

# Dual Rod Cylinder: Double Rod Type

# Series CXSW

ø6, ø10, ø15, ø20, ø25, ø32

## How to Order

**CXS** **W** **L** **20** **100** **Y7BW** **S**

Double rod type

Bearing type

M	Slide bearing
L	Ball bushing bearing

Bore size/Stroke (mm)

Bore size (mm)	Standard stroke
6	10, 20, 30, 40, 50
10, 15	10, 20, 30, 40, 50
20, 25, 32	10, 20, 30, 40, 50, 75, 100

Number of auto switches

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

Auto switch

Nil Without auto switch (Built-in magnet)

\* For the applicable auto switch model, refer to the table below.

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

**Applicable Auto Switch**/Refer to page 8-30-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length (m) *			Pre-wire connector	Applicable load	
					DC	AC	Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)	IC circuit		Relay, PLC	
															5 V
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	Z76	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	—	Z73	●	●	●	—	—	Relay, PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y69A	Y59A	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				Y7PV	Y7P	●	●	○	○	IC circuit	
				2-wire				Y69B	Y59B	●	●	○	○	—	
	Diagnostic indication (2-color indication)			3-wire (NPN)	Y7NWV	Y7NW		●	●	○	○	IC circuit			
				3-wire (PNP)	Y7PWV	Y7PW		●	●	○	○	IC circuit			
	Water resistant (2-color indication)			2-wire	12 V	Y7BWV		Y7BW	●	●	○	○	—		
						—		Y7BA*	—	●	○	○	—		

\* Lead wire length symbols: 0.5 m ..... Nil (Example) Y59A  
 3 m ..... L (Example) Y59AL  
 5 m ..... Z (Example) Y59AZ

\* Solid state switches marked with "○" are produced upon receipt of order.  
 \* ø10, 15, 20 are not applicable. Please consult with SMC separately.

- Since there are other applicable auto switches than listed, refer to page 8-29-10 for details.
- For details about auto switches with pre-wire connector, refer to page 8-30-52.

# Dual Rod Cylinder: Double Rod Type Series CXSW



## Specifications

Bore size (mm)	6	10	15	20	25	32
Fluid	Air (Non-lube)					
Proof pressure	1.05 MPa					
Maximum operating pressure	0.7 MPa					
Minimum operating pressure	0.15 MPa			0.1 MPa		
Ambient and fluid temperature	-10 to 60°C (No freezing)					
Piston speed	50 to 500 mm/s					
Cushion	Bumper is standard on both ends					
Stroke adjustable range	0 to -10 mm compared to the standard stroke (Extended end: 5 mm, Retracted end: 5 mm)					
Port size	M5 x 0.8				Rc 1/8	
Bearing type	Slide bearing, Ball bushing bearing (Same dimensions for both)					

## Standard Stroke

Model	Standard stroke	Long stroke
CXSW□6	10, 20, 30, 40, 50	—
CXSW□10	10, 20, 30, 40, 50	75, 100, 125, 150
CXSW□15		
CXSW□20	10, 20, 30, 40, 50, 75, 100	125, 150, 175, 200
CXSW□25		
CXWS□32		

\* For long strokes, it will be made-to-order. (-XB11)

## Theoretical Output

Model	Rod size (mm)	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)						
			0.1	0.2	0.3	0.4	0.5	0.6	0.7
CXSW□6	4	31	4.6	6.2	9.3	12.4	15.5	18.6	21.7
CXSW□10	6	100	10	20	30	40	50	60	70
CXSW□15	8	252	25.2	50.4	75.6	101	126	151	176
CXSW□20	10	471	47.1	94.2	141	188	236	283	330
CXSW□25	12	756	75.6	151	227	302	378	454	529
CXSW□32	16	1206	121	241	362	482	603	724	844

