

# STM

## Guided cylinder

### Combined functions cylinder

ø6/ø10

#### Overview

This is a super compact guided cylinder that provides high freedom in mounting and abundant variations, with attention to ease of use and of selection.



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● Double acting/single rod (STM-M/B)	314
● Double acting/single rod/clean-room specifications (STM-B-P7*)	320
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LCM
LCR
LCG
LCW
LCX
<b>STM</b>
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

# Super compact handy cylinders

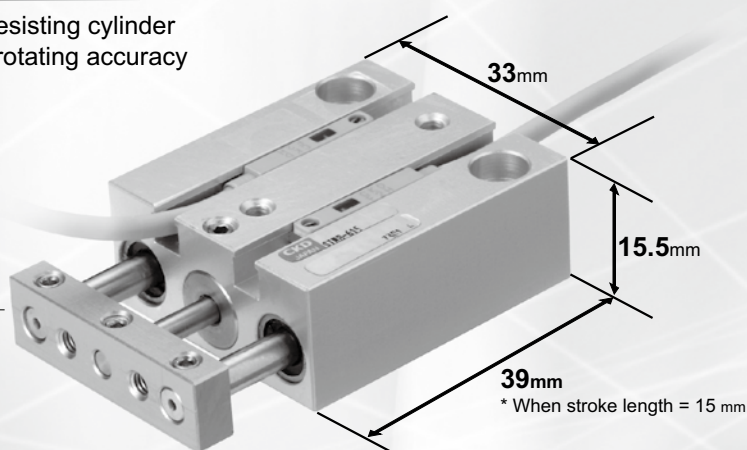
Super compact guided cylinder STM Series ( $\phi 6/\phi 10$ ) with a high level of mounting flexibility and rich variations, promoting ease of use and selection.

## Clean-room specifications with ball bearing is available.

### High-performance guide

Rigid and lateral load resisting cylinder with excellent rod non-rotating accuracy of  $\pm 0.08^\circ$ .

\* Ball bearing (STM-B)



### Super compact size

The smallest model is 33 mm wide and 15.5 mm high Super compact space saving in guided cylinders.

Guided cylinder

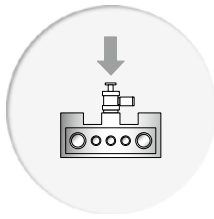
# STM Series



LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
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JSB3
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CAC4
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RCS2
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RRC
GRC
RV3*
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Ending

# suitable for various uses.

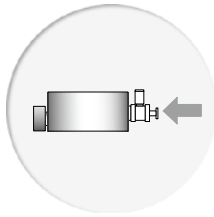
## ● Piping direction



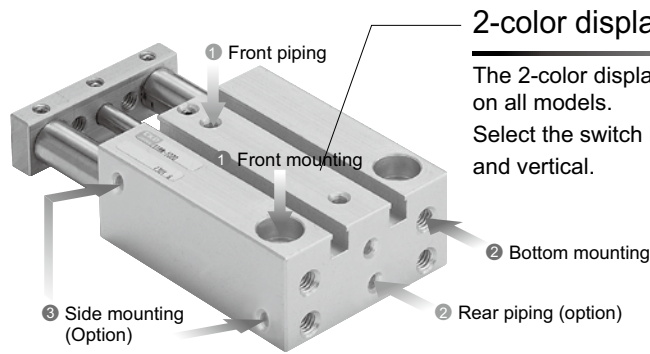
1 Front piping

### ■ Supports rear piping and side mounting

In addition to the front side, common piping on the rear side is possible. (Option)  
Side mounting of cylinder is supported. Multiple units can be installed even in small spaces. (Option)



2 Rear piping (option)

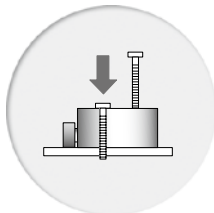


### ■ 2-color display switch can be mounted.

The 2-color display proximity switch can be mounted on all models.  
Select the switch lead wire direction from horizontal and vertical.

\* The picture shows all options for explanation purposes.  
Side and bottom mounting options are not available at the same time.  
The same applies to piping options.

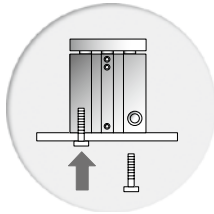
## ● Mounting direction



1 Front mounting

### ■ Two bearing options

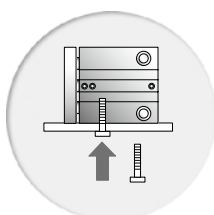
Select metal bush bearing or ball bearing according to the application.



2 Bottom mounting

### ■ Suitable for clean rooms

Clean-room specifications (STM-B...P7) suitable for clean rooms are available.



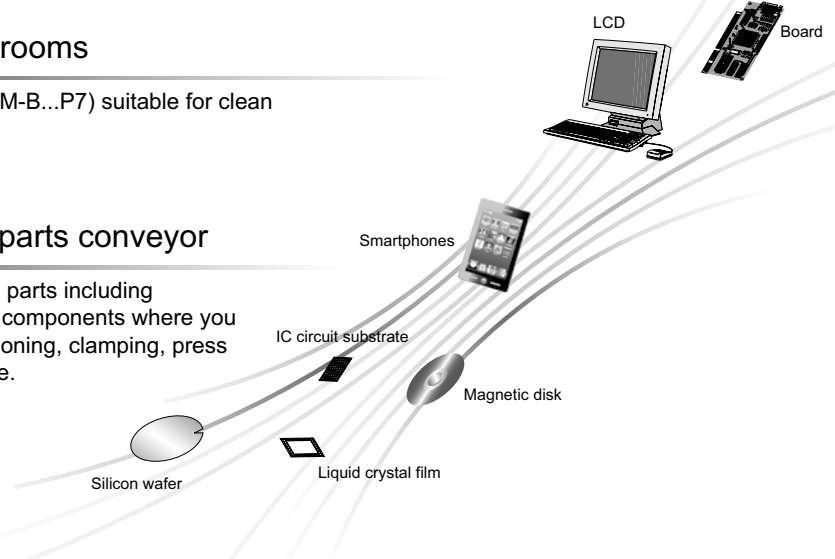
3 Side mounting (option)

### ■ Suitable for small parts conveyor

Suitable for conveyor for small parts including semiconductors and precision components where you can use the cylinders for positioning, clamping, press fitting, lifting, pushing and more.

