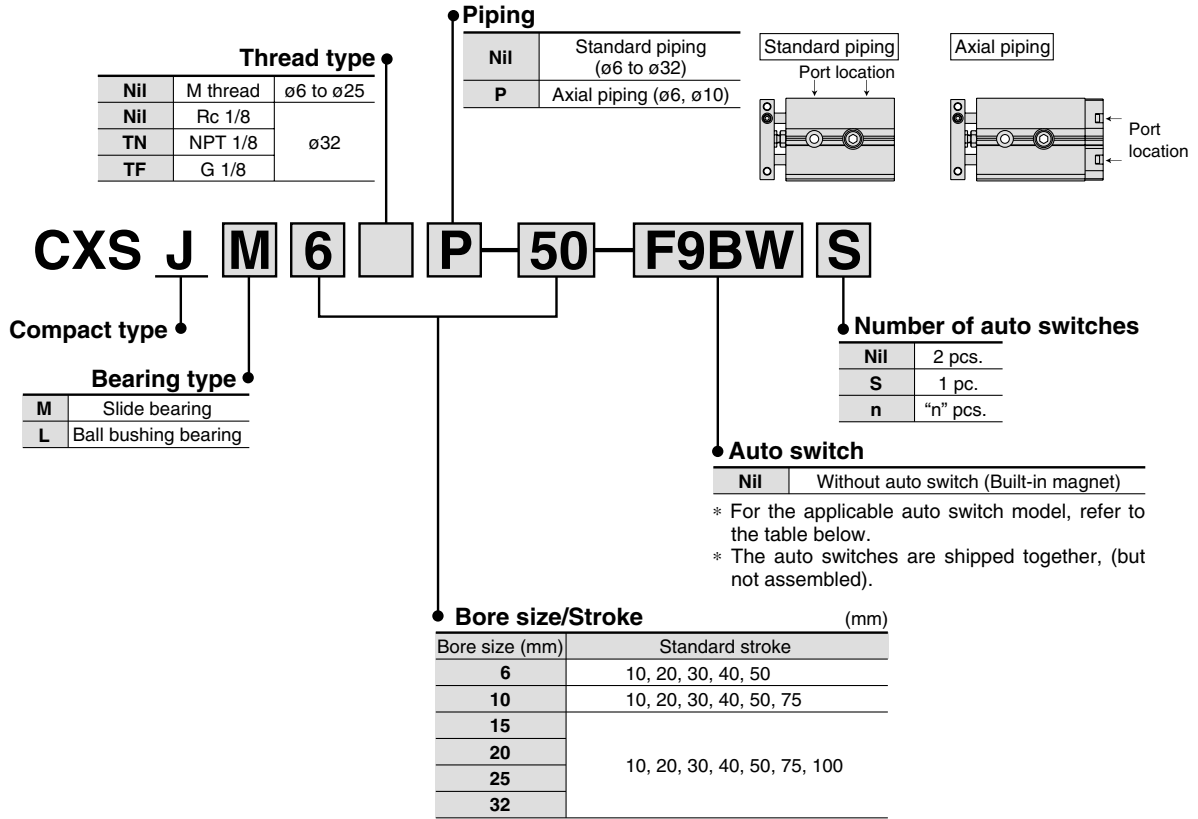


Dual Rod Cylinder: Compact Type

Series CXSJ

ø6, ø10, ø15, ø20, ø25, ø32

How to Order



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-wired 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 equiv.)	—	5 V	—	A96V	A96	●	●	—	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	A93V	A93	●	●	—	—	—	—	Relay, PLC
Solid state switch	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	—	—	—	IC circuit	Relay, PLC
				3-wire (PNP)				M9PV	M9P	●	●	—	—	—		
				2-wire				M9BV	M9B	●	●	—	—	—		
				3-wire (NPN)				F9NVV	F9NW	●	●	○	○	○	IC circuit	
				3-wire (PNP)				F9PWW	F9PW	●	●	○	○	○	—	
				2-wire				F9BWW	F9BW	●	●	○	○	○	—	
Water resistant (2-color indication)	—	F9BA	—	●	○	○	○	—	—	—						

* Lead wire length symbols: 0.5 m Nil (Example) A93
3 m L (Example) A93L
5 m Z (Example) M9NZ

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

- Refer to page 8-28-27 for additional details and applicable auto switches other than the above types.
- Please contact SMC for detailed auto switch with pre-wired connector.

Dual Rod Cylinder: Compact Type Series CXSJ

Specifications



Bore size (mm)	6	10	15	20	25	32
Fluid	Air (Non-lube)					
Proof pressure	1.05 MPa					
Max. operating pressure	0.7 MPa					
Min. operating pressure	0.15 MPa	0.1 MPa	0.05 MPa			
Ambient and fluid temperature	-10 to 60°C (With no freezing)					
Piston speed	30 to 800 mm/s		30 to 700 mm/s		30 to 600 mm/s	
Cushion	Rubber bumper on both ends					
Stroke adjustable range	0 to -5 mm compared to the standard stroke					
Port size	M3 × 0.5		M5 × 0.8			Rc (NPT, PF) 1/8

* The maximum piston speed shown in the table above is for extension.
The maximum piston speed for retraction is approximately 70% that of extension.

Standard Stroke

Model	Standard strokes	Manufacturable stroke range (mm)
CXSJ□6	10, 20, 30, 40, 50	60 to 100
CXSJ□10	10, 20, 30, 40, 50, 75	80 to 150
CXSJ□15	10, 20, 30, 40, 50, 75, 100	110 to 150
CXSJ□20, 25, 32		110 to 200

* Strokes beyond the standard stroke range are available as a special order.

