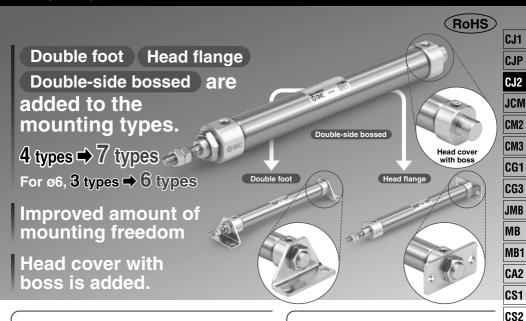
Air Cylinder

CJ2 Series

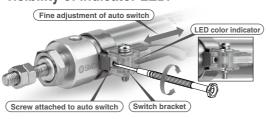
ø6, ø10, ø16



Easy fine adjustment of auto switch position

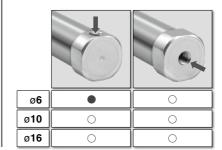
Fine adjustment of the auto switch position is possible by simply loosening the screw attached to the auto switch.

Transparent switch bracket improves visibility of indicator LED.



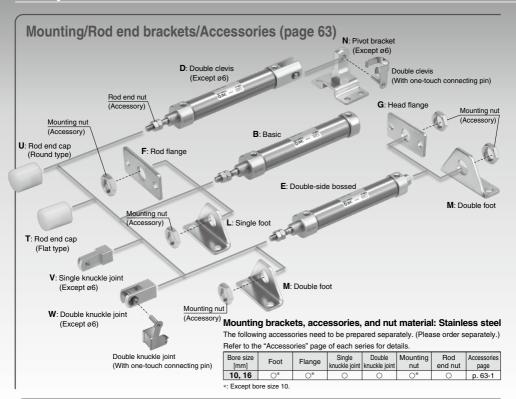
Head cover port location "Perpendicular to axis" is newly added to Ø6.

Improved piping flexibility



D--X Technical

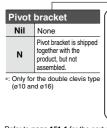




Part numbers with rod end bracket and/or pivot bracket available

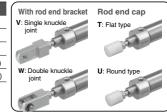
Not necessary to order a bracket for the applicable cylinder separately Note) Mounting bracket is shipped together with the product, but not assembled.

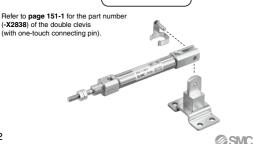
Example) CDJ2D16-50Z- N W -M9BW-B



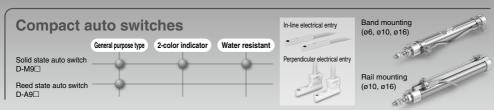


Rod e	nd bracket				
Nil	None				
V	Single knuckle joint				
W	Double knuckle joint				
Т	Rod end cap (Flat type)				
U	Rod end cap (Round type)				
*: V/M: a10 and a16 only					









Stroke Variations

					Standar	d stroke				
Bore size [mm]	15	30	45	60	75	100	125	150	175	200
6	-	-	-	-						
10	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	

Series Variations

Series variations			R	Bore size [mm]			Variations		
Series	Action	Туре	6	10	16	Built-in magnet	Air cushion	Page	
Standard CJ2-Z	Double acting	Single rod	0	0	0	•	•	46	
	Double acting	Double rod	•	-	-	-	-	64	
	Single acting	Single rod (Spring return /extend)	•	•	•	•		71	
Non-rotating rod	Double acting	Single rod	+	•	•	•		88	
	Single acting	Single rod (Spring return /extend)	-	•	•	•		95	
Built-in speed controller CJ2Z-Z	Double acting	Single rod	-	•	•	•		107	
	Double acting	Double rod		•	•	•		114	
Direct mount CJ2R-Z	Double acting	Single rod		•	•	•		119	
	Single acting	Single rod (Spring return /extend)		•	•	•		123	
Direct mount, Ion-rotating rod	Double acting	Single rod		•	•	•		127	
JJ2HK-Z	Single acting	Single rod (Spring return /extend)		•	•	•		130	
Vith end lock CBJ2	Double acting	Single rod			•	•		134	
Smooth Cylinder CJ2Y-Z	Double acting	Single rod		•	•	•		Best Pneumation No. 2-3	
ow Speed Cylinder	Double acting	Single rod	_	•	•	•		Best Pneumatio	

*: The air cylinder with end lock has the same shape as the current product. *: Air cushion is only available for ø10 and ø16.

Environmentally Resistant Specifications

Water Resistant Corrosion Resistant
Stainless steel cylinder (CJ5 Series) p. 1063

Corrosion Resistant
Fluororubber seal (-XC22) p. 1804

Refer to "Operating Environment" in the Actuator Precautions.

Applications Requiring Lateral Load Resistance

For use in applications in which a lateral load exceeding the allowable value is to be applied, consider using a guide cylinder.



CJ1

CJP CJ2

JCM

CM2

CM3

CG1

CG3

MB

MB1 CA2

CS1

CS2

D-□ -X□

Technical

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	⊗ SMC	43-2	(A)

Combinations of Standard Products and Made to Order Specifications

CJ2

(Standard type)

Single rod Double rod

Single acting

Single rod

CJ2K

(Non-rotating rod type)

Single rod

Single acting

Double acting

Single rod

Series

Action/

CJ2 Series

- : Standard
- : Made to Order
- O : Special product (Please contact SMC for details.)
- : Not available

— : Not availab	ie				(Spring return)	(spring extend)		(Spring return)	(spring extend)	
		Page	46	64	7	'1	88	9)5	
Symbol	Specifications	Applicable bore size		ø6 to	ø16			ø10, ø16		
Standard	Standard	ø6 to ø16	•	•	•	•	•	•	•	
D	Built-in magnet	96 10 9 16	•	•	•	•	•	•	•	
CJ2□-□A	Air cushion	ø10, ø16	•	•	_	_	_	_	_	
10-, 11-	Clean series*1	ø6 to ø16	•	●*9	0	0	_	_	_	
25A-	Copper (Cu) and Zinc (Zn)-free*5	ø10, ø16	•	0	0	0	0	0	0	
XB6	Heat resistant cylinder (-10 to 150°C)*3, 4		0	0	0	0	0	0	0	
ХВ7	Cold resistant cylinder (-40 to 70°C)*3,4	ø6 to ø16	0	0	0	0	0	0	0	
ХВ9	Low speed cylinder (10 to 50 mm/s)*4		0	_	_	_	_	_	_	
XB13	Low speed cylinder (5 to 50 mm/s)	ø6	0	_	_	_	_	_	_	
хсз	Special port position*2, 4	ø6 to ø16	0	0	_	_	0	_	_	
XC8	Adjustable stroke cylinder/ Adjustable extension type*4		0	_	0	0	0	0	0	
XC9	Adjustable stroke cylinder/ Adjustable retraction type*4	ø10, ø16	0	_	0	_	0	0	_	
XC10	Dual stroke cylinder/Double rod type*4	Ø10, Ø16	0	_	0	0	0	0	0	
XC11	Dual stroke cylinder/Single rod type*4		0	_	_	_	0	_	_	
XC22	Fluororubber seal*4		0	0	0	0	0	0	0	
XC51	With hose nipple	ø6 to ø16	0	0	0	0	0	0	0	
XC85	Grease for food processing equipment		0	0	0	0	0	0	0	
X446	PTFE grease	ø10, ø16	0	0	0	0	0	0	0	
X773	Short pitch mounting	ø6	_	_	0	_	_	_	_	
X2838	Double clevis (With one-touch connecting pin)*11	ø10, ø16	0	_	0	0	0	0	0	

^{*1:} Mounting type: Not compatible with the clevis type. An auto switch is available in the band mounting type only.

^{*2:} An auto switch is available in the band mounting type only

^{*3:} The products with an auto switch are not compatible. *4: The products with an air cushion are not compatible.

^{*5:} For details, refer to the Web Catalog.

^{*6:} The shape is the same as the current product.

^{*7:} Available only for locking at head end.

^{*8:} Available only for locking at rod end.

^{*9:} ø10 and ø16 only

^{*10:} Copper and fluorine-free [20-] are available as standard products.

^{*11:} Not compatible with the air cushion or rail mounting type auto switches.

	CJ2X Low Speed Cylinder			2Z controller type)							
	Double acting	Double acting	Double acting	acting	Single	Double acting	acting	Single	Double acting	acting	Double
	Single rod	Single rod	Single rod	Single rod (spring extend)	Single rod (spring return)	Single rod	Single rod (spring extend)	Single rod (spring return)	Single rod	Double rod	Single rod
	Best Pneumatics No. 2-3	Best Pneumatics No. 2-3	134	30	13	127	23	12	119	114	107
Symbol	ø10, ø16	ø10, ø16	ø16				ø16	ø10,			
Standard	•	•	•	•	•	•	•	•	•	•	•
D	•	•	•	•	•	•	•	•	•	•	•
CJ2□-□A	_	_	_	-	_	_	_	_	0	_	_
10-, 11-	_	_	○*7	-	_	_	0	0	•	_	_
25A-	0	0	0	0	0	0	0	0	0	0	0
XB6	_	_	0	0	0	0	0	0	0	0	0
XB7	_	_	_	0	0	0	0	0	0	0	0
XB9	_	_	0	I	_	_	_	_	_	_	_
XB13	_	_	_	-	_	_	_	_	_	_	_
хсз	0	0	0	1	_	0	_		0	_	_
XC8	_	_	_	0	0	0	0	0	0	_	0
XC9	_	0	O*8	1	0	0	_	0	0	_	_
XC10	_	0	0	0	0	0	0	0	0	_	0
XC11	_	_	O*8	-	_	0	_	_	0	_	_
XC22	_	_	0	0	0	0	0	0	0	0	0
XC51	_	_	_	0	0	0	0	0	0	0	0
XC85	_	_	_	0	0	0	0	0	0	0	0
X446	_	_	_	0	0	0	0	0	0	0	0
X773	_	_	_	_	_	_	_	_	_	_	_
X2838	0	0	_	_	_	_	_	_	_	_	_

CJ1

CJP CJ2

JCM

CM2 CM3

CG1

CG3 JMB

МВ

MB1 CA2

CS1

CS2

D-🗆

-X - Technical Data

Air Cylinder: Standard Type **Double Acting, Single Rod**

CJ2 Series ø6, ø10, ø16



How to Order

CJ2 B 16 **CDJ2B** 16 With auto switch With auto switch (Built-in magnet)

Mounting

В	Basic					
E	Double-side bossed					
D**	Double clevis					
L	Single foot					
M	Double foot					
F Rod flange						
G	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).

8 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.

2 Bore size

	6	6 mm
	10	10 mm
	16	16 mm

5 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.

Number of auto switches

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

Cvlinder standard stroke [mm] Refer to "Standard Strokes" on page 47.

6 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.

Auto switch mounting type

Α	Rail mounting						
В	Band mounting						
*: Fo	*: For rail mounting, screws and nuts fo						

- 2 auto switches come with the rail. *: Refer to page 148 for auto switch mounting brackets.
- *: Ø6: Band mounting only

4 Cushion

Nil	Rubber bumper			
Α	Air cushion			
*: ø6: Rı	ubber bumper only			

Rod end bracket

• • • • •							
Nil	None						
٧	Single knuckle joint						
W**	Double knuckle joint						
Т	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).

Made to Order Refer to page 47 for details.

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

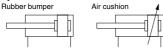
Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

			Electrical	<u>_</u>	Wiring		Load vo	oltage		Auto swit	ch model		Lea	d wir	e ler	ngth	[m]	Pre-wired	Annli	aabla																								
Ty	ре	Special function	entry		(Output)		DC	AC	Band m	ounting	Rail mo	ounting	0.5	1	3	5	None	connector		cable ad																								
			Citily	Indicat	(Output)		DC	AC.	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COIIIICCIOI	10	au																								
					3-wire (NPN)		5 V.12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit																									
4	=		Grommet		3-wire (PNP)]	5 V,12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	IIC GICGII																									
definio	€				O mino]	12 V]	M9BV	M9B	M9BV	M9B	•	•	•	0	I —	0]																								
8	2		Connector		2-wire		12 V		_	H7C	J79C		•	_	•	•	•	_	-																									
auto	₹ [Diameter in diameter		1	3-wire (NPN)	1	E V 10 V	1	M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	_	0	IC aireuit]																								
	ŭ	Diagnostic indication (2-color indicator)		Yes	3-wire (PNP)	24 V	5 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	—	0	IC circuit	PLC																								
4040			met	2-wire	1	12 V	1	M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	FLC																									
		Grommet		3-wire (NPN)	1	}			E V 10 V	.]	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	10	1																						
3100	ξl	Water resistant			3-wire (PNP)		5 V,12 V	M9P	M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	—	0	IC circuit																									
ò	ñ	(2-color indicator)																												2-wire	1	12 V	1	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_
	ſ	With diagnostic output (2-color indicator)			4-wire (NPN)	1	5 V,12 V	5 V,12 V]	_	H7NF	_	F79F	•	_	•	0	<u> </u>	0	IC circuit]																							
4	=			V	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	_	-	_	IC circuit	_																								
	switch		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_																										
				1 1				100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —																									
1	ang		No	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit	Relay.																									
			Connector Ye					Yes	2-wire	24 V	12 V		_	C73C	A73C		•	_	•	•	•	_	_	PLĆ																				
6000	Ď			No	No	No	No	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 "O" are produced upon receipt of order.
- *: The D-A9\(\times M9\(\times A7\(\times A80\(\times I/F7\(\times I/J7\)\) auto switches are shipped together, but not assembled. (For band mounting, only the auto switch mounting brackets are assembled before shipment.)



Symbol





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

Symbol	Specifications
	PTFE grease
	Short pitch mounting
-X2838*2	Double clevis (With one-touch connecting pin)

*1: ø6 only

*2: ø10 and ø16 only

Made to Order

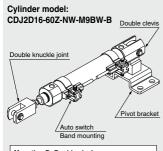
Click here for details

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

*: Except ø6

Ordering Example of Cylinder Assembly



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.

Specifications

Bore size [mml	6	10	16		
Action	Double acting, Single rod					
Fluid			Air			
Proof pressure			1 MPa			
Maximum operating	pressure		0.7 MPa			
Minimum operating	Rubber bumper	0.12 MPa	0.06 MPa			
pressure	Air cushion	_	0.1 [MРа		
Ambient and fluid temperature		Without auto s With auto s	uto switch: -10°C to 70°C (No freezing)			
Cushion		Rubber bumper	Rubber bump	er/Air cushion		
Lubrication		No	ot required (Non-lub	e)		
Piston speed	Rubber bumper		50 to 750 mm/s			
riston speed	Air cushion	_	50 to 10	00 mm/s		
Allowable kinetic	Rubber bumper	0.012 J	0.035 J	0.090 J		
energy	Air cushion	_	0.07 J	0.18 J		
chicigy	(Effective cushion length)		(9.4 mm)			
Stroke length tolera	nce		+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. O···Can	be ordered v	vithin the cyl	inder model	. △Orde	r separately.
	Mounting	Basic	Foot	Flange	Double ^{Note 1)} clevis	Double clevis (including T-bracket)
ard Disconnection	Mounting nut	•	•	•	_	_
Standard	Rod end nut	•	•	•	•	•
Ste	Clevis pin (including retaining rings)	_	_	_	•	•
	Double clevis (With one-touch connecting pin)	Δ	Δ	Δ	O (-X2838)	O (-X2838)
l _	Single knuckle joint	0	0	0	0	0
Option	Double knuckle joint (including a pin and retaining rings)	0	0	0	0	0
l g	Double knuckle joint (With one-touch connecting pin)	Δ	Δ	Δ	Δ	Δ
-	Rod end cap (Flat/Round type)	0	0	0	0	0
	Pivot bracket (T-bracket)	_	-	_	0	•

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]	
Mounting bracket	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.

D-□ -X□

CJ1

CJ2

JCM CM2

CM3

CG₁

CG3

JMB

MB1

CA₂

CS1

6. | Technic Data



Weights

		Dul	ober bum	nor	Air cı	lg Ishion
	Bore size [mm]	6	10	16	10	16
	Basic	20	22	46	39	66
Basic weight (When the stroke	Axial piping	17	22	46	39	66
is zero)	Double clevis (including clevis pin)	_	24	54	43	74
15 2010)	Head-side bossed	20	23	48	40	68
Additional weight	per 15 mm of stroke	2	4	7	4	7
	Single foot	8	8	25	8	25
Mounting bracket	Double foot	16	16	50	16	50
weight	Rod flange	5	5	13	5	13
	Head flange	5	5	13	5	13
	Clevis pin	_	1	3	1	3
	One-touch connecting pin for double clevis	_	2	4	_	_
	Single knuckle joint	_	17	23	17	23
Accession	Double knuckle joint (including knuckle pin)	-	25	21	25	21
Accessories Double knuckle joint (With one-touch connecting pin)	Double knuckle joint (With one-touch connecting pin)	_	26	22	26	22
	Rod end cap (Flat type)	1	1	2	1	2
	Rod end cap (Round type)	1	1	2	1	2
1	Pivot bracket (T-bracket)	_	32	50	32	50

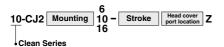
- Refer to page 152 before handling.
- *: Mounting nut and rod end nut are included in the basic weight.
- *: Mounting nut is not included in the basic weight for the double clevis.

Calculation:

Example) CJ2L10-45Z

- •Basic weight -----22 (ø10)
- Additional weight ------4/15 stroke
 Cylinder stroke -----45 stroke
- Mounting bracket weight----8 (Axial foot)
- 22 + 4/15 x 45 + 8 = 42 g

Clean Series



Air cylinder which is applicable for the system which discharges leakage from the rod section directly into the outside of clean room by relief port and making an actuator's rod section having a double seal construction.

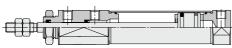


Specifications

	Double acting, Single rod
	6, 10, 16
pressure	0.7 MPa
ø 6	0.14 MPa
ø10, ø16	0.08 MPa
	Rubber bumper/Air cushion
m]	Same as standard type. (Refer to page 47.)
	Mountable (Band mounting)
	Basic, Double-side bossed*, Single/Double foot*, Rod/Head flange*
	ø6 ø10, ø16

^{*:} ø10 and ø16 only

Construction



*: The above figure is for ø16.

For the detailed specifications, refer to the "Pneumatic Clean Series" (CAT.E02-23).

Low Speed Cylinder



Smooth operation with a little sticking and slipping at low speed. Can start smoothly with a little ejection even after being rendered for hours.



The dimensions are the same as the double acting, single rod type.

Specifications

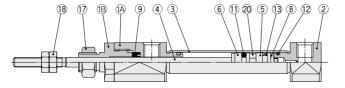
Action		Double acting, Single rod
		ŭ. ŭ
Bore size [mm]		10, 16
Fluid		Air
Proof pressure		1.05 MPa
Maximum operating pr	essure	0.7 MPa
Minimum operating pr	essure	0.06 MPa
Ambient and fluid temperature		Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C
Cushion		Rubber bumper (Standard equipment)
Lubrication		Not required (Non-lube)
Stroke length toleran	ce	+1.0 0
Piston speed		1 to 300 mm/s
Allowable kinetic	ø 10	0.035 J
energy	ø 16	0.090 J

For details, refer to the Best Pneumatics No. 2-3.

Construction (Not able to disassemble)

ø6

Rubber bumper





CJ1 CJP

CJ2 JCM

CM2

CM3

CG3 JMB MB

MB1

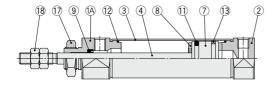
CA2

CS1

CS2

With auto switch

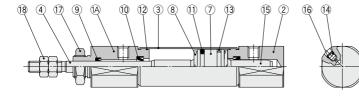
ø10, ø16 Rubber bumper





With auto switch

ø10, ø16 Air cushion





With auto switch

Component Parts

No.	Description	Material	Note
1A	Rod cover	Aluminum alloy	
1B	Seal retainer	Aluminum alloy	ø6 only
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	
8	Bumper	Urethane	
9	Rod seal	NBR	
10	Cushion seal	NBR	

No.	Description	Material	Note
11	Piston seal	NBR	
12	Tube gasket	NBR	
13	Wear ring	Resin	
14	Cushion needle	Carbon steel	
15	Cushion ring	Aluminum alloy	
16	Needle seal	NBR	
17	Mounting nut	Rolled steel	
18	Rod end nut	Rolled steel	
19	Magnet	_	
20	Spacer	Aluminum alloy	ø6: Without magnet

D-□ -X□

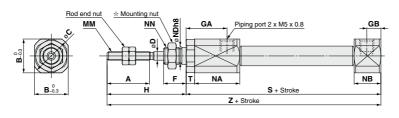
Technical Data

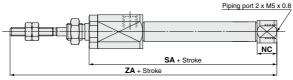


Dimensions

Basic (B)

CJ2B6 - Stroke Head cover port location Z





Head cover port location Axial location (R)

CJ2B 10 - Stroke Head cover port location Z Axial location (R) *: The overall cylinder length does not change. Section Y detail Y GA Piping port 2 x M5 x 0.8 B B Axial location (R) *: The overall cylinder length does not change.

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

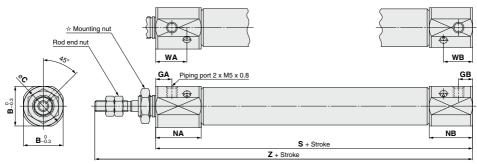
			J,																[mm]
Bore size	Α	В	С	D	F	GA	GB	Н	MM	NA	NB	NC	NDh8	NN	S	SA	T	Z	ZA
6	15	12	14	3	8	14.5	5	28	M3 x 0.5	16	9.5	7	6_0.018	M6 x 1.0	51.5	49	3	79.5	77
10	15	12	14	4	8	8	5	28	M4 x 0.7	12.5	9.5	_	8_0.022	M8 x 1.0	46	_	_	74	_
16	15	18.3	20	5	8	8	5	28	M5 x 0.8	12.5	9.5	_	10_0.022	M10 x 1.0	47	_	_	75	_

Z + Stroke

Dimensions

Basic (B)

With air cushion: CJ2B $^{10}_{16}$ – Stroke A Head cover port location Z





CJ1 CJP

CJ2

JCM

CM2 CM3 CG1

CG3

JMB

MB MB1

CA2

CS1

CS2

Head cover port location
Axial location (R)

*: The overall cylinder length does not change.

*: The overall cylinder length does not chan

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

[Dimensions ot	ther tha	n the ta	able be	low are	the sa	me as t	those o	n page	50.	[mm]
ı	Bore size	В	С	GA	GB	NA	NB	WA	WB	S	Z
	10	15	17	7.5	6.5	21	20	14.4	13.4	65	93
	16	18.3	20	7.5	6.5	21	20	14.4	13.4	66	94

D-□

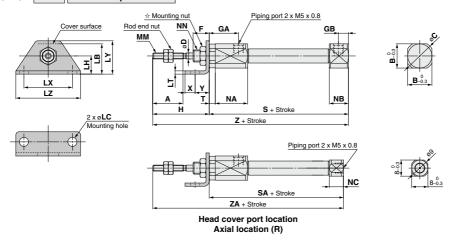
Technical Data



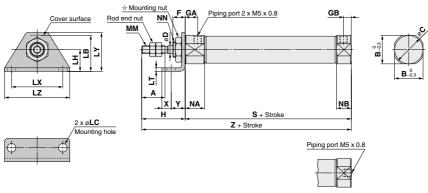
Dimensions

Single foot (L)

CJ2L6 - Stroke Head cover port location Z



CJ2L 10 - Stroke Head cover port location Z



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

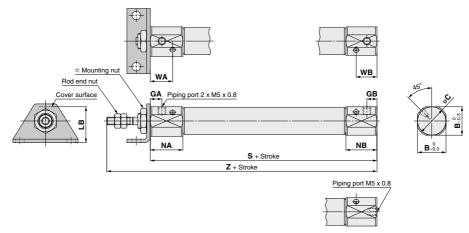
☆ For details of the mounting nut, refer to page 63.

Bore size	Α	В	С	D	F	GA	GB	Н	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NC	NN	S	SA	Т	Х	Υ	Z	ZA
6	15	12	14	3	8	14.5	5	28	15	4.5	9	1.6	24	16.5	32	M3 x 0.5	16	9.5	7	M6 x 1.0	51.5	49	3	5	7	79.5	77
10	15	12	14	4	8	8	5	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.7	12.5	9.5	_	M8 x 1.0	46	 -	_	5	7	74	—
16	15	18.3	20	5	8	8	5	28	23	5.5	14	2.3	33	25	42	M5 x 0.8	12.5	9.5	_	M10 x 1.0	47	-	_	6	9	75	$\overline{}$

Dimensions

Single foot (L)

With air cushion: CJ2L $^{10}_{16}$ – Stroke A Head cover port location Z



SMC

Head cover port location Axial location (R)

*: The overall cylinder length does not change.

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

Dimensions of	ther tha	n the ta	able be	low are	the sa	me as t	those o	n page	52.		[mm]
Bore size	В	С	GA	GB	LB	NA	NB	WA	WB	S	Z
10	15	17	7.5	6.5	16.5	21	20	14.4	13.4	65	93
16	18.3	20	7.5	6.5	23	21	20	14.4	13.4	66	94

CJ1

CJP

CJ2 JCM

CM2

СМЗ

CG1 CG3

JMB

MB MB1

CA2

CS1

CS2

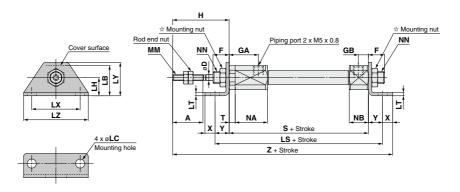
D-□ -X□ Technical Data

53

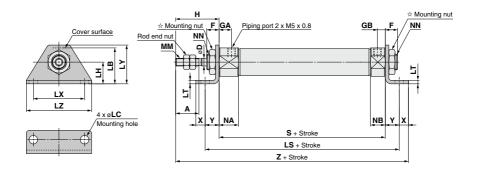
Dimensions

Double foot (M)

CJ2M6 - Stroke Z



CJ2M 10 - Stroke Z



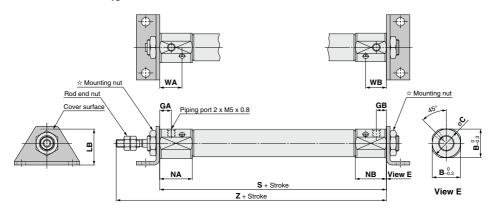
☆ For details of the mounting nut, refer to page 63.

	Rome size																						
Bore size	Α	D	F	GA	GB	Н	LB	LC	LH	LS	LT	LX	LY	LZ	MM	NA	NB	NN	S	Т	Х	Υ	Z
6	15	3	8	14.5	5	28	15	4.5	9	65.5	1.6	24	16.5	32	M3 x 0.5	16	9.5	M6 x 1.0	51.5	3	5	7	91.5
10	15	4	8	8	5	28	15	4.5	9	60	1.6	24	16.5	32	M4 x 0.7	12.5	9.5	M8 x 1.0	46	_	5	7	86
16	15	5	8	8	5	28	23	5.5	14	65	2.3	33	25	42	M5 x 0.8	12.5	9.5	M10 x 1.0	47	_	6	9	90

Dimensions

Double foot (M)

With air cushion: CJ2M $^{10}_{16}$ - Stroke AZ



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

With Air Cushion/Dimensions other than the table below are the same as those on page 54. [mm]

	0111011	Dilliono	10110 0111	CI tilaii	ine tubic	DOIOW	are the c	unic as	111000 01	i page o	ч. [······]
Bore size	В	С	GA	GB	LB	NA	NB	WA	WB	S	Z
10	15	17	7.5	6.5	16.5	21	20	14.4	13.4	65	93
16	18.3	20	7.5	6.5	23	21	20	14.4	13.4	66	94

CJ1

CJP CJ2

JCM

CM2

CM3

CG3

MB

MB1

CA2

CS1

D-□ -X□

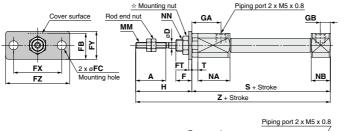
Technical Data



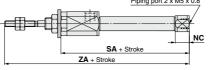
Dimensions

Rod flange (F)

CJ2F6 - Stroke Head cover port location Z



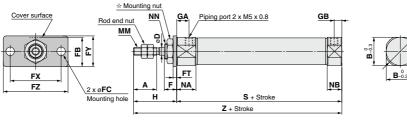






Head cover port location Axial location (R)

CJ2F 10 - Stroke Head cover port location Z





Head cover port location Axial location (R)

*: The overall cylinder length does not change.

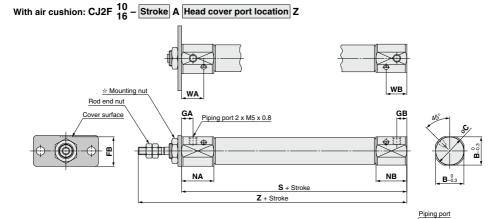
☆ For details of the mounting nut, refer to page 63.

			3	,		p	J																	[mm]
Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	MM	NA	NB	NC	NN	S	SA	Т	Z	ZA
6	15	12	14	3	8	13	4.5	1.6	24	14	32	14.5	5	28	M3 x 0.5	16	9.5	7	M6 x 1.0	51.5	49	3	79.5	77
10	15	12	14	4	8	13	4.5	1.6	24	14	32	8	5	28	M4 x 0.7	12.5	9.5	_	M8 x 1.0	46	_	_	74	_
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	8	5	28	M5 x 0.8	12.5	9.5	_	M10 x 1.0	47	_	_	75	_



Dimensions

Rod flange (F)



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

M5 x 0.8

 $[\]Rightarrow$ For details of the mounting nut, refer to page 63.

