

Air Cylinder: Standard Type Double Acting, Single Rod Series CJ2

ø6, ø10, ø16

How to Order

6	6 mm
10	10 mm
16	16 mm

ø6	15, 30, 45, 60
ø10	15, 30, 45, 60, 75, 100, 125, 150
ø16	15, 30, 45, 60, 75, 100, 125, 150, 175, 200

B	Basic style
L	Axial foot style
F	Rod side flange style
D	Double clevis style (Except ø6)

Nil	Rubber bumper
A	Air cushion (Except ø6)

Without auto switch CJ2 L 16 60 A R

With auto switch CDJ2 L 16 60 A R J79W

Built-in magnet

Auto switch

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Port location on head cover

Bore size (mm)	6	10, 16
Symbol	—	Perpendicular to axis
Nil	—	Perpendicular to axis
R	Axial foot style	Axial foot style

* For configuration, refer to page 6-3-4.
* Double clevis style is only available for being perpendicular to axis.

Built-in Magnet Cylinder Model

Suffix the symbol "-A" (Rail mounting style) or "-B" (Band mounting style) to the end of part number for cylinder with auto switch.

Example	Rail mounting style	CDJ2B10-45-A
	Band mounting style	CDJ2B16-60-B

* For rail mounting style, screws and nuts for 2 pcs switches come with the rail.

Band mounting style

Rail mounting style

Applicable Auto Switch/Refer to page 6-16-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model			Lead wire length (m)*				Pre-wire connector	Applicable load		
					DC	AC	Band mounting (ø6, ø10, ø16)	Rail mounting (ø10, ø16)		0.5 (Nil)	3 (L)	5 (Z)	None (N)		IC circuit	Relay, PLC	
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	C76	—	A76H	●	●	—	—			—
						—	200 V	—	A72	A72H	●	●	—	—	—		
	Connector	2-wire	24 V	12 V	100 V	C73	A73	A73H	●	●	●	—	—	—	—	—	Relay, PLC
	With diagnostic output (2-color indication)	Grommet	Yes	2-wire	—	—	—	A79W **	—	—	●	●	—	—	—	—	—
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	H7A1	F7NV	F79	●	●	○	—	○	IC circuit	—
				3-wire (PNP)				H7A2	F7PV	F7P	●	●	○	—	○		
		2-wire		H7B				F7BV	J79	●	●	○	—	○			
				H7C				J79C	—	●	●	●	●	—	—		
	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	H7NW	F7NWV	F79W	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)				H7PW	—	F7PW	●	●	○	—	○		
		2-wire		H7BW				F7BWV	J79W	●	●	○	—	○			
				H7BA				—	F7BA	—	●	○	—	○			
Water resistant (2-color indication)	Grommet	Yes	2-wire	24 V	12 V	—	—	F7BAV	—	—	●	○	—	○	—	—	
							—	F7BAV	—	—	●	○	—	○			
With diagnostic output (2-color indication)	Grommet	Yes	4-wire (NPN)	24 V	5 V, 12 V	—	H7NF	—	F79F	●	●	○	—	○	—	—	

* Lead wire length symbols: 0.5 m Nil (Example) C73C
 3 m L (Example) C73CL
 5 m Z (Example) C73CZ
 None N (Example) C73CN

* Solid state switches marked with "○" are produced upon receipt of order.
 ** "D-A79W" cannot be mounted on bore size ø10 cylinder with air cushion.

- Since there are other applicable auto switches than listed, refer to page 6-3-13 for details.
- For details about auto switches with pre-wire connector, refer to page 6-16-60.