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

## Weight

Model	Standard stroke (mm)						
	10	20	30	40	50	75	100
CXSWM6	0.11	0.13	0.14	0.16	0.17	—	—
CXSWL6	0.12	0.13	0.15	0.16	0.18	—	—
CXSWM10	0.24	0.26	0.28	0.30	0.32	0.37	0.42
CXSWL10	0.25	0.27	0.29	0.31	0.33	0.38	0.43
CXSWM15	0.43	0.45	0.48	0.51	0.54	0.61	0.68
CXSWL15	0.47	0.50	0.52	0.55	0.58	0.65	0.42
CXSWM20	0.71	0.74	0.78	0.82	0.85	0.95	1.04
CXSWL20	0.75	0.79	0.82	0.86	0.90	0.99	1.08
CXSWM25	1.06	1.11	1.17	1.22	1.28	1.41	1.55
CXSWL25	1.07	1.12	1.18	1.23	1.29	1.42	1.56
CXSWM32	2.04	2.12	2.21	2.29	2.38	2.59	2.81
CXSWL32	2.06	2.15	2.23	2.32	2.41	2.62	2.83



**Made to Order Specifications**  
(For details, refer to page 8-31-1.)

Symbol	Specifications
-XB11	Long stroke

MX□

MTS

MY□

CY□

MG□

CX□

D-

-X

20-

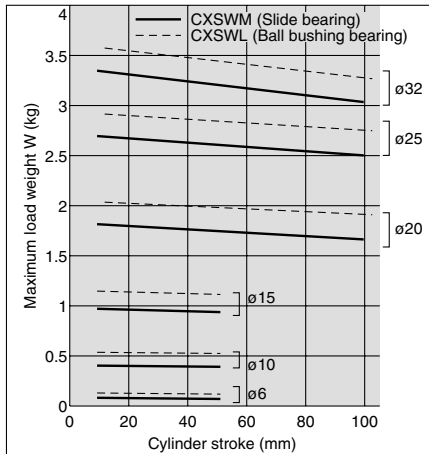
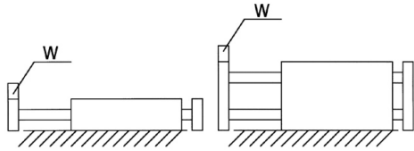
Data

# Series CXSW

## Operating Conditions

### Maximum Load Weight

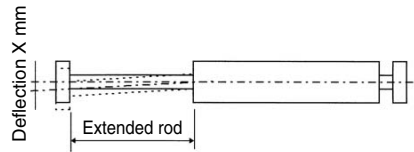
When the cylinder is mounted as shown in the diagrams below, the maximum load weight  $W$  should not exceed the values illustrated in the graph immediately following the diagrams.



Note) Please consult with SMC regarding the maximum load weight for long strokes depending on your specific usage conditions.

### Deflection at the Plate End

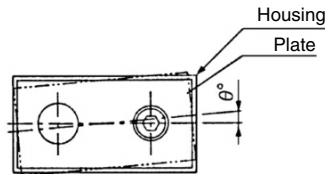
An approximate plate-end deflection  $X$  without a load is shown in the table below.



Bore size (mm)	<b>6 to 32</b>
<b>CXSWM (Slide bearing)</b>	±0.03 mm
<b>CXSWL (Ball bushing bearing)</b>	

### Non-rotating accuracy

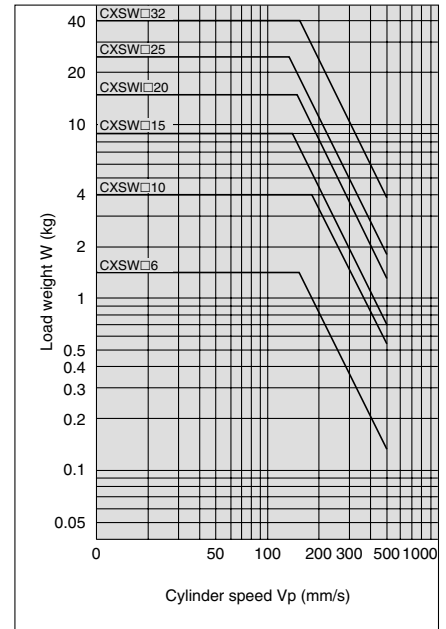
Non-rotating accuracy  $\theta^\circ$  without a load should be less than or equal to the value provided in the table below as a guide.