Dimensions of	her tha	n the ta	able be	ow are	the sar	me as t	hose o	n page	56.		[mm]
Bore size	В	С	FB	GA	GB	NA	NB	WA	WB	S	Z
10	15	17	14.5	7.5	6.5	21	20	14.4	13.4	65	93
16	18.3	20	19	7.5	6.5	21	20	14.4	13.4	66	94

CJ1

CJP

CJ2 JCM

CM2

CM3

CG3

JMB MB

MB1

CA2 CS1

CS2

D-□ -X□

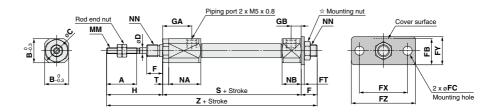
Technical Data



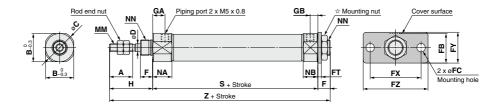
Dimensions

Head flange (G)

CJ2G6 - Stroke Z



CJ2G 10 - Stroke Z



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

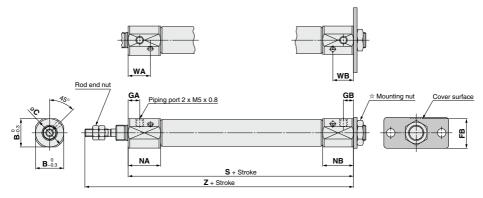
58

	A I OI details c	In the details of the mountaing flut, feller to page 65.															[mm]					
Ī	Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	MM	NA	NB	NN	S	Т	Z
	6	15	12	14	3	8	13	4.5	1.6	24	14	32	14.5	5	28	M3 x 0.5	16	9.5	M6 x 1.0	51.5	3	87.5
Ī	10	15	12	14	4	8	13	4.5	1.6	24	14	32	8	5	28	M4 x 0.7	12.5	9.5	M8 x 1.0	46	_	82
	16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	8	5	28	M5 x 0.8	12.5	9.5	M10 x 1.0	47	_	83

Dimensions

Head flange (G)

With air cushion: CJ2G $^{10}_{16}$ - Stroke AZ



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

Nith Air Cushion/Dimensions other than the table below are the same as those on page 58. [mm]

WILLI All Cu	SHIOH	Dimens	ions otn	er tnan	the table	below a	are the s	same as	those o	n page :	38. [111111]
Bore size	В	С	FB	GA	GB	NA	NB	WA	WB	S	Z
10	15	17	14.5	7.5	6.5	21	20	14.4	13.4	65	93
16	18.3	20	19	7.5	6.5	21	20	14.4	13.4	66	94

CJ1

CJP

CJ2 JCM

CM2

CM3

CG3

JMB MB

MB1

CA2

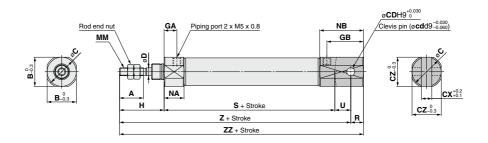
CS1

CS2

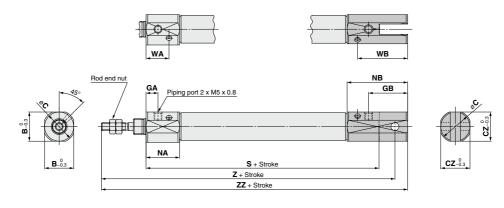
Dimensions

Double clevis (D)

CJ2D 10 - Stroke Z



With air cushion: CJ2D $^{10}_{16}$ - Stroke AZ



*: A clevis pin and retaining rings are included.

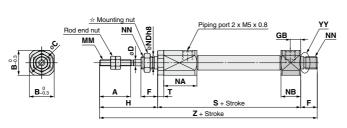
																		[mm]
Bore size	Α	В	С	CD (cd)	СХ	CZ	D	GA	GB	Н	MM	NA	NB	R	S	U	Z	ZZ
10	15	12	14	3.3	3.2	12	4	8	18	28	M4 x 0.7	12.5	22.5	5	46	8	82	87
16	15	18.3	20	5	6.5	18.3	5	8	23	28	M5 x 0.8	12.5	27.5	8	47	10	85	93

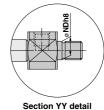
1	With Air Cushion/Dimensions other than the table below are the same as the table above. [mm]														
Ī	Bore size	В	С	CZ	GA	GB	NA	NB	WA	WB	S	Z	ZZ		
	10	15	17	15	7.5	19.5	21	33	14.4	26.4	65	101	106		
ı	16	18.3	20	18.3	7.5	24.5	21	38	14.4	31.4	66	104	112		

Dimensions

Double-side bossed (E)

CJ2E6 - Stroke Z





CJ1

CJP

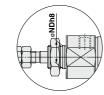
CJ2 JCM CM2

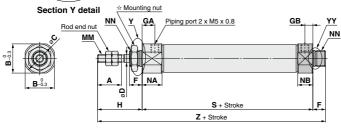
CM3

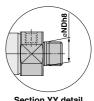
CG1 CG3

JMB MB MB1 CA2 CS1 CS2

CJ2E 10 - Stroke Z







Section YY detail

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

[mm] Bore size В С D GA GB н MM NA NB NDh8 NN s z 6 15 12 14 3 8 14.5 5 28 M3 x 0.5 16 9.5 6_0.018 M6 x 1.0 51.5 3 87.5 10 15 12 14 4 8 8 5 M4 x 0.7 12.5 9.5 8_0,022 M8 x 1.0 46 82 10_0022 16 15 18.3 5 8 8 5 M5 x 0.8 12.5 9.5 M10 x 1.0 83

> D-□ -X□

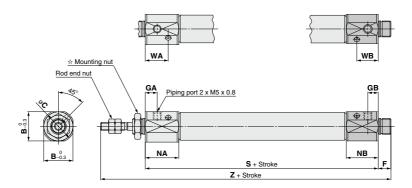
Technical Data

SMC

Dimensions

Double-side bossed (E)

With air cushion: CJ2E 10 - Stroke AZ

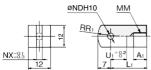


With Air Cushion/Dimensions other than the table below are the same as those on page 61. [mm]

With Air Cus	IIIOII/DI	mension	s otner tr	nan the ta	adie delo	w are the	same a	s tnose o	n page 6	ı. [mm]
Bore size	В	С	GA	GB	NA	NB	WA	WB	S	Z
10	15	17	7.5	6.5	21	20	14.4	13.4	65	101
16	18.3	20	7.5	6.5	21	20	14.4	13.4	66	102

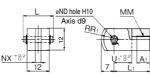
Dimensions of Accessories (Options)

Single Knuckle Joint Material: Rolled steel



							[mm]
Part no.	Applicable bore size	Αı	Lı	ММ	NDH10	NX	R₁	U₁
I-J010C								
I-J016C	16	8	25	M5 x 0.8	5 ^{+0.048}	6.4	12	14

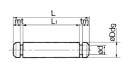
Double Knuckle Joint Material: Rolled steel



								[
Part no.	Applicable bore size	Αı		L	ī	-1		ММ
Y-J010C	10	8	15	5.2	2	1	M	4 x 0.7
Y-J016C	16	11	16	6.6	2	1	M	5 x 0.8
Part no.	NDd9	NDH	10	N	Х	F	1 1	U₁
Y-J010C	3.3-0.030	3.3+0.	048	3.	2	8	3	10
Y-J016C	5-0.030	5+0.0	148	6.	5	1	2	10

^{*:} A knuckle pin and retaining rings are included.

Knuckle Pin Material: Stainless steel



CJ1

CJP CJ2

CG1

CG3

MB

MB1

CA2

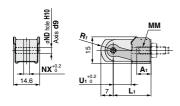
CS₁

CS2

								[mm]	JCM
	Annlirable	-	٦.				Г.	Included	
Part no.									CM2
CD-J010	10	3.3-0.030	3	15.2	12.2	1.2	0.3	Type C 3.2	U
IY-J015									СМЗ
Fax at	10 00	lavia ni		ali		_			00

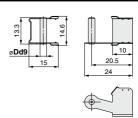
- *: For ø10, a clevis pin is diverted.
- *: Retaining rings are included with a knuckle pin.

Double Knuckle Joint (With One-touch Connecting Pin)



									[mm]
Part no.	Applicable bore size	A 1	Lı	ММ	NDd9	NDH10	NX	Rı	U ₁
Y-J10	10	8	21	M4 x 0.7	3.3-0.030	3.3+0.048	3.2	8	10
Y-J16	16	11	21	M5 x 0.8	5-0.030 5-0.060	5 ^{+0.048}	6.5	12	10

One-touch Connecting Pin for Double Knuckle Joint Material: Stainless steel

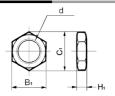




		[mm]
Part no.	Applicable bore size	Dd9
IY-J10	10	3.3-0.030
IV- I16	16	g-0.030

Mounting Nut

Material: Carbon steel



					[mm]
Part no.	Applicable bore size	Bı	C ₁	d	Нı
SNJ-006C	6	8	9.2	M6 x 1.0	4
SNJ-010C	10	11	12.7	M8 x 1.0	4
SNJ-016C	16	14	16.2	M10 x 1.0	4
SNKJ-016C*	16	17	19.6	M12 x 1.0	4

^{*:} For ø16 non-rotating type. (Use SNJ-016C for ø10 non-rotating type.)

Rod End Nut

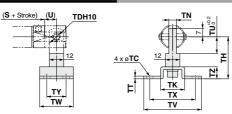
Material: Carbon steel



					[mm]
Part no.	Applicable bore size	B2	C ₂	d	H ₂
NTJ-006B	6	5.5	6.4	M3 x 0.5	2.4
NTJ-010C	10	7	8.1	M4 x 0.7	3.2
NTJ-015C	16	8	9.2	M5 x 0.8	4

D-□ -X□

Pivot Bracket (T-bracket)

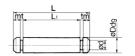


													mm]
Part no.	Applicable bore size	тс	TDH10	тн	тк	TN	тт	ΤU	τv	TW	тх	ΤY	TZ
CJ-T010C	10	4.5	3.3 ^{+0.048}	29	18	3.1	2	9	40	22	32	12	8
CJ-T016C	16	5.5	5 ^{+0.048}	35	20	6.4	2.3	14	48	28	38	16	10

- *: A T-bracket includes a T-bracket base, single knuckle joint, hexagon socket head bolt and spring washer.
- *: For dimensions of (U) and (S + Stroke), refer to the double clevis drawing on page 60.

Clevis Pin

Material: Stainless steel

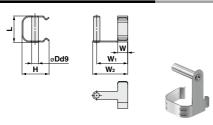


								[mm]
Part no.	Applicable bore size	Dd9	d	L	Lı	m	t	Included retaining ring
CD-J010	10	3.3-0.030	3	15.2	12.2	1.2	0.3	Type C 3.2
CD-Z015	16	5-0.030	4.8	22.7	18.3	1.5	0.7	Type C 5
CD-JA010*	10	3.3-0.030	3	18.2	15.2	1.2	0.3	Type C 3.2

- *: For ø10 double clevis type, with air cushion and built-in speed controller.
- *: Retaining rings are included with a clevis pin.

Round type/CJ-CR $\square\square$

One-touch Connecting Pin for Double Clevis Material: Stainless steel



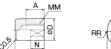
							[mm]		
Part no.	Applicable bore size		Dd9		Н	L	w		
CD-J10	10		3.3 -0.030		13.4	13.2	4		
CD-J16	16		5-0.030		18.2	19.5	5		
Part no.	W 1	W	1 2	Note					
CD-J10	12	1	5	Cannot be mounted on cylinders with air					
CD-J16	15	1	8	cushion, or rail mounting type auto switches.					

^{*:} Please pay attention to the applicable cylinder.

Rod End Cap

Material: Polyacetal

Flat type/CJ-CF□□□







									[mm
Par	Part no.		Α	D	_	ММ	N	Б	w
Flat type	Round type	bore size	^	-	-	IVIIVI	IN	n	VV
CJ-CF006	CJ-CR006	6	6	8	11	M3 x 0.5	5	8	6
CJ-CF010	CJ-CR010	10	8	10	13	M4 x 0.7	6	10	8
CJ-CF016	CJ-CR016	16	10	12	15	M5 x 0.8	7	12	10

Mounting Brackets, Rod End Brackets, and Nut Material: Stainless Steel

Part No. (Dimensions: Same as standard type)

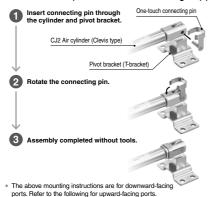
				,		
Bore size [mm]	Foot	Flange	Single knuckle joint	Double knuckle joint*		
10		_	I-J010SUS	Y-J010SUS	_	NTJ-010SUS
16	CJ-L016SUS	CJ-F016SUS	I-J016SUS	Y-J016SUS	SNJ-016SUS	NTJ-015SUS

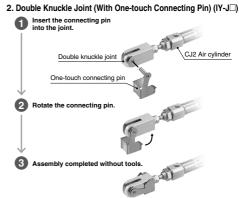
^{*:} A knuckle pin and retaining rings are shipped together.

Precautions

Assembly Procedures

1. Double Clevis (With One-touch Connecting Pin) (CD-J





How to Mount the Double Clevis (With One-touch Connecting Pin)

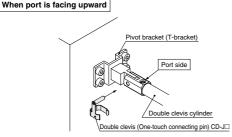
When connecting a double clevis cylinder to a pivot bracket (T-bracket), it is recommended that the pivot bracket (T-bracket) and the cylinder be connected with the one-touch connecting pin first, before fastening the pivot bracket.

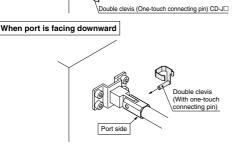
When connecting the cylinder after the pivot bracket (T-bracket) has been fastened, mount the cylinder according to the following procedure.

∕∰Warning

For assembling the clevis type to the pivot bracket, refer to the figure below.

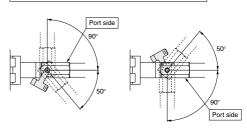
1. Insert the double clevis (One-touch connecting pin) from the direction in the figure.



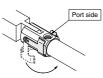


.Marning

* Perform the mounting within the following range.



Push the one-touch connecting pin into the cylinder body (Double clevis) until it clicks and is firmly fastened.



* Attach the double knuckle joint within 180° (±90° from center). Other mounting methods are the same as the above.



63-2 ®

D-□

-X□

CJ1

CJP CJ2

JCM

CM2

CM3

CG3

JMB

MB MB1

CA2

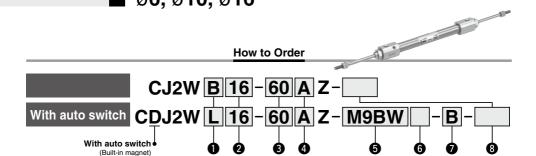
CS1

CS2

Air Cylinder: Standard Type **Double Acting, Double Rod**

CJ2W Series ø6, ø10, ø16





Mounting

_	
В	Basic
L	Foot
F	Flange

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

6 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.

A Bore size

9	G Bule Size						
6	6 mm						
10	10 mm						
16	16 mm						

Number of auto switches

•	
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

3 Cylinder star	ndard stroke [mm]
Refer to "Standard	Strokes" on page 65

ige 65

D.	Auto switch mounting type	8 Made to Order
Α	Rail mounting	Refer to page 65 for details.

- 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

	Cushion					
	Nil	Rubber bumper				
	Α	Air cushion				
*: ø6: Rubber bumper only						

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

		Florenda and	light	Wiring		Load voltage Auto switch me		tch model		Lea	d wir	e le	ngth	[m]	Day and and	A 13					
Туре	Special function	Electrical entry		(Output)		DC	oc AC		ounting	Rail mo	ounting	0.5	1	3	5	None	Pre-wired connector		cable ad		
		Citaly	рģ	(Output)		DO	٨٥	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COMMICCION		uu		
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit			
ڃ		Grommet		3-wire (PNP)]	J V,12 V	M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	IIC GITCUIL				
switch				2-wire]	10.1/	40.1/	M9BV	M9B	M9BV	M9B	•	•	•	0	-	0]		
S		Connector		Z-WITE		12 V	_	H7C	J79C	_	•	_	•	•	•	_	_				
anto	Diagnostic indication			3-wire (NPN)]	5 V,12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	_	0	IC circuit			
	Diagnostic indication (2-color indicator)	Yes	3-wire (PNP)	24 V	5 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	 -	0	IIC GITCUIL	PLC			
state		Grommet			2-wire	e	12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	1	
	Water resistant			3-wire (NPN)	-wire (NPN)	E V/ 10 V/	5 V.12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit]	
Solid	(2-color indicator)				3-wire (PNP)		5 V,12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	 -	0	IIC GITCUIL		
Ś	(2-color indicator)			2-wire		12 V	V	V	12 V	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_	
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V		_	H7NF	_	F79F	•	_	•	0	<u> </u>	0	IC circuit			
switch			V	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	_	_	_	IC circuit	_		
<u>=</u>		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_				
		<u> </u> No				100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	-				
anto						No	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit
		Cannastas	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ		
Reed		5	Connector	No]		I -	24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit]	
_	Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	_	•	_	_	_	_]		

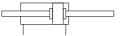
- *1: Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please contact SMC regarding water resistant types with the above model numbers.

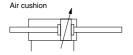
 *2: 1 m type lead wire is only applicable to D-A93.

- *: Lead wire length symbols: 0.5 m Nil (Example) M9NW ... M (Example) M9NWM 1 m-
 - 3 m----- L (Example) M9NWL 5 m----- Z (Example) M9NWL (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 "O" 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

Double acting, Double rod, Rubber bumper







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

Symbol	Specifications		
-X446	PTFE grease	PTFE grease	

Made to Order Click here for details

Symbol	Specifications
-ХА□	Change of rod end shape
-XB6 Heat resistant cylinder (-10 to 150°C) * Not available with switch & with air cushio	
-XB7	Cold resistant cylinder (-40 to 70°C) * Not available with switch & with air cushion
-XC22 Fluororubber seal * Not available with a	
-XC51	With hose nipple
-XC85	Grease for food processing equipment

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.

⚠ Precautions

Refer to page 152 before handling.

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.

Specifications

Bore size [mm]	6	10	16		
Action		Double acting, Double rod				
Fluid			Air			
Proof pressure			1 MPa			
Maximum operating	pressure		0.7 MPa			
Minimum operating Rubber bumper		0.15 MPa	0.1 l	MРа		
pressure	pressure Air cushion		0.1 l			
Ambient and fluid to	Ambient and fluid temperature		Without auto switch: -10°C to 70°C With auto switch: -10°C to 60°C (No freezing)			
Ambient and naid to	imperature	With auto switch: -10°C to 60°C (No incozing)				
Cushion		Rubber bumper	lubber bumper Rubber bumper/Air cushion			
Lubrication		Not required (Non-lube)				
Piston speed	Rubber bumper	50 to 750 mm/s				
ristori speeu	Air cushion	_	50 to 10	00 mm/s		
Allowable kinetic	Rubber bumper	0.012 J	0.035 J	0.090 J		
	Air cushion		0.07 J	0.18 J		
energy	(Effective cushion length)	_	(9.4 mm)	(9.4 mm)		
Stroke length tolera	Stroke length tolerance		+1.0			

Standard Strokes

C	[mm]	
\vdash	Standard stroke	Bore size
C	15, 30, 45, 60	6
_	15, 30, 45, 60, 75, 100, 125, 150	10
	15, 30, 45, 60, 75, 100, 125, 150, 175, 200	16
JI	of intermediate strokes in 1 mm increments is possible. (Spacers are not used.)	* Manufacture o

- Manufacture of intermediate strokes in 1 mm increments is possible. (Spacers are not used Produced upon receipt of order.
 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.

		●···Mounted of	on the product.	O…Please or	der separately.
		Mounting	Basic	Foot	Flange
Otrandonal	Dian.	Mounting nut	•	•	•
1		Rod end nut	•	•	•
Г.	_	Single knuckle joint	0	0	0
3	ē	Double knuckle joint (including a pin and retaining rings)	0	0	0
3	Option	Double knuckle joint (With one-touch connecting pin)	0	0	0
Ľ	_	Rod end cap (Flat/Round type)	0	0	0

*: ø10 and ø16 only

Stainless steel mounting brackets and accessories are also available.
 Refer to page 63-1 for details.

Mounting Brackets/Part No.

Maumina brookst		Bore size [mm]	
Mounting bracket	6	10	16
Foot	CJ-L006C	CJ-L010C	CJ-L016C
Flange	CJ-F006C	CJ-F010C	CJ-F016C

Weights

						19.
	Ru	bber bum	Air cushion			
Bore size [mm]		6	10	16	10	16
Basic weight (When the stroke is zero)	Basic	25	29	56	36	61
Additional weight per 15 mm of stroke		3	4.5	7.5	4.5	7.5
Mounting bracket	Foot	16	16	50	16	50
weight	Flange	5	5	13	5	13
	Single knuckle joint	_	17	23	17	23
	Double knuckle joint (including knuckle pin)	_	25	21	25	21
Accessories	Double knuckle joint (With one-touch connecting pin)		26	22	26	22
	Rod end cap (Flat type)	1	1	2	1	2
	Rod end cap (Round type)	1	1	2	1	2

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

Example) CJ2WL10-45Z

Basic weight 29 (ø10)
Additional weight4.5/15 stroke
Cylinder stroke45 stroke
Mounting bracket weight 16 (Foot)

29 + 4.5/15 x 45 + 16 = 58.5 g

SMC

CJP

CJ1

CJ2 JCM

CM2

CM3

CG1

CG3

JMB

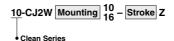
MB

MB1 CA2

CS1

CS2

Clean Series



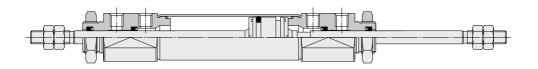
Air cylinder which is applicable for the system which discharges leakage from the rod section directly into the outside of clean room by relief port and making an actuator's rod section having a double seal construction.

For the detailed specifications, refer to the "Pneumatic Clean Series" (CAT.E02-23).

Specifications

opeomedicale			
Action	Double acting, Double rod		
Bore size [mm]	10, 16		
Maximum operating pressure	0.7 MPa		
Minimum operating pressure	0.1 MPa		
Cushion	Rubber bumper		
Standard stroke [mm]	Same as standard type. (Refer to page 65.)		
Auto switch	Mountable (Band mounting)		
Mounting	Basic, Foot, Flange		

Construction (Not able to disassemble)



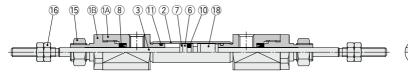


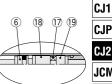
With auto switch

Construction (Not able to disassemble)

ø6

Rubber bumper





CJ2 **JCM** CM2

СМЗ

CG1

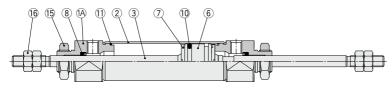
CG3 JMB MB MB1

CA2

CS1

With auto switch

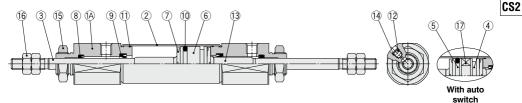
ø10, ø16 Rubber bumper





With auto switch

ø10, ø16 Air cushion



Component Parts

No.	Description	Material	Note
1A	Rod cover	Aluminum alloy	
1B	Seal retainer	Aluminum alloy	ø6 only
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	Rod seal	NBR	
9	Cushion seal	NBR	

No.	Description	Material	Note
10	Piston seal	NBR	
11	Tube gasket	NBR	
12	Cushion needle	Carbon steel	
13	Cushion ring	Aluminum alloy	
14	Needle seal	NBR	
15	Mounting nut	Rolled steel	
16	Rod end nut	Rolled steel	
17	Magnet	_	
18	Spacer A	Aluminum alloy	ø6 only
19	Spacer B	Aluminum alloy	ø6 only

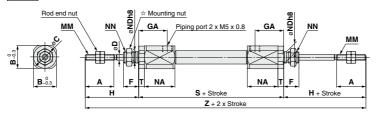
D-□ -X□

Technical Data

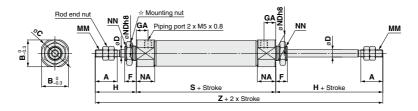


Basic (B)

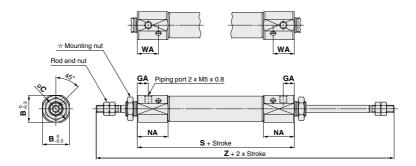
CJ2WB6 - Stroke Z



CJ2WB 10 - Stroke Z



With air cushion: CJ2WB 10 - Stroke AZ



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

														[mm]
Bore size	Α	В	С	D	F	GA	Н	MM	NA	NDh8	NN	S	Т	Z
6	15	12	14	3	8	14.5	28	M3 x 0.5	16	6-0.018	M6 x 1.0	61 (66)	3	117 (122)
10	15	12	14	4	8	8	28	M4 x 0.7	12.5	8_0.022	M8 x 1.0	49	_	105
16	15	18.3	20	5	8	8	28	M5 x 0.8	12.5	10-0.022	M10 x 1.0	50	_	106

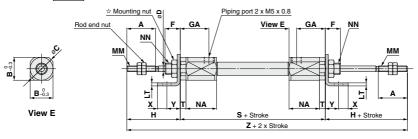
With Air Cushion/Dimensions other than the table below are the same as the table above.

Bore size	В	С	GA	NA	WA	S	Z
10	15	17	7.5	21	14.4	66	122
16	18.3	20	7.5	21	14.4	67	123

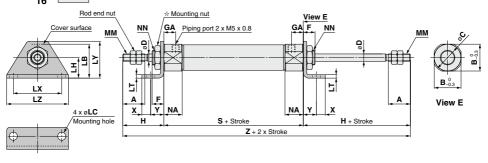
*: () in S and Z dimensions: With auto switch

Foot (L)

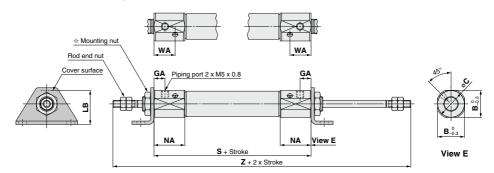
CJ2WL6 - Stroke Z



CJ2WL 10 - Stroke Z



With air cushion: CJ2WL $^{10}_{16}$ – Stroke AZ



 $\dot{\boldsymbol{x}}$ For details of the mounting nut, refer to page 63.

A I OI details o	1 1110 1	iiouiiti	ng na	t, icic	i to pi	age oc																[mm]
Bore size	Α	В	С	D	F	GA	Н	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NN	s	Т	Х	Υ	Z
6	15	12	14	3	8	14.5	28	15	4.5	9	1.6	24	16.5	32	M3 x 0.5	16	M6 x 1.0	61 (66)	3	5	7	117 (122)
10	15	12	14	4	8	8	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.7	12.5	M8 x 1.0	49	_	5	7	105
16	15	18.3	20	5	8	8	28	23	5.5	14	2.3	33	25	42	M5 x 0.8	12.5	M10 x 1.0	50	_	6	9	106

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

Bore size	В	С	GA	LB	NA	WA	S	Z
10	15	17	7.5	16.5	21	14.4	66	122
16	18.3	20	7.5	23	21	14.4	67	123

*: () in S and Z dimensions: With auto switch

- X □	
Technical	

D-

CJ1 CJP CJ2 JCM

CM2

CM3

CG1

CG3

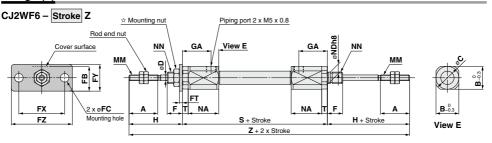
JMB MB MB1

CA2

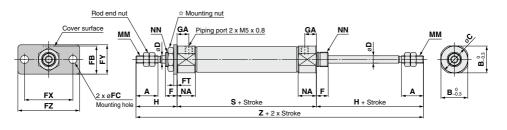
CS1



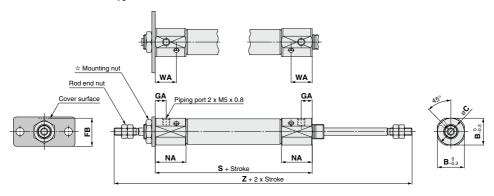
Flange (F)



CJ2WF $^{10}_{16}$ - Stroke Z



With air cushion: CJ2WF $^{10}_{16}$ - Stroke AZ



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

																			[]
Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	Н	MM	NA	NN	S	Т	Z
6	15	12	14	3	8	13	4.5	1.6	24	14	32	14.5	28	M3 x 0.5	16	M6 x 1.0	61 (66)	3	117 (122)
10	15	12	14	4	8	13	4.5	1.6	24	14	32	8	28	M4 x 0.7	12.5	M8 x 1.0	49	_	105
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	8	28	M5 x 0.8	12.5	M10 x 1.0	50	_	106
With Air Cush	ion/Dia	noncione	other tha	n the tabl	a halaw s	ro the ca	ma ac th	n tahla ah	2010					*:	() in S a	and Z dimens	sions: W	ith auto	switch

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

Bore size	В	С	GA	FB	NA	WA	S	Z
10	15	17	7.5	14.5	21	14.4	66	122
16	18.3	20	7.5	19	21	14.4	67	123

Air Cylinder: Standard Type Single Acting, Spring Return/Extend

CJ2 Series ø6, ø10, ø16



CJ₁ **CJP** CJ₂

JCM

CM₂

CM3

CG₁

CG3

JMB

MB

MB₁

CA₂

CS₁

CS2

How to Order

CDJ2B With auto switch (Built-in magnet)

Mounting

With auto switch

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

- *: 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)

8 Auto switch

Nil	Without auto switch
*: For ap	plicable 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.

2 Bore size

6	6 mm
10	10 mm
16	16 mm

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.
- *: Not applicable to single acting, spring extend (T)

Number of auto switches

U	inder or dute emiteries
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

*: Refer to "Ordering Example of Cylinder Assembly" on page 72.

Cvlinder standard stroke [mm] Refer to "Standard Strokes" on page 72.

