

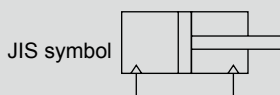
LCW  
LCR  
LCG  
LCX  
LCM  
**STM**  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCC2  
RCS  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HR  
LN  
Hand  
Chuk  
MecHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending



Guided cylinder, double acting/single rod

# STM-M/B Series

● Bore size:  $\phi 6$ ,  $\phi 10$



## Specifications

Descriptions		STM-M/B	
Bore size	mm	$\phi 6$	$\phi 10$
Actuation		Double acting	
Working fluid		Compressed air	
Max. working pressure	MPa	0.7 ( $\approx 100$ psi, 7 bar)	
Min. working pressure	MPa	0.15 ( $\approx 22$ psi, 1.5 bar)	
Proof pressure	MPa	1.05 ( $\approx 150$ psi, 10.5 bar)	
Ambient temperature	$^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ ) (no freezing)	
Port size		M3	
Stroke tolerance	mm	+1.5 0	
Working piston speed	mm/s	50 to 500	
Cushion		With rubber cushion	
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)	
Allowable absorbed energy	J	0.008	0.054

## Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length	Min. stroke with switch
$\phi 6$	5/10/15	15	5	5
$\phi 10$	5/10/15/20	20		

Note: Products other than standard stroke length are custom order products.

### Switch specifications

Descriptions	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (Custom order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA (*2)		100 mA or less	50 mA or less	
Indicator lamp	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 µA or less	1 mA or less		10 µA or less		
Weight g	1 m:10 3 m:29		1 m:10 3 m:29		1 m:10 3 m:29		

\*1 : Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C.)

\*2 : Refer to Ending Page 1 for other switch specifications.

\*3 : Dimensions depend on switch model No. Refer to Ending Page 23 for details.

### Cylinder weight

Unit: g

Model No.	Stroke length (mm)	5	10	15	20	Switch weight
	Bore size (mm)					
STM-M	φ6	45.1	52.5	59.9	-	Refer to the weight in the switch specifications.
	φ10	73.7	84.6	95.4	106.3	
STM-B	φ6	41.9	48.1	54.3	-	
	φ10	67.1	75.5	84.0	92.5	

### Theoretical thrust table

Unit: N

Bore size (mm)	Operating direction								
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
φ6	Push	2.83	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	2.12	3.18	4.24	6.36	8.48	10.6	12.7	14.8
φ10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

## How to order

Without switch (built-in magnet for switch)



With switch (built-in magnet for switch)



**A** Bearing

**B** Bore size

**C** Stroke length

**D** Switch model No.  
\*1

**E** Switch quantity

**F** Option

### ⚠ Precautions for model No. selection

\*1: When using a 2-color display proximity switch for STM-B-6, avoid mounting the cylinder on a magnetic substance such as a metal plate. This could lead to switch detection malfunction.

[Example of model No.]

**STM-M-10-15-F2H-D-A**

Model: Guided cylinder

- A** Bearing : Metal bush bearing
- B** Bore size :  $\phi 10$  mm
- C** Stroke length : 15 mm
- D** Switch model No. : Proximity switch F2H, lead wire 1 m
- E** Switch quantity : 2
- F** Option : Side mounting

