Slide Unit

CX2/CXWM/CXWL Series

Slide Bearing/CX2:Ø10, Ø15, Ø25 CXWM:Ø10, Ø16, Ø20, Ø25, Ø32 Ball Bushing Bearing/CXWL: Ø10, Ø16, Ø20, Ø25, Ø32

Provided with shock absorbers to absorb impact and noise.

The slide unit can absorb energy in a wide range, in high speed, low-load applications to low speed, high-load applications, without requiring adjustments.

Ensures high positional accuracy.

A high level of positional accuracy can be attained because the two parallel piston rods prevent the rods from rotating, and the workpiece mounting surface and the parallelism of the piston rods are made highly precise.

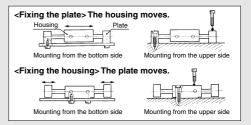
Auto switches can be installed.

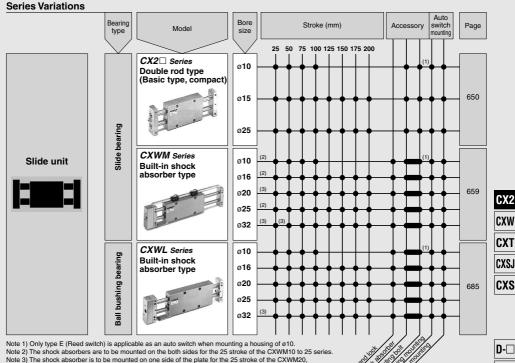
Smooth operation and high thrust.

CXWM32, CXWL32 series and the 50 stroke of the CXWM32 series

Mountable on the housing or on the plate.

The slide unit can be mounted on the housing or on the plate, depending on the application. It can also be bolted from the bottom or from the top. The piping can be fitted to the port in any of the three positions, according to how the unit is mounted.





ØSMC

647

CXT

CXSJ

CXS

D-

-X□

CX2/CXWM/CXWL Series Prior to Use

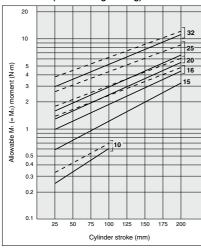
Maximum Allowable Moment: CX2N, CXWM, CXWL

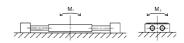
Operate within the operating range and under the allowable moment indicated in the table below.

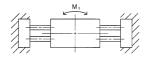
CX2N

CXWM (Slide bearing)

- - - CXWL (Ball bushing bearing)







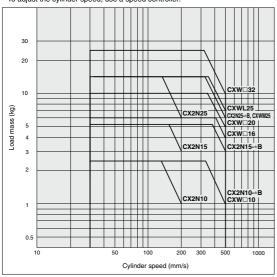
Allowable Moment (M₂) (N·m)

Bore size (mm)	10	15	16	20	25	32
CX2N	0.098	0.294	_	_	1.029	_
CXWM	0.108	_	0.549	0.809	1.029	2.695
CXWL	0.108	_	0.549	0.809	1.201	2.695

Note) M2 is steady regardless of the strokes

Allowable Kinetic Energy

Load mass and cylinder speed should be observed within the range given in the graph below. To adjust the cylinder speed, use a speed controller.





CX2 Series **Prior to Use**

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

CX2 Series

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

Without auto switch:	CX2N — – —
Plate mounting type with auto switch:	CDPX2N STable (1
Housing mounting type with auto switch:	CDBX2N M Table (2

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



Table (1) Plate Mounting Type with Auto Switch (CDPX2N□□-□)

Component Parts for Mounting Switches and No. of Component Parts

		ø 10	ø15	ø 25					
		Assembly model no. for mounting switch							
Component parts	Material	CDPX2N 10S-□	CDPX2N 15S-□	CDPX2N 25S-□					
Switch mounting block	Aluminum alloy	1	1	1					
Block mounting screw	Chrome steel/Zinc chromated	2	2	2					
Switch mounting screw	Chrome steel/Zinc chromated	2	2	2					
Hexagon nut	Carbon steel/Zinc chromated	2	2	2					
Magnet	_	1(2)(2)	_						
Socket	Carbon steel/Electroless nickel plated	2							
Plug	Carbon steel/Nickel plated		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 Type with Auto Switch (CDBX2N□□-□) Component Parts for Mounting Switches and No. of Component Parts

