

# Air Cylinder: Built-in Speed Controller Type Double Acting, Double Rod

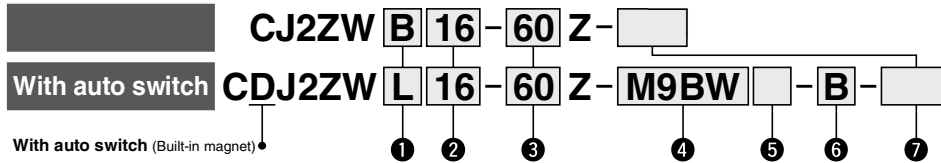
## CJ2ZW Series

ø10, ø16

RoHS



### How to Order



#### 1 Mounting

B	Basic
L	Foot
F	Flange

\*: Foot/Flange brackets are shipped together with the product, but not assembled.

#### 2 Bore size

10	10 mm
16	16 mm

#### 3 Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 115.

#### 4 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.

#### 5 Number of auto switches

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

#### 6 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.

#### 7 Made to Order

Refer to page 115 for details.

### 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		Auto switch model				Lead wire length [m]					Pre-wired connector	Applicable load			
					DC	AC	Band mounting		Rail mounting		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)					
							Perpendicular	In-line	Perpendicular	In-line										
Solid state auto switch	—	Grommet	—	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC			
				3-wire (PNP)			M9PV	M9P	M9PV	M9P	●	●	●	○	○					
		Connector	—	2-wire	12 V	—	M9BV	M9B	M9BV	M9B	●	●	●	○	○	—				
				—	—	—	H7C	J79C	—	—	●	—	●	●	—	—				
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NWV	M9NW	M9NWV	M9NW	●	●	●	○	○	IC circuit				
				3-wire (PNP)			M9PWV	M9PW	M9PWV	M9PW	●	●	●	○	○	—				
	Water resistant (2-color indicator)	Grommet	—	3-wire (NPN)	5 V, 12 V	—	M9BWV	M9BW	M9BWV	M9BW	●	●	●	○	○	—				
				3-wire (PNP)			M9NAV <sup>*1</sup>	M9NA <sup>*1</sup>	M9NAV <sup>*1</sup>	M9NA <sup>*1</sup>	○	○	●	○	○	IC circuit				
	With diagnostic output (2-color indicator)	Grommet	—	3-wire (PNP)	5 V, 12 V	—	M9PAV <sup>*1</sup>	M9PA <sup>*1</sup>	M9PAV <sup>*1</sup>	M9PA <sup>*1</sup>	○	○	●	○	○	—				
				2-wire			M9BAV <sup>*1</sup>	M9BA <sup>*1</sup>	M9BAV <sup>*1</sup>	M9BA <sup>*1</sup>	○	○	○	○	○	—				
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	—	A96V	A96	A96V	A96	●	—	—	—	—	IC circuit				
							—	—	—	—	—	—	—	—	—	—	—			
							—	—	—	—	—	—	—	—	—	—	—	—		
							—	—	—	—	—	—	—	—	—	—	—	—		
							—	—	—	—	—	—	—	—	—	—	—	—		
		Connector	No	2-wire	24 V	—	12 V	—	A93V <sup>*2</sup>	A93	A93V <sup>*2</sup>	A93	●	●	●	—	—	—		
									—	—	—	—	—	—	—	—	—	—	—	
									—	—	—	—	—	—	—	—	—	—	—	—
									—	—	—	—	—	—	—	—	—	—	—	—
									—	—	—	—	—	—	—	—	—	—	—	—
Diagnostic indication (2-color indicator)	Grommet	Yes	—	—	—	—	C73C	A73C	—	—	●	—	●	●	—	—				
							—	C80C	A80C	—	—	●	—	●	●	—	—			
—	Grommet	No	—	—	—	—	—	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, 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 auto switch mounting brackets are assembled before being shipped.)

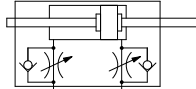
## Air Cylinder: Built-in Speed Controller Type Double Acting, Double Rod **CJ2ZW Series**

**Space-saving air cylinder with speed controller built-in cylinder cover**



### Symbol

Double acting, Double rod, Rubber bumper



**Made to Order: Individual Specifications**  
(For details, refer to page 150.)

Symbol	Specifications
-X446	PTFE grease

### Made to Order

[Click here for details](#)

Symbol	Specifications
-XA <input type="checkbox"/>	Change of rod end shape
-XC51	With hose nipple
-XC85	Grease for food processing equipment



## Precautions

Refer to page 152 before handling.

