5	
	$\phi 25$	5		5	5	5	
	$\phi 32$	5		5	5	5	
SMD2-YL-DB/DC	$\phi 6$	10	5	10	10	10	
	$\phi 10$	10		10	10	5	
	$\phi 16$	5		5	5	5	
	$\phi 20$	5		5	5	5	
	$\phi 25$	5		5	5	5	
	$\phi 32$	5		5	5	5	

### Switch specifications

● 1 color/2 color indicator

Descriptions	Proximity 2-wire		Proximity 3-wire			Reed 2-wire				
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V		
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection		
Output method	-		NPN output	PNP output	NPN output	-				
Power voltage	-		10 to 28 VDC			-				
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC /24 VDC	110 VAC	5/12/24 VDC	110 VAC	
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less	20mA or less	
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-		
Leakage current	1mA or less		10 μA or less			0mA				

Note 1: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

● With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire		
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V		
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay		
Output method	NPN output								
Light	Installation position adjustment section	Red/green LED (ON lighting)							
	Preventive maintenance output	-		Yellow LED (ON lighting)					
Output	Power voltage	-		10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC		30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20mA		50mA or less		5 to 20mA		50mA or less	
	Leakage current	1mA or less		10 μA or less		1.2mA or less		10 μA or less	
Preventive maintenance output	Load voltage	30 VDC or less							
	Load current	20mA or less		50mA or less		5 to 20mA or less		50mA or less	
	Leakage current	10 μA or less							

### SMD2-X cylinder weight

(Weight with switch is with a 2 piece by cylinder switch lead wire length 1m.) Unit (g)

Stroke length (mm)	5		10		15		
	W/o switch	With switch	W/o switch	With switch	W/o switch	With switch	
φ6	DA	33	69	36	105	39	141
	DB	32	68	35	104	38	140
	DC	41	77	44	113	47	149
φ10	DA	46	82	50	118	54	154
	DB	45	81	49	117	53	153
	DC	57	93	61	129	65	165
φ16	DA	85	138	91	174	97	210
	DB	83	135	89	171	95	207
	DC	112	128	118	164	124	200
φ20	DA	164	229	175	265	186	301
	DB	158	223	169	259	180	295
	DC	205	270	216	306	227	342
φ25	DA	273	355	290	391	307	427
	DB	264	345	281	381	298	417
	DC	335	417	352	453	369	489
φ32	DA	512	618	538	654	564	690
	DB	494	600	620	636	546	672
	DC	641	747	667	783	693	819

### Discrete cylinder switch weight

Unit (g)

Name	Model no.	Lead wire length		
		1m	3m	5m
Cylinder switch	K0	18	52	86
	K2	18	52	86
	K3	18	52	86
	K5	18	52	86

### SMD2-X/SMD2-Y spring load

Unit: N

Bore size (mm)	Stroke length (mm)	Stroke length 0	Full stroke length during operation	Bore size (mm)	Stroke length (mm)	Stroke length 0	Full stroke length during operation
φ6	5	3.42	4.02	φ20	5	13.7	15.8
	10	2.83			10	11.7	
	15	2.25			15	9.7	
φ10	5	6.13	7.25	φ25	5	33.3	38.0
	10	5.03			10	28.7	
	15	3.92			15	24.0	
φ16	5	12.6	15.3	φ32	5	34.4	39.5
	10	9.99			10	29.4	
	15	7.35			15	24.5	

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

Compact cylinder  
Space saving structure

# SMD2-X<sub>Y</sub> Series

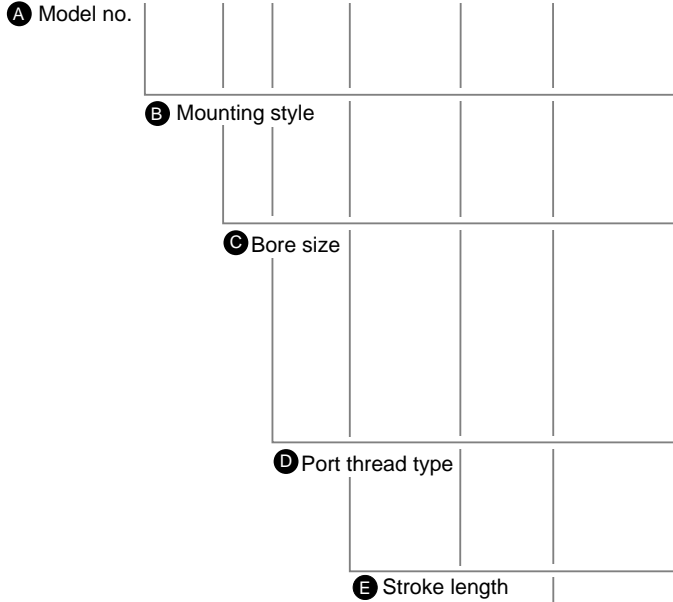
- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC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

How to order  
Without switch

**SMD2-X** - **DA** - **6** - **15**

With switch

**SMD2-XL** - **DA** - **6** - **15** - **K2H** - **R**



## ⚠ Note on model no. selection

Note 1: For mounting style "DB" or "DC", if "X" indicated on "Switch selection table", K\* H type (axial lead wire) cannot be installed. Please use K\*V type (radial lead wire).

Switch selection table

SMD2-XL (single acting extend type with switch)

Bore size	DB (head end mounting type)		DC (high rigid mounting type)	
	5 mm stroke	10 mm stroke	5 mm stroke	10 mm stroke
φ6	X	X	X	X
φ10	X		X	
φ16	X		X	
φ20	X		X	
φ25				
φ32				

SMD2-YL (single acting retract type)

Bore size	DB (head end mounting type)		DC (high rigid mounting type)	
	5 mm stroke	10 mm stroke	5 mm stroke	10 mm stroke
φ6	X		X	
φ10	X		X	
φ16				
φ20				
φ25				
φ32				

Note 2: Refer to page 1014 for min. stroke length with switch.

Note 3: Copper and PTFE free as standard.

<Example of model number>

**SMD2-XL-DA-6-15-K0H-R**

Model: Compact cylinder

- A** Model no. : Single acting extend type
- B** Mounting style : Rod end mounting type
- C** Bore size : φ 6mm
- D** Port thread type : Rc thread
- E** Stroke length : 15mm
- F** Switch model no. : Reed switch K0H, lead wire length 1m
- G** Switch quantity : 1 on rod end

Symbol	Descriptions			
<b>A Model no.</b>				
SMD2-X	Single acting extend type			
SMD2-Y	Single acting retract type			
<b>B Mounting style</b>				
DA	Rod end mounting type			
DB	Head end mounting type			
DC	High rigid mounting type			
<b>C Bore size (mm)</b>				
6	φ6			
10	φ10			
16	φ16			
20	φ20			
25	φ25			
32	φ32			
<b>D Port thread type</b>				
Blank	Rc thread			
NN	NPT thread (only φ32) custom order			
GN	G thread (only φ32) custom order			
<b>E Stroke length (mm)</b>				
Bore size	Stroke length Note 2	Custom stroke length		
φ6 to φ32	1 to 15	1 mm increment		
<b>F Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
K0H*	K0V*	Reed	1 color indicator type	2-wire
K5H*	K5V*		Without indicator light	
K2H*	K2V*	Proximity	1 color indicator type	2-wire
K3H*	K3V*		3-wire	
K3PH*	K3PV*	Proximity	1 color indicator type (custom order)	3-wire
K2YH*	K2YV*		2 color indicator type	2-wire
K3YH*	K3YV*	Proximity	2 color indicator type	3-wire
K2YFH*	K2YFV*		2 color indicator type (W/o indicator light for preventive maintenance output)	3-wire
K3YFH*	K3YFV*	Proximity	2 color indicator type (W/ indicator light for preventive maintenance output (1 color))	4-wire
K2YMH*	K2YMV*		2 color indicator type	3-wire
K3YMH*	K3YMV*	Proximity	2 color indicator type (W/ indicator light for preventive maintenance output (1 color))	4-wire
K3YMH*	K3YMV*		2 color indicator type	3-wire
<b>*Lead wire length</b>				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
<b>G Switch quantity</b>				
R	1 on rod end			
H	1 on head end			
D	Two			

How to order switch

**SW** - **K2H**

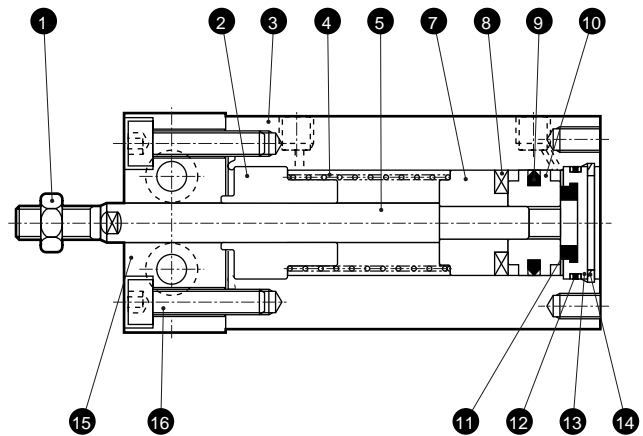
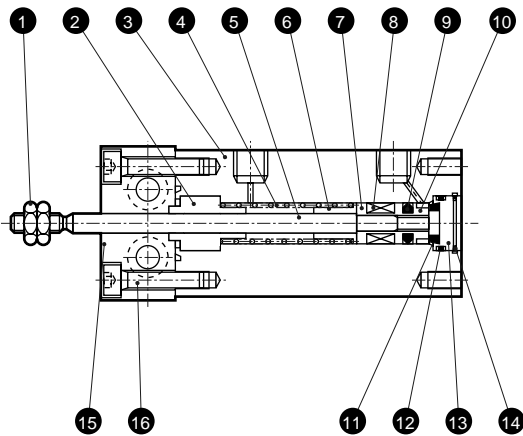
Switch model no.  
(Item **F** above)



### Internal structure and parts list

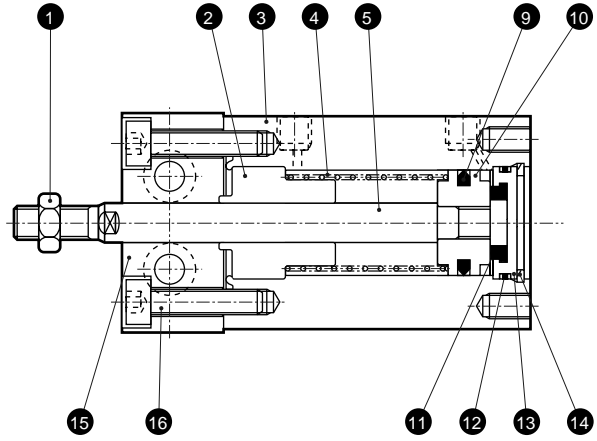
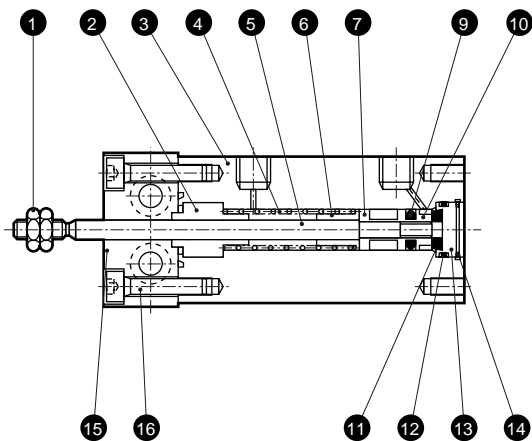
- Single acting extend type/with switch, magnet built-in type SMD2-XL  
φ 6, φ 10

φ 16, φ 20, φ 25, φ 32



- Single acting extend type SMD2-X  
φ 6, φ 10

φ 16, φ 20, φ 25, φ 32



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Hexagon nut	Steel	Nickeling	9	Piston packing seal	Nitrile rubber	
2	Rod bushing	Aluminum alloy	Alumite	10	Piston	Aluminum alloy	
3	Cylinder body	Aluminum alloy	Hard alumite	11	Cushion rubber (H)	Urethane rubber	
4	Spring	Steel	Electrode position coating	12	Gasket	Nitrile rubber	
5	Piston rod	Stainless steel	φ 20, φ 25, φ 32 Industrial chrome plating	13	Base plate	Aluminum alloy	Chromate
6	Spring holder	Aluminum alloy		14	C type snap ring	Steel	Phosphoric acid zinc
7	Spacer	Aluminum alloy		15	Mount	Aluminum alloy	Black alumite
8	Magnet	Plastic		16	Hexagon socket head cap bolt	Alloy steel	Blackening