Theoretical Output

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)								
				0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	
CXS□6	4	OUT	56	—	8.4	11.2	16.8	22.4	28.0	33.6	39.2	
		IN	31	—	4.6	6.2	9.3	12.4	15.5	18.6	21.7	
CXS□10	6	OUT	157	15.7	—	31.4	47.1	62.8	78.5	94.2	110	
		IN	100	10.0	—	20.0	30.0	40.0	50.0	60.0	70.0	
CXS□15	8	OUT	353	35.3	—	70.6	106	141	177	212	247	
		IN	252	25.2	—	50.4	75.6	101	126	151	176	
CXS□20	10	OUT	628	62.8	—	126	188	251	314	377	440	
		IN	471	47.1	—	94.2	141	188	236	283	330	
CXS□25	12	OUT	982	98.2	—	196	295	393	491	589	687	
		IN	756	75.6	—	151	227	302	378	454	529	
CXS□32	16	OUT	1608	161	—	322	482	643	804	965	1126	
		IN	1206	121	—	241	362	482	603	724	844	

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm²)

Weight

Model	Standard stroke (mm)						
	10	20	30	40	50	75	100
CXSJM6	0.047	0.057	0.067	0.077	0.087	—	—
CXSJL6	0.048	0.058	0.068	0.078	0.088	—	—
CXSJM10	0.099	0.114	0.129	0.144	0.159	0.198	—
CXSJL10	0.106	0.121	0.136	0.151	0.166	0.205	—
CXSJM15	0.198	0.219	0.240	0.261	0.282	0.335	0.387
CXSJL15	0.218	0.239	0.260	0.281	0.302	0.355	0.407
CXSJM20	0.345	0.371	0.397	0.423	0.449	0.514	0.579
CXSJL20	0.375	0.401	0.427	0.453	0.479	0.544	0.609
CXSJM25	0.506	0.544	0.582	0.620	0.658	0.753	0.848
CXSJL25	0.516	0.554	0.592	0.630	0.668	0.763	0.858
CXSJM32	1.022	1.078	1.134	1.190	1.246	1.386	1.526
CXSJL32	1.032	1.088	1.144	1.200	1.256	1.396	1.536

Note) For axial piping of CXSJ□6P-□ and CXSJ□10P-□, please add the following weight.
CXSJ□6P-□: 0.009 kg, CXSJ□10P-□: 0.014 kg

MX□

MTS

MY□

CY□

MG□

CX□

D-

-X

20-

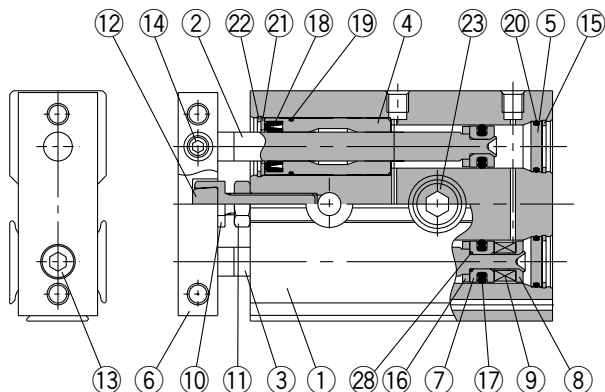
Data

Series CXSJ

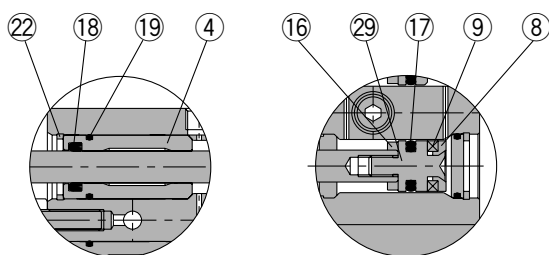
Construction: Standard Piping

CXSJM (Slide bearing)

CXSJM6



CXSJM10

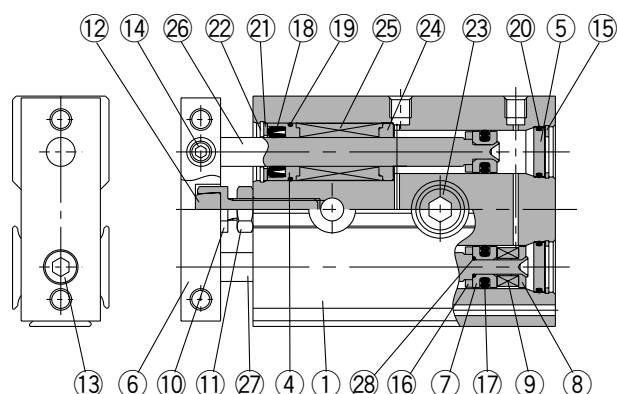


Rod cover

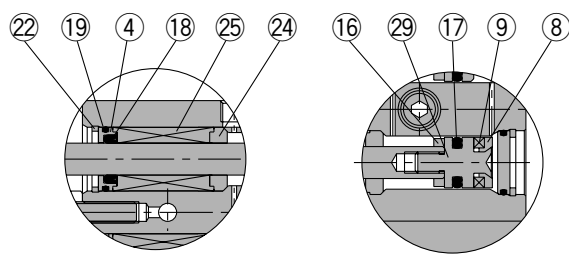
Piston rod B-side piston

CXSJL (Ball bushing bearing)

CXSJL6



CXSJL10



Rod cover

Piston rod B-side piston

Component Parts

No.	Description	Material	Note
①	Housing	Aluminum alloy	Hard anodized
②	Piston rod A	Carbon steel ^{Note)}	Hard chromium electroplated
③	Piston rod B	Carbon steel ^{Note)}	Hard chromium electroplated
④	Rod cover	Aluminum bearing alloy	
⑤	Head cover	Aluminum alloy	Anodized
⑥	Plate	Aluminum alloy	Glossy, self-coloring hard anodized
⑦	Piston A	Aluminum alloy	Chromated
⑧	Piston B	Aluminum alloy	Chromated
⑨	Magnet	Magnetic material	
⑩	Bumper bolt	Carbon steel	Nickel plated
⑪	Hexagon nut	Carbon steel	Nickel plated
⑫	Bumper	Polyurethane	
⑬	Hexagon socket head cap screw	Chromium steel	Nickel plated
⑭	Hexagon socket head set screw	Chromium steel	Nickel plated
⑮	Snap ring	Special steel	Nickel plated

Note) Stainless steel for CXSJM6.

