

Long service life cylinder

Environment-resistant cylinder

Linear Slide Hand

Low-profile long stroke hand

Wide-Parallel Hand

Chuck

Air Booster

Compatible with rechargeable batteries

Supports food mfg. processes

SCPD3

CMK2

SCM

SSD2

MDC2

MSD

MSDG-L

SMG

LCR

LCG

STM

STG

STR2

SCPD3

CMK2

SCM

SCG

SSD2

SMG

LCR

STG

STS

STL

LSH

LSHL

LSHM

LST

LSTM

HMC

CKW

ABP2

SCPD3

CMK2

SCM

SSD2

MSD

MSDG-L

SMG

STG

STM

LCR

LCG

STR2

LSH

LSHL

SCPD3

CMK2

SCM

SCG

SSD2

STG



Small compact cylinder Double acting/Single rod

Long service life cylinder

MSD-HP1 Series

● Bore size: $\varnothing 6/\varnothing 8$



Specifications

Item	MSD-HP1 MSD-L-HP1 (with switch)	
Bore size	mm	$\varnothing 6, \varnothing 8$
Actuation		Double acting
Working fluid		Compressed air
Max. working pressure	MPa	1.0
Min. working pressure	MPa	0.15
Proof pressure	MPa	1.6
Ambient temperature	°C	-10 to 60 (where, no freezing)
Port size		M3
Stroke tolerance	mm	+0.5
		0
Working piston speed	mm/s	50 to 500
Cushion		No
Lubrication		Not required
Allowable absorbed energy	J	This product cannot absorb the energy generated by an external load mounted on the cylinder. When using the product with no load, separately provide a shock absorber on the outside.

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke with two switches (mm)		Min. stroke with one switch (mm)	
			Reed switch	Proximity switch	Reed switch	Proximity switch
$\varnothing 6$	5/10/15 20/25/30	30	10	5 (10)	5	5
$\varnothing 8$						

*1: Products with stroke other than standard stroke are not available.
*2: For F2Y, F3Y or F3P, the min. stroke will be the dimensions in ().

For dimensions, refer to the MSD Series in "Pneumatic Cylinders I (CB-029SA)".

How to order

- Without switch(without magnet for switch)

MSD - 6 - 5 - R - HP1

- With switch(built-in magnet for switch)

MSD-L - 6 - 5 - F0H - R - R - HP1

A Model No.

B Bore size

C Stroke

D Switch model No.

*1

E Switch quantity

F Option

*2

⚠ Precautions for model No. selection

*1: For ø6 or ø8 with switch, use a non-magnetic (stainless steel, etc.) mounting bolt.

*2: For rear piping, body side mounting is possible. Note that 2 bolts are used for rod side mounting and head side mounting.

[Example of model No.]

MSD-L-6-5-F0H-R-R-HP1

- A** Model No. : Double acting/Single rod/with switch
- B** Bore size : ø6 mm
- C** Stroke : 5 mm
- D** Switch model No. : Reed F0H switch, lead wire 1 m
- E** Switch quantity : 1 on rod side
- F** Option : Rear piping

How to order switch

SW - F0H

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

Code		Description				
A Model No.						
MSD	Double acting/Single rod	Without switch				
MSD-L		With switch				
B Bore size (mm)						
6	ø6					
8	ø8					
C Stroke (mm)						
5	5					
10	10					
15	15					
20	20					
25	25					
30	30					
D Switch model No.						
Lead wire Straight	Lead wire L-shaped	Contact Point	Voltage AC DC	Indicator lamp	Lead wire	
F0H*	F0V*	Reed		●	1-color LED	
-	F2S*	Proximity		●		2-wire
F2H*	F2V*			●		3-wire
-	F3S*			●		
F3H*	F3V*			●	1-color LED (PNP output) (Made to order)	3-wire
F3PH*	F3PV*		●	2-color LED	2-wire	
F2YH*	F2YV*		●		2-wire	
F3YH*	F3YV*		●		3-wire	
* Lead wire length						
Blank	1 m (Standard)					
3	3 m (Options)					
E Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
F Option						
Blank	Front piping					
R	Rear piping					

