

# SMC Information

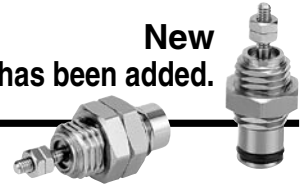
## Pin Cylinder/Single Acting, Spring Extended Type Series CJP

ø4, ø6, ø10, ø15

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D-KS P-120(KS)

**New**  
Size ø4 has been added.



### A short stroke miniature cylinder with a shorter overall length.

The installation space can be significantly reduced because this cylinder can be recessed directly into a machine body or installed on a panel.

Thus, the machine can be made more compact.

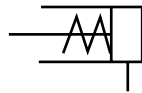


Plug mounting style

Panel mounting style

#### JIS Symbol

Single acting, Spring return

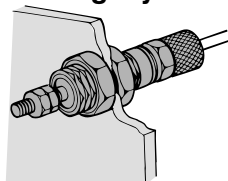


**Made to Order Specifications**  
(For details, refer to SMC's  
Best Pneumatics catalogue Made to Order.)

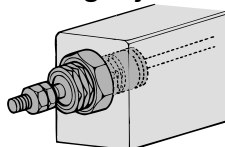
Symbol	Specifications
-XC17	Pin cylinder with rod quenched
-XC22	Fluoro rubber seals

### Mounting Style

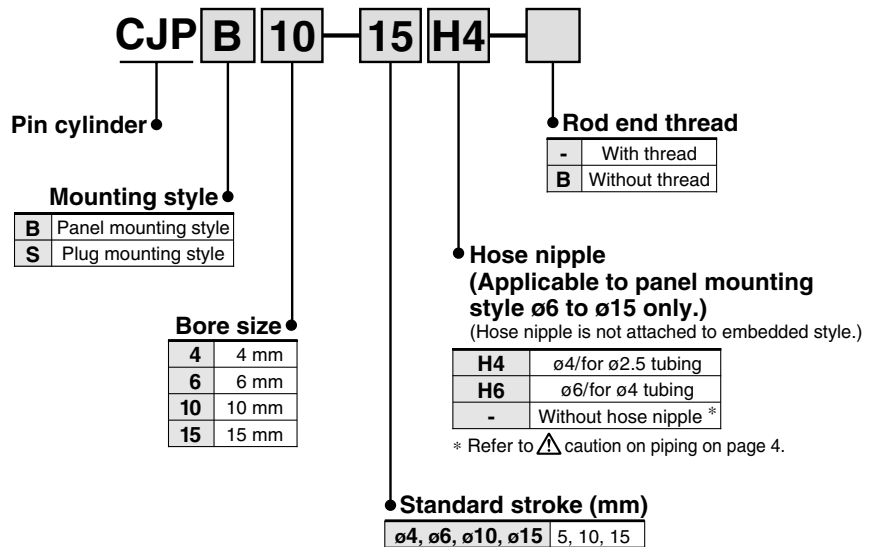
#### Panel mounting style



#### Plug mounting style



### How to Order

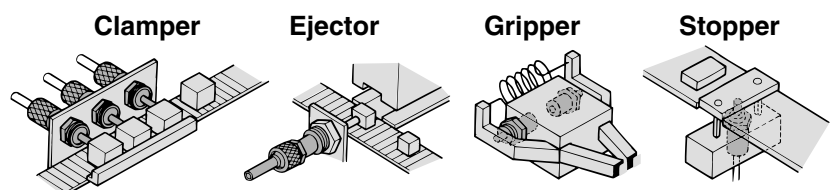


### Specifications

Action		Single acting, Spring return	
Maximum operating pressure		0.7 MPa	
Minimum operating pressure	ø4	0.3 MPa	
	ø6	0.2 MPa	
	ø10, ø15	0.15 MPa	
Proof pressure		1.05 MPa	
Ambient and fluid temperature		-10 to 70°C (No freezing)	
Lubrication		Not required (Non-lube)	
Piston speed		50 to 500 mm/s	
Cushion		None	
Stroke length tolerance		$\begin{matrix} +1.0 \\ 0 \end{matrix}$	
Thread tolerance		JIS Class 2	
Rod end configuration		With thread/Without thread	
Mounting bracket		Panel mounting style	Plug mounting style
Accessory (Standard equipment)	Standard equipment	Mounting nut (2) Rod end nut * (2)	Mounting nut (1) Gasket (1) Rod end nut * (2)
	Option	Hose nipple (Except ø4)	

\* When rod end is threaded.