### Repair parts list

Bore size (mm)	Kit No.	Repair parts number	Bore size (mm)	Kit No.	Repair parts number
φ 6	SMD2-X-6K	● 9 ● 11 ● 12	φ 20	SMD2-X-20K	● 9 ● 11 ● 12
φ 10	SMD2-X-10K		φ 25	SMD2-X-25K	
φ 16	SMD2-X-16K		φ 32	SMD2-X-32K	

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

Compact cylinder  
Space saving structure

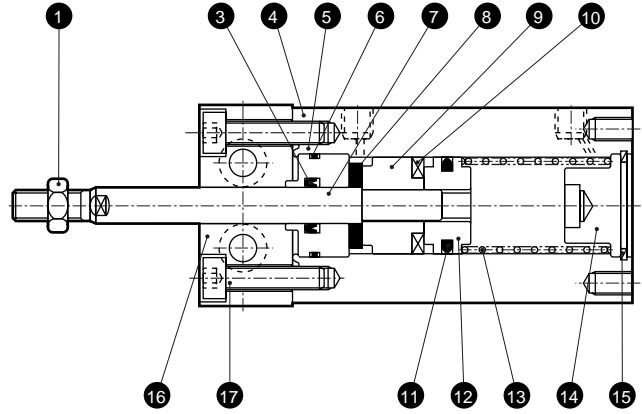
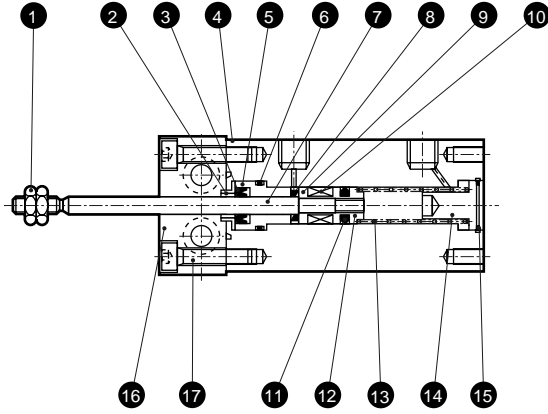
# SMD2-Y Series

## Internal structure and parts list

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

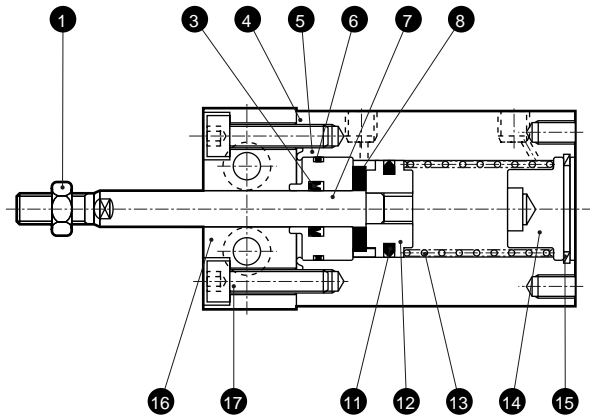
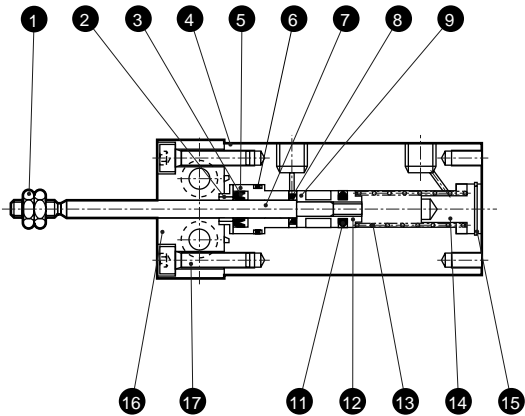
● Single acting retract type/with switch, magnet built-in type SMD2-YL  
 $\phi 6, \phi 10$

$\phi 16, \phi 20, \phi 25, \phi 32$



● Single acting, retract type SMD2-Y  
 $\phi 6, \phi 10$

$\phi 16, \phi 20, \phi 25, \phi 32$



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Hexagon nut	Steel	Nickeling	9	Spacer	Aluminum alloy	
2	Cap	Aluminum alloy		10	Magnet	Plastic	
3	Rod packing seal	Nitrile rubber		11	Piston packing seal	Nitrile rubber	
4	Cylinder body	Aluminum alloy	Hard alumite	12	Piston	Aluminum alloy	
5	Rod bushing	Aluminum alloy	Alumite	13	Spring	Steel	Electrode position coating
6	Gasket	Nitrile rubber		14	Base plate	Aluminum alloy	Chromate
7	Piston rod	Stainless steel	$\phi 20, \phi 25, \phi 32$ industrial chrome plating	15	C type snap ring	Steel	Phosphoric acid zinc
8	Cushion rubber (R)	Urethane rubber		16	Mount	Aluminum alloy	Black alumite
				17	Hexagon socket head cap bolt	Alloy steel	Blackening

### Repair parts list

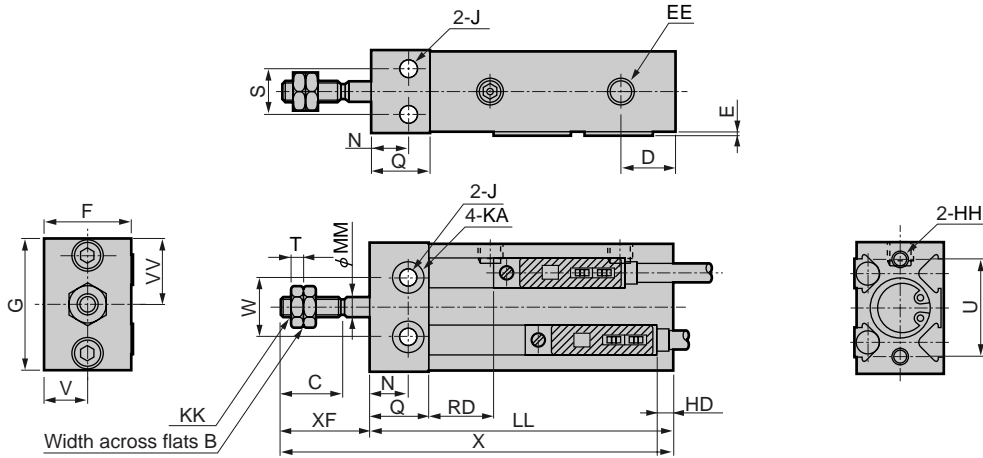
Bore size (mm)	Kit No.	Repair parts number	Bore size (mm)	Kit No.	Repair parts number
$\phi 6$	SMD2-Y-6K	● 3 ● 8 ● 11	$\phi 20$	SMD2-Y-20K	● 3 ● 8 ● 11
$\phi 10$	SMD2-Y-10K		$\phi 25$	SMD2-Y-25K	
$\phi 16$	SMD2-Y-16K		$\phi 32$	SMD2-Y-32K	

### Dimensions

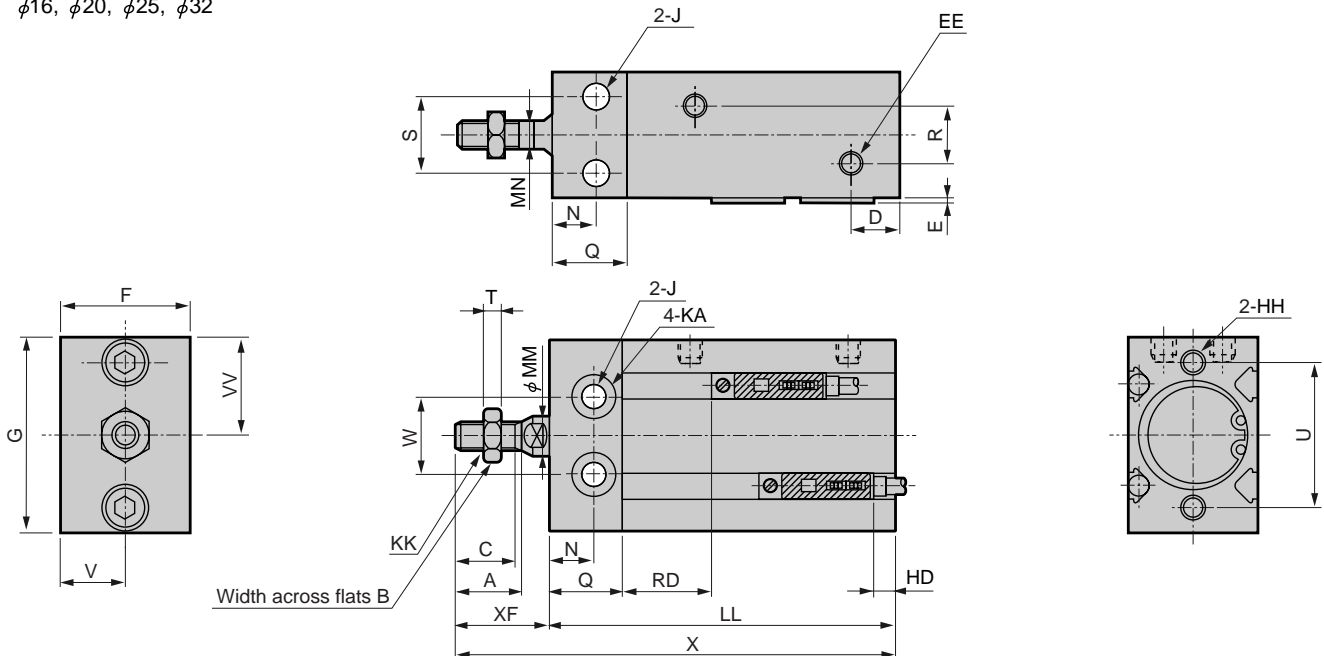


● Single acting extend type/with switch, rod end mounting type SMD2-X(L)-DA

φ 6, φ10



φ16, φ20, φ25, φ32



Symbol	A	B	C	D	EE	F	G	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U	V	VV
φ6	-	5.5	7	10	M5	13.4	22.4	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	7	11	-	7	1.8	17	6.7	11.2
φ10	-	7	10	10	M5	15.4	24.4	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	7	11	-	9	2.4	18	7.7	12.2
φ16	12.5	8	11	10	M5	20.4	32.4	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24	10.2	16.2
φ20	13.5	10	12	10	M5	26.4	40.4	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30	13.2	20.2
φ25	17.5	13	15.5	10	M5	32.4	50.4	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	10	15	13	20	5	38	16.2	25.2
φ32	21	17	19.5	11	Rc1/8	40.4	62.4	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	11	20	17	24	6	48	20.2	31.2

Symbol	LL						X						With switch										
	W	XF	5st		10st		5st		10st		15st		E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V			
			W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW		W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW
φ6	10	13	48	48	53	53	58	58	61	61	66	66	71	71	1.0	-2.0	10.0	-3.0	11.0	-5.0	10.0	-6.0	11.0
φ10	11	16	51	51	56	56	61	61	67	67	72	72	77	77	1.0	0.5	10.5	-1.0	12.0	-2.5	10.5	-4.0	12.0
φ16	14	16	50	60	55	65	60	70	66	76	71	81	76	86	0.5	1.5	15.0	0.5	16.0	-1.5	15.0	-2.5	16.0
φ20	16	19	56	66	61	71	66	76	75	85	80	90	85	95	0.5	5.5	17.5	4.5	18.5	2.5	17.5	1.5	18.5
φ25	20	23	60	70	65	75	70	80	83	93	88	98	93	103	0.5	8.5	17.5	7.5	18.5	5.5	17.5	4.5	18.5
φ32	24	27	72	82	77	87	82	92	99	109	104	114	109	119	0.5	9.0	24.0	8.0	25.0	6.0	24.0	5.0	25.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.