## How to order switch



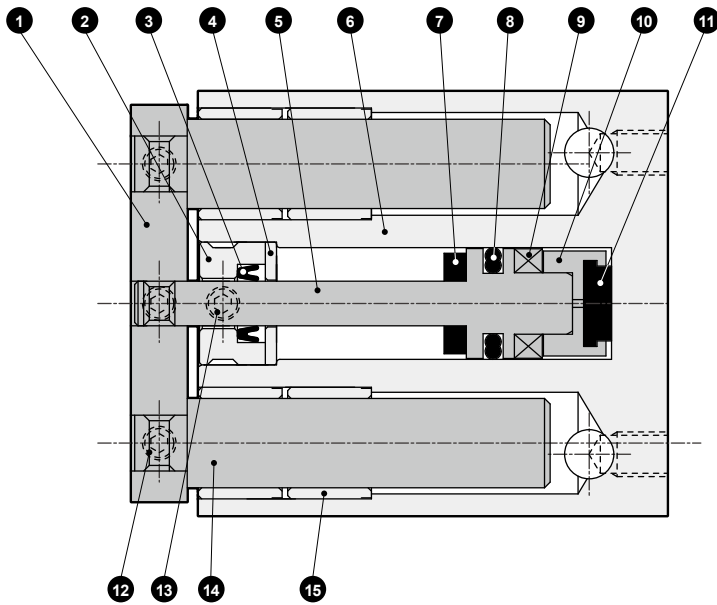
Switch model No.  
(Item **D** above)

**CKD**

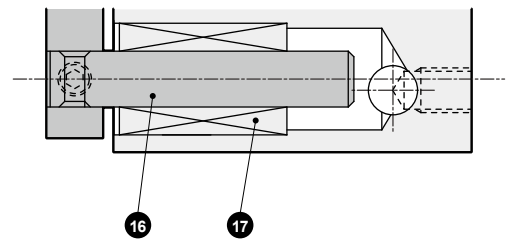
Code	Content					
<b>A Bearing</b>						
<b>M</b>	Metal bush bearing					
<b>B</b>	Ball bearing					
<b>B Bore size (mm)</b>						
<b>6</b>	$\phi 6$					
<b>10</b>	$\phi 10$					
<b>C Stroke length (mm)</b>						
				<b>Bore size</b>		
				<b>6</b>	<b>10</b>	
<b>5</b>	5			●	●	
<b>10</b>	10			●	●	
<b>15</b>	15			●	●	
<b>20</b>	20				●	
<b>D Switch model No.</b>						
Axial lead wire	Radial lead wire	Contact	Voltage		Display	Lead wire
			AC	DC		
<b>F2S*</b>		Proximity		●	1-color display	2-wire
<b>F2H*</b>	<b>F2V*</b>			●		
<b>F3S*</b>				●	3-wire	
<b>F3H*</b>	<b>F3V*</b>			●		
<b>F3PH*</b>	<b>F3PV*</b>			●	1 color display (PNP output) (custom order)	3-wire
<b>F2YH*</b>	<b>F2YV*</b>			●	2-color display	2-wire
<b>F3YH*</b>	<b>F3YV*</b>		●	display	3-wire	
<b>* Lead wire length</b>						
<b>Blank</b>	1 m (standard)					
<b>3</b>	3 m (option)					
<b>E Switch quantity</b>						
<b>R</b>	1 on rod side					
<b>H</b>	1 on head side					
<b>D</b>	2					
<b>F Option</b>						
<b>A</b>	Side mounting					
<b>R</b>	Rear piping					

### Internal structure and parts list

LCW
LCR
LCG
LCX
LCM
<b>STM</b>
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Metal bush bearing