### Application Example



# Series CJP

## Standard Stroke

Bore size (mm)	Stroke (mm)
4	5, 10, 15
6	5, 10, 15
10	5, 10, 15
15	5, 10, 15

## Spring Reaction Force

Bore size (mm)	Stroke (mm)	Retracted side	Extended side
4	5, 10, 15	2.80	1.00
6	5, 10, 15	3.92	1.42
10	5, 10, 15	5.98	2.45
15	5, 10, 15	10.80	4.41

\* Same spring force for each stroke.

## Weight

Model	Stroke (mm)		
	5	10	15
CJP□4	10	13	15
CJP□6	10.6	13.1	15.6
CJP□10	28	33	38
CJP□15	72	82	92

\* Weight of hose nipple (4 g) for panel mounting is excluded.

## Hose Nipple Dedicated for Panel Mounting Style (With fixed orifice)

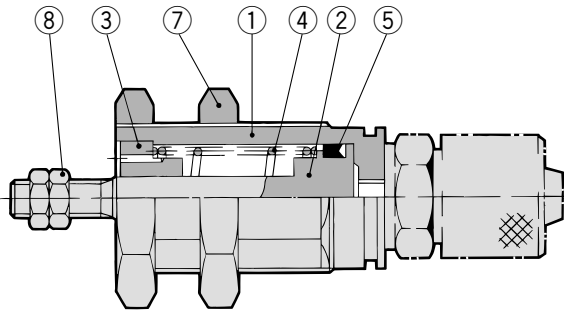
Applicable tubing	Part no.
ø4/for ø2.5 tubing	CJ-5H-4
ø6/for ø4 tubing	CJ-5H-6

## Standard Stroke

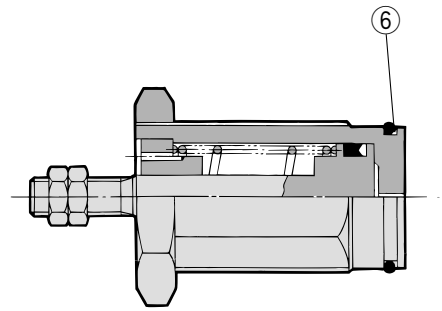
Bore size (mm)	Operating direction	Operating pressure (MPa)		
		0.3	0.5	0.7
4	OUT	0.97	3.48	6.00
	IN	1.0		
6	OUT	4.56	10.2	15.9
	IN	1.42		
10	OUT	17.6	33.3	49.0
	IN	2.45		
15	OUT	42.2	77.5	113
	IN	4.41		

## Construction (Not able to disassemble.)

### Panel mounting style



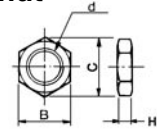
### Plug mounting style



## Component Parts

No.	Description	Material	Note	
①	Cover	Brass	Electroless nickel plated	
②	Piston	Stainless steel		
③	Collar	Oil-impregnated sintered alloy	ø4	Brass + Electroless nickel plated
			ø6, ø10	Phosphor bronze
④	Return spring	Piano wire	Zinc chromated	
⑤	Piston seal	NBR		
⑥	Gasket	NBR	Special product (O-ring) for embedded style	
⑦	Mounting nut	Brass	Electroless nickel plated	
⑧	Rod end nut	Steel	Nickel plated	