Air Cylinder: Standard Type Double Acting, Single Rod Series CJ2

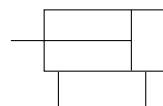
Specifications

Action	Double acting, Single rod	
Fluid	Air	
Proof pressure	1.05 MPa	
Maximum operating pressure	0.7 MPa	
Minimum operating pressure	ø6	0.12 MPa
	ø10, ø16	0.06 MPa
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)	
Cushion	Rubber bumper/Air cushion	
Lubrication	Not required (Non-lube)	
Thread tolerance	JIS Class 2	
Stroke length tolerance	+1.0 0	
Piston speed	50 to 750 mm/s	
Allowable kinetic energy	ø6	0.012 J
	ø10	0.035 J
	ø16	0.090 J



JIS Symbol

Double acting,
Single rod



Standard Stroke

Bore size (mm)	Standard stroke
6	15, 30, 45, 60
10	15, 30, 45, 60, 75, 100, 125, 150
16	15, 30, 45, 60, 75, 100, 125, 150, 175, 200

* Intermediate strokes are available by the 1 mm interval with no stroke adjustment by spacer.

Minimum Stroke for Auto Switch Mounting

Auto switch mounting style	Auto switch model	No. of auto switches mounted	Minimum cylinder stroke (mm)	Auto switch mounting style	Auto switch model	No. of auto switches mounted	Minimum cylinder stroke (mm)
Band mounting style (ø6, ø10, ø16)	D-C7□ D-C80	3 (Same side)	90	Rail mounting style (ø10, ø16)	D-A7□ D-A80 D-A73C D-A80C	3	35
		3 (Different sides)	55			2	10
		2 (Same side)	50			1	5
		2 (Different sides)	15		D-A7□H D-A80H	3	45
						1	10
		D-H7□ D-H7□W D-H7BAL D-H7NF	3 (Same side)		105	1	5
	3 (Different sides)		60		3	40	
	2 (Same side)		60		D-A79W	2	15
	2 (Different sides)		15			1	10
	1		10		3	45	
	D-C73C D-C80C D-H7C		3 (Same side)		105	D-F7□ D-J79	2
		3 (Different sides)	65		1		5
2 (Same side)		65	3	30			
2 (Different sides)		15	D-F7□V D-J79C	2	5		
				1	5		
1		10	D-F7□W D-J79W D-F7BAL D-F79F	3	55		
D-F7□WV D-F7BAVL	10	2		15			
		1		10			
		3		40			
		2		15			
		1	10				



Made to Order Specifications (For details, refer to page 6-17-1.)

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat resistant cylinder (150°C) * Not available with switch & with air cushion
-XB7	Cold resistant cylinder * Not available with switch & with air cushion
-XB9	Low speed cylinder (10 to 50 mm/s) * Not available with air cushion
-XB13	Low speed cylinder (5 to 50 mm/s) * Not available with air cushion
-XC3	Special port location * Not available with air cushion
-XC8	Adjustable stroke cylinder/Adjustable extension type
-XC9	Adjustable stroke cylinder/Adjustable retraction type
-XC10	Dual stroke cylinder/Double rod type
-XC11	Dual stroke cylinder/Single rod type
-XC22	Fluoro rubber seals * Not available with air cushion
-XC51	With hose nipple

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

C76

C85

C95

CP95

NCM

NCA

D-

-X

20-

Data

Series CJ2

Mounting Style and Accessory/For details, refer to page 6-3-11.

Mounting		Basic style	Axial foot style	Rod side flange style	Double * clevis style
Standard equipment	Mounting nut	●	●	●	—
	Rod end nut	●	●	●	●
	Clevis pin	—	—	—	●
Option	Single knuckle joint	●	●	●	●
	Double knuckle joint *	●	●	●	●
	T-bracket	—	—	—	●

* Pin and snap ring are shipped together with double clevis and double knuckle joint.

Mounting Bracket Part No.

Mounting bracket	Bore size (mm)		
	6	10	16
Foot bracket	CJ-L006B	CJ-L010B	CJ-L016B
Flange bracket	CJ-F006B	CJ-F010B	CJ-F016B
T-bracket *	—	CJ-T010B	CJ-T016B

* T-bracket is used with double clevis (D).

Auto Switch Mounting Bracket Part No. (Band mounting style)

Bore size (mm)	Auto switch mounting bracket no.	Note
6	BJ2-006	Common for the types of D-C7/C8 and D-H7
10	BJ2-010	
16	BJ2-016	

[Mounting screws set made of stainless steel]

The following set of mounting screws made of stainless steel is also available. Use it in accordance with the operating environment. (Please order the mounting band separately, since it is not included.)

