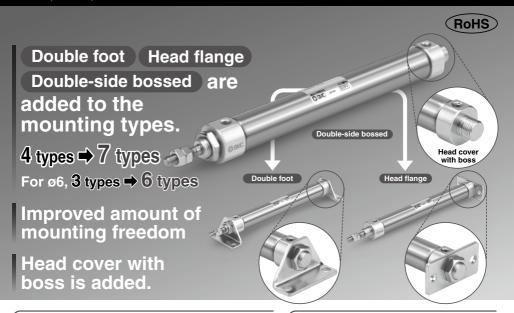
Air Cylinder

CJ2 Series

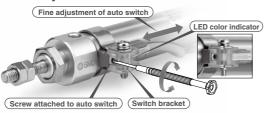
ø6, ø10, ø16



Easy fine adjustment of auto switch position

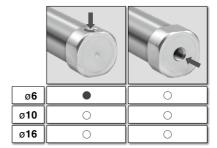
Fine adjustment of the auto switch position is possible by simply loosening the screw attached to the auto switch.

Transparent switch bracket improves visibility of indicator LED.

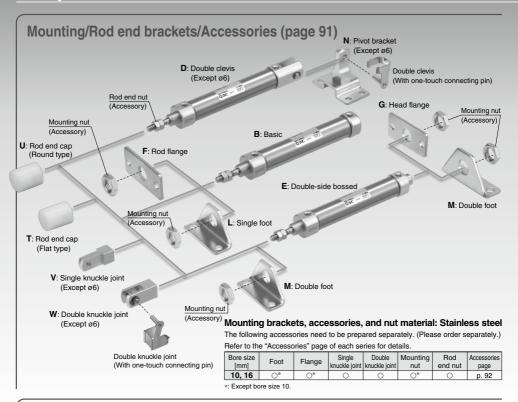


Head cover port location "Perpendicular to axis" is newly added to Ø6.

Improved piping flexibility



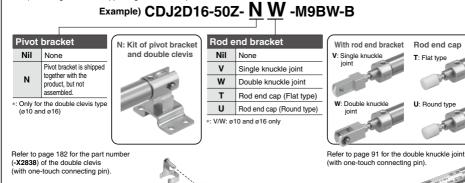




Part numbers with rod end bracket and/or pivot bracket available

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

oring 60



ØSMC

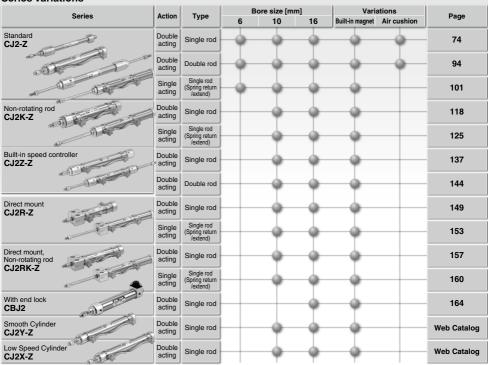




Stroke Variations

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

Series Variations



*: 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. 1117 Corrosion Resistant Fluororubber seal (-XC22) p. 1508 Environmentally Resistant Specifications Temperature Measures Heat resistant/Cold resistant cylinder (-XB6, -XB7) p. 1428, 1430 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.



CONTENTS

Air Cylinder CJ2 Series

The state of the s	All Cylinder. Standard Type	
	Double Acting, Single Rod CJ2 Series	
	How to Order ·····	······ P.74
	Specifications	······ P.75
	Construction	······ P.77
	Dimensions ·····	······ P.78
	Dimensions of Accessories (Options)	······· P.91
	Precautions ·····	······ P.93
	■ Air Cylinder: Standard Type	
	Double Acting, Double Rod CJ2W Series	
D on	How to Order ·····	······ P.94
4	Specifications	······ P.95
	Construction ·····	P.97
	Dimensions	······ P.98
	■Air Cylinder: Standard Type	
	Single Acting, Spring Return/Extend CJ2 Series	
	How to Order ·····	······ P.101
	Specifications	······ P.102
	Construction	······ P.104
	Dimensions	······ P.105
	■ Air Cylinder: Non-rotating Rod Type	
	Double Acting, Single Rod CJ2K Series	
	How to Order ·····	······ P.118
	Specifications ·····	
	Construction ·····	······ P.120
	Dimensions	······ P.121
	■ Air Cylinder: Non-rotating Rod Type	
	Single Acting, Spring Return/Extend CJ2K Series	
1)	How to Order ·····	······ P.125
GALLY.	Specifications ·····	······ P.126
	Construction ·····	······ P.128
	Dimensions	······ P.129
	■ Air Cylinder: Built-in Speed Controller Type	
1	Double Acting, Single Rod CJ2Z Series	
	How to Order ·····	······ P.137
	Specifications ·····	
	Construction ·····	
	Dimensions	······ P.140

	■ Air Cylinder: Built-in Speed Controller Type	
	Double Acting, Double Rod CJ2ZW Series	
41	How to Order ·····	···· P.144
	Specifications ·····	···· P.145
	Construction ·····	···· P.146
	Dimensions	···· P.147
	■Air Cylinder: Direct Mount Type	
	Double Acting, Single Rod CJ2R Series	
	How to Order ·····	···· P.149
	Specifications	···· P.150
	Construction	···· P.152
	■ Air Cylinder: Direct Mount Type	
	Single Acting, Spring Return/Extend CJ2R Series	
al .	How to Order ·····	···· P.153
	Specifications	···· P.154
	Construction ·····	···· P.155
	Dimensions	···· P.156
	■ Air Cylinder: Direct Mount, Non-rotating Rod Type	
	Double Acting, Single Rod CJ2RK Series	
	How to Order ·····	···· P.157
	Specifications	···· P.158
	Construction ·····	···· P.159
	Dimensions	···· P.159
	■ Air Cylinder: Direct Mount, Non-rotating Rod Type	
	Single Acting, Spring Return/Extend CJ2RK Series	
	How to Order ·····	···· P.160
au-	Specifications	···· P.161
	Construction ·····	···· P.162
	Dimensions	···· P.163
*	■ Air Cylinder: With End Lock CBJ2 Series	
1000	How to Order ·····	···· P.164
م (رمون	Specifications ·····	···· P.165
	Construction ·····	
	Dimensions ·····	
	Specific Product Precautions	····· P.171
	Auto Switch Mounting	
	Made to Order: Individual Specifications	
	Specific Product Precautions ·····	····· P.183



Combinations of Standard Products and Made to Order Specifications

CJ2

(Standard type)

Single rod Double rod

Single acting

CJ2K

(Non-rotating rod type)

Single rod

Single rod

Single acting

Series

Action/

CJ2 Series

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

		Page	74	94	10	01	118	1:	25	
Symbol	Specifications	Applicable bore size		ø6 to	ø16			ø10, ø16		
Standard	Standard		•	•	•	•	•	•	•	
D	Built-in magnet	ø6 to ø16	•	•	•	•	•	•	•	
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	~10 ~16	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.

72

SMC

^{*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.

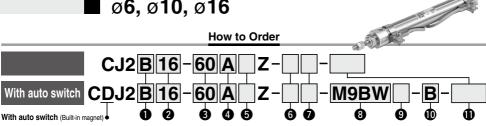
^{*11:} Not compatible with the air cushion or rail mounting type auto switches.

	CJ2X Low Speed Cylinder	CJ2Y Smooth Cylinder	CBJ2 (With end lock)*6	CJ2RK oct mount, Non-rotating rod type)			CJ2Z CJ2R (Built-in speed controller type) (Direct mount type)				
	Double acting	Double acting	Double acting	acting		Double 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
	Web Catalog	Web Catalog	164	60	10	157	53	15	149	144	137
Symbol	ø10, ø16	ø10, ø16	ø16				ø16	ø10,			
Standard	•	•	•	•	•	•	•	•	•	•	•
D	•	•	•	•	•	•	•	•	•	•	•
CJ2□-□A	_	_	_	_	_	_	_	-	0	-	_
10-, 11-	_	_	○*7	_	_	ı	0	0	•	ı	
25A-	0	0	0	0	0	0	0	0	0	0	0
XB6	_	_	0	0	0	0	0	0	0	0	0
ХВ7	_	_	_	0	0	0	0	0	0	0	0
ХВ9	_	_	0	_	_	_	_	_	_	_	_
XB13	_	_	_	_	_	_	_	_	_	_	_
хсз	0	0	0	_	_	0	_	_	0	_	_
XC8	_	_	_	0	0	0	0	0	0	_	0
хс9	_	0	O*8	_	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	_	_	_	_	_	_	_	_	_

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

CJ2 Series ø6, ø10, ø16





Mounting

В	Basic		
E	Double-side bossed		
D**	Double clevis		
L	Single foot		
M	Double foot		
E Double-side bossed D** Double clevis L Single foot			
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 182 for the double clevis (with one-touch connecting pin).

8 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.

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.

Number of auto switches

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

Cvlinder standard stroke [mm] Refer to "Standard Strokes" on page 75.

6 Pivot bracket None 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

- Rail mounting Band mounting *: For rail mounting, screws and nuts for
- 2 auto switches come with the rail *: Refer to page 178 for auto switch mounting brackets.
- *: Ø6: Band mounting only

4 Cushion

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

RoHS

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 91 for the double knuckle joint (with one-touch connecting pin).

Made to Order Refer to page 75 for details.

*: Refer to "Ordering Example of Cylinder Assembly" on page 75.

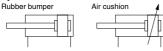
Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		Electrical	<u>_</u>	Wiring		Load vo	oltage		Auto swit	tch model		Lea	d wir	e ler	ngth	[m]	Pre-wired	Annli	aabla														
Тур	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)	CONTINUE	10	au														
				3-wire (NPN)		5 V.12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit															
ء ا		Grommet		3-wire (PNP)]	5 V,12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	IIC GICGII															
switch				O mino]	10.1/]	M9BV	M9B	M9BV	M9B	•	•	•	0	—	0]														
5		Connector	1	2-wire		12 V		_	H7C	J79C	_	•	_	•	•	•	_	_															
율			1	3-wire (NPN)	1	5 1/ 40 1/	1	M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	_	0	10	1														
~	Diagnostic indication		Yes	3-wire (PNP)	24 V	5 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IC circuit	PLC														
state	(2-color indicator)		Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet						2-wire	1	12 V	1	M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	FLC
		Grommet											t	3-wire (NPN)	1	5 1/ 40 1/	1	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit	1				
Solid	Water resistant								3-wire (PNP)]	5 V,12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	lic circuit										
ď.	(2-color indicator)											2-wire	1	12 V	1	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_	1 1						
	With diagnostic output (2-color indicator)	1		4-wire (NPN)	1	5 V,12 V	<i>i</i>]	_	H7NF	_	F79F	•	_	•	0	<u> </u>	0	IC circuit]														
switch													3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	_	_	_	IC circuit	_					
3		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_																
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —															
anto			No			40.1/	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit	Relay.														
	Reed	Cannadas	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ														
ě		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 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 179 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.) 74



Symbol





Made to Order: Individual Specifications (For details, refer to pages 180 and 182.)

Symbol	
	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. a6 only

*: Except ø6

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2D16-60Z-NW-M9BW-B Double knuckle joint Auto switch Band mounting

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]	6	10	16			
Action	1	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 [VРа			
Ambient and fluid temperature		Without auto switch: -10°C to 70°C (No freezing) With auto switch: -10°C to 60°C					
Cushion		Rubber bumper	Rubber bumper Rubber bumper/Air cushion				
Lubrication		Not required (Non-lube)					
Piston speed	Rubber bumper	50 to 750 mm/s					
ristori speed	Air cushion	_	50 to 10	000 mm/s			
Allowable kinetic	Rubber bumper	0.012 J	0.035 J	0.090 J			
energy	Air cushion (Effective cushion length)	_	0.07 J (9.4 mm)	0.18 J (9.4 mm)			
Stroke length tolera	Stroke length tolerance		+1.0 0				

Standard Strokes

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

- *: Manufacture of intermediate strokes in 1 mm increments is possible. (Spacers are not used.) Produced upon receipt of order.
- *: Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on pages 8 to 19. 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 68 for the list of brackets and page 91 for details about part numbers and dimensions.

•	Mounted on the product. ○…Can I	be ordered v	vithin the cyl	inder model	. △···Orde	r separately.
	Mounting	Basic	Foot	Flange	Double ^{Note 1)} clevis	Double clevis (including T-bracket)
P.	Mounting nut	•	•	•	_	_
Standard	Rod end nut	•	•	•	•	•
St	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
18	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 92 for details.

Mounting Brackets/Part No.

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

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

Refer to pages 172 to 179 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 Web Catalog.



Weights

						[g]
	Bore size [mm]			-		$\overline{}$
	2010 0:20 [11:11]	6	10	16	10	16
Basic weight	Basic	20	22	46	39	66
(When the stroke	Axial piping	17	22	46	39	66
is zero)	Double clevis (including clevis pin)	_	24	54	43	74
13 2610)	Head-side bossed	Rubber bumper	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	74 68 7 25 50 13 13 3 ——————————————————————————————
	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
Accessories	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)	17 22 46 39 66	2			
	Pivot bracket (T-bracket)	_	32	50	32	50

⚠ Precautions

Refer to page 183 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.

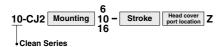
Calculation:

Example) CJ2L10-45Z • Basic weight22 (Ø10)

- 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.

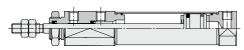


Specifications

Action		Double acting, Single rod					
Bore size [mm]		6, 10, 16					
Maximum operating	pressure	0.7 MPa					
Minimum operating Ø6		0.14 MPa					
pressure	ø10, ø16	0.08 MPa					
Cushion		Rubber bumper/Air cushion					
Standard stroke [mi	m]	Same as standard type. (Refer to page 75.)					
Auto switch		Mountable (Band mounting)					
Mounting		Basic, Double-side bossed*, Single/Double foot*, Rod/Head flange*					

^{*:} ø10 and ø16 only

Construction



*: The above figure is for ø16.

For the detailed specifications, refer to the Web Catalog.

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

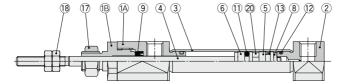
Action		Double acting, Single rod			
Bore size [mm]		10, 16			
Fluid		Air			
Proof pressure		1.05 MPa			
Maximum operating pr	essure	0.7 MPa			
Minimum operating pressure		0.06 MPa			
Ambient and fluid temperature		Without auto switch: -10 to 70°C (No freezing With auto switch: -10 to 60°C			
Cushion		Rubber bumper (Standard equipment)			
Lubrication		Not required (Non-lube)			
Stroke length tolerand	ce	+1.0 0			
Piston speed		1 to 300 mm/s			
Allowable kinetic	ø10	0.035 J			
energy	ø 16	0.090 J			

For details, refer to the Web Catalog

Construction (Not able to disassemble)

ø6

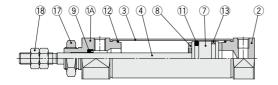
Rubber bumper





With auto switch

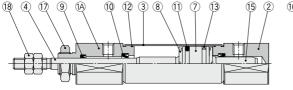
ø10, ø16 Rubber bumper





With auto switch

ø10, ø16 Air cushion







With auto switch

Component Parts

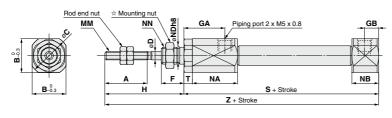
No.	Description	Material	Note					
1A	Rod cover	Aluminum alloy						
1B	Seal retainer	Aluminum alloy	ø6 only					
2	Head cover	Aluminum alloy						
3	Cylinder tube	Stainless steel						
4	Piston rod	Stainless steel						
5	Piston A	Aluminum alloy						
6	Piston B	Aluminum alloy						
7	Piston	Aluminum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

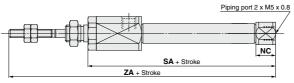
No.	Description	Description Material					
11	Piston seal	NBR					
12	Tube gasket	NBR					
13	Wear ring	Resin					
14	Cushion needle	Carbon steel					
15	Cushion ring	Aluminum alloy					
16	Needle seal	NBR					
17	Mounting nut	Rolled steel					
18	Rod end nut	Rolled steel					
19	Magnet	_					
20	Spacer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

Dimensions

Basic (B)

CJ2B6 - Stroke Head cover port location Z

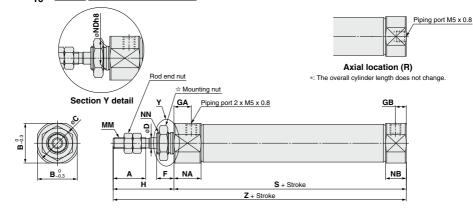






Head cover port location Axial location (R)

CJ2B $^{10}_{16}$ - Stroke Head cover port location Z



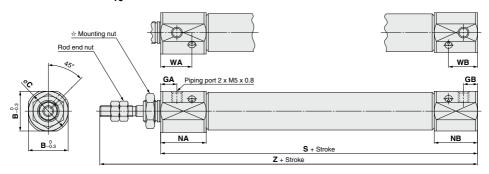
☆ For details of the mounting nut, refer to page 91.

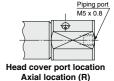
												[mm]							
Bore size	Α	В	С	D	F	GA	GB	Н	MM	NA	NB	NC	NDh8	NN	S	SA	Т	Z	ZA
6	15	12	14	3	8	14.5	5	28	M3 x 0.5	16	9.5	7	6_0.018	M6 x 1.0	51.5	49	3	79.5	77
10	15	12	14	4	8	8	5	28	M4 x 0.7	12.5	9.5	_	8_0.022	M8 x 1.0	46	_	_	74	_
16	15	18.3	20	5	8	8	5	28	M5 x 0.8	12.5	9.5	_	10_0.022	M10 x 1.0	47	_	_	75	_

Dimensions

Basic (B)

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





*: The overall cylinder length does not change.

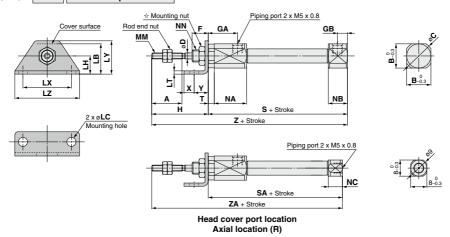
[☆] For details of the mounting nut, refer to page 91.

Dimensions of	her tha	n the ta	able be	low are	the sa	me as t	those o	n page	78.	[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	93
16	18.3	20	7.5	6.5	21	20	14.4	13.4	66	94

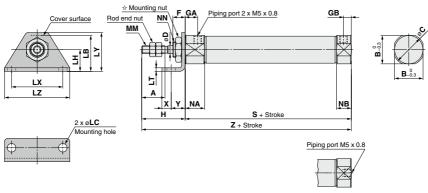
Dimensions

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.

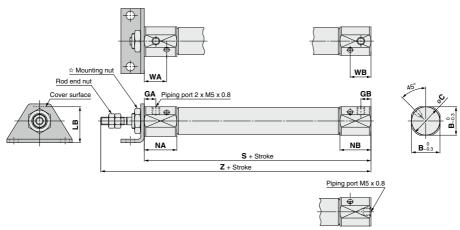
☆ For details of the mounting nut, refer to page 91.

																										l	[mm]
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	<u> </u>
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	<u> </u>

Dimensions

Single foot (L)

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



Head cover port location Axial location (R)

*: The overall cylinder length does not change.

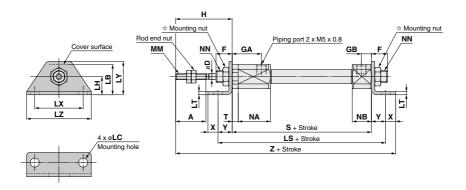
[☆] For details of the mounting nut, refer to page 91.

Dimensions of	her tha	n the ta	able be	low are	the sa	me as t	those o	n page	80.		[mm]			
Bore size B C GA GB LB NA NB WA WB S														
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			

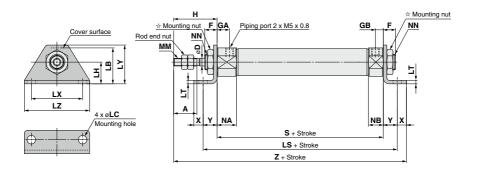
Dimensions

Double foot (M)

CJ2M6 - Stroke Z



CJ2M 10 - Stroke Z



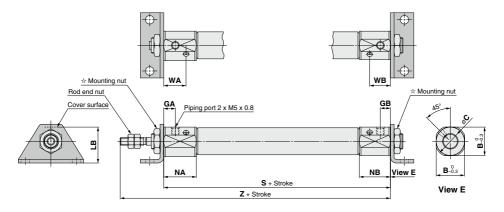
☆ For details of the mounting nut, refer to page 91.

																							[mm]
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 91.

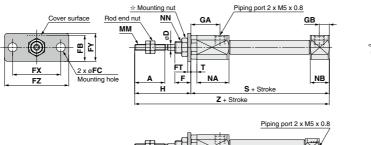
With Air Cushion/Dimensions other than the table below are the same as those on page 82. [mm]

	0111011	Dilliono	10110 0111	or unann	iic tabic	DOIOW	are trie c	unic us	111000 01	i page e	2. []
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

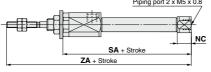
Dimensions

Rod flange (F)

CJ2F6 - Stroke Head cover port location Z



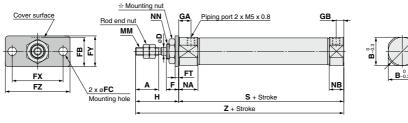






Head cover port location Axial location (R)

CJ2F 10 - Stroke Head cover port location Z





Head cover port location Axial location (R)

*: The overall cylinder length does not change.

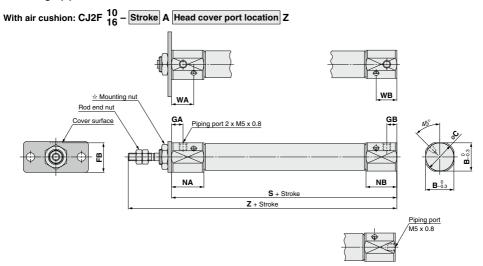
☆ For details of the mounting nut, refer to page 91.

			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.

 $[\]ensuremath{\dot{\mathbf{x}}}$ For details of the mounting nut, refer to page 91.

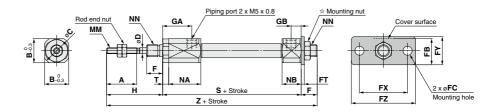
Dimensions ot	her tha	n the ta	able be	low are	the sar	me as t	hose o	n page	84.		[mm]			
Bore size B C FB GA GB NA NB WA WB S														
10	15	17	14.5	7.5	6.5	21	20	14.4	13.4	65	93			
16	18.3	20	19	7.5	6.5	21	20	14.4	13.4	66	94			

SMC

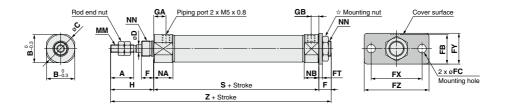
Dimensions

Head flange (G)

CJ2G6 - Stroke Z



CJ2G 10 - Stroke Z



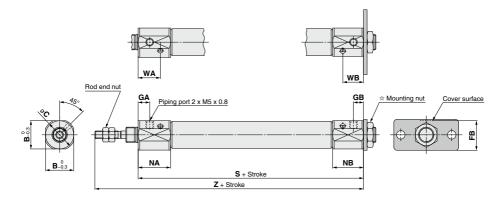
☆ For details of the mounting nut, refer to page 91

A I	oi detalis (JI IIIC I	mount	ng mu	i, reiei	ιο ρα	ge 31.															[mm]
В	ore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	MM	NA	NB	NN	S	T	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
	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



☆ For details of the mounting nut, refer to page 91.

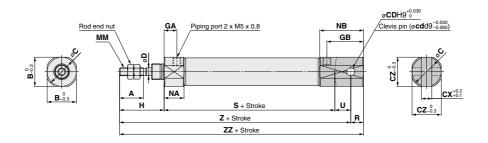
With Air Cushion/Dimensions other than the table below are the same as those on page 86. [mm]

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

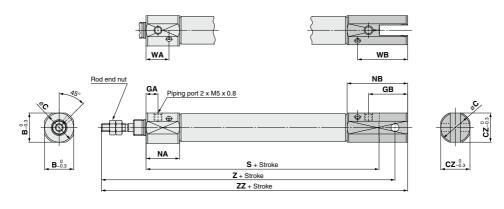
Dimensions

Double clevis (D)

CJ2D 10 - Stroke Z



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



*: A clevis pin and retaining rings are included.

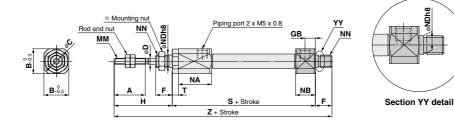
		-	-															[mm]
Bore size	Α	В	С	CD (cd)	СХ	CZ	D	GA	GB	Н	MM	NA	NB	R	S	U	Z	ZZ
10	15	12	14	3.3	3.2	12	4	8	18	28	M4 x 0.7	12.5	22.5	5	46	8	82	87
16	15	18.3	20	5	6.5	18.3	5	8	23	28	M5 x 0.8	12.5	27.5	8	47	10	85	93

With Air C	ushio	n /Dime	ensions	other th	nan the	table b	elow ar	e the sa	ame as	the tabl	e above	e. [mm]		
Bore size B C 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		
16	18.3	20	18.3	7.5	24.5	21	38	14.4	31.4	66	104	112		

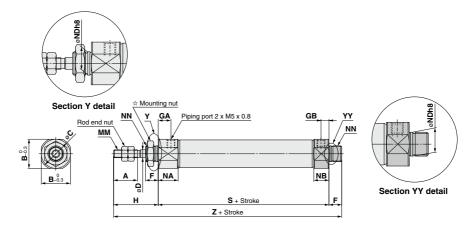
Dimensions

Double-side bossed (E)

CJ2E6 - Stroke Z



CJ2E 10 - Stroke Z



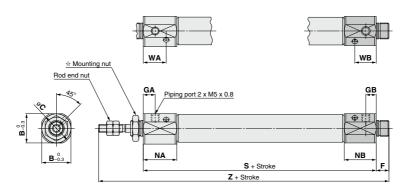
	× FOI details O	ille IIIo	unung i	iui, reie	i to pay	e 91.											[mm]
j	Bore size	Α	В	С	D	F	GA	GB	Н	MM	NA	NB	NDh8	NN	S	Т	Z
	6	15	12	14	3	8	14.5	5	28	M3 x 0.5	16	9.5	6_0.018	M6 x 1.0	51.5	3	87.5
Ī	10	15	12	14	4	8	8	5	28	M4 x 0.7	12.5	9.5	8_0.022	M8 x 1.0	46	_	82
	16	15	18.3	20	5	8	8	5	28	M5 x 0.8	12.5	9.5	10_0,022	M10 x 1.0	47	_	83

SMC

Dimensions

Double-side bossed (E)

With air cushion: CJ2E 10 - Stroke AZ



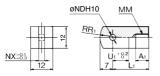
 $\ \, \dot{x}$ For details of the mounting nut, refer to page 91.

With Air Cushion/Dimensions other than the table below are the same as those on page 89. [mm]

That Fill Gading is below and the table below are the same as those on page of. [
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

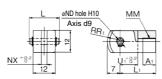
Dimensions of Accessories (Options)

Single Knuckle Joint Material: Rolled steel



								[mm]
Part no.								
I-J010C								
I-J016C	16	8	25	M5 x 0.8	5 ^{+0.048}	6.4	12	14

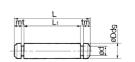
Double Knuckle Joint Material: Rolled steel



								[mm]
Part no.	Applicable bore size	Αı	-	LL		-1	ı	MM
Y-J010C	10	8	15	5.2	.2 21		M4 x 0.7	
Y-J016C	16	11 1		6.6	.6 21		M	5 x 0.8
Part no.	NDd9	NDH	10	NX		R₁		U₁
Y-J010C	$3.3^{-0.030}_{-0.060}$	3.3+0.	048	3.2		2 8		10
Y-J016C	5 ^{-0.030} 5 _{-0.060}	5+0.0	6.		3.5 1		2	10

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

Knuckle Pin Material: Stainless steel

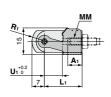


								[mm]
Part no.								
CD-J010								
IY-J015	16	5-0.030 5-0.060	4.8	16.6	12.2	1.5	0.7	Type C 5

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

Double Knuckle Joint (With One-touch Connecting Pin)





							[mm]	
\ 1	Lı	ММ	NDd9	NDH10	NX	Rı	U ₁	
8	21	M4 x 0.7	3.3-0.030	3.3+0.048	3.2	8	10	
1	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
IY-J16	16	5 ^{-0.030}

Mounting Nut

Applicable hore size

Y-J10 Y-J16

Material: Carbon steel

d	
5 1	
B ₁	
<u>→ □1</u> → H ₁	

					[mm]
Part no.	Applicable bore size	B ₁	C ₁	d	Hı
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.)

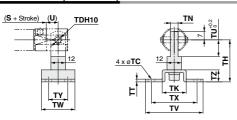
Rod End Nut

Material: Carbon steel



Applicable B. C. d. L.	
Part no. Applicable bore size B2 C2 d H	12
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	1

Pivot Bracket (T-bracket)



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										
CJ-T016C	16	5.5	5 ^{+0.048}	35	20	6.4	2.3	14	48	28	38	16	10

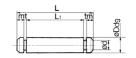
*: A T-bracket includes a T-bracket base, single knuckle joint, hexagon socket head bolt and spring washer.

[mm]

*: For dimensions of (U) and (S + Stroke), refer to the double clevis drawing on page 88.

Clevis Pin

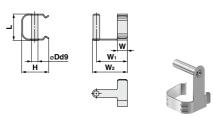
Material: Stainless steel



								[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.

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



							[mm]			
Part no.	Applica bore si			Dd9 H L		L	w			
CD-J10	10		3.	3-0.030	13.4	13.2	4			
CD-J16	16		4)	5-0.030 -0.060	18.2	19.5	5			
Part no.	W 1	W	1 2		Note					
CD-J10	12	1	5	Cannot	Cannot be mounted on cylinders with air					
CD-J16	15	1	8	cushion,	cushion, or rail mounting type auto switches.					

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

Rod End Cap

Material: Polyacetal

Flat type/CJ-CF□□□

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







										[mm
į	Par	Applicable	Α	D		ММ	N	ь	w	
	Flat type	Round type	bore size	^	ייו	-	IVIIVI	14	n	W
	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)

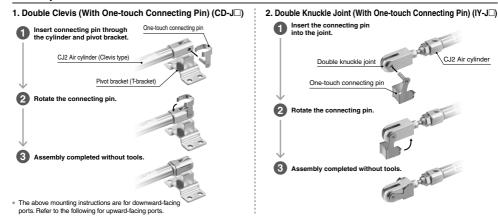
				,			
Bore size [mm]	Foot	Foot Flange		Double knuckle joint*	Mounting nut	Rod end nut	
10		_	I-J010SUS	Y-J010SUS	_	NTJ-010SUS	
16	CJ-L016SUS	CJ-F016SUS	I-J016SUS	Y-J016SUS	SNJ-016SUS	NTJ-015SUS	

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

CJ2 Air cylinder

Precautions

Assembly Procedures



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

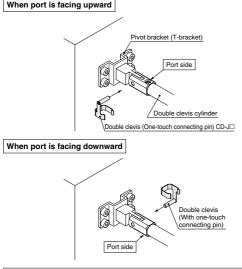
When connecting a double clevis cylinder to a pivot bracket (T-bracket), it is recommended that the pivot bracket (T-bracket) and the cylinder be connected with the one-touch connecting pin first, before fastening the pivot bracket.

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

Warning

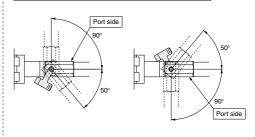
For assembling the clevis type to the pivot bracket, refer to the figure below.

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

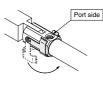


∕∿Warning

Perform the mounting within the following range.



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



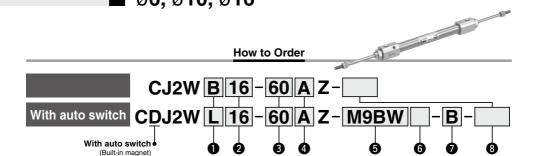
* Attach the double knuckle joint within 180° (±90° from center). Other mounting methods are the same as the above.



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

CJ2W Series ø6, ø10, ø16





Mounting

В	Basic
L	Foot
F	Flange
F	

*: 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 Poro ciza

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

Mulliper of auto switche							
Nil	2 pcs.						
S	1 pc.						
n	"n" pcs.						

3 Cylinder standard stroke [mr	n
Refer to "Standard Strokes" on page	9

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 178 for auto switch mounting brackets.
- *: ø6: Band mounting only

Cusnion								
	Nil	Rubber bumper						
	Α	Air cushion						

*: ø6: Rubber bumper only

8 Made to Order Refer to page 95 for details.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		pecial function Electrical By Wiring (Output) DC AC Property (Output)		14 <i>6</i>		Load vo	oltage		Auto swit	tch model		Lea	d wir	e ler	ngth	[m]	Day and and	A														
Тур		entry	apor	Wiring (Output)		DC	AC	Band m	ounting	Rail mo	unting	0.5	1	3	5	None	Pre-wired connector		cable ad													
		Citaly	рģ	(Output)		DO	Α0	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														
۾		Grommet		3-wire (PNP)		5 V,12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	IIC GICUIL														
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	-	0]													
		Connector		2-wire		12 V		_	H7C	J79C	_	•	_	•	•	•																
anto	Diamental indiantal		1	3-wire (NPN)		E V 10 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	_	0	IC aireuit	1													
	Diagnostic indication		Yes	3-wire (PNP)	24 V	5 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IC circuit	PLC													
state	(2-color indicator)	ator)												2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	1 FLC			
		Grommet	Grommei	Grommet	, Grommet	Grommet		3-wire (NPN)		5 1/ 40 1/		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit	1									
Solid	Water resistant (2-color indicator)																3-wire (PNP)		5 V,12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	11C circuit	
တိ	(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)	1		4-wire (NPN)	7	5 V,12 V		_	H7NF	_	F79F	•	_	•	0	_	0	IC circuit	1													
등				Grommet				3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	_	_	_	IC circuit	_									
switch		Grommet	Grommet		Yes			_	200 V	_		A72	A72H	•	_	•	_	_	_													
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —														
anto			No			12 V	100 V or less	s A90V A90 A90'	A90V	A90	•	_	•	_	_	_	IC circuit	Relay.														
				Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ												
Reed			Connector	No	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.

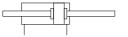
 *2: 1 m type lead wire is only applicable to D-A93.

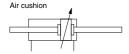
- *: Lead wire length symbols: 0.5 m Nil (Example) M9NW ··· M (Example) M9NWM 1 m-
 - 3 m----- L (Example) M9NWL 5 m---- Z (Example) M9NWL (Example) M9NWZ None----- N (Example) H7CN
- *: Since there are other applicable auto switches than listed above, refer to page 179 for details. *: Solid state auto 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 180.)

_			-	•			
Symbol	Specifications						
-X446	PTFE grease						

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
-XC22	Fluororubber seal * Not available with air cushion
-XC51	With hose nipple
-XC85	Grease for food processing equipment

Refer to pages 172 to 179 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 183 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 Web Catalog.

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 [MРа				
pressure	Air cushion	_	0.1 MPa					
Ambient and fluid to	emperature	Without auto switch: -10°C to 70°C (No freezing) With auto switch: -10°C to 60°C						
Cushion		Rubber bumper Rubber bumper/Air cushion						
Lubrication		Not required (Non-lube)						
Piston speed	Rubber bumper	50 to 750 mm/s						
riston speed	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	nce	+1.0 0						

Standard Strokes

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

- *: 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 pages 8 to 19. 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 68 for the list of brackets and page 91 for details about part numbers and dimensions.

	●···Mounted of	on the product.	O…Please or	der separately.
	Mounting	Basic	Foot	Flange
Standard	Mounting nut	•	•	•
蠹	Rod end nut	•	•	•
	Single knuckle joint	0	0	0
Option	Double knuckle joint (including a pin and retaining rings)	0	0	0
<u>P</u>	Double knuckle joint (With one-touch connecting pin)	0	0	0
~	Rod end cap (Flat/Round type)	0	0	0

*: Ø10 and Ø16 only

Mounting Brackets/Part No.

Maunting brookst	Bore size [mm]											
Mounting bracket	6	10	16									
Foot	CJ-L006C	CJ-L010C	CJ-L016C									
Flange	C:I-E006C	CJ-F010C	CJ-F016C									

Weights

						[g
	Bore size [mm]	Ru	bber bum	Air cu	shion	
-	sore size [mm]	6	10	16	10	16
Basic weight	Basic	05	-00		-00	61
(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 stroke--..... 45 stroke •Mounting bracket weight---- 16 (Foot)

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



^{*:} Stainless steel mounting brackets and accessories are also available. Refer to page 92 for details.

Clean Series

Specifications

Mounting

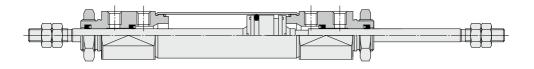
Air cylinder which is applicable for the system which discharges leakage from the rod section directly into the outside of clean room by relief port and making an actuator's rod section having a double seal construction.

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 95.)
Auto switch	Mountable (Band mounting)

Basic, Foot, Flange

For the detailed specifications, refer to the Web Catalog.

Construction (Not able to disassemble)



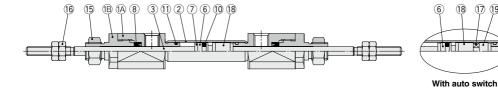


With auto switch

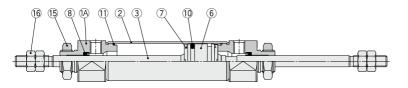
Construction (Not able to disassemble)

ø6

Rubber bumper



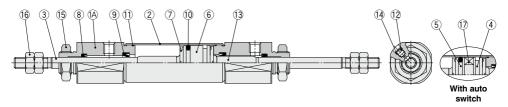
ø10, ø16 Rubber bumper





With auto switch

ø10, ø16 Air cushion



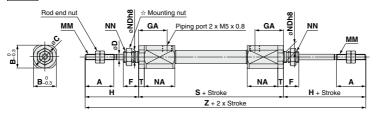
Component Parts

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	

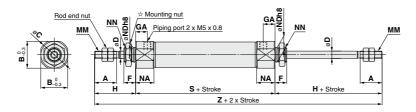
No.	Description	Material	Note
10	Piston seal	NBR	
11	Tube gasket	NBR	
12	Cushion needle	Carbon steel	
13	Cushion ring	Aluminum alloy	
14	Needle seal	NBR	
15	Mounting nut	Rolled steel	
16	Rod end nut	Rolled steel	
17	Magnet	_	
18	Spacer A	Aluminum alloy	ø6 only
19	Spacer B	Aluminum alloy	ø6 only

Basic (B)

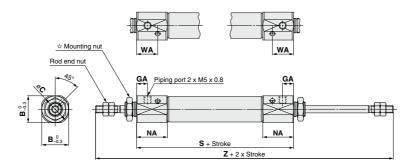
CJ2WB6 - Stroke Z



CJ2WB 10 - Stroke Z



With air cushion: CJ2WB 10 - Stroke AZ



☆ For details of the mounting nut, refer to page 91.

														[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

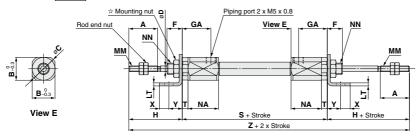
With Air Cushion/Dimensions other than the table below are the same as the table above.

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

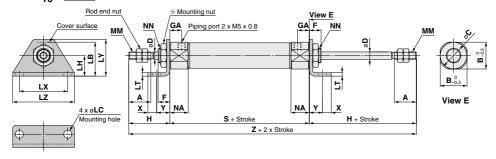
*: () in S and Z dimensions: With auto switch

Foot (L)

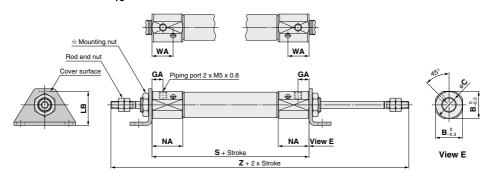
CJ2WL6 - Stroke Z



CJ2WL $^{10}_{16}$ - Stroke Z



With air cushion: CJ2WL 10 - Stroke AZ



☆ For details of the mounting nut, refer to page 91.

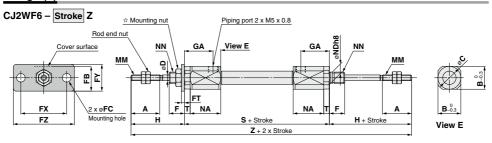
																						[IIIIII]
Bore size	Α	В	С	D	F	GA	Н	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NN	S	Т	Х	Υ	Z
6	15	12	14	3	8	14.5	28	15	4.5	9	1.6	24	16.5	32	M3 x 0.5	16	M6 x 1.0	61 (66)	3	5	7	117 (122)
10	15	12	14	4	8	8	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.7	12.5	M8 x 1.0	49	_	5	7	105
16	15	18.3	20	5	8	8	28	23	5.5	14	2.3	33	25	42	M5 x 0.8	12.5	M10 x 1.0	50	_	6	9	106
With Air Cushion Dimensions other than the table helow are the came as the table above as																						

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

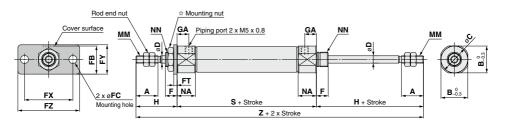
Bore size	В	С	GA	LB	NA	WA	S	Z
10	15	17	7.5	16.5	21	14.4	66	122
16	18.3	20	7.5	23	21	14.4	67	123



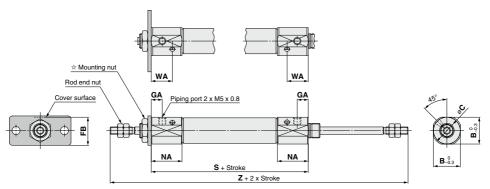
Flange (F)



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







☆ For details of the mounting nut, refer to page 91.

																			[iiiiii]
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	With Air Cushion Dimensions other than the table below are the came as the table above. *: () in S and Z dimensions: With auto switch													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





CDJ2B 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	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 182 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.

9	bore size
6	6 mm
10	10 mm
16	16 mm

Head cover port location

Nil	Perpendicular to axis		
R	Axial	10	

- *: 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							
Nil	2 pcs.						
S	1 pc.						
n	"n" ncs						

*: Refer to "Ordering Example of Cylinder Assembly" on page 102.

Refer to "Standard Strokes" on page 102.

Cvlinder standard stroke [mm]

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	

- *: For rail mounting, screws and nuts for 2 auto switches come with the rail.
- *: Refer to page 178 for auto switch mounting brackets.
- *: Ø6: Band mounting only

Single acting, Spring extend Rod end bracket

Action

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

Single acting, Spring return

- *: Rod end bracket is shipped together with the product but not assembled
- *: Single/Double knuckle joint: ø10 and ø16 only
- **: Refer to page 91 for the double knuckle joint (with one-touch connecting pin).

Made to Order

Refer to page 102 for details.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches

			Electrical	Flantriani	Clastrias	Clastrias	Clastrias	匮	Wiring		Load vo	oltage		Auto swit	ch model		Lead	d wire lengt			[m]	Pre-wired	Ammi	aabla																		
Тур	Special function entry টু		ndicator			DC	AC	Band me	ounting	Rail mo	Rail mounting		1	3	5	None	connector	Appli																								
		entry	휼	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	connector	load																								
				3-wire (NPN)		5 V/ 40 V/		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit																								
ء ا		Grommet		3-wire (PNP)]	5 V,12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	I —	0	IIC CITCUIL																								
switch				2-wire]	12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	_	0																									
		Connector	Ì	2-wire		12 V		_	H7C	J79C		•	_	•	•	•	_	1 —																								
율	Diamandia indiantia			3-wire (NPN)]	E V 10 V]	M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	-	0	IC aireuit	Dalau																							
a a	Diagnostic indication (2-color indicator)		Yes	3-wire (PNP)	24 V	5 V,12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IC circuit	PLC																							
state	(2-color indicator)			2-wire]	12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	1 1 20																							
	14/	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	Grommet	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	Water resistant (2-color indicator)									3-wire (PNP)		J V, 12 V			M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IIO GIIGUII																	
S	(E color irralcator)																				2-wire		12 V	- 1	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_							
	With diagnostic output (2-color indicator)		L						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	_																							
\ <u>=</u>		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_																									
	anto ——			l i				100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —																							
Ę		No								No	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	_	<u> </u>	_	IC circuit	Relay,																
8		Connector	Yes	Z-WIFE	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLC																							
Reed		Connector	Connector	Connector	Connector	Connector	No	No	5			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, refer to page 179 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.)



Symbol

Single acting, Spring return, Rubber bumper

Single acting, Spring extend, Rubber bumper





Made to Order: Individual Specifications (For details, refer to pages 180 and 182.)

Symbol	
	PTFE grease
-X773*1	Short pitch mounting/Single acting, spring return
	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

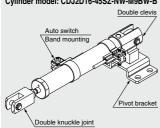
Refer to pages 172 to 179 for cylinders with auto switches

- · 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 183 before handling.

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2D16-45SZ-NW-M9BW-B



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

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

Specifications

Bore size [mm]		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 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		0.012 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 pages 8 to19. 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 1571 (Table (2): Spring Reaction Force).

Mounting Brackets/Part No.

Mounting bracket	Bore size [mm]				
Woulding 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 68 for the list of brackets and page 91 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)
Stand- ard	Mounting nut	•	•	•	_	_
	Rod end nut	•	•	•	•	•
S	Clevis pin (including retaining rings)	_	_	_	•	•
Option	Double clevis (With one-touch connecting pin)	Δ	Δ	Δ	O (-X2838)	(-X2838)
	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	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 92 for details.

Theoretical Output

Refer to the "Single acting, Spring return cylinder" in Theoretical Output of Technical data 3 in page 1575. 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 been 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 Web Catalog.



Weights

<u> </u>	ing Return		6				0				6	[9
	Bore size [mm]		, 0					,				
	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
Basic weight	45 stroke	23	21	23	44	44	45	45	95	95	102	97
. ĕ	60 stroke	26	24	27	54	54	55	54	113	113	119	115
.0	75 stroke								134	134	141	136
388	100 stroke								167	167	174	169
	125 stroke								204	204	212	206
	150 stroke								227	227	234	229
Mounting bracket weight	Single foot	8	8	8			8			2	25	
le je	Double foot	16	16	16		1	6			5	50	
용토	Rod flange	5	5	5			5			1	3	
pra p	Head flange	5	5	5			5			1	3	
	Clevis pin	_	_		_	_	1	_	_	_	3	_
	One-touch connecting pin for double clevis	_	_	_	_	_	2	_	_	_	4	_
	Single knuckle joint	_	_	_		•	7			2	23	
sories	Double knuckle joint (including knuckle pin)	_	_	_		2	25			2	21	
Accessories	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	
	Pivot Bracket (T-bracket)	_	_	_		3	32			5	50	

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

Example) CJ2L10-45SZ

-----44 (ø10-45 stroke)

44 + 8 = **52 g**

Carina	Extend
SDIIIIG	Exterio

Spri	ng Extend										[g]
	Bore size [mm]	(6		1	0			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
 	45 stroke	24	24	42	42	44	43	93	93	100	96
Basic weight	60 stroke	27	28	51	51	52	51	109	109	116	112
, <u>S</u>	75 stroke							129	129	137	133
8g	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	
wei	Double foot	16	16		1	6			5	0	
dour	Rod flange	5	5			5			1	3	
bra	Head flange	5	5			5			1	3	
	Clevis pin	_	_	_	_	1	_	_	_	3	_
	One-touch connecting pin for double clevis	-	_	_	_	2	_	_	_	4	_
l	Single knuckle joint	ı	_		1	7			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)	_	_		3	32			5	0	

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

Example) CJ2L10-45TZ

SMC

^{*:} 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:

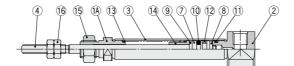
Basic weight -----42 (ø10-45 stroke)

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

Construction (Not able to disassemble)

Single acting, Spring return

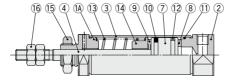






With auto switch

ø10, ø16

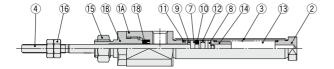




With auto switch

Single acting, Spring extend

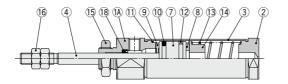






With auto switch

ø10, ø16





With auto switch

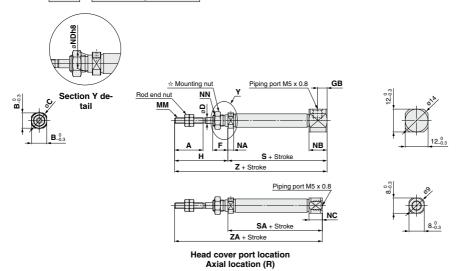
Component Parts

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	

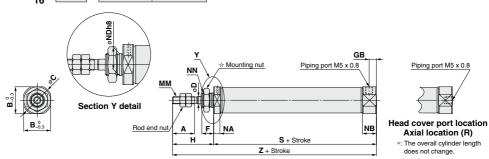
No.	Description	Material	Note
10	Piston seal	NBR	
11	Tube gasket	NBR	
12	Wear ring	Resin	
13	Return spring	Piano wire	
14	Spring seat	Aluminum alloy	
15	Mounting nut	Rolled steel	
16	Rod end nut	Rolled steel	
17	Magnet	_	
18	Rod seal	NBR	

Single Acting, Spring Return: Basic (B)

CJ2B6 - Stroke S Head cover port location Z



CJ2B 10 - Stroke S Head cover port location Z

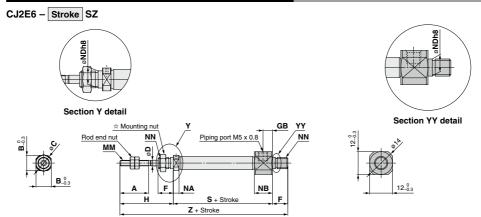


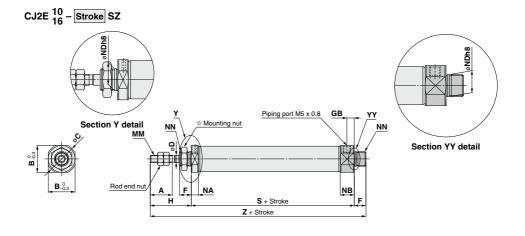
☆ For details of the mounting nut, refer to page	91
--	----

☆ For de	etails	of the	mour	iting r	nut, re	fer to	page	91.													[mm]
D																		3			
Bore	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 s	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				
•	15	0	9	3	٥	5	20	IVI3 X U.5	٥	9.5	′	0-0.018	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
Bore					SA							Z						ZA	١		
Dole	5 to	16 to	\ 31 t	0 46	to 61	to 76	3 to 11	01 to 126 to	5 to	16 to	31 t	146 to 6	1 to 76 to	101 to 1	26 to	5 to 16 t	0 31 to	146 to 16	31 to 76	to 101 t	n 126 to

Dava				S	Α								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				
О	(39.5)	(48.5)	(52.5)	(66.5)	_	_	_	_	(70)	(79)	(83)	(97)	_	-	_	_	(67.5)	(76.5)	(80.5)	(94.5)	_	_	_	_
10	$\top -$	I —	-	_	_	_	_	_	73.5	81	93	105	_	_	_	_	_	_	_	_	_	—	_	_
16	_	_			_		-	_	73.5	82	94	106	112	136	154	166	_		_	_	_		-	

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





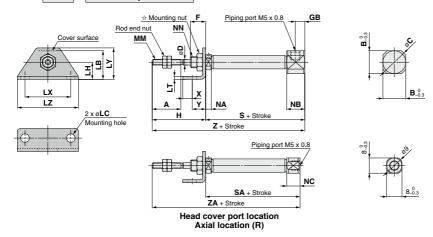
☆ For details of the mounting nut, refer to page 91.

																													[mm]
																	•	3							Z	Z			
	ore ize	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
51	ze													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
	_	45	_	_			-		MO 0.5		۸.	0.0	M6 x 1.0	37	46	50	64					73	82	86	100				
	ן ס	15	8	9	3	l °	5	20	M3 x 0.5	٥	9.5	0-0.018	IVIO X 1.U	(42)	(51)	(55)	(69)	_	_	_	_	(78)	(87)	(91)	(105)	_	_	_	-
1	0	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	_	_	_	_
	6	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

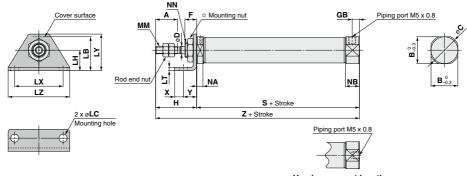
^{*: ()} in S and Z dimensions: With auto switch

Single Acting, Spring Return: Single Foot (L)

CJ2L6 - Stroke S Head cover port location Z



CJ2L 10 - Stroke S Head cover port location Z



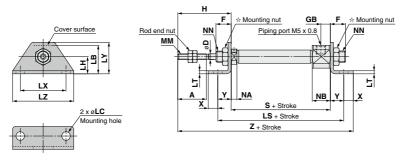
Head cover port location Axial location (R)

*: The overall cylinder length does not change.

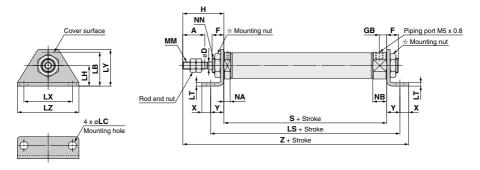
☆ For d	etails	of the	mo	untii	ng nı	ıt, ref	er to	pag	e 91																			[mm]
Bore						Т		Т																5	;			
size	Α	В	С	D) F	F∣G	BI	1	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NI NI				31 to		61 to			
								_												1	5 st 3	30 st	45 st	60 st	75 st	100 st	125 st	150 st
6	15	12	14	3	ء ا	3 5	, l 2	.	13	4.5	9	1.6	24	16.5	32	M3 x 0.		0.5	M6 x	10	37	46	50	64				
U	15	12	14	3	' °	' '	' '	۱ ۰	13	4.5	9	1.0	24	10.5	32	IVIO X U.	د ا د	9.5	IVIOX	1.0	42)	(51)	(55)	(69)	_	_	_	_
10	15	12	14	4	. 8	3 5	5 2	8	15	4.5	9	1.6	24	16.5	32	M4 x 0.	7 4.8	9.5	M8 x	1.0	15.5	53	65	77	_	_	_	_
16	15	18.3	20	5	8	3 5	5 2	8	23	5.5	14	2.3	33	25	42	M5 x 0.	8 4.8	9.5	M10 x	1.0	15.5	54	66	78	84	108	126	138
Bore					S	Α										7	<u> </u>							Z	'A			
	5 to	16 to	31	to 4	16 to	61 to	76 to	10	1 to 1	26 to	χ	Υ	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 6	60 st	75 st	100 s	t 125	5 st 1	50 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				
6	(39.5)	(48.5	(52.	5) (6	66.5)	_	-	-	-	-	5		(70)	(79)	(83)	(97)	_	_	-	_	(67.5)	(76.5)	(80.5)	(94.5)	_	_	_	_
10	_	Ī-	-	-	-	_	_	1-	-	- 1	5	7	73.5	81	93	105	_	_	_	_	_	-	-	T —	—	_	_	_
16	_	-	_	-	_	_	_	-	-	-	6	9	73.5	82	94	106	112	136	154	166	_	_	_	_	_	_	_	_

Single Acting, Spring Return: Double Foot (M)

CJ2M6 - Stroke SZ



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



☆ For details of the mounting nut, refer to page 91.

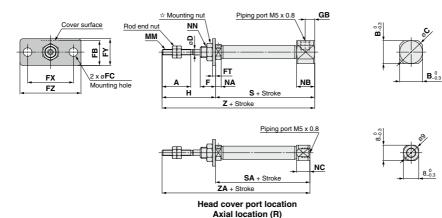
																						[mm]
D												L	S									
Bore size	A	D	F	GB	H	LB	LC	LH	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	LT	LX	LY	LZ	MM	NA
Size									15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st						
6	15	3	8	5	28	13	4.5	9	51	60	64	78					1.6	24	16.5	32	M3 x 0.5	3
0	15	٥	0	5	20	13	4.5	9	(56)	(65)	(69)	(83)	-	_	-	_	1.0	24	10.5	32	IVI3 X U.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
Bore								S										Z				
oizo	NB	N	N	5 to	16 to	31 to	46 t	0 61	to 76	to 101	to 126	to X	(Y	5	to 16	to 31	to 46	to 6	1 to	76 to	101 to 126 to	5

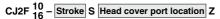
	Bore							•										<u> </u>			
	size	NB	NN								126 to 150 st		Y							101 to 125 st	
		M6 x 1.0	37 (42)	46 (51)	50 (55)	64 (69)	_	_	_	_	5	7	77 (82)	86 (91)	90 (95)	104 (109)	_	_	_	_	
	10 9.5	M8 x 1.0	45.5	53	65	77	_	_	I —	_	5	7	85.5	93	105	117	_	_	_	_	
Ξ	16		M10 x 1.0	45.5	54	66	78	84	108	126	138	6	9	88.5	97	109	121	127	151	169	181

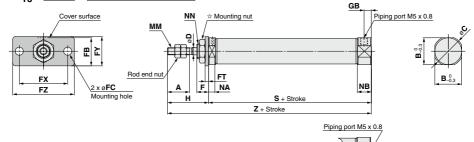
^{*: ()} in LS, S and Z dimensions: With auto switch

Single Acting, Spring Return: Rod Flange (F)

CJ2F6 - Stroke S Head cover port location Z







Head cover port location

Axial location (R)
*: The overall cylinder length does not change.

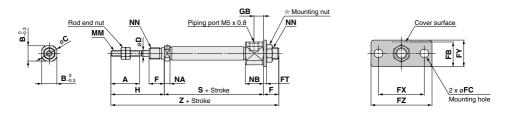
☆ For de	tails o	of the	mour	nting	g nut,	refer	to pag	ge 91.																		f1
																						-	s			[mm]
Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GB	н	ММ	NA	NB	NC	NN								126 to
5120																			15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
6	45	40		_		144	4.5	4.0	- 4		32	_				0.5	-	140 4.0	37	46	50	64				
ь	15	12	14	3	8	11	4.5	1.6	24	14	32	5	28	M3 x 0.5	5 3	9.5	/	M6 x 1.0	(42)	(51)	(55)	(69)	_	_	_	_
10	15	12	14	4	8	13	4.5	1.6	24	14	32	5	28	M4 x 0.7	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	8 4.8	9.5	_	M10 x 1.0	45.5	54	66	78	84	108	126	138
																										_
Bore					S	Α								Z	4							Z	Α			
size	5 to	16 to	31	to	46 to	61 to	76 to	101 t	0 126	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 8	st 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
_	34.5	43.5	47	.5	61.5					- 6	65	74	78	92					62.5	71.5	75.5	89.5				
6	(39.5	(48.5	(52	.5)	(66.5)	_	_	-	-	- (7	70)	(79)	(83)	(97)	_	_	_	-	(67.5)	(76.5)	(80.5)	(94.5)	_	_	_	_
10										7	2 5	01	00	105												

106 112 136 154 166

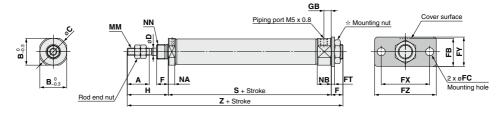
73.5 82

Single Acting, Spring Return: Head Flange (G)

CJ2G6 - Stroke SZ



CJ2G 10 - Stroke SZ

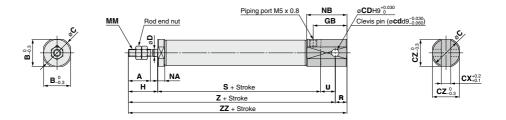


☆ For details of the mounting nut, refer to page 91.

																			[mm]
Bore size	А	В	С	D	F	FB	FC	FT	FX	FY	FZ	GB	н	MN	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	Мє	S 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	M8	3 x 1.0
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	5	28	M5 x	8.0	4.8	9.5	M1	0 x 1.0
D					S									7	<u>'</u>				
Bore size	5 to 15 st	16 to			16 to 60 st	61 to 75 st	76 to 100 st	101 to 125 st	126 to			16 to 30 st	31 to 45 st	46 to 60 st	61 to 75 st	76 100		01 to 25 st	126 to 150 st
6	37	46	5 (5	-	64 (69)	_	_	_	_	7:	- 1	82 (87)	86 (91)	100 (105)	_	_	-	_	_
•	(42)	(51)	(3	ין (כ	(00)														
10	45.5	53	6		77	_	_	_	_	81		89	101	113	_	-	-	_	_
		- ' '		5		— 84	— 108	— 126	138	81 81	.5	89 90	101	113 114	— 120	14	_	— 162	 174

Single Acting, Spring Return: Double Clevis (D)

CJ2D 10 - Stroke SZ



																							[mm]
Ī																			- 5	3			
	Bore size	Α	В	С	CD	CX	CZ	D	GB	Н	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	12	14	3.3	3.2	12	4	18	20	M4 x 0.7	4.8	22.5	5	8	45.5	53	65	77	_	_	_	
ı	16	15	18.3	20	5	6.5	18.3	5	23	20	M5 x 0.8	4.8	27.5	8	10	45.5	54	66	78	84	108	126	138

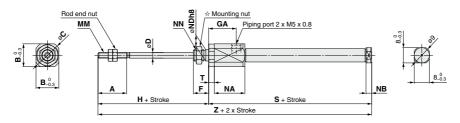
				7	Z							Z	Z			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
10	73.5	81	93	105	_	_	_	_	78.5	86	98	110	_	_	_	$\overline{}$
16	75.5	84	96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

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

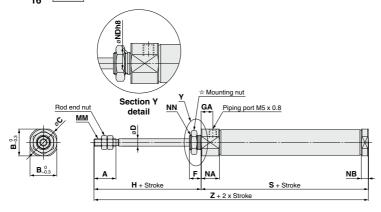
SMC

Single Acting, Spring Extend: Basic (B)

CJ2B6 - Stroke TZ



CJ2B 10 - Stroke TZ



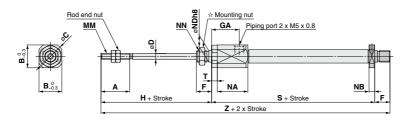
☆ For details of the mounting nut, refer to page 91.

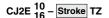
[mm] С NDh8 В D F GA MM NA NB NN Bore size Т 6 15 12 14 3 8 14.5 28 M3 x 0.5 16 3 6-0.018 3 M6 x 1.0 10 15 12 14 4 8 8 M4 x 0.7 12.5 4.8 8_0.02 M8 x 1.0 15 5 28 M5 x 0.8 12.5 4.8 10_0.022 M10 x 1.0 16 18.3 20 8 8

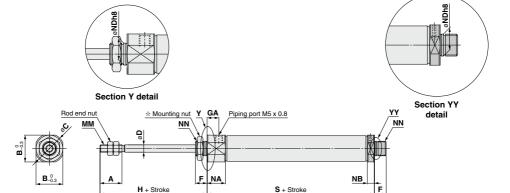
					3							Z	<u> </u>			
Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
	46.5	55.5	59.5	73.5					74.5	83.5	87.5	101.5				
•	(51.5)	(60.5)	(64.5)	(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

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

CJ2E6 - Stroke TZ







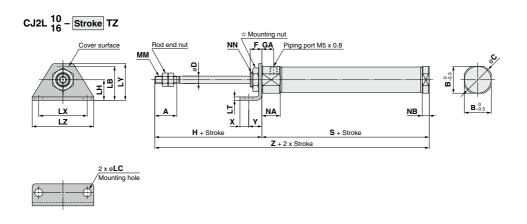
Z + 2 x Stroke

☆ For details	of the m	ounting r	nut, refer	to page 9	91.											[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 :	¢ 0.5	16	3		6-0.018	M6	x 1.0
10	15	12	14		4	8	8	28	M4 :	¢ 0.7	12.5	4.8		8-0.022	M8	x 1.0
16	15	18.3	20)	5	8	8	28	M5 :	k 0.8	12.5	4.8	1	0_0.022	M10	x 1.0
					3								7			
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
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



Single Acting, Spring Extend: Single Foot (L)

CJ2L6 - Stroke TZ Rod end nut NN F GA Piping port M5 x 0.8 NB B 2 x o LC Mounting hole H + Stroke Z + 2 x Stroke Rod cover side Head cover side

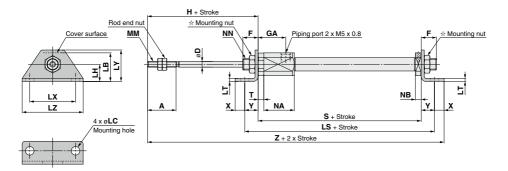


☆ For details	of the	mounting	nut	refer to	nage	Q1
A I OI UCIAIIS	OI LITE	mounting	mut,	Telel 10	page	91.

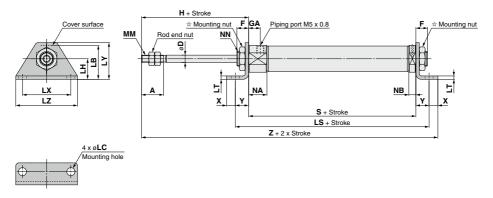
× 1 or dotalic	01 1110	mount	ing no	it, roic	n to pag	01.															[mm]
Bore size	A	В	С	D	F	GA	н	LB	LC	LH	LT	1	LX	LY	LZ	N	ІМ	NA	NB	NN	т
6	15	12	14	3	8	14.5	28	15	4.5	9	1.6		24	16.5	32	МЗ	x 0.5	16	3	M6 x 1.0	3
10	15	12	14	4	8	8	28	15	4.5	9	1.6		24	16.5	32	M4	x 0.7	12.5	4.8	M8 x 1.0	_
16	15	18.3	20	5	8	8	28	23	5.5	14	2.3		33	25	42	M5	x 0.8	12.5	4.8	M10 x 1.0	
													1					-			
						<u> </u>			,									4			
Bore size	5 to	16 t	0 3	1 to	46 to	61 to	76 to	101 to	126	to)	(Υ	5 to	o .	6 to	31 to	46 to	61 to	o 76	to 101 to	126 to
	15 st	30 :	st 4	5 st	60 st	75 st	100 st	125 st	150	st			15 8	st 3	30 st	45 st	60 st	75 s	t 100	0 st 125 st	150 st
•	46.5	55.	5 5	9.5	73.5						5	7	74.	5	33.5	87.5	101.5				
6	(51.5)	(60.	5) (6	4.5)	(78.5)	_	_	_	-	- -	·	/	(79.	5) (38.5)	(92.5)	(106.5)	-	-	_ _	_
10	48.5	56	i (68	80	_	_	<u> </u>	-	- 5	5	7	76.	5	84	96	108	<u>-</u>	-	- -	_
16	48.5	57		69	81	87	111	129	14	1 6	3	9	76.	5	85	97	109	115	5 10	39 157	169

Single Acting, Spring Extend: Double Foot (M)

CJ2M6 - Stroke TZ



CJ2M 10 - Stroke TZ



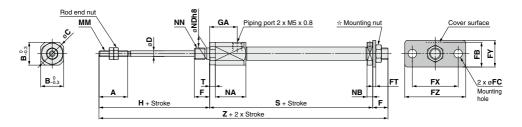
☆ For details of the mounting nut, refer to page 91

	o.			ga., .	0.0. 10	page	•														[mm]
D												L	S								
Bore size	A	D	F	GA	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
SIZE									15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st					
6	15	_	_	14.5	28	15	4.5	9	60.5	69.5	73.5	87.5					1.0	0.4	16.5	32	M3 x 0.5
•	15	3	8	14.5	20	15	4.5	9	(65.5)	(74.5)	(78.5)	(101.5)	_	_	_	_	1.6	24	10.5	32	IVIS X U.S
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

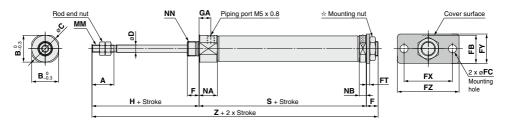
Bore								3									- 7	<u> </u>			
size	NA	NB	NN	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	Х	Y	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
Size				15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st			15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
	4.0		140 4.0	46.5	55.5	59.5	73.5					-		86.5	95.5	99.5	113.5				
ь	16	3	M6 x 1.0	(51.5)	(60.5)	(64.5)	(78.5)	_	_	-	_	5	′	(91.5)	(100.5)	(104.5)	(118.5)	_	_	_	_
10	12.5	4.8	M8 x 1.0	48.5	56	68	80	_	_	_	_	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

Single Acting, Spring Extend: Head Flange (G)

CJ2G6 - Stroke TZ



CJ2G 10 - Stroke TZ



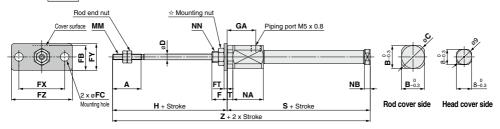
☆ For details of the mounting nut, refer to page 91.

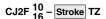
Bore size	A	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	н	ММ	NA	NB	NN NN
6	15	12	14	3	8	13	4.5	1.6	24	14	32	14.5	28	M3 x 0.5	16	3	M6 x 1.0
10	15	12	14	4	8	13	4.5	1.6	24	14	32	8	28	M4 x 0.7	12.5	4.8	M8 x 1.0
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	8	28	M5 x 0.8	12.5	4.8	M10 x 1.0

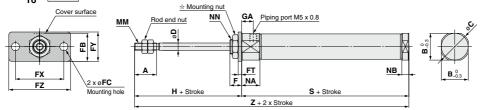
	Dava					3								<u> </u>			
	Bore size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to
	size	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st	15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st
	9	46.5	55.5	59.5	73.5					82.5	91.5	95.5	109.5				
	0	(51.5)	(60.5)	(64.5)	(78.5)	_	_	_	_	(87.5)	(96.5)	(100.5)	(114.5)	_	_	_	_
	10	48.5	56	68	80	_	_	_	_	84.5	92	104	116	_	_	_	_
Ξ	16	48.5	57	69	81	87	111	129	141	84.5	93	105	117	123	147	165	177

Single Acting, Spring Extend: Rod Flange (F)

CJ2F6 - Stroke TZ





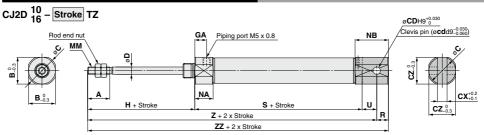


☆ For details of the mounting nut, refer to page 91.

						•				•	_																							[mm]
Bore					_				-v									_		40.4-	04.4-	40.4-	3	704-	4044-	4004-	- A-	40.4-	04.4-	40.40	<u>7</u>	70.4	404.1-	4004
size	A	В	C	ט	-	rв	FC	FT	FX	FY	۲Z	GA	н	ММ	NA	NB	NN		1															126 to
6	15	40	4.4	_	,	10	4.5	10	0.4	4.4	20	44.5	00	M3 x 0.5	40	,	M6 x 1.0	_	46.5	55.5	59.5	73.5					74.5	83.5	87.5	101.5				
•	15	12	14	٥	°	13	4.5	1.0	24	14	32	14.5	20	IVIS X U.S	10	3	IVIO X 1.U	3	(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 S and Z dimensions: With auto switch

Single Acting, Spring Extend: Double Clevis (D)



*: A clevis pin and retaining rings are included.

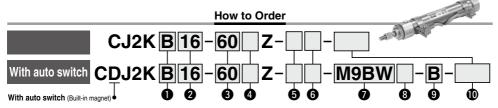
Bore size A B C CD (cd) CX CZ D GA H MM NA NB R U 5 to 16 to 31 to 46 to 61 to 75 to 101 to 126 to 15 to 15 to 15 to 15 to 16 to 31 to 46 to 61 to 75 to 101 to 126 to 15 to 15 to 15 to 15 to 16 to 31 to 46 to 61 to 75 to 101 to 126 to 15 to																S							
10 15 12 14 3.3 3.2 12 4 8 28 M4 x 0.7 12.5 17.8 5 8 48.5 56 68 80	Bore size	A	В	С	CD	СХ	cz	D	GA	Н	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	12	14	3.3	3.2	12	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 18.3 5 8 28 M5 x 0.8 12.5 22.8 8 10 48.5 57 69 81 87 111 129 14	16	15	18.3	20	5	6.5	18.3	5	8	28	M5 x 0.8	12.5	22.8	8	10	48.5	57	69	81	87	111	129	141

				- 2	<u> </u>			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 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	_	_		_		
16	86.5	95	107	119	125	149	167	179	94.5	103	115	127	133	157	175	187		

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 182 for the double clevis (with one-touch connecting pin).

Auto switch

Nil	Without auto switch
*: For an	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

ı	10	10 mm
[16	16 mm

4 Head cover port location

Nil	Perpendicular to axis	
R	Axial	1

- *: 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

•	inder or date entitorice
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

*: Refer to "Ordering Example of Cylinder Assembly" on page 119.

3 Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 119.

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 Rail mounting
- Band mounting *: For rail mounting, screws and nuts for 2 auto switches come
- with the rail. *: Refer to page 178 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)

- *: Rod end bracket is shipped together with the product, but not assembled.
- **: Refer to page 91 for the double knuckle
- joint (with one-touch connecting pin).

Made to Order

Lond wire length [m]

Refer to page 119 for details.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		Flantriant	들	Minima	na	Load voltage			Auto swi	Auto switch model				e ler	ngth	[m]	Pre-wired	Ammli	aabla
Тур	Special function	Electrical entry	ndicator	Wiring (Output)		DC	AC	Band me	ounting	Rail mo	unting	0.5	1	3	5	None	connector		cable ad
		Citity	Рď	(Output)			7.0	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COTHICCIO	101	uu
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit	
ء ا		Grommet		3-wire (PNP)		5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	 -	0	IC CITCUIL	
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	_	0		
		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	Polov
	Diagnostic indication (2-color indicator)		Yes	3-wire (PNP)	24 V	J V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IO GIIGUII	PLC
state	(2-color indicator)			2-wire		12 V	v l	M9BWV M9NAV*1	M9BW	M9BWV	M9BW		•	•	0	_	0	_] [
	Motor registent	Grommet		3-wire (NPN) 3-wire (PNP) 2-wire		5 V,12 V			M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit	
Solid	Water resistant (2-color indicator)							M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IO GIIGUII	
S	(E color illuloutor)				_	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			Vaa	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	-	-	_	IC circuit	_
3		Grommet	Yes			_	200 V	_	_	A72	A72H	• -		•	_	_	_		
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —	
anto			No	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	<u> </u>	—	_	IC circuit	Relay,
		Connector	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLC
Reed		Connector	No	_		l –	24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit	
		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 5 m····· Z (Example) M9NWZ None···· N (Example) H7CN 3 m----- L (Example) M9NWL
- *: Since there are other applicable auto switches than listed, refer to page 179 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.)

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 pages 180 to 182.)

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

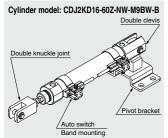
Made to Order

Click here for details

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 183 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	Double actin	g, Single rod							
Fluid	А	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	0°C to 70°C 0°C to 60°C (No freezing)							
Cushion	Rubber	bumper							
Lubrication	Not required	d (Non-lube)							
Stroke length tolerance	+1	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.
- *: Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on pages 8 to 19. In addition, the products that exceed the standard stroke midht not be able to fulfill the specifications due to the deflection etc.

Mounting and Accessories/Refer to page 68 for the list of brackets and page 91 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) (-X2838) Single knuckle joint Double knuckle joint (including a pin and retaining rings) Double knuckle joint (With one-touch connecting pin) Δ Δ Rod end cap (Flat/Round type) Pivot bracket (T-bracket)

Mounting Brackets/Part No.

Maunting brookst	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 172 to 179 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.