Note 3: Refer to page 1036 for HD, RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

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

Ending  
Compact cylinder  
Space saving structure

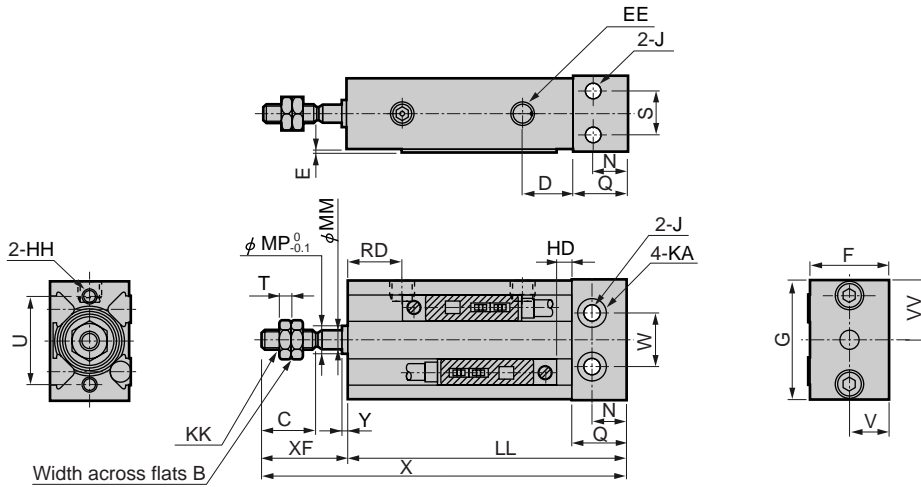
# SMD2-X Series

## Dimensions

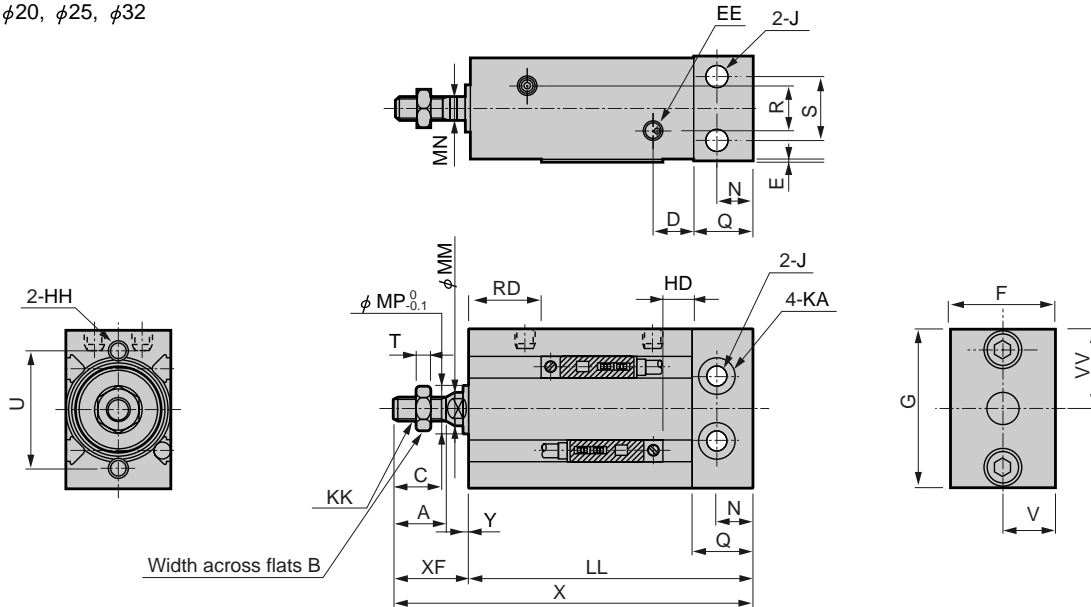


● Single acting extend type/with switch, head end mounting type SMD2-X(L)-DB

φ 6, φ 10



φ 16, φ 20, φ 25, φ 32



Symbol	A	B	C	D	EE	F	G	HH	J	KA	KK	MM	MN	MP	N	Q	R	S	T	U	V	VV	
SM-25																							
CAC3																							
UCAC	φ 6	-	5.5	7	10	M5	13.4	22.4	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	5	7	11	-	7	1.8	17	6.7	11.2
RCC2	φ 10	-	7	10	10	M5	15.4	24.4	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	6	7	11	-	9	2.4	18	7.7	12.2
MFC	φ 16	12.5	8	11	10	M5	20.4	32.4	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	8	7	15	5	12	3.2	24	10.2	16.2
SHC	φ 20	13.5	10	12	10	M5	26.4	40.4	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	12	9	15	12	16	3.6	30	13.2	20.2
GLC	φ 25	17.5	13	15.5	10	M5	32.4	50.4	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	14	10	15	13	20	5	38	16.2	25.2
Ending	φ 32	21	17	19.5	11	Rc1/8	40.4	62.4	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	16	11	20	17	24	6	48	20.2	31.2
Symbol	W	XF	LL						X						With switch								
			5st		10st		15st		5st		10st		15st		E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
			W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW		W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW
Bore size (mm)																							
φ 6	10	14	48	48	53	53	58	58	62	62	67	67	72	72	1.0	1.5	10.0	2.5	11.0	1.5	10.0	2.5	11.0
φ 10	11	17	51	51	56	56	61	61	68	68	73	73	78	78	1.0	3.5	10.5	4.5	12.0	3.5	10.5	4.5	12.0
φ 16	14	16	50	60	55	65	60	70	66	76	71	81	76	86	0.5	5.0	15.0	6.0	16.0	5.0	15.0	6.0	16.0
φ 20	16	19	56	66	61	71	66	76	75	85	80	90	85	95	0.5	8.5	17.5	9.5	18.5	8.5	17.5	9.5	18.5
φ 25	20	23	60	70	65	75	70	80	83	93	88	98	93	103	0.5	11.5	17.5	12.5	18.5	11.5	17.5	12.5	18.5
φ 32	24	27	72	82	77	87	82	92	99	109	104	114	109	119	0.5	12.0	24.0	13.5	25.0	12.0	24.0	13.5	25.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.  
 Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.  
 Note 3: For 5, 10 mm stroke cylinders, use K\*V switch because K\*H switch cannot be installed.  
 Note 4: For 5 mm stroke cylinder, use K\*V switch because K\*H switch cannot be installed.

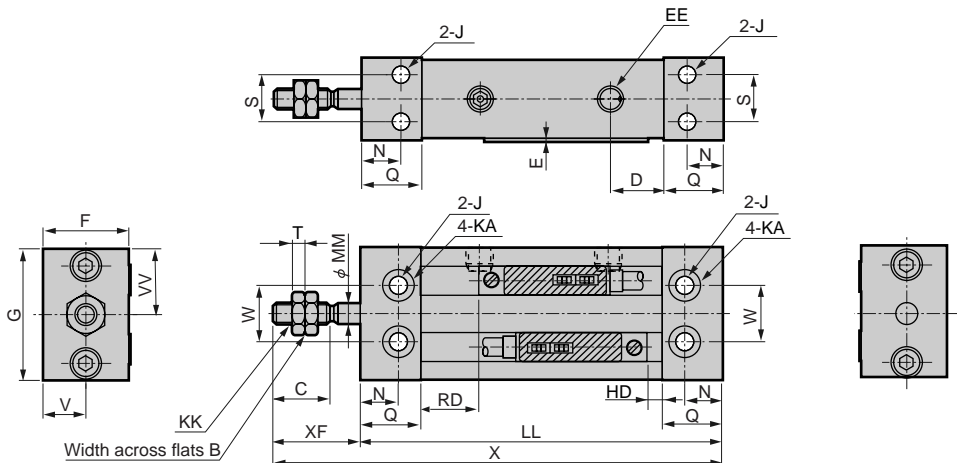
Note 5: Refer to page 1037 for HD/RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

### Dimensions

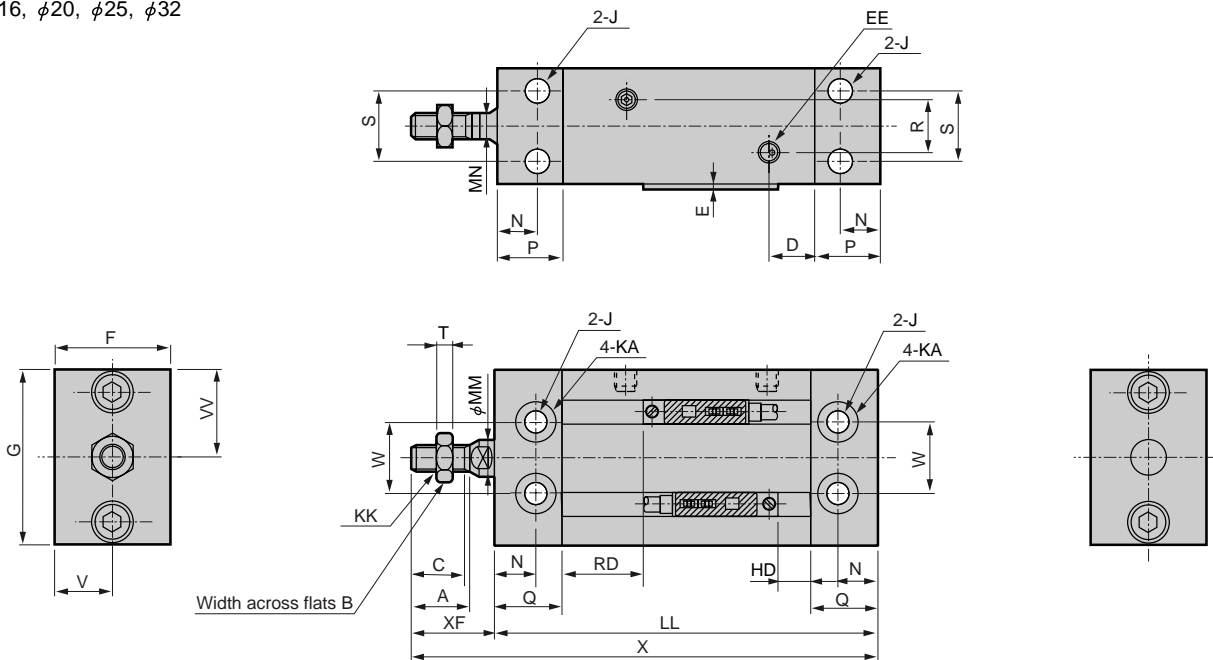


● Single acting extend type/with switch, high rigid mounting type SMD2-X(L)-DC

φ6, φ10



φ16, φ20, φ25, φ32



Symbol	A	B	C	D	EE	F	G	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U	V	VV
φ6	-	5.5	7	10	M5	13.4	22.4	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	7	11	-	7	1.8	17	6.7	11.2
φ10	-	7	10	10	M5	15.4	24.4	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	7	11	-	9	2.4	18	7.7	12.2
φ16	12.5	8	11	10	M5	20.4	32.4	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24	10.2	16.2
φ20	13.5	10	12	10	M5	26.4	40.4	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30	13.2	20.2
φ25	17.5	13	15.5	10	M5	32.4	50.4	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	10	15	13	20	5	38	16.2	25.2
φ32	21	17	19.5	11	Rc1/8	40.4	62.4	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	11	20	17	24	6	48	20.2	31.2

Symbol	W	XF	LL			X			With switch														
			5st	10st	15st	5st	10st	15st	E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V							
			W/SW	W/SW	W/SW	W/SW	W/SW	W/SW		W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW					
φ6	10	13	59	59	64	64	69	69	72	72	77	77	82	82	1.0	1.5	10.0	2.5	11.0	1.5	10.0	2.5	11.0
φ10	11	16	62	62	67	67	72	72	78	78	83	83	88	88	1.0	3.5	10.5	4.5	12.0	3.5	10.5	4.5	12.0
φ16	14	16	65	75	70	80	75	85	81	91	86	96	91	101	0.5	5.0	15.0	6.0	16.0	5.0	15.0	6.0	16.0
φ20	16	19	71	81	76	86	81	91	90	100	95	105	100	110	0.5	8.5	17.5	9.5	18.5	8.5	17.5	9.5	18.5
φ25	20	23	75	85	80	90	85	95	98	108	103	113	108	118	0.5	11.5	17.5	12.5	18.5	11.5	17.5	12.5	18.5
φ32	24	27	92	102	97	107	102	112	119	129	124	134	129	139	0.5	12.0	24.0	13.5	25.0	12.0	24.0	13.5	25.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.  
 Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.  
 Note 3: For 5, 10 mm stroke cylinders, use K\*V switch because K\*H switch cannot be installed.  
 Note 4: For 5 mm stroke cylinder, use K\*V switch because K\*H switch cannot be installed.