No.	Description	Material	Note
⑯	Bumper B	Polyurethane	
⑰	Piston seal	NBR	
⑱	Rod seal	NBR	
⑲	O-ring	NBR	
⑳	O-ring	NBR	
㉑	Seal retainer	Stainless steel	
㉒	Snap ring B	Special steel	Nickel plated
㉓	Bolt holder	Stainless steel	
㉔	Bearing spacer	Aluminum bearing alloy	
㉕	Ball bushing	—	
㉖	Piston rod A	Special steel	Hard chromium electroplated
㉗	Piston rod B	Special steel	Hard chromium electroplated
㉘	O-ring	NBR	
㉙	Piston C	Stainless steel	
㉚	Bumper holder	Resin	

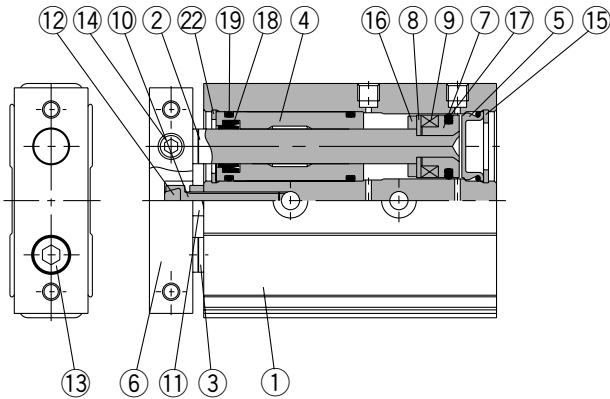
Replacement Parts: Seal Kit

Model	Kit no.	Content
CXSJ□6	CXSJ6-PS	Items ⑰, ⑱, and ㉚ from the chart above
CXSJ□10	CXSJ10-PS	

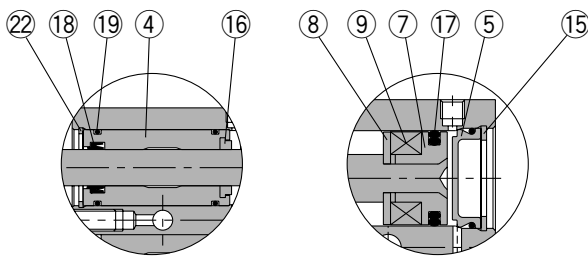
Construction: Standard Piping

CXSJM (Slide bearing)

CXSJM15



CXSJM20 to 32

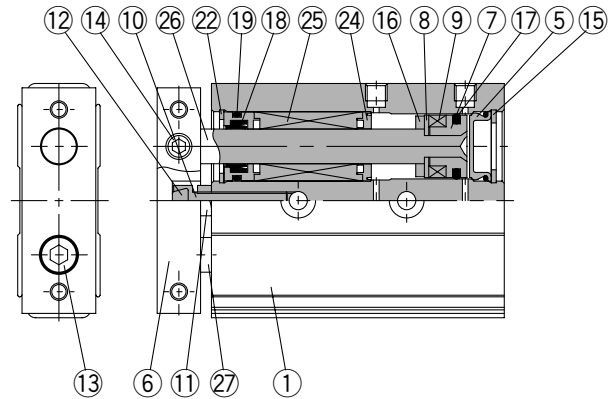


Rod cover

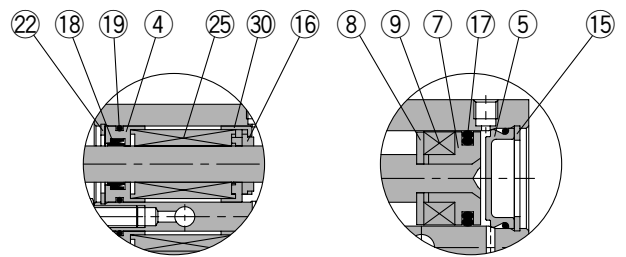
Head cover

CXSJL (Ball bushing bearing)

CXSJL15



CXSJL20 to 32



Rod cover

Head cover

MX

MTS

MY

CY

MG

CX

D-

-X

20-

Data

Component Parts

No.	Description	Material	Note
①	Housing	Aluminum alloy	Hard anodized
②	Piston rod A	Carbon steel	Hard chromium electroplated
③	Piston rod B	Carbon steel	Hard chromium electroplated
④	Rod cover	Aluminum bearing alloy	
⑤	Head cover	Special steel	
⑥	Plate	Aluminum alloy	Glossy, self-coloring hard anodized
⑦	Piston A	Aluminum alloy	Chromated
⑧	Piston B	Stainless steel	
⑨	Magnet	Magnetic material	
⑩	Bumper bolt	Carbon steel	Nickel plated
⑪	Hexagon nut	Carbon steel	Nickel plated
⑫	Bumper	Polyurethane	
⑬	Hexagon socket head cap screw	Chromium steel	Nickel plated
⑭	Hexagon socket head set screw	Chromium steel	Nickel plated
⑮	Snap ring	Special steel	Nickel plated

No.	Description	Material	Note
⑯	Bumper B	Polyurethane	
⑰	Piston seal	NBR	
⑱	Rod seal	NBR	
⑲	O-ring	NBR	
⑳	O-ring	NBR	
㉑	Seal retainer	Stainless steel	
㉒	Snap ring B	Special steel	Nickel plated
㉓	Bolt holder	Stainless steel	
㉔	Bearing spacer	Resin	
㉕	Ball bushing	—	
㉖	Piston rod A	Special steel	Hard chromium electroplated
㉗	Piston rod B	Special steel	Hard chromium electroplated
㉘	O-ring	NBR	
㉙	Piston C	Stainless steel	
㉚	Bumper holder	Resin	

