Air Cylinder: Standard Type
Double Acting, Single Rod

CJ2 Series

ø6, ø10, ø16

RoHS

How to Order

CJ2 B 16 – 60 A □ Z – □ □ – □

With auto switch **CDJ2 B 16 – 60 A □ Z – □ □ – M9BW □ – B – □**

With auto switch (Built-in magnet)

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❶ Mounting

B	Basic
E	Double-side bossed
D**	Double clevis
L	Single foot
M	Double foot
F	Rod flange
G	Head flange

*: Foot/Flange brackets are shipped together with the product, but not assembled.
*: Double clevis is only available for ø10 and ø16.
**: Refer to page 151-1 for the double clevis (with one-touch connecting pin).

❷ Bore size

6	6 mm
10	10 mm
16	16 mm

❺ Head cover port location

Nil	Perpendicular to axis	
R	Axial	

*: For double clevis, the product is perpendicular to the cylinder axis.
*: For double-side bossed, the product is perpendicular to the cylinder axis.

❾ Number of auto switches

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

❸ Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 47.

❻ Pivot bracket

Nil	None
N	Pivot bracket is shipped together with the product.

*: Only for the double clevis type (ø10 and ø16)
*: Pivot bracket is shipped together with the product, but not assembled.

❿ Auto switch mounting type

A	Rail mounting
B	Band mounting

*: For rail mounting, screws and nuts for 2 auto switches come with the rail.
*: Refer to page 148 for auto switch mounting brackets.
*: ø6: Band mounting only

❹ Cushion

Nil	Rubber bumper
A	Air cushion

*: ø6: Rubber bumper only

❼ Rod end bracket

Nil	None
V	Single knuckle joint
W**	Double knuckle joint
T	Rod end cap (Flat type)
U	Rod end cap (Round type)

*: Rod end bracket is shipped together with the product, but not assembled.
*: Single/Double knuckle joint: ø10 and ø16 only
**: Refer to page 63 for the double knuckle joint (with one-touch connecting pin).

❽ Auto switch

Nil	Without auto switch

*: For applicable auto switches, refer to the table below.
★ Enter the auto switch mounting type (A or B) even when a built-in magnet cylinder without an auto switch is required.

⓫ Made to Order

Refer to page 47 for details.

*: **Refer to "Ordering Example of Cylinder Assembly" on page 47.**

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Band mounting Perpendicular	Band mounting In-line	Rail mounting Perpendicular	Rail mounting In-line	Lead wire length [m]: 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)	Pre-wired connector	Applicable load	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V,12 V	—	**M9NV**	**M9N**	**M9NV**	**M9N**	●	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)			**M9PV**	**M9P**	**M9PV**	**M9P**	●	●	●	○	—	○		
				2-wire	12 V		**M9BV**	**M9B**	**M9BV**	**M9B**	●	●	●	○	—	○	—	
		Connector					—	**H7C**	**J79C**	—	●	—	●	●	●	—		
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V,12 V		**M9NWV**	**M9NW**	**M9NWV**	**M9NW**	●	●	●	○	—	○	IC circuit	
				3-wire (PNP)			**M9PWV**	**M9PW**	**M9PWV**	**M9PW**	●	●	●	○	—	○		
				2-wire	12 V		**M9BWV**	**M9BW**	**M9BWV**	**M9BW**	●	●	●	○	—	○	—	
	Water resistant (2-color indicator)			3-wire (NPN)	5 V,12 V		**M9NAV**∗1	**M9NA**∗1	**M9NAV**∗1	**M9NA**∗1	○	○	●	○	—	○	IC circuit	
				3-wire (PNP)			**M9PAV**∗1	**M9PA**∗1	**M9PAV**∗1	**M9PA**∗1	○	○	●	○	—	○		
				2-wire	12 V		**M9BAV**∗1	**M9BA**∗1	**M9BAV**∗1	**M9BA**∗1	○	○	●	○	—	○	—	
	With diagnostic output (2-color indicator)			4-wire (NPN)	5 V,12 V		—	**H7NF**	—	**F79F**	●	—	●	○	—	○	IC circuit	
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	5 V	—	**A96V**	**A96**	**A96V**	**A96**	●	—	●	—	—	—	IC circuit	—
				2-wire	—	200 V	—	—	**A72**	**A72H**	●	—	●	—	—	—	—	Relay, PLC
			No		24 V	100 V	**A93V**∗2	**A93**	**A93V**∗2	**A93**	●	●	●	●	—	—		
					12 V	100 V or less	**A90V**	**A90**	**A90V**	**A90**	●	—	●	—	—	—	IC circuit	
		Connector	Yes			—	—	**C73C**	**A73C**	—	●	—	●	●	●	—	—	
			No			24 V or less	—	**C80C**	**A80C**	—	●	—	●	●	●	—	IC circuit	
	Diagnostic indication (2-color indicator)	Grommet	Yes		—	—	—	—	**A79W**	—	●	—	●	—	—	—	—	

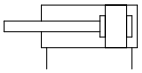
∗1: Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please contact SMC regarding water resistant types with the above model numbers.
∗2: 1 m type lead wire is only applicable to D-A93.

