


# Air Cylinder

## Series CJ1

Double Acting: ø4/Single Acting, Spring Return: ø2.5, ø4

### Series Variations

Series	Action		Bore size (mm)	Cylinder standard stroke (mm)	Page
<b>Standard Series CJ1</b> 	Double acting	Single rod	4	5, 10, 15, 20	P.16
	Single acting	Single rod Spring return	2.5 4	5, 10 5, 10, 15, 20	P.18

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

CS2

D-□

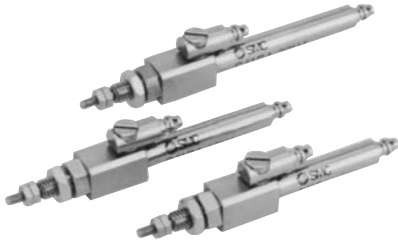
-X□

Individual  
-X□

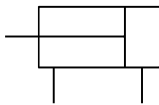
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# Double Acting Series CJ1

Bore Size:  $\varnothing 4$



**JIS Symbol**  
Double acting,  
Single rod



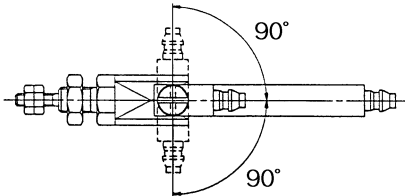
## Formation of small series of a double acting cylinder

(A cylinder with  $\varnothing 4$  bore has been added as a compact type to the existing CJ2:  $\varnothing 6$  double acting cylinder.)

**The fitting on the rod cover side has been provided with a variable piping direction.**

(The piping direction of the fitting on the rod cover side can move freely within a range of  $\pm 90^\circ$ .)

■ **The piping direction of the fitting on the rod cover side varies within a range of  $\pm 90^\circ$ .**



## ⚠ Precautions

**Be sure to read before handling. Refer to front matters 54 and 55 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.**

### Piping

## ⚠ Caution

- Do not force to connect piping in such a way that the lateral force could be applied on a cylinder tube. This could cause a cylinder tube to slant and malfunction.

### Piping

## ⚠ Caution

- Do not install by directly grasping the cylinder tube, as this could cause a tube to deform and malfunction.
- Do not install it by directly grasping the piston rod with a pair of electrician's pliers. Scratches on the piston rod would cause a bearing or rod seal to get damaged, malfunction, and leak air.

## How to Order/Double Acting

**CJ1B4 - 5 U4**

● **Mounting style**

**B** Basic style

● **Bore size**

**4** 4 mm

● **Applicable tubing**

Symbol	Tubing material	Size	
		O.D.	Bore size
<b>U4</b>	Polyurethane	4 mm	2.5 mm
	Soft nylon	4 mm	2.5 mm

● **Standard stroke (mm)**

5, 10, 15, 20

## Specifications

<b>Action</b>	Double acting, Single rod
<b>Fluid</b>	Air
<b>Proof pressure</b>	1.05 MPa
<b>Maximum operating pressure</b>	0.7 MPa
<b>Minimum operating pressure</b>	0.2 MPa
<b>Ambient and fluid temperature</b>	-10 to 70°C (No freezing)
<b>Piston speed</b>	50 to 500 mm/s
<b>Cushion</b>	None
<b>Stroke length tolerance</b>	$^{+0.5}_0$ mm
<b>Mounting</b>	Basic style
<b>Lubrication</b>	Not required (Non-lube)

## Model/Bore Size/Standard Stroke

Model	Bore size (mm)	Standard stroke (mm)
<b>CJ1B4</b>	4	5, 10, 15, 20

## Applicable Tubing

Tubing type	Material	Size		Tube no.
		O.D.	Bore size	
Metric size	Polyurethane	4 mm	2.5 mm	TU0425
	Soft nylon	4 mm	2.5 mm	TS0425