6 Pivot bracket

Nil	None						
N	Pivot bracket is shipped together with the product.						
*: Only for the double clavis type							

- (ø10 and ø16) *: Pivot bracket is shipped
- together with the product, but not assembled.

Auto switch mounting type Rail mounting

В	Band mounting
	rail mounting, screws and

- with the rail. *: Refer to page 148 for auto switch mounting brackets.
- *: Ø6: Band mounting only

Single acting, Spring extend

Action

Rod end bracket							
Nil	None						
V	Single knuckle joint						
W**	Double knuckle joint						
Т	Rod end cap (Flat type)						

Single acting, Spring return

*: Rod end bracket is shipped together with

Rod end cap (Round type)

- 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).

Made to Order

Refer to page 72 for details.

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

	Special function Electrical entry	iaal ji	AAC of one or	Load voltage		Auto switch model			Lead wire length [m]			[m]	Day ordered	Applicable																						
Туре			ndicator	Wiring (Output)		DC AC	۸۵	Band mounting Rail mounting		0.5	1	3	5	None	Pre-wired connector		ad																			
		Cility	ğ	(Output)			AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	CONNECTOR	oninector IOaC	au																	
				3-wire (NPN)		5 V 12 V	5 V,12 V	M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit																		
ᇨ		Grommet		3-wire (PNP)]	J V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	<u> </u>	0	IO GICUII																		
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	<u> </u>	0	l _																		
		Connector		2 11110	ļ]	_	H7C	J79C		•	_	•	•	•	_		ļ																	
anto	Diagnostic indication			3-wire (NPN)		5 V.12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	<u> </u>	0	IC circuit	Rolay																	
	(2-color indicator)		Yes	3-wire (PNP)	<u>)</u> 24 V	, 5 V, 12 V	-	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	<u> </u>	0	IO GICUII	PLC																	
state				2-wire		12 V			M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	<u> </u>	0	_]																
	Water resistant Grommet		3-wire (NPN)	5 V,12 \	,	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit																				
Solid	(2-color indicator)			3-wire (PNP))	J V, 12 V	12 V	M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IIO GIIGUII																		
Ñ	(2-color iridicator)		2-wire]	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	-	0	_]																		
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V			H7NF	_	F79F	•	_	•	0	_	0	IC circuit																		
switch																				,,	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	-	_	_	IC circuit	_
×		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_																			
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —	l																	
anto	Connector	No	i .		1,0,,	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit	Relay,																		
Ď		Cannastar	Yes	2-wire 24 V	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•		_	PLC																	
Reed		Connector	nnector No				24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit	1																	
_	Diagnostic indication (2-color indicator)					_	_	_	_	A79W	_	•	_	•	_	_	_	_	1																	

- *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 "O" are produced upon receipt of order.

*: The D-A9□M9□IA7□/A80□/F7□J7□ auto switches are shipped together, but not assembled. (For band mounting, only auto switch mounting brackets are assembled before being shipped.)

D-□

-X□

71 A

Technical



Symbol

Single acting, Spring return, Rubber bumper

Single acting, Spring extend, Rubber bumper







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

Symbol	
	PTFE grease
-X773*1	Short pitch mounting/Single acting, spring return
-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					
-XC22	Fluororubber seal					
-XC51	With hose nipple					
-XC85	Grease for food processing equipment					

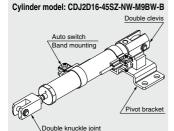
Refer to pages 142 to 149 for cylinders with auto switches

- · 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.

Precautions

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly



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.

Specifications

Bore size [m	nm]	6	10	16		
Action		Single acting, Spring return/Single acting, Spring extend				
Fluid		Air				
Proof pressure			1 MPa			
Maximum operating	pressure		0.7 MPa			
Minimum operating	Spring return	0.2 MPa 0.15 MPa				
pressure	Spring extend	0.25 MPa	0.15 MPa			
Ambient and fluid te	mperature	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 tolerar	nce	+1.0 0				
Piston speed		50 to 750 mm/s				
Allowable kinetic en	ergy	0.012 J	0.035 J 0.090 J			

Standard Strokes

	[mm]
Bore size	Standard stroke
6	15, 30, 45, 60
10	15, 30, 45, 60
16	15, 30, 45, 60, 75, 100, 125, 150

- * 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.

Spring Reaction Force

Refer to page 1899 (Table (2): Spring Reaction Force).

Mounting Brackets/Part No.

Mounting bracket		Bore size [mm]	
Wounting bracket	6	10	16
Foot	CJ-L006C	CJ-L010C	CJ-L016C
Flange	CJ-F006C	CJ-F010C	CJ-F016C
Pivot bracket (T-bracket)*1	_	CJ-T010C	CJ-T016C

^{*1:} The pivot bracket (T-bracket) is used with double clevis (D).

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)			
÷	Mounting nut	•	•	•	_	_			
Stand- ard	Rod end nut	•	•	•	•	•			
S	Clevis pin (including retaining rings)	_	_	_	•	•			
	Double clevis (With one-touch connecting pin)	Δ	Δ	Δ	O (-X2838)	O (-X2838)			
_	Single knuckle joint	0	0	0	0	0			
jo	Double knuckle joint (including a pin and retaining rings)	0	0	0	0	0			
Option	Double knuckle joint (With one-touch connecting pin)	Δ	Δ	Δ	Δ	Δ			
~	Rod end cap (Flat/Round type)	0	0	0	0	0			
	Pivot bracket (T-bracket)	_		_	0	•			

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.

Theoretical Output

Refer to the "Single acting, Spring return cylinder" in Theoretical Output 1 of Technical data 3 in page 1903. In the case of the spring extend type, the force at OUT side will be the ending force of the spring return, and that at the IN side will be the amount of the IN side force of the double acting type cylinder from which the beginning force of the spring return has subtracted.

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.



Weights

Spr	ing Return											[g]
	Bore size [mm]		6			1	0			1	16	
	Mounting	Basic	Axial piping	Double-side bossed	Basic	Axial piping	Double clevis (including clevis pin)	Double-side bossed	Basic	Axial piping	Double clevis (including clevis pin)	Double-side bossed
	15 stroke	17	15	18	28	28	29	28	62	62	69	64
l	30 stroke	20	18	21	35	35	35	35	77	77	84	79
l g	45 stroke	23	21	23	44	44	45	45	95	95	102	97
Basic weight	60 stroke	26	24	27	54	54	55	54	113	113	119	115
. <u></u>	75 stroke								134	134	141	136
388	100 stroke							_	167	167	174	169
-	125 stroke] _							204	204	212	206
	150 stroke							ĺ	227	227	234	229
Mounting bracket weight	Single foot	8	8	8			8			2	25	
ligi M	Double foot	16	16	16			16			Ę	50	
l a s	Rod flange	5	5	5			5			1	13	
pra p	Head flange	5	5	5			5			•	13	
	Clevis pin	_	_	_	_	_	1	_	_	_	3	_
	One-touch connecting pin for double clevis	_	_	_	_	_	2	_	_	_	4	_
	Single knuckle joint	_	_	_			17			2	23	
Accessories	Double knuckle joint (including knuckle pin)	_	_	_		2	25			2	21	
Acces	Double knuckle joint (With one-touch connecting pin)	_	_	_		2	26			2	22	
`	Rod end cap (Flat type)	1	1	1			1				2	
	Rod end cap (Round type)	1	1	1			1				2	
1	Pivot Bracket (T-bracket)	_	_	_		:	32				50	

^{*:} Mounting nut and rod end nut are included in the basic weight.

Example) CJ2L10-45SZ

 Basic weight -----44 (ø10-45 stroke)

•Mounting bracket weight----8 (Single foot)

44 + 8 = **52 g**

Caria	~	Evtond
Spi III	ıų	Extend

Spr	ing Extena										[g]
	Bore size [mm]		6		1	10			1	6	
	Mounting	Basic	Double-side bossed	Basic	Axial piping	Double clevis (including clevis pin)	Double-side bossed	Basic	Axial piping	Double clevis (including clevis pin)	Double-side bossed
	15 stroke	18	19	28	28	30	29	63	63	71	67
l	30 stroke	21	22	34	34	36	35	77	77	85	80
weight	45 stroke	24	24	42	42	44	43	93	93	100	96
. <u>≅</u>	60 stroke	27	28	51	51	52	51	109	109	116	112
	75 stroke							129	129	137	133
Basic	100 stroke]						159	159	166	162
-	125 stroke	/						193	193	201	196
	150 stroke							213	213	221	217
Mounting bracket weight	Single foot	8	8			8			2	25	
vei vei	Double foot	16	16		1	16			5	0	
Sket	Rod flange	5	5			5			1	3	
pra p	Head flange	5	5			5			1	3	
	Clevis pin	_	_	_	_	1	_	_	_	3	_
	One-touch connecting pin for double clevis	_	_	_	_	2	_	_	_	4	_
	Single knuckle joint	_	_		1	17			2	23	
Accessories	Double knuckle joint (including knuckle pin)	_	_		2	25			2	21	
Acces	Double knuckle joint (With one-touch connecting pin)	_	_		2	26			2	22	
`	Rod end cap (Flat type)	1	1			1				2	
	Rod end cap (Round type)	1	1			1				2	
	Pivot Bracket (T-bracket)	_	_			32				0	

^{*:} Mounting nut and rod end nut are included in the basic weight.

Example) CJ2L10-45TZ

 Basic weight -----42 (ø10-45 stroke)

•Mounting bracket weight····· 8 (Single foot)
42 + 8 = **50 g**

SMC

CJ1

CJP CJ2

JCM

CM2 СМЗ

CG1

CG3 JMB

MB

MB1

CA2

CS1

CS2

D-□

-X□ Technical Data

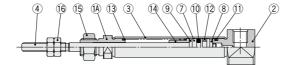
^{*:} Mounting nut is not attached to the double clevis, so the mounting nut weight is already subtracted. Calculation

^{*:} Mounting nut is not attached to the double clevis, so the mounting nut weight is already subtracted. Calculation:

Construction (Not able to disassemble)

Single acting, Spring return

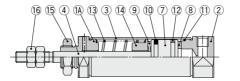






With auto switch

ø10, ø16

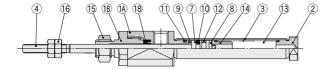




With auto switch

Single acting, Spring extend

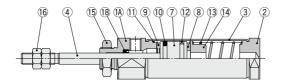
ø**6**





With auto switch

ø10, ø16





With auto switch

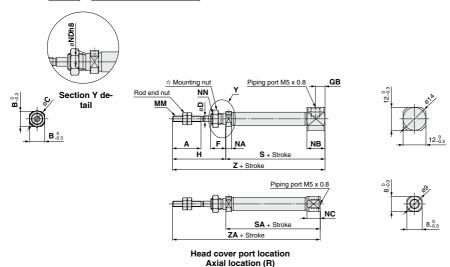
Component Parts

No.	Description	Material	Note
1A	Rod cover	Aluminum alloy	
1B	Seal retainer	Aluminum alloy	ø6 only
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	
8	Bumper A	Urethane	
9	Bumper B	Urethane	

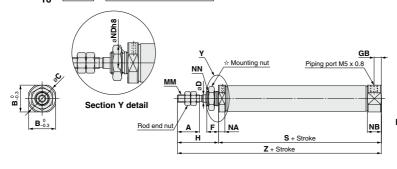
No.	Description	Material	Note
10	Piston seal	NBR	
11	Tube gasket	NBR	
12	Wear ring	Resin	
13	Return spring	Piano wire	
14	Spring seat	Aluminum alloy	
15	Mounting nut	Rolled steel	
16	Rod end nut	Rolled steel	
17	Magnet	_	
18	Rod seal	NBR	

Single Acting, Spring Return: Basic (B)

CJ2B6 - Stroke S Head cover port location Z



CJ2B 10 - Stroke S Head cover port location Z





CJ1 CJP CJ2

JCM

CM2 СМЗ

CG1

CG3 JMB

MB

MB1

CA2 CS1

CS2

Head cover port location Axial location (R)

*: The overall cylinder length does not change.

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

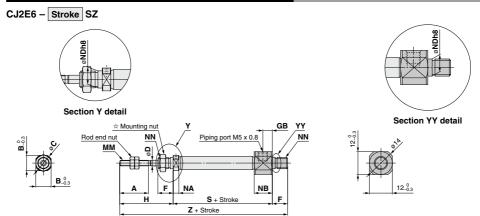
☆ For de	etails	of the	mour	iting r	iut, re	eter to	page	63.													[mm]
Bore																		3			
size	Α	В	C	D	F	GB	Н	MM	NA	NB	NC	NDh8	NN	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
3126														15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
6	15	8	9	3	8	5	28	M3 x 0.5	,	9.5	7	6-0.018	M6 x 1.0	37	46	50	64		_	_	
·	13	0	9	٥	٥	3	20	IVIS X U.S	3	9.5	′	O-0.018	IVIO X 1.0	(42)	(51)	(55)	(69)	_	_		_
10	15	12	14	4	8	5	28	M4 x 0.7	4.8	9.5	_	8-0.022	M8 x 1.0	45.5	53	65	77	_	_	_	_
16	15	18.3	20	5	8	5	28	M5 x 0.8	4.8	9.5	_	10_0,022	M10 x 1.0	45.5	54	66	78	84	108	126	138

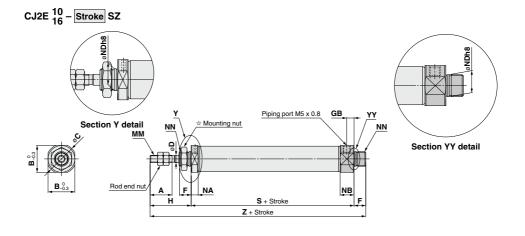
Dava				S	Α							- 7	Z							Z	Α			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
SIZE	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
	34.5	43.5	47.5	61.5					65	74	78	92					62.5	71.5	75.5	89.5				
0	(39.5)	(48.5)	(52.5)	(66.5)	_	_	_	_	(70)	(79)	(83)	(97)	_	-	_	_	(67.5)	(76.5)	(80.5)	(94.5)	_	_	_	_
10	_	_	—	_	_	_	_	_	73.5	81	93	105	_	_	_	_	_	_	_	_	_	—	_	_
16	_	_	_	_	_	_	_	_	73.5	82	94	106	112	136	154	166	_	_	_	_	_	_	_	_

*: () in S, SA, Z and ZA dimensions: With auto switch

D-□ -X□ Technical Data

Single Acting, Spring Return: Double-side Bossed (E)





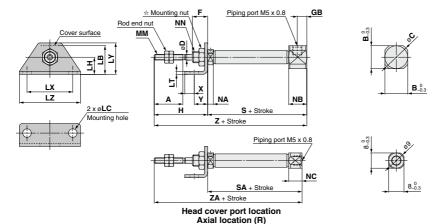
☆ For details of the mounting nut, refer to page 63.

																												[mm]
Dava																•	3								<u> </u>			
Bore size	Α	В	С	D	F	GB	Н	MM	NA	NB	NDh8	NN	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
SIZE													15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
	4-	_	9		8	5	-00	M3 x 0.5	_	9.5	0.0	140 4.0	37	46	50	64					73	82	86	100				
6	15	l °	9	၂ ၁	l °	5	20	INIO X U.S	٥	9.5	0-0.018	M6 x 1.0	(42)	(51)	(55)	(69)	_	_	_	_	(78)	(87)	(91)	(105)	_	_	_	_
10	15	12	14	4	8	5	28	M4 x 0.7	4.8	9.5	8-0.022	M8 x 1.0	45.5	53	65	77	_	_	_	_	81.5	89	101	113	_	_	_	_
16	15	18.3	20	5	8	5	28	M5 x 0.8	4.8	9.5	10-0.022	M10 x 1.0	45.5	54	66	78	84	108	126	138	81.5	90	102	114	120	144	162	174

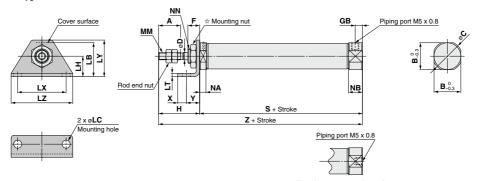
^{*: ()} in S and Z dimensions: With auto switch

Single Acting, Spring Return: Single Foot (L)

CJ2L6 - Stroke S Head cover port location Z



CJ2L 10 - Stroke S Head cover port location Z



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

Dava																							5	3			
Bore size	A	В	С	D	F	GB	Н	LB	LC	LH	LT	LX	LY	LZ	ММ	NA	NB	NN				31 to 45 st		61 to 75 st	76 to 100 st	101 to 125 st	
6	15	12	14	3	8	5	28	13	4.5	9	1.6	24	16.5	32	M3 x 0.	5 3	9.5	M6 x		-·	46 (51)	50 (55)	64 (69)	_	-	-	_
10	15	12	14	4	8	5	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.	7 4.8	9.5	M8 x	1.0 4	15.5	53	65	77	_	_	_	_
16	15	18.3	20	5	8	5	28	23	5.5	14	2.3	33	25	42	M5 x 0.	8 4.8	9.5	M10 x	1.0 4	15.5	54	66	78	84	108	126	138
Bore					SA										Z	<u>. </u>								ZA			
size	5 to 15 st		31 to						126 to 150 st	Х	Y	5 to 15 st			46 to 60 st												
6	34.5 (39.5)		47.5 (52.5			- -	-	-	-	5	7	65 (70)	74 (79)	78 (83)	92 (97)	-	_	_	_	62.5 (67.5)	71.5 (76.5)	75.5 (80.5)	89.5 (94.5)		-	_	_
10	_	-	-	-	1 -	- -	-1	_	_	5	7	73.5	81	93	105	_	_	_	_	_	—	-	_	I —	-	_	_
16	_	_	_	_	1 -	- -	_	_	_	6	9	73.5	82	94	106	112	136	154	166	_	_	_	_	_	_	_	_

CJ1 CJP

CJ2

JCM

CM2

СМЗ CG1

CG3

JMB

MB

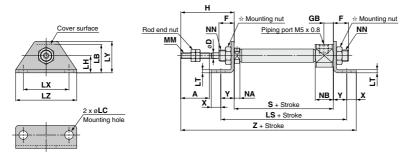
MB1

CA2 CS1

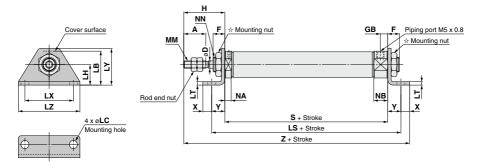
CS2

Single Acting, Spring Return: Double Foot (M)

CJ2M6 - Stroke SZ



CJ2M $^{10}_{16}$ - Stroke SZ



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

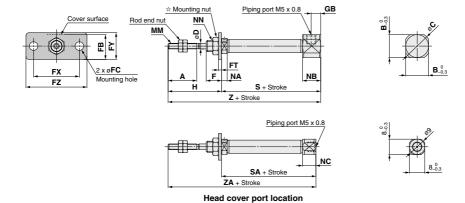
																						[mm]
D												L	S									
Bore size	A	D	F	GB	Н	LB	LC	LH	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	LT	LX	LY	LZ	MM	NA
SIZE									15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st						
	45			_		40	4.5		51	60	64	78					4.0		40.5	-00	MO 0.5	
6	15	3	8	5	28	13	4.5	9	(56)	(65)	(69)	(83)	_	_	_	_	1.6	24	16.5	32	M3 x 0.5	3
10	15	4	8	5	28	15	4.5	9	59.5	67	79	91	_	_	_	_	1.6	24	16.5	32	M4 x 0.7	4.8
16	15	5	8	5	28	23	5.5	14	63.5	72	84	96	102	126	144	156	2.3	33	25	42	M5 x 0.8	4.8
		S																7				

Bore							•										<u> </u>			
size	NB	NN								126 to 150 st		Y								126 to 150 st
6	9.5	M6 x 1.0	37 (42)	46 (51)	50 (55)	64 (69)	_	_	_	_	5	7	77 (82)	86 (91)	90 (95)	104 (109)	_	_	_	_
10	9.5	M8 x 1.0	45.5	53	65	77	_	_	I —	_	5	7	85.5	93	105	117	_	_	_	_
16	9.5	M10 x 1.0	45.5	54	66	78	84	108	126	138	6	9	88.5	97	109	121	127	151	169	181

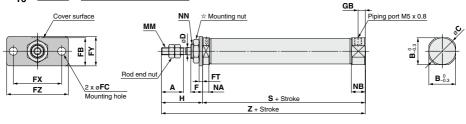
^{*: ()} in LS, S and Z dimensions: With auto switch

Single Acting, Spring Return: Rod Flange (F)

CJ2F6 - Stroke S Head cover port location Z







Axial location (R)



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

☆ For def	ails c	f the	moui	ntin	g nut,	refer	to pag	je 63.																		[mm]	
D																							5				
Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GB	Н	ММ	NA	NB	NC	NN	5 to 15 st			46 to 60 st					
6	15	12	14	3	8	11	4.5	1.6	24	14	32	5	28	M3 x 0.5	3	9.5	7	M6 x 1.0	37 (42)	46 (51)	50 (55)	64 (69)	_	_	_	_	
10	15	12	14	4	8	13	4.5	1.6	24	14	32	5	28	M4 x 0.7	4.8	9.5	_	M8 x 1.0	45.5	53	65	77	_	_	_	_	
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	5	28	M5 x 0.8	4.8	9.5	_	M10 x 1.0	45.5	54	66	78	84	108	126	138	
Bore					S	A								Z								Z	A				
size	5 to	16 t	0 31	to	46 to	61 to	76 to	101 to	126	to 5	to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	
Size	15 st	30 s	t 45	st	60 st	75 st	100 st	125 s	t 150	st 1	5 st	30 st	45 st	60 st	75 st	100 st	125 s	t 150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	D-□
6					61.5 (66.5)	_	_	-	-	- 1	65 70)	74 (79)	78 (83)	92 (97)	-	_	_			71.5 (76.5)					1	_	-X□
10	_	I =	Τ-	- 1	-	_	_	I —	Ι-	- 7	3.5	81	93	105	_	_	_	I - I	_	_	_	_	_	_	_	_	
16	_	-	-	-	_	_	_	-	-	- 7	3.5	82	94	106	112	136	154	166	_	_	_	_	_	_	_	_	Technical
																		*:	() in §	S, SA, 2	Z and	ZA dim	ensior	s: Wit	h auto	switch	Data

CJ1 CJP CJ2

JCM

CM2

СМЗ CG1

CG3

JMB

MB MB1

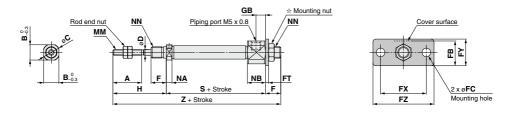
CA2

CS1

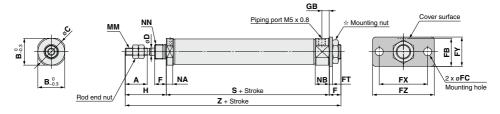
CS2

Single Acting, Spring Return: Head Flange (G)

CJ2G6 - Stroke SZ



CJ2G 10 - Stroke SZ

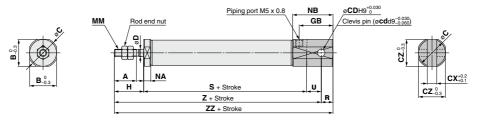


☆ For details of the mounting nut, refer to page 63.

☆ For deta	ils of the	mount	ing nut,	refer to	page	63.													[mm]
Bore size	А	В	С	D	F	FB	FC	FT	FX	FY	FZ	GB	н	MI	1	NA	NB		NN
6	15	8	9	3	8	11	4.5	1.6	24	14	32	5	28	МЗх	0.5	3	9.5	Me	3 x 1.0
10	15	12	14	4	8	13	4.5	1.6	24	14	32	5	28	M4 x	0.7	4.8	9.5	M	3 x 1.0
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	5	28	M5 x	0.8	4.8	9.5	M1	0 x 1.0
					S										<u> </u>				
Bore size	5 to 15 st	16 to			16 to 30 st	61 to 75 st	76 to 100 st	101 to 125 st	126 t		to st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st			101 to 125 st	126 to 150 st
6	37 (42)	46 (51)	5 (5	- 1	64 (69)	_	_	_	-	7 (7	3 (8)	82 (87)	86 (91)	100 (105)	_	-	-	_	_
10	45.5	53	6	5	77	_	_	_	_	81	.5	89	101	113	_	_	-	_	_
16	45.5	54	6	6	78	84	108	126	138	81	.5	90	102	114	120	14	4	162	174
														*: () ir	S and	Z dimer	nsions	With a	uto switch

Single Acting, Spring Return: Double Clevis (D)

CJ2D 10 - Stroke SZ



[mm] В С CD CX CZ D GB н ММ NA NB R U 16 to 31 to 46 to 61 to 76 to 101 to 126 to Bore size 5 to (cd) 15 st 30 st 45 st 60 st 75 st 100 st 125 st 150 st 10 45.5 15 12 14 3.3 3.2 12 4 18 20 M4 x 0.7 4.8 22.5 5 8 53 65 77 18.3 20 5 20 M5 x 0.8 4.8 27.5 54 66 108 126 138 16 15 6.5 18.3 5 23 8 10 45.5 78 84

				7	<u> </u>							Z	Z			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	73.5	81	93	105	_	_	_	_	78.5	86	98	110	_	_	_	_
16	75.5	84	96	108	114	138	156	168	83.5	92	104	116	122	146	164	176

^{*:} A clevis pin and retaining rings are included.

CJ1

CJP

CJ2 JCM

CM2

CM3

CG1

CG3

JMB

MB

MB1 CA2

CS1

CS2

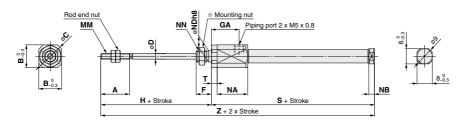
D-□ -X□

Technical Data

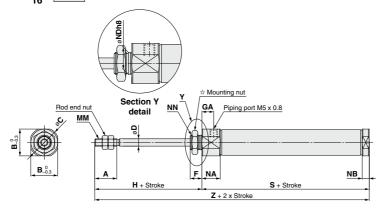
SMC

Single Acting, Spring Extend: Basic (B)

CJ2B6 - Stroke TZ



CJ2B 10 - Stroke TZ



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

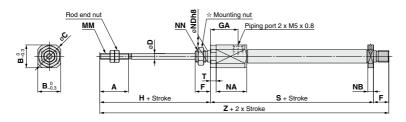
[mm] С NDh8 В D F GA MM NA NB NN Bore size Т 6 15 12 14 3 8 14.5 28 M3 x 0.5 16 3 6-0.018 3 M6 x 1.0 10 15 12 14 4 8 8 28 M4 x 0.7 12.5 4.8 8_0.02 M8 x 1.0 15 5 28 M5 x 0.8 12.5 4.8 10_0.022 M10 x 1.0 16 18.3 20 8 8

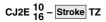
					3								<u> </u>			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
	46.5	55.5	59.5	73.5					74.5	83.5	87.5	101.5				
0	(51.5)	(60.5)	(64.5)	(78.5)	_	_	_	_	(79.5)	(88.5)	(92.5)	(106.5)	_	_	_	_
10	48.5	56	68	80	_	_	_	_	76.5	84	96	108	_	_	_	_
16	48.5	57	69	81	87	111	129	141	76.5	85	97	109	115	139	157	169

 \ast : () in S and Z dimensions: With auto switch

Single Acting, Spring Extend: Double-side Bossed (E)

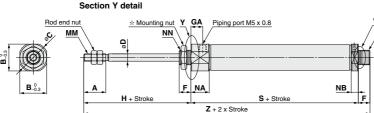
CJ2E6 - Stroke TZ











CJP CJ2

CJ1

JCM

CM2

CM3

CG1

CG3 JMB

MB

MB1 CA2

CS1

Section YY

detail

CS2

of the	mounting	nut	rofor to	nage	63

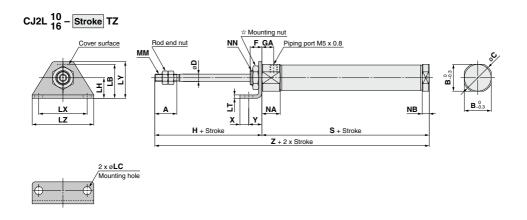
☆ For details	of the m	ounting r	nut, refer	to page 6	63.											[mm]
Bore size	A	В	С		D	F	GA	н	М	М	NA	NB	N	Dh8	N	IN
6	15	12	14		3	8	14.5	28	M3 :	x 0.5	16	3		6-0.018	M6	x 1.0
10	15	12	14		4	8	8	28	M4 :	x 0.7	12.5	4.8		8-0.022	M8	x 1.0
16	15	18.3	20)	5	8	8	28	M5 :	x 0.8	12.5	4.8	1	0_0.022	M10	x 1.0
					3								2			
Bore size	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st
6	46.5 (51.5)	55.5 (60.5)	59.5 (64.5)	73.5 (78.5)	_	_	_	_	82.5 (87.5)	91.5 (96.5)	95.5 (100.5)	109.5 (114.5)	_	_	_	_
10	48.5	56	68	80	_	_	_	_	84.5	92	104	116	_	_	_	_
16	48.5	57	69	81	87	111	129	141	84.5	93	105	117	123	147	165	177

*: () in S and Z dimensions: With auto switch

D-□ -X□

Single Acting, Spring Extend: Single Foot (L)

CJ2L6 - Stroke TZ Rod end nut ☆ Mounting nut Cover surface MM NN GA Piping port M5 x 0.8 LX NB. Rod cover side Head cover side H + Stroke S + Stroke 2 x ø**LC** Z + 2 x Stroke Mounting hole