## Mounting nut



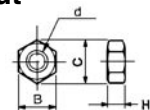
Material: Brass

Part No.	Applicable bore size (mm)	d	H	B	C
SNPS-004	4	M8 x 1.0	3	10	11.5
SNPS-006	6	M10 x 1.0	3	12	13.9
SNPS-010	10	M15 x 1.5	4	19	22
SNPS-015	15	M22 x 1.5	5	27	31

## Dedicated Nut Part No.

Description	Bore size (mm)			
	4	6	10	15
Mounting nut	SNPS-004	SNPS-006	SNPS-010	SNPS-015
Rod end nut	NTJ-004	NTP-006	NTP-010	NTP-015

## Rod end nut



Material: Steel

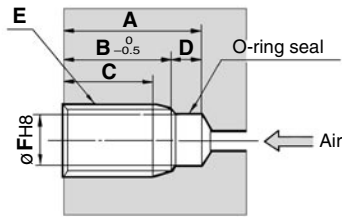
Part No.	Applicable bore size (mm)	d	H	B	C
NTJ-004	4	M2	1.6	4	4.6
NTP-006	6	M3	1.8	5.5	6.4
NTP-010	10	M4	2.4	7	8.1
NTP-015	15	M5	3.2	8	9.2

### Recommended Mounting Hole Dimensions for Plug Mounting Style

When plug mounted



Machining dimensions for mounting

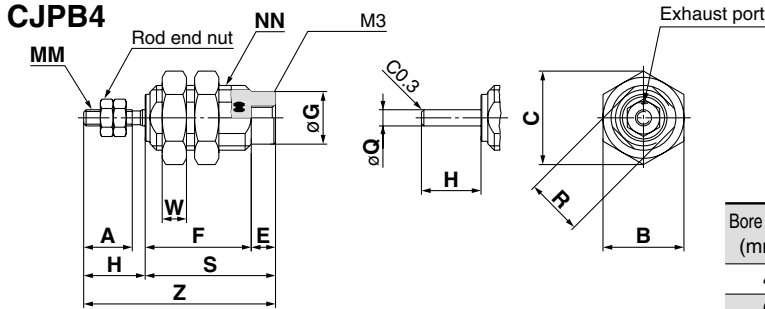


Bore size (mm)	Stroke	A	B	C	D	E	F	G
4	5	12	8.5	6	3.5	M8 x 1.0	6.5	3
	10	20	16.5	14				
	15	28	24.5	22				
6	5	16	12.5	10	3.5	M10 x 1.0	8.5	3
	10	23	19.5	17				
	15	30	26.5	24				
10	5	17	13.5	10.5	3.5	M15 x 1.5	12	4
	10	23.5	20	17				
	15	30.5	27	24				
15	5	19	14.5	11.5	4.5	M22 x 1.5	19	5
	10	25	20.5	17.5				
	15	31.5	27	24				

Note) E and  $\phi F$  should be machined in a concentric manner.

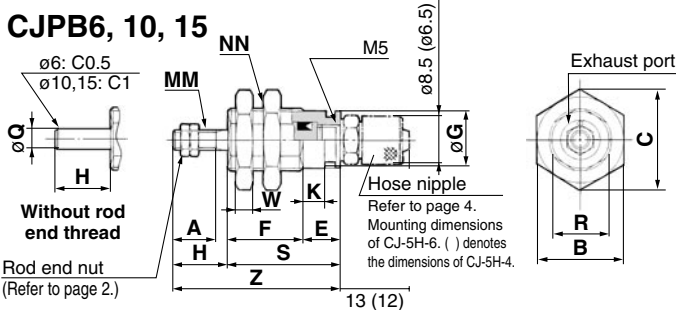
### Panel Mounting Style

**CJPB4**



Bore size (mm)	A	B	C	E	F			G	H	K	MM
					5 st	10 st	15 st				
4	6	10	11.5	3	13	21	29	6.5	7.5	—	M2
6	7	12	13.9	6	12.5	19.5	26.5	8.5	9	3.5	M3
10	10	19	22	6	14.5	21	28	12	12	3.5	M4
15	12	27	31	7	16.5	22.5	29	19	14	4.2	M5