Note 5: Refer to page 1038 for HD/RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

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

Ending

Compact cylinder  
Space saving structure

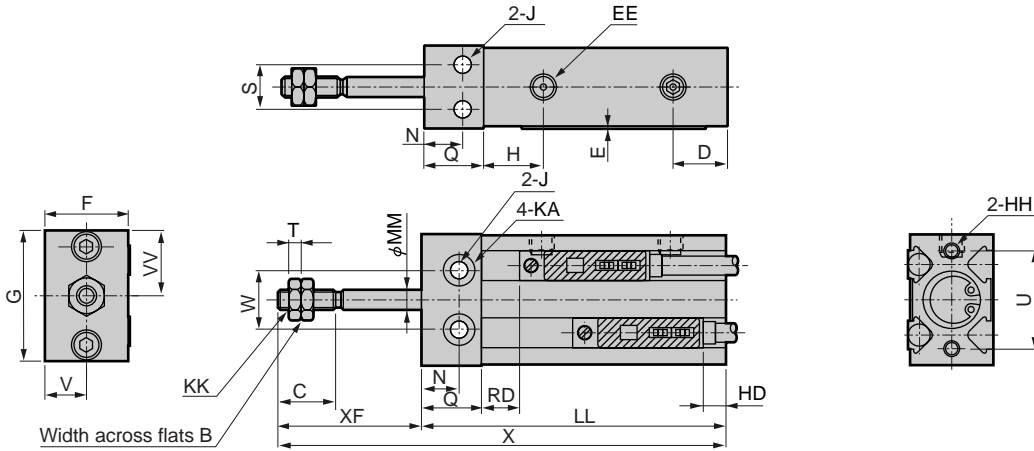
# SMD2-Y Series

## Dimensions

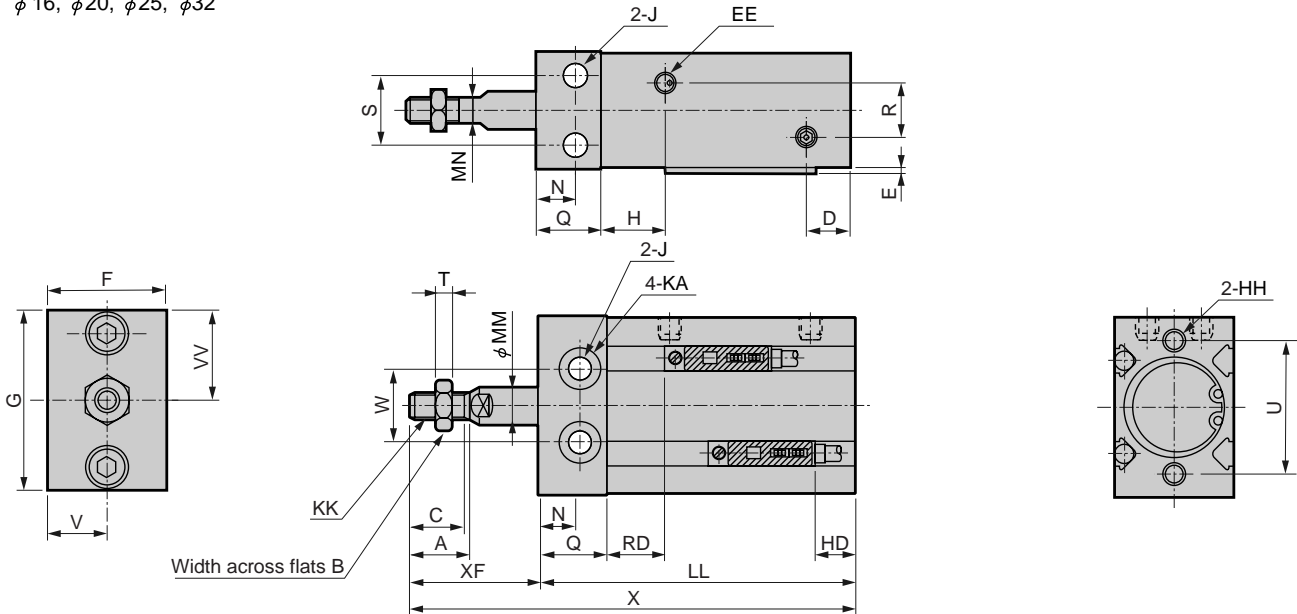


● Single acting retract type/with switch, rod end mounting type SMD2-Y(L)-DA

φ6, φ10



φ16, φ20, φ25, φ32



Symbol	A	B	C	D	EE	F	G	H	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U	V	VV	W	XF			
																								5st	10st	15st	
UCAC	φ6	-	5.5	11	7	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	7	11	-	7	1.8	17	6.7	11.2	10	18	23	28
RCC2	φ10	-	7	11	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	7	11	-	9	2.4	18	7.7	12.2	11	21	26	31
MFC	φ16	12.5	8	10	11	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24	10.2	16.2	14	21	26	31
SHC	φ20	13.5	10	14	12	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30	13.2	20.2	16	24	29	34
GLC	φ25	17.5	13	14	15.5	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	10	15	13	20	5	38	16.2	25.2	20	38	33	38
Ending	φ32	21	17	21	19.5	Rc1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	11	20	17	24	6	48	20.2	31.2	24	32	37	42

Symbol	LL						X						With switch								
	5st		10st		15st		5st		10st		15st		E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW		W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW
φ6	48	48	53	53	58	58	66	66	76	76	86	86	1.0	3.0	5.0	2.0	6.0	0.0	5.0	-1.0	6.0
φ10	51	51	56	56	61	61	72	72	82	82	92	92	1.0	5.5	5.5	4.0	7.0	2.5	5.5	1.0	7.0
φ16	50	60	55	65	60	70	71	81	81	91	91	101	0.5	6.5	10.0	5.5	11.0	3.5	10.0	2.5	11.0
φ20	56	60	61	71	66	76	80	90	90	100	100	110	0.5	10.5	12.5	9.5	13.5	7.5	12.5	6.5	13.5
φ25	60	70	65	75	70	80	88	98	98	108	108	118	0.5	13.5	12.5	12.5	13.5	10.5	12.5	9.5	13.5
φ32	72	82	77	87	82	92	104	114	114	124	124	134	0.5	14.0	19.0	13.0	20.0	11.0	19.0	10.0	20.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.

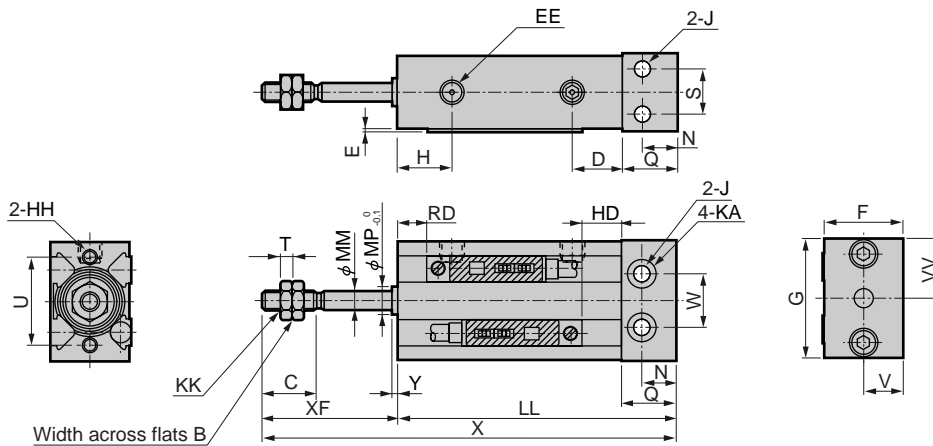
Note 3: Refer to page 1036 for HD, RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

### Dimensions

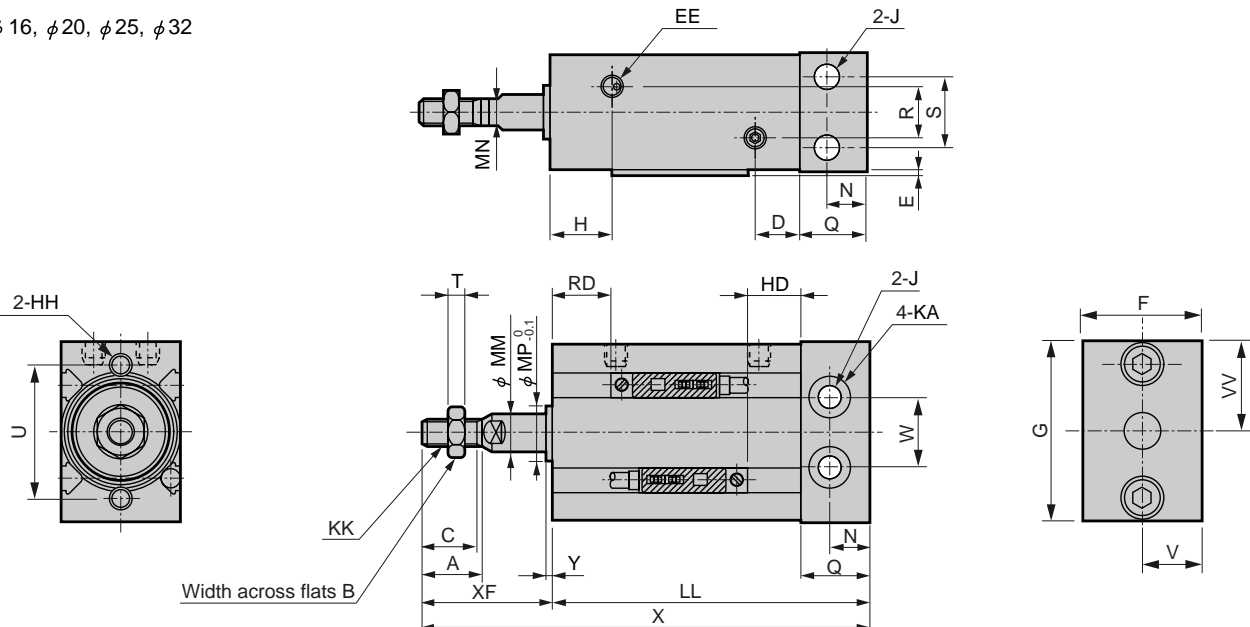


● Single acting retract type/with switch, head end mounting type SMD2-Y(L)-DB

φ 6, φ 10



φ 16, φ 20, φ 25, φ 32



Symbol Bore size (mm)	A	B	C	EE	F	G	H	HH	J	KA	KK	MM	MN	MP	N	Q	R	S	T	U	V	VV	W	XF		
																								5st	10st	15st
φ 6	-	5.5	7	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	5	7	11	-	7	1.8	17	6.7	11.2	10	19	24	29
φ 10	-	7	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	6	7	11	-	9	2.4	18	7.7	12.2	11	22	27	32
φ 16	12.5	8	11	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	8	7	15	5	12	3.2	24	10.2	16.2	14	21	26	31
φ 20	13.5	10	12	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	12	9	15	12	16	3.6	30	13.2	20.2	16	24	29	34
φ 25	17.5	13	15.5	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 9.5	M8	10	8	14	10	15	13	20	5	38	16.2	25.2	20	28	33	38
φ 32	21	17	19.5	Rc1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	16	11	20	17	24	6	48	20.2	31.2	24	32	37	42

Symbol Bore size (mm)	Y	LL						X						With switch								
		5st		10st		15st		5st		10st		15st		E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
		W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW		W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW
φ 6	1	48	48	53	53	58	58	67	67	77	77	87	87	1.0	6.5	5.0	7.5	6.0	6.5	5.0	7.5	6.0
φ 10	1	51	51	56	56	61	61	73	73	83	83	93	93	1.0	8.5	5.5	9.5	7.0	8.5	5.5	9.5	7.0
φ 16	1	50	60	55	65	60	70	71	81	81	91	91	101	0.5	10.0	10.0	11.0	11.0	10.0	10.0	11.0	11.0
φ 20	1.5	56	60	61	71	66	76	80	90	90	100	100	110	0.5	13.5	12.5	14.5	13.5	13.5	12.5	14.5	13.5
φ 25	2	60	70	65	75	70	80	88	98	98	108	108	118	0.5	16.5	12.5	17.5	13.5	16.5	12.5	17.5	13.5
φ 32	2	72	82	77	87	82	92	104	114	114	124	124	134	0.5	17.0	19.0	18.5	20.0	17.0	19.0	18.5	20.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.  
 Note 2: Negative dimension shows dimensions of projecting section of switch from main body.  
 Note 3: For 5 mm stroke, use K\*V switch because K\*H switch cannot be installed.