### Specifications

Bore size [mm]	10	16
	Action	
Double acting, Double rod		
Fluid		
Air		
Proof pressure		
1 MPa		
Maximum operating pressure		
0.7 MPa		
Minimum operating pressure		
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		
Lubrication		
Not required (Non-lube)		
Stroke length tolerance		
$\begin{matrix} +1.0 \\ 0 \end{matrix}$		
Speed controller		
Built-in		
Piston speed		
50 to 750 mm/s		
Allowable kinetic energy		
	0.035 J	0.090 J

### Standard Strokes

Bore size	Standard stroke [mm]	
	10	15, 30, 45, 60, 75, 100, 125, 150
16	15, 30, 45, 60, 75, 100, 125, 150, 175, 200	

\*: Manufacture of intermediate strokes in 1 mm increments is possible. (Spacers are not used.)

\*: Please consult with SMC for strokes which exceed the standard stroke length.

\*: 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.

Mounting	●...Mounted on the product. ○...Please order separately.		
	Basic	Foot	Flange
Standard	Mounting nut	●	●
	Rod end nut	●	●
Option	Single knuckle joint	○	○
	Double knuckle joint (including a pin and retaining rings)	○	○
	Double knuckle joint (With one-touch connecting pin)	○	○

\*: 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]	
	10	16
Foot	CJ-L010C	CJ-L016C
Flange	CJ-F010C	CJ-F016C

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.

**CJ1**

**CJP**

**CJ2**

**JCM**

**CM2**

**CM3**

**CG1**

**CG3**

**JMB**

**MB**

**MB1**

**CA2**

**CS1**

**CS2**

**D-**

**-X**

Technical Data

# CJ2ZW Series

## Weights

		[g]	
		10	16
Bore size [mm]		10	16
Basic weight (When the stroke is zero)	Basic	36	61
Additional weight per 15 mm of stroke		4.5	7.5
Mounting bracket weight	Double foot	16	50
	Head flange	5	13
	Single knuckle joint	17	23
Accessories	Double knuckle joint (including knuckle pin)	25	21
	Double knuckle joint (With one-touch connecting pin)	26	22
	Rod end cap (Flat type)	1	2
	Rod end cap (Round type)	1	2

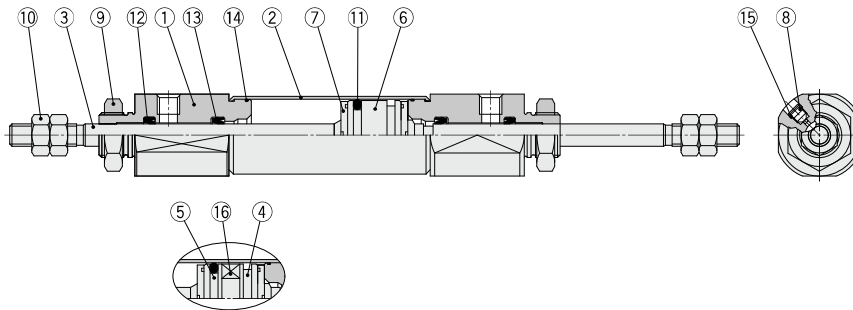
\*: Mounting nut and rod end nut are included in the basic weight.

Calculation:

Example) **CJ2ZW10-45Z**

- Basic weight .....36 (σ10)
  - Additional weight .....4.5/15 stroke
  - Cylinder stroke.....45 stroke
  - Mounting bracket weight...16 (Double foot)
- $$36 + 4.5/15 \times 45 + 16 = 65.5 \text{ g}$$

## Construction (Not able to disassemble)



With auto switch

### Component Parts

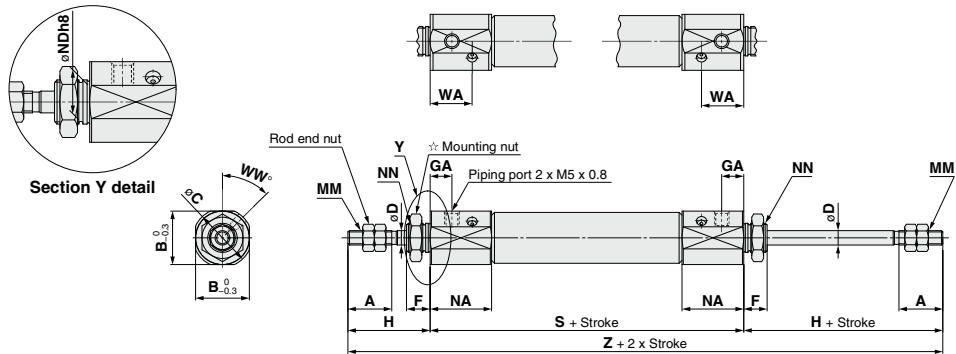
No.	Description	Material	Note
1	Rod cover	Aluminum alloy	
2	Cylinder tube	Stainless steel	
3	Piston rod	Stainless steel	
4	Piston A	Aluminum alloy	
5	Piston B	Aluminum alloy	
6	Piston	Aluminum alloy	
7	Bumper	Urethane	
8	Speed controller needle	Carbon steel	

No.	Description	Material	Note
9	Mounting nut	Rolled steel	
10	Rod end nut	Rolled steel	
11	Piston seal	NBR	
12	Rod seal	NBR	
13	Check seal	NBR	
14	Tube gasket	NBR	
15	Needle seal	NBR	
16	Magnet	—	