<u> </u>		ø 10	ø 15	ø 25			
Component parts	Material	Assembly model no. for mounting switch					
Component parts	iviaterial	CDBX2N CDBX2N 10M-□ 15M-□		CDBX2N 25M-□			
Magnet mounting block assembly	Aluminum alloy	1	1	1			
Switch mounting rail	Aluminum alloy		1	1			
Spacer	Aluminum alloy/Anodized	2					
Block mounting screw	Chrome steel/Zinc chromated	2	2	2			
Screw for mounting rail	Chrome steel/Zinc chromated		2	2			
Switch mounting screw	Chrome steel/Zinc chromated	2	2	2			
Hexagon nut	Carbon steel/Zinc chromated	2	2	2			
Hexagon socket head plug	Chrome steel/Zinc chromated	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

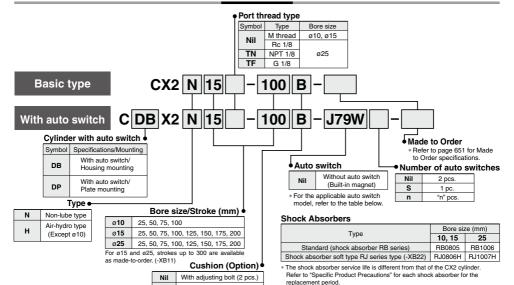
CXSJ CXS

-X□

Slide Unit/Double Rod Type CX2 Series

Slide Bearing: Ø10, Ø15, Ø25

How to Order



Applicable Auto Switches/Refer to pages 1119 to 1245 for further information on auto switches.

With shock absorber (2 pcs.

With shock absorber (1 pc.)

В

BS

			ight	140		Load volta	ge	Rail mor	unting	Applicable	cylinder size	Lead	d wire	length	(m)		A !				
Type	Special function	Electrical entry	Indicatorlight	Wiring (Output)		DC	AC	Perpendicular	In-line	Housing mounting	Plate mounting	0.5 (Nil)	3 (L)		None (N)	Pre-wired connector		cable ad			
£				3-wire (NPN)		5 V, 12 V		F7NV	F79			•	•	0	_	0	,IC				
switch	_	Grommet		3-wire (PNP)		5 V, 12 V		F7PV	F7P			•	•	0	_	0	circuit				
				2-wire		12 V		F7BV	J79		ø10	•	•	0	-	0					
anto		Connector				12 V		J79C	_	ø15		•	•	•	•	_		Relay,			
	Diagnostic indication		Yes	3-wire (NPN)	24 V	5 V, 12 V	-	F7NWV	F79W		ø 15	•	•	0	_	0	IC.	PLC			
state	(2-color indicator)			3-wire (PNP)		3 V, 12 V		_	F7PW	ø 25	ø 25	•	•	0	_	0	circuit				
Solid	(,	Grommet		2-wire		12 V		F7BWV	J79W		023		•	0	_		_				
တ	Water resistant (2-color indicator)							F7BAV**	F7BA**]			•	0	_	0					
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V, 12 V		_	F79F			•	•	0	_	0	IC circuit				
				3-wire	_	5 V	_	_	A76H			•	•	_	_	-	IC circuit	_			
동		Grommet	Yes		_	_	200 V	A72	A72H	-45	ø 10	•	•	_	_	_	l _				
switch						12 V	100 V	A73	A73H	ø15	ø15	•	•	•	_						
			ટ	2-wire	24 V	5 V, 12 V	100 V or less		A80H	ø 25		•	•	_	_	-	IC circuit				
anto	_	Connector	No Yes			12 V	_	A73C	_		ø 25	•	•	•	•	_		Relay,			
			ž			5 V, 12 V	24 V or less	A80C	_			•	•	•	•	_	,IC	PLC			
Reed		_	Yes	3-wire	_	5 V	_	_	E76A			•	•	_	_	_	circuit				
		Grommet		2-wire	24 V	12 V	100 V	_	E73A	ø 10	-	•	•	-	_	_					
			ž			5 V, 12 V	100 V or less	_	E80A] [•		—	-	-	IC circuit	

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

The shock absorber soft type RJ series type (-XB22) is a made to order

specification. For details, refer to page 1296.

- 3 m L (Example) F79WL 5 m Z (Example) F79WZ None N (Example) J79CN
- None N (Example) J79CN

 * Refer to pages 1192 and 1193 for details of auto switches with a pre-wired connector.
- * Auto switches are shipped together (not assembled).

650



Slide Unit/Double Rod Type CX2 Series



Specifications

Тур	е	Non-lube	Air-hydro type		
Fluid		Air	Hydraulic fluid		
Proof pressure		1.5 [MРа		
Max. operating pressu	ire	1.01	MРа		
	CX2N10	0.15 MPa	_		
Min. operating pressure	CX2□15	0.15	MPa		
	CX2□25	0.10	MPa		
Ambient and fluid tem	perature	−10°C to	o +60°C		
Piston speed (Non-lube)	With adjusting bolt	30 to 200 mm/s	Refer to Table (1).		
r istori speca (itori iabe)	With shock absorber	30 to 500 mm/s	neiei to rable (1).		
Cushion		With shock absorber (Option)			
Stroke adjustable rang	ge	Standard stroke: ±2 mm			
	CX2N10	9.8 N			
Max. load mass (1)	CX2□15	29.	4 N		
	CX2□25	58.	8 N		
Non-rotating accuracy	CX2N10	±0	.1°		
Except piston rod	CX2□15	±0.	04°		
\ deflection /	CX2□25	±0.	02°		
Accessory (Option)		Straight knock pin (2 pcs.), Adjusting bolt (-X138) ⁽²⁾ 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.

Made to Order

Made to Order: Individual Specifications (For details, refer to pages 706 to 708.)

Symbol	Specifications					
-X138	Adjustable stroke					
-X146	Hollow piston rod					
-X168	CX helical insert thread					
-X169	2 built-in magnets					

Made to Order Specifications (For details, refer to pages 1247 to 1440.)

(1 of details, felci to pages 1247 to 1440.)							
Symbol	Specifications						
-XB11	Long stroke type						
-XB13	Low speed cylinder (5 to 50 mm/s)						
-XB22	Shock absorber soft type RJ series type						
-XC22	Fluororubber seals						

Table (1) Air-hydro/Piston Speed

Model	Plate mounting	Housing mounting
CX2H15	Refer to the below. Note 1)	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 energ	y absorption (J)	0.98	3.92			
Stroke absorpt	ion (mm)	5	6			
Max. collision s	speed (m/sec)	0.05 to 5				
Max. operating from	equency (cycle/min)	80	70			
Max. allowable	thrust (N)	147	353			
Ambient temper	ature range (°C)	-10	to 80			
Spring force (N)	Extended	1.96	4.22			
Spring loice (N)	Retracted	3.83	6.18			
Weight (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.

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.

Theoretical Output

										(N)
Model	Rod size	Piston area			Opera	ating pro	essure	(MPa)		
iviouei	(mm)	(mm²)	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 (mm²)

CX2

CXW

CXT

CXSJ

CXS

D-□

-X□



Standard Stroke Table

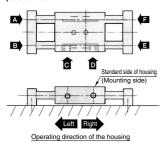
		Basic stroke (mm)									
Model	25	50	75	100	125	150	175	200			
CX2N10	•	•	•	•	_	_	_	_			
CX2□15	•	•	•	•	•	•	•	•			
CX2□25	•	•	•	•	•	•	•	•			

Weight

								(kg)				
Model	Basic stroke (mm)											
	25	50	75	100	125	150	175	200				
CX2N10	0.17	0.22	0.27	0.32	_	_	_	_				
CX2□15	0.23	0.34	0.45	0.56	0.67	0.78	0.89	1.00				
CX2□25	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

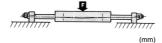


Pressure port A B C D E F
Operating direction Right Left Left Right Left Right

* There are 9 possible reciprocating piping methods.

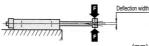
Deflection of Piston Rod by Center Loading (Reference)

When center loading is added to the center of the housing



Model	Stroke Load (N)	100	200
CX2N10	9.8	0.07	_
CX2□15	29.4	0.08	0.28
CX2□25	58.8	0.02	0.08

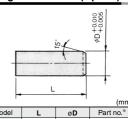
When center loading is added to the center of the plate



					(mm
Model	Stroke Load (N)	50	100	150	200
CX2N10	2.94	0.06	0.30	_	_
CX2□15	4.90	0.09	0.22	0.50	1.0
CX2□25	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)

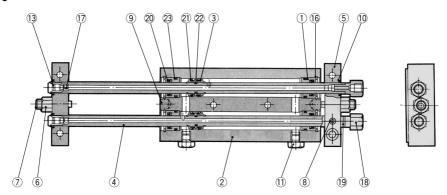


L	øD	Part no.*
0	4	MS4-10
0	5	MS5-10
5	6	MS6-15
	10 10	0 4

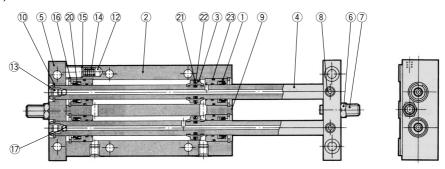
* Manufactured by Misumi Trading Ltd.

Construction/Parts List, Seal List

CX2N10



CX2N15, 25



Parts List

_			
No.	Description	Material	Note
1	Rod cover	Aluminum bearing alloy	
2	Housing	Aluminum alloy	Hard anodized
3	Piston	Aluminum alloy	
4	Piston rod	Carbon steel piping for machine constructions	Hard chrome plated
5	Plate	Aluminum alloy	Anodized
6	Lock nut	Carbon steel	Nickel plated
7	Adjusting bolt	Chromium steel	Zinc chromated
8	Set screw (For fixing rods)	Chromium steel	Zinc chromated
9	Pin	Carbon steel	Quenched
10	Retaining ring	Carbon tool steel	Phosphate coated
11	Plug	Carbon steel	Nickel plated
12	Magnet	_	
13	Ball fixing screw	Chromium steel	Zinc chromated
14	Spring	Stainless steel	
15	Type CR retaining ring	Carbon tool steel	
16	Round type R retaining ring	Carbon tool steel	Phosphate coated

Parts List

No.	Description	Material	Note
17	Steel ball	High carbon chrome bearing steel	Heat treated
18	Socket	Brass	Electroless nickel plated
19	Gasket		
20	Rod seal		
21	Piston seal	NBR	
22	Piston gasket		
23	Cylinder tube gasket		

Replacement Parts: Seal Kit

Ī	Model	Kit no.	Contents
	CX2N10	CX2N10-PS	
	CX2N15	CX2N15-PS	A set of 20, 21, 23 listed above
	CX2N25	CX2N25-PS	

^{*} Seal kit includes ②, ②, ②. ③ Order the seal kit, based on each bore size. (The piston gasket ② is not replaceable.)

* Since the seal kit does not include a grease pack, order it separately.

* Grease pack part no.: GR-S-010 (10 g)

D-□ -X□

CX2 CXW CXT

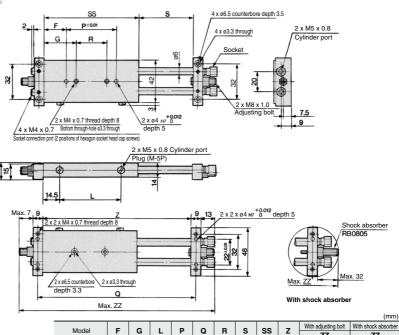
CXSJ CXS



CX2 Series

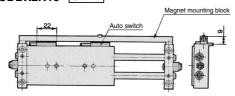


Ø10 Basic Type: CX2N10 - Strokes: 25 to 100



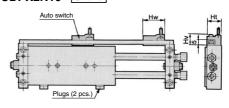
Model	_	G		ь	Q	R	s						ss	7	With adjusting bolt	With shock absorber
Model	-	l G	_		Q	n	, s	33		ZZ	ZZ					
CX2N10-25	9.5	19.5	38	48	103	28	27	67	94	132	176					
CX2N10-50	20	30	63	52	153	32	52	92	144	182	226					
CX2N10-75	25	35	88	67	203	47	77	117	194	232	276					
CX2N10-100	25	35	113	92	253	72	102	142	244	282	326					

Housing mounting type with auto switch CDBX2N10-Stroke



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

Plate mounting type with auto switch CDPX2N10 - Stroke



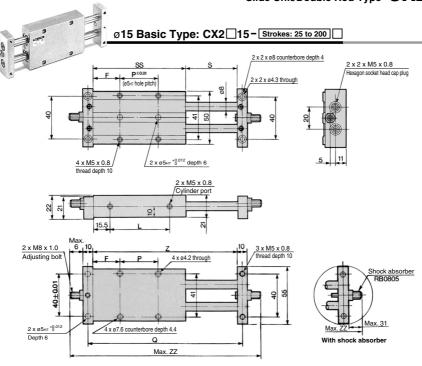
Note 1) The dimensions show D-A7 and D-A8.

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-F7BA, D-F7NT	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.

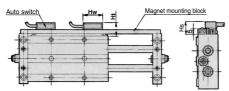


Slide Unit/Double Rod Type CX2 Series



									(11111)
Model	F		Р	Q	s	ss	z	With adjusting bolt	With shock absorber
Wodel		_		ų.	3	33		ZZ	ZZ
CX2□15-25□	24.5	38	20	106	27	69	96	128	178
CX2□15-50□	24.5	63	45	156	52	94	146	178	228
CX2□15-75□	27	88	65	206	77	119	196	228	278
CX2□15-100□	27	113	90	256	102	144	246	278	328
CX2□15-125□	39.5	138	90	306	127	169	296	328	378
CX2□15-150□	52	163	90	356	152	194	346	278	428
CX2□15-175□	64.5	188	90	406	177	219	396	428	478
CX2□15-200□	77	213	90	456	202	244	446	478	528

Housing mounting type with auto switch CDBX2 15- Stroke

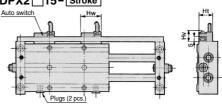


Note 1) The dimensions show D-A7 and D-A8.

Auto switch model	Hw	Hs	Ht
D-A7, D-A8	23	12.5	15
D-F7□, D-J79, D-J79W, D-F7PW, D-F79F, D-F7BA, D-F7NT	23	12.5	15
D-A7□H, D-A80H	22	12.5	15
D-A73C, D-A80C	23	15	17.5
D-F7□V	23	12.5	15
D-J79C	24	15	17.5
D-F7LF	30	12.5	15

Note 2) For only 25 strokes, two magnets for auto switches are installed to the magnet mounting block.

Plate mounting type with auto switch CDPX2 15- 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-F7BA, D-F7NT	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.

CX2

CXW CXT

CXSJ

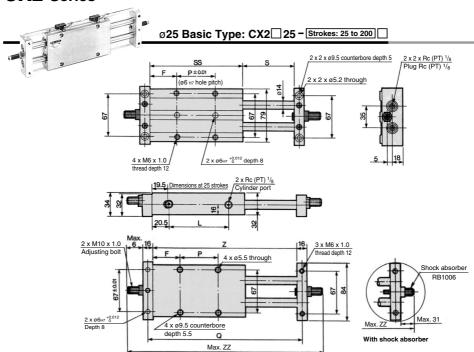
CXS

D-□ -X□



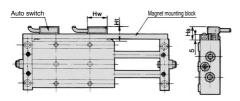


CX2 Series



								()	
Model	F	L	Р	a	Q S SS Z		z	With adjusting bolt	With shock absorber
		_			_		_	ZZ	ZZ
CX2□25-25□	28.5	43	25	125	27	82	109	153	203
CX2□25-50□	31	66	45	175	52	107	159	203	253
CX2□25-75□	33.5	91	65	225	77	132	209	253	303
CX2□25-100□	33.5	116	90	275	102	157	259	303	353
CX2□25-125□	46	141	90	325	127	182	309	353	403
CX2□25-150□	58.5	166	90	375	152	207	359	403	453
CX2□25-175□	71	191	90	425	177	232	409	453	503
CX2 25-200 =	83.5	216	an	475	202	257	450	503	553

Housing mounting type with auto switch CDBX2 25-Stroke

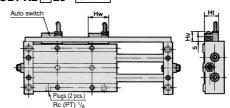


Note 1) The dimensions show D-A7 and D-A8.

Auto switch model	Hw	Hs	Ht
D-A7, D-A8	23	12.5	15
D-F7□, D-J79, D-J79W, D-F7PW, D-F79F, D-F7BA, D-F7NT	23	12.5	15
D-A7□H, D-A80H	22	12.5	15
D-A73C, D-A80C	23	15	17.5
D-F7□V	23	12.5	15
D-J79C	24	15	17.5
D-F7LF	30	12.5	15

Note 2) For only 25 strokes, two magnets for auto switches are installed to the magnet mounting block.

Plate mounting type with auto switch CDPX2 25- Stroke



(mm)

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-F7BA, D-F7NT	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.

Operating Range

(mm)

Auto switch	Applicable cylinder size				
Auto Switch	10	15	25		
D-A7□/A80 D-A7□H/A80H	Housing mounting	ı		6	
D-A73C/A80C	Plate mounting	6	6		
D-E7□A/E80A	Housing mounting	6	ĺ		
D-F7□/J79 D-F7□V/J79C D-F7□W/F7□WV	Housing mounting	_	2.5	2.5	
D-F7BA/F7BAV D-F79F/F7NT	Plate mounting	2.5	2.5	3	

^{*} Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately ±30% dispersion). It may vary substantially depending on an ambient environment.

Besides the models listed in How to Order, the following auto switches are applicable. Refer to pages 1119 to 1245 for the detailed specifications.

Auto quitab tuno	Model	Electrical entry	F	Applicable cylinder size		
Auto switch type		(Fetching direction)	Features	Housing mounting	Plate mounting	
Solid state	D-F7NT	Grommet (In-line)	With timer	ø15, ø25	ø10, ø15, ø25	

^{*} With pre-wired connector is also available for D-F7NT type. For details, refer to pages 1119 and 1193.

* It is impossible to mount solid state auto switches to the housing mounting ø10.

CX2

CXW

CXSJ

CXS

D-□ -X□