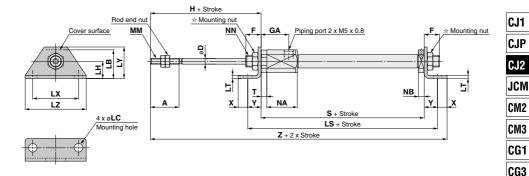
|--|

☆ For details	of the	mount	ng nu	t, refe	r to pag	e 63.																[mm]
Bore size	A	В	B C D F GA H LB LC LH LT LX LY LZ MM NA NB NN T 2 14 3 8 14.5 28 15 4.5 9 1.6 24 16.5 32 M3 x 0.5 16 3 M6 x 1.0 3 2 14 4 8 8 8 28 15 4.5 9 1.6 24 16.5 32 M4 x 0.7 12.5 4.8 M8 x 1.0 — 3.3 20 5 8 8 28 23 5.5 14 2.3 33 25 42 M5 x 0.8 12.5 4.8 M10 x 1.0 — S 6 to 31 to 46 to 61 to 76 to 101 to 126 to 30 st 45 st 60 st 75 st 100 st 125 st 150 st 55.5 59.5 73.5 — 5 7 74.5 83.5 87.5 101.5 —																			
6	15	12	14	3	8	14.5	28	15	4.5	9	1.	6	24	16.5	32	МЗ	x 0.5	16	3	М	6 x 1.0	3
10	15	12	14	4	8	8	28	15	4.5	9	1.	6	24	16.5	32	M4	x 0.7	12.5	4.8	M	8 x 1.0	-
16	15	18.3	20	5	8	8	28	23	5.5	14	2.	3	33	25	42	M5	x 0.8	12.5	4.8	M1	I0 x 1.0	\top
													_					_				
					S	i			,									<u>z</u>				
Bore size	5 to	16 t	o 3 [.]	1 to	46 to	61 to	76 to	101 to	126	to	X	Υ	51	o	16 to	31 to	46 to	61 to	o 76	3 to	101 to	126 to
	15 st	30 s	t 4	5 st	60 st	75 st	100 st	125 st	150	st			15	st	30 st	45 st	60 st	75 s	t 10	0 st	125 st	150 st
	46.5	55.5	5 5	9.5	73.5						_ [74	.5	83.5	87.5	101.5					
6	(51.5)	(60.5	5) (6	4.5)	D F GA H LB LC LH LT LX LY LZ MM NA NB NN T																	
10	48.5	56	- 6	68	80	_	_	_	-	-	5	7	76	.5	84	96	108	l –	-	_	_	_
16	48.5	Max A B C D F GA H LB LC LH LT LX LY LZ MM NA NB NN T																				

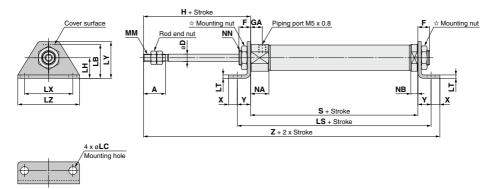
*: () in S and Z dimensions: With auto switch

Single Acting, Spring Extend: Double Foot (M)

CJ2M6 - Stroke TZ



CJ2M 10 - Stroke TZ



☆ For de	tails o	f the m	nountin	g nut	, refer	to page	63.														[mm]
Bore size	A	D	F	GA	Н	LB	LC	LH	5 to 15 st	16 to 30 st	1	46 to			101 to	126 to 150 st		LX	LY	LZ	ММ
6	15	3	8	14.	5 28	15	4.5	9	60.5 (65.5)	69.5 (74.5)	73.5 (78.5)	87.5 (101.5)	-	-	-	-	1.6	24	16.5	32	M3 x 0.5
10	15	4	8	8	28	15	4.5	9	62.5	70	82	94	_	_	_	_	1.6	24	16.5	32	M4 x 0.7
16	15	5	8	8	28	23	5.5	14	66.5	75	87	99	105	129	147	159	2.3	33	25	42	M5 x 0.8
Bore								S	,									Z			
20.0	NIA	NB	NIN		E to	16 10	21 +0	16 +0	61 10	76 to 1	101 to 1	26 +0	v	v	E to 16	2 +0 21	+0 14	2 10 6	1 +0 7	'C +0 1	101 +0 106 +0

	Bore								•										4			
	size	NA	NB	NN	5 to							126 to		Υ	5 to							126 to
	0.20				15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st			15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
		16	_	M6 x 1.0	46.5	55.5	59.5	73.5					-	-	86.5	95.5	99.5	113.5				
	0	16	3	IVIO X 1.U	(51.5)	(60.5)	(64.5)	(78.5)		_	-	_	5	′	(91.5)	(100.5)	(104.5)	(118.5)	_	_	_	_
ı	10	12.5	4.8	M8 x 1.0	48.5	56	68	80	_	I —		_	5	7	88.5	96	108	120	_	_	_	_
	16	12.5	4.8	M10 x 1.0	48.5	57	69	81	87	111	129	141	6	9	91.5	100	112	124	130	154	172	184
-		1		1 X 1.0	1 .5.5		_ 55	_ U			0				01.0					.54		

*: () in LS, S and Z dimensions: With auto switch

D-□ -X□

JMB

MB

MB1

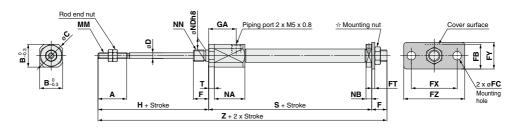
CA2

CS1

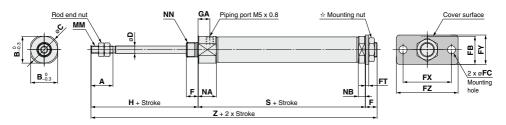
CS2

Single Acting, Spring Extend: Head Flange (G)

CJ2G6 - Stroke TZ



CJ2G 10 - Stroke TZ



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

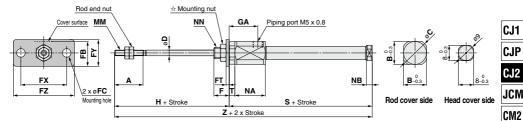
	2113 01 111	- moun	ang nat,	1010110	page of												[mm]
Bore size	A	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	н	мм	NA	NB	NN
6	15	12	14	3	8	13	4.5	1.6	24	14	32	14.5	28	M3 x 0.5	16	3	M6 x 1.0
10	15	12	14	4	8	13	4.5	1.6	24	14	32	8	28	M4 x 0.7	12.5	4.8	M8 x 1.0
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	8	28	M5 x 0.8	12.5	4.8	M10 x 1.0

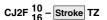
	Dava					3								<u> </u>			
	Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	size	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
	6	46.5	55.5	59.5	73.5					82.5	91.5	95.5	109.5				
	0	(51.5)	(60.5)	(64.5)	(78.5)	_	_	_	_	(87.5)	(96.5)	(100.5)	(114.5)	_	_	_	_
Ī	10	48.5	56	68	80	_	_	_	_	84.5	92	104	116	_	_	_	_
	16	48.5	57	69	81	87	111	129	141	84.5	93	105	117	123	147	165	177

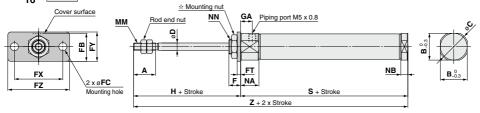
*: () in S and Z dimensions: With auto switch

Single Acting, Spring Extend: Rod Flange (F)







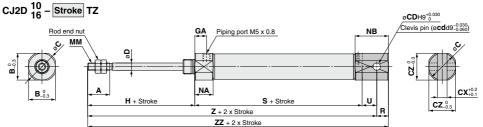


☆ For details of the mounting nut, refer to page 63.

Bore																							S							7				
size	Α	В	С	D	F	FΒ	FC	FT	FΧ	FΥ	FΖ	GΑ	Н	MM	NA	NB	NN	Т	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
3126																			15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
-	15	10	4.4	_		10	4.5	10	0.4	14	20	115	00	M3 x 0.5	10	0	M6 x 1.0	_	46.5	55.5	59.5	73.5					74.5	83.5	87.5	101.5				
0	15	12	14	l 3	l°.	13	4.5	1.0	24	14	32	14.3	20	C.U X GIVI	10	3	IVIO X 1.U	٥	(51.5)	(60.5)	(64.5)	(78.5)	_	_	_	_	(79.5)	(88.5)	(92.5)	(106.5)	_	_	_	-
10	15	12	14	4	8	13	4.5	1.6	24	14	32	8	28	M4 x 0.7	12.5	4.8	M8 x 1.0	_	48.5	56	68	80	_	_	_	_	76.5	84	96	108	_	_	_	_
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	8	28	M5 x 0.8	12.5	4.8	M10 x 1.0	_	48.5	57	69	81	87	111	129	141	76.5	85	97	109	115	139	157	169
																									±. / \	in C	and	7 4	mon	oiono	. \A/i4	h au	to or	witch

*: () in S and Z dimensions: With auto switch

Single Acting, Spring Extend: Double Clevis (D)



*: A clevis pin and retaining rings are included

*: A cievis pin	and re	laining	nngs	are in	Jiuded																	[mm]	
																		;	S				
Bore size	A	В	С	CD	CX	cz I	o ∣G/	ΑН	l N	IM	NA	NB	R	U	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	
				(cd)											15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	
10	15	12	14	3.3	3.2	2 4	4 8	28	M4	x 0.7	12.5	17.8	5	8	48.5	56	68	80	_	_	_	_	
16	15	18.3	20	5	6.5	8.3	5 8	28	M5	8.0 x	12.5	22.8	8	10	48.5	57	69	81	87	111	129	141	
					_												_						
					z								ZZ										
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76	to 101	l to 12	6 to						
	15 st	30 st	45 st	60 s	t 75 s	t 100 s	125 st	150 st	15 st	30 st	45 st	60 st	75 s	t 100	st 125	5 st 15) st						
10	84.5	92	104	116	-	-	_	_	89.5	97	109	121	_	-	- -	- -							
16	86.5	95	107	119	125	149	167	179	94.5	103	115	127	133	15	7 17	75 18	37						ļ

D
-X

Technical Data

CM3

CG1

CG3

MB

MB1

CA2

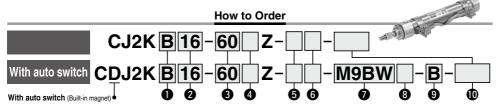
CS1

[mm]

Air Cylinder: Non-rotating Rod Type **Double Acting, Single Rod**

CJ2K Series ø10, ø16





Mounting

В	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
- **: Refer to page 151-1 for the double clevis (with one-touch connecting pin).

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

Auto switch

to the table below.

U Nui	liber of auto switches
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Bore size

10 10 mm 16 16 mm

4 Head cover port location

Nil	Perpendicular to axis	
R	Axial	0

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

U Nui	liber of auto switches
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

*: Refer to "Ordering Example of Cylinder Assembly" on page 89.

3 Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 89.

6 Pivot bracket

Nil	None							
N	Pivot bracket is shipped together with the product.							
*: Only for the double clevis type								

*: Pivot bracket is shipped together with the product, but not assembled

Auto switch mounting type

Α	Rail mounting
В	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.

6 Rod end bracket

Nil	None
٧	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).

Made to Order

Refer to page 89 for details.

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

	Electrical.	들	14 <i>0</i> -1		Load vo	oltage		Auto swi	ch model		Lea	niw b	e ler	ngth	[m]	Day and and	A I				
Special function		ator			DC	۸۲	Band me	ounting	Rail mo	ounting	0.5	1	3		None			ad			
	Cilly	Indi	(Output)		DC	ΛΟ	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COTHICCIO	10	au			
			3-wire (NPN)		E V/ 10 V/		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC aire sit				
	Grommet		3-wire (PNP)]	5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	IC CITCUIL	1 1			
			O suine	1	10 V	1	M9BV	M9B	M9BV	M9B	•	•	•	0	_	0		1 1			
	Connector	1	2-wire		12 V			H7C	J79C	_	•	_	•	•	•	_	-				
Discussion in discales			3-wire (NPN)		E V/ 10 V/		M9NWV	M9NW	VWN6W	M9NW	•	•	•	0	_	0	IC aire sit]			
		Yes	3-wire (PNP)	24 V	5 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IC CITCUIL	- PLC			
(2-coloi iliulcator)						2-wire	, 1	12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	—	0	_] [[
10/	Grommet		3-wire (NPN)		E V/ 10 V/	,	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC aircuit]			
(2 color indicator)			3-wire (PNP)		5 V, 12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IC GICGII	1 1			
(2-coloi iliulcator)			2-wire]	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	—	0	_	1			
With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V		_	H7NF		F79F	•	_	•	0	_	0	IC circuit				
		V	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	-	-	_	IC circuit	_			
	Grommet	res			_	200 V	_	_	A72	A72H	•	_	•	 —	_	_					
						100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —				
		No	0		10.1/	100 V or less	A90V	A90	A90V	A90	•	_	•	_	—	_	IC circuit	Relay,			
	Cannadar	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLC			
	Connector	No				24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit				
	Grommet	Yes			_	_	_	_	A79W	_	•	<u> </u>	•	I —	_	_	_	1			
	Diagnostic indication (2-color indicator) Water resistant (2-color indicator) With diagnostic output (2-color indicator)	Grammet Connector Diagnostic indication (2-color indicator) Water resistant (2-color indicator) With degrees output (2-color indicator) Grammet Connector	Grommet Grommet Connector	Grommet Grom	Special function entry	Special function Electrical	Grommet 3-wire (NPN) 2-wire (NPN) 3-wire (NPN) 2-wire (NPN) 3-wire (NPN) 2-wire (NPN) 3-wire (NPN) 2-wire (NPN) 3-wire (N	Special function Electrical	Special function Electrical Special function Electrical Special function Electrical Special function Electrical Special function Country Cutput DC AC Band mounting Perpendicular In-line MSNV M9N M9N M9P M	Special function Electrical Fig. Writing Courbut DC AC Band mounting Rail mc Perpendicular In-line In-	Special function Electrical entry Electrical	Special function Electrical Section Se	Special function Electrical Security Wiring Court Connector Sheek Sheek	Special function Electrical Section Connector Section Connector Section Connector Section Connector Connector Section Connector Connec	Special function Electrical entry Eletry Electrical entry Electrical entry Electrical entry El	Special function Electrical entry Eletry Electrical entry Electrical entry Electrical entry El	Special function Electrical and the content of	Special function			

- *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 "O" 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: Non-rotating Rod Type Double Acting, Single Rod

A cylinder which rod does not rotate because of the hexagonal rod shape.

Non-rotating accuracy ø10: ±1.5°, ø16: ±1°
Can operate without lubrication.

Symbol

Double acting, Single rod, Rubber bumper



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

Symbol	Specifications
-X446	PTFE grease
-X2838	Double clevis (With one-touch connecting pin)

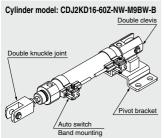
Made to Order

Click here for detail:

CHCK III	ere for details
Symbol	Specifications
-XA□	Change of rod end shape
-XC3	Special port location
-XC9	Adjustable stroke cylinder/Adjustable retraction type
-XC10	Dual stroke cylinder/Double rod type
-XC22	Fluororubber seal
-XC51	With hose nipple
-XC85	Grease for food processing equipment

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly



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

Specifications

Bore size [mm]	10	16
Action	Double actin	g, Single rod
Fluid	A	ir
Proof pressure	1 M	1Pa
Maximum operating pressure	0.7 1	MPa
Minimum operating pressure	0.06	MPa
Ambient and fluid temperature	Without auto switch: -10 With auto switch: -10	°C to 70°C °C to 60°C (No freezing)
Cushion	Rubber	bumper
Lubrication	Not required	(Non-lube)
Stroke length tolerance	+1	
Rod non-rotating accuracy	±1.5°	±1°
Piston speed	50 to 75	60 mm/s
Allowable kinetic energy	0.035 J	0.090 J

Standard Strokes

	[mm]
Bore size	Standard stroke
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.

• · · · Mounted on the product. O · · · Can be ordered within the cylinder model. △···Order separately. Double Double clevis Basic Foot Flange Mounting clevis (including T-bracket) Mounting nut • Rod end nut • • • Clevis pin (including retaining rings) • • Double clevis (With one-touch connecting pin) Δ O (-X2838) Single knuckle joint Double knuckle joint (including a pin and retaining rings) Double knuckle joint (With one-touch connecting pin) Δ Δ Δ Rod end cap (Flat/Round type) Pivot bracket (T-bracket)

Mounting Brackets/Part No.

Mounting breaket	Bore siz	ze [mm]
Mounting bracket	10	16
Foot	CJ-L016C	CJK-L016C
Flange	CJ-F016C	CJK-F016C
Pivot bracket (T-bracket)*1	CJ-T010C	CJ-T016C

^{*1:} The pivot bracket (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.

D-□ -X□

CJ1

CJP

CJ2 JCM CM2

CM3

CG3

JMB MB

MB1

CA2 CS1

CS₂

Technical Data



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

Weights

			[g]
	Bore size [mm]	10	16
D ! ! - ! - ! - !	Basic	25	47
Basic weight (When the stroke	Axial piping	25	47
is zero)	Double clevis (including clevis pin)	27	55
15 2010)	Head-side bossed	29	50
Additional weight	per 15 mm of stroke	4	7
	Single foot	8	25
Mounting bracket	Double foot	16	50
weight	Rod flange	5	13
	Head flange	5	13
	Clevis pin	1	3
	One-touch connecting pin for double clevis	2	4
	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
	Pivot bracket (T-bracket)	32	50

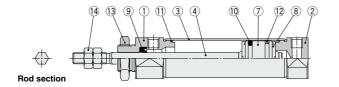
- *: Mounting nut and rod end nut are included in the basic weight.
- *: Mounting nut is not included in the basic weight for the double clevis. Calculation:

Example) CJ2KL10-45Z

- Basic weight -----25 (Ø10)
- Additional weight ------4/15 stroke
- Cylinder stroke -----45 stroke
- Mounting bracket weight --- 8 (Single foot)

25 + 4/15 x 45 + 8 = 45 g

Construction (Not able to disassemble)





With auto switch

Component Parts

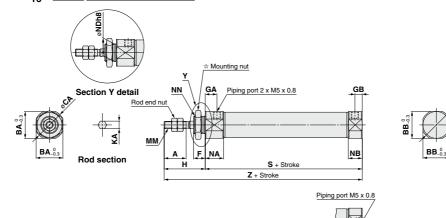
No.	Description	Material	Note
1	Rod cover	Aluminum alloy	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	
8	Bumper	Urethane	

No.	Description	Material	Note
9	Rod seal	NBR	
10	Piston seal	NBR	
11	Tube gasket	NBR	
12	Wear ring	Resin	
13	Mounting nut	Rolled steel	
14	Rod end nut	Rolled steel	
15	Magnet	_	

Air Cylinder: Non-rotating Rod Type Double Acting, Single Rod CJ2K Series

Basic (B)

CJ2KB 10 Stroke Head cover port location Z



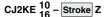
Head cover port location Axial location (R)

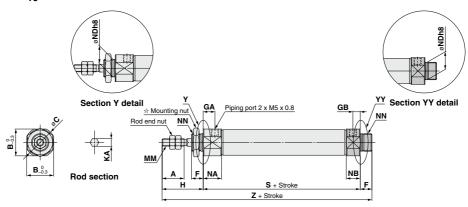
*: The overall cylinder length does not change.

\$ Refer to page 63 for details of the mounting put (SNJ-016C for ø10, SNKJ-016C for ø16)

											,						[mm]
Bore size	Α	BA	BB	CA	СВ	F	GA	GB	Н	KA	MM	NA	NB	NDh8	NN	S	Z
10	15	15	12	17	14	8	8	5	28	4.2	M4 x 0.7	12.5	9.5	10_0.022	M10 x 1.0	46	74
16	15	18.3	18.3	20	20	8	8	5	28	5.2	M5 x 0.8	12.5	9.5	12_0.027	M12 x 1.0	47	75

Double-side Bossed (E)





☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10. SNKJ-016C for ø16)

A THOROUGH TO P	ago oo .	or dotain	0 01 1110		.ga (5.10 0.0		. 0, 0	0 0 100 101 0 10)						[mm
Bore size	Α	В	С	F	GA	GB	Н	KA	MM	NA	NB	NDh8	NN	S	Z
10	15	15	17	8	8	5	28	4.2	M4 x 0.7	12.5	9.5	10_0.022	M10 x 1.0	46	82
16	15	18.3	20	8	8	5	28	5.2	M5 x 0.8	12.5	9.5	12_0.027	M12 x 1.0	47	83

SMC

D-□

CJ1 CJP

CJ2

JCM

CM2 CM3

CG1

CG3

JMB

MB MB1

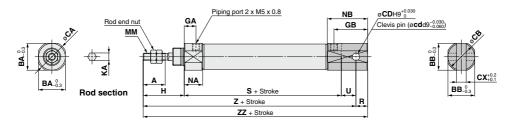
CA2

CS1

CS2

Double Clevis (D)

CJ2KD 10 - Stroke Z

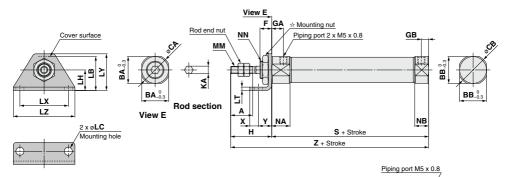


*: A clevis pin and retaining rings are included.

[mm] Bore size BA BB CA СВ CD(cd) СХ GA GB Н KA MM NA NB R s υ Z ZZ 15 15 12 17 14 3.3 18 28 M4 x 0.7 12.5 22.5 5 46 8 87 18.3 18.3 5.2 M5 x 0.8 8 10 93

Single Foot (L)

CJ2KL 10 - Stroke Head cover port location Z



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

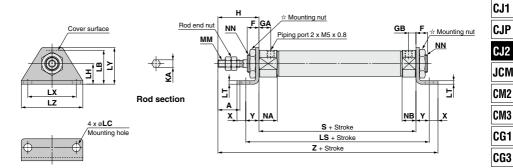
 $\,\dot{\approx}\,$ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

																									[mm]
Bore size	Α	BA	ВВ	CA	СВ	F	GA	GB	Н	KA	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	S	Х	Υ	Z
10	15	15	12	17	14	8	8	5	28	4.2	21.5	5.5	14	2.3	33	25	42	M4 x 0.7	12.5	9.5	M10 x 1.0	46	6	9	74
16	15	18.3	18.3	20	20	8	8	5	28	5.2	23	5.5	14	2.3	33	25	42	M5 x 0.8	12.5	9.5	M12 x 1.0	47	6	9	75

Air Cylinder: Non-rotating Rod Type Double Acting, Single Rod CJ2K Series

Double Foot (M)

CJ2KM 10 - Stroke Z

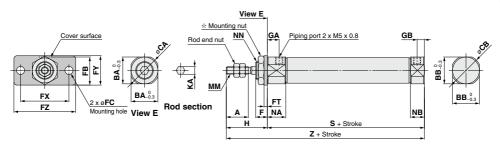


 $\,\dot{\approx}\,$ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

																						[mm]
Bore size	Α	F	GA	GB	Н	KA	LB	LC	LH	LS	LT	LX	LY	LZ	MM	NA	NB	NN	S	Х	Υ	Z
10	15	8	8	5	28	4.2	21.5	5.5	14	64	2.3	33	25	42	M4 x 0.7	12.5	9.5	M10 x 1.0	46	6	9	89
16	15	8	8	5	28	5.2	23	5.5	14	65	2.3	33	25	42	M5 x 0.8	12.5	9.5	M12 x 1.0	47	6	9	90

Rod Flange (F)

CJ2KF $^{10}_{16}$ - Stroke Head cover port location Z



Piping port M5 x 0.8

Head cover port location Axial location (R)

*: The overall cylinder length does not change.

 $\dot{\approx}$ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

																						[mm]
Bore size	Α	ВА	ВВ	CA	СВ	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	KA	MM	NA	NB	NN	S	Z
10	15	15	12	17	14	8	17.5	5.5	2.3	33	20	42	8	5	28	4.2	M4 x 0.7	12.5	9.5	M10 x 1.0	46	74
16	15	18.3	18.3	20	20	8	19	5.5	2.3	33	20	42	8	5	28	5.2	M5 x 0.8	12.5	9.5	M12 x 1.0	47	75

D
-X

Technical

JMB

MB1 CA2

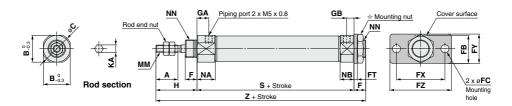
CS₁

CS2



Head Flange (G)

CJ2KG $^{10}_{16}$ - Stroke Z



☆ Refer to page 63 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

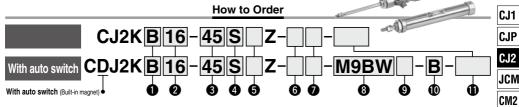
A Holor to pag	[m												[mm]							
Bore size	Α	В	С	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	KA	MM	NA	NB	NN	S	Z
10	15	15	17	8	17.5	5.5	2.3	33	20	42	8	5	28	4.2	M4 x 0.7	12.5	9.5	M10 x 1.0	46	82
16	15	18.3	20	8	19	5.5	2.3	33	20	42	8	5	28	5.2	M5 x 0.8	12.5	9.5	M12 x 1.0	47	83

Air Cylinder: Non-rotating Rod Type Single Acting, Spring Return/Extend

CJ2K Series



ø10, ø16



Mounting

В	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
- **: Refer to page 151-1 for the double clevis (with one-touch connecting

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.

2 Bore size

_	
10	10 mm
16	16 mm

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.
- *: Not applicable to single acting, spring extend (T).

U Nui	mber of auto switches					
Nil	2 pcs.					
S	1 pc.					
n	"n" pcs.					

Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 96.

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

*: Only for the double clevis type *: Pivot bracket is shipped together with the product, but not assembled

Auto switch mounting type Rail mounting

В

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

Action

S	Single acting, Spring return
Т	Single acting, Spring extend

CM3

CG₁

CG3

JMB

MB

MB1

CA₂

CS₁

CS₂

Rod end bracket

Nil	None
٧	Single knuckle joint
W**	Double knuckle joint
Т	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).

Made to Order

Refer to page 96 for details.

switch mounting brackets. *: Refer to "Ordering Example of Cylinder Assembly" on page 96. Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

		Electrical	light	Wiring	Load voltage			Auto switch model					Lead wire length [m]				Dra mirad	Annli	aabla											
Туре	Special function	entry	ndicator	(Output)	, l	DC	AC	Band m	ounting	Rail mounting		0.5	1	3	5	None	Pre-wired connector		cable ad											
		Citiy	Ιğ	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COTIFICATION	10.	au											
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit												
Ę		Grommet		3-wire (PNP)		J V,12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	IO GIGGIE												
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	_	0	_												
		Connector		2 ******		12 4		_	H7C	J79C		•	_	•	•	•	_													
anto	Diagnostic indication			3-wire (NPN)		5 V,12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	_	0	IC circuit	Dolov											
	(2-color indicator)			Yes	3-wire (PNP)	24 V	J V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IO GIGGIE	PLC										
state				2-wire	2-wire	2-wire	2-wire	2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	<u> </u>	0	_] - = 0							
	Water resistant (2-color indicator)	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet		3-wire (NPN)	-	5 V,12 V	,	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit			
Solid																			3-wire (PNP))	5 V, 12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0000-	0	IO GIGGIE	
Ñ															2-wire	╛	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_	
	With diagnostic output (2-color indicator)		ÌÌ	4-wire (NPN)	5 V,12 V	/	-	H7NF	_	F79F	•	_	•	0	_	0	IC circuit													
switch									3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	-	-	_	IC circuit	_						
3		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_													
				lo .			100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	-												
anto			No				100 V or less	A90V		A90V	A90	•	_	•	_	_	_	IC circuit	Relay.											
		0	Yes No	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ											
Reed		Connector		1			24 V or less	_	C80C	A80C	_	•	-	•	•	•	_	IC circuit												
_	Diagnostic indication (2-color indicator)	Grommet	Yes	1		_	_	_	_	A79W	_	•	_	•	_	_	_	_	1											

*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 5 m----- Z (Example) M9NWZ 1 m----- M (Example) M9NWM 3 m----- L (Example) M9NWL 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 "O" 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.)

D-□

A cylinder which rod does not rotate because of the hexagonal rod shape.

Non-rotating accuracy Ø10: ±1.5°, Ø16: ±1° Can operate without



Symbol

Single acting, Spring return, Rubber bumper







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

	Symbol	Specifications			
-X446 PTFE grease					
	-X2838	Double clevis (With one-touch connecting pin)			

Made to Order

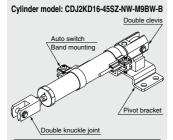
Click here for details

Symbol	Specifications					
-XA□ Change of rod end shape						
-XC51	With hose nipple					
-XC85	Grease for food processing equipment					

⚠ Precautions

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly



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.

Specifications

Bore size [mm]	10	16			
Action	Single acting, Spring return/	Single acting, Spring extend			
Fluid	A	ir			
Proof pressure	1 M	1Pa			
Maximum operating pressure	0.71	MPa			
Minimum operating pressure	0.15	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 (standard equipment)				
Lubrication	Not required (Non-lube)				
Stroke length tolerance	+1.0 0				
Rod non-rotating accuracy	±1.5° ±1°				
Piston speed	50 to 750 mm/s				
Allowable kinetic energy	0.035 J	0.090 J			

Standard Strokes

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

- *: 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.

Spring Reaction Force

Refer to page 1899 (Table (2): Spring Reaction Force).

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. O···Can be ordered within the cylinder model. △···Order separately. Double Double clevis Mounting Basic Foot Flange clevis (including T-bracket) Mounting nut Rod end nut Clevis pin (including retaining rings) Double clevis (With one-touch connecting pin) Δ Δ Δ O (-X2838) (-X2838) Single knuckle joint Double knuckle joint (including a pin and retaining rings Double knuckle joint (With one-touch connecting pin) Δ Δ Δ Δ Rod end cap (Flat/Round type) Pivot bracket (T-bracket)

Mounting Brackets/Part No.

Maunting brookst	Bore si	ze [mm]
Mounting bracket	10	16
Foot	CJ-L016C	CJK-L016C
Flange	CJ-F016C	CJK-F016C
Pivot bracket (T-bracket)*1	CJ-T010C	CJ-T016C

*1: The pivot bracket (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.