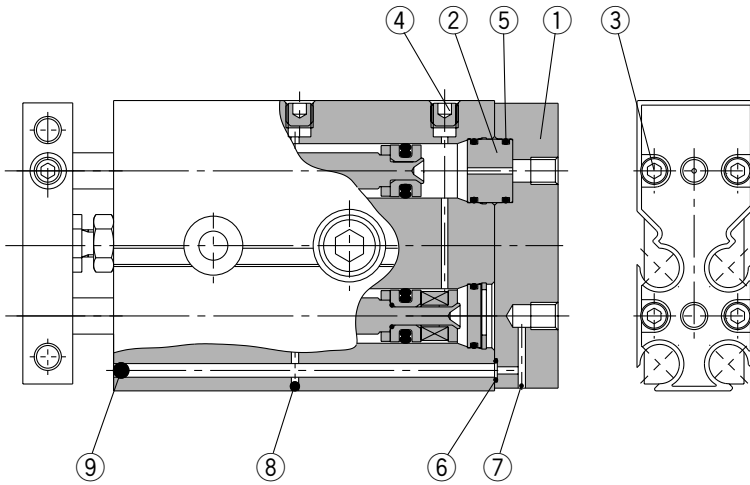
Replacement Parts: Seal Kits

Model	Kit no.	Content
CXSJM15	CXSM15-PS	Items ⑰, ⑱, and ⑲ from the chart above
CXSJM20	CXSM20-PS	
CXSJM25	CXSM25-PS	
CXSJM32	CXSM32-PS	
CXSJL15	CXSL15APS	
CXSJL20	CXSL20APS	
CXSJL25	CXSL25APS	
CXSJL32	CXSL32APS	

Series CXSJ

Construction: Axial Piping

CXSJ□6P, CXSJ□10P



Component Parts

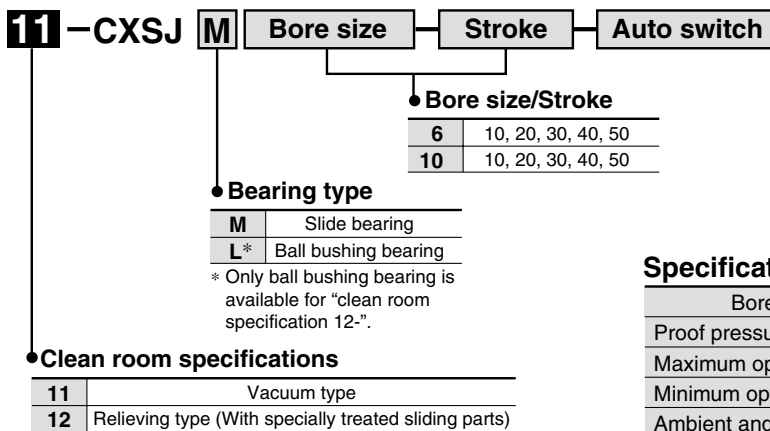
No.	Description	Material	Note
①	Cover	Aluminum alloy	Hard anodized
②	Adapter	Aluminum alloy	Anodized
③	Hexagon socket head cap screw	Chromium steel	Nickel plated
④	Hexagon socket head plug	Chromium steel	Nickel plated
⑤	O-ring	NBR	
⑥	O-ring	NBR	
⑦	Steel ball	Special steel	Hard chromium electroplated
⑧	Steel ball	Special steel	Hard chromium electroplated
⑨	Steel ball	Special steel	Hard chromium electroplated

* Parts other than those listed above are the same as those for CXSJ basic type.

Clean Series

There are two types of cylinders, relieving type and vacuum type, available for a clean room environment. The relieving type specification with the double-seal construction of the rod section allows the cylinder to channel exhaust through the relief port directly to the outside of a clean room environment. The vacuum type specification allows for the application of a vacuum on the rod section while forced exhaust of air takes place through the vacuum port to the outside of a clean room environment.