Weights

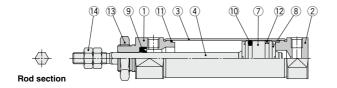
			[g]
	Bore size [mm]	10	16
Donie weight	Basic	25	47
Basic weight (When the stroke	Axial piping	25	47
is zero)	Double clevis (including clevis pin)	27	55
15 2010)	Head-side bossed	29	50
Additional weight	per 15 mm of stroke	4	7
	Single foot	8	25
Mounting bracket	Double foot	16	50
weight	Rod flange	5	13
	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 \cdots 8 (Single foot) 25 + 4/15 x 45 + 8 = **45 g**

Construction (Not able to disassemble)





With auto switch

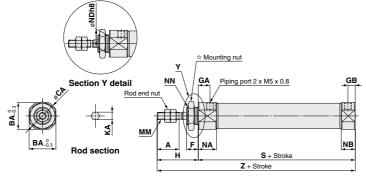
Component Parts

Description	Material	Note
Rod cover	Aluminum alloy	
Head cover	Aluminum alloy	
Cylinder tube	Stainless steel	
Piston rod	Stainless steel	
Piston A	Aluminum alloy	
Piston B	Aluminum alloy	
Piston	Aluminum alloy	
Bumper	Urethane	
	Head cover Cylinder tube Piston rod Piston A Piston B Piston	Head cover Aluminum alloy Cylinder tube Stainless steel Piston rod Stainless steel Piston A Aluminum alloy Piston B Aluminum alloy Piston A Aluminum alloy Aluminum alloy

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	_	

Basic (B)

CJ2KB 10 - Stroke Head cover port location Z







Head cover port location Axial location (R)

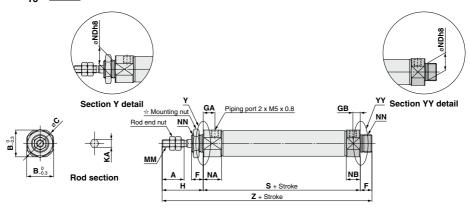
*: The overall cylinder length does not change.

☆ Refer to page 91 for details of the mounting nut. (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)

CJ2KE 10 - Stroke Z

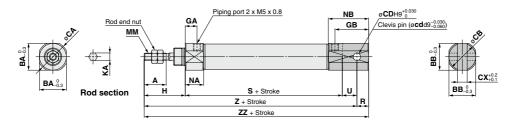


☆ Refer to page 91 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

															[IIIIII]
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

Double Clevis (D)

CJ2KD 10 - Stroke Z

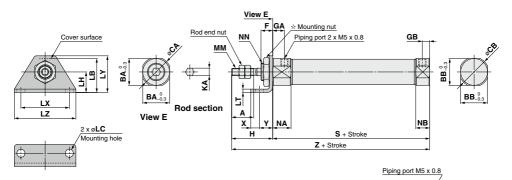


*: A clevis pin and retaining rings are included.

			3																[mm]
Bore size	Α	BA	BB	CA	СВ	CD(cd)	СХ	GA	GB	Н	KA	MM	NA	NB	R	S	U	Z	ZZ
10	15	15	12	17	14	3.3	3.2	8	18	28	4.2	M4 x 0.7	12.5	22.5	5	46	8	82	87
16	15	18.3	18.3	20	20	5	6.5	8	23	28	5.2	M5 x 0.8	12.5	27.5	8	47	10	85	93

Single Foot (L)

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



Head cover port locat

Head cover port location Axial location (R)

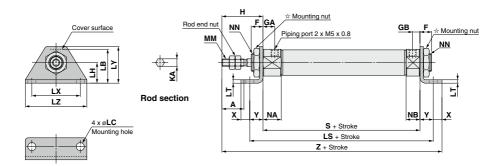
*: The overall cylinder length does not change.

 $\,\dot{\approx}\,$ Refer to page 91 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

Double Foot (M)

CJ2KM 10 - Stroke Z

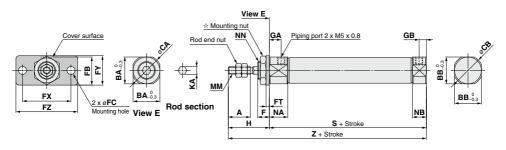


☆ Refer to page 91 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

																						[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





Head cover port location Axial location (R)

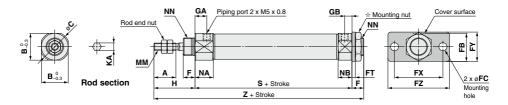
*: The overall cylinder length does not change.

 $\dot{\approx}$ Refer to page 91 for details of the mounting nut. (SNJ-016C for ø10, SNKJ-016C for ø16)

	[m													[mm]								
Bore size	Α	BA	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

Head Flange (G)

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



☆ Refer to page 91 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



How to Order CJ2K|B|16| **CDJ2KB** 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	Head flange

- *: Foot/Flange brackets are shipped together with the product, but not assembled
- **: Refer to page 182 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.

•	DOIC SIZE
10	10 mm
16	16 mm

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

Number of auto switches Nil 2 pcs. s 1 pc

"n" pcs.

*: Refer to "Ordering Example of Cylinder Assembly" on page 126.

Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 126.

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 178 for auto switch mounting brackets.

Action

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

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 91 for the double knuckle
- joint (with one-touch connecting pin).

Made to Order

Refer to page 119 for details.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		Clastriani	匮	Wiring	Load v		oltage		Auto swit	ch model		Lead	d wir	e ler	ngth	[m]	Pre-wired	Ammi	aabla
Typ	Special function	Electrical entry	ndicator	(Output)		DC	AC	Band m		Rail mo		0.5	1	3	5	None	connector		cable ad
		o.i.i.y	亨	(Output)		50	7.0	Perpendicular	Perpendicular In-line P		In-line	(Nil)	(M)	(L)	(Z)	(N)	00111100101		
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit	
ے ا		Grommet		3-wire (PNP)		5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	_	0	ic dicuit	
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	_	0		
		Connector		Z-WITE	6	12 V		_	H7C	J79C	_	- • - •	•	•	_	_			
1	Diagnostic indication			3-wire (NPN)		5 V,12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	—	0	IC aire sit	
1 00	(2-color indicator)		Yes	3-wire (PNP)	24 V	5 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IC circuit	PLC
state	(2-color indicator)	Grommet		2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	1 ' []
	Water resistant (2-color indicator)		Grommet	Grommet		3-wire (NPN)		5 V,12 V	,	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	19NA*1 ○ ○ ●	0	 -	0	IC circuit]
Solid				3-wire (PNP)				M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	ic dicuit	
ď.				2-wire	5	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	
5			.,	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	-	-	_	IC circuit	-
switch		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	—	_	_		
			ĺ				100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	1 —	
anto			No	0		40.1/	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit	Relay,
2		Connector	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ
Beed		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 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 179 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.)

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

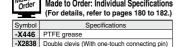
Single acting, Spring return, Rubber bumper







<u> </u>	*************************************	_	4	<i>I</i> V	ΛЭ
Made to	Made to Ord	ler: Individual	Spe	cificat	tions



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 183 before handling.

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2KD16-45SZ-NW-M9BW-B Double clevis Auto switch Band mounting Pivot bracket

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

Double knuckle joint

*: 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 With auto switch: -10	o°C to 70°C (No freezing) o°C to 60°C
Cushion	Rubber bumper (st	andard equipment)
Lubrication	Not required	d (Non-lube)
Stroke length tolerance	+1	.0
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
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 pages 8 to 19. 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 1571 (Table (2): Spring Reaction Force).

Mounting and Accessories/Pefer to page 68 for the list of brackets and page 91 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 (-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 172 to 179 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**

Carina 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		
ä	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			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				
set å	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			
se	Double knuckle joint (including knuckle pin)			25			21				
Accessories	Double knuckle joint (With one-touch connecting pin)				22						
Acce	Rod end cap (Flat type)	1 2									
	Rod end cap (Round type)										
	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 weight -----48 (Ø10)
- Cylinder stroke ----- 45 stroke
- •Mounting bracket weight----8 (Single foot)
 - 48 + 8 = **56 g**

									[g]			
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			
탏	45 stroke	44	44	46	46	95	95	103	99			
, wei	60 stroke	52	52	54	55	111	111	119	115			
Basic weight	75 stroke				/	133	133	140	137			
Ba	100 stroke					163	163	170 167				
	125 stroke		/			198	198	206	202			
	150 stroke					219 219 227 223						
l g	Single foot			8				25				
we	Double foot			16				50				
Mounting pracket weight	Rod flange			5				13				
pra	Head flange			5		13						
	Clevis pin	_	_ _ 1 _		_	_	_	3	_			
	One-touch connecting pin for double clevis	_	_	2	_	_	_	4	_			
	Single knuckle joint			17				23				
se	Double knuckle joint (including knuckle pin)			25				21				
	Double knuckle joint (With one-touch connecting pin)			26				22				
Ac	Rod end cap (Flat type)			1		2						
	Rod end cap (Round type)				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:

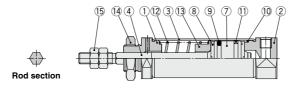
Example) CJ2KL10-45TZ

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

44 + 8 = **52 g**

Construction (Not able to disassemble)

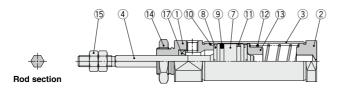
Single acting, Spring return





With auto switch

Single acting, Spring extend





With auto switch

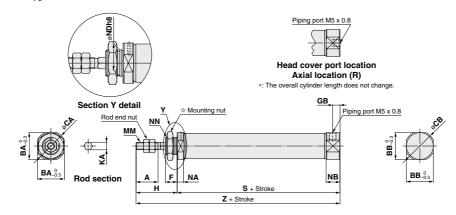
Component Parts

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	

Single Acting, Spring Return: Basic (B)

CJ2KB 10 - Stroke S Head cover port location Z

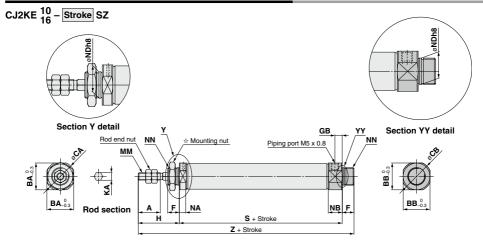


☆ For details of the mounting nut, refer to page 91.

[mm]

	Dava																			3							Z	<u> </u>			
	Bore	Α	BA	BB	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	12	17	14	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	_	_	_	_	73.5	81	93	105	_		_	_
	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	73.5	82	94	106	112	136	154	166

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



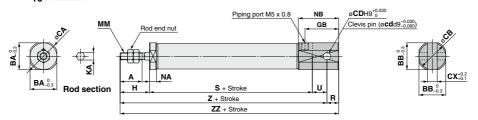
☆ For details of the mounting nut, refer to page 91.

[mm]

-	ore																			3							Z	<u>'</u>			
		Α	BA	вв	CA	СВ	F	GB	н	KΑ	MM	NΑ	NΒ	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
٤	ize															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

Single Acting, Spring Return: Double Clevis (D)

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



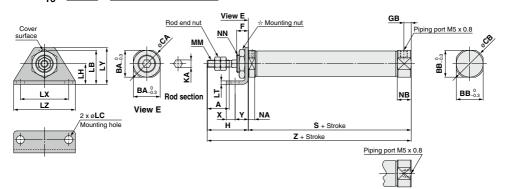
*: A clevis pin and retaining rings are included.

																							[mm]
																				;			
Bore size	A	BA	ВВ	CA	СВ	CD	СХ	GB	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	12	12	14	14	3.3	3.2	18	20	4.2	M4 x 0.7	4.8	22.5	5	8	45.5	53	65	77	_	_	_	_
16	15	18.3	18.3	20	20	5	6.5	23	20	5.2	M5 x 0.8	4.8	27.5	8	10	45.5	54	66	78	84	108	126	138

				7	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 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.

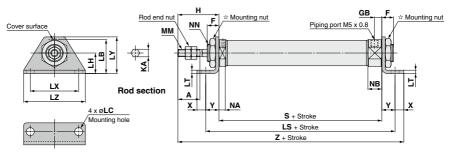
 $\ensuremath{\dot{\mathbf{x}}}$ For details of the mounting nut, refer to page 91.

Bore size	A	ВА	вв	CA	СВ	F	GB	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>			
size	5 to	16 to	31 to	46 to	61 to	76 to	101 to	126 to	Х	Y	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



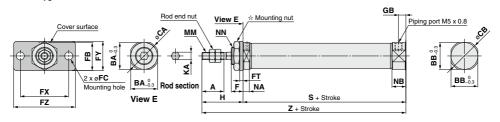
☆ For details of the mounting nut, refer to page 91.

				-			-																	[mm]
Dovo											L	S												
Bore size	A	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

Dove					3										<u> </u>			
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

Single Acting, Spring Return: Rod Flange (F)

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





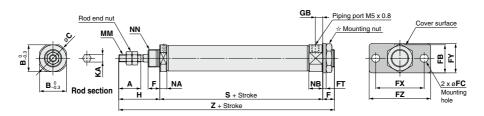
Head cover port location Axial location (R)

*: The overall cylinder length does not change.

																																			[mm]
Bore																								5							7	Z			
size	ΙΔ.	BA	ВВ	CA	СВ	F	FΒ	FC	FT	FX	FY	FΖ	GB	н	KΑ	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
3120																				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	18.3	18.3	20	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	45.5	54	66	78	84	108	126	138	73.5	82	94	106	112	136	154	166

Single Acting, Spring Return: Head Flange (G)

CJ2KG 10 - Stroke SZ



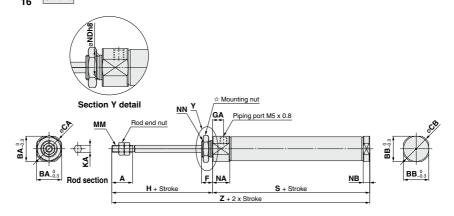
☆ For details of the mounting nut, refer to page 91.

_																		[111111]
	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
I	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 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
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

Single Acting, Spring Extend: Basic (B)

CJ2KB $^{10}_{16}$ - Stroke TZ

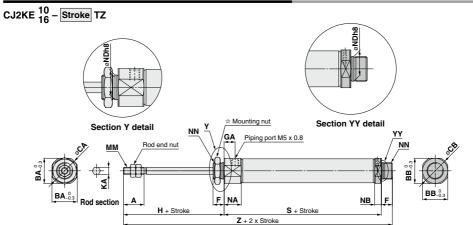


☆ For details of the mounting nut, refer to page 91.

[mm]

Bore																		- ;	S							Z	<u> </u>			
size	A	BA	вв	CA	СВ	F	GΑ	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	12	17	14	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	—	_	_	_	76.5	84	96	108	_	_	_	_
16	15	18.3	18.3	20	20	8	8	28	5.2	M5 x 0.8	12.5	4.8	12_0.022	M12 x 1.0	48.5	57	69	81	87	111	129	141	76.5	85	97	109	115	139	157	169

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

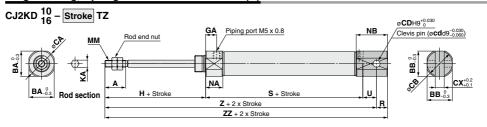


☆ For details of the mounting nut, refer to page 91.

[mm]

Dava																		•	3							Z	<u> </u>			
Bore	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

Single Acting, Spring Extend: Double Clevis (D)



* A clevis pin and retaining rings are included.

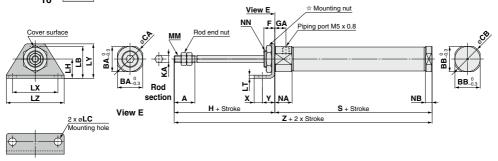
	[mm
1 to	126 to

_																								
																				5	3			
	Bore size	Α	ВА	вв	CA	СВ		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	<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	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

Single Acting, Spring Extend: Single Foot (L)





☆ For details of the mounting nut, refer to page 91. ВА

ВВ CA СВ

GΑ н KA LB LC LH LT LX LY LZ

	[r	nr	'n

ММ

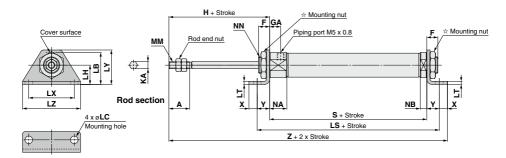
NA NB

10	15	15	12	17	14	8	8	28 4	2 21.5	5.5	14	2.3	33	25 42	2 M4	x 0.7	12.5	4.8 M1	0 x 1.0
16	15	18.3	18.3	20	20	8	8	28 5	2 23	5.5	14	2.3	33	25 42	M5	x 0.8	12.5	4.8 M1	2 x 1.0
Bore size					5	3				l v	l v					Z			
Dore Size	5 to 15 st	16 to 3) st 31 to	45 st	46 to 60 st	61 to 75 st	76 to 100	st 101 to 125	st 126 to 150 s	^	1	5 to 15 st	16 to 30 s	t 31 to 45 s	46 to 60 st	61 to 75 st	76 to 100 s	t 101 to 125 s	126 to 150 st
10	48.5	56	6	88	80	_	_	_	_	6	9	76.5	84	96	108	_	-	-	I -
16	48.5	57	6	69	81	87	111	129	141	6	9	76.5	85	97	109	115	139	157	169
							•	_	-			_	•		•		•		

Bore size

Single Acting, Spring Extend: Double Foot (M)

CJ2KM 10 - Stroke TZ



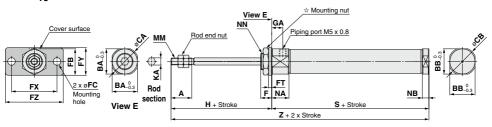
☆ For details of the mounting nut, refer to page 91.

																									[mm]
													L	S											
E	Bore size	Α	F	GA	н	KA	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	NB	NN
										15 st	30 st	45 st	60 st	75 st	100 st	125 st	150 st								
	10	15	8	8	28	4.2	21.5	5.5	14	66.5	74	86	98	_	_	_	_	2.3	33	25	42	M4 x 0.7	12.5	4.8	M10 x 1.0
	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
	_	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	Λ

					3									- 2	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



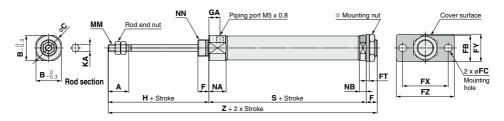
☆ For details of the mounting nut, refer to page 91.

																			[mm]
Bore size	Α	ВА	вв	CA	СВ	F	FB	FC	FT	FX	FY	FZ	GA	н	KA	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					3								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 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

Single Acting, Spring Extend: Head Flange (G)

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



☆ For details of the mounting nut, refer to page 91.

[mm] FC FΧ FΥ FΖ GA NB Α В С F FΒ FT Н KA MM NA 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 4.8 M10 x 1.0 8 20 18.3 5.2 16 15 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			
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 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 ø10, ø16



and 1 How to Order CJ2Z B 16 With auto switch **CDJ2Z B 16** With auto switch (Built-in magnet)

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

* 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.

Without auto switch

9	Dule 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

8 Number of auto switches

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

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

*: Refer to "Ordering Example of Cylinder Assembly" on page 138.

Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 138.

Pivot bracket

Nil	None						
N	Pivot bracket is shipped						
IN	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

- Band mounting *: For rail mounting, screws and nuts for 2 auto switches come with the rail.
- *: Refer to page 178 for auto switch mounting brackets.

6 Rod end bracket

None						
Single knuckle joint						
Double knuckle joint						
Rod end cap (Flat type)						
Rod end cap (Round type)						

- *: Rod end bracket is shipped together with the product, but not assembled.
- **: Refer to page 91 for the double knuckle
- joint (with one-touch connecting pin).