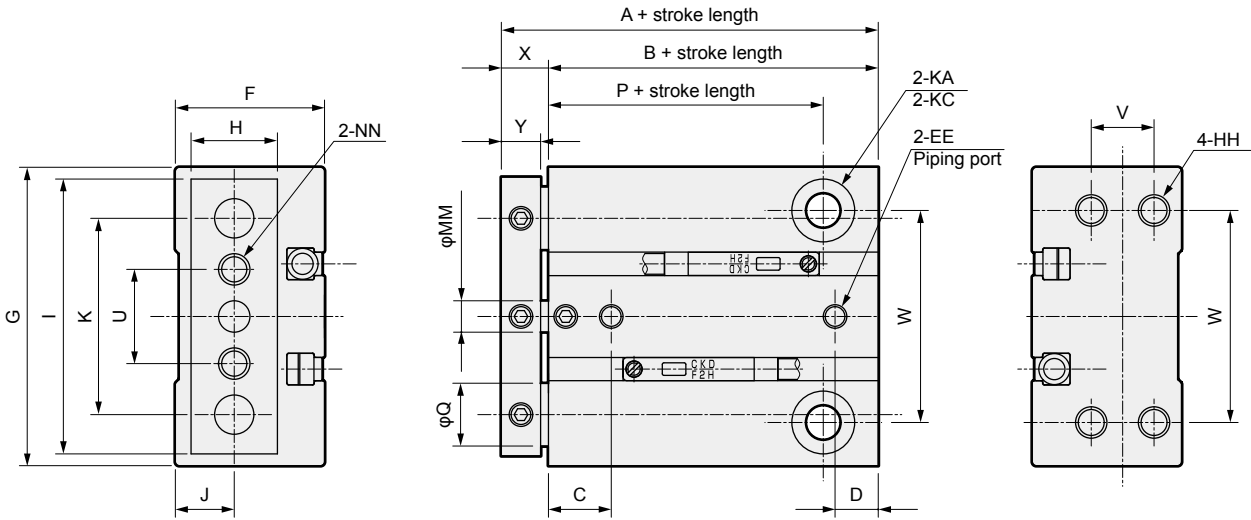
Ball bearing

**Cannot be disassembled**

\* This product cannot be disassembled.

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	End plate	Aluminum alloy	Alumite	10	Adaptor	Aluminum alloy	Chromate
2	Rod metal	Stainless steel		11	Cushion rubber H	Urethane rubber	
3	Rod packing	Nitrile rubber		12	Hexagon socket set screw	Stainless steel	
4	Spacer	Aluminum alloy	Chromate	13	Hexagon socket set screw	Stainless steel	
5	Piston	Stainless steel		14	Guide rod	Stainless steel	Industrial chrome plating (φ10)
6	Cylinder body	Aluminum alloy	Hard alumite	15	Metal	Oil-impregnated copper alloy	
7	Cushion rubber R	Urethane rubber		16	Guide rod	Alloy steel	Industrial chrome plating
8	Piston packing	Nitrile rubber		17	Ball bearing		
9	Piston magnet						

## Dimensions



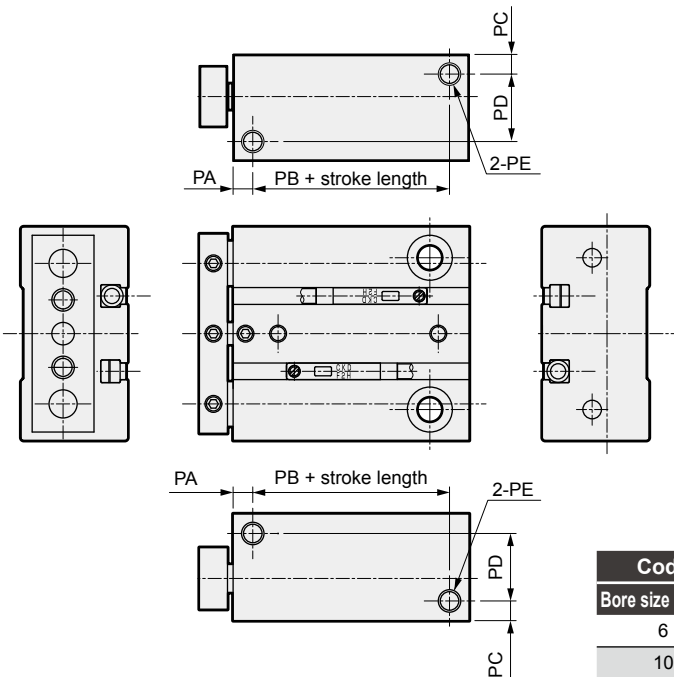
Code	Standard stroke length (mm)	A	B	C	D	EE	F	G	H	HH	I	J	K	KA
Code	Standard stroke length (mm)	A	B	C	D	EE	F	G	H	HH	I	J	K	KA
Bore size (mm)														
6	5/10/15	30	24	7.5	5	M3	15.5	33	9	M3 depth 5	31	6	23	3.4 through
10	5/10/15/20	34	28	8.5	7	M3	19	38	11	M4 depth 5	35	7.5	25	4.3 through