## Theoretical Output

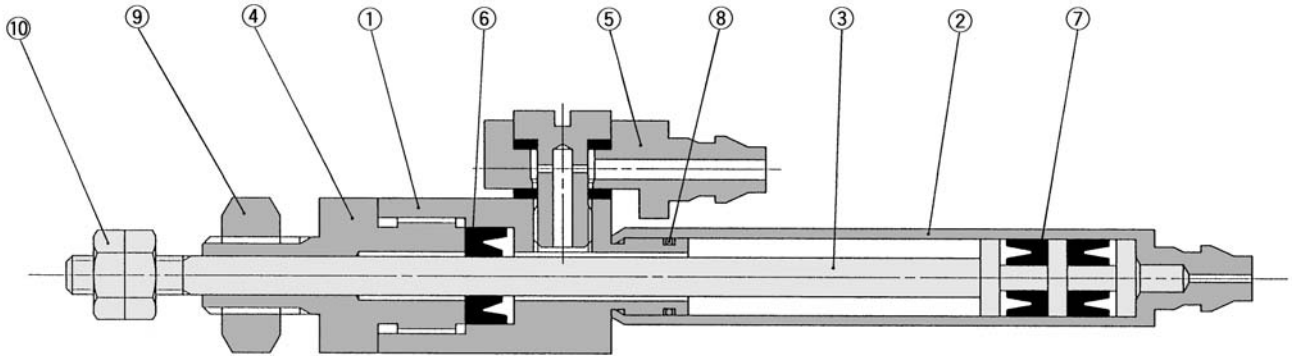
Bore size (mm)	Rod size (mm)	Action	Piston area (mm <sup>2</sup> )	Operating pressure (MPa) (N)					
				0.2	0.3	0.4	0.5	0.6	0.7
<b>4</b>	<b>2</b>	OUT	12.6	2.52	3.78	5.04	6.30	7.56	8.82
		IN	9.4	1.88	2.82	3.76	4.70	5.64	6.58

## Mass

(g)

Bore size (mm)	Cylinder stroke (mm)	Mass
<b>4</b>	5	12.0
	10	12.4
	15	12.8
	20	13.2

## Construction



### Component Parts

No.	Description	Material	Note
1	Rod cover	Brass	Electroless nickel plated
2	Cylinder tube	Brass	Electroless nickel plated
3	Piston	Stainless steel	
4	Seal retainer	Brass	Electroless nickel plated
5	Fittings	Body Brass	Electroless nickel plated
		Gasket PVC	
6	Rod seal	NBR	
7	Piston seal	NBR	
8	Tube gasket	NBR	
9	Mounting nut	Steel	Nickel plated
10	Rod end nut	Steel	Nickel plated

CJ1

CJP

CJ2

CM2

CG1

MB

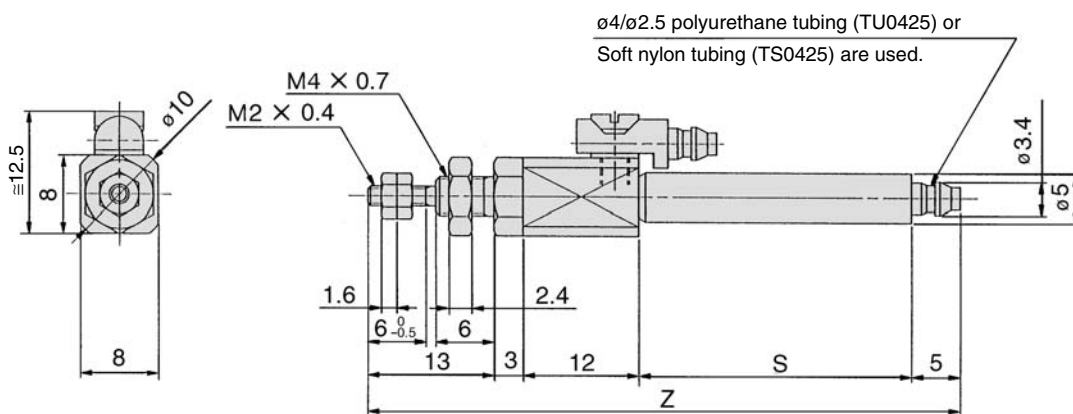
MB1

CA2

CS1

CS2

## Dimensions: Double Acting, Basic Style



Symbol Bore size (mm) \ Stroke	S				Z			
	5	10	15	20	5	10	15	20
4	18	23	28	33	51	56	61	66