Note 4: Refer to page 1038 for HD/RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

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

Compact cylinder  
 Space saving structure



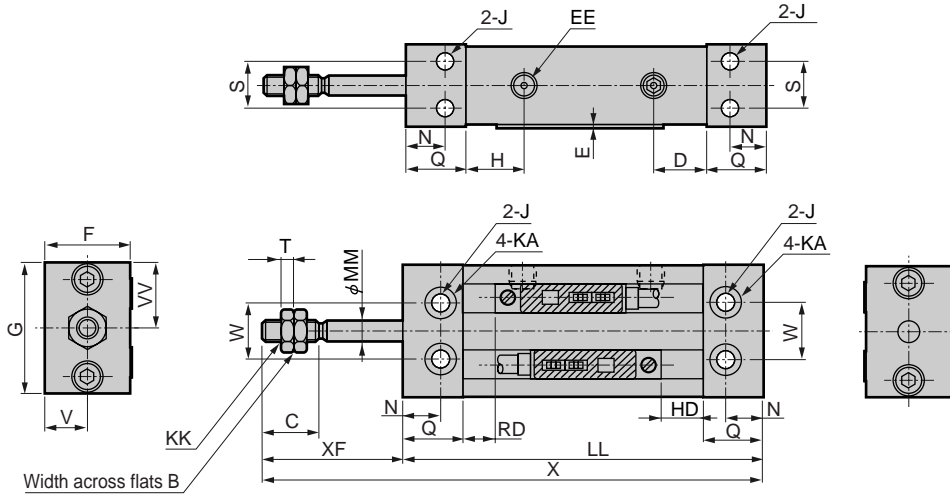
# SMD2-Y Series

## Dimensions

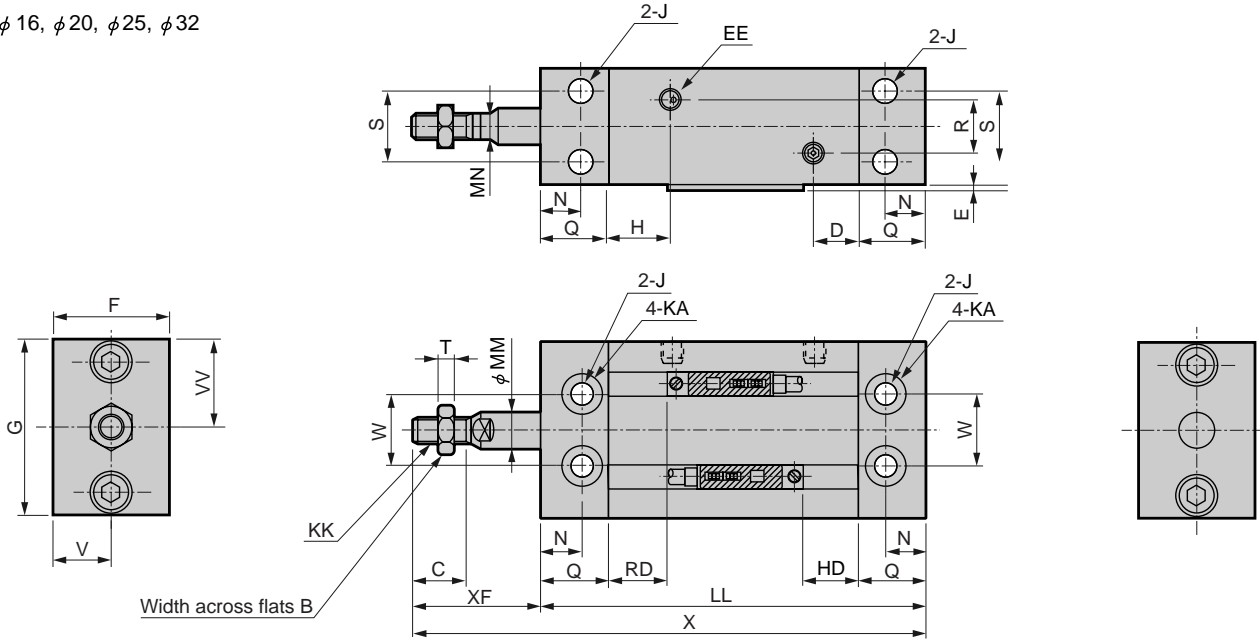


● Single acting retract type with switch, high rigid mounting type SMD2-Y(L)-DC

φ 6, φ 10



φ 16, φ 20, φ 25, φ 32



Symbol Bore size (mm)	A	B	C	EE	F	G	H	HH	J	KA	KK	MM	MN	N	Q	R	S	T	U	V	VV	W	XF		
																							5st	10st	15st
φ 6	-	5.5	7	M5	13.4	22.4	11	M2.5 depth 5	3.4 (penetrating)	5.9 spot face depth 5.3	M3	3	-	7	11	-	7	1.8	17	6.7	11.2	10	18	23	28
φ 10	-	7	10	M5	15.4	24.4	11	M3 depth 5	3.4 (penetrating)	5.9 spot face depth 5.5	M4	4	-	7	11	-	9	2.4	18	7.7	12.2	11	21	26	31
φ 16	12.5	8	11	M5	20.4	32.4	10	M4 depth 6	4.5 (penetrating)	7.5 spot face depth 7	M5	6	5	7	15	5	12	3.2	24	10.2	16.2	14	21	26	31
φ 20	13.5	10	12	M5	26.4	40.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M6	8	6	9	15	12	16	3.6	30	13.2	20.2	16	24	29	34
φ 25	17.5	13	15.5	M5	32.4	50.4	14	M5 depth 8	5.5 (penetrating)	9 spot face depth 8.5	M8	10	8	10	15	13	20	5	38	16.2	25.2	20	28	33	38
φ 32	21	17	19.5	Rc1/8	40.4	62.4	21	M6 depth 9	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	12	10	11	20	17	24	6	48	20.2	31.2	24	32	37	42

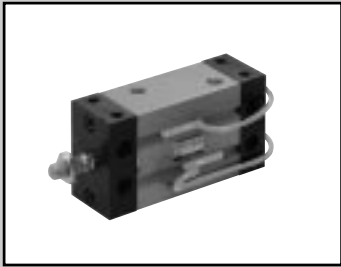
Symbol Bore size (mm)	LL						X						With switch								
	5st		10st		15st		5st		10st		15st		E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW		W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW	W/SW
φ 6	59	59	64	64	69	69	77	77	87	87	97	97	1.0	6.5	5.0	7.5	6.0	6.5	5.0	7.5	6.0
φ 10	62	62	67	67	72	72	83	83	93	93	103	103	1.0	8.5	5.5	9.5	7.0	8.5	5.5	9.5	7.0
φ 16	65	75	70	80	75	85	86	96	96	106	106	116	0.5	10.0	10.0	11.0	11.0	10.0	10.0	11.0	11.0
φ 20	71	81	76	86	81	91	95	105	105	115	115	125	0.5	13.5	12.5	14.5	13.5	13.5	12.5	14.5	13.5
φ 25	75	85	80	90	85	95	103	113	113	123	123	133	0.5	16.5	12.5	17.5	13.5	16.5	12.5	17.5	13.5
φ 32	92	102	97	107	102	112	124	134	134	144	144	154	0.5	17.0	19.0	18.5	20.0	17.0	19.0	18.5	20.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

Note 2: Negative dimension indicates dimensions of projecting section of switch from main body.

Note 3: For 5 mm stroke cylinder, use K\*V switch because K\*H switch cannot be installed.

Note 4: Refer to page 1038 for HD/RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.



Compact cylinder, fine speed type

# SMD2-F Series

● Bore size:  $\phi 6$ ,  $\phi 10$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$

JIS symbol SMD2



Double acting



## Specifications

Descriptions	SMD2-F/SMD2-LF (with switch)					
Bore size mm	$\phi 6$	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Actuation	Double acting					
Working fluid	Compressed air					
Max. working pressure MPa	0.70					
Min. working pressure MPa	0.15					0.10
Withstanding pressure MPa	1.05					
Ambient temperature °C	5 to 60					
Port size	M5					Rc 1/8
Stroke tolerance mm	+1.5 0					
Working piston speed mm/s	1 to 200					
Cushion	Rubber cushioned					
Lubrication	Must be oil free					
Allowable energy absorption J	0.005	0.036	0.1	0.1	0.19	0.5

## Stroke length

Model no.	Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
SMD2-F	$\phi 6, \phi 10, \phi 16$	5, 10, 15, 20, 25, 30	60	1
SMD2-LF	$\phi 20, \phi 25, \phi 32$	5, 10, 15, 20, 25, 30, 40, 50	100	

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

## Min. stroke length with switch

Model	Bore size	1 color indicator type		2 color indicator type		With preventive maintenance output	
		K*H	K*V	K*YH	K*YV	K*Y*H	K*Y*V
SMD2-LF-DA	$\phi 6$	5		5		1	
	$\phi 10$						
	$\phi 16$						
	$\phi 20$						
	$\phi 25$						
	$\phi 32$						
SMD2-LF-DB/DC	$\phi 6$	15	5	15	10	10	
	$\phi 10$	10		15	10	10	
	$\phi 16$	10		10	10	10	
	$\phi 20$	10		10	5	5	
	$\phi 25$	5		5	5	5	
	$\phi 32$	5		5	5	5	

## Clean room specifications

(Catalog No. CB-033SA)

● Dust generation preventing structure for use in clean room

SMD2 ..... P7\*

### Switch specifications

- 1 color/2 color indicator

Descriptions	Proximity 2-wire		Proximity 3-wire			Reed 2-wire			
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V	
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection	
Output method	-		NPN output	PNP output	NPN output	-			
Power voltage	-		10 to 28 VDC			-			
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC /24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less	20mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-	
Leakage current	1mA or less		10 $\mu$ A or less			0mA			

Note 1: Max load current above: 20 mA at 25 °C . The current will be lower than 20 mA if ambient temperature around switch is higher than 25°C . (5 to 10mA at 60°C )

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V	
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay	
Output method	NPN output							
Light	Installation position adjustment section	Red/green LED (ON lighting)						
	Preventive maintenance output	-			Yellow LED (ON lighting)			
Output	Power voltage	-	10 to 28 VDC		-	10 to 28 VDC		
	Load voltage	10 to 30 VDC	30 VDC or less		10 to 30 VDC	30 VDC or less		
	Load current	5 to 20mA	50mA or less		5 to 20mA	50mA or less		
	Leakage current	1mA or less	10 $\mu$ A or less		1.2mA or less	10 $\mu$ A or less		
Preventive maintenance output	Load voltage	30 VDC or less						
	Load current	20mA or less	50mA or less		5 to 20mA or less		50mA or less	
	Leakage current	10 $\mu$ A or less						

### Weight

It is the same as the double acting/single rod type SMD2 series. Refer to page 1007.

### Dimensions

It is the same as the double acting/single rod type SMD2 series. Refer to pages 1010 to 1012.

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

Compact cylinder  
Space saving structure

# SMD2-F Series

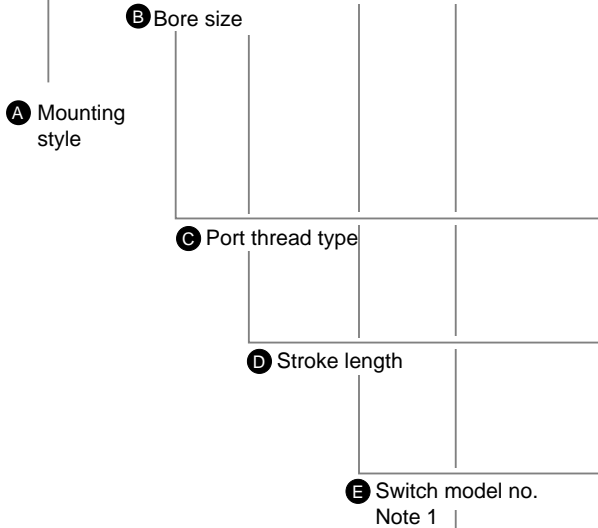
## How to order

Without switch

**SMD2-F** - **DA** - **6** - **15**

With switch

**SMD2-LF** - **DA** - **6** - **15** - **K2H** - **R**



## Note on model no. selection

Note 1: For mounting style "DB" or "DC", if "X" indicated on "Switch selection table", K\* H type (axial lead wire) cannot be installed. Please use K\*V type (radial lead wire).