Code	KC	MM	NN	P	Q		U	V	W	X	Y
Code	KC	MM	NN	P	Q		U	V	W	X	Y
Bore size (mm)					STM-M	STM-B					
6	6.1 spot face depth 3.3	3	M3 through	17	6	4	12	6	25	6	5
10	8 spot face depth 4.4	4	M4 through	20.5	8	5	12	8	27	6	5

## Dimensions with options

### ● Side mounting (A)

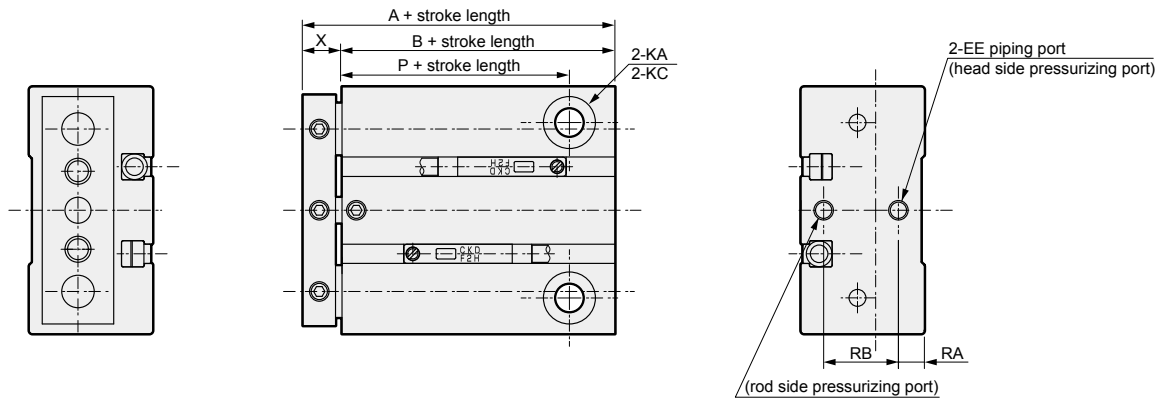


Code	Standard stroke length (mm)	PA	PB	PC	PD	PE
Code	Standard stroke length (mm)	PA	PB	PC	PD	PE
Bore size (mm)						
6	5/10/15	3	18	3	10	M3 depth 5
10	5/10/15/20	4	21	4	12	M4 depth 5

