


# Air Cylinder

## Series *CJ1*

Double Acting:  $\varnothing 4$ /Single Acting, Spring Return:  $\varnothing 2.5$ ,  $\varnothing 4$

### Series Variations

Series	Action		Bore size (mm)	Cylinder standard stroke (mm)	Page
<b>Standard Series <i>CJ1</i></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  
-Z

**CJ2**

CM2  
-Z

**CM2**

**CM3**

CG1  
-Z

**CG1**

**CG3**

MB  
-Z

**MB**

**MB1**

CA2  
-Z

**CA2**

**CS1**

**CS2**

D-☐

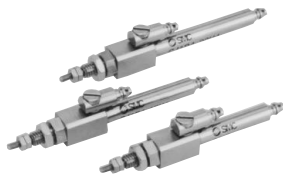
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Technical  
data

# Air Cylinder: Double Acting

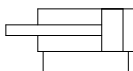
## Series CJ1

Bore Size:  $\phi 4$



### Symbol

Double acting,  
Single rod  
Without cushion



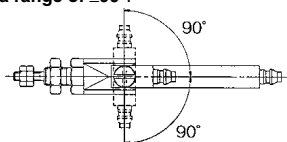
### Formation of small series of a double acting cylinder

(A cylinder with  $\phi 4$  bore has been added as a compact type to the existing CJ2:  $\phi 6$  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 matter 57 for Safety Instructions and pages 3 to 12 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.

### Mounting

## ⚠ 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

**CJ1B 4 - 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

Action	Double acting, Single rod
Fluid	Air
Proof pressure	1.05 MPa
Maximum operating pressure	0.7 MPa
Minimum operating pressure	0.2 MPa
Ambient and fluid temperature	-10 to 70°C (No freezing)
Piston speed	50 to 500 mm/s
Cushion	None
Stroke length tolerance	+0.5 0 mm
Mounting	Basic style
Lubrication	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

(N)

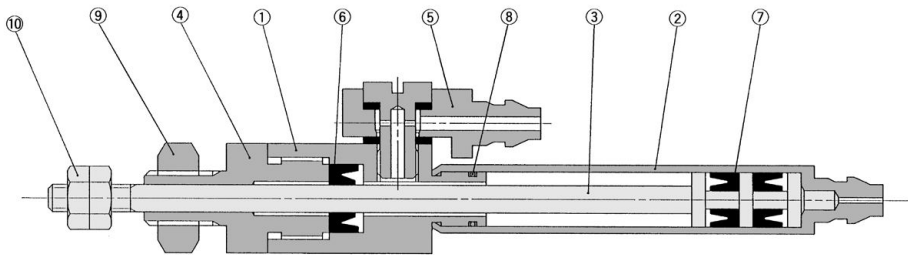
Bore size (mm)	Rod size (mm)	Action	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)					
				0.2	0.3	0.4	0.5	0.6	0.7
<b>4</b>	<b>2</b>	OUT	12.6	2.52	3.78	5.04	6.30	7.56	8.82
		IN	9.4	1.88	2.82	3.76	4.70	5.64	6.58

## Weight

(g)

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

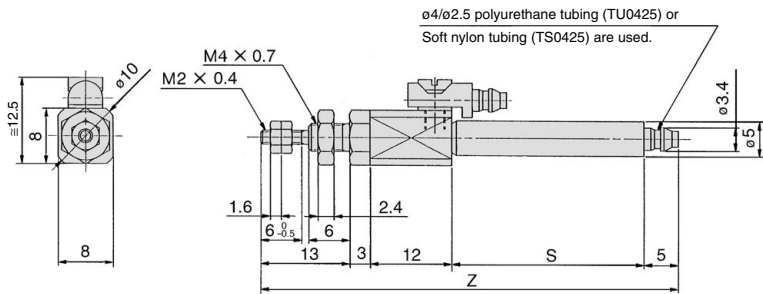
**Construction**



**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 Gasket NBR + Stainless steel 304	Electroless nickel plated
6	Rod seal	NBR	
7	Piston seal	NBR	
8	Tube gasket	NBR	
9	Mounting nut	Steel	Nickel plated
10	Rod end nut	Steel	Zinc chromated

**Dimensions: Double Acting, Basic Style**



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

CJ1
CJP
CJ2
CJ2-Z
CJ2
CM2
CM2-Z
CM2
CM3
CG1
CG1-Z
CG1
CG3
MB
MB-Z
MB
MB1
CA2
CA2-Z
CA2
CS1
CS2

D-□
-X□
Technical data

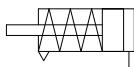


# Air Cylinder Single Acting: Spring Return Series CJ1

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



**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

## Weight

(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 matter 57 for Safety Instructions and pages 3 to 12 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.

## Mounting



## 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.

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## How to Order/Single Acting

**CJ1B 4 - 10 S U4**

**Mounting style**

**B** Basic style

**Bore size**

2	2.5 mm
4	4 mm

**Standard stroke (mm)**

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

**Applicable tubing**

Symbol	Tubing material	O.D.	Bore size
U4	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 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)
CJ1B2	2.5	5, 10
CJ1B4	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)

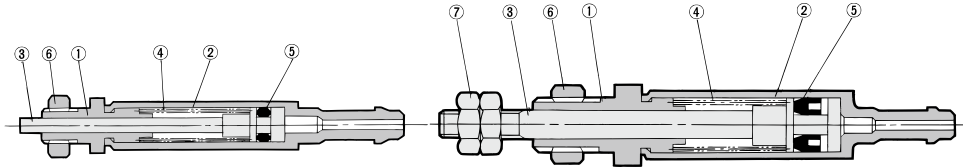
Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)				
				0.3	0.4	0.5	0.6	0.7
2.5	1	OUT	4.9	0.34	0.83	1.32	1.81	2.30
		IN	—	0.64				
4	2	OUT	12.6	0.74	2.00	3.26	4.52	5.78
		IN	—	1.47				



**Construction (Not able to disassemble)**

## CJ1B2-□SU4

## CJ1B4-□SU4

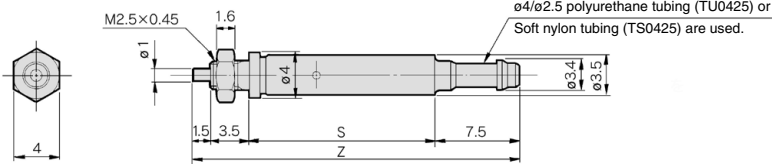


## Component Parts

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	Zinc chromated

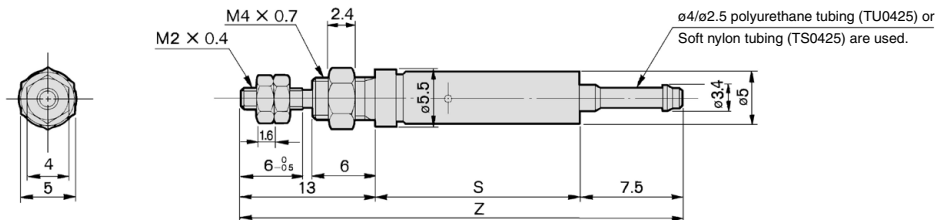
## Basic Style

**Bore size: Ø2.5/CJ1B2-□SU4**



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

**Bore size: Ø4/CJ1B4-□SU4**



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