Switch selection table

Bore size	DB (head end mounting type)		DC (high rigid mounting type)	
	5 mm stroke	10 mm stroke	5 mm stroke	10 mm stroke
φ6	X	X	X	X
φ10	X		X	
φ16	X		X	
φ20	X		X	
φ25				
φ32				

Note 2: Refer to page 1026 for min. stroke length with switch.

<Example of model number>

**SMD2-LF-DA-6-15-K0H-R**

Model: Compact cylinder fine speed type

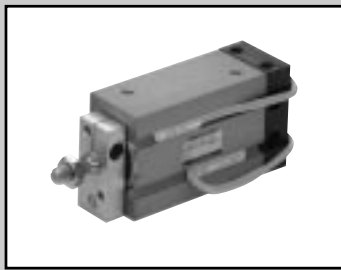
- A** Mounting style : Rod end mounting type
- B** Bore size : φ 6mm
- C** Port thread type : Rc thread
- D** Stroke length : 15mm
- E** Switch model no. : Reed switch K0H, lead wire length 1m
- F** Switch quantity : 1 on rod end

## How to order switch

**SW** - **K2H**

Switch model no.  
(Item **E** above)

Symbol	Descriptions			
<b>A Mounting style</b>				
<b>DA</b>	Rod end mounting type			
<b>DB</b>	Head end mounting type			
<b>DC</b>	High rigid mounting type			
<b>B Bore size (mm)</b>				
<b>6</b>	φ 6			
<b>10</b>	φ 10			
<b>16</b>	φ 16			
<b>20</b>	φ 20			
<b>25</b>	φ 25			
<b>32</b>	φ 32			
<b>C Port thread type</b>				
<b>Blank</b>	Rc thread			
<b>NN</b>	NPT thread (only φ 32) (custom order)			
<b>GN</b>	G thread (only φ 32) (custom order)			
<b>D Stroke length (mm)</b>				
<b>Bore size</b>	<b>Stroke length Note 2</b>	<b>Custom stroke length</b>		
φ6 to φ16	<b>1 to 60</b>	<b>1 mm increment</b>		
φ20 to φ32	<b>1 to 100</b>			
<b>E Switch model no.</b>				
<b>Axial lead wire</b>	<b>Radial lead wire</b>	<b>Contact</b>	<b>Indicator</b>	<b>Lead wire</b>
<b>K0H*</b>	<b>K0V*</b>	Reed	1 color indicator type	2-wire
<b>K5H*</b>	<b>K5V*</b>		Without indicator light	
<b>K2H*</b>	<b>K2V*</b>	Proximity	1 color indicator type	2-wire
<b>K3H*</b>	<b>K3V*</b>		1 color indicator type (custom order)	3-wire
<b>K3PH*</b>	<b>K3PV*</b>			
<b>K2YH*</b>	<b>K2YV*</b>	Proximity	2 color indicator type	2-wire
<b>K3YH*</b>	<b>K3YV*</b>		2 color indicator type (W/o indicator light for preventive maintenance output)	3-wire
<b>K2YFH*</b>	<b>K2YFV*</b>		2 color indicator type (W/ indicator light for preventive maintenance output (1 color))	3-wire
<b>K3YFH*</b>	<b>K3YFV*</b>			4-wire
<b>K2YMH*</b>	<b>K2YMV*</b>			3-wire
<b>K3YMH*</b>	<b>K3YMV*</b>			4-wire
<b>*Lead wire length</b>				
<b>Blank</b>	1m (standard)			
<b>3</b>	3m (option)			
<b>5</b>	5m (option)			
<b>F Switch quantity</b>				
<b>R</b>	1 on rod end			
<b>H</b>	1 on head end			
<b>D</b>	Two			

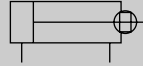


Compact cylinder, double acting non-rotating type

# SMD2-M Series

● Bore size:  $\phi 6$ ,  $\phi 10$ ,  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 32$

JIS symbol SMD2-M



Double acting non-rotating type



## Specifications

Descriptions	SMD2-M SMD2-ML (with switch)					
	$\phi 6$	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Bore size mm	$\phi 6$	$\phi 10$	$\phi 16$	$\phi 20$	$\phi 25$	$\phi 32$
Actuation	Double acting					
Working fluid	Compressed air					
Max. working pressure MPa	0.7					
Min. working pressure MPa	0.15	0.1				
Withstanding pressure MPa	1.05					
Ambient temperature $^{\circ}\text{C}$	-10 to 60 (no freezing)					
Port size	M5					Rc1/8
Stroke tolerance mm	$\begin{matrix} +1.5 \\ 0 \end{matrix}$					
Working piston speed mm/s	50 to 500					
Cushion	Rubber cushioned					
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISO VG32.)					
Revolvable angle tolerance Note	$\pm 0.8^{\circ}$			$\pm 0.5^{\circ}$		
Allowable torque N·m	0.008	0.025	0.088	0.17	0.33	0.67
Allowable energy absorption J	0.005	0.036	0.1	0.1	0.19	0.5

Note: Value for stroke 0 (excluding piston rod deflection)

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 6$	5, 10, 15, 20, 25, 30	30	1
$\phi 10$			
$\phi 16$			
$\phi 20$	5, 10, 15, 20, 25, 30, 40, 50	50	
$\phi 25$			
$\phi 32$			

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

## Min. stroke length with switch

Model	Bore size	1 color indicator type		2 color indicator type		With preventive maintenance output	
		K*H	K*V	K*YH	K*YV	K*Y*H	K*Y*V
SMD2-ML	$\phi 6$	15	5	15	10	10	
	$\phi 10$	10		15	10	10	
	$\phi 16$	10		10	10	10	
	$\phi 20$	10		10	5	5	
	$\phi 25$	5		5	5	5	
	$\phi 32$	5		5	5	5	

### Switch specifications

- 1 color/2 color indicator

Descriptions	Proximity 2-wire		Proximity 3-wire			Reed 2-wire				
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Custom order)	K3YH/K3YV	K0H/K0V		K5H/K5V		
Applications	Programmable controller		Programmable controller, relay			Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection		
Output method	-		NPN output	PNP output	NPN output	-				
Power voltage	-		10 to 28 VDC			-				
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC /24 VDC	110 VAC	5/12/24 VDC	110 VAC	
Load current	5 to 20mA (Note 1)		50mA or less			5 to 50mA	7 to 20mA	50mA or less	20mA or less	
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-		
Leakage current	1mA or less		10 μA or less			0mA				

Note 1: Max. load current above: 20 mA at 25 °C. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 °C. (5 to 10mA at 60 °C)

- With preventive maintenance output

Descriptions	Proximity 3-wire		Proximity 4-wire		Proximity 3-wire		Proximity 4-wire	
	K2YFH/V		K3YFH/V		K2YMH/V		K3YMH/V	
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay	
Output method	NPN output							
Light	Red/green LED (ON lighting)							
	Preventive maintenance output		-		Yellow LED (ON lighting)			
Output	Power voltage	-	10 to 28 VDC		-		10 to 28 VDC	
	Load voltage	10 to 30 VDC	30 VDC or less		10 to 30 VDC		30 VDC or less	
	Load current	5 to 20mA	50mA or less		5 to 20mA		50mA or less	
	Leakage current	1mA or less	10 μA or less		1.2mA or less		10 μA or less	
Preventive maintenance output	Load voltage	30 VDC or less						
	Load current	20mA or less	50mA or less		5 to 20mA or less		50mA or less	
	Leakage current	10 μA or less						

### Cylinder weight

Unit (g)

Model no. Bore size (mm)	Product weight when stroke length S = 0mm		Additional weight per S = 5mm
	SMD2-M double acting	SMD2-ML double acting/with switch	
φ 6	30	30	3
φ 10	43	43	4
φ 16	79	95	7
φ 20	146	175	12
φ 25	251	296	18
φ 32	486	556	26

(Example) Product weight

- SMD2-ML-16-10-K2-D
- Product weight when stroke length = 0mm ... 95g
  - Additional weight when S=10mm ... 7g x 10/5 = 14g
  - Weigh of two cylinder switches ... 18g x 2 = 36g
  - Product weight ... 95g + 14g + 36g = 145g

### Discrete cylinder switch weight

Unit (g)

Name	Model no.	Lead wire length		
		1m	3m	5m
Cylinder switch	K0	18	52	86
	K2	18	52	86
	K3	18	52	86
	K5	18	52	86

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

Compact cylinder  
Space saving structure

# SMD2-M Series

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

How to order  
Without switch

**SMD2-M** - 6 - 15

With switch

**SMD2-ML** - 6 - 15 - K2H - R

**A** Bore size

**B** Port thread type

**C** Stroke length

**D** Switch model no.  
Note 1

**E** Switch quantity

## ⚠ Note on model no. selection

Note 1: For the item indicated by "X" on the switch selection guide, K\*H type (axial lead wire) switch cannot be installed. Use K\*V type (radial lead wire) switch.

Switch selection table

Bore size	5 mm stroke	10 mm stroke
φ 6	X	X
φ 10	X	
φ 16	X	
φ 20	X	
φ 25		
φ 32		

Note 2: Refer to page 1030 for min. stroke length with switch.

Note 3: Copper and PTFE free as standard.

Symbol	Descriptions			
<b>A Bore size (mm)</b>				
6	φ 6			
10	φ 10			
16	φ 16			
20	φ 20			
25	φ 25			
32	φ 32			
<b>B Port thread type</b>				
Blank	Rc thread			
NN	NPT thread (only φ 32) (custom order)			
GN	G thread (only φ 32) (custom order)			
<b>C Stroke length (mm)</b>				
Bore size	Stroke length Note 2	Custom stroke length		
φ 6 to φ 16	1 to 30	1 mm increment		
φ 20 to φ 32	1 to 50			
<b>D Switch model no.</b>				
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire
K0H*	K0V*	Reed	1 color indicator type	2-wire
K5H*	K5V*		Without indicator light	
K2H*	K2V*	Proximity	1 color indicator type	2-wire
K3H*	K3V*		indicator type	2-wire
K3PH*	K3PV*	Proximity	1 color indicator type (custom order)	3-wire
K2YH*	K2YV*		2 color indicator type	2-wire
K3YH*	K3YV*		indicator type	3-wire
K2YFH*	K2YFV*		2 color indicator type (W/o indicator light for preventive maintenance output)	3-wire
K3YFH*	K3YFV*		indicator type	4-wire
K2YMH*	K2YMV*		2 color indicator type (W/ indicator light for preventive maintenance output (1 color))	3-wire
K3YMH*	K3YMV*		indicator type	4-wire
<b>*Lead wire length</b>				
Blank	1m (standard)			
3	3m (option)			
5	5m (option)			
<b>E Switch quantity</b>				
R	1 on rod end			
H	1 on head end			
D	Two			

<Example of model number>

**SMD2-ML-6-15-K0H-R**

Model: Compact cylinder

**A** Bore size : φ 6mm

**B** Port thread type : Rc thread

**C** Stroke length : 15mm

**D** Switch model no. : Reed switch K0H, lead wire length 1m

**E** Switch quantity : 1 on rod end

How to order switch

**SW** - **K2H**

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

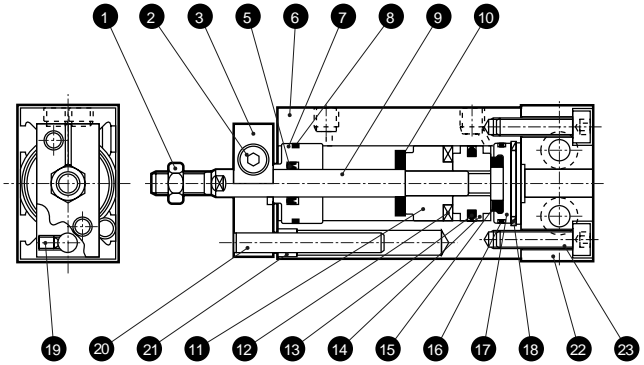
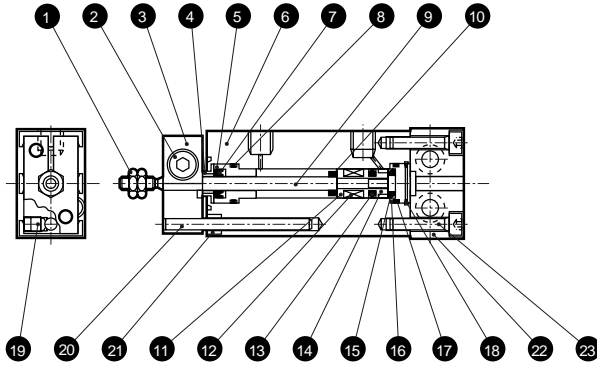