D-□

-X□

Individual  
-X□Technical  
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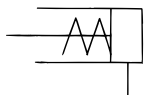
# Single Acting: Spring Return

# Series CJ1

Bore Size:  $\varnothing 2.5, \varnothing 4$



**JIS Symbol**  
Single acting, Spring return



### Spring Force (N)

Bore size (mm)	Retracted side	Extended side
2.5	1.13	0.64
4	3.04	1.47

### Mass (g)

Bore size (mm)	5	10	15	20
2.5	1.5	2	—	—
4	3.7	4.6	5.6	6.5



## Precautions

Be sure to read before handling.  
Refer to front matters 54 and 55 for  
Safety Instructions and pages 3 to 11 for  
Actuator and Auto Switch Precautions.

### Piping

## Caution

- Do not force to connect piping in such a way that the lateral force could be applied on a cylinder tube. This could cause a cylinder tube to slant and malfunction.  
Because this could cause a cylinder tube to tilt and malfunction.

### Piping

## Caution

- Do not use it in such a way that a load could be applied to the piston rod during the retraction.  
The spring that is built into the cylinder provides only enough force to retract the piston rod. Thus, if a load is applied, the piston rod will not be able to retract to the end of the stroke.
- Do not install it by directly grasping the cylinder tube, as this could cause a tube to deform and malfunction.

## How to Order/Single Acting

**CJ1B 4 - 10 S U4**

Mounting style

**B** Basic style

Bore size

<b>2</b>	2.5 mm
<b>4</b>	4 mm

Standard stroke (mm)

$\varnothing 2.5$	5, 10
$\varnothing 4$	5, 10, 15, 20

Applicable tubing

Symbol	Tubing material	Size	
		O.D.	Bore size
<b>U4</b>	Polyurethane	4 mm	2.5 mm
	Soft nylon	4 mm	2.5 mm

Single acting, Spring return

## Specifications

<b>Action</b>	Single acting, Spring return
<b>Fluid</b>	Air
<b>Proof pressure</b>	1.05 MPa
<b>Maximum operating pressure</b>	0.7 MPa
<b>Minimum operating pressure</b>	0.3 MPa
<b>Ambient and fluid temperature</b>	-10 to 70°C (No freezing)
<b>Piston speed</b>	50 to 500 mm/s
<b>Cushion</b>	None
<b>Stroke length tolerance</b>	$^{+0.5}_0$ mm
<b>Mounting</b>	Basic style
<b>Lubrication</b>	Not required (Non-lube)

## Model/Bore Size/Standard Stroke

Model	Bore size (mm)	Standard stroke (mm)
<b>CJ1B2</b>	2.5	5, 10
<b>CJ1B4</b>	4	5, 10, 15, 20

## Applicable Tubing

Tubing type	Material	Size		Model no.
		O.D.	Bore size	
Metric size	Polyurethane	4 mm	2.5 mm	TU0425
	Soft nylon	4 mm	2.5 mm	TS0425

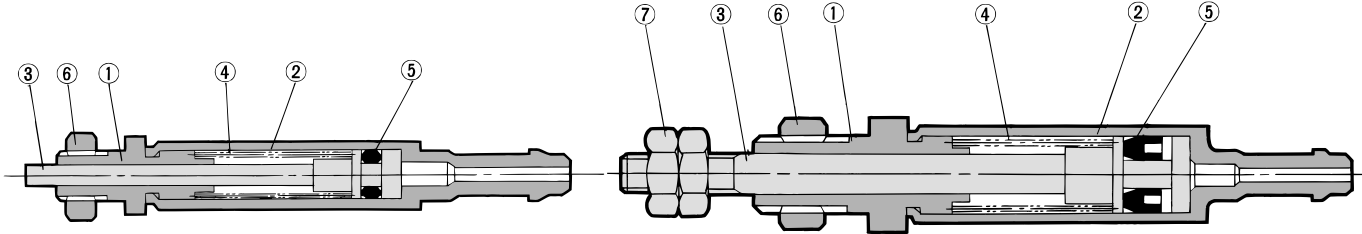
## Theoretical Output (N)