Air Cylinder: Non-rotating Rod Type Single Acting, Spring Return/Extend **CJ2K Series**

Spring Extend

Weights

Sprir	ng Return								[g]
Во	re size [mm]			10				16	
	Mounting	Basic	Axial piping	Double clevis (including clevis pin)	Double- side bossed	Basic	Axial piping	Double clevis (including clevis pin)	Double- side bossed
	15 stroke	30	30	30	31	64	64	70	66
	30 stroke	38	38	38	39	79	79	86	81
g	45 stroke	48	48	48	49	97	97	104	99
Basic weight	60 stroke	58	58	58	59	116	116	122	118
Sic	75 stroke					138	138	144	140
Ba	100 stroke					171	171	178	173
	125 stroke		/			209	209	215	211
	150 stroke					232	232	238	234
ght	Single foot			8				25	
Mounting bracket weight	Double foot			16				50	
ket &	Rod flange			5				13	
bra	Head flange			5				13	
	Clevis pin	_	_	1	_	_	_	3	_
	One-touch connecting pin for double clevis	_	_	2	_	_	_	4	_
	Single knuckle joint			17				23	
les	Double knuckle joint (including knuckle pin)			25				21	
Accessories	Double knuckle joint (With one-touch connecting pin)		:	26			:	22	
Yo	Rod end cap (Flat type)			1				2	
	Rod end cap (Round type)			1				2	
	Pivot Bracket (T-bracket)			32				50	

- *: Mounting nut and rod end nut are included in the basic weight.
- *: Mounting nut is not included in the basic weight for the double clevis. Calculation:

Example) CJ2KL10-45SZ

Basic weight48 (ø10)
Cylinder stroke45 stroke

[•] Mounting bracket weight ---- 8 (Single foot)

Bo	re size [mm]			10				16	
	Mounting	Basic	Axial piping	Double clevis (including clevis pin)	Double- side bossed	Basic	Axial piping	Double clevis (including clevis pin)	Double side bossed
	15 stroke	29	29	31	31	64	64	72	69
	30 stroke	35	35	37	38	79	79	86	83
捒	45 stroke	44	44	46	46	95	95	103	99
Basic weight	60 stroke	52	52	54	55	111	111	119	115
Sic	75 stroke				$\overline{}$	133	133	140	137
Ba	100 stroke					163	163	170	167
	125 stroke		/			198	198	206	202
	150 stroke					219	219	227	223
ght	Single foot			8				25	
ye.	Double foot			16				50	
Mounting bracket weight	Rod flange			5				13	
pra bra	Head flange			5				13	
	Clevis pin	_	-	1	_	_	_	3	_
	One-touch connecting pin for double clevis	_	_	2	_	_	_	4	_
	Single knuckle joint			17				23	
es	Double knuckle joint (including knuckle pin)			25				21	
Accessories	Double knuckle joint (With one-touch connecting pin)			26				22	
Ac	Rod end cap (Flat type)			1				2	
	Rod end cap (Round type)			1				2	
	Pivot Bracket (T-bracket)			32				50	

- *: Mounting nut and rod end nut are included in the basic weight.
- *: Mounting nut is not included in the basic weight for the double clevis. Calculation:

Example) CJ2KL10-45TZ

- Basic weight ------44 (ø10)
- Cylinder stroke ----- 45 stroke
- Mounting bracket weight ---- 8 (Single foot)

D
-X

Technical
Data

[0]

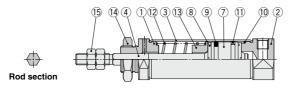
CJ1
CJP
CJ2
JCM
CM2
CM3
CG1
CG3
JMB
MB1
CA2
CS1
CS2

^{48 + 8 =} **56 g**

^{44 + 8 =} **52 g**

Construction (Not able to disassemble)

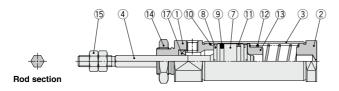
Single acting, Spring return





With auto switch

Single acting, Spring extend





With auto switch

Component Parts

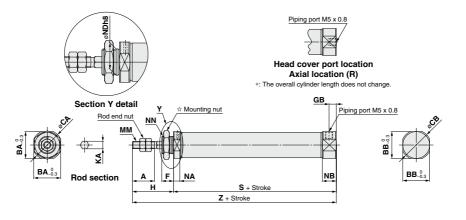
No.	Description	Material	Note
1	Rod cover	Aluminum alloy	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	
8	Bumper	Urethane	
9	Piston seal	NBR	

No.	Description	Material	Note
10	Tube gasket	NBR	
11	Wear ring	Resin	
12	Return spring	Piano wire	
13	Spring seat	Aluminum alloy	
14	Mounting nut	Rolled steel	
15	Rod end nut	Rolled steel	
16	Magnet	_	
17	Rod seal	NBR	

Air Cylinder: Non-rotating Rod Type Single Acting, Spring Return/Extend **CJ2K Series**

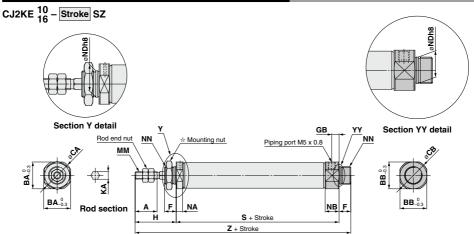
Single Acting, Spring Return: Basic (B)

CJ2KB 10 - Stroke S Head cover port location Z



| Rmm| | Strate | Str

Single Acting, Spring Return: Double-side Bossed (E)



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

Dava																			3							7	<u> </u>			
Bore size	Α	BA	вв	CA	СВ	F	GB	н	KA	MM	NA	NB	NDh8	NN	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
Size															15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	15	15	15	17	17	8	5	28	4.2	M4 x 0.7	4.8	9.5	10_0.022	M10 x 1.0	45.5	53	65	77	_	_	_	_	81.5	89	101	113	_	_	_	
16	15	18.3	18.3	20	20	8	5	28	5.2	M5 x 0.8	4.8	9.5	12_0.027	M12 x 1.0	45.5	54	66	78	84	108	126	138	81.5	90	102	114	120	144	162	174

CJP

CJ1

107

JCM CM2

CM3

CG1

CG3

JMB MB

MB1

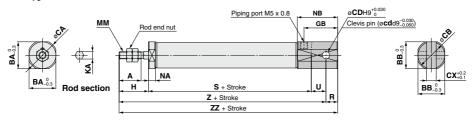
CA2 CS1

CS2

D-□ -X□

Single Acting, Spring Return: Double Clevis (D)

CJ2KD $^{10}_{16}$ - Stroke SZ



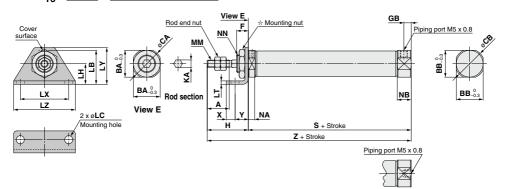
*: A clevis pin and retaining rings are included.

[mm] Bore size BA BB CA CB CD CX GB н KA мм NA NB R U 5 to 16 to 31 to 46 to 61 to 76 to 101 to 126 to (cd) 15 st 30 st 45 st 60 st 75 st 100 st 150 st 4.2 M4 x 0.7 10 15 12 12 14 14 3.3 3.2 18 20 4.8 22.5 5 8 45.5 53 65 77 20 5.2 M5 x 0.8 4.8 27.5 45.5 66

				7	Z							Z	Z			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	73.5	81	93	105	_	_	_	_	78.5	86	98	110	_	_	_	_
16	75.5	84	96	108	114	138	156	168	83.5	92	104	116	122	146	164	176

Single Acting, Spring Return: Single Foot (L)

CJ2KL $^{10}_{16}$ - Stroke S Head cover port location Z



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

[mm]

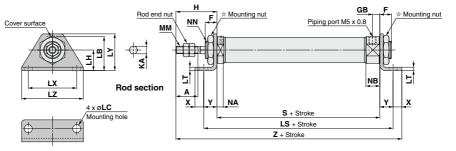
 $\ensuremath{\dot{x}}$ For details of the mounting nut, refer to page 63.

Bore size	A	ВА	вв	CA	СВ	F	GВ	Н	КА	LB	LC	LH	LT	LX	LY	LZ	ММ	NA	NB	NN
10	15	15	12	17	14	8	5	28	4.2	21.5	5.5	14	2.3	33	25	42	M4 x 0.7	4.8	9.5	M10 x 1.0
16	15	18.3	18.3	20	20	8	5	28	5.2	23	5.5	14	2.3	33	25	42	M5 x 0.8	4.8	9.5	M12 x 1.0

Bore					•									4	<u> </u>			
	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	Х	ΙY	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
size	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st			15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	45.5	53	65	77	_	_	_	_	6	9	73.5	81	93	105	_	_	_	_
16	45.5	54	66	78	84	108	126	138	6	9	73.5	82	94	106	112	136	154	166

Single Acting, Spring Return: Double Foot (M)

CJ2KM 10 - Stroke SZ



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

[mm]

Dava	Bore										L	s												
size	Α	F	GB	н	LB	LC	LH	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	LT	LX	LY	LZ	KA	MM	NA	NB	NN
SIZE								15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st									
10	15	8	5	28	21.5	5.5	14	63.5	71	83	95		_	_	_	2.3	33	25	42	4.2	M4 x 0.7	4.8	9.5	M10 x 1.0
16	15	8	5	28	23	5.5	14	63.5	72	84	96	102	126	144	156	2.3	33	25	42	5.2	M5 x 0.8	4.8	9.5	M12 x 1.0

JMB MB

CJ1

CJP CJ2

JCM

CM2

СМЗ

CG1

CG3

Dove					3										Z			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	Х	Υ	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
Size	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st			15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	45.5	53	65	77	_	_	_	_	6	9	88.5	96	108	120	_	_	_	_
16	45.5	54	66	78	84	108	126	138	6	9	88.5	97	109	121	127	151	169	181

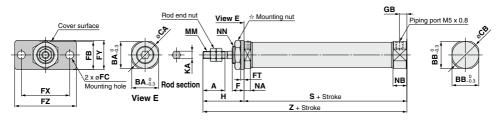
MB1

CA2 CS1

CS2

Single Acting, Spring Return: Rod Flange (F)

CJ2KF 10 - Stroke S Head cover port location Z





Head cover port location Axial location (R)

*: The overall cylinder length does not change.

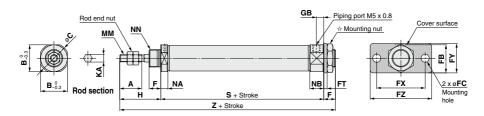
☆ Fo	or d	etail	s of	the	mo	unti	ing i	nut,	refe	er to	pa	qe 6	3.											~.	IIIe	over	ан су	iiiiue	i ielių	jui uc	JC3 11	Ot GI	ariye		
							·					_																						[mm]
Dava																							_ (5							7	<u> </u>			
Bore		BA	BB	CA	СВ	F	FB	FC	FT	FX	FY	FΖ	GB	Н	KA	MM	NA	NB	NN	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
size																				15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	15	15	12	17	14	8	17.5	5.5	2.3	33	20	42	5	28	4.2	M4 x 0.7	4.8	9.5	M10 x 1.0	45.5	53	65	77	_	_	_	_	73.5	81	93	105			_	_
16	15	10.2	103	20	20	Ω	10	5.5	23	33	20	12	5	28	52	M5 v n a	1Ω	0.5	M12 v 1 0	45.5	54	66	78	8/1	108	126	138	73.5	82	0.1	106	112	136	15/	166

D-□ -X□ Technical Data



Single Acting, Spring Return: Head Flange (G)

CJ2KG 10 - Stroke SZ



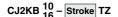
☆ For details of the mounting nut, refer to page 63.

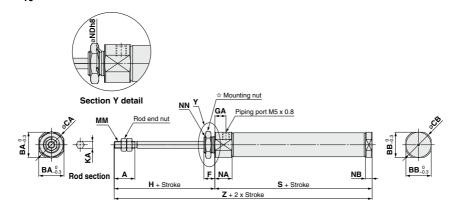
_																		[IIIIII]
	Bore size	A	В	С	F	FB	FC	FT	FX	FY	FZ	GВ	н	KA	ММ	NA	NB	NN
	10	15	15	17	8	17.5	5.5	2.3	33	20	42	5	28	4.2	M4 x 0.7	4.8	9.5	M10 x 1.0
	16	15	18.3	20	8	19	5.5	2.3	33	20	42	5	28	5.2	M5 x 0.8	4.8	9.5	M12 x 1.0

Dava				- 5	3							7	Z			
Bore	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
size	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	45.5	53	65	77	_	_	_	_	81.5	89	101	113	_	_	_	_
16	45.5	54	66	78	84	108	126	138	81.5	90	102	114	120	144	162	174

Air Cylinder: Non-rotating Rod Type Single Acting, Spring Return/Extend **CJ2K Series**

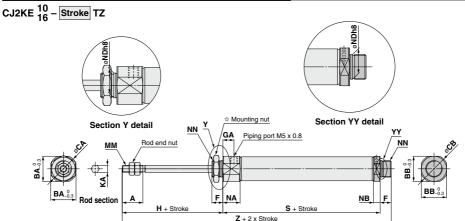
Single Acting, Spring Extend: Basic (B)





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

Single Acting, Spring Extend: Double-side Bossed (E)



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

Bore																		- 5	3							7				
size	Α	BA	вв	CA	СВ	F	GA	н	KA	MM	NA	NB	NDh8	NN	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
Size															15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	15	15	15	17	17	8	8	28	4.2	M4 x 0.7	12.5	4.8	10_0.022	M10 x 1.0	48.5	56	68	80	_	_	_	_	84.5	92	104	116	_	_	_	_
16	15	18.3	18.3	20	20	8	8	28	5.2	M5 x 0.8	12.5	4.8	12_0.027	M12 x 1.0	48.5	57	69	81	87	111	129	141	84.5	93	105	117	123	147	165	177

103 ®

[mm]

D-U

-XU

Technical Data

CJ1

CJP

JCM

CM2

CM3

CG1 CG3

JMB

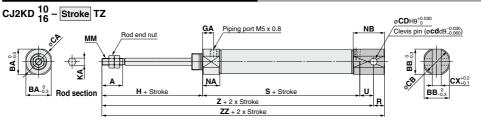
MB

MB1

CA2 CS1

CS2

Single Acting, Spring Extend: Double Clevis (D)



* A clevis pin and retaining rings are included.

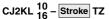
Įn	nn

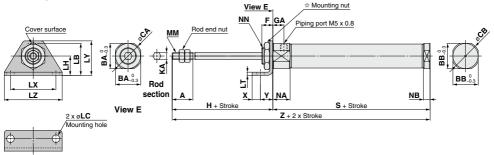
																				;			
Bore size	Α	BA	вв	CA	СВ	CD	СХ	GA	н	KA	MM	NA	NB	R	U	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
						(cd)										15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	15	15	12	17	14	3.3	3.2	8	28	4.2	M4 x 0.7	12.5	17.8	5	8	48.5	56	68	80	_	_	_	_
16	15	18.3	18.3	20	20	5	6.5	8	28	5.2	M5 x 0.8	12.5	22.8	8	10	48.5	57	69	81	87	111	129	141

				7	Z							Z	Z			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	84.5	92	104	116	_	_	_	_	89.5	97	109	121	_	l —	_	_
16	86.5	95	107	119	125	149	167	179	94.5	103	115	127	133	157	175	187

GΑ

Single Acting, Spring Extend: Single Foot (L)





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

вв CA СВ

	[n	٦r	1	n

NA NB

10	15	15	12	1/	14	8	8 2	28 4.2	2 21.5	5.5	14	2.3	33	25 4	2 M4	X U.7	12.5	4.8 M	10 X 1.0
16	15	18.3	18.3	20	20	8	8	28 5.2	2 23	5.5	14	2.3	33	25 4	2 M5	x 0.8	12.5	4.8 M1	12 x 1.0
Bore size					5	3				v	v					Z			
Dore Size	5 to 15 st	16 to 30	st 31 to	45 st	46 to 60 st	61 to 75 st	76 to 100 s	101 to 125 s	t 126 to 150 st	^	T	5 to 15 st	16 to 30 :	t 31 to 45	st 46 to 60 st	61 to 75 s	t 76 to 100	st 101 to 125 s	t 126 to 150 st
10	48.5	56	6	8	80	_	_	I -	-	6	9	76.5	84	96	108	_	I -	Τ-	T —
16	48.5	57	6	9	81	87	111	129	141	6	9	76.5	85	97	109	115	139	157	169

LB LC LH LT LX

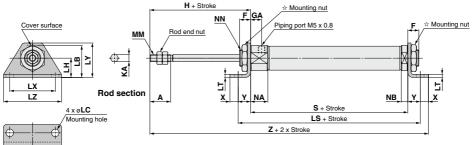
KA

LZ

Bore size

Single Acting, Spring Extend: Double Foot (M)

CJ2KM 10 - Stroke TZ



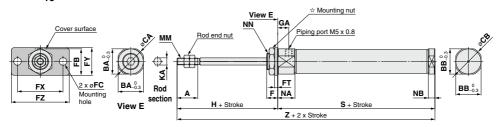
☆ For details of the mounting nut, refer to page 63.

[mm] LS GA LC LH 46 to 61 to 76 to 101 to LT LZ MM NA NB NN Bore size LB 5 to 16 to 31 to 126 to LX LY 60 st 75 st 100 st 125 st 15 st | 30 st 45 st 150 st 10 42 M4 x 0.7 12.5 4.8 M10 x 1.0 8 8 28 4.2 21.5 5.5 14 | 66.5 | 74 | 86 98 | — 2.3 33 25 16 15 8 8 28 5.2 23 5.5 14 66.5 75 87 99 105 129 147 159 2.3 33 25 42 M5 x 0.8 12.5 4.8 M12 x 1.0

					3									7	Z			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	Х	Υ	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st			15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	48.5	56	68	80	_	_	_	_	6	9	91.5	99	111	123	_	_	_	_
16	48.5	57	69	81	87	111	129	141	6	9	91.5	100	112	124	130	154	172	184

Single Acting, Spring Extend: Rod Flange (F)

CJ2KF $^{10}_{16}$ - Stroke TZ



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

× For details o	i the n	iounun	g riut, r	eier to	page (oo.													[mm]
Bore size	Α	ВА	вв	CA	СВ	F	FB	FC	FT	FX	FY	FZ	GA	н	КА	ММ	NA	NB	NN
10	15	15	12	17	14	8	17.5	5.5	2.3	33	20	42	8	28	4.2	M4 x 0.7	12.5	4.8	M10 x 1.0
16	15	18.3	18.3	20	20	8	19	5.5	2.3	33	20	42	8	28	5.2	M5 x 0.8	12.5	4.8	M12 x 1.0

Bore size					5								<u> </u>			
Dole Size	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st
10	48.5	56	68	80	_	_	_	_	76.5	84	96	108	_	_	_	_
16	48.5	57	69	81	87	111	129	141	76.5	85	97	109	115	139	157	169

105

D-□ -X□ Technical Data

CJ1 CJP

> CJ2 **JCM**

CM2

CM3 CG1

CG3

JMB

MB MB1

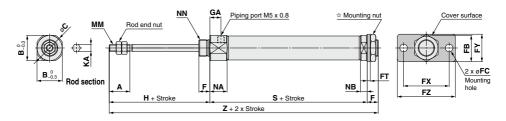
CA2

CS₁

CS2

Single Acting, Spring Extend: Head Flange (G)

CJ2KG $^{10}_{16}$ - Stroke TZ



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

[mm] FC FΧ FΥ FΖ GA Α В С F FΒ FT Н KA MM NA NB NN Bore size 10 15 15 17 17.5 5.5 2.3 33 42 8 28 4.2 M4 x 0.7 12.5 M10 x 1.0 8 20 4.8 5.2 16 15 18.3 20 8 19 5.5 2.3 33 20 42 8 28 M5 x 0.8 12.5 4.8 M12 x 1.0

Bore size													Z			
bore size	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st
10	48.5	56	68	80	_	_	_	_	84.5	92	104	116	_	_	_	
16	48.5	57	69	81	87	111	129	141	84.5	93	105	117	123	147	165	177

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

CJ2Z Series



CJ₁

CJP CJ₂

JCM

CM₂

CM3

CG₁

CG3 JMB

MB

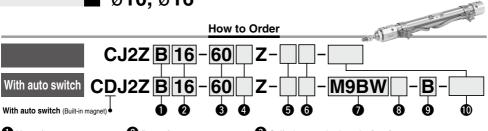
MB1

CA₂

CS₁

CS2

ø10, ø16



Mounting

Auto switch

В	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

Without auto switch

* For applicable auto switches

★ Enter the auto switch mounting type (A or B)

even when a built-in magnet cylinder without

refer to the table below

an auto switch is required.

2 Bore size

_	
10	10 mm
16	16 mm

4 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

<u> </u>	inder of date owntones
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

8 Number of auto switches

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

Cvlinder standard stroke [mm] Refer to "Standard Strokes" on page 108.

6 Pivot bracket

NII	None
N	Pivot bracket is shipped
IN	together with the product.
Only 6	au tha dauthla alauta tura

*: Pivot bracket is shipped together with the product, but not assembled

Auto switch mounting type Rail mounting

- 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.

6 Rod end bracket

Nil	None							
V	Single knuckle joint							
W**	Double knuckle joint							
Т	Rod end cap (Flat type)							
U	Rod end cap (Round type)							
B 1 11 1 11 11 11 11								

- *: 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).

Made to Order

Refer to page 108 for details.

*: Refer to "Ordering Example of Cylinder Assembly" on page 108.

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

		F14	Indicator light	VACi		Load vol	tage		Auto swit	ch model		Lead	wir	e ler	ngth	[m]	Pre-wired																			
Type	Special function	Electrical entry	apor	Wiring (Output)		DC	AC	Band m	ounting	Rail mounting		0.5	1	3	5	None	connector	Applica	ble load																	
		Citily	Indic	(Output)		DC	Ŕ	Perpendicular	In-line	Perpendicular In-line		(Nil)	(M)	(L)	(Z)	(N)	CONTINUE																			
				3-wire (NPN)		5 V. 12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit																		
ڃ		Grommet		3-wire (PNP)		3 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	IC CIICUII																		
switch				2-wire		10.1/		M9BV	M9B	M9BV	M9B	•	•	•	0	—	0																			
		Connector		2-wire		12 V			H7C	J79C	_	•	_	•	•	•	_	_																		
anto	Dia			3-wire (NPN)		5 V, 12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	 —	0	IC circuit	D-1																	
	Diagnostic indication (2-color indicator)	Grommet					Yes	3-wire (PNP)	24 V	5 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IC CITCUIT	Relay, PLC													
state	(2-color indicator)						Grommet						2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	 -	0	_	FLC								
	\M/-4								3-wire (NPN)	1	5 V, 12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	-	0	IC circuit]												
Solid	Water resistant (2-color indicator)			3-wire (PNP)	J V, 12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IC CITCUIT																			
ŭ																2-wire		12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_						
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V, 12 V		_	H7NF	_	F79F	•	_	•	0	 —	0	IC circuit																		
switch																			v.	Yes	3-wire (NPN equivalent)	_	5 V	-	A96V	A96	A96V	A96	•	_	•	_	_	_	IC circuit	_
\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>		Grommet	res		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_																			
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	_																		
anto			No	Qt		12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit	Relay,																	
ğ		0	Yes No	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLC																	
Reed		Connector		No	No	No	No				24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit	1													
_	Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	-	•	_	-	_	_	1																	

- *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 "O" 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.)

D-□

-X□ Technical

107 A

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



Symbol

Double acting, Single rod, Rubber bumper





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

Symbol	Specifications	
-X446	PTFE grease	Т

Made to Order

Click here for details

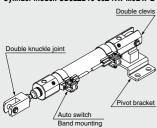
Click here for details										
Symbol	Specifications									
-XA□	Change of rod end shape									
-XC51	With hose nipple									
-XC85	Grease for food processing equipment									

⚠ Precautions

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2ZD16-60Z-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

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		
Speed controller	Built-in		
Piston speed	50 to 750 mm/s		
Allowable kinetic energy	0.035 J 0.090 J		

Standard Strokes

		[mm]
Bore size	Standard stroke	Maximum manufacturable stroke
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.

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 sep					separately.	
	Mounting	Basic	Foot	Flange	Double clevis	Double clevis (including T-bracket)
Standard	Mounting nut	•	•	•	_	_
	Rod end nut	•	•	•	•	•
ş	Clevis pin (including retaining rings)	_	_	_	•	•
Option	Single knuckle joint	0	0	0	0	0
	Double knuckle joint (including a pin and retaining rings)	0	0	0	0	0
	Double knuckle joint (With one-touch connecting pin)	Δ	Δ	Δ	Δ	0
	Rod end cap (Flat/Round type)	0	0	0	0	0
	Pivot bracket (T-bracket)	_	_	_	0	•

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	
Pivot bracket (T-bracket)*1	CJ-T010C	CJ-T016C	

^{*1:} The pivot bracket (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.



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

Air Cylinder: Built-in Speed Controller Type Double Acting, Single Rod CJ2Z Series

Weights

			[9]
	Bore size [mm]	10	16
De ete contesta	Basic	36	61
Basic weight (When the stroke	Axial piping	36	61
is zero)	Double clevis (including clevis pin)	40	68
13 2610)	Head-side bossed	37	63
Additional weight	per 15 mm of stroke	4	7
	Single foot	8	25
Mounting bracket	Double foot	16	50
weight	Rod flange	5	13
	Head flange	5	13
	Single knuckle joint	17	23
	Double knuckle joint (including knuckle pin)	25	21
Accessories	Double knuckle joint (With one-touch connecting pin)	26	22
	Rod end cap (Flat type)	1	2
	Rod end cap (Round type)	1	2
	Pivot bracket (T-bracket)	32	50

- *: Mounting nut and rod end nut are included in the basic weight.
- *: Mounting nut is not included in the basic weight for the double clevis.

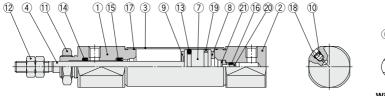
Calculation:

Example) CJ2ZL10-45Z

- Basic weight 36 (ø10)
- Additional weight ----- 4/15 stroke Cylinder stroke ----- 45 stroke
- Mounting bracket weight ··· 8 (Single foot)

36 + 4/15 x 45 + 8 = **56 g**

Construction (Not able to disassemble)





With auto switch

Component Parts

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

No.	Description	Material	Note
12	Rod end nut	Rolled steel	
13	Piston seal	NBR	
14	Rod seal	NBR	
15	Check seal A	NBR	
16	Check seal B	NBR	
17	Tube gasket	NBR	
18	Needle seal	NBR	
19	Wear ring	Resin	
20	Check seal sleeve	Aluminum alloy	
21	Retaining ring	Carbon tool steel	
22	Magnet	_	

D-□ -X□

CJ1 CJP CJ2 JCM CM2 СМЗ CG1

CG3

JMB

MB

MB1 CA2

CS₁ CS2

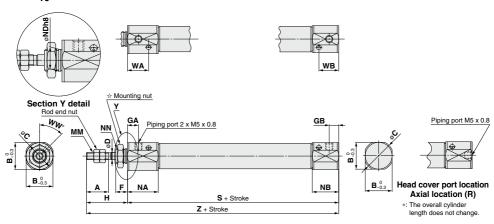
Technical Data



CJ2Z Series

Basic (B)

CJ2ZB $^{10}_{16}$ - Stroke Head cover port location Z

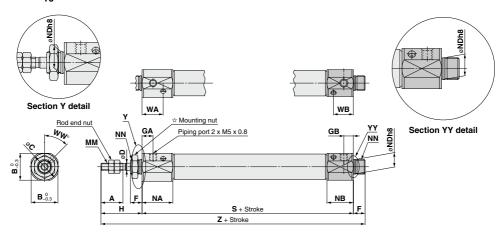


☆ For details of the mounting nut, refer to page 63.

																		[mm]
Bore size	Α	В	С	D	F	GA	GB	Н	MM	NA	NB	NDh8	NN	WA	WB	ww	S	Z
10	15	15	17	4	8	7.5	6.5	28	M4 x 0.7	21	18	8_0.022	M8 x 1.0	14.4	13.5	45	63	91
16	15	18.3	20	5	8	7.5	6.5	28	M5 x 0.8	21	18	10_0.022	M10 x 1.0	14.4	13.5	45	64	92

Double-side Bossed (E)

CJ2ZE 10 - Stroke Z



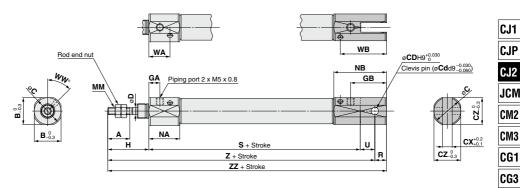
☆ For details of the mounting nut, refer to page 63.

A I OI details o	i iiie ii	iounini	y mut, i	eiei io	page	55.												[mm]
Bore size	Α	В	С	D	F	GA	GB	Н	MM	NA	NB	NDh8	NN	WA	WB	ww	S	Z
10	15	15	17	4	8	7.5	6.5	28	M4 x 0.7	21	18	8_0.022	M8 x 1.0	14.4	13.5	45	63	99
16	15	18.3	20	5	8	7.5	6.5	28	M5 x 0.8	21	18	10_0.022	M10 x 1.0	14.4	13.5	45	64	100

Air Cylinder: Built-in Speed Controller Type Double Acting, Single Rod CJ2Z Series

Double Clevis (D)

CJ2ZD 10 - Stroke Z

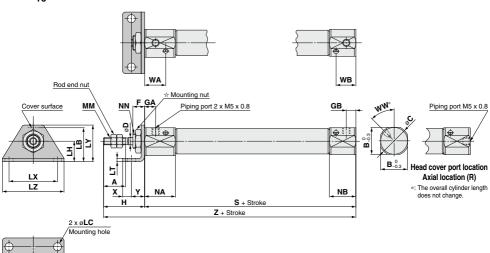


*: A clevis pin and retaining rings are included.