### Internal structure and parts list

#### ● Double acting non-rotating type (with switch) SMD2-ML

φ 6, φ 10

φ 16, φ 20, φ 25, φ 32

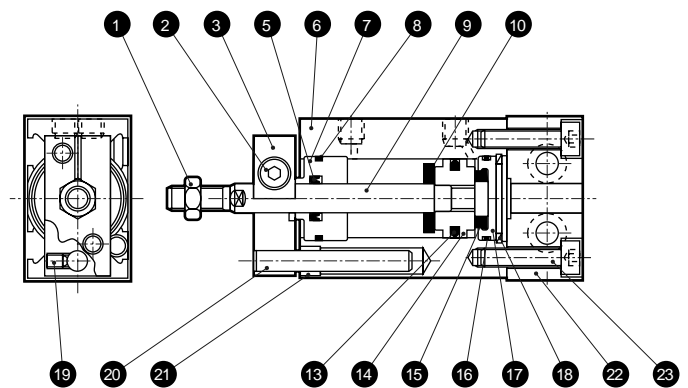
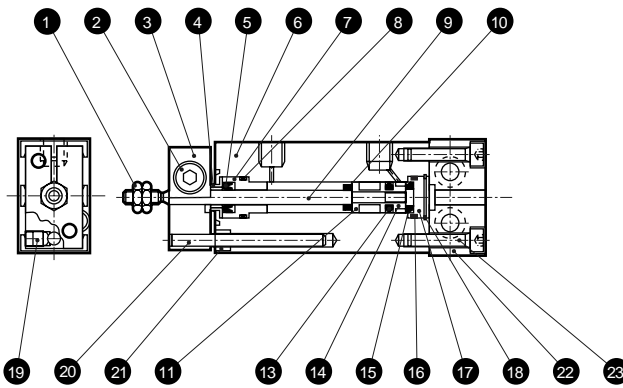


Note: Do not move the position of baffle plate (3) when using.  
Moving the position results in insufficient performance of non-rotation function.

#### ● Double acting non-rotating type SMD2-M

φ 6, φ 10

φ 6, φ 20, φ 25, φ 32



Note: Do not move the position of baffle plate (3) when using.  
Moving the position results in insufficient performance of non-rotation function.

No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Hexagon nut	Steel	Nickeling	12	Magnet	Plastic	
2	Hexagon socket head cap bolt	Alloy steel	Blackening	13	Piston packing seal	Nitrile rubber	
3	Non-rotating plate	Aluminum alloy	Chromate	14	Piston	Aluminum alloy	
4	Cap	Aluminum alloy		15	Cushion rubber (H)	Urethane rubber	
5	Rod packing seal	Nitrile rubber		16	Gasket	Nitrile rubber	
6	Cylinder body	Aluminum alloy	Hard alumite	17	Base plate	Aluminum alloy	Chromate
7	Rod bushing	Aluminum alloy	Alumite	18	C type snap ring	Steel	Phosphoric acid zinc
8	Gasket	Nitrile rubber		19	Hexagon socket set screw	Alloy steel	Blackening
9	Piston rod	Stainless steel	φ 20, φ 25, φ 32 industrial chrome plating	20	Guide bar	Stainless steel	φ 32 industrial chrome plating
10	Cushion rubber (R)	Urethane rubber		21	Non-rotating bush	Placental	
11	Spacer	Aluminum alloy		22	Mount	Aluminum alloy	Black alumite
				23	Hexagon socket head cap bolt	Alloy steel	Blackening

### Repair parts list

Bore size (mm)	Kit No.	Repair parts number	Bore size (mm)	Kit No.	Repair parts number
φ6	SMD2-6K	5 10 13 15 16	φ20	SMD2-20K	5 10 13 15 16
φ10	SMD2-10K		φ25	SMD2-25K	
φ16	SMD2-16K		φ32	SMD2-32K	

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

Compact cylinder  
Space saving structure

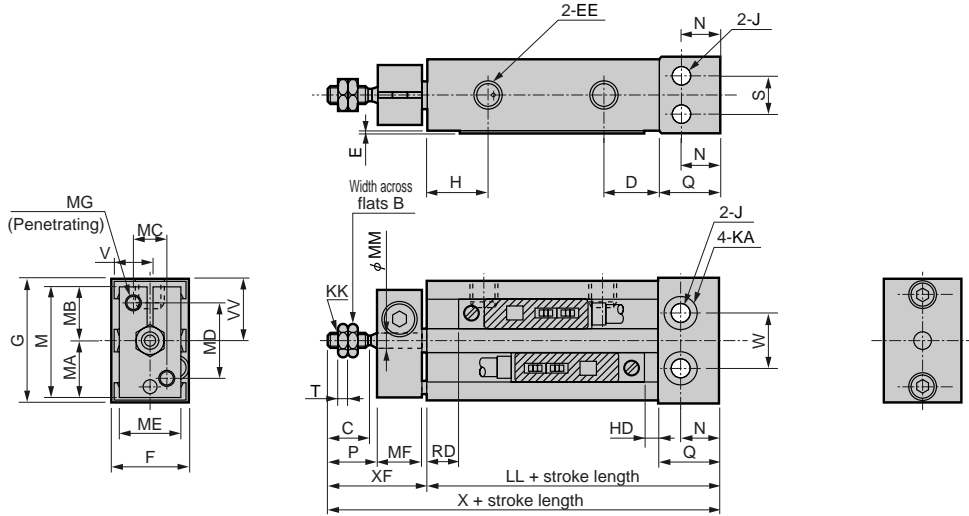
# SMD2-M Series

## Dimensions



### ● Double acting non-rotating type (with switch) SMD2-M (L)

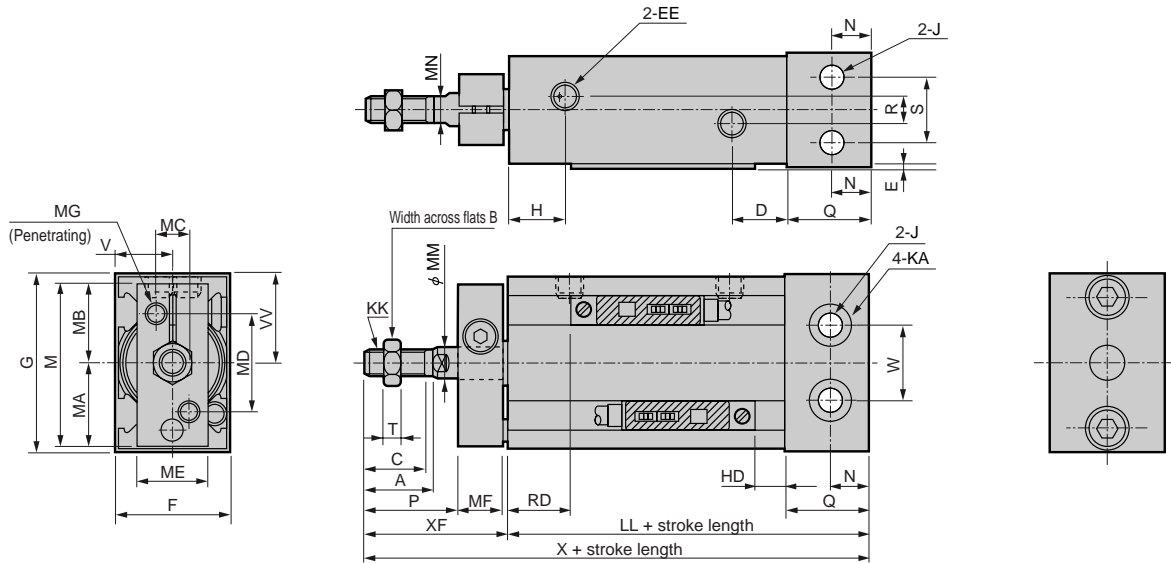
φ 6, φ 10



- For 6 mm bore size and 5 and 10 mm stroke, K\*H switch cannot be installed. Use K\*V switch.
- For 10 mm bore size and 5 mm stroke, K\*H switch cannot be installed. Use K\*V switch.

### ● Double acting non-rotating type (with switch) SMD2-M (L)

φ 6, φ 20, φ 25, φ 32



- For 16, 20 mm bore size and 5 mm stroke, K\*H switch cannot be installed. Use K\*V switch.

Symbol	A	B	C	D	EE	F	G	H	J	KA	KK	M	MA	MB	MC	MD	ME	MF	MG	MM	MN	N	P	Q	R	S	T	V	VV	W	XF
φ 6	-	5.5	7	10	M5	13.4	22.4	11	3.4 (penetrating)	5.9 spot face depth 5.3	M3	20	10.5	9.5	6	14	11	8	M3	3	-	7	10	11	-	7	1.8	6.7	11.2	10	19
φ 10	-	7	10	10	M5	15.4	24.4	11	3.4 (penetrating)	5.9 spot face depth 5.5	M4	22	11.5	10.5	7	15	12	8	M3	4	-	7	13	11	-	9	2.4	7.7	12.2	11	22
φ 16	12.5	8	11	10	M5	20.4	32.4	10	4.5 (penetrating)	7.5 spot face depth 7	M5	30	15.5	14.5	6	18	13	8	M4	6	5	7	17	15	5	12	3.2	10.2	16.2	14	26
φ 20	13.5	10	12	10	M5	26.4	40.4	14	5.5 (penetrating)	9 spot face depth 8.5	M6	33	19.5	13.5	8	20	15	8	M4	8	6	9	20	15	12	16	3.6	13.2	20.2	16	29
φ 25	17.5	13	15.5	10	M5	32.4	50.4	14	5.5 (penetrating)	9 spot face depth 9.5	M8	43.5	24.5	19	10	28	20	10	M5	10	8	10	22	15	13	20	5	16.2	25.2	20	33
φ 32	21	17	19.5	11	Rc1/8	40.4	62.4	21	6.6 (penetrating)	10.5 spot face depth 12	M10 x 1.25	51.5	30.5	21	12	32	25	12	M5	12	10	11	29	20	17	24	6	20.2	31.2	24	42

Symbol	LL		X		With switch								
	Without SW	With SW	Without SW	With SW	E	K0H/K5H		K2H/K3H		K0V/K5V		K2V/K3V	
Bore size (mm)						HD	RD	HD	RD	HD	RD	HD	RD
φ 6	38	38	57	57	1.0	1.5	5.0	2.5	6.0	1.5	5.0	2.5	6.0
φ 10	41	41	63	63	1.0	3.5	5.5	4.5	7.0	3.5	5.5	4.5	7.0
φ 16	40	50	66	76	0.5	5.0	10.0	6.0	11.0	5.0	10.0	6.0	11.0
φ 20	46	56	75	85	0.5	8.5	12.5	9.5	13.5	8.5	12.5	9.5	13.5
φ 25	50	60	83	93	0.5	11.5	12.5	12.5	13.5	11.5	12.5	12.5	13.5
φ 32	62	72	104	114	0.5	12.0	19.0	13.5	20.0	12.0	19.0	13.5	20.0

Note 1: HD and RD dimensions for 5, 10 stroke will differ from these due to manufacturing.

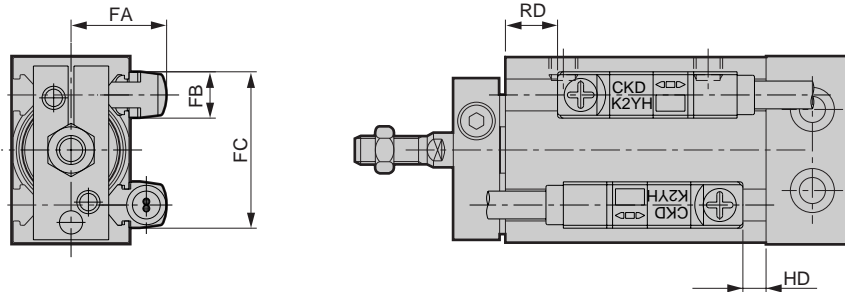
Note 2: For 5 and 10 mm stroke, use K\*V switch because K\*H switch cannot be installed.

Note 3: For 5 mm stroke, use K\*V switch because K\*H switch cannot be installed.