How to Order



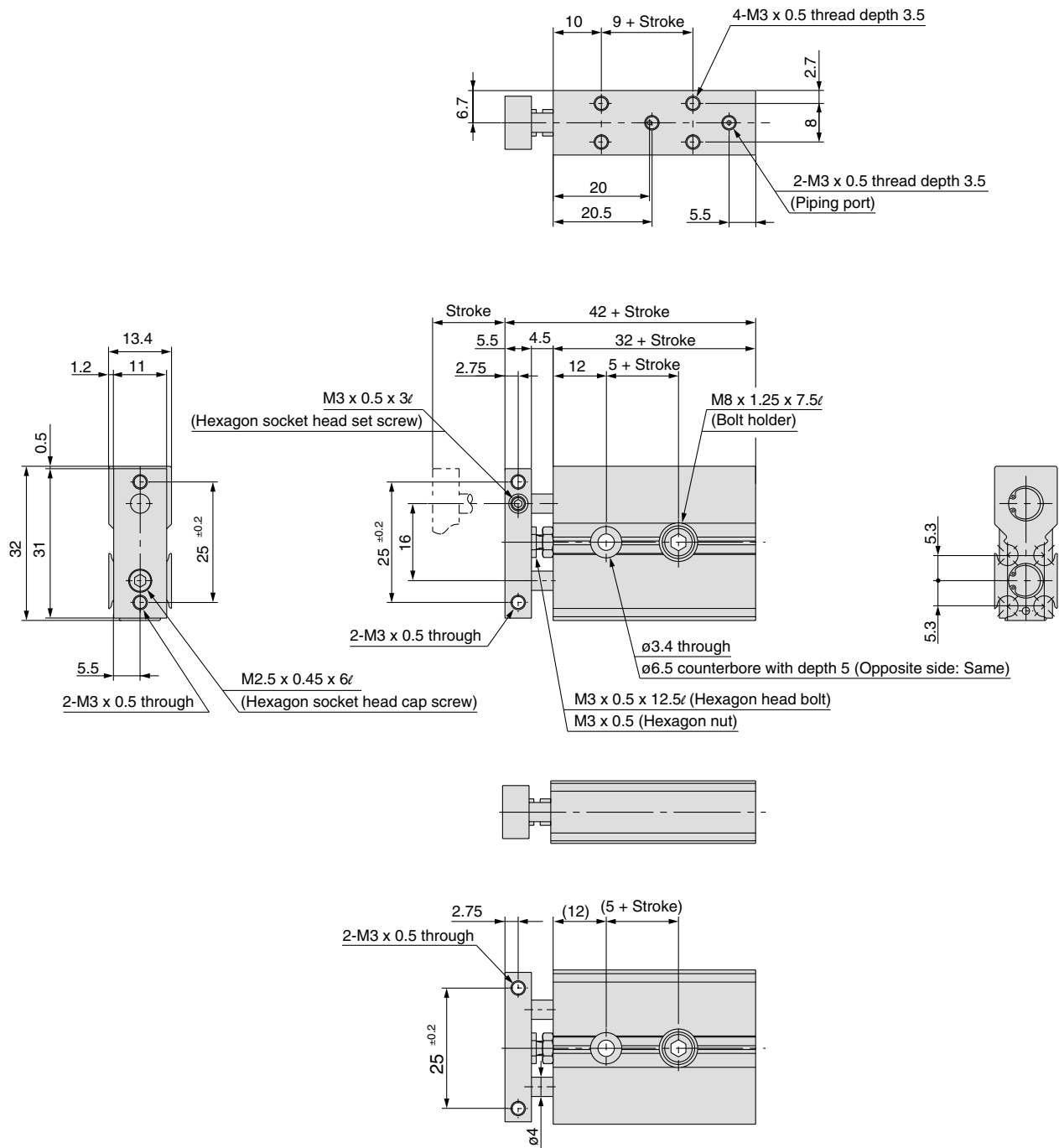
Specifications

Bore size (mm)	6	10
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 (With no freezing)	
Piston speed	30 to 400 mm/s	
Stroke adjustable range	0 to -5 mm compared to the standard stroke	
Bearing type	Slide bearing, Ball bushing bearing	

* Refer to the SMC Clean Series catalog for dimensions.