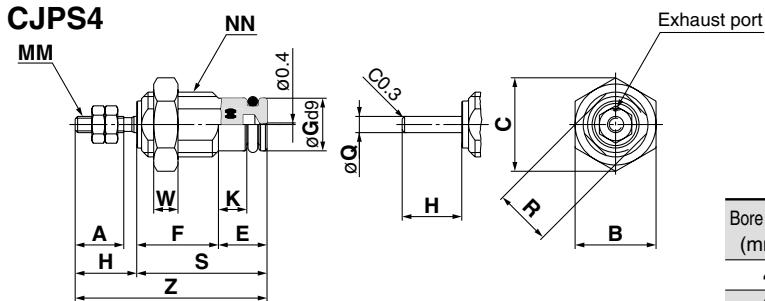
**CJPB6, 10, 15**



Bore size (mm)	NN	R	S			W	Z			Q
			5 st	10 st	15 st		5 st	10 st	15 st	
4	M8 x 1.0	7	16	24	32	3	23.5	31.5	39.5	2
6	M10 x 1.0	9	18.5	25.5	32.5	3	27.5	34.5	41.5	3
10	M15 x 1.5	13	20.5	27	34	4	32.5	39	46	5
15	M22 x 1.5	20	23.5	29.5	36	5	37.5	43.5	50	6

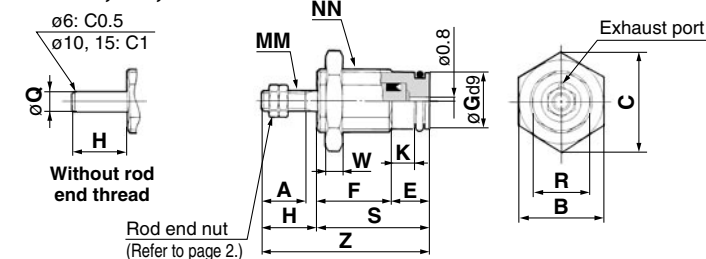
### Plug Mounting Style

**CJPS4**



Bore size (mm)	A	B	C	E	F			G	H	K	MM
					5 st	10 st	15 st				
4	6	10	11.5	6	10	18	26	6.5	7.5	3.5	M2
6	7	12	13.9	6	12.5	19.5	26.5	8.5	9	3.5	M3
10	10	19	22	6	14.5	21	28	12	12	3.5	M4
15	12	27	31	7	16.5	22.5	29	19	14	4.2	M5

**CJPS6, 10, 15**



Bore size (mm)	NN	R	S			W	Z			Q
			5 st	10 st	15 st		5 st	10 st	15 st	
4	M8 x 1.0	7	16	24	32	3	23.5	31.5	39.5	2
6	M10 x 1.0	9	18.5	25.5	32.5	3	27.5	34.5	41.5	3
10	M15 x 1.5	13	20.5	27	34	4	32.5	39	46	5
15	M22 x 1.5	20	23.5	29.5	36	5	37.5	43.5	50	6

## ⚠ Specific Product Precautions

Be sure to read before handling. Contact SMC if you are operating your product at different specifications.

### Piping

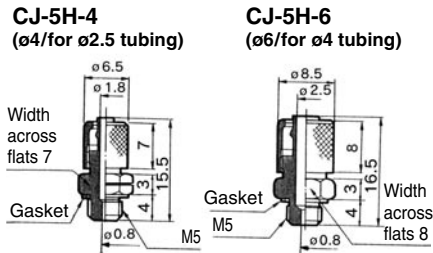
#### ⚠ Caution

The fittings described below are recommended for piping with this cylinder.