Bore size (mm)	<b>6 to 32</b>
<b>CXSWM (Slide bearing)</b>	±0.1°
<b>CXSWL (Ball bushing bearing)</b>	

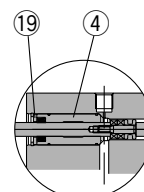
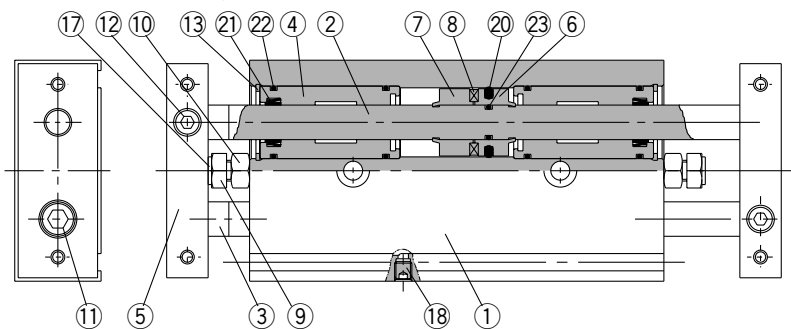
### Allowable Kinetic Energy

Operate a vertically mounted cylinder with a load weight and cylinder speed not exceeding the ranges shown in the graph below. A horizontally mounted cylinder should also be operated with a load weight less than the ranges given in the graph at left. Cylinder speed should be adjusted using a speed controller.



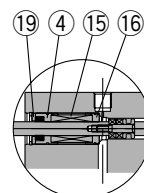
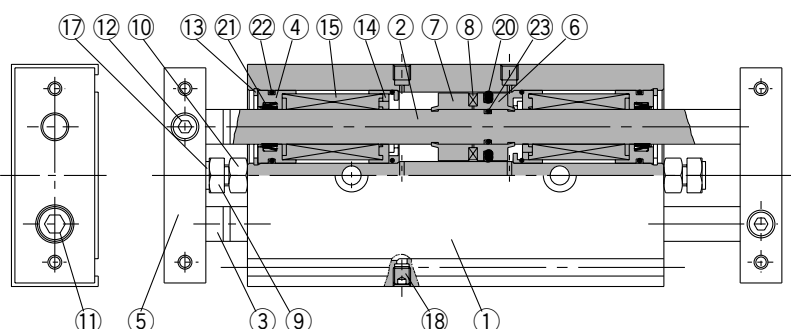
## Construction

### CXSWM (Slide bearing)



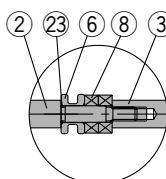
CXSWM6

### CXSWL (Ball bushing bearing)

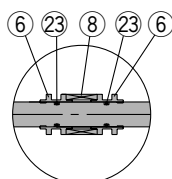


CXSWL6

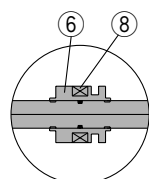
#### (Piston part)



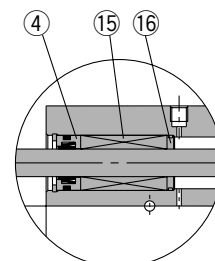
CXSW□6



CXSW□10



CXSW□25, 32



CXSWL10-15

## Component Parts

No.	Description	Material	Note
①	Housing	Aluminum alloy	Hard anodized
②	Piston rod A	Carbon steel	Hard chrome plated
③	Piston rod B	Carbon steel	Hard chrome plated
④	Rod cover	Aluminum bearing alloy	
⑤	Plate	Aluminum alloy	Hard anodized
⑥	Piston A	Aluminum alloy	Chromated
⑦	Piston B	Aluminum alloy	Chromated
⑧	Magnet	Magnetic material	
⑨	Bumper bolt	Carbon steel	Nickel plated
⑩	Hexagon nut	Carbon steel	Nickel plated
⑪	Hexagon socket head cap screw	Chromium steel	Nickel plated
⑫	Hexagon socket head set screw	Chromium steel	Nickel plated

Note) Piston rod for CXSWL is quenched.

No.	Description	Material	Note
⑬	Snap ring	Special steel	Nickel plated
⑭	Bumper holder	Synthetic resin	
⑮	Ball bushing	—	
⑯	Bearing spacer	Synthetic resin	
⑰	Bumper	Polyurethane	
⑱	Plug	Chromium steel	Nickel plated
⑲	Seal retainer	Aluminum alloy	
⑳*	Piston seal	NBR	
㉑)*	Rod seal	NBR	
㉒*	O-ring	NBR	
㉓	O-ring	NBR	

\* Seal kit includes ⑳ to ㉒. To order them, use the order number given in the table above. However, in the case of CXSWL15, there are two types of O-rings for ㉒. There is only one type for other sizes.