### ■ Applications

Suitable for various manufacturing processes.



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USSD
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MechHnd/Chuk
ShkAbs
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Ending

## ■ STM Series variation

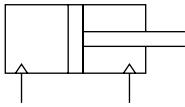
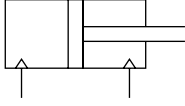
Model variations		Bore size	Stroke length (mm)				Option		Related products		
			5	10	15	20	Side mounting	Rear piping			
Metal bush bearing <b>STM-M Series</b>		ø6	●	●	●	●	●	●	● Detection switch (F type switch) 2-color display cylinder switch series		
		ø10	●	●	●	●	●	●			
Ball bearing <b>STM-B Series</b>		ø6	●	●	●	●	●	●		● Piping tube Fiber tube	
		ø10	●	●	●	●	●	●			
Clean-room specifications <b>STM-B-P7* Series</b>		ø6	●	●	●	●	●	●			● Dedicated fitting
		ø10	●	●	●	●	●	●			

\* Ball bearing only

# Series variation

## Guided cylinder STM Series

- LCM
- LCR
- LCG
- LCW
- LCX
- STM**
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
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- LML
- HCM
- HCA
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- CAC4
- UCAC2
- CAC-N
- UCAC-N
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- RCC2
- PCC
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- GLC
- MFC
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- Ending

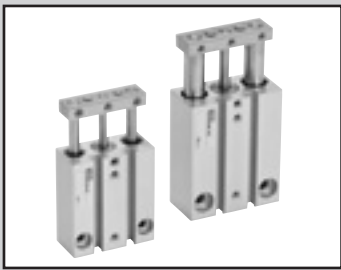
Variation	Model No.  JIS symbol	Bore size (mm)	Stroke length (mm)			
			5	10	15	20
Double acting/single rod	STM-M/B 	ø6	●	●	●	
		ø10	●	●	●	●
Double acting/single rod clean-room specifications	STM-B-P7* 	ø6	●	●	●	
		ø10	●	●	●	●

● : Standard, ◎ : Option, ■ : Not available

	Max. stroke length (mm)	Bearing		Option		Switch	Page
		Metal bush bearing M	Ball bearing B	Side mounting A	Rear piping R		
	15	●	●	●	●	◎	314
	20	●	●	●	●	◎	
	15	■	●	●	■	◎	320
	20	■	●	●	■	◎	

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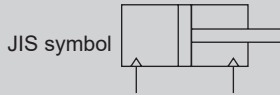
LCM  
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**STM**  
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Guided cylinder, double acting/single rod

# STM-M/B Series

● Bore size:  $\varnothing 6$ ,  $\varnothing 10$



## Specifications

Item	STM-M/B	
Bore size mm	$\varnothing 6$	$\varnothing 10$
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

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

Note: Products other than standard stroke are made-to-order products.

## Switch specifications

Item	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (Made to 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 20mA	50 mA or less	5 to 20 mA (*3)		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 : Refer to Ending Page 1 for detailed switch specifications and dimensions.

\*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

\*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

\*4 : The F-switch uses a bend-resistant lead wire.

## Cylinder weight

Unit: g

Model No.	Stroke (mm)	5	10	15	20	Switch weight
	Bore size (mm)					
STM-M	ø6	45.1	52.5	59.9	-	Refer to the weight in the switch specifications.
	ø10	73.7	84.6	95.4	106.3	
STM-B	ø6	41.9	48.1	54.3	-	
	ø10	67.1	75.5	84.0	92.5	

## Theoretical thrust table

Unit: N

Bore size (mm)	Operating direction							
		0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø6	Push	4.24	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	3.18	4.24	6.36	8.48	10.6	12.7	14.8
ø10	Push	11.8	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	9.90	13.2	19.8	26.4	33.0	39.6	46.2

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## How to order

Without switch (built-in magnet for switch)



With switch (built-in magnet for switch)



**A** Bearing

**B** Bore size

**C** Stroke

**D** Switch model No.

\*1

**E** Switch quantity

**F** Option

### ⚠ Precautions for model No. selection

\*1: When using a 2-color LED 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: 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)