- LCW
- LCR
- LCG
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

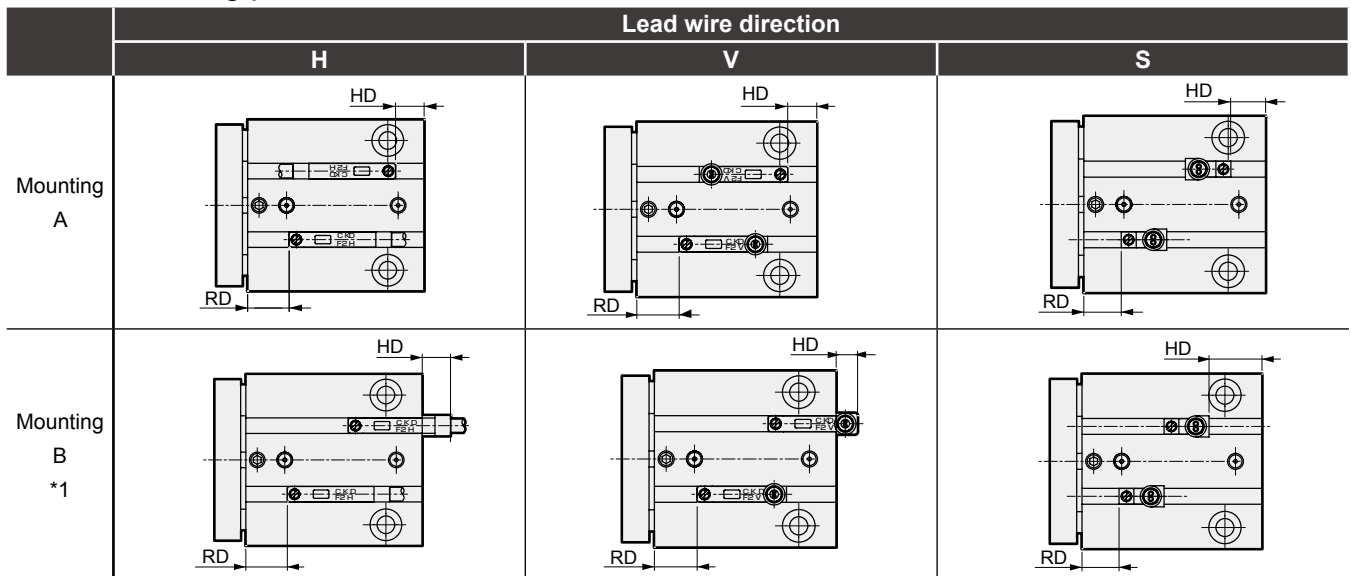
### Dimensions with options

#### ● Rear piping (R)



Code	Standard stroke length (mm)	A	B	EE	KA	KC	P	RA	RB
6	5, 10, 15	32	26	M3	3.4 through	6.1 spot face depth 3.3	17	4	8
10	5, 10, 15, 20	34	28	M3	4.3 through	8 spot face depth 4.4	20.5	4	12

### Switch mounting position



Mounting	Bore size (mm)	F2H/V, F3H/V			F2YH/V, F3YH/V, F3PH/V			F2S, F3S	
		RD	HD(H)	HD(V)	RD	HD(H)	HD(V)	RD	HD
A	φ6	8	5.5(7.5)	5.5(7.5)	8	5.5(7.5)	5.5(7.5)	7	4.5
	φ10	10	7.5	7.5	10	7.5	7.5	9	6.5
B	φ6	8	-4.5(-6.5)	1.5(3.5)	8	-9(-11)	-6(-8)	7	8
	φ10	10	-3.5	0.5	10	8	-4	9	10

\*1: When the switch is mounted as shown in mounting B type, it may project from the body.

If the switch projects from the body, it will interfere with the equipment if the product is installed on the equipment by head side mounting.

\*2: Dimension in ( ) is the dimension for rear piping.

\*3: For mounting dimensions in the table, the negative dimensions are the protruding dimensions toward the head side.

LCW
LCR
LCG
LCX
LCM
<b>STM</b>
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCC2
RCS
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HR
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

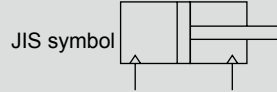
LCW  
LCR  
LCG  
LCX  
LCM  
**STM**  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCC2  
RCS  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HR  
LN  
Hand  
Chuk  
MecHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending



Guided cylinder, double acting/single rod/clean-room specifications

# STM-B-P7\* Series

● Bore size:  $\phi 6$ ,  $\phi 10$



## Specifications

Descriptions		STM-B	
Bore size	mm	$\phi 6$	$\phi 10$
Actuation		Double acting	
Working fluid		Compressed air	
Max. working pressure	MPa	0.7 ( $\approx 100$ psi, 7 bar)	
Min. working pressure	MPa	0.2 ( $\approx 29$ psi, 2 bar)	
Proof pressure	MPa	1.05 ( $\approx 150$ psi, 10.5 bar)	
Ambient temperature	$^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$ ) to 60 (140 $^{\circ}\text{F}$ ) (no freezing)	
Port size		M3	
Port size (pressure relief port)		M3	
Stroke tolerance	mm	+1.5 0	
Working piston speed	mm/s	50 to 500	
Cushion		With rubber cushion	
Lubrication		Not available	
Allowable absorbed energy	J	0.008	0.054

## Stroke length

Bore size	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length	Min. stroke with switch
$\phi 6$	5/10/15	15	5	5
$\phi 10$	5/10/15/20	20		

Note: Products other than standard stroke length are custom order products.