∗: Lead wire length symbols: 0.5 m····· Nil (Example) M9NW
1 m····· M (Example) M9NWM
3 m····· L (Example) M9NWL
5 m····· Z (Example) M9NWZ
None····· N (Example) H7CN

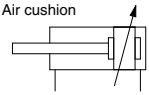
∗: Since there are other applicable auto switches than listed above, refer to page 149 for details.
∗: Solid state auto switches marked with "○" are produced upon receipt of order.
∗: The D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)

Symbol

Rubber bumper



Air cushion



Made to Order

Made to Order: Individual Specifications
(For details, refer to pages 150 and 151.)

Symbol	Specifications
-X446	PTFE grease
-X773∗1	Short pitch mounting
-X2838∗2	Double clevis (With one-touch connecting pin)

∗1: ø6 only
∗2: ø10 and ø16 only

Made to Order

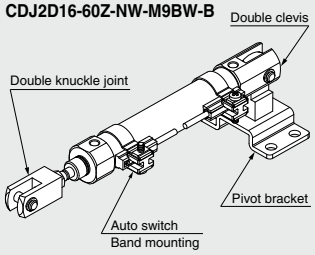
Click here for details

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat resistant cylinder (–10 to 150°C) ∗ Not available with switch & with air cushion
-XB7	Cold resistant cylinder (–40 to 70°C) ∗ Not available with switch & with air cushion
-XB9	Low speed cylinder (10 to 50 mm/s) ∗ Not available with air cushion
-XB13∗3	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	Fluororubber seal ∗ Not available with air cushion
-XC51	With hose nipple
-XC85	Grease for food processing equipment

∗3: ø6 only

Ordering Example of Cylinder Assembly

Cylinder model:
CDJ2D16-60Z-NW-M9BW-B



Mounting D: Double clevis
Pivot bracket N: Yes
Rod end bracket W: Double knuckle joint
Auto switch D-M9BW: 2 pcs.
Auto switch mounting B: Band mounting

∗: Pivot bracket, double knuckle joint and auto switch are shipped together with the product, but not assembled.

∗: Except ø6

Specifications

Bore size [mm]		6	10	16
Action		Double acting, Single rod		
Fluid		Air		
Proof pressure		1 MPa		
Maximum operating pressure		0.7 MPa		
Minimum operating pressure	Rubber bumper	0.12 MPa	0.06 MPa	
	Air cushion	—	0.1 MPa	
Ambient and fluid temperature		Without auto switch: –10°C to 70°C (No freezing) With auto switch: –10°C to 60°C		
Cushion		Rubber bumper	Rubber bumper/Air cushion	
Lubrication		Not required (Non-lube)		
Piston speed	Rubber bumper	50 to 750 mm/s		
	Air cushion	—	50 to 1000 mm/s	
Allowable kinetic energy	Rubber bumper	0.012 J	0.035 J	0.090 J
	Air cushion (Effective cushion length)	—	0.07 J (9.4 mm)	0.18 J (9.4 mm)
Stroke length tolerance		$^{+1.0}_{0}$		

Standard Strokes

[mm]

Bore size	Standard stroke	Maximum manufacturable stroke
6	15, 30, 45, 60	200
10	15, 30, 45, 60, 75, 100, 125, 150	400
16	15, 30, 45, 60, 75, 100, 125, 150, 175, 200	400

∗: Manufacture of intermediate strokes in 1 mm increments is possible. (Spacers are not used.) Produced upon receipt of order.
∗: Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on front matter pages. In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc.

Mounting and Accessories

Refer to page 42 for the list of brackets and page 63 for details about part numbers and dimensions.

●···Mounted on the product. ○···Can be ordered within the cylinder model. △···Order separately.

	Mounting	Basic	Foot	Flange	Double[Note 1] clevis	Double clevis (including T-bracket)
Standard	Mounting nut	●	●	●	—	—
	Rod end nut	●	●	●	●	●
	Clevis pin (including retaining rings)	—	—	—	●	●
Option	Double clevis (With one-touch connecting pin)	△	△	△	○ (-X2838)	○ (-X2838)
	Single knuckle joint	○	○	○	○	○
	Double knuckle joint (including a pin and retaining rings)	○	○	○	○	○
	Double knuckle joint (With one-touch connecting pin)	△	△	△	△	△
	Rod end cap (Flat/Round type)	○	○	○	○	○
	Pivot bracket (T-bracket)	—	—	—	○	●

Note 1) Double clevis is only available for ø10 and ø16.
Note 2) Stainless steel mounting brackets and accessories are also available.
Refer to page 63-1 for details.

Mounting Brackets/Part No.

Mounting bracket	Bore size [mm]		
	6	10	16
Foot	CJ-L006C	CJ-L010C	CJ-L016C
Flange	CJ-F006C	CJ-F010C	CJ-F016C
T-bracket∗	—	CJ-T010C	CJ-T016C

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

Refer to pages 142 to 149 for cylinders with auto switches.

- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Minimum stroke for auto switch mounting
- Operating range
- Auto switch mounting brackets/Part no.

Moisture Control Tube IDK Series

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 the IDK series in the Best Pneumatics No. 6.