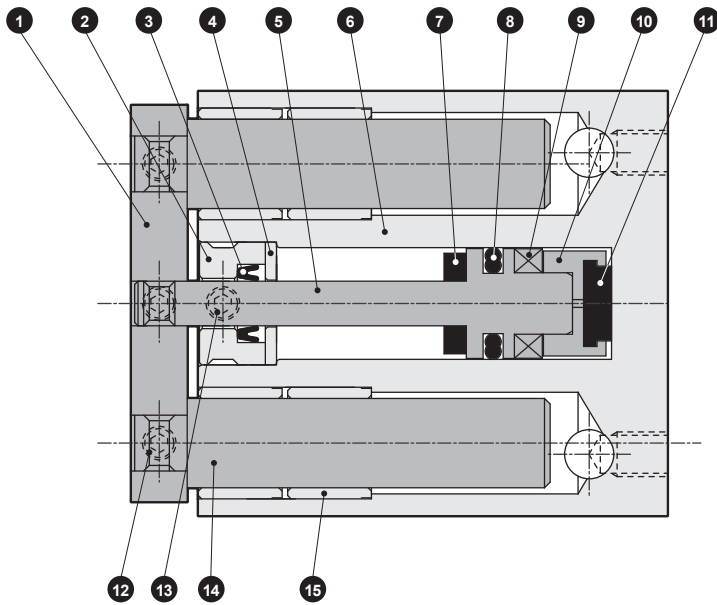
**CKD**

Code	Description					
<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 (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>						
Straight lead wire	L-shaped lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
-	F2S*	Proximity		●	1-color LED	2-wire
F2H*	F2V*			●		
-	F3S*			●	3-wire	
F3H*	F3V*			●		
F3PH*	F3PV*			●	1-color LED (PNP output) (made to order)	3-wire
F2YH*	F2YV*			●	2-color LED	2-wire
F3YH*	F3YV*			●	LED	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					

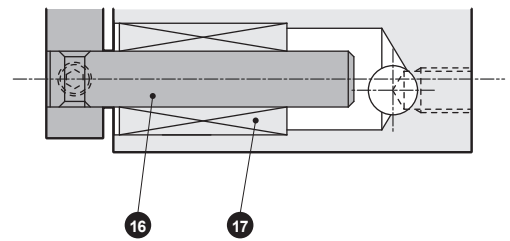


### Internal structure and parts list

LCM
LCR
LCG
LCW
LCX
<b>STM</b>
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
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GLC
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Ending



Metal bush bearing



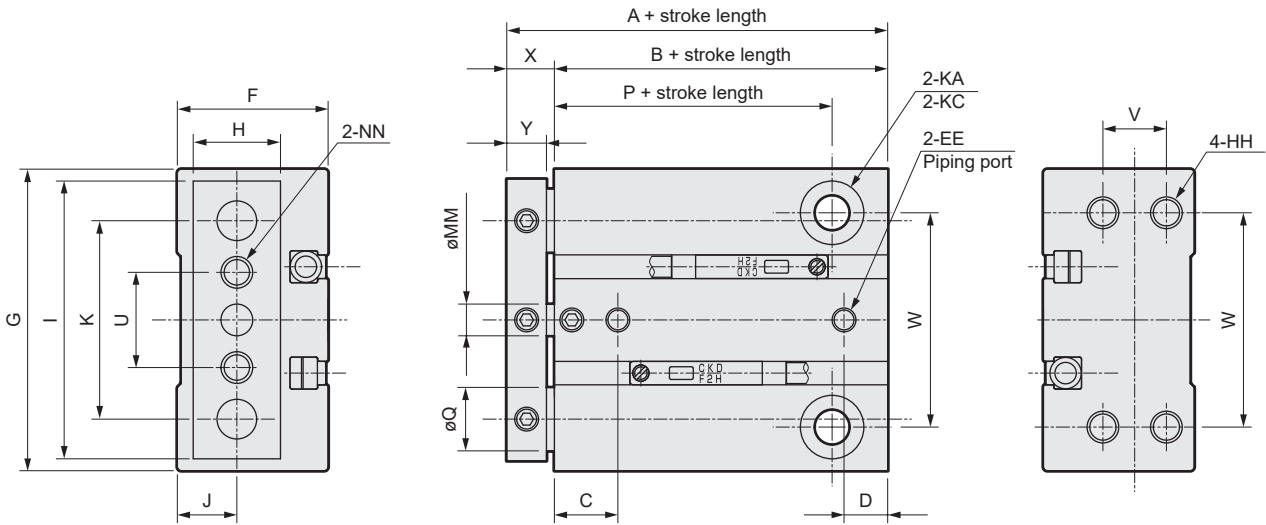
Ball bearing

**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 (ø10)
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						

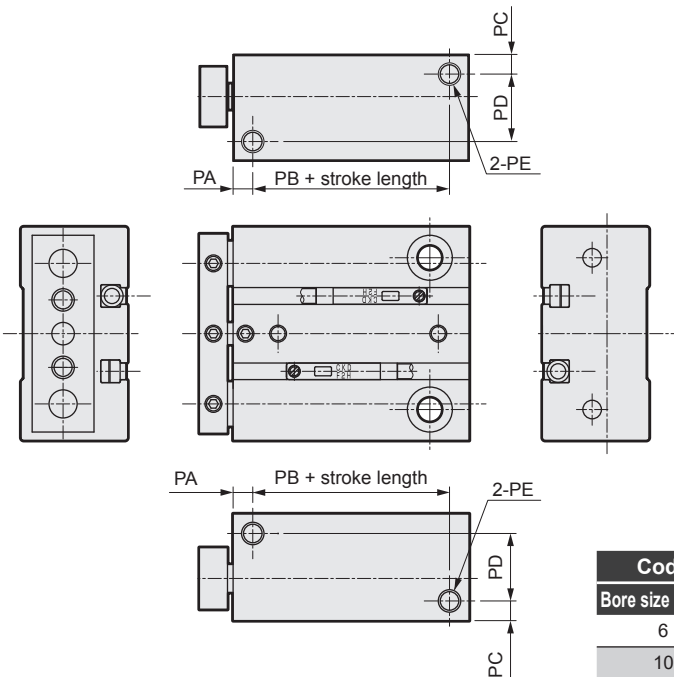
## Dimensions



Code	Standard stroke (mm)	A	B	C	D	EE	F	G	H	HH	I	J	K	KA
<b>Bore size (mm)</b>														
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
<b>Code</b>	<b>KC</b>	<b>MM</b>	<b>NN</b>	<b>P</b>	<b>Q</b>		<b>U</b>	<b>V</b>	<b>W</b>	<b>X</b>	<b>Y</b>			
<b>Bore size (mm)</b>					<b>STM-M</b>	<b>STM-B</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)