**Air Cylinder: Built-in Speed Controller Type**  
**Double Acting, Double Rod *CJ2ZW* Series**

**Basic (B)**

**CJ2ZWB**  $\frac{10}{16}$  - Stroke **Z**



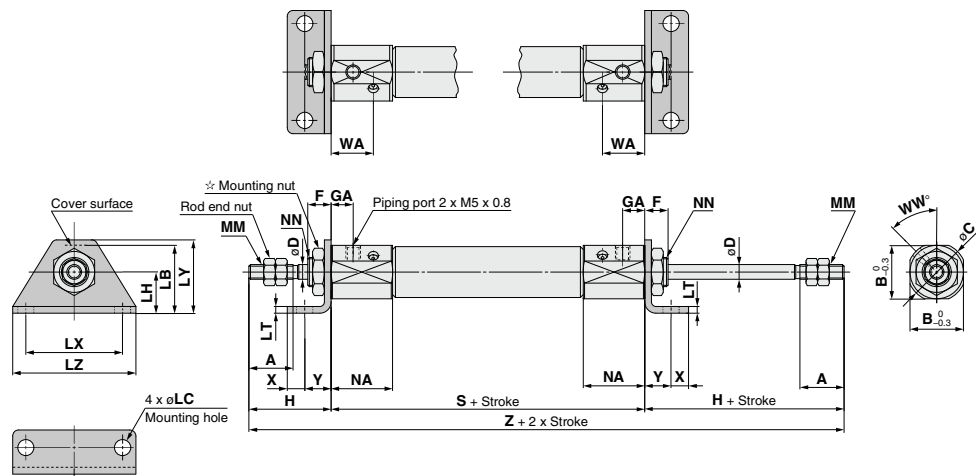
☆ For details of the mounting nut, refer to page 63.

Bore size	A	B	C	D	F	GA	H	MM	NA	NDh8	NN	WA	WW	S	Z
10	15	15	17	4	8	7.5	28	M4 x 0.7	21	$8_{-0.022}^0$	M8 x 1.0	14.4	45	66	122
16	15	18.3	20	5	8	7.5	28	M5 x 0.8	21	$10_{-0.022}^0$	M10 x 1.0	14.4	45	67	123

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

**Foot (L)**

**CJ2ZWL**  $\frac{10}{16}$  - Stroke **Z**



☆ For details of the mounting nut, refer to page 63.

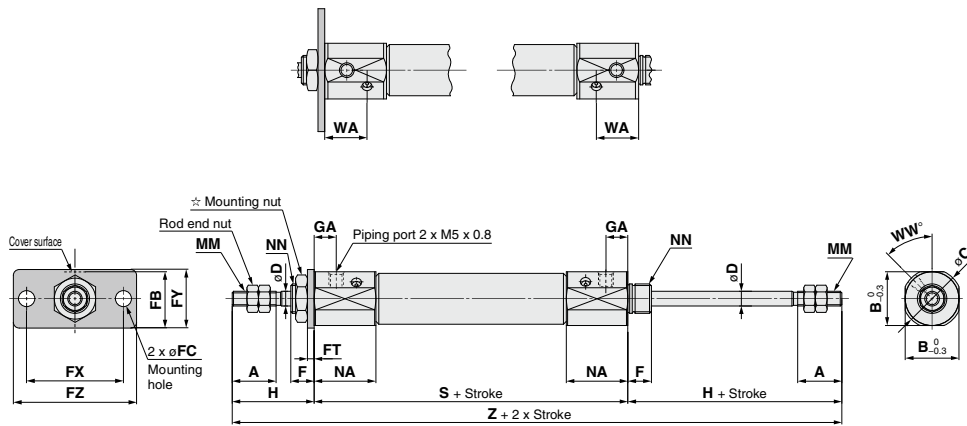
Bore size	A	B	C	D	F	GA	H	LB	LC	LH	LT	LX	LY	LZ	NN	NA	NN	WA	WW	S	X	Y	Z
10	15	15	17	4	8	7.5	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.7	21	M8 x 1.0	14.4	45	66	5	7	122
16	15	18.3	20	5	8	7.5	28	23	5.5	14	2.3	33	25	42	M5 x 0.8	21	M10 x 1.0	14.4	45	67	6	9	123

- D-□
  - X□
- Technical Data

# CJ2ZW Series

## Flange (F)

CJ2ZWF  $\frac{10}{16}$  - Stroke Z



☆ For details of the mounting nut, refer to page 63.

Bore size	A	B	C	D	F	FB	FC	FT	FX	FY	FZ	GA	H	MM	NA	NN	WA	WW	S	Z
10	15	15	17	4	8	13	4.5	1.6	24	14	32	7.5	28	M4 x 0.7	21	M8 x 1.0	14.4	45	66	122
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	7.5	28	M5 x 0.8	21	M10 x 1.0	14.4	45	67	123