Dual Rod Cylinder: Compact Type Series CXSJ

Dimensions: $\phi 6$ Standard Piping



MX□

MTS

MY□

CY□

MG□

CX□

D-

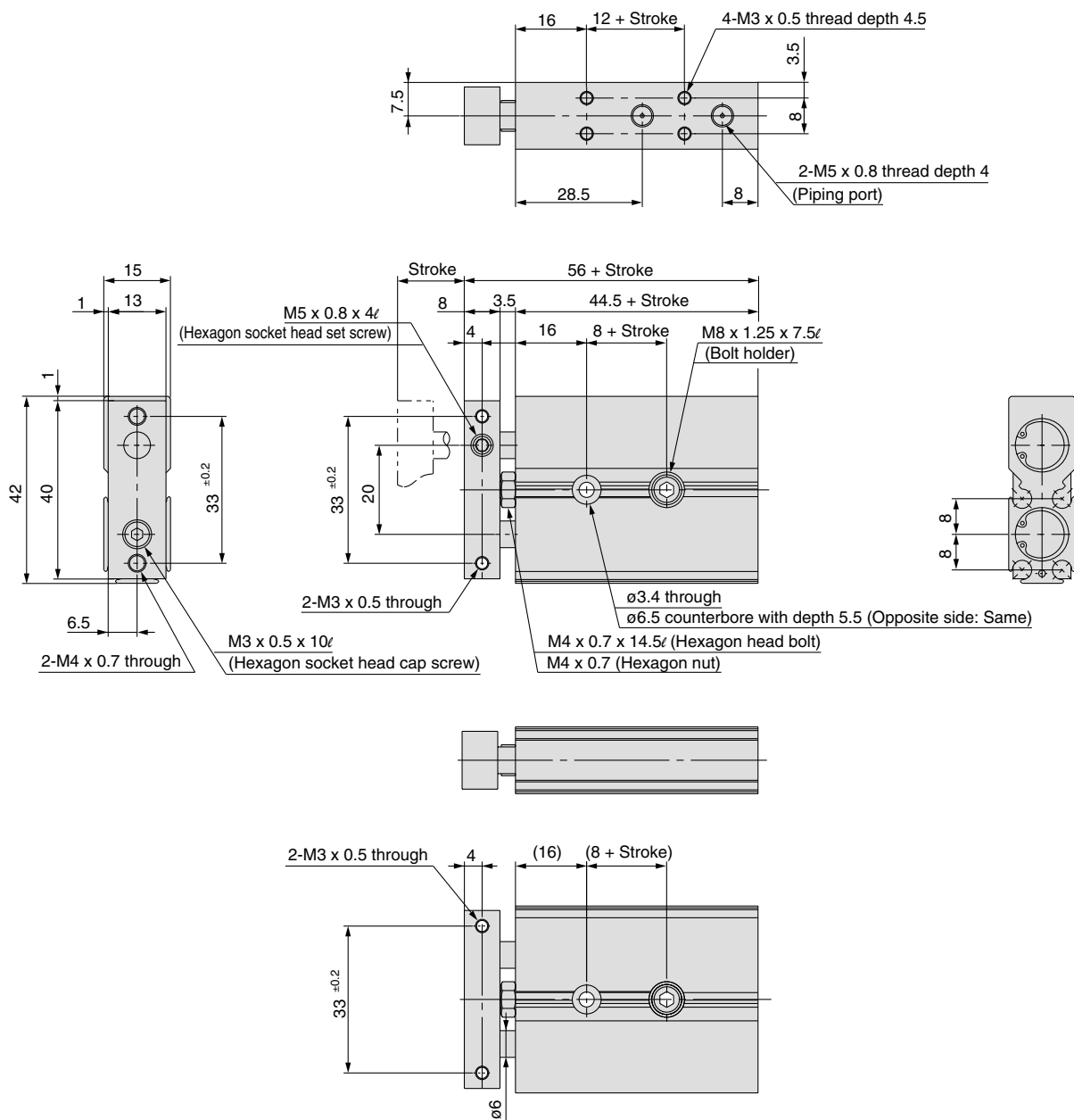
-X

20-

Data

Series CXSJ

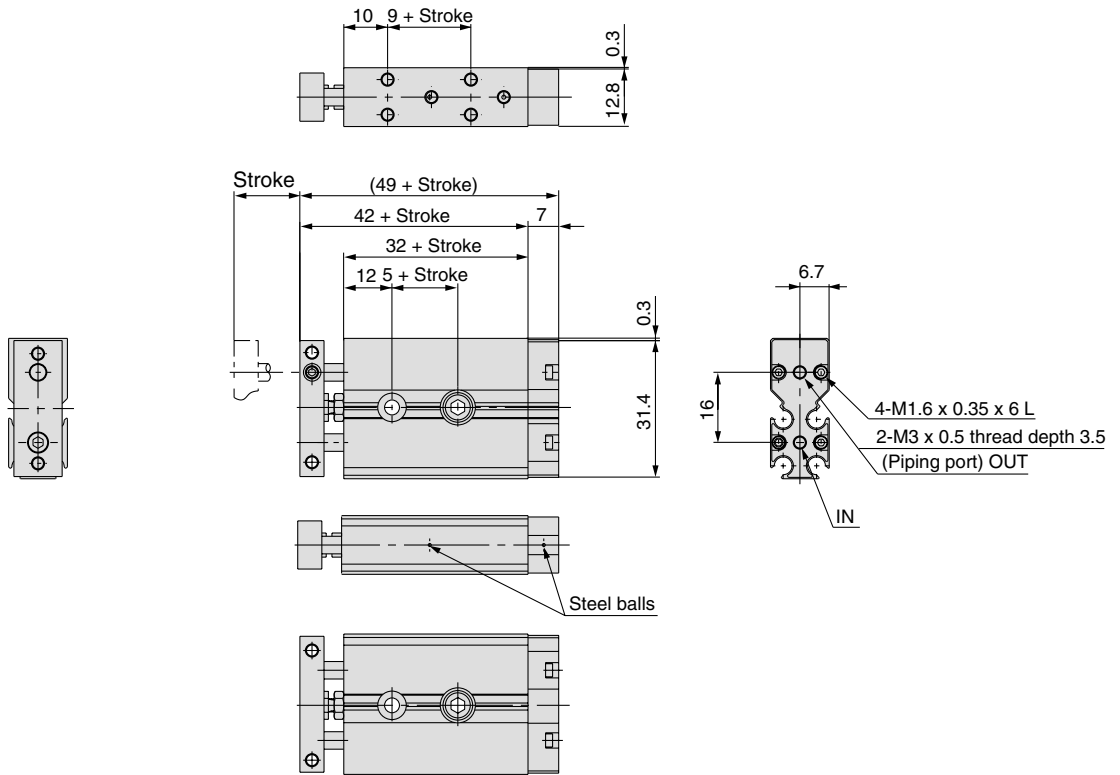
Dimensions: $\varnothing 10$ Standard Piping