BBA4: For D-C7/C8/H7

"D-H7BAL" switch is set on the cylinder with the stainless steel screws above when shipped.

When only a switch is shipped independently, "BBA4" screws are attached.

Theoretical Output

Refer to "Double acting cylinder" in Theoretical Output Table 1 of Technical data 3 on page 6-19-1.

Port Location on Head Cover

Either perpendicular to the cylinder axis or in-line with the cylinder axis is available for basic style. (ø6 is available only as in-line style.)



Axial

Perpendicular

Weight

(g)

Bore size (mm)		6	10	16
Basic weight *		15	24	55
Additional weight per each 15 mm of stroke		2	4	6.5
Mounting bracket weight	Axial foot style	8	8	20
	Rod side flange style	5	5	15
	Double clevis style (With pin) *	—	4	10
Accessory bracket	Single knuckle joint	—	16	22
	Double knuckle joint (With pin)	—	24	19.5
	T-bracket	—	32	50

* Mounting nut and rod end nut are included in the basic weight.

** Mounting nut is not attached to the double clevis style, so the mounting nut weight is already subtracted.

Calculation: (Example) CJ2L10-45

- Basic weight 24 (ø10)
 - Additional weight 4/15 stroke
 - Cylinder stroke 45 stroke
 - Mounting bracket weight .. 8 (Axial foot style)
- 24 + 4/15 x 45 + 8 = 44 g

⚠ Precautions

Be sure to read before handling. Refer to pages 6-20-3 to 6-20-6 for Safety Instructions and Actuator Precautions.

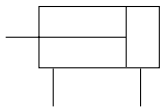
Mounting

⚠ Caution

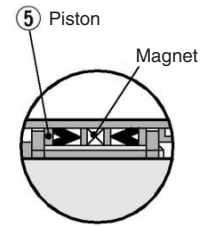
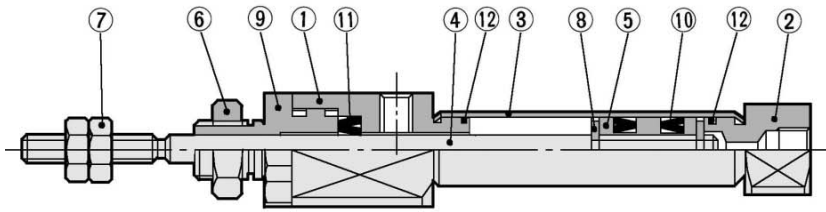
- During installation, secure the rod cover and tighten by applying an appropriate tightening force to the retaining nut or to the rod cover body. If the head cover is secured or the head cover is tightened, the cover could rotate, leading to the deviation.
- Tighten the retaining screws to an appropriate tightening torque within the range given below.
 - ø6: 2.1 to 2.5 N·m, ø10: 5.9 to 6.4 N·m, ø16: 10.8 to 11.8 N·m
- To remove and install the snap ring for the knuckle pin or the clevis pin, use an appropriate pair of pliers (tool for installing a type C snap ring). In particular, use a pair of ultra-mini pliers such as the Super Tool CSM-07A for removing and installing the snap ring on the ø10 cylinder.
- In the case of auto switch rail mounting style, do not remove the rail that is mounted. Because retaining screws extend into the cylinder, this could lead to an air leak.

Series CJ2

Construction (Not able to disassemble.)

