

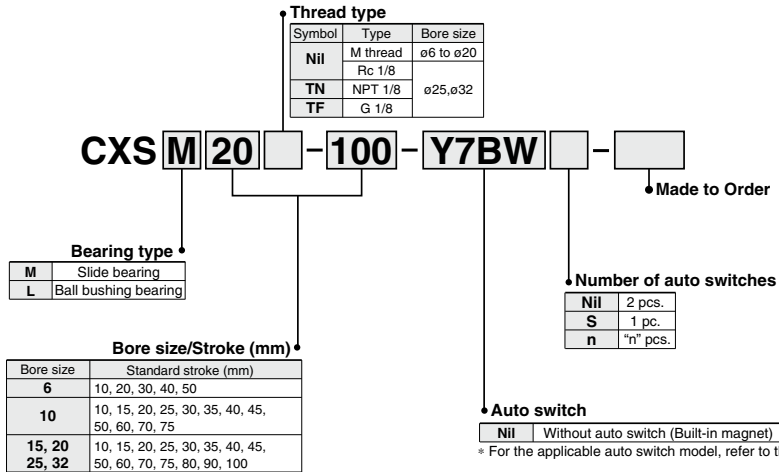
Dual Rod Cylinder Basic Type



CXS Series

ø6, ø10, ø15, ø20, ø25, ø32

How to Order



Applicable 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)			
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y69A	Y59A	●	●	○	IC circuit	Relay, PLC
				3-wire (PNP)				Y7PV	Y7P	●	●	○		
				2-wire				Y69B	Y59B	●	●	○		
				3-wire (NPN)				Y7NWV	Y7NW	●	●	○		
				3-wire (PNP)				Y7PWV	Y7PW	●	●	○		
				2-wire				Y7BWV	Y7BW	●	●	○		
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	—	Z76	●	●	—	IC circuit	—
				2-wire	24 V	12 V	100 V	—	Z73	●	●	●	—	Relay, PLC
					—	—	100 V or less	—	Z80	●	●	—	—	IC circuit



Symbol

Rubber bumper



Made to Order: Individual Specifications

Symbol	Specifications
-X593	Without plate

Made to Order Specifications

Symbol	Specifications
-XB6	Heat resistant cylinder (-10 to 150°C)
-XB9	Low speed cylinder (10 to 50 mm/s)
-XB11	Long stroke type
-XB13	Low speed cylinder (5 to 50 mm/s)
-XB19	High speed specification
-XC22	Fluororubber seals
-XC85	Grease for food processing equipment

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		0.05 MPa		
Ambient and fluid temperature	-10 to 60°C (No freezing)					
Piston speed	30 to 300 mm/s	30 to 800 mm/s	30 to 700 mm/s		30 to 600 mm/s	
Cushion	Rubber bumper					
Stroke adjustable range	0 to -5 mm compared to the standard stroke					
Port size	M5 x 0.8				Rc 1/8	
Bearing type	Slide bearing, Ball bushing bearing (Same dimensions for both)					
Allowable kinetic energy	0.0023 J	0.064 J	0.095 J	0.17 J	0.27 J	0.32 J

Standard Stroke

Model	Standard stroke						Long stroke					
	10	20	30	40	50	60	70	75	80	90	100	
CXS□6	10, 20, 30, 40, 50						60, 70, 75, 80, 90, 100					
CXS□10	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75						80, 90, 100, 110, 120, 125, 150					
CXS□15	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100						110, 120, 125, 150					
CXS□20							110, 120, 125, 150, 175, 200					
CXS□25												
CXS□32												

* Refer to "Made to Order Specifications" for stroke which exceeds the standard stroke length.
Non-standard strokes for a size ø6 cylinder are available as a special order.

Theoretical Output

Model	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		
				(N)									
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)