Made to Order

Refer to page 138 for details.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		-lastrian 5	5	VAC		Load voltage Auto switch model				Lead	l wir	e ler	igth	Įmj	Pre-wired										
Type	Special function	Electrical entry	Indicator ligh	Wiring (Output)		DC	AC	Band m		Rail mo		0.5	1	3	5	None	connector	Applica	ble load						
		Criay	Рd	(Output)		ЪС	70	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	CONTINUES								
				3-wire (NPN)		5 V, 12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	_	0	IC circuit							
چ		Grommet		3-wire (PNP)		J V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	<u> </u>	0	10 Cilcuit							
switch				2-wire		12 V		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 aireuit	١ ا						
	Diagnostic indication (2-color indicator)		Yes	3-wire (PNP)	12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	—	0	IC circuit	Relay, PLC							
state	(2-color indicator)		2-wire			12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	PLC						
	\M/-4	Grommet	et	3-wire (NPN)		E V 10 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit							
Solid	Water resistant (2-color indicator)			3-wire (PNP)		5 V, 12 V				5 V, 12 V	5 V, 12 V	5 V, 12 V	0 V, 12 V	M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	—	0	IC CIrcuit	
ű	(2-color indicator)			2-wire	1						12 V	M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	_	0	_			
	With diagnostic output (2-color indicator)			4-wire (NPN)	1	5 V, 12 V	Ī	1	1		_	H7NF	_	F79F	•	_	•	0	<u> </u>	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	•	_	•	_	_	_								
o o							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,						
ğ		0	Yes	2-wire	24 V	12 V	_	_	C73C	A73C		•	_	•	•	•	_	_	PLC						
Reed		Connector	No]			24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit							
_		Grommet				_	_	_	_	A79W	_	•	_	•	_	—	_	_							

- *1: Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please contact SMC regarding water resistant types with the above model numbers.
- *2: 1 m type lead wire is only applicable to D-A93.
- *: Lead wire length symbols: 0.5 m----- Nil (Example) M9NW 1 m----- M (Example) M9NWM 3 m---- L (Example) M9NWL
- 5 m····· Z (Example) M9NWZ
 - None----- N (Example) H7CN
- *: Since there are other applicable auto switches than listed, refer to page 179 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.)

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 180.)

Symbol	Specifications	
-X446	PTFE grease	PTFE grease

Made to Order

Click here for details

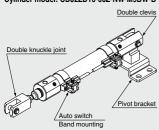
Symbol	Specifications				
-XA□	Change of rod end shape				
-XC51	With hose nipple				
-XC85	Grease for food processing equipment				

⚠ Precautions

Refer to page 183 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

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

Specifications

Bore size [mm]	10	16			
Action	Double actin	g, Single rod			
Fluid	А	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°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 pages 8 to19. 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 68 for the list of brackets and page 91 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 clevis	Double clevis (including T-bracket)		
5	Mounting nut	•	•	•	_	_		
Standard	Rod end nut	•	•	•	•	•		
ş	Clevis pin (including retaining rings)	_	_	_	•	•		
	Single knuckle joint	0	0	0	0	0		
ڃ	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	0		
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 92 for details.

Mounting Brackets/Part No.

Mounting brookst	Bore siz	ze [mm]
Mounting bracket	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 172 to 179 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.



Weights

			[g]
	Bore size [mm]	10	16
D ! ! - ! - ! - !	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.
- \ast : Mounting nut is not included in the basic weight for the double clevis.

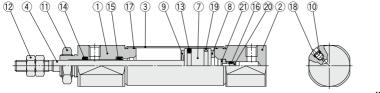
Calculation:

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

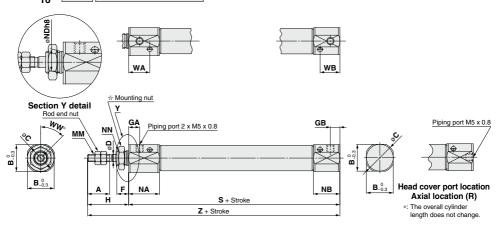
No.	Description	Material	Note
1	Rod cover	Aluminum alloy	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4	Piston rod	Stainless steel	
5	Piston A	Aluminum alloy	
6	Piston B	Aluminum alloy	
7	Piston	Aluminum alloy	
8	Bumper A	Urethane	
9	Bumper B	Urethane	
10	Speed controller needle	Carbon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

CJ2Z Series

Basic (B)

CJ2ZB 10 - Stroke Head cover port location Z

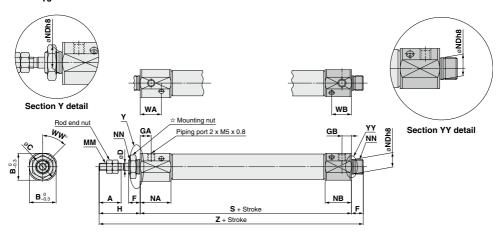


☆ For details of the mounting nut, refer to page 91.

																		[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)

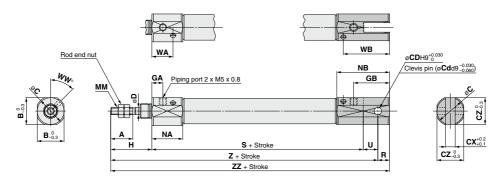
CJ2ZE 10 - Stroke Z



A I OI details o	i iiie ii	iounini	y mut, i	eiei io	page .	J 1.												[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

Double Clevis (D)

CJ2ZD 10 - Stroke Z

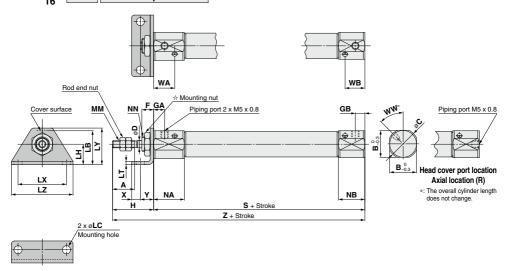


*: A clevis pin and retaining rings are included.

																						[mm]
Ī	Bore 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 - Stroke Head cover port location Z

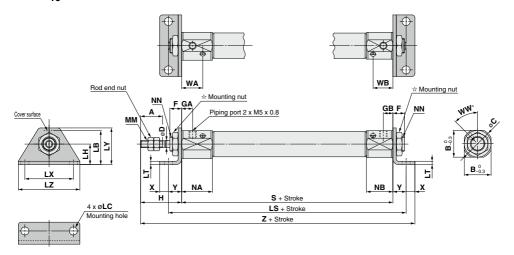


Bore size	Α	В	С	D	F	GA	GB	Н	LB	LC	LH	LT	LX	LY	LZ	MM	NA	NB	NN	WA	WB	ww	S	Х	Υ	Z
10	15	15	17	4	8	7.5	6.5	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.7	21	18	M8 x 1.0	14.4	13.5	45	63	5	7	91
16	15	18.3	20	5	8	7.5	6.5	28	23	5.5	14	2.3	33	25	42	M5 x 0.8	21	18	M10 x 1.0	14.4	13.5	45	64	6	9	92

CJ2Z Series

Double Foot (M)

CJ2ZM 10 - Stroke Z

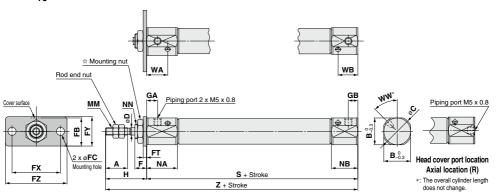


 $\dot{\boldsymbol{x}}$ For details of the mounting nut, refer to page 91.

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	Х	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)

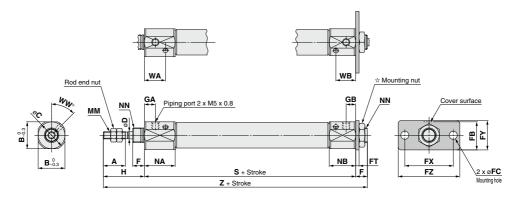
CJ2ZF $^{10}_{16}$ - Stroke Head cover port location Z



				,	·- ·																		[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

Head Flange (G)

CJ2ZG 10 - Stroke Z

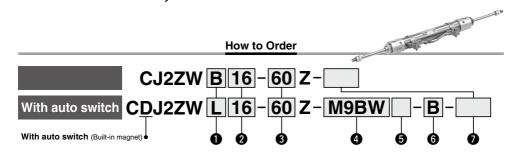


× 1 or details c	n tile	nount	ing in	at, 101	01 10 1	age c																	[mm]
Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	GB	Н	MM	NA	NB	NN	WA	WB	ww	s	Z
10	15	15	17	4	8	13	4.5	1.6	24	14	32	7.5	6.5	28	M4 x 0.7	21	18	M8 x 1.0	14.4	13.5	45	63	99
16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	7.5	6.5	28	M5 x 0.8	21	18	M10 x 1.0	14.4	13.5	45	64	100

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

CJ2ZW Series ø10, ø16





Mounting

4 Auto switch

В	Basic
L	Foot
F	Flange

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

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.

Number of auto switches

2 Bore size

• · · · · ·	inder or dute entitories
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

10 mm

Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 145.

6 Auto switch mounting type

_		
Α	Rail mounting	Refer to page 145 for details.
В	Band mounting	
*: F	or rail mounting, screws and nuts	

Made to Order

for 2 auto switches come with the *: Refer to page 178 for auto switch mounting brackets.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		Flootrical	ight	\A/isim a	Load voltage			Auto swit	ch model		Lea	d wir	e ler	ngth	[m]	Pre-wired	d Appli	aabla																							
Туре	Special function	-:-1 £ Ai Electrical > VVITITQ		AC Band mounting Rail mounting			0.5 1		3	5	None	connector		cable ad																											
		entry	Indicato	(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		M9PV	M9P	M9PV	M9P	•	•	•	0	-	0	IIC CIICUII	j																						
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	-	0																								
		Connector		Z-WIIE		12 V		_	H7C	J79C	_	•	 —	•	•	•	_																								
anto	Diagnostic indication			3-wire (NPN)]	E V 10 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	-	0	IC circuit	Dalan																						
	Diagnostic indication (2-color indicator)		Yes	3-wire (NPN) 3-wire (PNP)	24 V	3 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	-	0	IIC CIICUII	PLC																						
state	(2-color indicator)			2-wire	1	12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	-	0	_	1 1 10																						
	Grommet		3-wire (NPN)		5 V.12 V		M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	-	0	IC circuit																								
Solid	Water resistant			3-wire (PNP))	5 V,12 V			M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	 -	0	116 circuit																						
Ö	(2-color indicator)						2-wire]	12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	I-	0	l —																				
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V		_	H7NF	_	F79F	•	—	•	0	 –	0	IC circuit																							
switch																									V	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	-	•	_	-	_	IC circuit	_
3		Grommet	Yes		1	_	200 V	_	_	A72	A72H	•	_	•	_	—	_																								
	_						100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	—	_	1 -																							
anto			No	J .		40.1/	100 V or less	A90V	A90	A90V	A90	•	_	•	_	—	_	IC circuit	Relay,																						
		0	Vρς	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	<u> </u>	•	•	•	_	_	PLĆ																						
Reed		Connector		No	No	No	No	No	No	No	No	No	No	nortor —	onnector	ctor —		24 V	1 1	24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit										
_	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 ···· M (Example) M9NWM 3 m----- L (Example) M9NWL 5 m..... 7 (Example) M9NWZ None----- N (Example) H7CN
- *: Since there are other applicable auto switches than listed, refer to page 179 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.)

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



Specifications

Bore size [mm]	10	16			
Action	Double acting	g, Double rod			
Fluid	A	ir			
Proof pressure	1 N	1Pa			
Maximum operating pressure	0.7 I	MPa			
Minimum operating pressure	0.1 l	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				
Speed controller	Built-in				
Piston speed	50 to 750 mm/s				
Allowable kinetic energy	0.035 J	0.090 J			

Symbol

Double acting, Double rod, Rubber bumper





Made to Order: Individual Specifications (For details, refer to page 180.)

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

Refer to page 183 before handling. I

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 pages 8 to 19. 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 68 for the list of brackets and page 91 for details about part numbers and dimensions.

	●···Mounte	t. O Please order separately.				
	Mounting	Basic	Foot	Flange		
Standard	Mounting nut	•	•	•		
	Rod end nut	•	•	•		
Option	Single knuckle joint	0	0	0		
	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 92 for details.

Mounting Brackets/Part No.

Mounting bracket	Bore siz	ze [mm]
wounting bracket	10	16
Foot	CJ-L010C	CJ-L016C
Flange	CJ-F010C	CJ-F016C

Refer to pages 172 to 179 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.



CJ2ZW Series

Weights

			[g]		
E	10	16			
Basic weight (When the stroke is zero)					
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

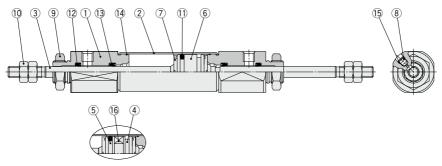
Basic weight -----36 (ø10)

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

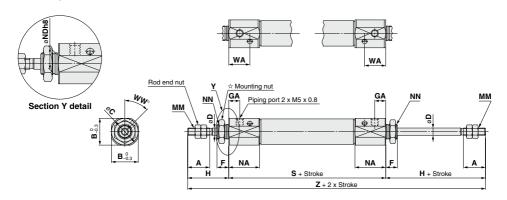
Component Parts

No.	Description	Material	Note
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	_	

Basic (B)

CJ2ZWB 10 - Stroke Z

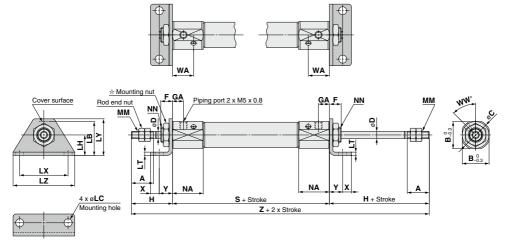


☆ For details of the mounting nut, refer to page 91.

															[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

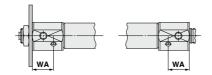


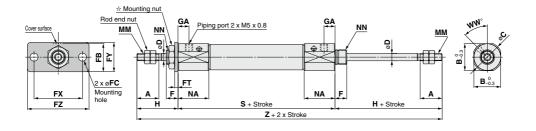
Bore size	Α	В	С	D	F	GA	Н	LB	LC	LH	LT	LX	LY	LZ	NN	NA	NN	WA	ww	S	X	Υ	Z
10	15	15	17	4	8	7.5	28	15	4.5	9	1.6	24	16.5	32	M4 x 0.7	21	M8 x 1.0	14.4	45	66	5	7	122
16	15	18.3	20	5	8	7.5	28	23	5.5	14	2.3	33	25	42	M5 x 0.8	21	M10 x 1.0	14.4	45	67	6	9	123

CJ2ZW Series

Flange (F)

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



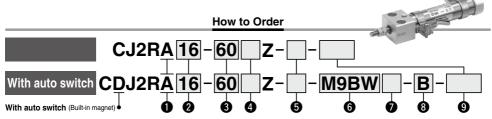


	A I OI details o	i iiie ii	iouritii	ig riut,	i ei ei i	page															[mm]
Ī	Bore size	Α	В	С	D	F	FB	FC	FT	FX	FY	FZ	GA	Н	MM	NA	NN	WA	ww	S	Z
	10	15	15	17	4	8	13	4.5	1.6	24	14	32	7.5	28	M4 x 0.7	21	M8 x 1.0	14.4	45	66	122
	16	15	18.3	20	5	8	19	5.5	2.3	33	20	42	7.5	28	M5 x 0.8	21	M10 x 1.0	14.4	45	67	123

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

CJ2R Series ø10, ø16





Mounting

Bottom mounting

2 Bore size

10 mm 16 16 mm

3 Cylinder standard stroke [mm]

Refer to "Standard Strokes" on page 150.

4 Head cover port location

Nil	Perpendicular to axis	
R	Axial	1

Rod end bracket

Nil	None										
V	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 91 for the double knuckle joint (with onetouch connecting pin).

6 Auto switch Without auto switch

*· For an	nligable auto	cwitches	rofor to the	table bal	0141

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

Number of auto switches

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

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 178 for auto switch mounting brackets.

 Made to Order Refer to page 150 for details.

*: Refer to "Ordering Example of Cylinder Assembly" on page 150.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches

		F14-11	igi	Wiring		Load vo	oltage		Auto swit	tch model		Lea	d wir	e ler	ngth	[m]	Pre-wired	Annli	cable
Тур	Special function	Electrical entry	ator	(Output)		DC	AC	Band mo	ounting	Rail mo	unting	0.5	1	3	5	None	connector		ad
		Citaly	Indica	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	CONTINUENT	10	au
				3-wire (NPN)		5 V, 12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	 -	0	IC circuit	
۽ ا		Grommet		3-wire (PNP)		5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	—	0	IIC CIICUII	
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	 —	0		
		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	Dalau
	(2-color indicator)		Yes	3-wire (PNP)	24 V	5 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	<u> </u>	0	IIG CIICUII	PLC
state	(2 color indicator)			2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	-	0	—	
	Water resistant	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)		5 V, 12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	<u> </u>	0	IO CIICUII	
ဟ	(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	—	0	IC circuit	
switch			Yes	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	•	•	•	•	_	_	-	
anto			Νo	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	<u> </u>	•	_	<u> </u>	_	IC circuit	Relay,
8		Connector	Yes	Z-WIFE	24 V	12 V	_	_	C73C	A73C	_	•	-	•	•	•	_	_	PLC
Beed		COIIIECIOI	Νo				24 V or less	_	C80C	A80C	_	•	-	•	•	•	_	IC circuit	
	Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	-	•	_	-	ı	_	

- *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
 - ······ Z (Example) M9NWZ 5 m-----
- *: Since there are other applicable auto switches than listed, refer to page 179 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.)



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 180.)

_		-,		,
Symbol		Specifi	cations	
-X446	PTFE grease	е		

Made to Order

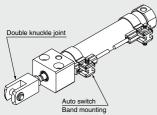
Click here for details

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 183 before handling.

Ordering Example of Cylinder Assembly

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



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

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

Specifications

	,						
Bore size [mm]	10	16					
Action	Double acting, Single rod						
Fluid	A	ir					
Proof pressure	1 M	1Pa					
Maximum operating pressure	0.71	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	i.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 pages 8 to 19. 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 68 for the list of brackets and page 91 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 92 for details.

Weights

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
Accessories	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

Cylinder stroke ----- 45 stroke

36 + 4/15 x 45 = **48 g**

Refer to pages 172 to 179 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.



Clean Series

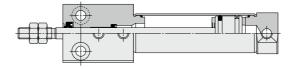
Air cylinder which is applicable for the system which discharges leakage from the rod section directly into the outside of clean room by relief port and making an actuator's rod section having a double seal construction.

For the detailed specifications, refer to the Web Catalog.