## Switch specifications

Descriptions	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (Custom order)	F3YH/F3YV
Applications	Dedicated for programmable controller	For programmable controller, relay	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	NPN output	-		NPN output	PNP output	NPN output
Power supply voltage	-	10 to 28 VDC	-		10 to 28 VDC	4.5 to 28 VDC	10 to 28 VDC
Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 20 mA	50 mA or less	5 to 20 mA (*2)		100 mA or less	50 mA or less	
Indicator lamp	LED (Lit when ON)		Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	Yellow LED (Lit when ON)		Red/green LED (Lit when ON)
Leakage current	1 mA or less	10 µA or less	1 mA or less		10 µA or less		
Weight g	1 m:10 3 m:29		1 m:10 3 m:29		1 m:10 3 m:29		

\*1 : Max. load current: 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C.)

\*2 : Refer to Ending Page 1 for other switch specifications.

\*3 : Dimensions depend on switch model No. Refer to Ending Page 23 for details.

## Cylinder weight

Unit: g

Model No.	Stroke length (mm)	5	10	15	20	Switch weight
	Bore size (mm)					
STM-B	φ6	56.2	62.5	68.7	-	Refer to the weight in the switch specifications.
	φ10	87.9	96.4	104.8	113.3	

## Theoretical thrust table

Unit: N

Bore size (mm)	Operating direction								
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
φ6	Push	2.83	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	2.12	3.18	4.24	6.36	8.48	10.6	12.7	14.8
φ10	Push	7.85	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	6.60	9.90	13.2	19.8	26.4	33.0	39.6	46.2

LCW  
LCR  
LCG  
LCX  
LCM  
STM  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCC2  
RCS  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HR  
LN  
Hand  
Chuk  
MecHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending



# STM-B-P7\* Series

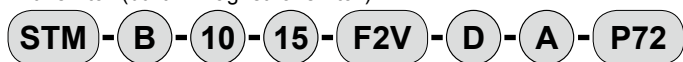
- LCW
- LCR
- LCC
- LCX
- LCM
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

## How to order

Without switch (built-in magnet for switch)



With switch (built-in magnet for switch)



**A** Bearing

**B** Bore size

**C** Stroke length

**D** Switch model No.

\*1

**E** Switch quantity

**F** Option

**G** Clean-room specifications

### ⚠ Precautions for model No. selection

\*1: When using a 2-color display proximity switch for STM-B-6-P72/P73, avoid mounting the cylinder on a magnetic substance such as a metal plate. This could lead to switch detection malfunction.

[Example of model No.]

### STM-B-10-15-F2H-D-A-P72

Model: Guided cylinder

- A** Bearing : Ball bearing
- B** Bore size : φ10 mm
- C** Stroke length : 15 mm
- D** Switch model No. : Proximity switch F2H, lead wire 1 m
- E** Switch quantity : 2
- F** Option : Side mounting
- G** Clean-room specifications : Exhaust port

Code	Content				
<b>A Bearing</b>					
<b>B</b>	Ball bearing				
<b>B Bore size (mm)</b>					
<b>6</b>	φ6				
<b>10</b>	φ10				
<b>C Stroke length (mm)</b>					
		<b>Bore size</b>			
		<b>6</b> <b>10</b>			
<b>5</b>	5	●      ●			
<b>10</b>	10	●      ●			
<b>15</b>	15	●      ●			
<b>20</b>	20	●      ●			
<b>D Switch model No.</b>					
Axial lead wire	Radial lead wire	Contact	Voltage AC   DC	Display	Lead wire
<b>F2S*</b>		Proximity	●	1-color display	2-wire
<b>F2H*</b>	<b>F2V*</b>		●		
<b>F3S*</b>			●	3-wire	
<b>F3H*</b>	<b>F3V*</b>		●		
<b>F3PH*</b>	<b>F3PV*</b>		●	1 color display (PNP output) (custom order)	3-wire
<b>F2YH*</b>	<b>F2YV*</b>		●	2-color display	2-wire
<b>F3YH*</b>	<b>F3YV*</b>	●	display	3-wire	
<b>* Lead wire length</b>					
<b>Blank</b>	1 m (standard)				
<b>3</b>	3 m (option)				
<b>E Switch quantity</b>					
<b>R</b>	1 on rod side				
<b>H</b>	1 on head side				
<b>D</b>	2				
<b>F Option</b>					
<b>A</b>	Side mounting				
<b>G Clean-room specifications</b>					
		<b>Structure</b>			
<b>P72</b>	Exhaust port				
<b>P73</b>	Vacuum treatment				