Note 4: Refer to page 1035 for HD/RD and dimensions of projecting section of 2 color indicator type preventive maintenance output switch.

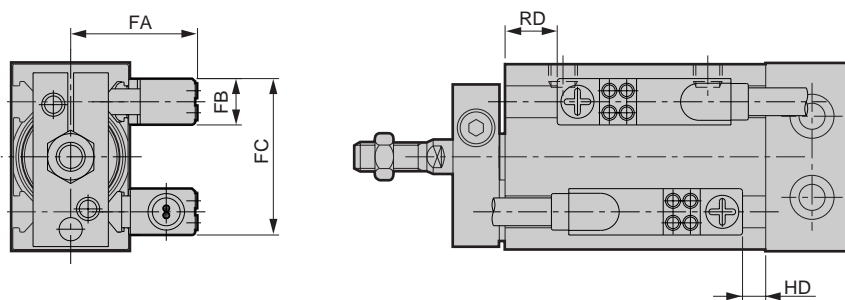
### Dimensions (2 color indicator type, preventive maintenance output switch)

- SMD2-ML (with switch: K2YH/V, K3YH/V)



Bore size (mm)	FA	FB	FC	RD	HD
φ 6	13.5	8.0	18.0	4.0	0.5
φ 10	14.5	8.0	21.0	5.0	2.5
φ 16	16.5	8.0	27.0	9.0	4.0
φ 20	19.5	8.0	29.0	12.0	7.0
φ 25	22.5	8.0	32.0	12.0	11.0
φ 32	26.5	8.0	34.0	18.5	11.5

- SMD2-ML (with switch: K2YFH/V, K3YFH/V, K2YMH/V, K3YMH/V)



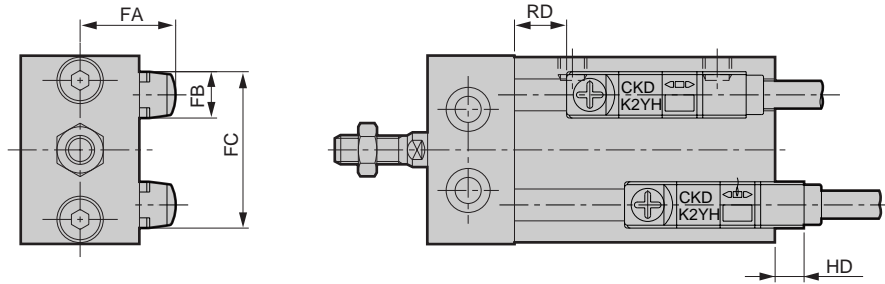
Bore size (mm)	FA	FB	FC	RD	HD
φ 6	19.0	8.0	18.0	4.0	0.5
φ 10	20.0	8.0	21.0	5.0	2.5
φ 16	22.0	8.0	27.0	9.0	4.0
φ 20	25.0	8.0	29.0	12.0	7.0
φ 25	28.0	8.0	32.0	12.0	11.0
φ 32	32.0	8.0	34.0	18.5	11.5

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

Compact cylinder  
Space saving structure

## SMD2 series common dimensions of types with switches (2 color indicator type, preventive maintenance output switch)

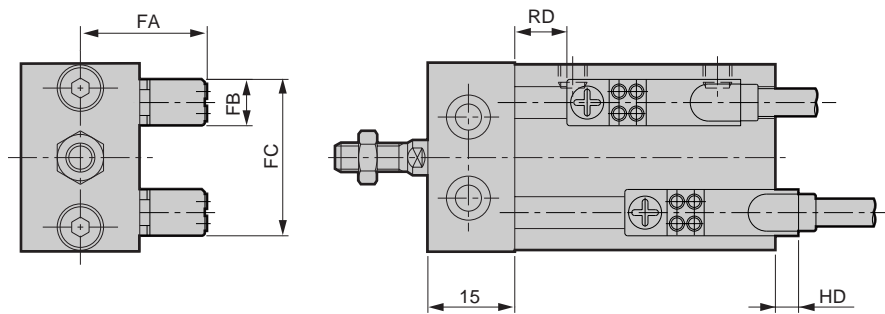
- SMD2-L-DA (with switch: K2YH/V, K3YH/V)
  - XL
  - YL



Bore size (mm)	FA	FB	FC	RD		HD	
				SMD2-L SMD2-YL	SMD2-XL	SMD2-L SMD2-XL	SMD2-YL
φ 6	13.5	8.0	18.0	4.0	9.0	8.5	3.5
φ 10	14.5	8.0	21.0	5.0	10.0	6.5	1.5
φ 16	16.5	8.0	27.0	9.0	14.0	5.0	0.0
φ 20	19.5	8.0	29.0	12.0	17.0	2.0	-3.0
φ 25	22.5	8.0	32.0	12.0	17.0	-2.0	-7.0
φ 32	26.5	8.0	34.0	18.5	23.5	-2.5	-7.5

Note: If the HD dimensions are negative, the lead-in dimensions from the cylinder end are indicated.

- SMD2-L-DA (with switch: K2YFH/V, K3YFH/V, K2YMH/V, K3YMH/V)
  - XL
  - YL



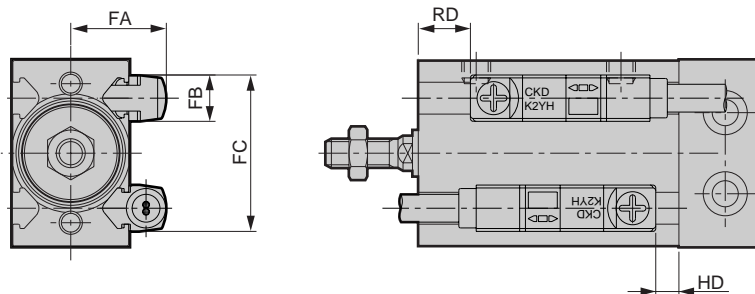
Bore size (mm)	FA	FB	FC	RD		HD	
				SMD2-L SMD2-YL	SMD2-XL	SMD2-L SMD2-XL	SMD2-YL
φ 6	19.0	8.0	18.0	4.0	9.0	7.5	2.5
φ 10	20.0	8.0	21.0	5.0	10.0	5.5	0.5
φ 16	22.0	8.0	27.0	9.0	14.0	4.0	-1.0
φ 20	25.0	8.0	29.0	12.0	17.0	1.0	-4.0
φ 25	28.0	8.0	32.0	12.0	17.0	-3.0	-8.0
φ 32	32.0	8.0	34.0	18.5	23.5	-3.5	-8.5

Note: If the HD dimensions are negative, the lead-in dimensions from the cylinder end are indicated.

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

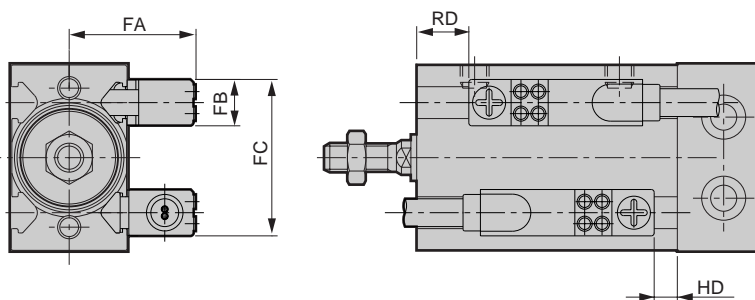
### SMD2 series common dimensions of types with switches (2 color indicator type, preventive maintenance output switch)

- SMD2-L-DB (with switch: K2YH/V, K3YH/V)
  - XL
  - YL



Bore size (mm)	FA	FB	FC	RD		HD	
				SMD2-L SMD2-YL	SMD2-XL	SMD2-L SMD2-XL	SMD2-YL
φ 6	13.5	8.0	18.0	4.0	9.0	0.5	5.5
φ 10	14.5	8.0	21.0	5.0	10.0	2.5	7.5
φ 16	16.5	8.0	27.0	9.0	14.0	4.0	9.0
φ 20	19.5	8.0	29.0	12.0	17.0	7.0	12.0
φ 25	22.5	8.0	32.0	12.0	17.0	11.0	16.0
φ 32	26.5	8.0	34.0	18.5	23.5	11.5	16.5

- SMD2-L-DB (with switch: K2YFH/V, K3YFH/V, K2YMH/V, K3YMH/V)
  - XL
  - YL



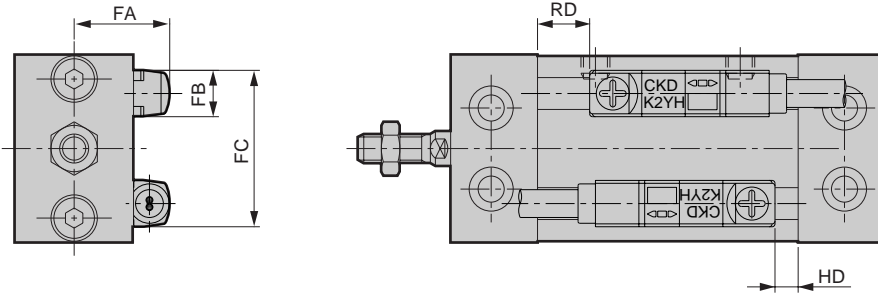
Bore size (mm)	FA	FB	FC	RD		HD	
				SMD2-L SMD2-YL	SMD2-XL	SMD2-L SMD2-XL	SMD2-YL
φ 6	19.0	8.0	18.0	4.0	9.0	0.5	5.5
φ 10	20.0	8.0	21.0	5.0	10.0	2.5	7.5
φ 16	22.0	8.0	27.0	9.0	14.0	4.0	9.0
φ 20	25.0	8.0	29.0	12.0	17.0	7.0	12.0
φ 25	28.0	8.0	32.0	12.0	17.0	11.0	16.0
φ 32	32.0	8.0	34.0	18.5	23.5	11.5	16.5

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

Compact cylinder  
Space saving structure

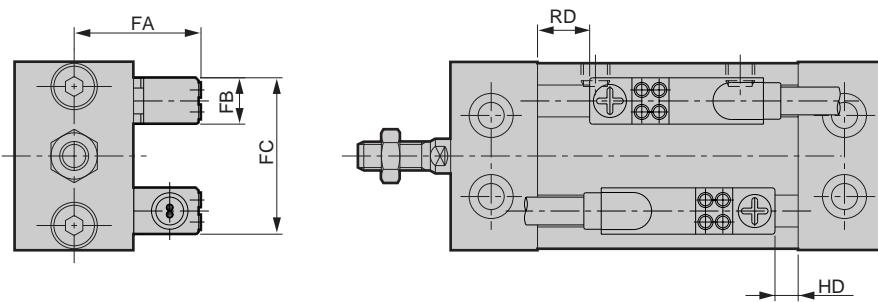
## SMD2 series common dimensions of types with switches (2 color indicator type, preventive maintenance output switch)

- SMD2-L-DC (with switch: K2YH/V, K3YH/V)
  - XL
  - YL



Bore size (mm)	FA	FB	FC	RD		HD	
				SMD2-L SMD2-YL	SMD2-XL	SMD2-L SMD2-XL	SMD2-YL
φ 6	13.5	8.0	18.0	4.0	9.0	0.5	5.5
φ 10	14.5	8.0	21.0	5.0	10.0	2.5	7.5
φ 16	16.5	8.0	27.0	9.0	14.0	4.0	9.0
φ 20	19.5	8.0	29.0	12.0	17.0	7.0	12.0
φ 25	22.5	8.0	32.0	12.0	17.0	11.0	16.0
φ 32	26.5	8.0	34.0	18.5	23.5	11.5	16.5

- SMD2-L-DC (with switch: K2YFH/V, K3YFH/V, K2YMH/V, K3YMH/V)
  - XL
  - YL



Bore size (mm)	FA	FB	FC	RD		HD	
				SMD2-L SMD2-YL	SMD2-XL	SMD2-L SMD2-XL	SMD2-YL
φ 6	19.0	8.0	18.0	4.0	9.0	0.5	5.5
φ 10	20.0	8.0	21.0	5.0	10.0	2.5	7.5
φ 16	22.0	8.0	27.0	9.0	14.0	4.0	9.0
φ 20	25.0	8.0	29.0	12.0	17.0	7.0	12.0
φ 25	28.0	8.0	32.0	12.0	17.0	11.0	16.0
φ 32	32.0	8.0	34.0	18.5	23.5	11.5	16.5

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