


# 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**

**CG3**

**MB**  
-Z

**MB**

**MB1**

**CA2**  
-Z

**CA2**

**CS1**

**CS2**

**D-□**

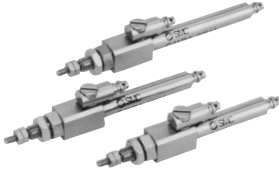
**-X□**

Technical data

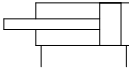
# Air Cylinder: Double Acting

# Series CJ1

Bore Size:  $\varnothing 4$



**Symbol**  
 Double acting,  
 Single rod  
 Without cushion



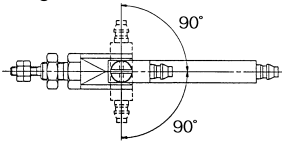
### Formation of small series of a double acting cylinder

(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 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
U4	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)
CJ1B4	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)						
				0.2	0.3	0.4	0.5	0.6	0.7	
4	2	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

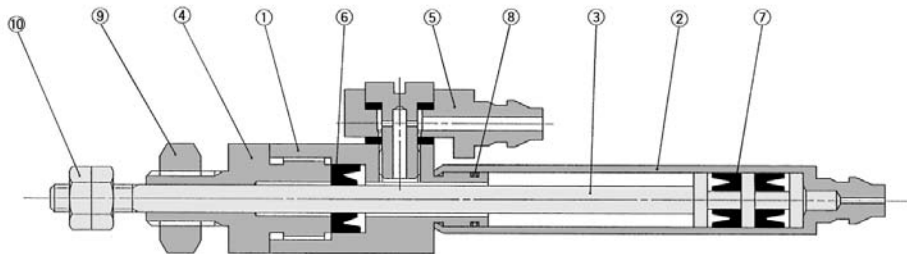
Bore size (mm)	Cylinder stroke (mm)	Weight (g)
4	5	12.0
	10	12.4
	15	12.8
	20	13.2

## Moisture Control Tube Series IDK

When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to [Series IDK in the WEB catalog](#).

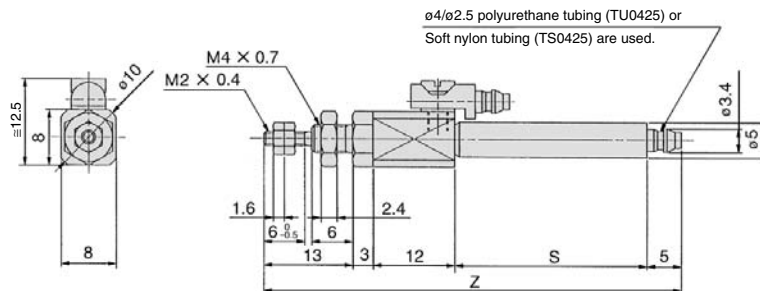
**Construction**



**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</b>	Stainless steel	
4	<b>Seal retainer</b>	Brass	Electroless nickel plated
5	<b>Fittings</b>	Body Brass Gasket NBR + Stainless steel 304	Electroless nickel plated
6	<b>Rod seal</b>	NBR	
7	<b>Piston seal</b>	NBR	
8	<b>Tube gasket</b>	NBR	
9	<b>Mounting nut</b>	Steel	Nickel plated
10	<b>Rod end nut</b>	Steel	Zinc chromated

**Dimensions: Double Acting, Basic Style**



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

**CJ1**

**CJP**

**CJ2**  
-Z

**CJ2**

**CM2**  
-Z

**CM2**

**CM3**

**CG1**  
-Z

**CG1**

**CG3**

**MB**  
-Z

**MB**

**MB1**

**CA2**  
-Z

**CA2**

**CS1**

**CS2**

**D-□**

**-X□**

Technical data

# Air Cylinder

## Single Acting: Spring Return

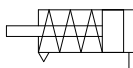
# Series CJ1

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.

### 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	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

Action	Single acting, Spring return
Fluid	Air
Proof pressure	1.05 MPa
Maximum operating pressure	0.7 MPa
Minimum operating pressure	0.3 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 mm 0
Mounting	Basic style
Lubrication	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

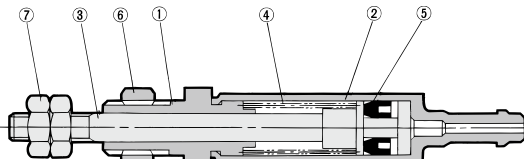
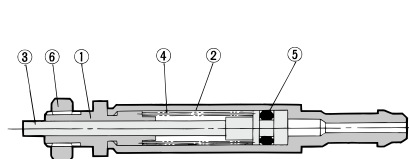
(N)

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
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

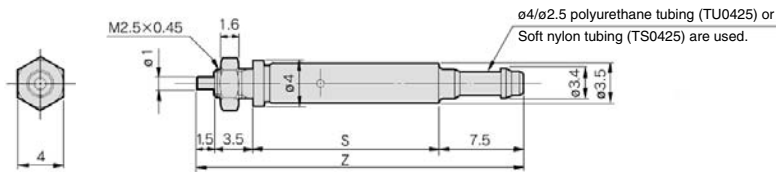


**Component Parts**

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

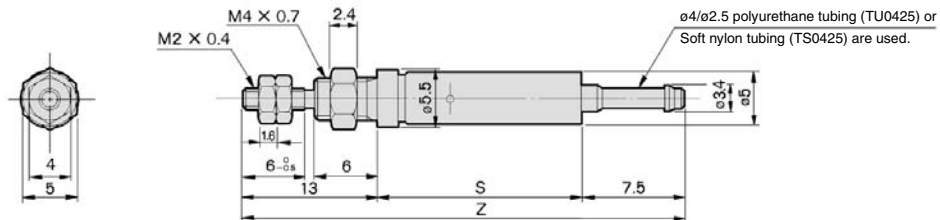
**Basic Style**

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

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

D-□  
-X□  
Technical data