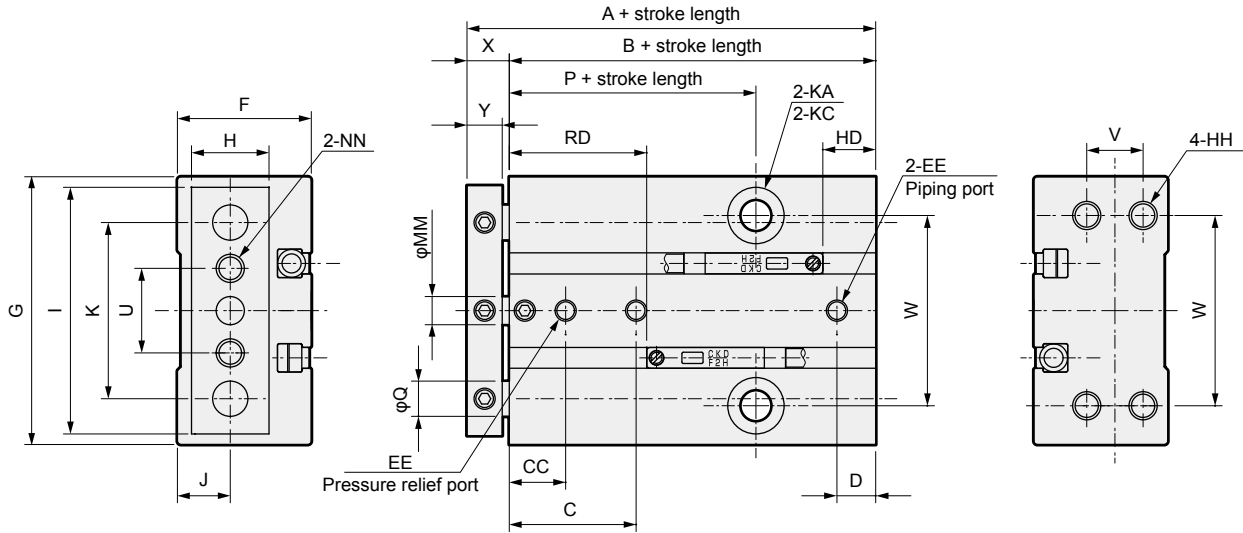
## How to order switch



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

**CKD**

Dimensions



Code	Standard stroke length (mm)	A	B	C	CC	D	EE	F	G	H	HH	I	J	K	KA
Bore size (mm)															
6	5/10/15	40	34	17.5	7.5	5	M3	15.5	33	9	M3 depth 5	31	6	23	3.4 through
10	5/10/15/20	44	38	18.5	8.5	7	M3	19	38	11	M4 depth 5	35	7.5	25	4.3 through
Code	KC		MM	NN	P	Q	U	V	W	X	Y	RD	HD		
Bore size (mm)															
6	6.1 spot face depth 3.3		3	M3 through	17	4	12	6	25	6	5	18	5.5		
10	8 spot face depth 4.4		4	M4 through	20.5	5	12	8	27	6	5	20	7.5		

- LCW
- LCR
- LCG
- LCX
- LCM
- STM**
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCC2
- RCS
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HR
- LN
- Hand
- Chuk
- MecHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending