

# Series CX2

## Prior to Use

1. Changing from the non-auto switch specifications to the auto switch specifications
2. Changing mounting style of the auto switch specifications

### Series CX2

1. In Series CX2, to change from the specification without auto switch to the plate mounting style with auto switch or to the housing mounting style with auto switch, refer to tables (1) and (2) before ordering.



2. In Series CX2, to change from the plate mounting style with an auto switch to the housing mounting style with an auto switch or vice versa, refer to tables (1) and (2) before ordering.



**Table (1)** Plate Mounting Style with Auto Switch (CDPX2N□□-□)  
Component Parts for Mounting Switches and No. of Component Parts

Component parts	Material	ø10	ø15	ø25
		Assembly model no. for mounting switch		
		CDPX2N 10S-□	CDPX2N 15S-□	CDPX2N 25S-□
Switch mounting block	Aluminum alloy	1	1	1
Block mounting screw	Chrome steel/Nickel plated	2	2	2
Switch mounting screw	Chrome steel/Nickel plated	2	2	2
Hexagon nut	Carbon steel/Nickel plated	2	2	2
Magnet	—	1(2) <sup>(2)</sup>	—	—
Socket	Brass/Electroless nickel plated	2	—	—
Plug (M-5P)	Brass/Electroless nickel plated	2	2	—

Note 1) "□" mark indicates strokes.

Note 2) In the case of ø10, the 25 mm stroke has two magnets that are bonded in the holes on the side of the housing. Those with strokes of 50 mm to 100 mm have one magnet. Those with other bore sizes have a built-in magnet in their housings.

**Table (2)** Housing Mounting Style with Auto Switch (CDBX2N□□-□)  
Component Parts for Mounting Switches and No. of Component Parts

Component parts	Material	ø10	ø15	ø25
		Assembly model no. for mounting switch		
		CDBX2N 10M-□	CDBX2N 15M-□	CDBX2N 25M-□
Magnet mounting block ass'y	Aluminum alloy	1	1	1
Switch mounting rail	Aluminum alloy	—	1	1
Spacer	Aluminum alloy/Anodized	2	—	—
Block mounting screw	Chrome steel/Nickel plated	2	2	2
Screw for mounting rail	Chrome steel/Nickel plated	—	2	2
Switch mounting screw	Chrome steel/Nickel plated	2	2	2
Hexagon nut	Carbon steel/Nickel plated	2	2	2
Hexagon socket head plug	Chrome steel/Nickel plated	2	2	—

Note 1) "□" mark indicates strokes.

Note 2) For ø10, CX2N10-□ can be changed to CDBX2N10-□, but note that CDPX2N10□ cannot be changed to CDBX2N10-□.