В	ore size	Α	В	С	CD	СХ	CZ	D	GA	GB	Н	MM	NA	NB	R	U	WA	WB	ww	S	Z	ZZ
	10	15	15	17	3.3	3.2	15	4	7.5	19.5	28	M4 x 0.7	21	31	5	8	14.4	26.5	45	63	99	104
	16	15	18.3	20	5	6.5	18.3	5	7.5	24.5	28	M5 x 0.8	21	36	8	10	14.4	31.5	45	64	102	110

Single Foot (L)

CJ2ZL $^{10}_{16}$ - Stroke Head cover port location Z



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

			9	, .			g																			[mm]
Bore size	Α	В	С	D	F	GA	GB	Н	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	WA	WB	ww	S	Х	Υ	Z
10	15	15	17	4	8	7.5	6.5	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.7	21	18	M8 x 1.0	14.4	13.5	45	63	5	7	91
16	15	18.3	20	5	8	7.5	6.5	28	23	5.5	14	2.3	33	25	42	M5 x 0.8	21	18	M10 x 1.0	14.4	13.5	45	64	6	9	92

Technical Data

D-□ -X□

JMB [mm]

> MB MB1

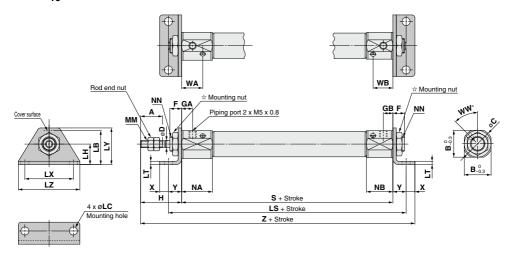
CA2

CS1 CS2

CJ2Z Series

Double Foot (M)

CJ2ZM 10 - Stroke Z

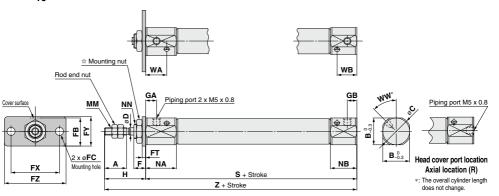


 $\mbox{$\stackrel{l}{\propto}$}$ For details of the mounting nut, refer to page 63.

Bore size	Α	В	С	D	F	GA	GB	Н	LB	LC	LH	LS	LT	LX	LY	LZ	MM	NA	NB	NN	WA	WB	ww	S	X	Υ	Z
10	15	15	17	4	8	7.5	6.5	28	15	4.5	9	77	1.6	24	16.5	32	M4 x 0.7	21	18	M8 x 1.0	14.4	13.5	45	63	5	7	103
16	15	18.3	20	5	8	7.5	6.5	28	23	5.5	14	82	2.3	33	25	42	M5 x 0.8	21	18	M10 x 1.0	14.4	13.5	45	64	6	9	107

Rod Flange (F)

CJ2ZF $^{10}_{16}$ - Stroke Head cover port location Z



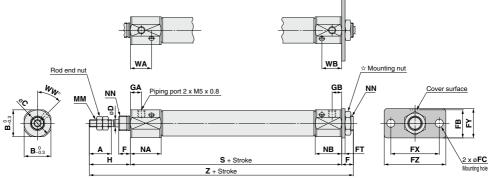
☆ For details of the mounting nut, refer to page 63.

				,	,	9																	[mm]
Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	MM	NA	NB	NN	WA	WB	ww	S	Z
10	15	15	17	4	8	13	4.5	1.6	24	14	32	7.5	6.5	28	M4 x 0.7	21	18	M8 x 1.0	14.4	13.5	45	63	91
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	7.5	6.5	28	M5 x 0.8	21	18	M10 x 1.0	14.4	13.5	45	64	92

Air Cylinder: Built-in Speed Controller Type Double Acting, Single Rod CJ2Z Series

Head Flange (G)

CJ2ZG $^{10}_{16}$ - Stroke Z



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

	A I OI details o	i iiie i	nount	ing m	at, ren	51 tO F	age c																	[mm
ĺ	Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	MM	NA	NB	NN	WA	WB	ww	S	Z
	10	15	15	17	4	8	13	4.5	1.6	24	14	32	7.5	6.5	28	M4 x 0.7	21	18	M8 x 1.0	14.4	13.5	45	63	99
į	16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	7.5	6.5	28	M5 x 0.8	21	18	M10 x 1.0	14.4	13.5	45	64	100

CJ1

CJ2

JCM

CM2

CM3

CG3

JMB

MB MB1

CA2

CS1

CS2

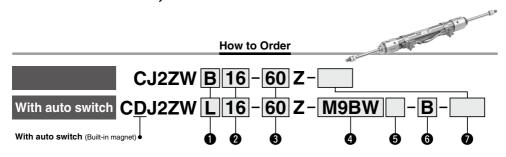
Technical Data

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

CJ2ZW Series ø10, ø16



Made to Order Refer to page 115 for details.



Mounting

В	Basic
L	Foot
F	Flange

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

Number of auto switches Nil 2 pcs

1 pc

"n" pcs

10 mm

6 Auto switch mounting type Rail mounting

Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 115.

В	Band mounting
*: Fo	r rail mounting, screws and nuts
for	2 auto switches come with the

- *: Refer to page 148 for auto switch

В	Basic
L	Foot
F	Flange

assembled

Auto switch

Nil	Without auto switch
Гот от	uliankla auto autitakan sa rafa.

- 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.

mounting brackets.

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

s

n

				ight	\A/!		Load vo	oltage		Auto switch model			Lea	d wir	e le	ngth	[m]	Day ordered	A											
Ту	ре	Special function	Electrical entry	ndicator light	Wiring		DC	AC	Band m	ounting	Rail mo	ounting	0.5	1	3		None	Pre-wired connector		cable ad										
			entry	Вğ	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	connector	10	au										
					3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	 —	0	IC circuit											
۽ ا	Ę		Grommet		3-wire (PNP)]	5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	-	0	IC CITCUIT											
dotivo	1				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	-	0												
			Connector		Z-WIIE		12 V		_	H7C	J79C	_	•	-	•	•	•	_	-											
1	₹ [Diagnostic indication			3-wire (NPN)]	5 V,12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	-	0	IC circuit	D.J										
		(2-color indicator)		Yes	3-wire (PNP)	24 V	3 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	-	0	iic ciicuii	PLC										
ototo	6	(2-color indicator)													2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	 -	0	_	1 . 50
		Water resistant	Grommet		3-wire (NPN)]	5 V,12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	-	0	IC circuit]										
100	5	(2-color indicator)			3-wire (PNP)]	3 V,12 V	1	M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	-	0	IIO OITOUIL											
U	ַ ו	(2-color indicator)			2-wire		12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	—	0	_											
		With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V		_	H7NF	_	F79F	•	_	•	0	<u> </u>	0	IC circuit											
ewitch	5			Yes	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	_	-	_	IC circuit	-										
1	\$		Grommet	res		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_												
								100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —											
1	[]		No	No	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	-	•	 —	-	_	IC circuit	Relay,										
			Cannadas	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ										
000	5		Connector	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 M (Example) M9NWM 3 m----- L (Example) M9NWL 5 m..... (Example) M9NWZ

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

None----- N (Example) H7CN

*: Solid state auto switches marked with "O" 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.)

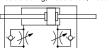
Air Cylinder: Built-in Speed Controller Type Double Acting, Double Rod CJ2ZW Series

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

OHOK III	onor nere for details					
Symbol	Symbol Specifications					
-XA□ Change of rod end shape						
-XC51 With hose nipple						
-XC85 Grease for food processing equipment						



Refer to page 152 before handling.

Specifications

Bore size [mm]	10	16	
Action	Double acting	g, Double rod	
Fluid	A	ir	
Proof pressure	1 M	MPa	
Maximum operating pressure	0.7 I	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	+1.0 0		
Speed controller	Built-in		
Piston speed	50 to 750 mm/s		
Allowable kinetic energy	0.035 J	0.090 J	

Standard Strokes

	[mm]
Bore size	Standard stroke
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.

	●···Mounte	ed on the produc	t. O···Please o	order separately.
	Mounting	Basic	Foot	Flange
Standard	Mounting nut	•	•	•
Standard	Rod end nut	•	•	•
	Single knuckle joint	0	0	0
Option	Double knuckle joint (including a pin and retaining rings)	0	0	0
	Double knuckle joint (With one-touch connecting pin)	0	0	0

*: Stainless steel mounting brackets and accessories are also available. Refer to page 63-1 for details.

Mounting Brackets/Part No.

Maunting breakst	Bore size [mm]			
Mounting bracket	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.

D-U
-XU
Technical

CJ1
CJP
CJ2
JCM
CM2
CM3
CG1

JMB

MB MB1

CA₂

CS₁

CS2



CJ2ZW Series

Weights

			[g]
E	Bore size [mm]		
Basic weight (When the stroke is zero)	Basic	36	61
Additional weight	per 15 mm of stroke	4.5	7.5
Mounting bracket	Double foot	16	50
weight	Head flange	5	13
	Single knuckle joint	17	23
	Double knuckle joint (including knuckle pin)	25	21
Accessories	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) CJ2ZWL10-45Z

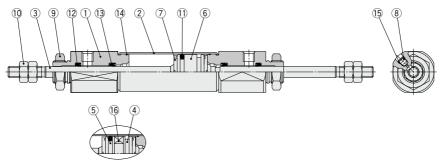
Basic weight -----36 (ø10)

Additional weight ------4.5/15 stroke

 Cylinder stroke-----45 stroke Mounting bracket weight---16 (Double foot)

36 + 4.5/15 x 45 + 16 = **65.5** g

Construction (Not able to disassemble)



With auto switch

Component Parts

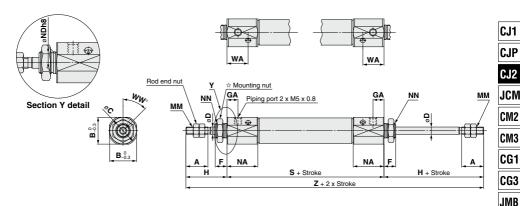
No.	Description	Material	Note
140.			14010
1	Rod cover	Aluminum alloy	
2	Cylinder tube	Stainless steel	
3	Piston rod	Stainless steel	
4	Piston A	Aluminum alloy	
5	Piston B	Aluminum alloy	
6	Piston	Aluminum alloy	
7	Bumper	Urethane	
8	Speed controller needle	Carbon steel	

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 10 - Stroke Z

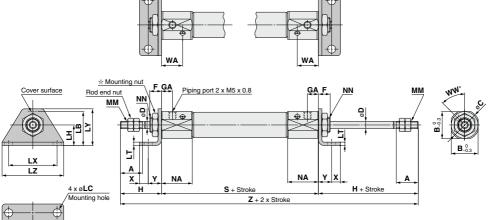


☆ For details of the mounting nut, refer to page 63.

	[mm]														
Bore size	Α	В	С	D	F	GA	Н	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	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	M10 x 1.0	14.4	45	67	123

Foot (L)

CJ2ZWL $^{10}_{16}$ - Stroke Z



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

₹ For details of the mounting nut, refer to page 63. [mm													[mm]									
Α	В	С	D	F	GA	Н	LB	LC	LH	LT	LX	LY	LZ	NN	NA	NN	WA	ww	S	Х	Υ	Z
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
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
ØSMC 11											117											
	A	A B 15 15	A B C 15 17	A B C D 15 15 17 4	A B C D F 15 15 17 4 8	A B C D F GA 15 15 17 4 8 7.5	A B C D F GA H 15 15 17 4 8 7.5 28	A B C D F GA H LB 15 15 17 4 8 7.5 28 15	A B C D F GA H LB LC 15 15 17 4 8 7.5 28 15 4.5	A B C D F GA H LB LC LH	A B C D F GA H LB LC LH LT 15 15 17 4 8 7.5 28 15 4.5 9 1.6 15 18.3 20 5 8 7.5 28 23 5.5 14 2.3	A B C D F GA H LB LC LH LT LX 15 15 17 4 8 7.5 28 15 4.5 9 1.6 24 15 18.3 20 5 8 7.5 28 23 5.5 14 2.3 33	A B C D F GA H LB LC LH LT LX LY 15 15 17 4 8 7.5 28 15 4.5 9 1.6 24 16.5 15 18.3 20 5 8 7.5 28 23 5.5 14 2.3 33 25	A B C D F GA H LB LC LH LT LX LY LZ 15 15 17 4 8 7.5 28 15 4.5 9 1.6 24 16.5 32 15 18.3 20 5 8 7.5 28 23 5.5 14 2.3 33 25 42	A B C D F GA H LB LC LH LT LX LY LZ NN 15 15 17 4 8 7.5 28 15 4.5 9 1.6 24 16.5 32 M4 x 0.7 15 18.3 20 5 8 7.5 28 23 5.5 14 2.3 33 25 42 M5 x 0.8	A B C D F GA H LB LC LH LT LX LY LZ NN NA 15 15 17 4 8 7.5 28 15 4.5 9 1.6 24 16.5 32 M4 x 0.7 21 15 18.3 20 5 8 7.5 28 23 5.5 14 2.3 33 25 42 M5 x 0.8 21	A B C D F GA H LB LC LH LT LX LY LZ NN NA NN 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 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	A B C D F GA H LB LC LH LT LX LY LZ NN NA NN WA 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 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	A B C D F GA H LB LC LH LT LX LY LZ NN NA NN WA WW 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 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	A B C D F GA H LB LC LH LT LX LY LZ NN NA NN WA WW S 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 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	A B C D F GA H LB LC LH LT LX LY LZ NN NA NN WA WW S X 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 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	A B C D F GA H LB LC LH LT LX LY LZ NN NA NN WA WW S X Y 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 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

MB MB1 CA2 CS1

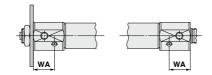
CS₂

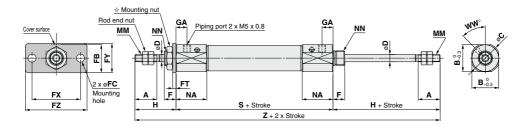
D-□

CJ2ZW Series

Flange (F)

CJ2ZWF $^{10}_{16}$ - Stroke Z





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

	r For details of the mounting flut, refer to page 65.														[mm]						
Ī	Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	Н	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

Air Cylinder: Direct Mount Type **Double Acting, Single Rod**

CJ2R Series ø10, ø16



CJ1

CJP

CJ₂

JCM CM₂

CM3

CG₁

CG3

JMB

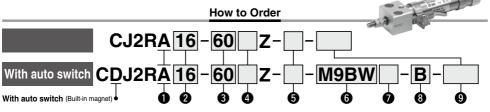
MB

MB₁

CA₂

CS₁

CS₂



Mounting

Bottom mounting

0	Bore	size

10 mm 16 16 mm

3 Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 120.

4 Head cover port location

Rod end bracket

Nil	Perpendicular to axis	
R	Axial	

- Nil None ν Single knuckle joint W* Double knuckle joint 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 onetouch connecting pin).

6 Auto switch

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.

	U Nu	inder of auto switches
	Nil	2 pcs.
	S	1 pc.
		"n" noo

Auto switch mounting type

	3 71
Α	Rail mounting
В	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.

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.

		Floridad	ndicator light	Wiring		Load v	oltage		Auto swit	ch model		Lea	d wir	e le	ngth	[m]	Pre-wired	Appli	ooblo							
Туре	Special function	Electrical entry	apor	(Output)		DC	AC	Band m	ounting	Rail mo	ounting	0.5	1	3	5	None	connector		ad							
		Citaly	ğ	(Output)		DC	AC	Perpendicular	r In-line Perpendicular In-line		(Nil)	(M)	(L)	(Z)	(N)	COLLICCIO	10	au								
				3-wire (NPN)		5 V, 12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	-	0	IC circuit								
ڃ		Grommet		3-wire (PNP)		J V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	-	0	IO GIIGGII								
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	<u> </u>	0	_								
		Connector	ļ	Z-WIIC		12 V			_	H7C	J79C	_	•	<u> —</u>	•	•	•	_]						
anto	Diagnostic indication (2-color indicator) Water resistant	(2-color indicator)		3-wire (NPN)		5 V, 12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	<u> —</u>	0	IC circuit	Polov							
				Yes	3-wire (PNP)	24 V	J V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	<u> — </u>	0	IO GIIGUII	PLC						
state				2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	<u> —</u>	0	_	- = 0							
		Grommet		Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet		3-wire (NPN)		5 V, 12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	-	0	IC circuit
Solid	(2-color indicator)		[3-wire (PNP)	(PNP)			M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	<u> </u>	0	IO GIIGUII								
တ	(2 color iridicator)			2-wire		12 V			M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	-	0	—							
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V, 12 V		_	H7NF	_	F79F	•	 -	•	0	-	0	IC circuit								
switch			Yes	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	-	•	-	_	_	IC circuit	_							
<u>=</u>		Grommet	res		1	_	200 V	_	_	A72	A72H	•	_	•	_	—	_									
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	—	_	1 —								
anto			No	0		10.1/	100 V or less	A90V	A90	A90V	A90	•	<u> </u>	•	_	 -	_	IC circuit	Relay,							
ğ		Connector	Yes	2-wire	rire 24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ							
Reed		COLLIGCTOL	No				24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit]							
_	Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	_	•	_	1-	_	_	1							

- *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
- *: Since there are other applicable auto switches than listed, refer to page 149 for
- ... Z (Example) M9NWZ 5 m... *: Solid state auto switches marked with "O" are produced upon receipt of order *: The D-A9\(\times M9\(\times A7\) /A80\(\times F7\) /J7\(\times are shipped together, but not assembled. (For band mounting, only auto switch mounting brackets are assembled before being shipped.)

119 A

D-□

-X□ Technical

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

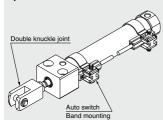
Click here for details

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								

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

	1						
Bore size [mm]	10	16					
Action	Double actin	g, Single rod					
Fluid	Д	ir					
Proof pressure	1 N	1Pa					
Maximum operating pressure	0.7	MPa					
Minimum operating pressure	0.06	MPa					
Ambient and fluid temperature	Without auto switch: -10 With auto switch: -10	o°C to 70°C (No freezing) o°C to 60°C					
Cushion	Rubber	bumper					
Lubrication	Not required	d (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

		[mm]
Bore size	Standard stroke	Maximum manufacturable stroke
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.)
- a: 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 onetouch connecting pin).

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

Weights

			[g
Bore	size [mm]	10	16
Basic weight	Basic	36	61
(When the stroke is zero)	Axial piping	36	61
Additional weight per 15 m	4	7	
	Single knuckle joint	17	23
	Double knuckle joint (including knuckle pin)	25	21
Accessories	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 x 45 = 48 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.



Air Cylinder: Direct Mount Type Double Acting, Single Rod CJ2R Series

Clean Series

10-CJ2RA 10 - Stroke Head cover port location Z

Air cylinder which is applicable for the system which discharges leakage from the rod section directly into the outside of clean room by relief port and making an actuator's rod section having a double seal construction.

For the detailed specifications, refer to the "Pneumatic Clean Series" (CAT.E02-23).

Specifications

Action	Double acting, Single rod		
Bore size [mm]	10, 16		
Maximum operating pressure	0.7 MPa		
Minimum operating pressure	0.08 MPa		
Cushion	Rubber bumper		
Standard stroke [mm]	Same as standard type. (Refer to page 120.)		
Auto switch	Mountable (Band mounting)		
Mounting	Bottom mounting		

CJ1

CJP

CJ2 JCM

CM2

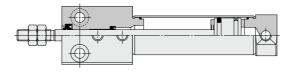
CM3

CG1

CG3

JMB

Construction (Not able to disassemble)



MB MB1

CA2

CS1

CS2

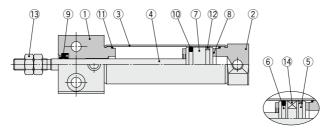
D-□ -X□

Technical Data



CJ2R Series

Construction (Not able to disassemble)



With auto switch

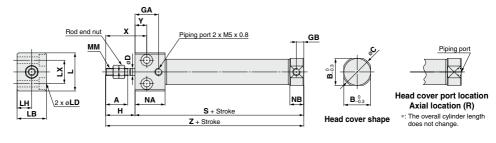
Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	

No.	Description	Material	Note
8	Bumper	Urethane	
9	Rod seal	NBR	
10	Piston seal	NBR	
11	Tube gasket	NBR	
12	Wear ring	Resin	
13	Rod end nut	Rolled steel	
14	Magnet	_	

Bottom Mounting

CJ2RA 10 - Stroke Head cover port location Z



																			[mm]
Bore size	Α	В	С	D	GA	GB	Н	L	LB	LD	LH	LX	MM	NA	NB	Х	Υ	S	Z
10	15	12	14	4	16	5	20	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12	M4 x 0.7	20.5	9.5	28	8	54	74
16	15	18.3	20	5	16	5	20	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	20.5	9.5	28	8	55	75

Air Cylinder: Direct Mount Type Single Acting, Spring Return/Extend

CJ2R Series ø10, ø16



CJ₁

CJP

CJ₂

JCM CM₂

CG3

JMB

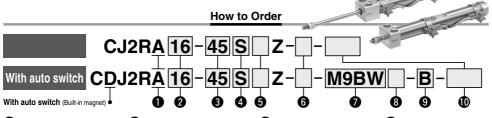
MB

MB1

CA₂

CS₁

CS2



Mounting

Α	Bottom mounting

2	Bore	size

10	10 mm
16	16 mm

Cvlinder standard stroke [mm] Refer to "Standard Strokes" on page 124.

Without auto switch

For applicable auto switches, refer

4	Action	CM3
S	Single acting, Spring return	CC1
Т	Single acting, Spring extend	- ՄԱI

Head cover port location

Nil	Perpendicular to axis	
R	Axial	

*: Not applicable to single acting, spring extend (T).

6 Rod end bracket

	Nil	None
ſ	٧	Single knuckle joint
ſ	W**	Double knuckle joint
	Т	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).

to the table below.

Auto switch

★ Enter the auto switch mounting type (A or B) even when a built-in magnet cylinder without an auto switch is required

Wur	nder of auto switches
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

 Auto switch mounting type Rail mounting Band mounting

Made to Order

Refer to page 124 for details.

*: Refer to "Ordering Example of Cylinder Assembly" on page 124.

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

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

		Electrical	Indicator light	Wiring		Load v	oltage		Auto swi	tch model		Lea	d wir	e lei	ngth	[m]	Pre-wired	Annli	aabla																	
Туре	Special function	entry	ator	(Output)		DC	AC	Band m	Band mounting R		Rail mounting		1	3	5	None	connector		cable ad																	
		entry	Рá	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	connector	10	au																	
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	-	0	IC circuit																		
ڃ		Grommet		3-wire (PNP)		5 V,12 V	Y [M9PV	M9P	M9PV	M9P	•	•	•	0	-	0	IIC CIICUII																		
switch				2-wire]	12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	-	0																			
		Connector		2-wire		12 V		_	H7C	J79C		•	-	•	•	•	_	1 —																		
anto	Diagnostic indication			3-wire (NPN)		5 V,12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	-	0	IC circuit	Delen																	
	Diagnostic indication (2-color indicator)		Yes	Yes	Yes	3-wire (PNP)	24 V	3 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	 –	0	IIC GIIGUII	PLC															
state				2-wire 3-wire (NPN	1	12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	I-	0	_	1 LC																	
	Water resistant (2-color indicator)	Grommet)	5 V.12 V	,]		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	-	0	IC circuit																	
Solid			3-wire (PNP)	1	5 V, 12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	<u> </u>	0	IIC circuit																			
ŭ					2-wire	2-wire	12 V	-	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	 -	0	_]																
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V	7				_	H7NF	_	F79F	•	-	•	0	I —	0	IC circuit															
switch																				.,	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	_	_	_	IC circuit	_
ž		Grommet	Yes		ĺ	_	200 V	_	_	A72	A72H	•	 —	•	_	—	_																			
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	1-	_	1 —																		
anto			No	١			100 V or less	A90V	A90	A90V	A90	•	_	•	_	-	_	IC circuit	Relay.																	
		0	Yes	2-wire	24 V	/ 12 V	_	_	C73C	A73C	_	•	 —	•	•	•	_	_	PLĆ																	
Reed		Connector	No	ĺ			24 V or less	_	C80C	A80C	_	•	-	•	•	•	_	IC circuit	1																	
_	Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	1—	•	_	1—	_	_	1																	

- *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 ··· N (Example) H7CN None-
- *: Since there are other applicable auto switches than listed, refer to page 149 for

D- \square -X□ Technical

*: Solid state auto switches marked with "O" 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.)



CJ2R Series

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



Symbol

Single acting, Spring return, Rubber bumper Single acting, Spring extend, Rubber bumper







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

Symbol	Specifications
-X446	PTFE grease

Made to Order

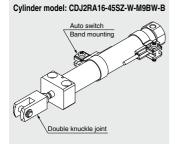
Click here for details

Symbol	Specifications
-ХА□	Change of rod end shape
-XC51	With hose nipple
-XC85	Grease for food processing equipment

⚠ Precautions

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly



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	Single acting, Spring return/Single acting, Spring extend						
Fluid	Air						
Proof pressure	1 N	/IPa					
Maximum operating pressure	0.7	MPa					
Minimum operating pressure	0.15 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	d (Non-lube)					
Stroke length tolerance	+-	1.0)					
Piston speed	50 to 750 mm/s						
Allowable kinetic energy	0.035 J	0.090 J					

Standard Strokes

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

- *: 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.

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

Standard	Rod end nut
OptionNote 1)	Single knuckle joint, Double knuckle joint (including a pin and retaining rings), Rod end cap (Flat type, 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.

Spring Reaction Force

Refer to page 1899 (Table (2): Spring Reaction Force).

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.



Air Cylinder: Direct Mount Type Single Acting, Spring Return/Extend CJ2R Series

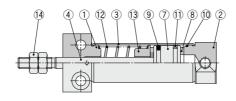
Weights

Spring Return Bore size [mm] 10 16 Axial piping Mounting Basic Axial piping Basic 15 stroke 42 42 81 81 30 stroke 49 49 97 97 45 stroke 59 59 114 114 Basic 60 stroke 68 68 132 132 weight 75 stroke 154 154 100 stroke 187 187 125 stroke 224 224 150 stroke 246 246 Single knuckle joint 17 23 Double knuckle joint 25 21 (including knuckle pin) Accessories Double knuckle joint (With 26 22 one-touch connecting pin) Rod end cap (Flat type) 2 Rod end cap (Round type) 2

Spring I	Extend		[g
	Bore size [mm]	10	16
	Mounting	Basic	Basic
	15 stroke	41	78
	30 stroke	47	92
	45 stroke	55	108
Basic	60 stroke	64	123
weight	75 stroke		144
	100 stroke		173
	125 stroke		208
	150 stroke		228
	Single knuckle joint	17	23
	Double knuckle joint (including knuckle pin)	25	21
Accessories	Double knuckle joint (With one-touch connecting pin)	26	22
	Rod end cap (Flat type)	1	2
	Rod end cap (Round type)	1	2

Construction (Not able to disassemble)

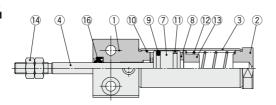
Single acting, Spring return





With auto switch

Single acting, Spring extend





With auto switch

Component Parts

•••			
No.	Description	Note	
1	Rod cover	Aluminum alloy	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	
8	Bumper	Urethane	

No.	Description	Note	
9	Piston seal	NBR	
10	Tube gasket	NBR	
11	Wear ring	Resin	
12	Return spring	Piano wire	
13	Spring seat	Aluminum alloy	
14	Rod end nut	Rolled steel	
15	Magnet	_	
16	Rod seal	NBR	

D-□ -X□

CJ1

CJP

CJ2

JCM

CM2

CM3

CG1

CG3

JMB

MB

MB1 CA2 CS1

CS2

Technical Data

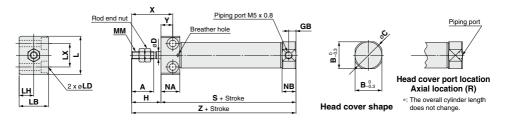


^{*:} Rod end nut is included in the basic weight.

CJ2R Series

Single Acting: Bottom Mounting

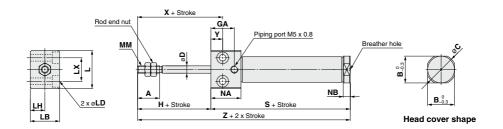
Spring return: CJ2RA $^{10}_{16}$ - Stroke S Head cover port location Z



																[mm]
Bore size	Α	В	С	D	GB	Н	L	LB	LD	LH	LX	MM	NA	NB	Х	Υ
10	15	12	14	4	5	20	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12 M4 x 0.7		12.8	9.5	28	8
16	15	18.3	20	5	5	20	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	12.8	9.5	28	8

Di	Dimensions by Stroke: Spring Return [mm]															[mm]	
	Dave sine			S Z													
	Bore size	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st
	10	53.5	61	73	85	_	_	_	I —	73.5	81	93	105	_	_	_	
	16	53.5	62	74	86	92	116	134	146	73.5	82	94	106	112	136	154	166

Spring extend: CJ2RA 10 - Stroke TZ



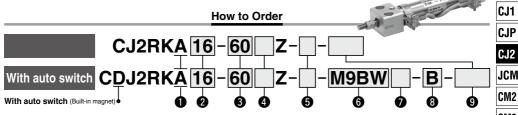
																[mm]
Bore size	Α	В	С	D	GA	Н	L	LB	LD	LH	LX	MM	NA	NB	Х	Υ
10	15	12	14	4	16	20	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12	M4 x 0.7	20.5	4.8	28	8
16	15	18.3	20	5	16	20	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	20.5	4.8	28	8

I	Dimensions	by S	troke	: Spri	ng Ex	tend											[mm]
ı	Dave size					5								Z			
	Bore size	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st	5 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st
	10	56.5	64	76	88	_	_	_	_	76.5	84	96	108	_	_	_	_
	16	56.5	65	77	89	95	119	137	149	76.5	85	97	109	115	139	157	169

Air Cylinder: Direct Mount, Non-rotating Rod Type **Double Acting, Single Rod**

CJ2RK Series ø10, ø16





Mounting Bottom mounting

2 Bore size 10 mm 16 mm

Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 128.