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)				
				0.3	0.4	0.5	0.6	0.7
<b>2.5</b>	<b>1</b>	OUT	4.9	0.34	0.83	1.32	1.81	2.30
		IN	—	0.64				
<b>4</b>	<b>2</b>	OUT	12.6	0.74	2.00	3.26	4.52	5.78
		IN	—	1.47				

## Construction (Not able to disassemble)

### CJ1B2-□SU4

### CJ1B4-□SU4

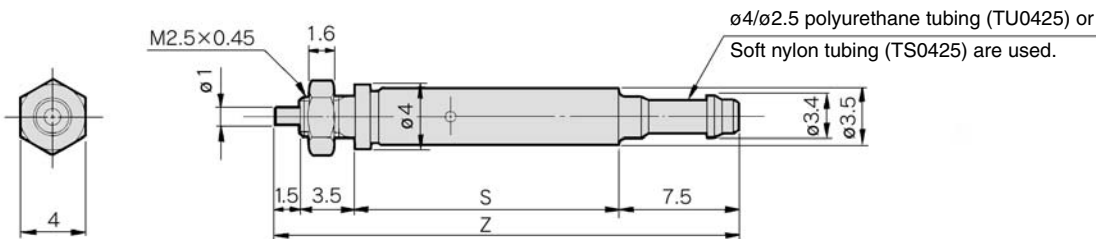


### Component Parts

No.	Description	Material	Note
1	<b>Rod cover</b>	Brass	Electroless nickel plated
2	<b>Cylinder tube</b>	Brass	Electroless nickel plated
3	<b>Piston rod</b>	Stainless steel	
4	<b>Spring</b>	Stainless steel wire	
5	<b>Piston seal</b>	NBR	
6	<b>Mounting nut</b>	Brass	Black zinc chromated
7	<b>Rod end nut</b>	Steel	Electroless nickel plated

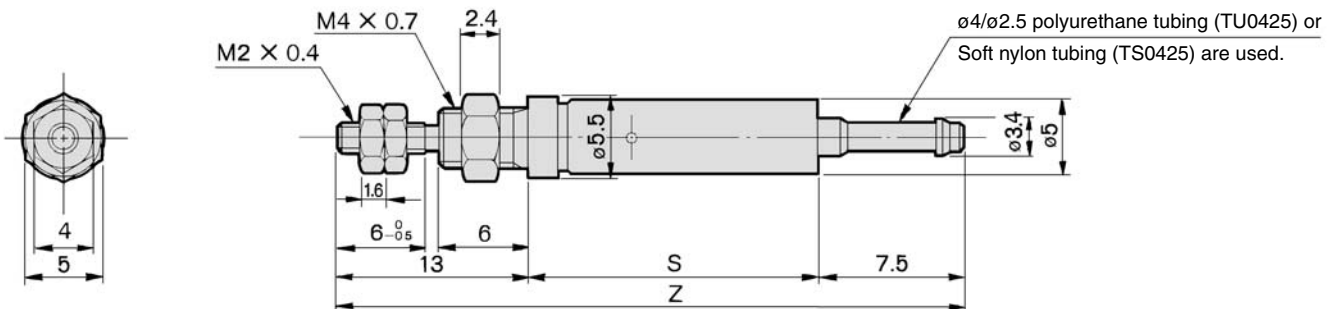
## Basic Style

### Bore size: $\phi 2.5$ /CJ1B2-□SU4



Bore size (mm)	Symbol Stroke	S		Z	
		5	10	5	10
2.5		16.5	25.5	29	38

### Bore size: $\phi 4$ /CJ1B4-□SU4



Bore size (mm)	Symbol Stroke	S				Z			
		5	10	15	20	5	10	15	20
4		19.5	28.5	37.5	46.5	40	49	58	67