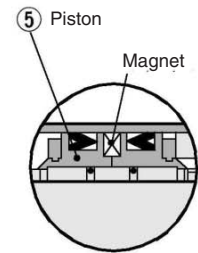
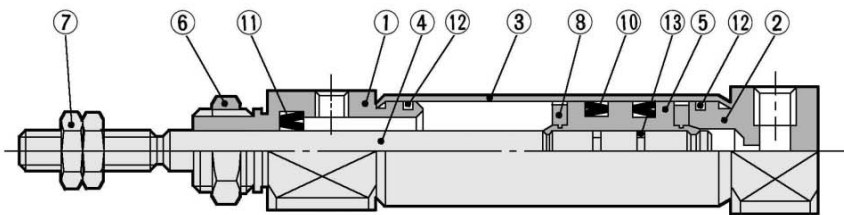


CJ2□6-R



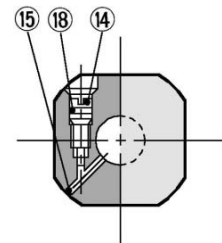
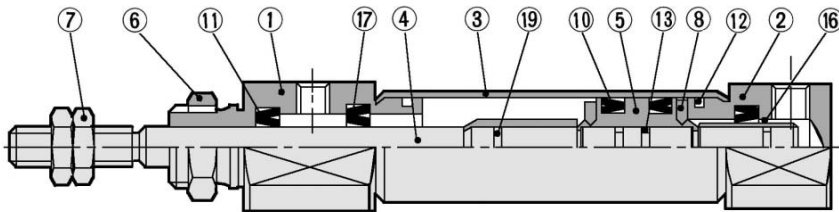
Piston construction when auto switch is mounted.

CJ2□10, CJ2□16



Piston construction when auto switch is mounted.

With air cushion



Component Parts

No.	Description	Material	Note
①	Rod cover	Aluminum alloy	Anodized
②	Head cover	Aluminum alloy	Anodized
③	Cylinder tube	Stainless steel	
④	Piston rod	Stainless steel	
⑤	Piston	Brass	
⑥	Mounting nut	Brass	Nickel plated
⑦	Rod end nut	Rolled steel	Nickel plated
⑧	Bumper	Urethane	
⑨*	Seal retainer	Aluminum alloy	Anodized
⑩	Piston seal	NBR	
⑪	Rod seal	NBR	
⑫	Tube gasket	NBR	
⑬	Piston gasket	NBR	

* Only for $\phi 6$

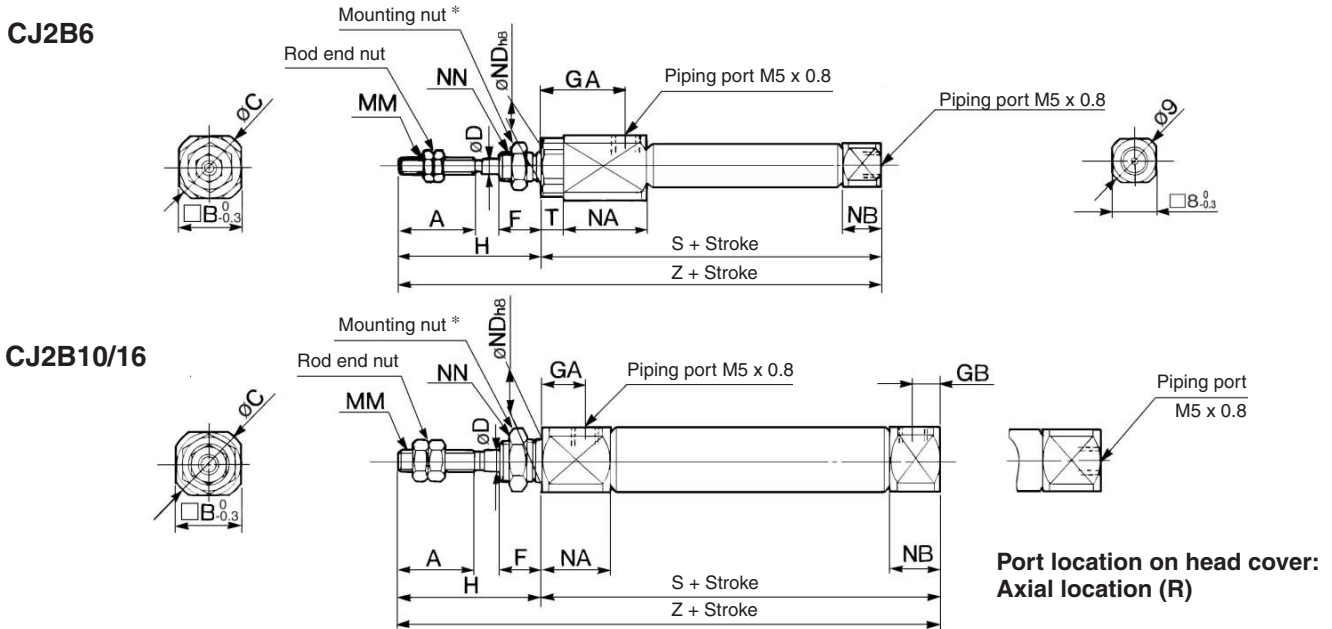
Dedicated for with Air Cushion Type

No.	Description	Material	Note
⑭	Cushion needle	Stainless steel	
⑮	Steel balls	Bearing steel	
⑯	Cushion ring	Brass	
⑰	Check seal	NBR	
⑱	Needle seal	NBR	
⑲	Cushion ring gasket	NBR	

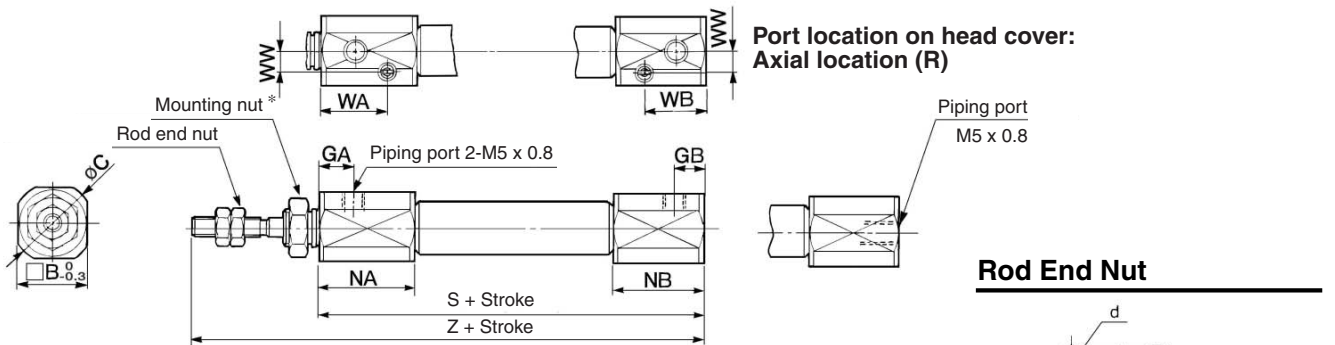
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Basic Style (B)

CJ2B Bore size — Stroke Port location on head cover



With air cushion: CJ2B Bore size — Stroke A Port location on head cover



Material: Iron

Part no.	Applicable bore (mm)	B	C	d	H
NTJ-006A	6	5.5	6.4	M3 x 0.5	2.4
NTJ-010A	10	7	8.1	M4 x 0.7	3.2
NTJ-015A	16	8	9.2	M5 x 0.8	4

* For details of the mounting nut, refer to page 6-3-11.

Bore size (mm)	A	B	C	D	F	GA	GB	H	MM	NA	NB	NDh8	NN	S	T	Z
6	15	12	14	3	8	14.5	—	28	M3 x 0.5	16	7	6 ⁰ _{-0.018}	M6 x 1.0	49	3	77
10	15	12	14	4	8	8	5	28	M4 x 0.7	12.5	9.5	8 ⁰ _{-0.022}	M8 x 1.0	46	—	74
16	15	18.3	20	5	8	8	5	28	M5 x 0.8	12.5	9.5	10 ⁰ _{-0.022}	M10 x 1.0	47	—	75

With Air Cushion Dimensions other than the table below are the same as the table above.

Bore size (mm)	B	C	GA	GB	NA	NB	WA	WB	WW	S	Z
10	15	17	7.5	6.5	21	20	14.5	13.5	4.5	65	93
16	18.3	20	7.5	6.5	21	20	14.5	13.5	5.5	66	94