CX2

CXW

CXT

CXSJ

CXS

D-□

-X□

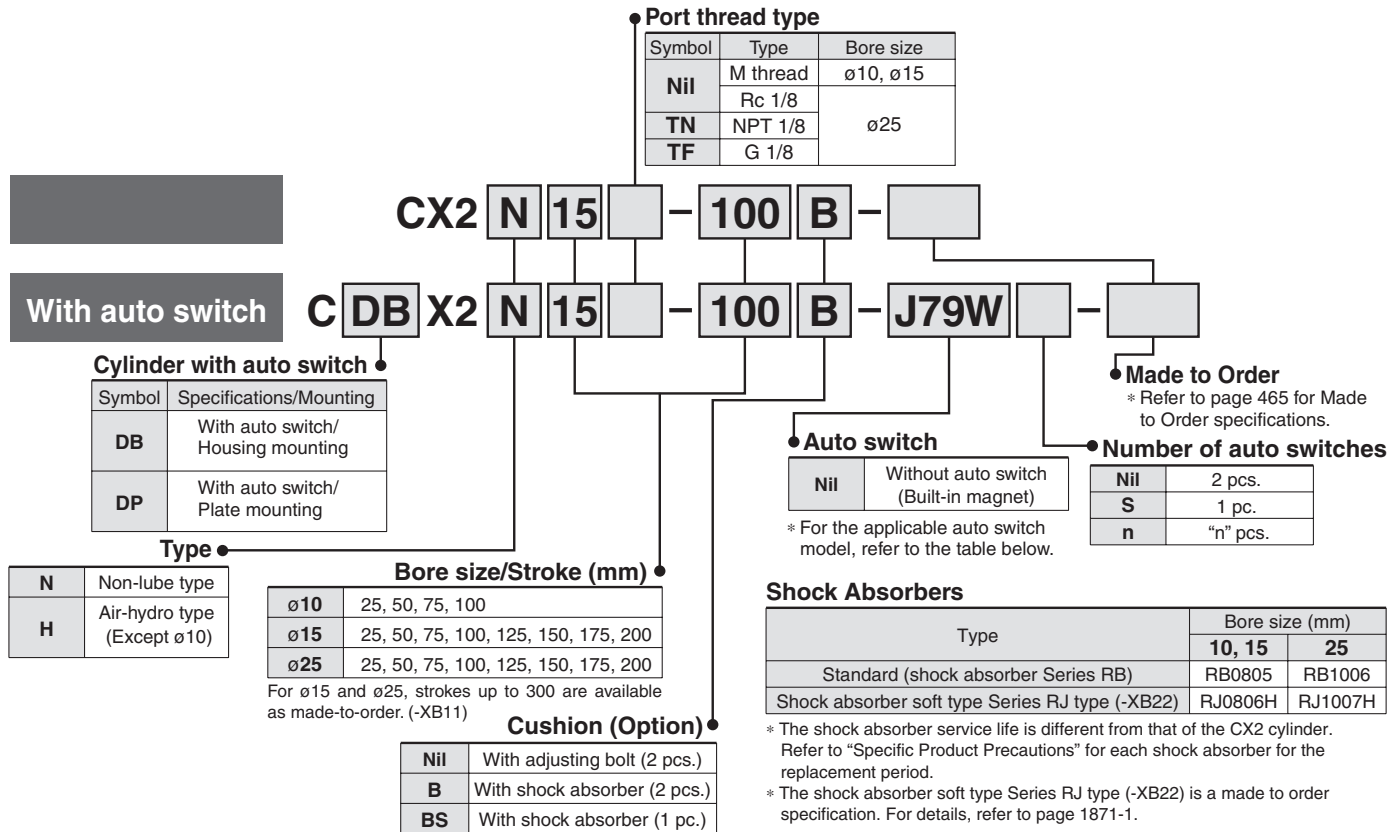
Individual  
-X□

# Slide Unit/Double Rod Type

## Series CX2

Slide Bearing: ø10, ø15, ø25

### How to Order



**Applicable Auto Switch**/Refer to pages 1719 to 1827 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch part no.		Applicable cylinder size		Lead wire length (m)				Pre-wired connector	Applicable load				
					DC	AC	Electrical entry		Housing mounting	Plate mounting	0.5 (Nil)	3 (L)	5 (Z)	None (N)						
							Perpendicular	In-line												
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24V	5V, 12V	—	F7NV	F79	ø15	ø10	●	●	○	—	○	IC circuit	Relay, PLC		
		3-wire (PNP)		F7PV				F7P	●			●	○	—	○					
	Connector	2-wire		12V				F7BV	J79			●	●	○	—	○			—	
				J79C				—	●			●	●	●	—					
	Diagnostic indication (2-color indication)	Grommet		3-wire (NPN)	5V, 12V	F7NWV		F79W	●			●	○	—	○	IC circuit				
				3-wire (PNP)		—		F7PW	●			●	○	—	○					
				2-wire		12V		F7BWV	J79W			●	●	○	—		○		—	
						F7BAV**		F7BA**	—			●	○	—	○					
Water resistant (2-color indication)	Grommet	4-wire (NPN)	5V, 12V	—	F79F	●	●	○	—	○	IC circuit									
With diagnostic output (2-color indication)																				
Reed switch	—	Grommet	Yes	3-wire	—	5V	—	—	A76H	ø15	ø10	●	●	—	—	—	IC circuit	—		
				2-wire	—	—	200V	A72	A72H			●	●	—	—	—	—			
			Connector		24V	12V	100V	A73	A73H			●	●	●	—	—				
						5V, 12V	100 V or less	A80	A80H			●	●	—	—	—			IC circuit	
		Connector	24V		12V	—	A73C	—	●	●	●	●	—	—	—	—		—	IC circuit	
				5V, 12V	24 V or less	A80C	—	●	●	●	●	—	—	—	—	—	—	IC circuit		
		Grommet	Yes	3-wire	—	5V	—	—	E76A	ø10	—	●	●	—	—	—	—	—	—	
				2-wire	24V	12V	100V	—	E73A			●	●	—	—	—	—	—	—	—
			No	24V	5V, 12V	100 V or less	—	E80A	●			●	—	—	—	—	—	—	—	—

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

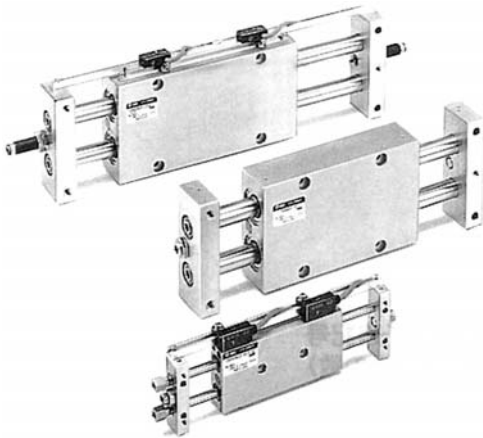
\* Lead wire length symbols: 0.5 m ..... Nil (Example) F79W  
3 m ..... L (Example) F79WL  
5 m ..... Z (Example) F79WZ  
None ..... N (Example) J79CN

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

\* Refer to pages 1784 and 1785 for details of auto switches with a pre-wired connector.

\* Auto switches are shipped together (not assembled).

## Specifications



Type		Non-lube	Air-hydro type
Fluid		Air	Hydraulic fluid
Proof pressure		1.5 MPa	
Max. operating pressure		1.0 MPa	
Min. operating pressure	CX2N10	0.15 MPa	—
	CX2□15	0.15 MPa	
	CX2□25	0.10 MPa	
Ambient and fluid temperature		-10°C to +60°C	
Piston speed (Non-lube)	With adjusting bolt	30 to 200 mm/s	Refer to Table (1).
	With shock absorber	30 to 500 mm/s	
Cushion		With shock absorber (Option)	
Stroke adjustable range		Standard stroke: ±2 mm	
Max. load mass <sup>(1)</sup>	CX2N10	9.8 N	
	CX2□15	29.4 N	
	CX2□25	58.8 N	
Non-rotating accuracy ( Except piston rod deflection )	CX2N10	±0.1°	
	CX2□15	±0.04°	
	CX2□25	±0.02°	
Accessory (Option)		Straight knock pin (2 pcs.), Adjusting bolt (-X138) <sup>(2)</sup> Shock absorber	

Note 1) Place the center of gravity of the load as close to the center of the slide unit as possible during operation. If they are placed far apart, consult with SMC.

Note 2) "-X138" has a stroke adjustable range of 12.5 mm on one side.

## Table (1) Air-hydro/Piston Speed

Model	Plate mounting	Housing mounting
CX2H15	Refer to the below. <sup>Note 1)</sup>	5 to 50 mm/s
CX2H25	5 to 40 mm/s	5 to 100 mm/s

Note 1) Consult with SMC when the air-hydro type is mounted on a plate.

Note 2) Consult with SMC when units are used at a low speed (10 mm/s or faster) (when intermediate stops are not required) since -XB13 (Low speed specification) is available.

Note 3) When using the air-hydro type, use the double side hydro unit.

## Shock Absorber Specifications

Shock absorber		RB0805	RB1006
Applicable slide unit		CX2N10, CX2□15	CX2□25
Maximum energy absorption (J)		0.98	3.92
Stroke absorption (mm)		5	6
Max. collision speed (m/sec)		0.05 to 5	
Max. operating frequency (cycle/min)		80	70
Max. allowable thrust (N)		147	353
Ambient temperature range (°C)		-10 to 80	
Spring force (N)	Extended	1.96	4.22
	Retracted	3.83	6.18
Mass (g)		15	25

\* The above shows the maximum absorption energy per cycle. Accordingly, the operating frequency can be increased in accordance with the absorption energy.

\* The shock absorber service life is different from that of the cylinder body depending on the operating conditions. Refer to the RB Series Specific Product Precautions for the replacement period.



**Made to Order Specifications**  
(For details, refer to pages 1851 to 2021.)

Symbol	Specifications
—XB11	Long stroke type
—XB13	Low speed cylinder (5 to 50 mm/s)
—XB22	Shock absorber soft type Series RJ type
—X146	Hollow piston rod
—X138	Adjustable stroke
—X168	CX helical insert thread
—X169	2 built-in magnets
—XC22	Fluororubber seals

## Theoretical Output

Model	Rod size (mm)	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)							
			0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
CX2N10	6	101	20	30	40	51	61	71	81	91
CX2□15	8	207	41	62	83	104	124	145	166	186
CX2□25	14	597	119	179	239	299	358	418	478	537

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm<sup>2</sup>)

