

Air Cylinder: Direct Mount Type Double Acting, Single Rod

CJ2R Series

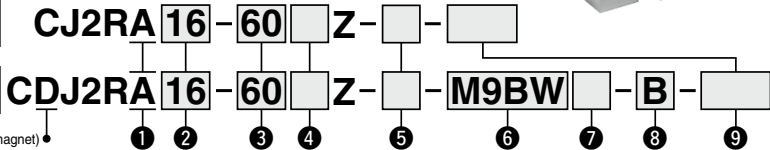
ø10, ø16

RoHS

How to Order



With auto switch



With auto switch (Built-in magnet)

1 Mounting

A	Bottom mounting
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2 Bore size

10	10 mm
16	16 mm

3 Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 120.

4 Head cover port location

Nil	Perpendicular to axis	
R	Axial	

5 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.

** : Refer to page 63 for the double knuckle joint (with one-touch connecting pin).

6 Auto switch

Nil	Without auto switch
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*: 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.

7 Number of auto switches

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

8 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.

9 Made to Order

Refer to page 120 for details.

*: Refer to "Ordering Example of Cylinder Assembly" on page 120.

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	No	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC		
		3-wire (PNP)	12 V	M9PV			M9P	M9PV	M9P	●	●	●	○	○					
	Connector	No	2-wire	12 V	M9BV		M9B	M9BV	M9B	●	●	●	○	○	—				
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (NPN)	24 V		M9NVW	M9NW	M9NVW	M9NW	●	●	●	○	○	IC circuit			
				3-wire (PNP)	12 V		M9PWV	M9PW	M9PWV	M9PW	●	●	●	○	○	—			
		Water resistant (2-color indicator)	Grommet	No	2-wire		12 V	M9BWW	M9BW	M9BWW	M9BW	●	●	●	○	○		—	
					3-wire (NPN)		5 V, 12 V	M9NAV ^{*1}	M9NA ^{*1}	M9NAV ^{*1}	M9NA ^{*1}	○	○	●	○	○		IC circuit	
	With diagnostic output (2-color indicator)	Grommet	No	3-wire (PNP)	12 V		M9PAV ^{*1}	M9PA ^{*1}	M9PAV ^{*1}	M9PA ^{*1}	○	○	●	○	○	—			
				2-wire	12 V		M9BAV ^{*1}	M9BA ^{*1}	M9BAV ^{*1}	M9BA ^{*1}	○	○	●	○	○	—			
	Reed auto switch	—	Grommet	Yes	4-wire (NPN)		5 V, 12 V	—	H7NF	—	F79F	●	—	●	○	○		IC circuit	—
5 V					—	A96V	A96	A96V	A96	●	●	●	—	—	IC circuit				
Diagnostic indication (2-color indicator)		Grommet	No	2-wire	24 V	12 V	—	200 V	—	A72	A72H	●	—	●	—	—			
						100 V	A93V ^{*2}	A93	A93V ^{*2}	A93	○	—	●	—	—	—			
						100 V or less	A90V	A90	A90V	A90	○	—	●	—	—	IC circuit			
						—	—	C73C	A73C	—	—	●	—	●	—	—			
		Connector	No	2-wire	12 V	—	24 V or less	—	C80C	A80C	—	—	●	●	●	—	IC circuit		
					—	—	—	A79W	—	—	●	—	●	—	—	—			
					Diagnostic indication (2-color indicator)	Grommet	Yes	2-wire	24 V	—	—	—	—	—	●	—	●	—	—
									—	—	—	—	—	—	●	—	●	—	—

*1: Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.

*2: 1 m type lead wire is only applicable to D-A93.

*: Lead wire length symbols: 0.5 m..... Nil (Example) M9NV
1 m..... M (Example) M9NW
3 m..... L (Example) M9NW
5 m..... Z (Example) M9NZ

*: Since there are other applicable auto switches than listed, refer to page 149 for details.

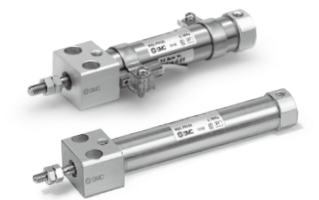
*: Solid state auto switches marked with "○" are produced upon receipt of order.

*: The D-A9□/M9□/A7□/A8□/F7□/J7□ auto switches are shipped together, but not assembled. (For band mounting, only auto switch mounting brackets are assembled before being shipped.)



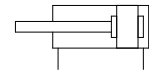
CJ2R Series

The CJ2R direct mount cylinder can be installed directly through the use of a square rod cover.



Symbol

Double acting, Single 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	Change of rod end shape
-XC9	Adjustable stroke cylinder/Adjustable retraction type
-XC22	Fluororubber seal
-XC51	With hose nipple
-XC85	Grease for food processing equipment

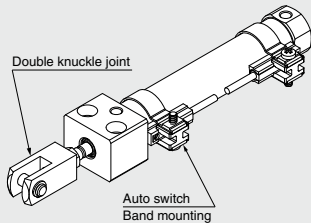


Precautions

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2RA16-60Z-W-M9BW-B



Mounting A: Bottom mounting
Rod end bracket W: Double knuckle joint
Auto switch D-M9BW: 2 pcs.
Auto switch mounting B: Band mounting

*: Double knuckle joint and auto switch are shipped together with the product, but not assembled.

Specifications

Bore size [mm]	10	16
Action	Double acting, Single rod	
Fluid	Air	
Proof pressure	1 MPa	
Maximum operating pressure	0.7 MPa	
Minimum operating pressure	0.06 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	$+1.0$ 0	
Piston speed	50 to 750 mm/s	
Allowable kinetic energy	0.035 J	0.090 J

Standard Strokes

Bore size	Standard stroke	Maximum manufacturable stroke [mm]
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.)
*: 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.

Accessories

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

Standard	Rod end nut
Option>Note 1)	Single knuckle joint, Double knuckle joint (including a pin and retaining rings), Rod end cap (Flat/Round type), Double knuckle joint (With one-touch connecting pin)

Note 1) Can be ordered within the cylinder model. Except for the double knuckle joint (with one-touch connecting pin).

Note 2) Stainless steel accessories are also available. Refer to page 63-1 for details.

Weights

Bore size [mm]	10	16
Basic weight	36	61
(When the stroke is zero)	36	61
Additional weight per 15 mm of stroke	4	7
Accessories		
Single knuckle joint	17	23
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) **CJ2RA10-45Z**

- Basic weight 36 (ø10)
 - Additional weight 4/15 stroke
 - Cylinder stroke 45 stroke
- $36 + 4/15 \times 45 = 48 \text{ g}$

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.