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 150.)
Auto switch	Mountable (Band mounting)
Mounting	Bottom mounting

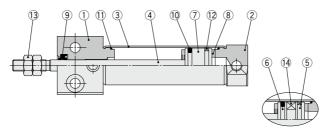
Construction (Not able to disassemble)



SMC

CJ2R Series

Construction (Not able to disassemble)



With auto switch

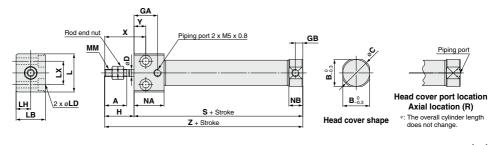
Component Parts

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

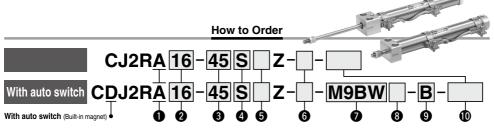


																			[mm]
Bore size	Α	В	С	D	GA	GB	Н	L	LB	LD	LH	LX	MM	NA	NB	Х	Υ	S	Z
10	15	12	14	4	16	5	20	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12	M4 x 0.7	20.5	9.5	28	8	54	74
16	15	18.3	20	5	16	5	20	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	20.5	9.5	28	8	55	75

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

CJ2R Series ø10, ø16





Mounting

Bottom mounting

9 1	Bore size	
10		10 mm

Cvlinder standard stroke [mm] Refer to "Standard Strokes" on page 154.

Action Single acting, Spring return

Head cover port location

Nil	Perpendicular to axis	
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)						

16 mm

- *: Rod end bracket is shipped together with the product, but not assembled.
- **: Refer to page 91 for the double knuckle joint (with one-touch connecting pin).

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

O Nur	nber of auto switches
Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Single acting, Spring extend

<u> </u>	Auto switch mounting type
Α	Rail mounting
В	Band mounting

Made to Order

Refer to page 154 for details.

*: Refer to "Ordering Example of Cylinder Assembly" on page 154.

*: For rail mounting, screws and nuts for 2 auto switch-

- es come with the rail. *: Refer to page 178 for auto switch mounting brackets
- Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

	Cleatrical	light	\A/isim as		Load v	oltage		Auto swit	ch model	Lead wire length				[m]	Dec mired	Annli	iaabla								
Special function		ator			Band mounting Rail mounting 0						None			load											
	Citily	Indic	(Output)		ьс	Α0	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	CONTINUE	loau								
			3-wire (NPN)		E V 10 V		M9NV	M9N	M9NV	M9N	•	•	•	0	 -	0	IC aireuit								
	Grommet	et 3	3-wire (PNP)		5 V, 12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	-	0	IIC CITCUIL	1							
			2 wire]	10 1/		M9BV	M9B	M9BV	M9B	•	•	•	0	-	0									
	Connector		2-wire		12 V		_	H7C	J79C		•	_	•	•	•	_	1 —								
Diamental in diameter			3-wire (NPN)		E V 10 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	-	0	IC aireuit]							
		Yes	3-wire (PNP) 24	24 V	3 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	-	0	IIC GIIGUII	PLC							
(2-color indicator)					2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	I —	0	_	1 1 20					
14/-4	Grommet		3-wire (NPN)		5 V,12 V	M	M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	-	0	IC aireuit]							
			3-wire (PNP)	1			M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IIC circuit	1							
(2-color indicator)			2-wire]	12 V			M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	I —	0]						
With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V		_	H7NF	_	F79F	•	_	•	0	-	0	IC circuit								
		.,	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	-	•	_	_	_	IC circuit	-							
	Grommet	res		1	_	200 V	_	_	A72	A72H	•	_	•	_	_	_									
						100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	-	_	1 —	İ							
		No						40.1/	100 V or less	A90V	A90	A90V	A90	•	-	•	_	—	_	IC circuit	Relay,				
Reed auto	Cannadas	Yes	2-wire	24 V	12 V	_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ							
	Connector	No								ĺ				24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit
Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	_	•	_	-	_	_]							
	Diagnostic indication (2-color indicator) Water resistant (2-color indicator) With degreesic culput (2-color indicator)	Grommet Connector Diagnostic indication (2-color indicator) Water resistant (2-color indicator) Wh dagnosic output 2-color indicator) Grommet Connector	Connector Grommet Connector	Grommet 3-wire (NPN) 3-wire (NPN) 3-wire (NPN) 2-wire 3-wire (NPN) 2-wire 3-wire (NPN) 2-wire 3-wire (NPN) 3-wire NPN NPN	Grammet 3-wire (NPN) 3-wire (PNP) 2-wire 3-wire (NPN) 3-wire 3-wire 3-wire (NPN) 3-wire 3-wire	Grommet 3-wire (NPN) 3-wire (NPN) 12 V 12	Savire (NPN) 3-wire (NPN) 12 V 13 V 14 V 14 V 15 V 12 V 14 V 15 V 12 V 15 V 12 V 12 V 14 V 15 V 12 V 12 V 12 V 14 V 14 V 14 V 15 V 12 V 12 V 12 V 14 V 14 V 14 V 15 V 12 V 15 V 15 V 12 V 15 V	Grommet Sawire (NPN) Sawire (NPN) 2-wire 12 V M9BV M9BV	Sommet S	Grommet Grom	Some content Some	Grommet S-wire (NPN) 3-wire (NPN) 3-wire (NPN) 3-wire (NPN) 2-wire 3-wire (NPN) 3-wire (NPN)	Grommet Gro	Grommet Gro	Sommet Sommet	Solution Solution	Some (NPN) Some (PNP) Som	Some content Some							

- 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 179 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.)



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 180.)

Symbol	Specifications
-X446	PTFE grease

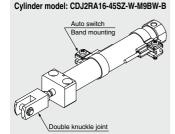
Made to Order

Click here for details

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

Refer to page 183 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	Д	ir				
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 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
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 pages 8 to 19. 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 68 for the list of brackets and page 91 for details about part numbers and dimensions.

Standard	Rod end nut
	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 92 for details.

Spring Reaction Force

Refer to page 1571 (Table (2): Spring Reaction Force).

Refer to pages 172 to 179 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.

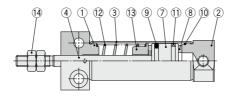
Weights

Spring I	Return				[g]		
	Bore size [mm]	1	0	16			
	Mounting	Basic	Axial piping	Basic	Axial piping		
	15 stroke	42	42	81	81		
	30 stroke	49	49	97	97		
	45 stroke	59	59	114	114		
Basic weight	60 stroke	68	68	132	132		
	75 stroke			154	154		
	100 stroke			187	187		
	125 stroke			224	224		
	150 stroke			246	246		
	Single knuckle joint	1	7	23			
	Double knuckle joint (including knuckle pin)	2	25	21			
Accessories	Double knuckle joint (With one-touch connecting pin)	2	26	22			
	Rod end cap (Flat type)		1	2			
	Rod end cap (Round type)	e [mm] 10 10 10 10 10 10 10 10 10 10 10 10 10	2				

Spring Extend											
	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)

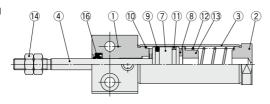
Single acting, Spring return





With auto switch

Single acting, Spring extend





With auto switch

Component Parts

No.	Description	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	

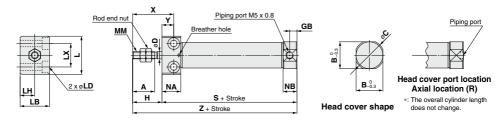
No.	Description	Description Material							
9	Piston seal	NBR							
10	Tube gasket	NBR							
11	Wear ring	Resin							
12	Return spring	Piano wire							
13	Spring seat	Aluminum alloy							
14	Rod end nut	Rolled steel							
15	Magnet	_							
16	Rod seal	NBR							

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

CJ2R Series

Single Acting: Bottom Mounting

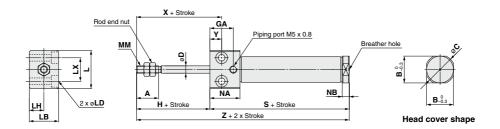
Spring return: CJ2RA $^{10}_{16}$ - Stroke S Head cover port location Z



																[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

D	Dimensions by Stroke: Spring Return [mm]																
Т	Bore size					3			Z								
		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



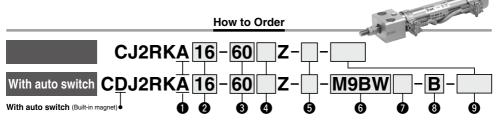
	[mr															[mm]
Bore size	Α	В	С	D	GA	Н	L	LB	LD	LH	LX	MM	NA	NB	Х	Υ
10	15	12	14	4	16	20	23	16	ø3.5 through, ø6.5 counterbore depth 4	8	12	M4 x 0.7	20.5	4.8	28	8
16	15	18.3	20	5	16	20	26	20	ø4.5 through, ø8 counterbore depth 5	10	16	M5 x 0.8	20.5	4.8	28	8

I	Dimensions by Stroke: Spring Extend [mm]																
S S	7	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**







Mounting

Nil

R

Bottom mounting 4 Head cover port location

Perpendicular to

axis

Axial

2 Bore size

10 mm

16 mm

Hod end bracket								
Nil	None							
٧	Single knuckle joint							

	V	Single knuckle joint					
	W**	Double knuckle joint					
/	Т	Rod end cap (Flat type)					
1	U	Rod end cap (Round type)					
0	*: Rod e	nd bracket is shipped togethe					

bracket is shipped together with the product, but not assembled.

**: Refer to page 91 for the double knuckle joint (with one-touch 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

3 Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 158.

7 Nur	mber of auto switches
Nil	2 ncs

1 pc.

"n" pcs

s

n

8	Auto switch mounting type
Α	Rail mounting
В	Band mounting

Made to Order Refer to page 158 for details.

- *: For rail mounting, screws and nuts for 2 auto switches come with the rai
- *: Refer to page 178 for auto switch mounting brackets.

*: Refer to "Ordering Example of Cylinder Assembly" on page 158.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		Clastrical	or light	\A/isim as		Load v	oltage		Auto swit	ch model		Lea	d wir	e lei	ngth	[m]	Pre-wired	Amali	aabla												
Тур		Electrical entry	ator	Wiring (Output)		DC	AC	Band m	ounting	ng Rail mounting		0.5	1	3	5	None	connector	Appli lo:													
		Citiy	Indicati	(Output)		ьс	70	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	CONTINECTOR	101	loau												
				3-wire (NPN)		5 V,12 V		M9NV	M9N	M9NV	M9N	•	•	•	0	-	0	IC circuit													
ءِ ا		Grommet		3-wire (PNP)		5 V,12 V		M9PV	M9P	M9PV	M9P	•	•	•	0	-	0	IC CIICUIL	1												
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	-	0														
		Connector	1	Z-WIIE		12 V		_	H7C	J79C	_	•	 —	•	•	•	_	-													
anto	Diagnostic indication			3-wire (NPN)		5 V,12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	-	0	IC aircuit	Date:												
		Diagnostic indication (2-color indicator)		Yes	Yes	3-wire (PNP)	24 V	3 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	-	0	PL	PLC										
state					2-wire]	12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	I-	0	_												
		Grommet	Gromme	Grommet	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		(2-color indicator)		3-wire (PNP)]	5 V, 12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	-	0	IIC CIICUII													
ത്	(2-coloi iliulcator)												2-wire		12 V		M9BAV*1	M9BA*1	M9BAV*1	M9BA*1	0	0	•	0	I-	0	_				
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V,12 V	5 V,12 V		_	H7NF	_	F79F	•	_	•	0	-	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	•	_	•	_	_	_														
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	1-	_	_													
anto			No			V 12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	_	—	_	IC circuit	Relay,												
		Connector	nnector Yes	2-wire	24 V		_	_	C73C	A73C	_	•	_	•	•	•	_	_	PLĆ												
Reed		Connector					24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit													
	Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	<u> </u>	•	_	I-	_	_													

- *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
- *: Since there are other applicable auto switches than listed, refer to page 179 for details
- ··· 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.)



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 180.)

Symbol	Specifications
-X446	PTFE grease

Made to Order

Click here for details

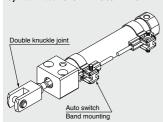
Symbol	Specifications						
-XA□	Change of rod end shape						
-XC9	Adjustable stroke cylinder/Adjustable retraction type						
-XC51	With hose nipple						
-XC85	Grease for food processing equipment						

⚠ Precautions

Refer to page 183 before handling.

Ordering Example of Cylinder Assembly

Cylinder model: CDJ2RKA16-60Z-W-M9BW-B



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

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

Specifications

Bore size [mm]	10	16			
Action	Double actin	g, Single rod			
Fluid	Д	ir			
Proof pressure	1 N	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				
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, 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 pages 8 to 19. 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 68 for the list of brackets and page 91 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/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 92 for details.

Weights

			[g]
Bore s	10	16	
Basic weight	Basic	36	62
(When the stroke is zero)	Axial piping	36	62
Additional weight per 15 mn	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

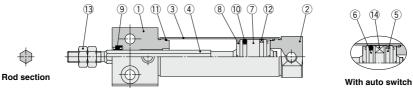
 $36 + 4/15 \times 45 = 48 g$

Refer to pages 172 to 179 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.



Construction (Not able to disassemble)





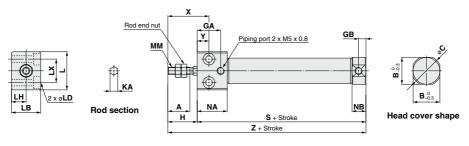
Component Parts

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

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





Head cover port location Axial location (R)

*: The overall cylinder length does not change.

																			[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	5	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	75

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

CJ2RK Series



How to Order

CJ2RKA 16 - 45 S Z - - - M9BW - B - With auto switch (Built-in magnet) 0 2 3 4 5 6 2 8 9 10

Mounting

Nil

R

_	
Α	Bottom mounting

Head cover port location

Perpendicular to

axis

Axial

*: Not applicable to single acting.

spring extend (T).

es come with the rail.

2 Bore size

9	DOTE SIZE
10	10 mm
16	16 mm

6 Rod end bracket

•	a cha 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 91 for the double knuckle joint (with one-touch connecting pin).

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

page 161. 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.

4 Action

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

O Nur	nber of auto switches
Nil	2 pcs.
-	1 no

"n" pcs.

9	Auto switch mounting type
Α	Rail mounting
	Band mounting

Made to Order
Refer to page 161 for details.

- B Band mounting

 *: For rail mounting, screws and nuts for 2 auto switch-
- *: Refer to page 178 for auto switch mounting brackets.

*: Refer to "Ordering Example of Cylinder Assembly" on page 161.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

			ig			Load vo	oltage		Auto swi	ch model		Lea	d wir	e ler	ngth	[m]		A !!													
Туре	Special function	Electrical entry	ndicator	vviring		D0	AC	Band m	ounting	Rail mo	unting	0.5	1	3	5	None	Pre-wired connector		cable												
		entry	ligi	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	CONTINECTOR	10	ad												
				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		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	_	0														
		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	D												
	(2-color indicator)	Grommet			Yes	3-wire (PNP)	24 V	3 V, 12 V	_	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	_	0	IC CIICUII	PLC										
state	(2-color indicator)															2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	_	0	_	
S	Water resistant														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)		3 V, 12 V]	M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	_	0	IC CIICUII													
S	(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	•	<u> </u>	•	0	_	0	IC circuit													
switch														1	.,	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	-	-	_	IC circuit	_
<u> </u>		Grommet	Yes]	_	200 V	_		A72	A72H	•	_	•	<u> </u>	_	_														
00							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_	_	_													
anto			No	0		12 V	100 V or less	A90V	A90	A90V	A90	•	_	•	_	_	_	IC circuit	Relay,												
8		Cannadar	Yes No		2-wire 2		24 V	12 V	_	_	C73C	A73C		•	I —	•	•	•	_	_	PLĆ										
Reed		Connector		No	No	No				24 V or less	_	C80C	A80C	_	•	_	•	•	•	_	IC circuit										
_		Grommet				_	_	_		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.
- *: Since there are other applicable auto switches than listed, refer to page 179 for details.
- *: Solid state auto switches marked with "O" are produced upon receipt of order.
- *: The D-A9\(\triangle A9\(\triangle A9\)\)}))))))})

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

Non-rotating accuracy \emptyset 10: \pm 1.5°, \emptyset 16: \pm 1° Can operate without



Symbol





Made to Order: Individual Specifications (For details, refer to page 180.)

	(i or dotaile, refer to page 100)
Symbol	Specifications
-X446	PTFE grease

Made to Order

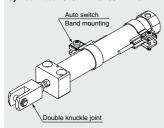
Click here for details

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

⚠ Precautions Refer to page 183 before handling.

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 N	1Pa					
Maximum operating pressure	0.7	MPa					
Minimum operating pressure	0.15	MPa					
Ambient and fluid temperature	Rubber bumper Not required (Non-lube)						
Cushion	Rubber bumper						
Lubrication	Not required	d (Non-lube)					
Stroke length tolerance	+1	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
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 pages 8 to 19. 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 68 for the list of brackets and page 91 for details about part numbers and dimensions.

Standard	Rod end nut
	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 92 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 J



Spring with secondary

When the spring is set in the cylinder

When the spring is contracted by applying air

Refer to pages 172 to 179 for cylinders with auto switches.

- \bullet 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.



CJ2RK Series

Weights

Spring I	Return				[g]	
	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		10 16			
	125 stroke			228	228	
	150 stroke			251	251	
	Single knuckle joint	1	7	23		
	Double knuckle joint (including knuckle pin)	25 21				
Accessories	Double knuckle joint (With one-touch connecting pin)	2	6	22		
	Rod end cap (Flat type)		1	- 1	2	
	Rod end cap (Round type)		1	- 2	2	

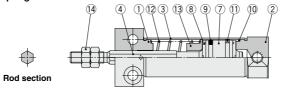
	Bore size [mm]	10	16		
	Mounting	Basic	Basic		
	15 stroke	42	79		
	30 stroke	48	93		
	45 stroke	57	110		
Basic	60 stroke	66	126		
weight	75 stroke		Basic 79 93 110		
	Mounting Basic 15 stroke 42 30 stroke 48 45 stroke 57 Basic 60 stroke 66 weight 75 stroke 100 stroke 125 stroke 150 stroke 150 stroke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

[g]

Spring Extend

Construction (Not able to disassemble)

Single acting, Spring return

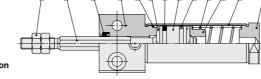




With auto switch









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	

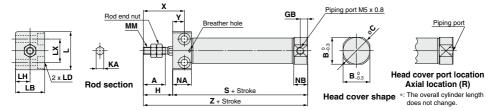
No.	Description	Material	Note
9	Piston seal	NBR	
10	Tube gasket	NBR	
11	Wear ring	Resin	
12	Return spring	Piano wire	
13	Spring seat	Aluminum alloy	
14	Rod end nut	Rolled steel	
15	Magnet	_	
16	Rod seal	NBR	

^{*:} 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

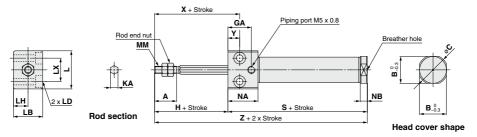
Spring return: CJ2RK $^{10}_{16}$ – Stroke S Head cover port location Z



																[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

ı	Dimensions by Stroke: Spring Return [mm]																
Ī	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	53.5	61	73	85	_	_	_	_	73.5	81	93	105	_	_	_	
ĺ	16	53.5	62	74	86	92	116	134	146	73.5	82	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	Υ
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]																
Dave size	S									Z						
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	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

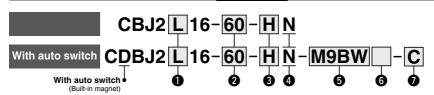
SMC

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.					
Ì	n	"n" pcs.					