Without auto switch

For applicable auto switches, refer

type (A or B) even when a built-in

magnet cylinder without an auto

★ Enter the auto switch mounting

6 Auto switch

to the table below.

switch is required

CM3 CG₁

2 pcs.

1 pc.

"n" pcs

CG3 Number of auto switches

JMB

MB MB₁

CA₂

CS1

CS₂

4 Head cover port location Perpendicular to Nil axis R Axial

6 Rod end bracket

Nil	None									
V	Single knuckle joint									
W**	Double knuckle joint									
Т	Rod end cap (Flat type)									
U	Rod end cap (Round type)									
a. Dad a	Dad and broaket is objected together									

- with the product, but not assembled. **: Refer to page 63 for the double knuckle
- joint (with one-touch connecting pin).

 Made to Order Refer to page 128 for details.

*: Refer to "Ordering Example of Cylinder Assembly" on page 128.

Nil

S

n

Auto switch mounting type Rail mounting Band mounting

*: For rail mounting, screws and nuts for 2 auto switches come with the rai

*: Refer to page 148 for auto switch mounting brackets

Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches Load voltage Auto switch model Lead wire length [m] Wiring Pre-wired Applicable Rail mounting Special function Band mounting 3 5 None DC ΔC connector entry (Output) load (Z) (N) Perpendicular In-line Perpendicular In-line (Nil) (M) (L) 3-wire (NPN M9NV M9NV M9N M9N • • 5 V.12 V IC circuit 3-wire (PNP) M9PV M9F M9PV M9P • • • Gromme M9BV M9B M9BV М9В • 2-wire 12 V Connecto H7C .179C • • 3-wire (NPN M9NWV M9NW M9NWV M9NW Diagnostic indication 5 V.12 V IC circuit Relay M9PWV MgPW Yes 3-wire (PNP MgPW MOPWV . PLC (2-color indicator) state 2-wire 12 V M9BWV • • M9NA*1 Gromme 3-wire (NPN M9NAV*1 M9NAV*1 M9NA*1 • Water resistant 5 V,12 V IC circui Solid M9PAV*1 M9PA*1 3-wire (PNP) M9PAV*1 M9PA*1 (2-color indicator) 12 V 2-wire M9BAV*1 M9BA*1 M9BAV*1 M9BA*1 . With diagnostic output (2-color indicator 4-wire (NPN 5 V,12 V F79F • • IC circui 3-wire 5 V A96V Δ96 A96V Δ96 IC circuit Reed auto switch Gromme 200 V Δ72 **A72H** 100 V A93V*2 A93V*2 • A93 A93 • . . No 100 V or les A90V A90V A90 A90 • • Relay 2-wire 12 V PLĆ C73C A73C • Yes • • • 24 V or less • • IC circuit A80C • . Diagnostic indication (2-color indicator) Grommet Yes • **A79W**

- : 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 (Example) M9NWZ (Example) H7CN
- *: Since there are other applicable auto switches than listed, refer to page 149 for

D-□ -X□ Technical

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

*: The D-A9 \(A9 \(A \) A80 \(A \) A80 \(A \) A80 \(A \) A7 \(A \) A80 \(A \) A



CJ2RK Series

A cylinder which rod does not rotate because of the hexagonal rod shape.

Non-rotating accuracy



Symbol

Double acting, Single rod, Rubber bumper





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

_	-		-	
Symbol		Specification	IS	
-X446	PTFE grease			

Made to Order

Click here for details

one contract and and											
Symbol	Specifications										
-XA□	Change of rod end shape										
-XC9	Adjustable stroke cylinder/Adjustable retraction type										
-XC51	With hose nipple										
-XC85	Grease for food processing equipment										

Refer to page 152 before handling.

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2RKA16-60Z-W-M9BW-B Double knuckle joint Auto switch Band mounting

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

	1 10	10				
Bore size [mm]	10	16				
Action	Double actin	g, Single rod				
Fluid	Д	ir				
Proof pressure	1 N	1Pa				
Maximum operating pressure	0.7	MPa				
Minimum operating pressure	0.06	MPa				
Ambient and fluid temperature	Without auto switch: -10 With auto switch: -10	10°C to 70°C (No freezing)				
Cushion	Rubber	bumper				
Lubrication	Not required	required (Non-lube)				
Stroke length tolerance	+	1.0				
Rod non-rotating accuracy	±1.5°	±1°				
Piston speed	50 to 75	50 mm/s				
Allowable kinetic energy	0.035 J	0.090 J				

Standard Strokes

	[mm]
Bore size	Standard stroke
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.
- *: Precase consult with Swit or stokes 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.

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

			[g]
Bore	size [mm]	10	16
Basic weight	Basic	36	62
(When the stroke is zero)	Axial piping	36	62
Additional weight per 15 m	m of stroke	4	7
	Single knuckle joint	17	23
	Double knuckle joint (including knuckle pin)	25	21
Accessories	Double knuckle joint (With one-touch connecting pin)	26	22
	Rod end cap (Flat type)	1	2
	Rod end cap (Round type)	1	2

*: Rod end nut is included in the basic weight.

Calculation:

Example) CJ2RKA10-45Z

•Basic weight 36 (ø10)

Additional weight ---- 4/15 stroke
Cylinder stroke ------ 45 stroke

 $36 + 4/15 \times 45 = 48 g$

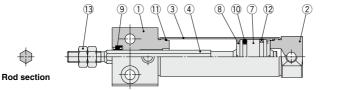
Refer to pages 142 to 149 for cylinders with auto switches.

- · 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.



Air Cylinder: Direct Mount, Non-rotating Rod Type Double Acting, Single Rod CJ2RK Series

Construction (Not able to disassemble)





CJ1 CJP CJ2

JCM CM2

CM3 CG1 CG3 JMB MB MB1

CA2

CS1 CS2

With auto switch

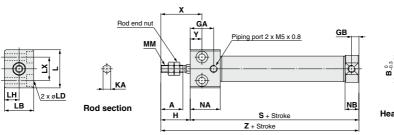
Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	

Description	Material	Note
Bumper	Urethane	
Rod seal	NBR	
Piston seal	NBR	
Tube gasket	NBR	
Wear ring	Resin	
Rod end nut	Rolled steel	
Magnet	_	
	Bumper Rod seal Piston seal Tube gasket Wear ring Rod end nut	Bumper Urethane Rod seal NBR Piston seal NBR Tube gasket NBR Wear ring Resin Rod end nut Rolled steel

Bottom Mounting

CJ2RKA $^{10}_{16}$ - Stroke Head cover port location Z





Head cover shape



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

10 15 12 14 16 5 20 4.2 23 16 s35 frough, e65 counterbore depth 4 8 12 M4 x 0.7 20.5 9.5 28 8 54 7																				[mm]
	Bore size	Α	В	С	GA	GB	Н	KA	L	LB	LD	LH	LX	MM	NA	NB	Х	Υ	S	Z
	10	15	12	14	16		20	4.2	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12	M4 x 0.7	20.5	9.5	28	8	54	74
16 15 18.3 20 16 5 20 5.2 26 20 ø4.5 through, ø8 counterbore depth 5 10 16 M5 x 0.8 20.5 9.5 28 8 55 7	16	15	18.3	20	16	5	20	5.2	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	20.5	9.5	28	8	55	75

D-□ -X□

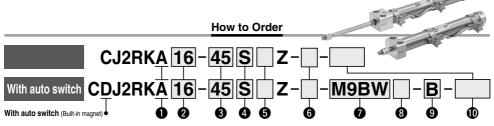
Technical Data



Air Cylinder: Direct Mount, Non-rotating Rod Type Single Acting, Spring Return/Extend

CJ2RK Series ø10, ø16





Mounting

_	_ · · · · · ·
Α	Bottom mounting

A Rore size

9	Dole Size						
10	10 mm						
16	16 mm						

Cvlinder standard stroke [mm] Refer to "Standard Strokes" on page 131.

A Action

• 71011011					
S	Single acting, Spring return				
Т	Single acting, Spring extend				

Head cover port location

Nil	Perpendicular to axis	(A)
R	Axial	

*: Not applicable to single acting, spring extend (T).

6 Rod end bracket

Nil	None
V	Single knuckle joint
W**	Double knuckle joint
Т	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).

Auto switch

NII	Without auto switch
*: For ap	plicable 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

8 Number of auto switches						
Nil	2 pcs.					
S	1 pc.					
n	"n" pcs.					

Auto switch mounting type Rail mounting Band mounting

Made to Order

- Refer to page 131 for details.
- *: For rail mounting, screws and nuts for 2 auto switches come with the rail. *: Refer to page 148 for auto switch mounting brackets

*: Refer to "Ordering Example of Cylinder Assembly" on page 131.

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

	Special function				를	146		Load voltage Auto switch model				Lea	d wir	e ler	ngth	[m]	l	Annli	cable																
Туре		Electrical entry		Wiring (Output)		DC	AC	Band m	Band mounting Rail mounting		0.5	1	3	5	None	Pre-wired connector																			
		enny	Indica	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COTHICCTO	load																	
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit																	
ڃ		Grommet		3-wire (PNP)	1	5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	—	0	IC CIrcuit																	
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	 -	0																		
		Connector	1	2-wire		12 V		_	H7C	J79C	_	•	_	•	•	•	_	-																	
auto	Diagnostic indication		1	3-wire (NPN)	1	E V 10 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	—	0	IC airea it	١																
	Diagnostic indication			Yes	Yes	Yes	Yes	3-wire (PNP)	24 V	5 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	—	0	IC circuit	Helay,												
state	(2-color indicator)									2-wire		12 V	1	M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	1										
S	Water resistant	Grommet		3-wire (NPN) 3-wire (PNP)	1	5 V.12 \	/	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	—	0	IC circuit																	
Solid					1	5 V, 12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IC CIrcuit																	
Ñ	(2-color iriulcator)	2-color indicator)											2-wire	2-wire	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_								
	With diagnostic output (2-color indicator)						4-wire (NPN)		wire (NPN)	5 V,12 V	5 V,12 V	5 V,12 V			H7NF	_	F79F	•	_	•	0	—	0	IC circuit											
switch		Grommet Yes	Grommet	Grommet																3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	-	-	_	IC circuit	_
>					res		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_																
o						İ	İ			100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —														
auto	c					N	1	i i			No	No			40.1/	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit	Relav.							
ğ			0	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLC															
Reed		Connector	Connector No	Connector	Connector	Connector	Connector	Connector	Connector	Connector	nector No	No	5			24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit								
	Diagnostic indication (2-color indicator)					_	_	_	_	A79W	_	•	_	•	_	_	_	_	1																

- *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
- *: Solid state auto switches marked with "O" 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: Direct Mount, Non-rotating Rod Type Single Acting, Spring Return/Extend CJ2RK Series

A cylinder which rod does not rotate because of the hexagonal rod shape.

Non-rotating accuracy ø10: ±1.5°, ø16: ±1° Can operate without



Symbol

Single acting, Spring return, Single acting, Spring extend, Rubber bumper Rubber bumper



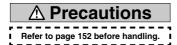
Made to Order: Individual Specifications

_	(i or details, refer to page 100.)	
Symbol	Specifications	
-X446	PTFE grease	

Made to Order

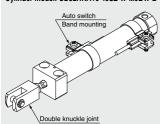
Click here for details

Symbol	Specifications
-XA□	Change of rod end shape
-XC51	With hose nipple
-XC85	Grease for food processing equipment



Ordering Example of Cylinder Assembly

Cylinder model: CDJ2RKA16-45SZ-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	Single acting, Spring return/	Single acting, Spring extend			
Fluid	A	ir			
Proof pressure	1 M	1Pa			
Maximum operating pressure	0.7 1	MРa			
Minimum operating pressure	0.15	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				
Rod non-rotating accuracy	±1.5° ±1°				
Piston speed	50 to 750 mm/s				
Allowable kinetic energy	0.035 J	0.090 J			

Standard Strokes

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

- *: 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.

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 onetouch connecting pin).

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

Spring Reaction Force

Bore size	Spring reaction force [N]						
[mm]	Primary	Secondary					
10	3.53	6.86					
16	6.86	14.2					

Spring with primary mounting load

in M

mounting load

Spring with secondary

When the spring is set in the cylinder

When the spring is contracted by applying air

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 mountingOperating range
- · Auto switch mounting brackets/Part no.

SMC

-X 🗆 Technical Data

D-□

CJ1

CJP

CJ2 JCM CM2 CM3

CG₁

CG3

JMB MB

MB1

CA₂

CS1

CJ2RK Series

Weights

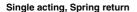
Spring Return [9]							
	Bore size [mm]	1	0	16			
	Mounting	Basic	Axial piping	Basic	Axial piping		
	15 stroke	44	44	83	83		
	30 stroke	52	52	99	99		
	45 stroke	62	62	117	117		
Basic	60 stroke	72	72	135	135		
weight	75 stroke			157	157		
	100 stroke			191	191		
	125 stroke			228	228		
	150 stroke			251	251		
	Single knuckle joint	1	7	23			
	Double knuckle joint (including knuckle pin)	2	5	21			
Accessories	Double knuckle joint (With one-touch connecting pin)	2	6	22			
	Rod end cap (Flat type)		1	2			
	Rod end cap (Round type)		1	- 2	2		

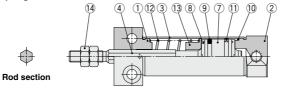
	Bore size [mm]	10	16		
	Mounting	Basic	Basic		
	15 stroke	42	79		
	30 stroke	48	93		
	45 stroke	57	110		
Basic	60 stroke	66	126		
weight	75 stroke		147		
	100 stroke		177		
	125 stroke		213		
	150 stroke		234		
	Single knuckle joint	17	23		
	Double knuckle joint (including knuckle pin)	25	21		
Accessories	Double knuckle joint (With one-touch connecting pin)	26	22		
	Rod end cap (Flat type)	1	2		
	Rod end cap (Round type)	1	2		

[g]

Spring Extend

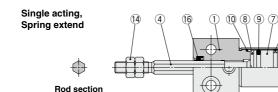
Construction (Not able to disassemble)







With auto switch





With auto switch

Component Parts

00.									
No.	Description	Material	Note						
1	Rod cover	Aluminum alloy							
2	Head cover	Aluminum alloy							
3	Cylinder tube	Stainless steel							
4	Piston rod	Stainless steel							
5	Piston A	Aluminum alloy							
6	Piston B	Aluminum alloy							
7	Piston	Aluminum alloy							
8	Bumper	Urethane							

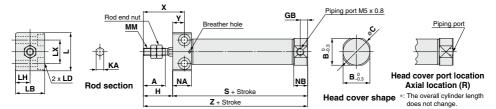
No.	Description	Material	Note
9	Piston seal	NBR	
10	Tube gasket	NBR	
11	Wear ring	Resin	
12	Return spring	Piano wire	
13	Spring seat	Aluminum alloy	
14	Rod end nut	Rolled steel	
15	Magnet	_	
16	Rod seal	NBR	

^{*:} Rod end nut is included in the basic weight.

Air Cylinder: Direct Mount, Non-rotating Rod Type Single Acting, Spring Return/Extend CJ2RK Series

Single Acting: Bottom Mounting

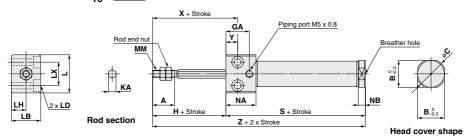
Spring return: CJ2RK 10 - Stroke S Head cover port location Z



																[mm]
Bore size	Α	В	С	GB	Н	KA	L	LB	LD	LH	LX	MM	NA	NB	Х	Υ
10	15	12	14	5	20	4.2	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12	M4 x 0.7	12.8	9.5	28	8
16	15	18.3	20	5	20	5.2	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	12.8	9.5	28	8

Dimensions by Stroke: Spring Return [mm] s Bore size 5 to 15 16 to 30 31 to 45 46 to 60 61 to 75 76 to 100 101 to 125 126 to 150 5 to 15 16 to 30 31 to 45 46 to 60 61 to 75 76 to 100 101 to 125 126 to 150 10 53.5 61 73 73.5 81 105 16 53.5 62 74 92 116 134 146 73.5 94 106 112 136 154 166

Spring extend: CJ2RK 10 - Stroke TZ



																[mm]
Bore size	Α	В	С	GA	Н	KA	L	LB	LD	LH	LX	MM	NA	NB	Х	Y
10	15	12	14	16	20	4.2	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12	M4 x 0.7	20.5	4.8	28	8
16	15	18.3	20	16	20	5.2	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	20.5	4.8	28	8

Dimensions by Stroke: Spring Extend (Dimensions not mentioned in the below table are the same as the above table.) [mm]																
Bore size					•			Z								
	5 to 15	16 to 30	31 to 45	46 to 60	61 to 75	76 to 100	101 to 125	126 to 150	5 to 15	16 to 30	31 to 45	46 to 60	61 to 75	76 to 100	101 to 125	126 to 150
10	56.5	64	76	88	_	_	_	_	76.5	84	96	108	_	_	_	_
16	56.5	65	77	89	95	119	137	149	76.5	85	97	109	115	139	157	169

D-□ -X□ Technical Data

SMC

CG1 CG3

CJ1

CJP CJ2

JCM

CM2 CM3

JMB MB

MB1 CA2

CS₁

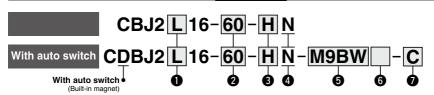
CS2

Air Cylinder: With End Lock

CBJ2 Series



How to Order



Mounting

_	
В	Basic
L	Axial foot
F	Rod flange
D	Double clevis**

- Foot/Flange brackets are shipped together with the product, but not assembled.
- **: Rod end lock only.

6 Number of auto switches

•	inder er date emiteriet
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

2 Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 135.

neier to Standard Strokes on page 135.

- *: 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.

Auto switch mounting bracket

*: This symbol is indicated when the D-A9□ or M9□ type auto switch is specified. This mounting bracket does not apply to other auto switches (D-C7□ and H7□, etc.) (Nil)

3 Lock position

_	
Н	Head end lock
R	Rod end lock

4 Manual release

N Non-locking type

Built-in Magnet Cylinder Model

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

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

Example	Rail mounting	CDBJ2B16-45-HN-A
Example	Band mounting	CDBJ2B16-60-HN-B

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

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

		Electrical	light	Wiring		Load vol	tage		Auto swit	ch model		Lead	l wir	e ler	igth	[m]	Pre-wired																				
Type	Special function	entry	Indicator	(Output)		DC	AC	Band m	ounting	Rail mo	unting	0.5	1	3	5		connector	Applica	ble load																		
		Citity	Indi	(Output)		DC	Perper		In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COINICCIO																				
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	<u> </u>	0	IC circuit																			
Ę		Grommet		3-wire (PNP)		5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	—	0	IC CIICUII																			
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	-	0]																		
S		Connector		Z-WIIE		12 V		_	H7C	J79C	_	•	_	•	•	•	_	_																			
anto	Diamaratia in diamatan			3-wire (NPN)		E V 10 V	1	M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	_	0	IC aireuit	D-1																		
	Diagnostic indication (2-color indicator)		Yes	3-wire (PNP)	24 V	5 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	 -	0	IC circuit	Relay, PLC																		
state	(2-color indicator)																					2-wire		12 V	1	M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	PLC
	Water resistant (2-color indicator)	irommet		3-wire (NPN)		5 V,12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	10	1																		
Solid				3-wire (PNP)					M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	 -	0	IC circuit																		
Ñ																		2-wire	ĺ	12 V	1	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_	1				
	With diagnostic output (2-color indicator)	1		4-wire (NPN)		5 V,12 V	1	_	H7NF	_	F79F	•	_	•	0	_	0	IC circuit	1																		
				3-wire		5 V	_	A96V	A96	A96V	A96	•						IC circuit																			
달			Yes	(NPN equivalent)	 —	5 V	_	A90V	A90	A90V	A90	•	-	•	_	-	_	IC CIICUII	_																		
switch		Grommet	168			_	200 V	_	_	A72	A72H	•	—	•	_	 —	_																				
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	-	_	_																			
anto			No	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	_	-	_	IC circuit	Relay,																		
8		Cannastas	Yes	Z-WIIE	24 V	12 V	_	_	C73C	A73C	_	•	—	•	•	•	_	_	PLC																		
Reed	Conne	Connector	Connector	Connector	Connector	Connector	Connector	Connector	Connector	Connector	Connector	Connector	Connector	nnector				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
- *: Solid state auto switches marked with "O" are produced upon receipt of order.
- *: The D-A9□/M9□/A7□/A80□/F7□/J7□ auto switches are shipped together, (but not assembled). (However, when the D-A9□/M9□ types are selected, only auto

for details

switch mounting brackets are assembled before being shipped.)

*: When the D-A9□/M9□ types are mounted on a rail, order auto switch mounting brackets separately. Refer to page 148 for details.

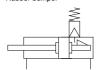
SMC

Air Cylinder: With End Lock CBJ2 Series

The CJ2 air cylinder is equipped with end lock function.



Symbol Rubber bumper



Specifications

Bore size [mm]	16			
Action	Double acting, Single rod			
Fluid	Air			
Proof pressure	1 MPa			
Maximum operating pressure	0.7 MPa			
Minimum operating pressure	0.15 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	0.090 J			

^{*: 0.06} MPa for parts other than the lock unit.

Lock Specifications

Lock position	Head end, Rod end
Holding force (Max.)	98 N
Lock release pressure	0.15 MPa or less
Backlash	1 mm or less
Manual release	Non-locking type

Standard Strokes

	[mm	ı]
Bore size	Standard stroke	7
16	15, 30, 45, 60, 75, 100, 125, 150, 175, 200	1
· Manufacture of i	ntermediate strokes in 1 mm increments is nossible (Spacers are not used.)	_

Mounting Brackets/Part No.

Maunting breaket	Bore size [mm]
Mounting bracket	16
Foot	CJ-L016C
Flange	CJ-F016C
Pivot bracket (T-bracket)Note 1)	CJ-T016C

Note 1) The pivot bracket (T-bracket) is used with double clevis (D).

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

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

D-□ -X□ Technical

ØSMC

CJP CJ₂

CJ1

JCM

CM₂ CM3

CG1

CG3

JMB

MB MB1

CA₂

CS₁

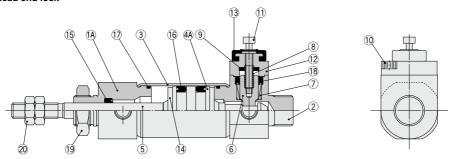
CS2

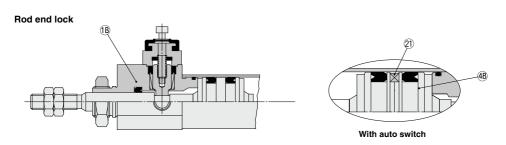
^{*:} Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on front matter pages. In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc.

CBJ2 Series

Construction (Not able to disassemble)

Head end lock





Component Parts

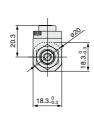
No.	Description	Material	Note
1A	Rod cover	Aluminum alloy	
1B	Rod cover	Stainless steel	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4A	Piston	Aluminum alloy	
4B	Piston B	Aluminum alloy	
5	Piston rod	Carbon steel	
6	Locking piston	Carbon steel	
7	Locking bushing	Copper alloy	
8	Lock spring	Spring steel	
9	Bumper	Urethane	
10	Hexagon socket head cap screw	Alloy steel	

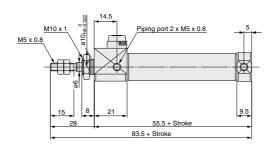
No.	Description	Material	Note
11	Hexagon socket head cap screw	Alloy steel	
12	Сар	Aluminum alloy	
13	Rubber cap	Synthetic rubber	
14	Bumper	Urethane	
15	Rod seal	NBR	
16	Piston seal	NBR	
17	Tube gasket	NBR	
18	Locking piston seal	NBR	
19	Mounting nut	Brass	
20	Rod end nut	Rolled steel	
21	Magnet	_	

Air Cylinder: With End Lock CBJ2 Series

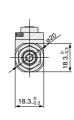
Dimensions

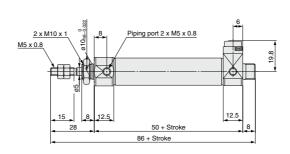
Basic





With head end lock: C□BJ2B16-□□-HN





CJ1

CJP

CJ2 JCM

CM2

CM3

CG3

JMB

MB MB1

CA2

CS1

CS2

D-□ -X□

Technical Data

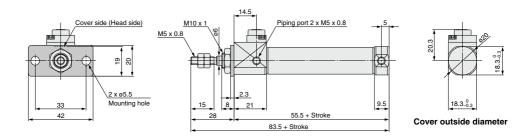


CBJ2 Series

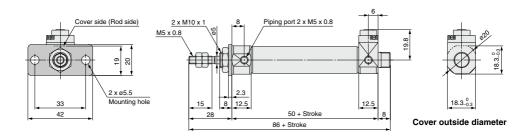
Dimensions

Flange

With rod end lock: C□BJ2F16-□□-RN



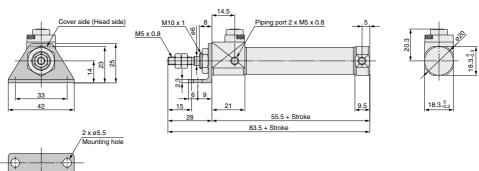
With head end lock: C□BJ2F16-□□-HN



Air Cylinder: With End Lock CBJ2 Series

Dimensions

Axial foot



CJP CJ2

JCM CM2

CJ1

CM3

CG1

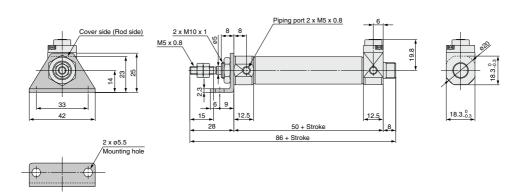
JMB MB

MB1

CA2

CS2

With head end lock: C□BJ2L16-□□-HN



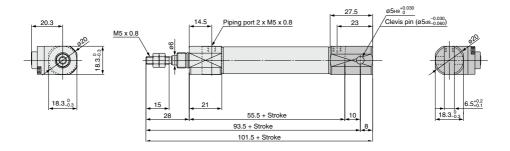
D
-X

Technical Data

CBJ2 Series

Dimensions

Double clevis





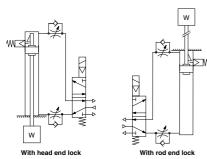
CBJ2 Series Specific Product Precautions

Be sure to read this before handling the products. Please consult with SMC for products outside these specifications.

Use Recommended Air Pressure Circuit.

.↑.Caution

• It is necessary for proper locking and unlocking.



Selection

⚠ Caution

1. Do not use a 3-position solenoid valve.

Avoid using this cylinder in combination with a 3-position solenoid valve (particularly the closed center metal seal type). If air pressure becomes sealed inside the port on the side that contains the lock mechanism, the lock will not engage. Even if the lock is engaged at first, the air that leaks from the solenoid valve could enter the cylinder and cause the lock to disengage as time elapses.

2. Back pressure is necessary for unlocking.

Before starting, make sure that air is supplied to the side that is not equipped with a lock mechanism as shown in the diagram above. Otherwise, the lock may not disengage. (Refer to "Lock Disengagement.")

3. Disengage the lock before installing or adjusting the cylinder.

The lock could become damaged if the cylinder is installed with its lock engaged.

4. Operate the cylinder at a load ratio of 50% or less. The lock might not disengage or might become damaged if a load ratio of 50% is exceeded.

5. Do not synchronize multiple cylinders.

Do not operate two or more end lock cylinders synchronized to move a single workpiece because one of the cylinder locks may not be able to disengage when required.

Operate the speed controller under meterout control.

If operated under meter-in control, the lock might not disengage.

7. On the side that has a lock, make sure to operate at the stroke end of the cylinder.

The lock might not engage or disengage if the piston of the cylinder has not reached the stroke end.

The position adjustment of the auto switch should be performed at two positions; a position determined by the stroke and a position after the backlash movement (by 1 mm).

When a 2-color indicator switch is adjusted to show green at the stroke end, the indication may turn red when the cylinder returns by the backlash. This, however, is not an error.

Operating Pressure

. Caution

Supply air pressure of 0.15 MPa or higher to the port on the side that has the lock mechanism, as it is necessary for disengaging the lock.

Exhaust Air Speed

. Caution

The lock will engage automatically if the air pressure at the port on the side that has the lock mechanism becomes 0.05 MPa or less. Be aware that if the piping on the side that has the lock mechanism is narrow and long, or if the speed controller is located far from the cylinder port, the exhaust air speed could become slower, involving a longer time for the lock to engage. A similar result will ensure if the silencer that is installed on the exhaust port of the solenoid valve becomes clogged.

Lock Disengagement

△Warning

To disengage the lock, make sure to supply air pressure to the port on the side without a lock mechanism, thus preventing the load from being applied to the lock mechanism. (Refer to the recommended air pressure circuit.) If the lock is disengaged when the port on the side that does not contain a lock mechanism is in the exhausted state and the load is being applied to the lock mechanism, undue force will be applied to the lock mechanism, and it may damage the lock mechanism. Also, it could be extremely dangerous, because the piston rod could move suddenly.

Manual Disengagement

↑ Caution

Non-locking type manual release

Insert the bolt, which is provided as an accessory part, through the rubber cap (it is not necessary to remove the rubber cap). Screw the bolt into the lock piston and pull the bolt to disengage the lock. Releasing the bolt will re-engage the lock. The bolt size, pulling force, and the stroke are listed below.