Dual Rod Cylinder: Compact Type Series CXSJ

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

CXSJ□6P



MX□

MTS

MY□

CY□

MG□

CX□

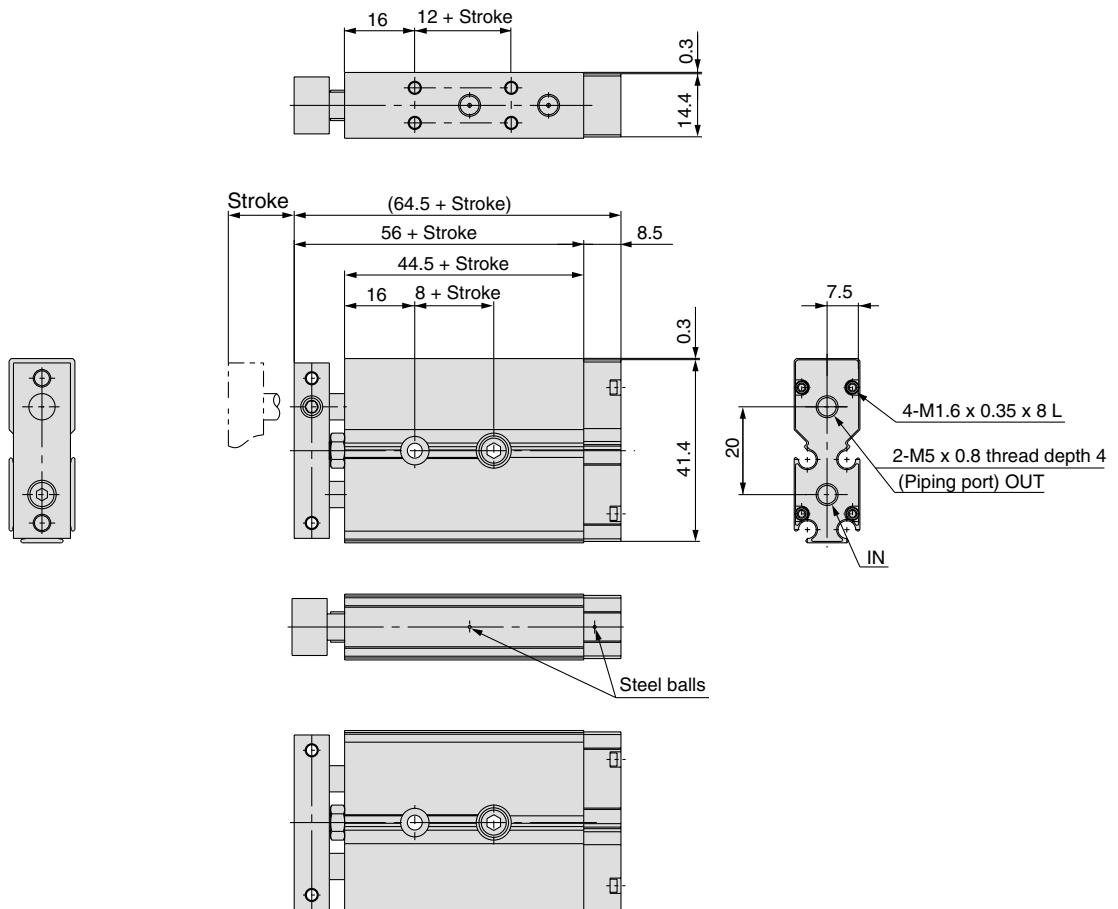
D-

-X

20-

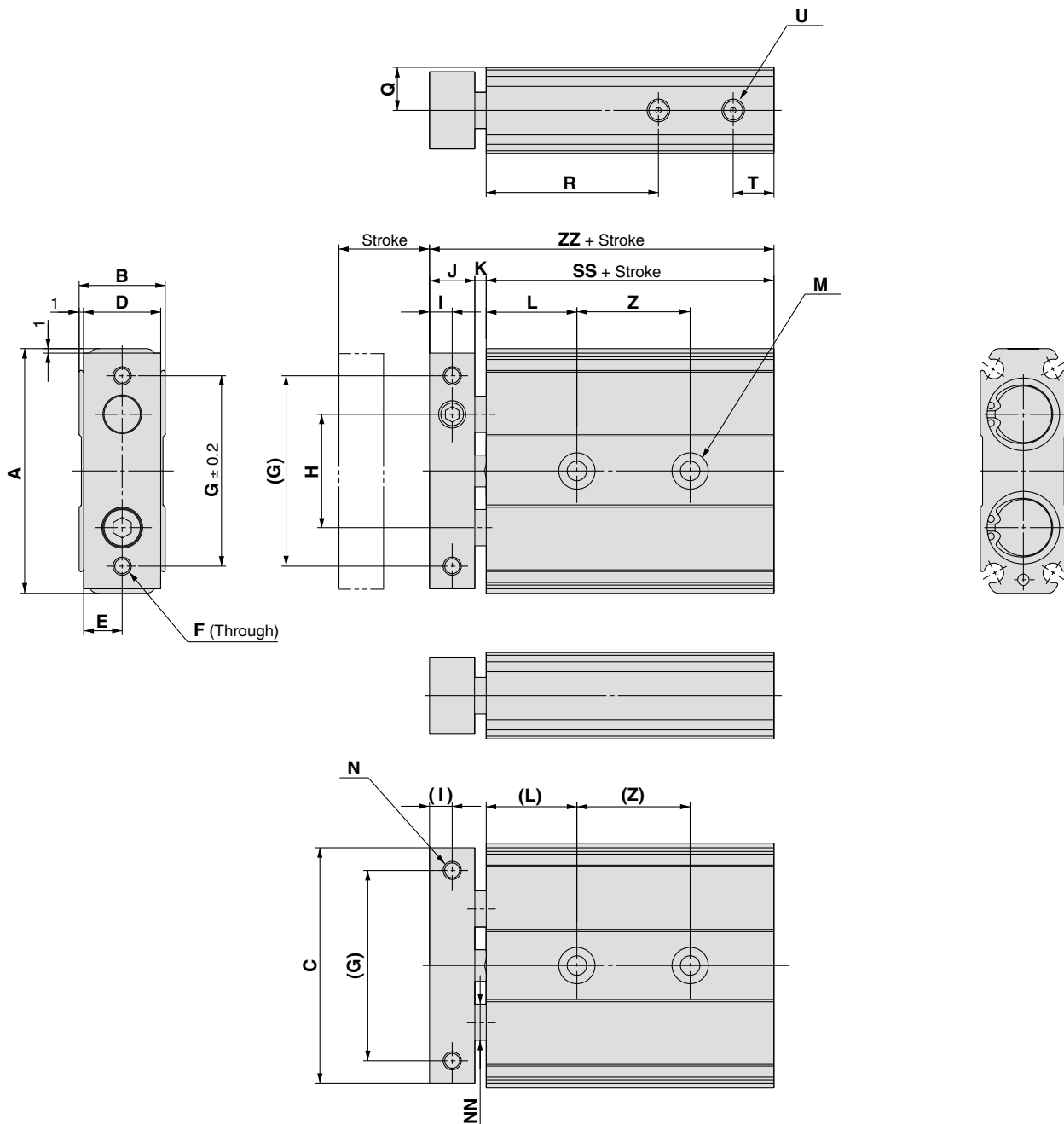
Data

CXSJ□10P



Series CXSJ

Dimensions: ø15 to 32 Standard Piping

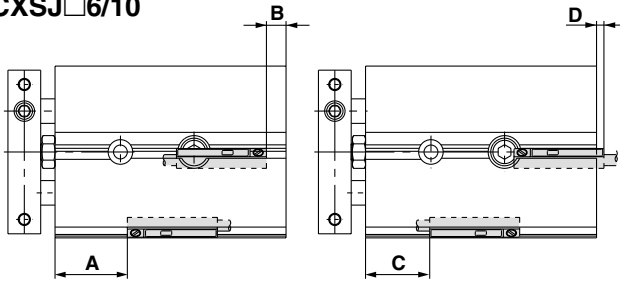


Bore size (mm)	A	B	ZZ	C	D	E	F	G	H	I	J	K	L	M	N	NN	Q	R	T	U	SS
15	54	19	70	52	17	8.5	2-M5 x 0.8	42	25	5	10	2.5	20	2 x 2-ø4.3 through 2 x 2-ø8 counterbore with depth 4.3	2-M4 x 0.7 with depth 6	ø8	9.5	38	9	2-M5 x 0.8 thread depth 4	57.5
20	62	24	84	60	22	11	2-M5 x 0.8	50	29	6	12	4.5	25	2 x 2-ø5.5 through 2 x 2-ø9.5 counterbore with depth 5.3	2-M4 x 0.7 with depth 6	ø10	12	45	9	2-M5 x 0.8 thread depth 4	67.5
25	73	29	87	71	27	13.5	2-M6 x 1.0	60	35	6	12	4.5	30	2 x 2-ø6.5 through 2 x 2-ø11 counterbore with depth 6.3	2-M5 x 0.8 with depth 7.5	ø12	14.5	46	9	2-M5 x 0.8 thread depth 4	70.5
32	94	37	100.5	92	35	17.5	2-M6 x 1.0	75	45	8	16	4	30	2 x 2-ø6.5 through 2 x 2-ø11 counterbore with depth 6.3	2-M5 x 0.8 with depth 7.5	ø16	18.5	56	10	2-Rc 1/8 thread depth 5	80.5

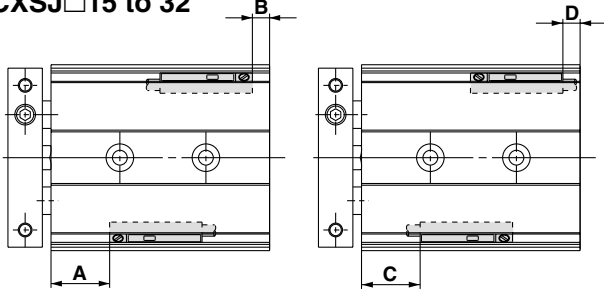
Bore size (mm)	Symbol	Z				
	Stroke	10, 20	30, 40, 50	75	100	
15		25	35	45	55	
20		30	40	60	60	
25		30	40	60	60	
32		40	50	70	70	