**CX2**

**CXW**

**CXT**

**CXSJ**

**CXS**

**D-□**

**-X□**

Individual  
**-X□**

# Series CX2

## Standard Stroke Table

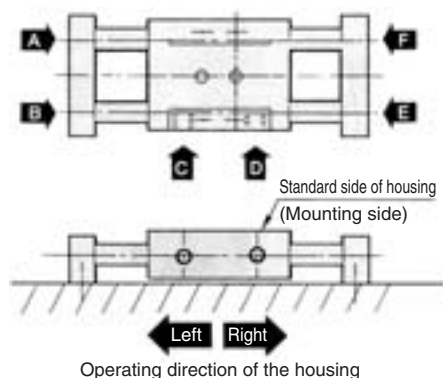
Model	Basic stroke (mm)							
	25	50	75	100	125	150	175	200
<b>CX2N10</b>	●	●	●	●	—	—	—	—
<b>CX2□15</b>	●	●	●	●	●	●	●	●
<b>CX2□25</b>	●	●	●	●	●	●	●	●

## Mass

Model	Basic stroke (mm)								(kg)
	25	50	75	100	125	150	175	200	
<b>CX2N10</b>	0.17	0.22	0.27	0.32	—	—	—	—	—
<b>CX2□15</b>	0.23	0.34	0.45	0.56	0.67	0.78	0.89	1.00	
<b>CX2□25</b>	0.93	1.15	1.36	1.58	1.80	2.01	2.29	2.45	

## Operating Direction with Different Pressure Ports

Operating direction of housing when the plate is fixed



Pressure port	A	B	C	D	E	F
Operating direction	Right	Left	Left	Right	Left	Right

\* There are 9 possible reciprocating piping methods.

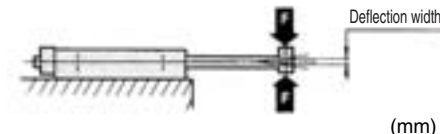
## Deflection of Piston Rod by Center Loading (Reference)

When center loading is added to the center of the housing



Model	Stroke Load (N)	Stroke	
		100	200
<b>CX2N10</b>	9.8	0.07	—
<b>CX2□15</b>	29.4	0.08	0.28
<b>CX2□25</b>	58.8	0.02	0.08

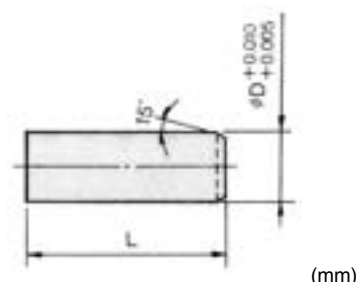
When center loading is added to the center of the plate



Model	Stroke Load (N)	Stroke			
		50	100	150	200
<b>CX2N10</b>	2.94	0.06	0.30	—	—
<b>CX2□15</b>	4.90	0.09	0.22	0.50	1.0
<b>CX2□25</b>	9.81	0.03	0.09	0.16	0.25

Note) The values denote the total width of the deflections in the upward/downward direction.