For CXSWL6, aluminum bearing alloy is used for ⑯.

## Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
6	CXSWM6-PS	Set of nos. above ⑳, ㉑, ㉒
	CXSWL6-PS	
10	CXSWM10-PS	
	CXSWL10APS	
15	CXSWM15-PS	
	CXSWL15APS	
20	CXSWM20-PS	
	CXSWL20APS	
25	CXSWM25-PS	
	CXSWL25APS	
32	CXSWM32-PS	
	CXSWL32APS	

MX□

MTS

MY□

CY□

MG□

CX□

D-

-X

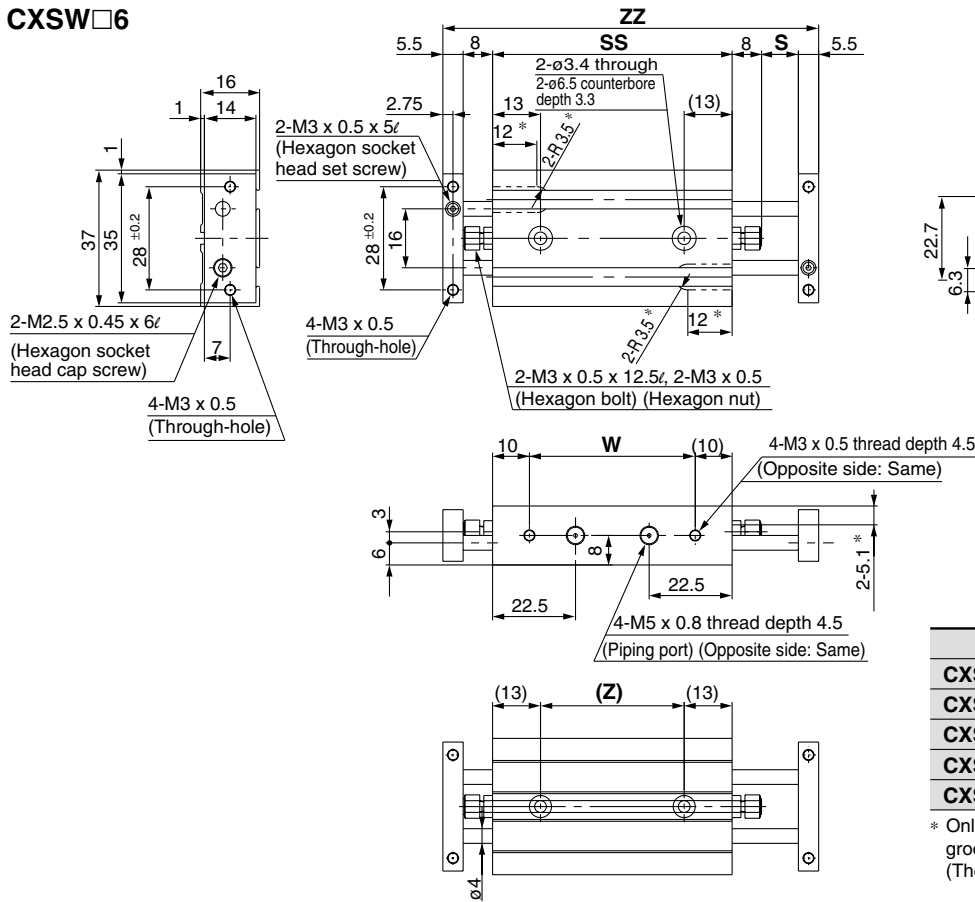
20-

Data

# Series CXSW

Dimensions:  $\phi 6$ ,  $\phi 10$

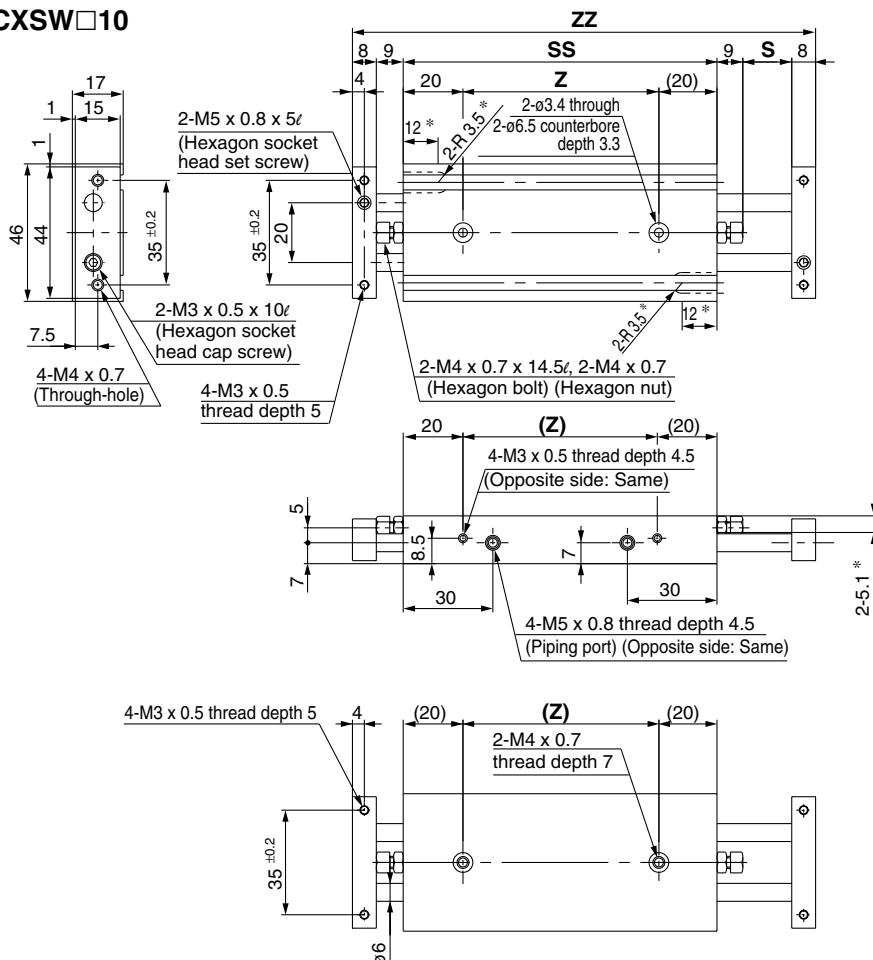
## CXSW□6



Model	S	SS	ZZ	Z	W
CXSW□6-10	10	66	103	40	46
CXSW□6-20	20	76	123	50	56
CXSW□6-30	30	86	143	60	66
CXSW□6-40	40	96	163	70	76
CXSW□6-50	50	106	183	80	86

\* Only the CXSW□6-10 and the CXSW□6-20 have a groove cut out for installing auto switches. (The dimensions are marked "\*").

## CXSW□10



	Model	S	SS	ZZ	Z
Standard stroke	CXSW□10-10	10	92	136	52
	CXSW□10-20	20	102	156	62
	CXSW□10-30	30	112	176	72
	CXSW□10-40	40	122	196	82
	CXSW□10-50	50	132	216	92
Long stroke (-XB11)	CXSW□10-75	75	157	266	117
	CXSW□10-100	100	182	316	142
	CXSW□10-125	125	207	366	167
	CXSW□10-150	150	232	416	192