2 Cylinder standard stroke [mm] Refer to "Standard Strokes" on page 165.

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.
- 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.) (NiI)

3 Lock position

C Look poolition								
Н	Head end lock							
R	Rod end lock							

4 Manual release

N Non-locking type

Built-in Magnet Cylinder Model

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 178 for auto switch mounting brackets.

Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

		Electrical	light	Wiring		Load vol	tage		Auto swit	ch model		Lead	d wire	e ler	igth	[m]	Pre-wired								
Type	Special function	entry	Indicator	(Output)		DC	AC	Band m	ounting	Rail mo	unting	0.5	1	3		Inoue	connector	Applica	ble load						
		Citaly	Indic	(Output)		DC	AC	Perpendicular	In-line	Perpendicular	In-line	(Nil)	(M)	(L)	(Z)	(N)	COTTIECTO								
				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 CITCUIT							
switch				2-wire		12 V		M9BV	M9B	M9BV	M9B	•	•	•	0	 —	0								
		Connector		Z-WITE		12 V			H7C	J79C	_	•	-	•	•	•	_	_							
anto	Di			3-wire (NPN)		5 V,12 V		M9NWV	M9NW	M9NWV	M9NW	•	•	•	0	 -	0	IC circuit	D-1						
	Diagnostic indication (2-color indicator)		Yes	3-wire (PNP)	24 V	5 V, 12 V	-	M9PWV	M9PW	M9PWV	M9PW	•	•	•	0	-	0	IC CITCUIT	Relay, PLC						
state	(2-color indicator)			İ	2-wire		12 V		M9BWV	M9BW	M9BWV	M9BW	•	•	•	0	—	0	_	FLC					
	\M/-4	Grommet		3-wire (NPN)		E V 10 V								M9NAV*1	M9NA*1	M9NAV*1	M9NA*1	0	0	•	0	_	0	IC circuit	1
Solid	Water resistant	color indicator)				3-wire (PNP))	5 V,12 V		M9PAV*1	M9PA*1	M9PAV*1	M9PA*1	0	0	•	0	 -	0	IC CITCUIT					
ŭ	(2-color indicator)		İ	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	1					
등				3-wire (NPN equivalent)	_	5 V	_	A96V	A96	A96V	A96	•	_	•	_	_	_	IC circuit	_						
switch		Grommet	Yes		ĺ	_	200 V	_	_	A72	A72H	•	-	•	_	-	_								
							100 V	A93V*2	A93	A93V*2	A93	•	•	•	•	_									
anto		No	No	No	2-wire		12 V	100 V or less	A90V	A90	A90V	A90	•	-	•	_	-	_	IC circuit	Relay,					
8		Connector	Yes	Z-WIIE	24 V	12 V	_		C73C	A73C	_	•	 -	•	•	•	_	_	PLC						
ě	Reed	Connector	No				24 V or less		C80C	A80C	_	•	_	•	•	•	_	IC circuit							
	Diagnostic indication (2-color indicator)	Grommet	Yes			_	_	_	_	A79W	_	•	_	•	_	_	_	_							

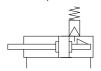
- *1: Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please contact SMC regarding water resistant types with the above model numbers.
- *2: 1 m type lead wire is only applicable to D-A93.
- *: Lead wire length symbols: 0.5 m Nil (Example) M9NW
 - 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 179 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). (However, when the D-A9□/M9□ types are selected, only auto
- 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 178 for details.

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]
Bore size	Standard stroke	
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.)
- Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on pages 8 to 19. In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc.

Mounting Brackets/Part No.

Mounting brookst	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 92 for details.

Refer to pages 172 to 179 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.

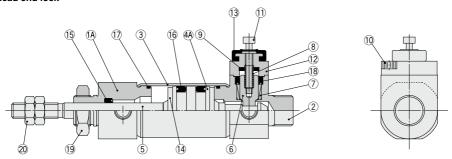
Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to the Web Catalog.

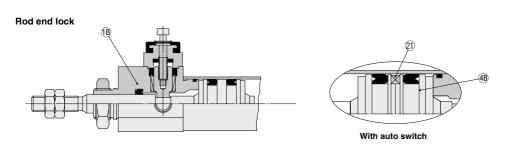


CBJ2 Series

Construction (Not able to disassemble)

Head end lock





Component Parts

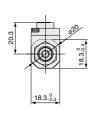
No.	Description	Material	Note
1A	Rod cover	Aluminum alloy	
1B	Rod cover	Stainless steel	
2	Head cover	Aluminum alloy	
3	Cylinder tube	Stainless steel	
4A	Piston	Aluminum alloy	
4B	Piston B	Aluminum alloy	
5	Piston rod	Carbon steel	
6	Locking piston	Carbon steel	
7	Locking bushing	Copper alloy	
8	Lock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

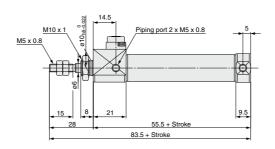
No.	Description	Material	Note
11	Hexagon socket head cap screw	Alloy steel	
12	Сар	Aluminum alloy	
13	Rubber cap	Synthetic rubber	
14	Bumper	Urethane	
15	Rod seal	NBR	
16	Piston seal	NBR	
17	Tube gasket	NBR	
18	Locking piston seal	NBR	
19	Mounting nut	Brass	
20	Rod end nut	Rolled steel	
21	Magnet		

Dimensions

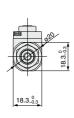
Basic

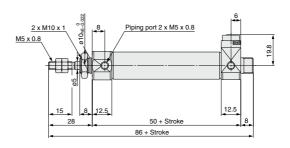
With rod end lock: C□BJ2B16-□□-RN





With head end lock: C BJ2B16- -HN





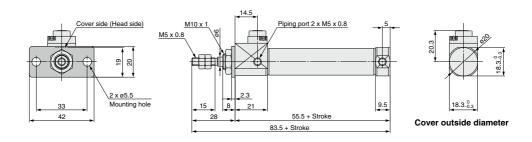
SMC

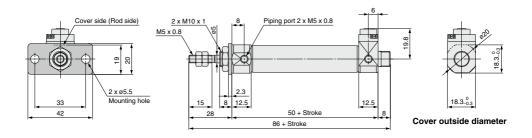
CBJ2 Series

Dimensions

Flange

With rod end lock: C□BJ2F16-□□-RN

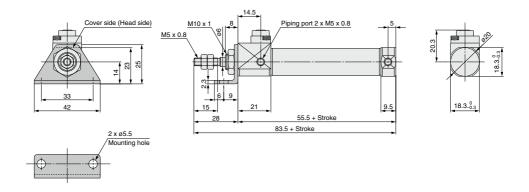




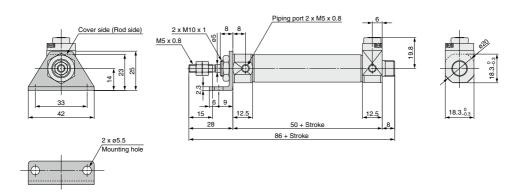
Dimensions

Axial foot

With rod end lock: C□BJ2L16-□-RN



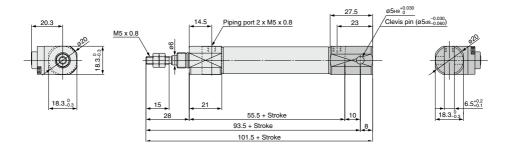
With head end lock: C□BJ2L16-□-HN



CBJ2 Series

Dimensions

Double clevis



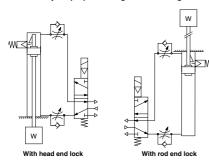


CBJ2 Series Specific Product Precautions

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

Use Recommended Air Pressure Circuit.

· 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.")

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

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.



CJ2 Series

Auto Switch Mounting

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

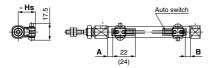
Solid state auto switch

<Band mounting>

D-M9□

D-M9□W

D-M9□A

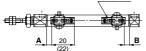


(): Dimension of the D-M9□A.
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-M9□V

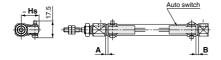
D-M9□MV D-M9□AV





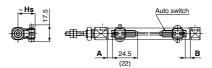
(): Dimension of the D-M9□AV.
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-H7□ D-H7□W D-H7BA D-H7NF D-H7C



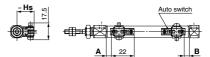
Reed auto switch <Band mounting>

D-A9□



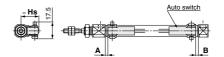
(): Dimension of the D-A96.
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-A9□V

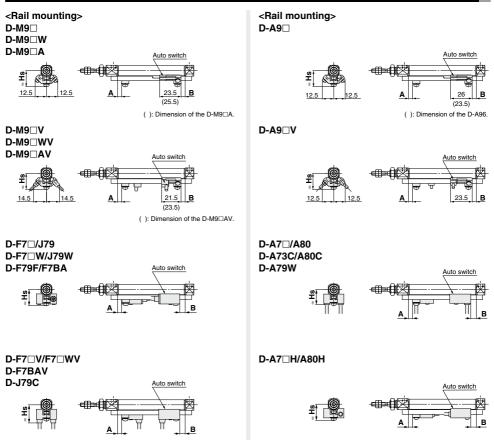


A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-C7□/C80 D-C73C□/C80C



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



SMC

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

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

tate entities repet meaning rection (entities acting type execution)								
Auto switch				Band m	ounting			
model	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV		D-A9□ D-A9□V		D-H7□ D-H7C D-H7NF D-H7□W D-H7BA		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	o switch Rail mounting											
model	D-M9 D-M9 D-M9 D-M9 D-M9 D-M9	□V □W □WV □A	D-A D-A		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	Α	В	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 Omiton	tato Cwitch Mounting Height									
Auto switch										
model	D-M9 D-M9 V D-M9 W D-M9 WV D-M9 A D-M9 AV D-A9 D-A9 U		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 D-M9 V D-M9 W D-M9 W D-M9 A V D-M9 A V D-A9 D-A9 V	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)

[mm]

	A to a National fall	Bore					A dimensions	3		A dimensions						
	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				
	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				
mounting	D-A9□	10	_	9	16.5	28.5	40.5	-	-	_	_	2				
lo ur		16	_	8.5	17	29	41	47	71	89	101	2.5				
P		6	8	8	17	21	35	_	_	_	_	1.5				
Band	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 D-C73C D-C80C	6	_	8.5	17.5	21.5	35.5	_	_	_	_	2				
		10	_	9.5	17	29	41	_	_	_	_	2.5				
		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				
		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 A30	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-A3-1	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				
Railm	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				
		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				
	/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				
	2 011	16	_	7	15.5	27.5	39.5	45.5	69.5	87.5	99.5	1				

st: In the actual setting, adjust them after confirming the auto switch performance.



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)

[mm] **B** dimensions Bore Auto switch model Α 5 to 9 st 10 to 15 st 16 to 30 st 31 to 45 st 46 to 60 st 76 to 100 st 101 to 125 st | 126 to 150 st 61 to 75 st 6 5.5 21 25 D-M9□ 39 D-M9□W/M9□WV 10 6 13 20.5 32.5 44.5 D-M9□A/M9□AV 16 12.5 6.5 21 33 45 51 75 93 105 5.5 21 25 6 12 12 39 D-M9□V 10 20.5 32.5 44.5 6 13 13 16 6.5 12.5 12.5 21 33 45 51 75 93 105 6 15 Я 17 21 35 D-A9□ 10 2 9 165 28.5 40.5 16 2.5 8.5 17 29 41 47 71 89 101 6 15 Я Я 17 21 35 3and 1 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 6 1 7.5 16.5 20.5 34.5 D-H7□/H7C 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 6 2 8.5 17.5 21.5 35.5 D-C7□/C80 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 4.5 11.5 31 43 D-M9□W/M9□WV D-M9□A/M9□AV 11 19.5 31.5 43.5 49.5 73.5 91.5 103.5 4.5 11.5 11.5 31 43 D-M9□V 16 5 11 11 19.5 31.5 43.5 49.5 73.5 91.5 103.5 10 0.5 7.5 15 27 39 D-A9□ 16 15.5 27.5 39.5 45.5 69.5 87.5 99.5 10 0.5 7.5 7.5 27 39 15 D-A9□V 16 1 7 7 15.5 27.5 39.5 69.5 87.5 99.5 45.5 D-F7 - /F7 - V 10 3.5 10.5 10.5 18 30 42 D-J79/J79C D-A7 H/A80H 16 4 10 10 18.5 30.5 42.5 48.5 72.5 90.5 102.5 D-A73C/A80C D-F7 W/J79W 10 3.5 10.5 18 30 42 D-F7 WV/F79F D-F7BA/F7BAV 4 10 30.5 42.5 102.5 16 18.5 48.5 72.5 90.5 8.5 15.5 35 47 10 23 D-F7NT 16 9 15 23.5 35.5 47.5 77.5 107.5 53.5 95.5 17.5 29.5 41.5 10 3 10 10 D-A7□/A80 16 3.5 9.5 9.5 30 42 48 102 18 72 90 10 0.5 7.5 15 27 39 D-A79W 16 1 7 27.5 39.5 45.5 69.5 87.5 99 5

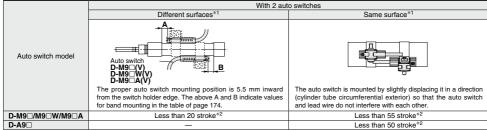
^{*:} In the actual setting, adjust them after confirming the auto switch performance.

Minimum Stroke for Auto Switch Mounting

						[mm]
Auto switch					auto switches	
mounting	Auto switch model	With 1 pc.	With 2			ber of auto switches)
			Different surfaces	Same surface	Different surfaces	Same surface
	D-M9□ D-M9□W D-M9□A D-A9□	10	15* ¹	45* ¹	$15 + 35\frac{(n-2)}{2}$ $(n = 2, 4, 6)^{*3}$	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



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



Operating Range

_				[mm]
	Auto switch model	В	ore siz	ze
	Auto Switch model	6	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	Auto switch model		Bore size [mm]				
mounting	Auto switch model	6	10	16			
	D-M9 D-M9 V D-M9 W D-M9 WV D-A9 D-A9	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, q)	BJ6-010S (A set of a, b, d, e)	BJ6-016S (A set of a, b, d, e)			
Band mounting	Switch bra	cket (Resin) nt (Nylon)*1 nt blue (Nylon)*1 T) holder	Auto switch mounting screw Auto switch mounting band				
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)			
			BQ2-012 (S) (A set of a and b)	BQ2-012 (S) (A set of a and b)			
*4 Rail mounting	D-M9□ V D-M9□ W D-M9□ W V D-M9□ W V D-M9□ A *4 D-M9□ A V*4 D-A9□ D-A9□ V	_	Auto switch (Accessory) BO2-012 BO2-012 Auto switch (Accessory) Auto switch mounting screw Nut (Cylinder accessory)				

- *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 Brackets Set 1 art 140.								
C-44	Contents	В	ore size [mn	n]				
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 1370 for details on the BBA4.

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



Other than the applicable auto switches listed in "How to Order", the following auto switches are mountable. Refer to pages 1271 to 1365 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)	96 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	
		D-F7NV/F7PV/F7BV	Grommet	_	910,910	
		D-F7NWV/F7BWV	(Perpendicular)	Diagnostic indication (2-color indicator)		
	Band mounting	D-C73/C76		_	ø6 to ø16	
	Band mounting	D-C80	Grommet	Without indicator light	0010016	
Reed		D-A73H/A76H	(In-line)	_		
need	Rail mounting	D-A80H		Without indicator light	ø10. ø16	
	Hall mounting	D-A73	Grommet	_	טוש,טוש	
		D-A80	(Perpendicular)	Without indicator light		

^{*:} With pre-wired connector is also available for solid state auto switches. For details, refer to pages 1340 and 1341.

1 1 1

^{*:} Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)) are also available. For details, refer to page 1290.

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	032	Single acting (Spring return/extend)	
	CJ2W	Double acting, Double rod	
Non-rotating rod	C/15K	Double acting, Single rod	
type	CJZK	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	CJZR	Single acting (Spring return/extend)	
Direct mount,	CJ2RK	Double acting, Single rod	
Non-rotating rod type	CJ2HK	Single acting (Spring return/extend)	

How to Order

Standard model no. – X446

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.

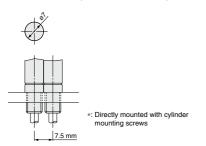


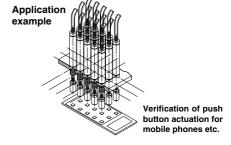
2 Short Pitch Mounting/Single Acting, Spring Return

Symbol -X773

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

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





SU4Z - X773

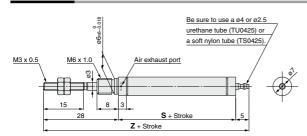
Short pitch mounting/ Single acting, spring return



Specifications

6 Single acting, Spring return		
With ø4 barb fitting (For soft tube) Head cover/Axial direction		
None		

Dimensions



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

- When mounting a cylinder, make sure that the air exhaust port on the rod cover is not blocked.
- 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.



3 Double Clevis (With One-touch Connecting Pin)

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

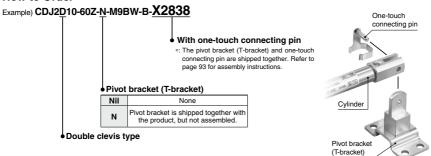
Not necessary to order a bracket for the applicable cylinder separately.

Applicable Series

Applicable Cylinders (Double Clevis Type)

· · · · · · · · · · · · · · · · · · ·							
Series	Bore size [mm]	Type	Model	Action	Note		
	10, 16	Standard	CJ2D	Double acting, Single rod	Cannot be mounted on cylinders with air cushion, or rail mounting type auto switches.		
C12D			CJ2D	Single acting, Single rod (Spring return/extend)			
0320		Non-rotating	CJ2KD	Double acting, Single rod			
		rod type	CJ2KD	Single acting, Single rod (Spring return/extend)			

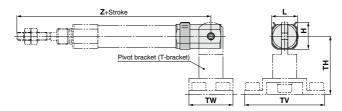




Specifications: Same as standard type

Dimensions

*: Refer to page 93 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 92 for details.



Specific Product Precautions

Be sure to read this before handling the products. Refer to page 20 for safety instructions and pages 21 to 30 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.
- 2. 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 guide/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.

4. Do not apply any torque to the cover joint.

Both the rod cover and head cover have wrench flats. When mounting the product, be sure to tighten with an appropriate amount of force.

When mounting the cylinder or screwing a fitting into the port, tighten while holding the cover on the mounting side with a wrench. In other words, do not hold the cover on the opposite side with a wrench. The applied torque may damage the cover iointed part.





↑ Caution

- Tighten the retaining screws to an appropriate tightening torque within the range given below.
 - Ø6: 2.1 to 2.5 N·m, Ø10: 5.9 to 6.4 N·m Ø16: 10.8 to 11.8 N·m
- To remove and install the 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.

 3. 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.

 4. Please contact SMC when the stroke exceeds

100 mm for the axial foot mounting type. <Pre><Precautions 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 retational torque [N m]	ø 10	ø16
Allowable rotational torque [N·m]	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.