## Accessory Straight Knock Pin (Option)



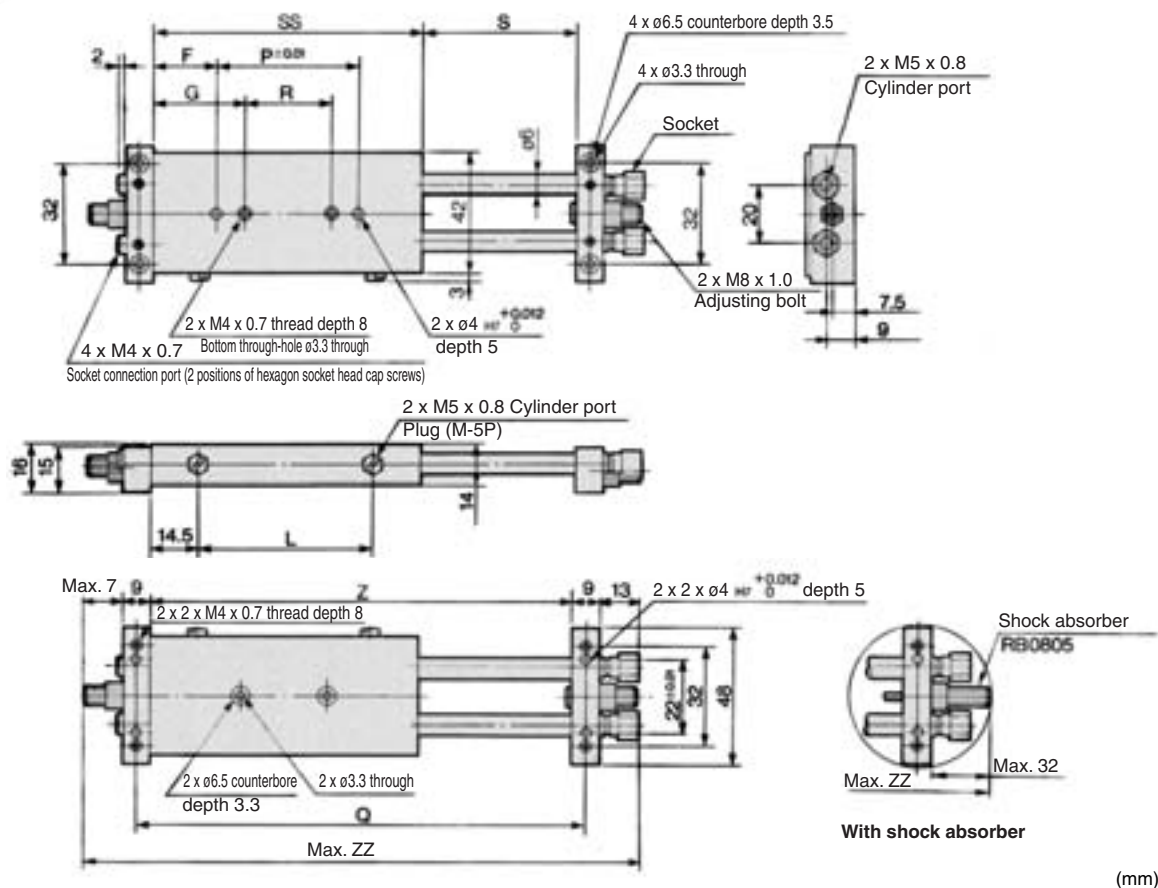
Model	L	øD	Part no.*
<b>CX2N10</b>	10	4	MS4-10
<b>CX2□15</b>	10	5	MS5-10
<b>CX2□25</b>	15	6	MS6-15

\* Manufactured by Misumi Trading Ltd.

# Series CX2

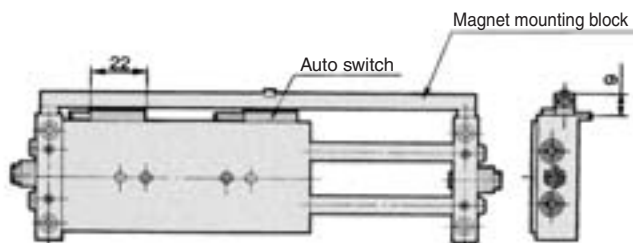


## ø10 Basic Type: CX2N10 – Strokes: 25 to 100



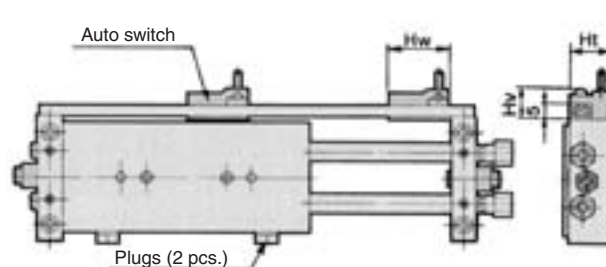
Model	F	G	L	P	Q	R	S	SS	Z	With adjusting bolt	With shock absorber
										ZZ	ZZ
CX2N10-25	9.5	19.5	38	48	103	28	27	67	94	132	176
CX2N10-50	20	30	63	52	153	32	52	92	144	182	226
CX2N10-75	25	35	88	67	203	47	77	117	194	232	276
CX2N10-100	25	35	113	92	253	72	102	142	244	282	326

## Housing mounting style with auto switch CDBX2N10 – Stroke



Note 1) The dimensions show D-E7□A and D-E80A.

## Plate mounting style with auto switch CDPX2N10 – Stroke



Note 1) The dimensions show D-A7 and D-A8.

Auto switch model	Hw	Ht	Hv
D-A7, D-A8	23	15	10.5
D-F7□, D-J79, D-J79W, D-F7PW, D-F79F, D-F7BAL, D-F7NTL	23	15	11.5
D-A7□H, D-A80H	22	15	11.5
D-A73C, D-A80C	23	17.5	17.5
D-F7□V	23	15	14
D-J79C	24	17.5	17
D-F7LF	30	15	11.5

Note 2) For only 25 strokes, two magnets for auto switches are installed in the housing.