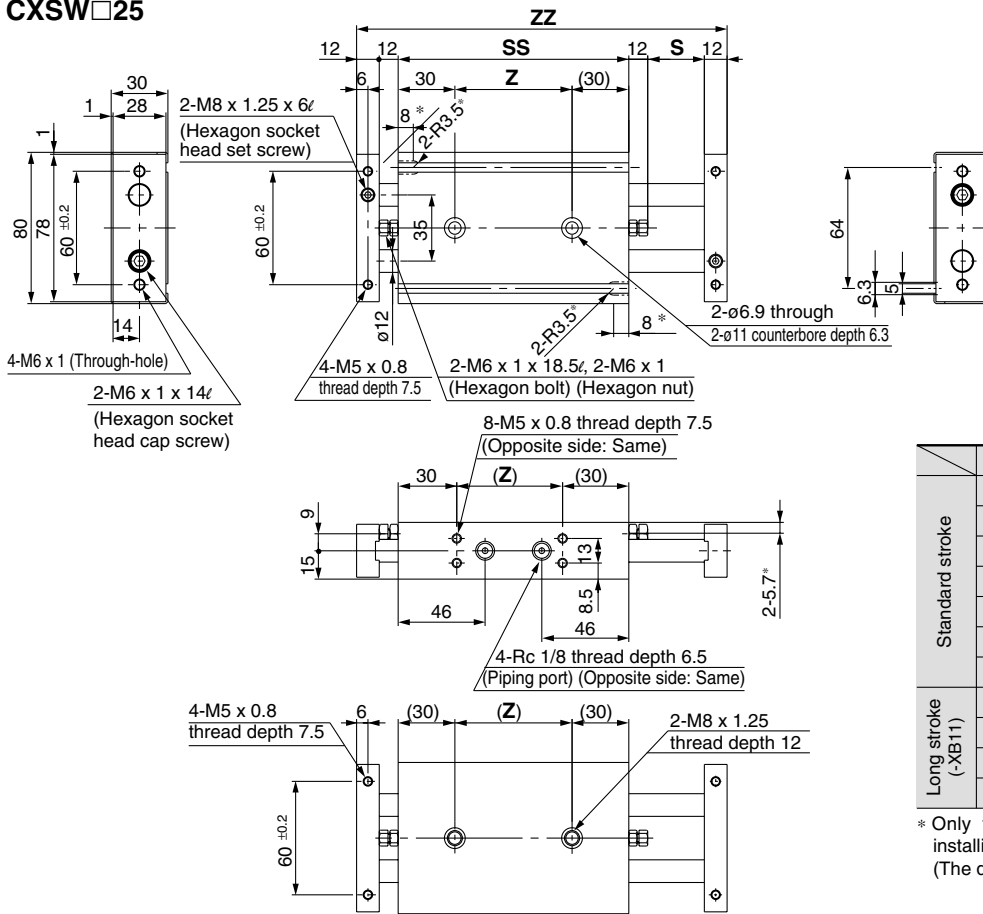
\* Only the CXSW□10-10 and the CXSW□10-20 have a groove cut out for installing auto switches. (The dimensions are marked "\*").