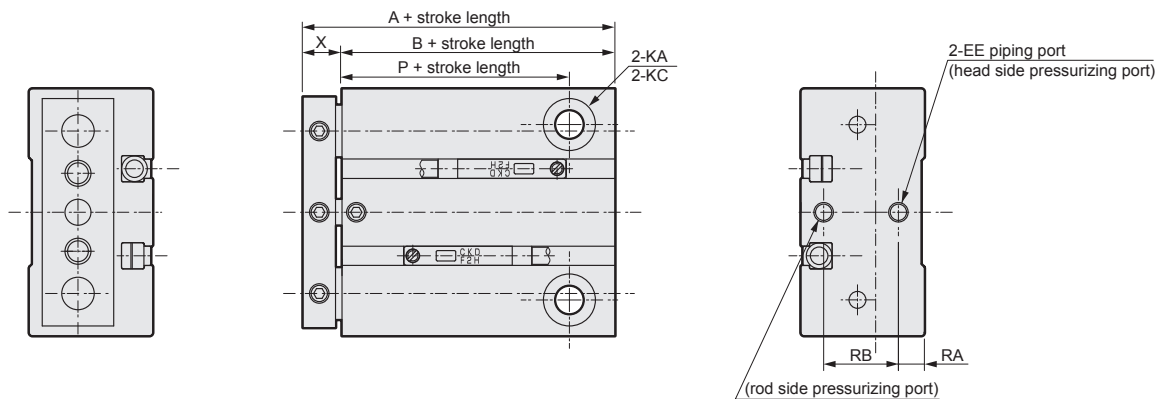


Code	Standard stroke (mm)	PA	PB	PC	PD	PE
<b>Bore size (mm)</b>						
6	5/10/15	3	18	3	10	M3 depth 5
10	5/10/15/20	4	21	4	12	M4 depth 5

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- UCAC2
- CAC-N
- UCAC-N
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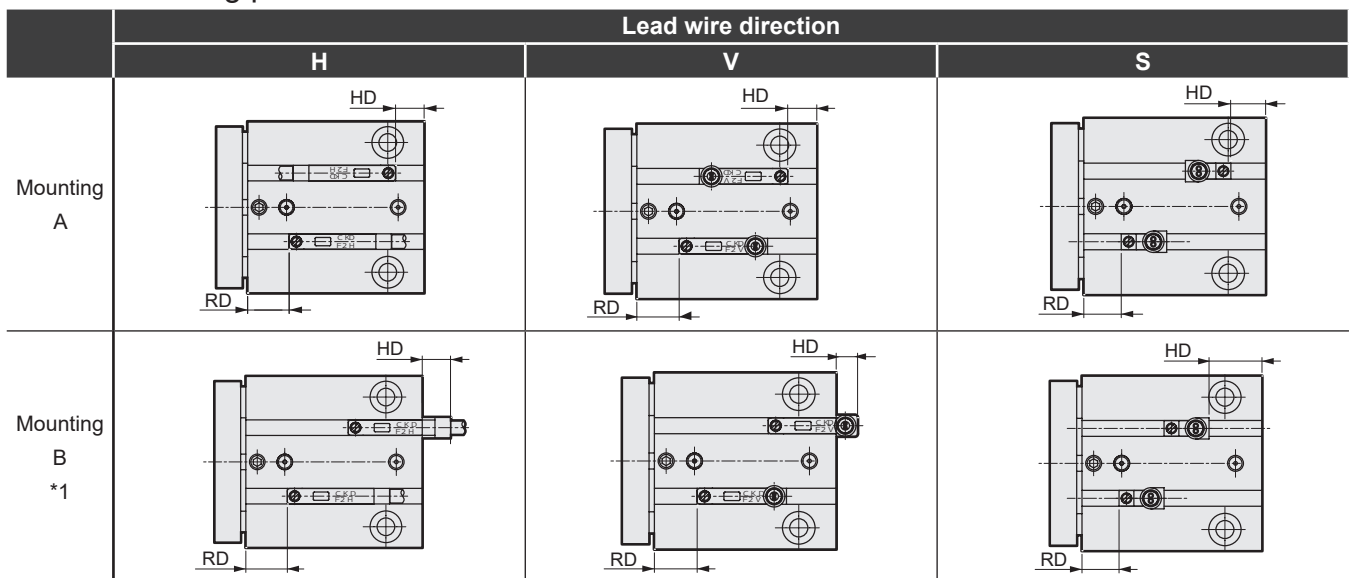
### Dimensions with options

● Rear piping (R)



Code	Standard stroke (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



		F2H/V, F3H/V			F2YH/V, F3YH/V, F3PH/V			F2S, F3S	
		RD	HD(H)	HD(V)	RD	HD(H)	HD(V)	RD	HD
Mounting A	ø6	8	5.5(7.5)	5.5(7.5)	8	5.5(7.5)	5.5(7.5)	7	4.5
	ø10	10	7.5	7.5	10	7.5	7.5	9	6.5
Mounting B	ø6	8	-4.5(-6.5)	1.5(3.5)	8	-9(-11)	-6(-8)	7	8
	ø10	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.