SCPD3	Long service life cylinder
CMK2	
SCM	
SSD2	
MDC2	
MSD	
MSDG-L	Environment-resistant cylinder
SMG	
LCR	
LCG	
STM	
STG	
STR2	Linear Slide Hand
SCPD3	
CMK2	
SCM	
SCG	
SSD2	
SMG	Low-profile long stroke hand
LCR	
STG	
STS	
STL	
LSH	Wire Parallel Hand
LSHL	
LSHM	
LST	
LSTM	
HMC	Chuck Booster
CKW	
ABP2	
SCPD3	Compatible with rechargeable batteries
CMK2	
SCM	
SSD2	
MSD	
MSDG-L	
SMG	Supports food mfg. processes
STG	
STM	
LCR	
LCG	
STR2	
LSH	
LSHL	
SCPD3	
CMK2	
SCM	
SCG	
SSD2	
STG	

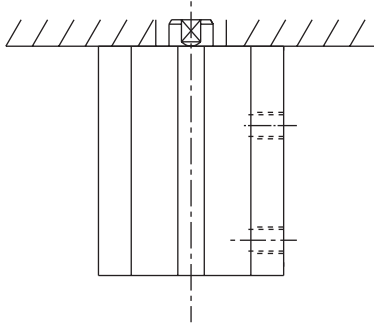
Switch selection table

Switches may not be installable depending on relations between cylinder installation and stroke.

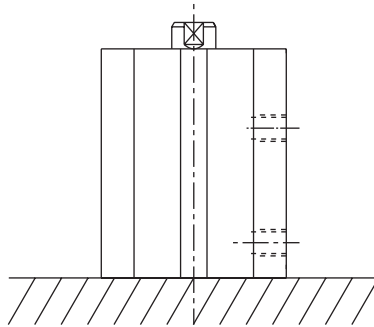
Refer to the table below to select a switch.

Switches cannot be used for side mounting in the following combinations.

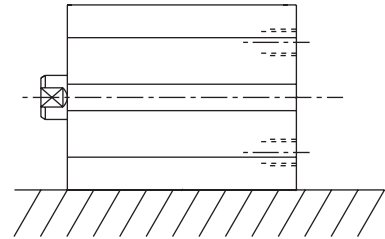
- Combinations in which F2YH/V, F3YH/V or F3PH/V is mounted at the switch mounting position H with stroke 5 mm
- Combinations in which F2YH, F3YH or F3PH is mounted at the switch mounting position H with stroke 10mm (For the min. stroke with switch, Page 16.)



For rod side installation



For head side mounting



For side mounting

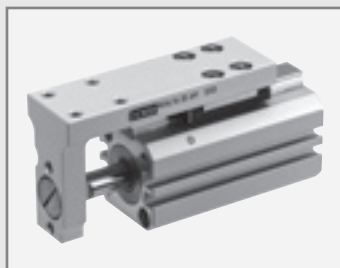
● For rod side installation

Tube Bore size (mm)	Stroke (mm)	Reed switch				Proximity switch									
		F0H		F0V		F2S/F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	○	○	○	○	○	○	○	x	○	○	○	x	○	x
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø8	5	○	○	○	○	○	○	○	x	○	○	○	x	○	x
	10	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● For head side mounting

Tube Bore size (mm)	Stroke (mm)	Reed switch				Proximity switch									
		F0H		F0V		F2S/F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	x	x	○	○	○	○	x	○	○	○	x	x	○	x
	10	○	x	○	○	○	○	x	○	○	○	x	○	○	○
	15	○	x	○	○	○	○	○	○	○	○	x	○	○	○
	20 to	○	x	○	○	○	○	○	○	○	○	○	○	○	○
ø8	5	x	x	○	○	○	○	x	○	○	○	x	x	○	x
	10	○	x	○	○	○	○	x	○	○	○	x	○	○	○
	15	○	x	○	○	○	○	○	○	○	○	x	○	○	○
	20 to	○	x	○	○	○	○	○	○	○	○	○	○	○	○