# Series CXSW

## Dimensions; $\phi 25$ , $\phi 32$

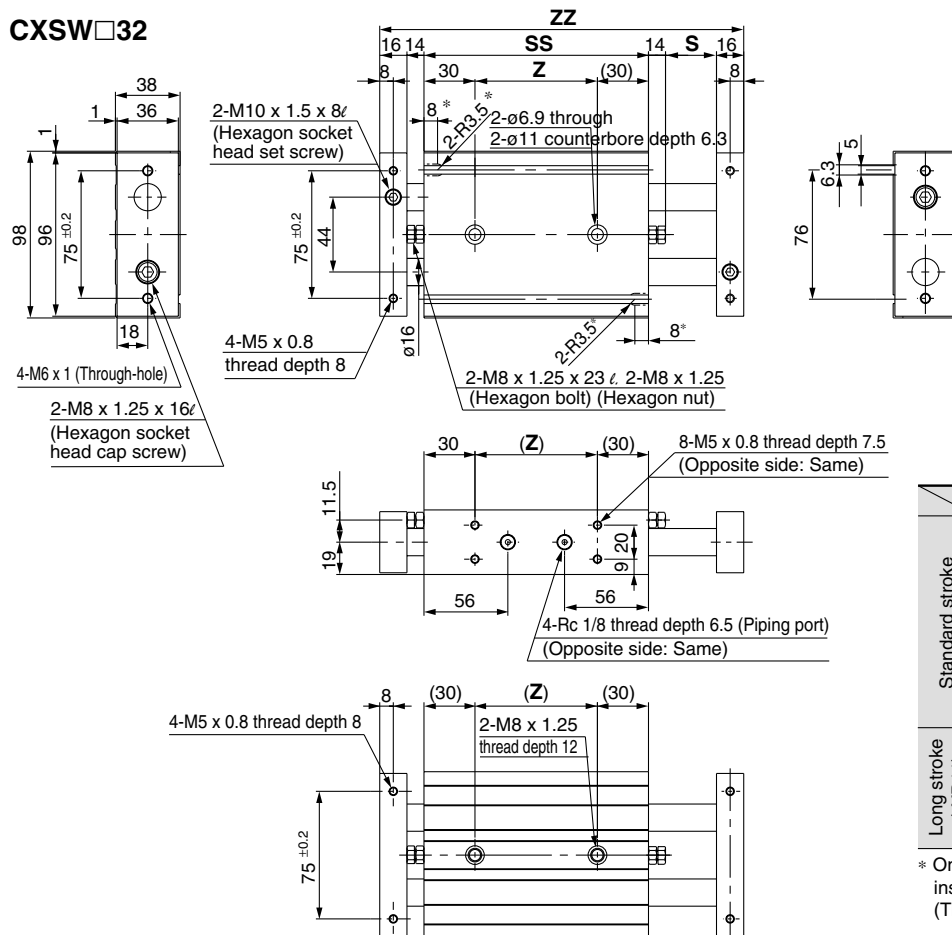
### CXSW□25



		Model	S	SS	ZZ	Z
Standard stroke	CXSW□25-10	10	122	180	62	
	CXSW□25-20	20	132	200	72	
	CXSW□25-30	30	142	220	82	
	CXSW□25-40	40	152	240	92	
	CXSW□25-50	50	162	260	102	
	CXSW□25-75	75	187	310	127	
Long stroke (-XB11)	CXSW□25-125	125	237	410	177	
	CXSW□25-150	150	262	460	202	
	CXSW□25-175	175	287	510	227	
	CXSW□25-200	200	312	560	252	

\* Only the CXSW□25-10 has a groove cut out for installing auto switches.  
(The dimensions are marked "\*".)

### CXSW□32

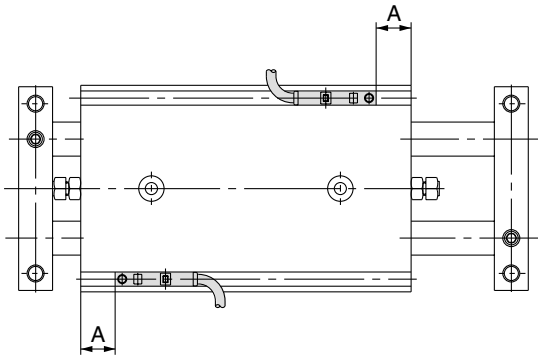


		Model	S	SS	ZZ	Z
Standard stroke	CXSW□32-10	10	143	213	83	
	CXSW□32-20	20	153	233	93	
	CXSW□32-30	30	163	253	103	
	CXSW□32-40	40	173	273	113	
	CXSW□32-50	50	183	293	123	
	CXSW□32-75	75	208	343	148	
Long stroke (-XB11)	CXSW□32-100	100	233	393	173	
	CXSW□32-125	125	258	443	198	
	CXSW□32-150	150	283	493	223	
	CXSW□32-175	175	308	543	248	
CXSW□32-200	200	333	593	273		

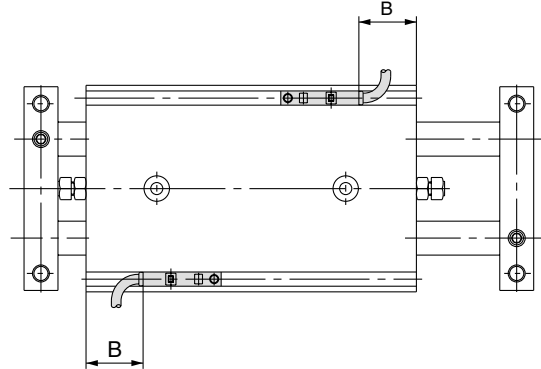
\* Only the CXSW□32-10 has a groove cut out for installing auto switches.  
(The dimensions are marked "\*".)

## Proper Auto Switch Mounting Position (Detection at stroke end)

Electrical entry direction: Inward



Electrical entry direction: Outward



Bore size (mm)	A	D-Z7/Z8, D-Y7□W D-Y5□, D-Y7□	D-Y6□, D-Y7□V D-Y7□WV	D-Y7BAL
		B	B	B
6	13.8	9.8 (8.3)	11.3	3.8
10	28.5	24.5 (23)	26	—
15	35	31 (29.5)	32.5	—
20	42.5	38.5 (37)	40.5	—
25	43.5	39.5 (38)	41.5	33.5
32	54	50 (48.5)	52	44

As for auto switch mounting dimensions, auto switch mounting method and its operating range, those are the same as basic type. Refer to page 8-29-10.

MX□

MTS

MY□

CY□

MG□

**CX□**

D-

-X

20-

Data