LCM  
LCR  
LCG  
LCW  
LCX  
STM  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
UB  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCS2  
RCC2  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HRL  
LN  
Hand  
Chuk  
MechHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending

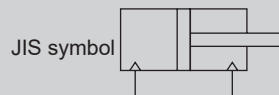
LCM  
LCR  
LCG  
LCW  
LCX  
STM  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
UB  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCS2  
RCC2  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HRL  
LN  
Hand  
Chuk  
MecHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending



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

# STM-B-P7\* Series

● Bore size:  $\varnothing 6$ ,  $\varnothing 10$



## Specifications

Item	STM-B	
	$\varnothing 6$	$\varnothing 10$
Bore size mm	$\varnothing 6$	$\varnothing 10$
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

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

Note: Products other than standard stroke are made-to-order products.

### Switch specifications

Item	Proximity 2-wire	Proximity 3-wire	Proximity 2-wire		Proximity 3-wire		
	F2S	F3S	F2H/F2V	F2YH/F2YV	F3H/F3V	F3PH/F3PV (Made to 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 20mA	50 mA or less	5 to 20 mA (*3)		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 : Refer to Ending Page 1 for detailed switch specifications and dimensions.

\*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

\*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

\*4 : The F-switch uses a bend-resistant lead wire.

### Cylinder weight

Unit: g

Model No.	Stroke (mm)	5	10	15	20	Switch weight
	Bore size (mm)					
STM-B	ø6	56.2	62.5	68.7	-	Refer to the weight in the switch specifications.
	ø10	87.9	96.4	104.8	113.3	

### Theoretical thrust table

Unit: N

Bore size (mm)	Operating direction						
		0.2	0.3	0.4	0.5	0.6	0.7
ø6	Push	5.65	8.48	11.3	14.1	17.0	19.8
	Pull	4.24	6.36	8.48	10.6	12.7	14.8
ø10	Push	15.7	23.6	31.4	39.3	47.1	55.0
	Pull	13.2	19.8	26.4	33.0	39.6	46.2

LCM  
LCR  
LCG  
LCW  
LCX  
STM  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
UB  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCS2  
RCC2  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HRL  
LN  
Hand  
Chuk  
MechHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending

# STM-B-P7\* Series

- LCM
- LCR
- LCC
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- 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

**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 LED 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 :  $\phi 10$  mm
- C** Stroke : 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

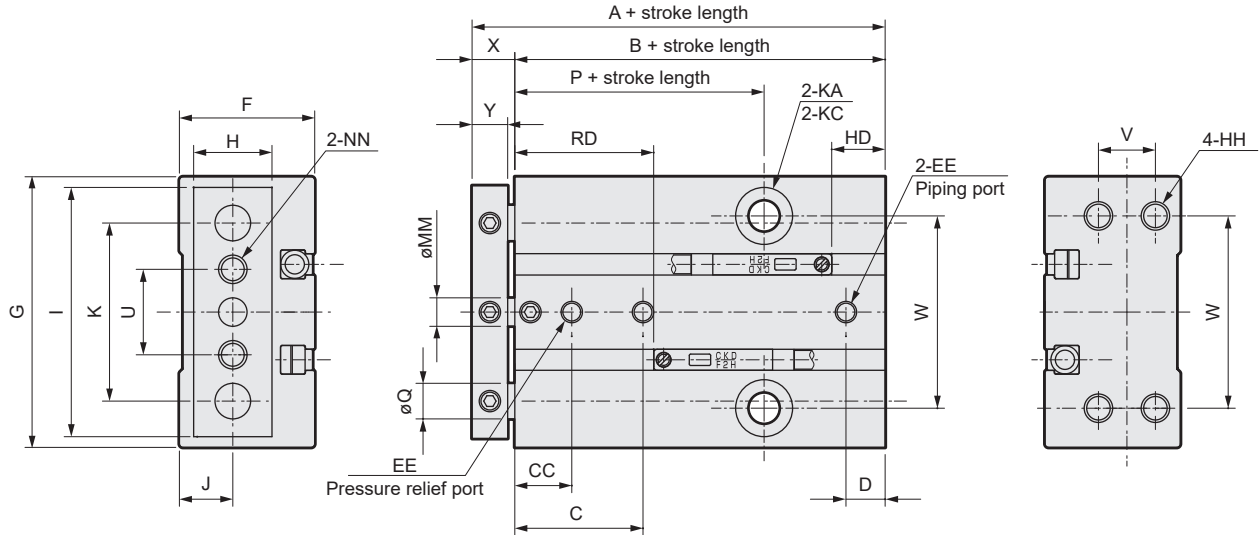
Code	Description					
<b>A Bearing</b>						
<b>B</b>	Ball bearing					
<b>B Bore size (mm)</b>						
<b>6</b>	$\phi 6$					
<b>10</b>	$\phi 10$					
<b>C Stroke (mm)</b>						
		<b>Bore size</b>				
		<b>6</b> <b>10</b>				
<b>5</b>	5	●      ●				
<b>10</b>	10	●      ●				
<b>15</b>	15	●      ●				
<b>20</b>	20	●				
<b>D Switch model No.</b>						
Straight lead wire	L-shaped lead wire	Contact	Voltage		Indicator	Lead wire
			AC	DC		
-	F2S*			●	1-color LED	2-wire
F2H*	F2V*			●		
-	F3S*			●	3-wire	
F3H*	F3V*	Proximity		●		1-color LED (PNP output) (made to order)
F3PH*	F3PV*			●		
F2YH*	F2YV*			●	2-color	2-wire
F3YH*	F3YV*		●	LED	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**