SCPDP3	Long service life cylinder	SCPDP3	Environment-resistant cylinder	Linear Slide Hand	Low-profile long stroke hand	Wide Parallel Hand	Chuck	Air Booster	Compatible with rechargeable batteries	Supports food mfg. processes
CMK2										
SCM										
SSD2										
MDC2										
MSD										
MSDG-L										
SMG										
LCR										
LCG										
STM										
STG										
STR2										
SCPDP3										
CMK2										
SCM										
SCG										
SSD2										
SMG										
LCR										
STG										
STS										
STL										
LSH										
LSHL										
LSHM										
LST										
LSTM										
HMC										
CKW										
ABP2										
SCPDP3										
CMK2										
SCM										
SSD2										
MSD										
MSDG-L										
SMG										
STG										
STM										
LCR										
LCG										
STR2										
LSH										
LSHL										
SCPDP3										
CMK2										
SCM										
SCG										
SSD2										
STG										



Small guided compact cylinder
Double acting/Guided/With switch

Long service life cylinder

MSDG-L-HP1 Series

● Bore size: ø6/ø8/ø12/ø16

JIS symbol



Specifications

Item		MSDG-L-HP1(With switch)			
Bore size mm		ø6	ø8	ø12	ø16
Actuation		Double acting			
Working fluid		Compressed air			
Max. working pressure MPa		1.0			
Min. working pressure MPa		0.2	0.15	0.1	
Proof pressure MPa		1.6			
Ambient temperature °C		5 to 60			
Port size	Front piping	M3		M5	
	Rear piping	M3		M3	
Stroke tolerance	mm	+2.0			
		0			
Working piston speed	mm/s	50 to 500			
Cushion		With rubber cushion			
Lubrication		Not required			
Allowable absorbed energy J		0.004	0.014	0.044	0.110

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke with two switches (mm)		Min. stroke with one switch (mm)	
			Reed switch	Proximity switch	Reed switch	Proximity switch
ø6	5/10/15 20/25/30	30	10	5	5	5
ø8						
ø12						
ø16						

Note: Products with stroke other than standard stroke are not available.

For dimensions, refer to the MSDG-L Series in "Pneumatic Cylinders I (CB-029SA)".

How to order

● With switch(built-in magnet for switch)

MSDG-L-6-30-F0H-D-R-HP1

Model No.

A Bore size

B Stroke

C Switch model No.

*1

*2

D Switch quantity

E Option

*3

⚠ Precautions for model No. selection

- *1: For ø6 or ø8 with switch, use a non-magnetic (stainless steel, etc.) mounting bolt.
- *2: When using a proximity switch with ø12 or ø16, use a non-magnetic (stainless steel, etc.) through bolt.
- *3: For rear piping, body side mounting is possible.

[Example of model No.]

MSDG-L-6-30-F0H-D-R-HP1

Model No.: Double acting/guided/with switch

- A** Bore size : ø6 mm
- B** Stroke : 30 mm
- C** Switch model No. : Reed F0H switch
- D** Switch quantity : 2 pcs. included
- E** Option : Rear piping

How to order switch

SW - F0H

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

Code		Description				
A Bore size (mm)						
6	ø6					
8	ø8					
12	ø12					
16	ø16					
B Stroke (mm)						
5	5					
10	10					
15	15					
20	20					
25	25					
30	30					
C Switch model No.						
Lead wire	Lead wire	Contact	Voltage		Indicator lamp	Lead wire
Straight	L-shaped	Point	AC	DC		
F0H*	F0V*	Reed		●	1-color LED	2-wire
-	F2S*	Proximity		●		
F2H*	F2V*			●		
-	F3S*			●		
F3H*	F3V*			●		
F3PH*	F3PV*			●	1-color LED (PNP output) (Made to order)	3-wire
F2YH*	F2YV*		●	2-color LED	2-wire	
F3YH*	F3YV*		●		3-wire	
* Lead wire length						
Blank	1 m (Standard)					
3	3 m (Options)					
D Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
E Option						
Blank	Front piping					
R	Rear piping					