Proper Auto Switch Mounting Position (Detection at stroke end)

CXSJ□6/10



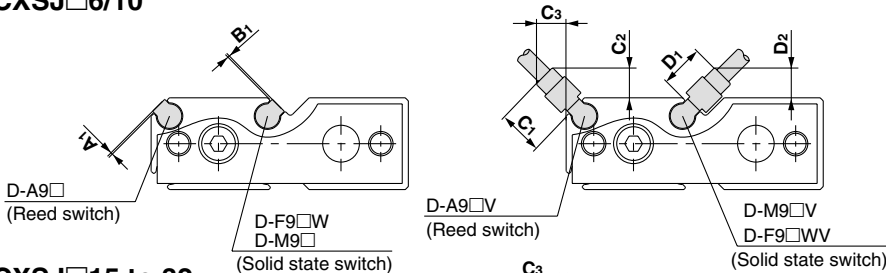
CXSJ□15 to 32



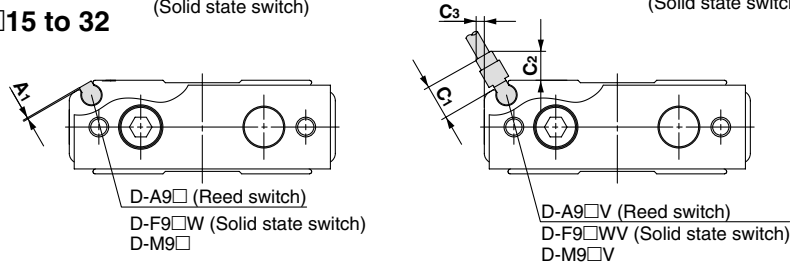
Electrical entry direction:
Inward

Electrical entry direction:
Outward

Auto Switch Mounting Dimensions CXSJ□6/10



CXSJ□15 to 32



Operating Range

Auto switch model	Bore size (mm)					
	6	10	15	20	25	32
D-A9□/A9□V	5	6	6	7.5	8	9
D-F9□W D-F9□WV	2.5	3	3	5	5	4.5
D-F9BAL	2.5	3.5	3.5	5	5	5
D-M9□, D-M9□V	2	2.5	3	4	4	4

* The operating ranges are provided as guidelines including hystereses and are not guaranteed values (assuming approximately ±30% variations). They may vary significantly with ambient environments.

Bore size (mm)	D-A90, D-A96				D-A93				D-F9□W, D-M9□				D-M9□V, D-F9□WV			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
6	15.5	—	13.5	5.5	15.5	—	11	8	19.5	0.5	9.5	9.5	19.5	0.5	11.5	7.5
10	25.5	—	23.5	3	25.5	—	21	5.5	29.5	3	19.5	7	29.5	3	21.5	5
15	31.5	6	29.5	4	31.5	6	27	1.5	35.5	10	25.5	0	35.5	10	27.5	2
20	39	9	37	7	39	9	34.5	4.5	43	13	33	3	43	13	35	5
25	40	11	38	9	40	11	35.5	6.5	44	15	34	5	44	15	36	7
32	49	11.5	47	9.5	49	11.5	44.5	7	53	15.5	43	5.5	53	15.5	45	7.5

Bore size (mm)	D-F9BAL			
	A	B	C	D
6	18.5	—	0.5	18.5
10	28.5	2	10.5	16
15	34.5	9	16.5	—
20	42	12	24	—
25	43	14	25	—
32	52	14.5	34	—3.5

Note 1) ø6: D-A90, D-A96, D-A93, D-F9BAL
ø10: D-A90, D-A96, D-A93

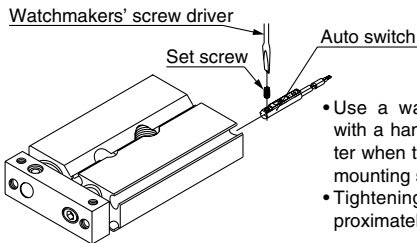
Only outward electrical entry (D dimension) is available.

Note 2) Minus value in D column (ø15, ø20, ø25, ø32) means that the auto switches are to be mounted beyond the cylinder body edges.

Auto switch model	Symbol	Bore size (mm)	
		6, 10	15, 20, 25, 32
D-A9□	A ₁	0.4	0.4
D-F9□W, D-M9□	B ₁	0.4	0.4
D-A9□V	C ₁	7.2	7.2
	C ₂ , C ₃	4.8	4.8
D-M9□V, D-F9□WV	D ₁	7.2	7.2
	D ₂	4.8	4.8

Auto switch model	Symbol	Bore size (mm)			
		15	20	25	32
D-F9□W, D-M9□	A ₁	0.3	0.3	0.3	0.3
D-A9□V, D-F9□WV	C ₁	7.1	7.1	7.1	7.1
	C ₂	6.2	6.2	6.2	6.2
D-M9□V	C ₃	2.2	1.2	0.4	3.1

Mounting of Auto Switch

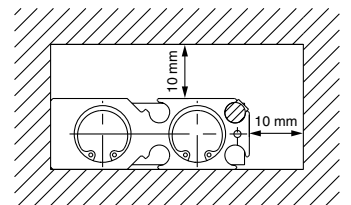


- Use a watchmakers' screwdriver with a handle 5 to 6 mm in diameter when tightening the auto switch mounting screw.
- Tightening torque should be approximately 0.10 to 0.20 N·m.

⚠ Caution

1. Avoid proximity to magnetic objects

When magnetic substances such as iron (including flange brackets) are in close proximity of an auto switch cylinder, be sure to provide a clearance between the magnetic substance and the cylinder body as shown in the drawing below. If the clearance is less than 10 mm, the auto switch may not function properly.



Other than the applicable auto switches listed in "How to Order," the following auto switches can be mounted. For detailed specifications, refer to page 8-30-1.

Type	Model	Electrical entry	Features
Reed switch	D-A90	Grommet (In-line)	Without indicator light
	D-A90V	Grommet (Perpendicular)	

* Please contact SMC for detailed normally closed solid (N.C. = b contact) state auto switches such as D-F9G and D-F9H.