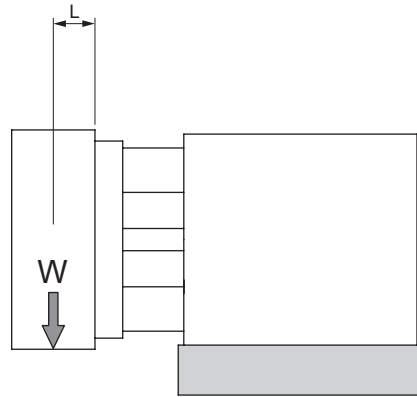
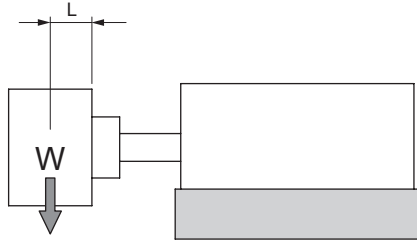


Code	Standard stroke (mm)	A	B	C	CC	D	EE	F	G	H	HH	I	J	K	KA	
Bore size (mm)																
6	5/10/15	40	34	17.5	7.5	5	M3	15.5	33	9	M3 depth 5	31	6	23	3.4 through	
10	5/10/15/20	44	38	18.5	8.5	7	M3	19	38	11	M4 depth 5	35	7.5	25	4.3 through	
Code	KC	MM	NN	P	Q	U	V	W	X	Y	RD	HD				
Bore size (mm)									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

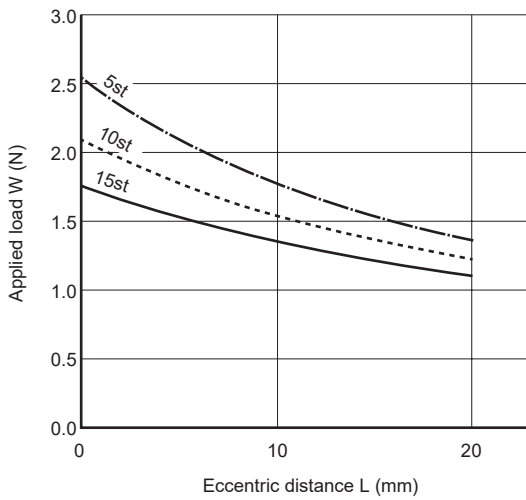
- LCM
- LCR
- LCG
- LCW
- LCX
- STM**
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

## Selection guide

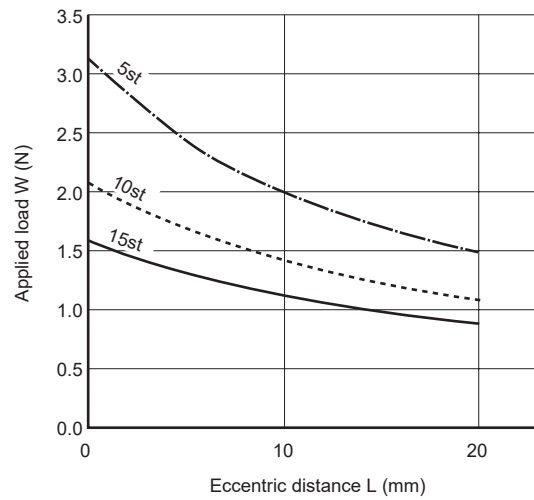
### Allowable lateral load



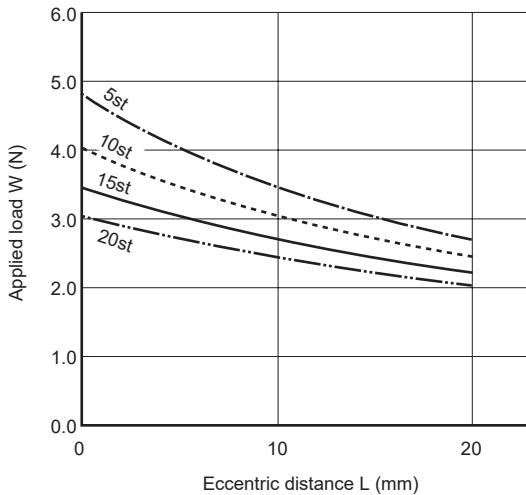
#### ● STM-M-6



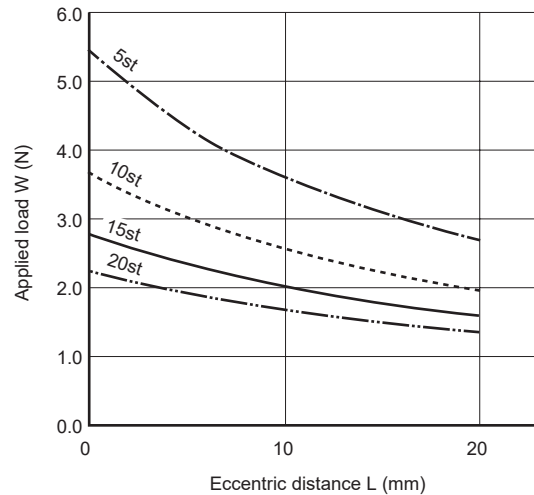
#### ● STM-B-6



#### ● STM-M-10



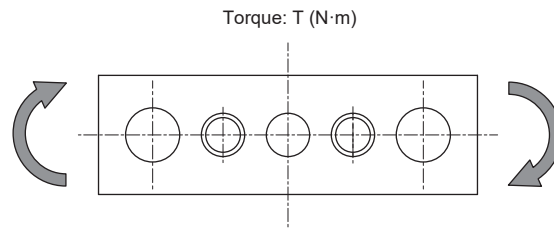
#### ● STM-B-10



- LCM
- LCR
- LCG
- LCW
- LX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending



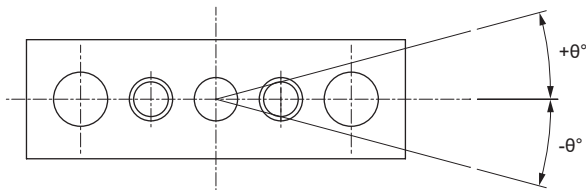
## Allowable torque



Unit: N·m

Bore size (mm)	Model No.	Bearing	Stroke length (mm)			
			5	10	15	20
ø6	STM-M-6	Metal bush bearing	0.015	0.012	0.010	-
	STM-B-6	Ball bearing	0.018	0.012	0.009	-
ø10	STM-M-10	Metal bush bearing	0.030	0.025	0.022	0.019
	STM-B-10	Ball bearing	0.034	0.023	0.018	0.014

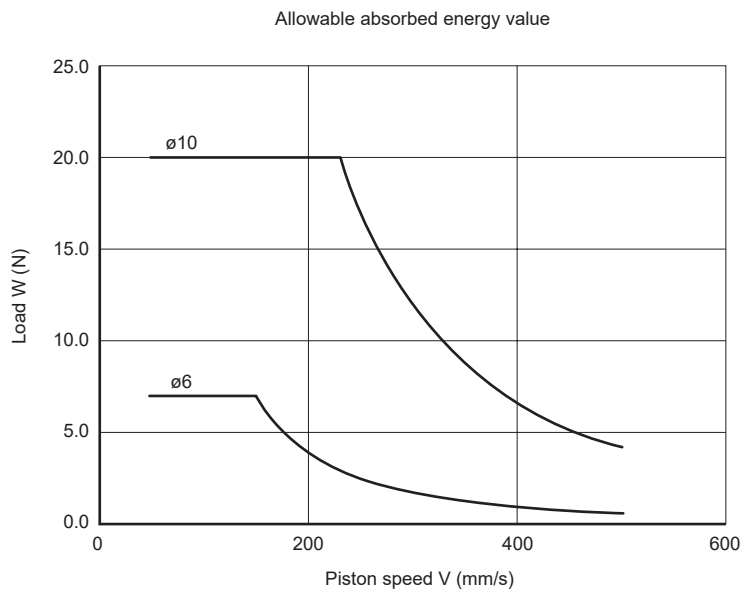
## Non-rotating accuracy (reference value)



Bore size (mm)	Non-rotating accuracy $\theta$ (degree)	
	Metal bush bearing	Ball bearing
ø6	±0.14	±0.08
ø10	±0.16	±0.08

## Allowable absorbed energy value

Use in the range below and to the left of the curve. For use in the upper right range, provide an external shock absorber.



- LCM
- LCR
- LCG
- LCW
- LCX
- STM**
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending



Pneumatic components

# Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Guided cylinder STM Series

## Design/selection

### 1. Common

#### ⚠ CAUTION

- 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.

### 2. With switch

#### ⚠ CAUTION

- Observe tightening torque when mounting the switch. If the tightening torque range is exceeded, the mounting bolt, bracket, switch, etc., could be damaged. In addition, when tightening the set screw with a torque less than the tightening torque range, displacement of switch mounting position could occur.  
Tightening torque: 0.03 to 0.08 (N·m)

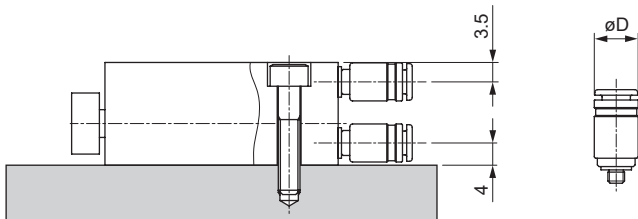
## Mounting, installation and adjustment

### 1. Common

#### ⚠ CAUTION

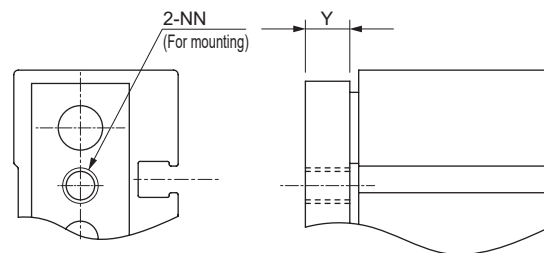
- Be sure to attach a speed controller during piping before use. In addition, when mounting the rear piping with through bolt, the applicable fittings are as follows.

Bore size	Port size	Applicable fitting/ speed controller	Fitting O.D. D
ø6 ø10	M3	SC3W-M3-*	ø8
		SC3U-M3-*	
		FTS4-M3	
		FTL4-M3	
		GWS *-M3-S	
		PTN2-M3	
		PTNL-M3	



- Do not damage surface flatness by denting or scratching the tube main body mounting surface or the end plate surface in order to increase sliding resistance. Make sure that the flatness of the mating surface where the end plate will be attached is 0.02 mm or below. If it is difficult to ensure the above flatness, insert a shim (customer-provided) between the end plate and workpiece and adjust the clearance. This may prevent an increase in sliding resistance.

- When attaching a jig, etc., to the end plate, make sure that the bolt insertion length is equivalent to the Y dimension. Not doing so could cause malfunction or damage of the end plate.