Bore size [mm]	Thread size	Pulling force [N]	Stroke [mm]
16	M2 x 0.4 x 20 L or more	4.9	2

Bolt should be detached under normal operation, otherwise it may cause malfunction of the locking feature.



D-□ -X□

CJ1

CJP

CJ2

JCM

CM₂

CM3

CG₁

CG3

JMB

MB

MB₁

CA₂

CS₁

CS2

Data



CJ2 Series

Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height

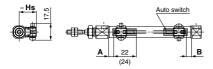
Solid state auto switch

<Band mounting>

D-M9□

D-M9□W

D-M9□A

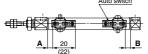


(): Dimension of the D-M9□A.
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-M9□V

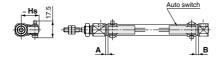
D-M9□MV D-M9□AV





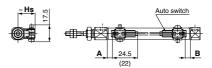
(): Dimension of the D-M9□AV.
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-H7□ D-H7□W D-H7BA D-H7NF D-H7C



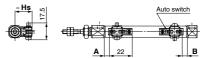
Reed auto switch <Band mounting>

D-A9□



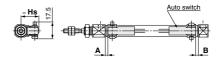
(): Dimension of the D-A96.
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-A9□V



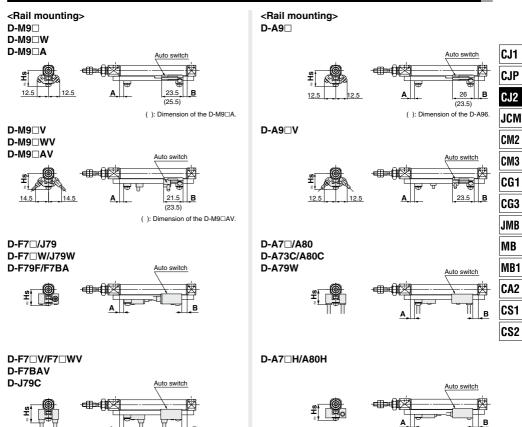
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-C7□/C80 D-C73C□/C80C



Auto Switch Mounting CJ2 Series

Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height



D
-X

Technical
Data

Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height

Auto Switch Proper Mounting Position (Single acting type excluded) [mm]

				(9 -) -		, []	
Auto switch				Band m	ounting				
model	D-M	9□V 9□W 9□WV	D-A D-A	9□ 9□V	D-H7 D-H7 D-H7 D-H7 D-H7	'C 'NF '□W	D-C7□ D-C80 D-C73C D-C80C		
Bore size	Α	В	Α	В	Α	В	Α	В	
6	5.5 (4.5) [12]	5.5 (4.5) [4]	1.5 (0.5) [8]	1.5 (0.5) [0]	1 (7.5)	1 (0)	2 (8.5)	2 (0.5)	
10	(5) 6 (5) 6		(1) 2	(1) 2	1.5	1.5	2.5	2.5	
16	(5.5) 6.5	(5.5) 6.5	(1.5) 2.5	(1.5) 2.5	2	2	3	3	

^{*:} The values in () are measured from the end of the auto switch mounting bracket.

^{*:} The values in [] for bore size ø6 are for the double rod type (CJ2W series).

												[mm]
\ Auto switch						Rail mo	ounting					
model	D-M9 D-M9 V D-M9 W V D-M9 W V D-M9 A D-M9 A V		D-A9□ D-A9□V		D-F7□/J79 D-F7□W/J79W D-F7□W/F7□WV D-F79F D-J79C D-F7BA D-F7BAV D-A7□H/A80H D-A73C/A80C		D-F7NT		D-A7□ D-A80		D-A79W	
Bore size	A B A		Α	В	Α	В	Α	В	Α	В	Α	В
6	_	_	_	_	_	_	_	_	_	_	_	_
10	4.5	4.5	0.5	0.5	3.5 3.5		8.5	8.5	3	3	0.5	0.5
16	5	5	1	1	4	4	9	9	3.5	3.5	1	1

^{*:} Adjust the auto switch after confirming the operating condition in the actual setting.

Auto Switch Mounting Height

Auto Switch	i woulding neigh	16			[mm]					
Auto switch	Band mounting									
model	D-M9□ D-M9□W D-M9□A D-A9□	D-M9□V D-M9□WV D-M9□AV D-A9□V	D-H7□/H7□W D-H7NF D-H7BA D-C7□/C80	D-H7C	D-C73C D-C80C					
Bore size	Hs	Hs	Hs	Hs	Hs					
6	15	16	15	18	17.5					
10	17	18	17	20	19.5					
16	20.5	21	20.5	23.5	23					

							[mm]		
Auto switch		Rail mounting							
model	D-M9 UD-M9 WD-M9 WD-M9 WD-M9 WD-M9 WD-M9 WD-M9 WD-M9 WD-M9 WD-M9 WD-A9 UD-A9 UD-A9 UD-A9 UD-A9 WD-M9 W	D-F7□/J79 D-F7□W/J79W D-F7BA/F79F D-F7NT D-A7□H/A80H	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A7□ D-A80	D-A73C D-A80C	D-A79W		
Bore size	Hs	Hs	Hs	Hs	Hs	Hs	Hs		
6	_	_	_	_	_	_	_		
10	17.5	17.5	20	23	16.5	23.5	19		
16	21	20.5	23	26	19.5	26.5	22		

Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height/Single Acting, Spring Return Type (S)

Auto Switch Proper Mounting Position: Spring Return Type (S)

- · Standard Type (CDJ2 SZ)
- Non-rotating Rod Type (CDJ2K□□□-□SZ)
- Direct Mount Type (CDJ2R□□□-□SZ)

Direct Mount, Non-rotating Rod Type (CDJ2RK□□□-□SZ)

CJ1 [mm] CJP CJ2 JCM CM2 СМЗ CG1 CG3 JMB MB MB1 CA2 CS1 CS2

	A 1	Bore					A dimensions	3				
	Auto switch model	size	5 to 9 st	10 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st	В
٦	D-M9□	6	_	12	21	25	39	_	_	_	_	5.5
	D-M9□W/M9□WV	10	_	13	20.5	32.5	44.5	_	_	_	_	6
	D-M9□A/M9□AV	16	_	12.5	21	33	45	51	75	93	105	6.5
		6	12	12	21	25	39	_	_	_	_	5.5
	D-M9□V	10	13	13	20.5	32.5	44.5	_	_	_	_	6
		16	12.5	12.5	21	33	45	51	75	93	105	6.5
		6	_	8	17	21	35	_	_	_	_	1.5
9	D-A9□	10	_	9	16.5	28.5	40.5	_	_	_	_	2
mouning		16	_	8.5	17	29	41	47	71	89	101	2.5
Ė		6	8	8	17	21	35	_	_	_	_	1.5
Dario	D-A9□V	10	9	9	16.5	28.5	40.5	_	_	_	_	2
		16	8.5	8.5	17	29	41	47	71	89	101	2.5
	D-H7□/H7C	6	_	7.5	16.5	20.5	34.5	_	_	_		1
	D-H7□W/H7BA	10	_	8.5	16	28	40	_	_	_	_	1.5
	D-H7NF	16	_	8	16.5	28.5	40.5	46.5	70.5	88.5	100.5	2
	D-C7□/C80	6	_	8.5	17.5	21.5	35.5	_	_	_	_	2
	D-C73C	10	_	9.5	17	29	41	_	_	_	_	2.5
	D-C80C	16	_	9	17.5	29.5	41.5	47.5	71.5	89.5	101.5	3
	D-M9□ D-M9□W/M9□WV	10	_	11.5	19	31	43	_	_	_	_	4.5
	D-M9□A/M9□AV	16	_	11	19.5	31.5	43.5	49.5	73.5	91.5	103.5	5
	D-M9□V	10	11.5	11.5	19	31	43	_	_	_	_	4.5
	D-IVI3 V	16	11	11	19.5	31.5	43.5	49.5	73.5	91.5	103.5	5
	D-A9□	10	_	7.5	15	27	39	_	_	_	_	0.5
	D-A3	16		7	15.5	27.5	39.5	45.5	69.5	87.5	99.5	1
	D-A9□V	10	7.5	7.5	15	27	39	_	_	_	_	0.5
	D-A3□V	16	7	7	15.5	27.5	39.5	45.5	69.5	87.5	99.5	1
mounting	D-F7□/F7□V D-J79/J79C	10	10.5	10.5	18	30	42	_	_	_	-	3.5
Rail mo	D-A7□H/A80H D-A73C/A80C	16	10	10	18.5	30.5	42.5	48.5	72.5	90.5	102.5	4
	D-F7□W/J79W D-F7□WV/F79F	10	_	10.5	18	30	42	_	_	_	_	3.5
	D-F7BA/F7BAV	16	_	10	18.5	30.5	42.5	48.5	72.5	90.5	102.5	4
	D-F7NT	10	_	15.5	23	35	47	_	_	_	_	8.5
	517141	16	_	15	23.5	35.5	47.5	53.5	77.5	95.5	107.5	9
	D-A7□/A80	10	10	10	17.5	29.5	41.5	_	_	_	_	3
	D-A/ □/A00	16	9.5	9.5	18	30	42	48	72	90	102	3.5
	D-A79W	10	_	7.5	15	27	39	_	_	_	_	0.5
	D-W/AM	16	_	7	15.5	27.5	39.5	45.5	69.5	87.5	99.5	1

^{*:} In the actual setting, adjust them after confirming the auto switch performance.

D-□ -X□

Technical Data





Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height/Single Acting, Spring Extend Type (T)

Auto Switch Proper Mounting Position: Spring Extend Type (T)

- · Standard Type (CDJ2 TZ)
- · Non-rotating Rod Type (CDJ2K = TZ)
- Direct Mount Type (CDJ2R□□□-□TZ)

· Direct Mount, Non-rotating Rod Type (CDJ2RK□□□-□TZ)

· [Direct Mount, No	n-rot	ating	Rod Typ	e (CDJ2	RKUUU						[mm]
	Auto switch model	Bore	A	B dimensions								
	Adio Switch model	size	_ ^	5 to 9 st	10 to 15 st	16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to 150 st
	D-M9□	6	5.5	_	12	21	25	39	_	_	_	_
	D-M9□W/M9□WV	10	6	_	13	20.5	32.5	44.5	_	_	_	_
	D-M9□A/M9□AV	16	6.5	_	12.5	21	33	45	51	75	93	105
		6	5.5	12	12	21	25	39	_	_	_	_
	D-M9□V	10	6	13	13	20.5	32.5	44.5	_	_	_	_
		16	6.5	12.5	12.5	21	33	45	51	75	93	105
_		6	1.5	_	8	17	21	35	_	_	_	_
ting	D-A9□	10	2	_	9	16.5	28.5	40.5	_	_	_	_
uno		16	2.5	_	8.5	17	29	41	47	71	89	101
Ē		6	1.5	8	8	17	21	35	_	_	_	_
Band mounting	D-A9□V	10	2	9	9	16.5	28.5	40.5	_	_	_	_
		16	2.5	8.5	8.5	17	29	41	47	71	89	101
	D-H7□/H7C	6	1	_	7.5	16.5	20.5	34.5	_	_	_	_
	D-H7□W/H7BA	10	1.5	_	8.5	16	28	40	_	_	_	_
	D-H7NF	16	2	_	8	16.5	28.5	40.5	46.5	70.5	88.5	100.5
	D-C7□/C80	6	2	_	8.5	17.5	21.5	35.5	_	_	_	_
	D-C73C	10	2.5	_	9.5	17	29	41	_	_	_	_
	D-C80C	16	3	_	9	17.5	29.5	41.5	47.5	71.5	89.5	101.5
	D-M9 D-M9 W/M9 W/	10	4.5	_	11.5	19	31	43	_	_	_	_
	D-M9□A/M9□AV	16	5	_	11	19.5	31.5	43.5	49.5	73.5	91.5	103.5
	D-M9□V	10	4.5	11.5	11.5	19	31	43	_	_	_	_
	D-INI3-1V	16	5	11	11	19.5	31.5	43.5	49.5	73.5	91.5	103.5
	D-A9□	10	0.5	_	7.5	15	27	39	_	_	_	_
	D-A3	16	1	_	7	15.5	27.5	39.5	45.5	69.5	87.5	99.5
	D-A9□V	10	0.5	7.5	7.5	15	27	39	_	_	-	_
	D-A3□V	16	1	7	7	15.5	27.5	39.5	45.5	69.5	87.5	99.5
mounting	D-F7□/F7□V D-J79/J79C	10	3.5	10.5	10.5	18	30	42	_	_	_	_
Rail mo	D-A7□H/A80H D-A73C/A80C	16	4	10	10	18.5	30.5	42.5	48.5	72.5	90.5	102.5
	D-F7□W/J79W D-F7□WV/F79F	10	3.5	_	10.5	18	30	42	-	_	_	-
	D-F7BA/F7BAV	16	4		10	18.5	30.5	42.5	48.5	72.5	90.5	102.5
	D-F7NT	10	8.5	_	15.5	23	35	47		_	_	_
	D-1 /141	16	9	_	15	23.5	35.5	47.5	53.5	77.5	95.5	107.5
	D-A7□/A80	10	3	10	10	17.5	29.5	41.5	_	_	_	_
	D-AI LIMOU	16	3.5	9.5	9.5	18	30	42	48	72	90	102
	D-A79W	10	0.5	_	7.5	15	27	39	_	_	_	_
	D-A/SW	16	1	_	7	15.5	27.5	39.5	45.5	69.5	87.5	99.5

^{*:} In the actual setting, adjust them after confirming the auto switch performance.

Minimum Stroke for Auto Switch Mounting

						[mm]
Auto switch			1400		auto switches	
mounting	Auto switch model	With 1 pc.	With 2		With n pcs. (n: Numl	
	D-M9□ D-M9□W D-M9□A D-A9□	10	Different surfaces 15*1	Same surface 45*1	Different surfaces $15 + 35 \frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	Same surface 45 + 15 (n - 2) (n = 2, 3, 4, 5)
	D-M9□V	5	15*1	35	$15 + 35\frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	35 + 25 (n - 2) (n = 2, 3, 4, 5)
	D-M9□WV D-M9□AV	10	15* ¹	35	$15 + 35\frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	35 + 25 (n - 2) (n = 2, 3, 4, 5)
Band mounting	D-A9□V	5	10	35	$10 + 35\frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	35 + 25 (n - 2) (n = 2, 3, 4, 5)
	D-H7□/H7□W D-H7BA D-H7NF	10	15	60	$15 + 45\frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	60 + 22.5 (n - 2) (n = 2, 3, 4, 5)
	D-C7□ D-C80	10	15	50	$15 + 40\frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	50 + 20 (n - 2) (n = 2, 3, 4, 5)
	D-H7C D-C73C D-C80C	10	15	65	$15 + 50\frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	50 + 27.5 (n - 2) (n = 2, 3, 4, 5)
	D-M9□V	5	_	5	_	10 + 10 (n - 2) (n = 4, 6)*4
	D-A9□V	5	_	10	_	10 + 15 (n - 2) (n = 4, 6)*4
	D-M9□ D-A9□	10 (5)*5	_	10	_	15 + 15 (n - 2) (n = 4, 6)*4
	D-M9□WV D-M9□AV	10	_	15	_	15 + 15 (n - 2) (n = 4, 6)*4
	D-M9□W	15 (10)* ⁵	_	15	_	20 + 15 (n - 2) (n = 4, 6)*4
	D-M9□A	15 (10)* ⁵	_	20 (15)*5	_	20 + 15 (n - 2) (n = 4, 6)*4
Rail mounting	D-F7□ D-J79	5	_	5	_	15 + 15 (n - 2) (n = 4, 6)*4
	D-F7□V D-J79C	5	_	5	_	10 + 10 (n - 2) (n = 4, 6)*4
	D-F7□W/J79W D-F7BA/F79F/F7NT	10	_	15	_	15 + 20 (n - 2) (n = 4, 6)*4
	D-F7□WV D-F7BAV	10	_	15	_	10 + 15 (n - 2) (n = 4, 6)*4
	D-A7□/A80 D-A7□H/A80H D-A73C/A80C	5	_	10	_	15 + 10 (n - 2) (n = 4, 6)*4
	D-A7□H D-A80H	5	_	10	_	15 + 15 (n - 2) (n = 4, 6)*4
	D-A79W	10	_	15	_	10 + 15 (n - 2) (n = 4, 6)*4

- *3: When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation.
- *4: When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation. However, the minimum even number is 4. So, 4 is used for the calculation when "n" is 1 to 3.
- *5: The dimension stated in () shows the minimum mountable stroke when the auto switch does not project from the end face of the cylinder body and the lead wire bending space is not hindered.

*1: Auto switch mounting	the end race of the cylinder body and the lead wire bending space is not hindered.						
	With 2 aut	o switches					
	Different surfaces*1	Same surface*1					
Auto switch model	Auto switch D-M9=(V) D-M9=(V) D-M9=(V)						
	The proper auto switch mounting position is 5.5 mm inward from the switch holder edge. The above A and B indicate values for band mounting in the table of page 144.	The auto switch is mounted by slightly displacing it in a direction (cylinder tube circumferential exterior) so that the auto switch and lead wire do not interfere with each other.					
D-M9□/M9□W/M9□A	Less than 20 stroke*2	Less than 55 stroke*2					
D-A9□	_	Less than 50 stroke*2					

^{*2:} Minimum stroke for auto switch mounting in types other than those mentioned in *1.

CJ1

CJP CJ2

JCM

CM2

CM3

CG1

CG3

MB

MB1

CA2

CS1

CS2

D
-X

Technical
Data

Operating Range

_				[mm]		
	Auto switch model	В	Bore size			
	Auto switch model		10	16		
ıting	D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	2	2.5	3		
ā	D-A9□	4.5	6	7		
Band mounting	D-H7□/H7□W D-H7BA/H7NF	3	4	4		
m	D-H7C	5	8	9		
	D-C7□/C80/C73C/C80C	6	7	7		
	D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	_	3	3.5		
۵	D-A9□/A9□V	_	6	6.5		
Rail mounting	D-F7□/J79/F7□W/J79W D-F7□V/F7□WV/F79F D-J79C/F7BA/F7BAV D-F7NT	_	5	5		
	D-A7□/A80/A7H/A80H D-A73C/A80C	_	8	9		
	D-A79W	_	11	13		

*: Values which include hysteresis are for guideline purposes only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

Auto Switch Mounting Brackets/Part No.

Auto			Bore size [mm]		
switch	Auto switch model			1	
mounting		6	10	16	
	D-M9 D-M9 V D-M9 W D-M9 WV D-A9 D-A9 V	BJ6-006 (A set of a, b, d, f)	BJ6-010 (A set of a, b, c, d)	BJ6-016 (A set of a, b, c, d)	
	D-M9□A *2 D-M9□AV*2	BJ6-006S (A set of a, b, d, g)	BJ6-010S (A set of a, b, d, e)	BJ6-016S (A set of a, b, d, e)	
Band mounting	c Transparer f Transparer e White (PB' g Black (PB') d Switch	rent (Nylon)*1 rent blue (ch mounting screw	
Band mounting	D-H7□/H7□W D-H7BA/H7NF D-C7□/C80 D-C73C/C80C	BJ2-006 (A set of band and screw)	BJ2-010 (A set of band and screw)	BJ2-016 (A set of band and screw)	
*4 Rail mounting	D-M9□ D-M9□W D-M9□WV D-M9□A *4 D-M9□AV*4 D-A9□ D-A9□V	-	BQ2-012 (S) (A set of a and b) Auto switch mounting bracket BQ2-012 BQ2-		

- *1: Since the switch bracket (made from nylon) are affected in an environment where alcohol, chloroform, methylamines, hydrochloric acid or sulfuric acid is splashed over, so it cannot be used. Please contact SMC regarding other chemicals.
- *2: As the indicator LED is projected from the auto switch unit, indicator LED may be damaged if the switch bracket is fixed on the indicator LED.
- *3: When the cylinder is shipped, the auto switch mounting bracket and the auto switch will be included.
- *4: For D-M9□A(V), order the BQ2-012S, which uses stainless steel mounting screws.

Band Mounting Brackets Set Part No.

Dana mounting Drackets out Fart No.					
Set part no.	Contents	Bore size [mm]			
Set part no.	Contents	6	10	16	
BJ2-□□□	Auto switch mounting band (a) Auto switch mounting screw (b)	BJ2-006	BJ2-010	BJ2-016	
BJ4-1	Switch bracket (White/PBT) (e) Switch holder (d)	_	•	•	
BJ4-2	Switch bracket (Black/PBT) (g) Switch holder (d)	•	_	_	
BJ5-1	Switch bracket (Transparent/Nylon) (c)*1 Switch holder (d)	_	•	•	
BJ5-2	Switch bracket (Transparent blue/Nylon) (f)*1 Switch holder (d)	•	_	_	

[Stainless Steel Mounting Screw]

The following stainless steel mounting screw kit is available. Use it in accordance with the operating environment. (Since the auto switch mounting bracket is not included, order it separately.) BBA4: For D-C7/C8/H7 types

*5: Refer to page 1682 for details on the BBA4.

When the D-H7BA type auto switch is shipped independently, the BBA4 is attached.



Auto Switch Mounting CJ2 Series

Other than the applicable auto switches listed in "How to Order", the following auto switches are mountable. Refer to pages 1575 to 1701 for the detailed specifications.

Туре	Mounting	Model	Electrical entry	Features	Applicable bore size	
	Band mounting	D-H7A1/H7A2/H7B		_	ø6 to ø16	
	Band mounting	D-H7NW/H7PW/H7BW	Grommet	Diagnostic indication (2-color indicator)	90 10 9 10	
Sold state		D-F79/F7P/J79	(In-line)	_		
Solu State	Rail mounting	D-F79W/F7PW/J79W		Diagnostic indication (2-color indicator)	ø10. ø16	
	Hall mounting	D-F7NV/F7PV/F7BV	Grommet	_	1 810, 810	
		D-F7NWV/F7BWV	(Perpendicular)	Diagnostic indication (2-color indicator)		
	Band mounting	D-C73/C76		_	ø6 to ø16	
	Dana mounting	D-C80	Grommet	Without indicator light	9010910	
Reed		D-A73H/A76H	(In-line)	_		
neeu	Rail mounting	D-A80H		Without indicator light	ø10. ø16	
	hall illouliting	D-A73	Grommet	_	010,010	
		D-A80	(Perpendicular)	Without indicator light]	

^{*:} With pre-wired connector is also available for solid state auto switches. For details, refer to pages 1648 and 1649.

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CJ1

CJP CJ2

JCM

CM2 CM3

CG1

CG3

JMB

MB

MB1

CS1

CS2

^{*:} Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)) are also available. For details, refer to page 1592-1.

CJ2 Series

Made to Order: Individual Specifications

Contact SMC for detailed specifications, delivery and prices.



1 PTFE Grease

Symbol -X446

Applicable Series

· · ·			
Description	Model	Action	Note
	CJ2	Double acting, Single rod	
Standard type	002	Single acting (Spring return/extend)	
	CJ2W	Double acting, Double rod	
Non-rotating rod	C/15K	Double acting, Single rod	
type	CJ2K	Single acting (Spring return/extend)	
Built-in speed	CJ2Z	Double acting, Single rod	
controller type	CJ2ZW	Double acting, Double rod	
Direct mount type	CJ2R	Double acting, Single rod	
Direct mount type	CUZH	Single acting (Spring return/extend)	
Direct mount,	CJ2RK	Double acting, Single rod	
Non-rotating rod type	CJ2RK	Single acting (Spring return/extend)	

How to Order

Standard model no. – X446

PTFE grease

Specifications: Same as standard type

Dimensions: Same as standard type

*: When grease is necessary for maintenance, grease pack is available, please order it separately.

GR-F-005 (Grease: 5 g)

⚠ Warning

Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

2 Short Pitch Mounting/Single Acting, Spring Return

Symbol -X773

CJ1

CJP

CJ₂ JCM CM2 СМЗ

CG1

CG3

JMB MB

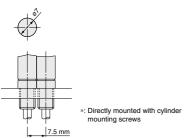
MB1

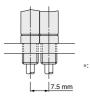
CA2

CS₁ CS2

Mounting pitch is shortened when cylinders are used in parallel.

- Changes rod cover and head cover dimensions to Ø7.
- Shortens the full length with a head cover integrated with a barb fitting.





Applicable Series

Applicable collec					
Description	Model	Action	Note		
Standard type	CJ2	Single acting (Spring return)			

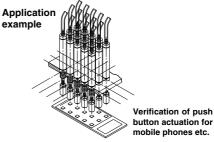




SU4Z - X773

Short pitch mounting/ Single acting, spring return



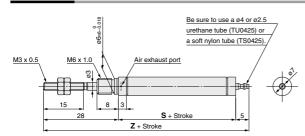


Specifications

opecinications					
6					
Single acting, Spring return					
0.2 to 0.7 MPa					
With ø4 barb fitting (For soft tube)					
Head cover/Axial direction					
5 to 60					
None					

Bore size [mm]	6		
Action	Single acting, Spring return		
Operating pressure range	0.2 to 0.7 MPa		
Port size	With ø4 barb fitting (For soft tube)		
Connecting port location	Head cover/Axial direction		
Stroke [mm]	5 to 60		
Auto switch	None		

Dimensions



				[mm]
Stroke	5 to 15	16 to 30	31 to 45	46 to 60
s	30.5	39.5	43.5	57.5
Z	63.5	72.5	76.5	90.5

Note

- 1. When mounting a cylinder, make sure that the air exhaust port on the rod cover is not blocked.
- 2. When mounting a cylinder, apply thread locking adhesive on the threaded part and hold the external diameter of the rod cover with a needlenose pliers or regular pliers.

D-□ -X□

Technical Data

SMC

Symbol

-X2838

3 Double Clevis (With One-touch Connecting Pin)

With pivot bracket (T-bracket) and one-touch connecting pin

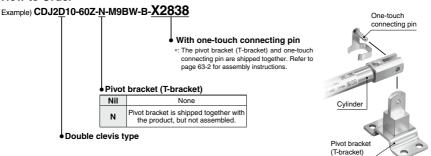
Not necessary to order a bracket for the applicable cylinder separately.

Applicable Series

Applicable Cylinders (Double Clevis Type)

Applicable Cylindere (Boddle Clotte 1)pc/						
Series	Bore size [mm]	Type	Model	Action	Note	
CJ2D	10, 16	Standard	CJ2D	Double acting, Single rod	cushion, or rail mounting	
			CJ2D	Single acting, Single rod (Spring return/extend)		
		Non-rotating rod type	CJ2KD	Double acting, Single rod		
			CJ2KD	Single acting, Single rod (Spring return/extend)	type auto switches.	

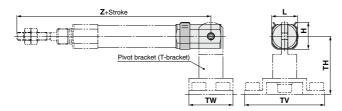




Specifications: Same as standard type

Dimensions

*: Refer to page 63-2 for assembly procedures and mounting methods.



Applicable bore size	Н	L	TH	TV	TW	z
10	13.4	13.2	29	40	22	82
16	18.2	19.5	35	48	28	85

*: The pivot bracket (T-bracket) is the same as the standard type. Refer to page 63-1 for details.

CJ2 Series



Specific Product Precautions

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 12 for Actuator and Auto Switch Precautions.

Mounting

⚠ Warning

1. Use within the specified cylinder speed and kinetic energy ranges.

Otherwise, cylinder and seal damage may occur.

Do not apply excessive lateral load to the piston rod.

Easy checking method

Minimum operating pressure after the cylinder is mounted to the equipment (MPa) = Minimum operating pressure of cylinder (MPa) + {Load weight (kg) x Friction coefficient of quide/Sectional area of cylinder (mm²)}

If smooth operation is confirmed within the above value, the load on the cylinder is the resistance of the thrust only and it can be judged as having no lateral load.

Do not open the cushion needle after rotating it numerous times in a row. Though uncommon, there are cases in which the cushion needle may leak air.

The cushion needle should be adjusted by gradually opening it while checking the operation of the cylinder cushion.

⚠ Caution

 During installation, secure the cover on the tightening side and tighten by applying an appropriate tightening force to the retaining nut or to the cover on the tightening side.

If the cover on the opposite side of the tightening side is secured or 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

3. To remove and install the retaining ring for the knuckle pin or the clevis pin, use an appropriate pair of pliers (tool for installing a type C retaining ring). In particular, use a pair of ultramini pliers for removing and installing the retaining ring on the Ø10 cylinder.

4. In the case of auto switch rail mounting type, do not remove the rail that is mounted. Because retaining screws extend into the cylinder, this could lead to an air leak.

Please contact SMC when the stroke exceeds 100 mm for the axial foot mounting type.

<Pre><Pre>cautions on the single acting cylinder>

1) Do not operate it in such a way that a load would be applied during the retraction of the piston rod of the spring return type, or during the extension of the piston rod of the spring extend type. 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.

A breather hole is provided in the cover surface. Make sure not to block this hole during installation, as this could lead to a malfunction.

<Pre><Pre>cautions on the non-rotating cylinder>

- Tighten the retaining screws to an appropriate tightening torque within the range given below. Ø10: 10.8 to 11.8 N·m, Ø16: 20 to 21 N·m
- 2) Do not operate it in such a way that rotational torque would be applied to the piston rod. If rotational torque is applied, the non-rotating guide will become deformed, thus affecting the non-rotating accuracy.

Allowable rotational torque [N·m]	ø 10	ø 16
Allowable lotational torque [N-III]	0.02	0.04

3) To screw a bracket onto the threaded portion at the tip of the piston rod, make sure to retract the piston rod entirely, and place a wrench over the flat portion of the rod that protrudes. To tighten, take precautions to prevent the tightening torque from being applied to the non-rotating guide.



CJ₁

CJP

CJ₂

JCM

CM₂

CM3

CG₁

CG3

JMB

MB

MB1

CA2

CS₁

CS₂