Bore size	Applicable bore size	Fitting type	Connection thread	Model
ø4	ø2	One-touch fitting	M3	<b>KJ□02-M3</b>
		Miniature fitting		<b>M-3AU-2</b>
One-touch fitting		M5	<b>KJ□02-M5</b>	
Miniature fitting			<b>M-5AU-2</b>	
ø6 ø10 ø15	ø4/2.5	Dedicated hose nipple (With a fixed orifice)	M5	<b>CJ-5H-4</b>
	ø6/4			<b>CJ-5H-6</b>

Be aware of the cylinder speed at the return side since it may be delayed when the above one-touch fittings or miniature fittings with a bore size greater than ø15 are used.

#### Hose nipple



This cylinder can also accept the fittings described below. When these fittings are used, please make sure to mount a speed controller that is set to control the speed to less than 500mm/s.

Bore size	Applicable bore size	Fitting type	Connection thread	Model
ø4	3.2	One-touch fitting	M3	<b>KJ□23-M3</b>
	4			<b>KJ□04-M3</b>
ø6 ø10 ø15	3.2		M5	<b>KJ□23-M5</b>
	4			<b>KJ□04-M5</b>
	6		<b>KJ□06-M5</b>	

#### Recommended speed controllers

Applicable bore size	Thread	Elbow type meter-in	Universal type meter-in	In-line type meter-in
ø2	M3	AS1211F-M3-02	—	AS1001F-02
	M5	AS1211F-M5-02	—	
ø3.2	M3	AS1211F-M3-23	AS1311F-M3-23	AS1001F-23
	M5	AS1211F-M5-23	AS1311F-M5-23	
ø4	M3	AS1211F-M3-04	AS1311F-M3-04	AS1001F-04
	M5	AS1211F-M5-04	AS1311F-M5-04	
ø6	M5	AS1211F-M5-06	AS1311F-M5-06	AS1001F-06

\* Please refer to SMC catalog no. ES50-25 (after version B) for details of one-touch fittings, miniature fittings and speed controllers (applies only to tubing of O.D. ø2). Please refer to SMC's Best Pneumatics catalogue for recommended speed controller details (applicable tubing O.D.: ø3.2 to ø6)

### Mounting

#### ⚠ Caution

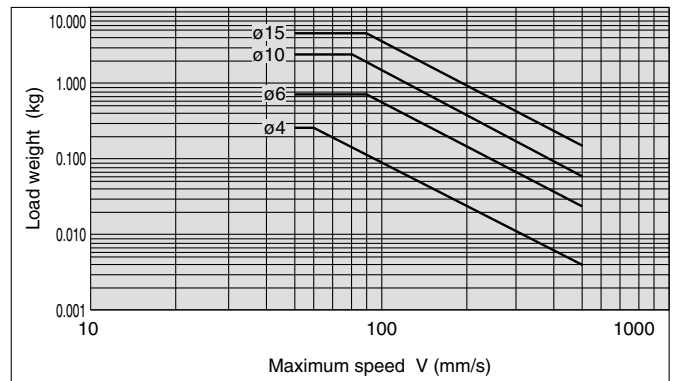
Do not use the cylinder in such a way that a load could be applied to the piston rod during the retraction. The spring that is built into the cylinder provides only enough force to retract the piston rod. Thus, if a load is applied, the piston rod will not be able to retract to the end of the stroke.

### Allowable Kinetic Energy

#### ⚠ Caution

When driving an inertial load, operate the cylinder with a kinetic energy within the allowable value. The range in the chart below that is shown by bold solid lines indicates the relation between load weights and maximum driving speeds.

Bore size (mm)	4	6	10	15
Piston speed (m/s)	0.05 to 0.5			
Allowable kinetic energy (J)	$0.5 \times 10^{-3}$	$3 \times 10^{-3}$	$8 \times 10^{-3}$	$19 \times 10^{-3}$



### Selection

Strictly observe the limiting range of lateral load to the piston rod. (Refer to the graph below.) If this product is used beyond the limits, it may shorten the machine life or cause damage.