Bore size (mm)	Y dimension
ø6	5
ø10	

LCM  
LCR  
LCG  
LCW  
LCX  
STM  
STG  
STS/STL  
STR2  
UCA2  
ULK\*  
JSK/M2  
JSG  
JSC3/JSC4  
USSD  
UFCD  
USC  
UB  
JSB3  
LMB  
LML  
HCM  
HCA  
LBC  
CAC4  
UCAC2  
CAC-N  
UCAC-N  
RCS2  
RCC2  
PCC  
SHC  
MCP  
GLC  
MFC  
BBS  
RRC  
GRC  
RV3\*  
NHS  
HRL  
LN  
Hand  
Chuk  
MechHnd/Chuk  
ShkAbs  
FJ  
FK  
SpdContr  
Ending

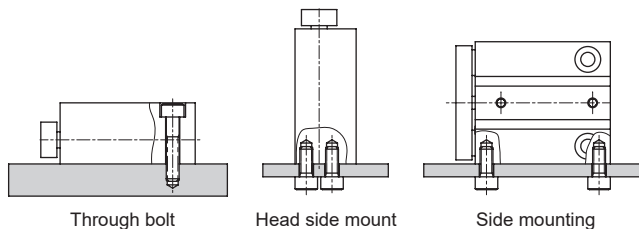
## Mounting, installation and adjustment

- Rubber cushion is integrated as a cushion mechanism. The table below shows the kinetic energy which can be absorbed by the rubber cushion. If the energy exceeds these values, consider using a separate shock absorber.

Bore size (mm)	Allowable absorbed energy (J)
ø6	0.008
ø10	0.054

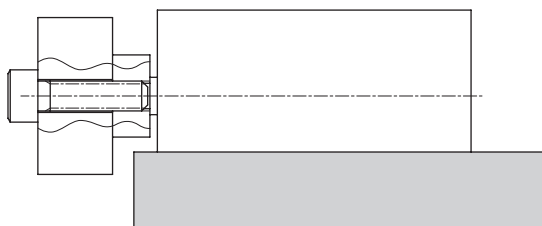
- When mounting the body with bolts, tighten with tightening torque as shown in the table below.

Bore size (mm)	Thread size	Tightening torque (N·m)		
		Through bolt	Bottom mount	Head side mount
ø6	M3	1.1		0.6
ø10	M4	2.7		1.6



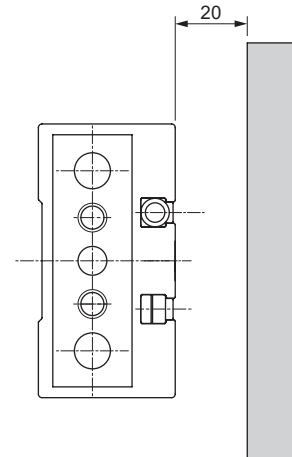
- When mounting the workpiece on the end plate, tighten with tightening torque as shown in the table below.

Bore size (mm)	Thread size	Tightening torque (N·m)
ø6	M3	0.6
ø10	M4	1.6

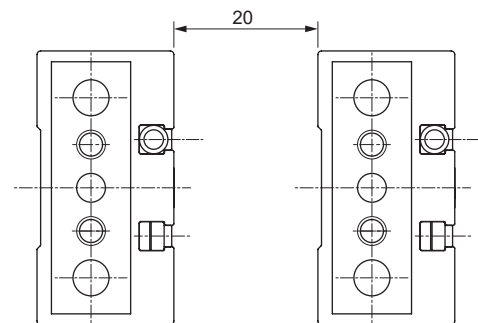


### 2. With switch

- The cylinder switch may malfunction if there is a magnetic substance such as a metal plate installed adjacently. Check that a distance of 20 mm is provided from the surface of the cylinders. (Same clearance for all bore sizes)



- The cylinder switch may malfunction if cylinders are installed adjacently. Check that the following distances are provided between cylinders. (Same clearance for all bore sizes)



### 3. Clean-room specifications

- Open the package in a cleanroom.
  - This product is packed in a cleanroom. The package should be opened just before piping in the cleanroom.

- LCM
- LCR
- LCG
- LCW
- LCX
- STM
- STG
- STS/STL
- STR2
- UCA2
- ULK\*
- JSK/M2
- JSG
- JSC3/JSC4
- USSD
- UFCD
- USC
- UB
- JSB3
- LMB
- LML
- HCM
- HCA
- LBC
- CAC4
- UCAC2
- CAC-N
- UCAC-N
- RCS2
- RCC2
- PCC
- SHC
- MCP
- GLC
- MFC
- BBS
- RRC
- GRC
- RV3\*
- NHS
- HRL
- LN
- Hand
- Chuk
- MechHnd/Chuk
- ShkAbs
- FJ
- FK
- SpdContr
- Ending

## Use/maintenance

### 1. Common

#### CAUTION

- This cylinder is a non-disassembly. Do not disassemble forcibly.

### 2. Clean-room specifications

#### WARNING

- Fluorine grease is used for P7 Series. Smoking with hands smeared with fluorine grease could generate harmful gases and cause physical harm.

LCM  
 LCR  
 LCG  
 LCW  
 LCX  
**STM**  
 STG  
 STS/STL  
 STR2  
 UCA2  
 ULK\*  
 JSK/M2  
 JSG  
 JSC3/JSC4  
 USSD  
 UFCD  
 USC  
 UB  
 JSB3  
 LMB  
 LML  
 HCM  
 HCA  
 LBC  
 CAC4  
 UCAC2  
 CAC-N  
 UCAC-N  
 RCS2  
 RCC2  
 PCC  
 SHC  
 MCP  
 GLC  
 MFC  
 BBS  
 RRC  
 GRC  
 RV3\*  
 NHS  
 HRL  
 LN  
 Hand  
 Chuk  
 MecHnd/Chuk  
 ShkAbs  
 FJ  
 FK  
 SpdContr  
 Ending