SCPD3	Long service life cylinder
CMK2	
SCM	
SSD2	
MDC2	
MSD	
MSDG-L	Environment-resistant cylinder
SMG	
LCR	
LCG	
STM	
STG	
STR2	Linear Slide Hand
SCPD3	
CMK2	
SCM	
SCG	
SSD2	
SMG	Low-profile long stroke hand
LCR	
STG	
STS	
STL	
LSH	Wire Parallel Hand
LSHL	
LSHM	
LST	
LSTM	
HMC	Chuck
CKW	
ABP2	
SCPD3	Air Booster
CMK2	
SCM	
SSD2	
MSD	
MSDG-L	
SMG	Compatible with rechargeable batteries
STG	
STM	
LCR	
LCG	
STR2	
LSH	Supports food mfg. processes
LSHL	
SCPD3	
CMK2	
SCM	
SCG	
SSD2	
STG	

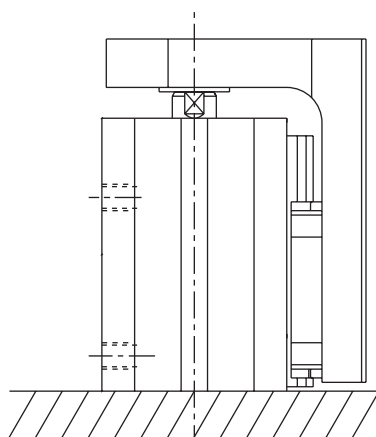
Switch selection table

Switches may not be installable depending on relations between cylinder installation and stroke.

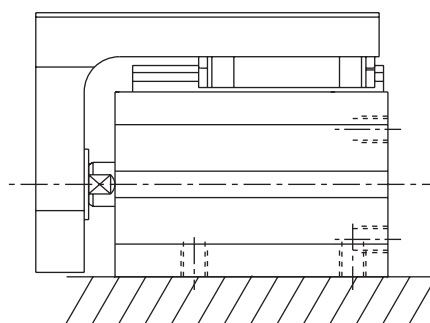
Refer to the table below to select a switch.

Switches cannot be used for side mounting in the following combinations.

- Combinations in which F2YH/V, F3YH/V or F3PH/V is mounted at the switch mounting position H with stroke 5 mm
- Combinations in which F2YH, F3YH or F3PH is mounted at the switch mounting position H with stroke 10mm
(For the min. stroke with switch, Page 20.)



For head side mounting



For side mounting

● For head side mounting

Tube Bore size (mm)	Stroke (mm)	Reed switch				Proximity switch									
		F0H		F0V		F2S/F3S		F2H/F3H		F2V/F3V		F2YH/F3YH/F3PH		F2YV/F3YV/F3PV	
		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position		Switch mounting position	
		R	H	R	H	R	H	R	H	R	H	R	H	R	H
ø6	5	x	○	○	○	○	○	x	○	○	○	x	x	○	○
	10	○	○	○	○	○	○	x	○	○	○	x	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø8	5	x	○	○	○	○	○	x	○	○	○	x	x	○	○
	10	○	○	○	○	○	○	x	○	○	○	x	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø12	5	x	○	○	○	○	○	x	○	○	○	x	○	○	○
	10	○	○	○	○	○	○	x	○	○	○	x	x	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○
ø16	5	x	○	○	○	○	○	x	○	○	○	x	○	○	○
	10	○	○	○	○	○	○	x	○	○	○	x	○	○	○
	15 to	○	○	○	○	○	○	○	○	○	○	○	○	○	○