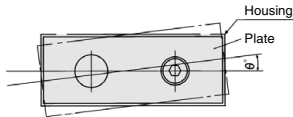
Weight

Model	Standard stroke (mm)														
	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
CXSM 6	0.081	—	0.095	—	0.108	—	0.122	—	0.135	—	—	—	—	—	—
CXSL 6	0.081	—	0.095	—	0.108	—	0.122	—	0.135	—	—	—	—	—	—
CXSM10	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.25	0.27	0.28	—	—	—
CXSL 10	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.25	0.27	0.28	—	—	—
CXSM15	0.25	0.265	0.28	0.29	0.30	0.315	0.33	0.345	0.36	0.39	0.42	0.435	0.45	0.48	0.51
CXSL 15	0.27	0.285	0.30	0.31	0.32	0.335	0.35	0.365	0.38	0.41	0.44	0.455	0.47	0.50	0.53
CXSM20	0.40	0.42	0.44	0.46	0.48	0.495	0.51	0.53	0.55	0.585	0.62	0.64	0.66	0.70	0.74
CXSL 20	0.43	0.445	0.46	0.48	0.50	0.515	0.53	0.55	0.57	0.605	0.64	0.66	0.68	0.715	0.75
CXSM25	0.61	0.635	0.66	0.69	0.72	0.745	0.77	0.80	0.83	0.89	0.95	0.97	0.995	1.06	1.10
CXSL 25	0.62	0.645	0.67	0.70	0.73	0.755	0.78	0.81	0.84	0.895	0.955	0.98	1.005	1.065	1.11
CXSM32	1.15	1.19	1.23	1.275	1.32	1.36	1.40	1.45	1.49	1.58	1.665	1.71	1.755	1.84	1.93
CXSL 32	1.16	1.205	1.25	1.295	1.34	1.38	1.42	1.465	1.51	1.595	1.68	1.72	1.765	1.855	1.94

Operating Conditions

Non-rotating Accuracy

Non-rotating accuracy θ° at the retracted end and without a load should be less than or equal to the value provided in the table below as a guide.

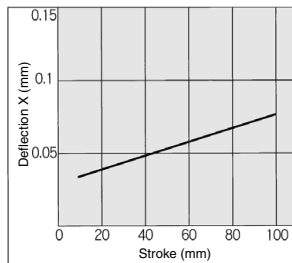
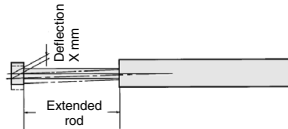


Bore size (mm)	$\phi 6$ to $\phi 32$
CXSM (Slide bearing)	$\pm 0.1^\circ$
CXSL (Ball bushing bearing)	

CXS $\phi 6$ to 32

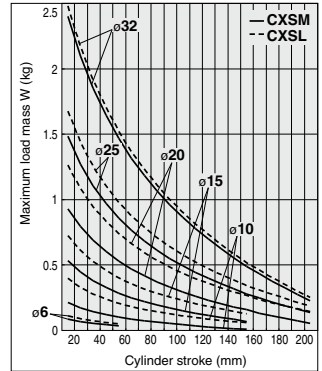
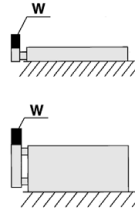
Deflection at the Plate End

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



Maximum Load Mass

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



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

12 – **CXS L** **Bore size** – **Stroke** – **Auto switch**

Clean room specifications

10	Relieving type
11	Vacuum type
12	Relieving type (With specially treated sliding parts)

Ball bushing bearing

M	Slide bearing
L*	Ball bushing bearing

* 12-series is compatible with the ball bushing bearing type only.

Series Applicable to Operating Environments that Do Not Accept Copper

- Copper (Cu) and Zinc (Zn)-free.....25A-series
- Copper and Fluorine-free.....20-series

Specifications

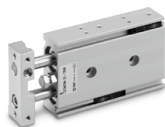
Bore size (mm)	6	10	15	20	25	32
Proof pressure	1.05 MPa					
Maximum operating pressure	0.7 MPa					
Minimum operating pressure	0.15 MPa	0.1 MPa	0.05 MPa			
Ambient and fluid temperature	-10 to 60°C (No freezing)					
Piston speed	30 to 400 mm/s					
Stroke adjustable range	0 to -5 mm compared to the standard stroke					
Bearing type	Ball bushing bearing					

Cylinder with Stable Lubrication Function (Lube-retainer)

How to Order

CXS **Bearing type** **Bore size** **M** – **Stroke** – **Auto switch**

↓ Cylinder with Stable Lubrication Function (Lube-retainer)



Specifications

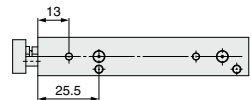
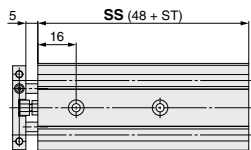
Bore size (mm)	6	10	20	25	32
Action	Double acting				
Minimum operating pressure	0.2 MPa	0.15 MPa	0.1 MPa		
Piston speed	50 to 300 mm/s	50 to 800 mm/s	50 to 700 mm/s	50 to 600 mm/s	
Cushion	Rubber bumper				

* Specifications other than the above are the same as the standard model.

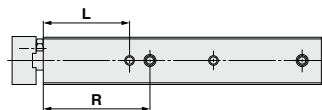
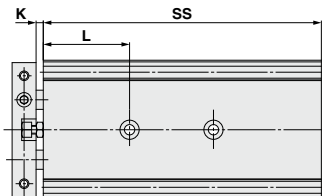
Dimensions

(Dimensions other than those shown below are the same as the standard model.)

CXS□6



CXS□10 to 32

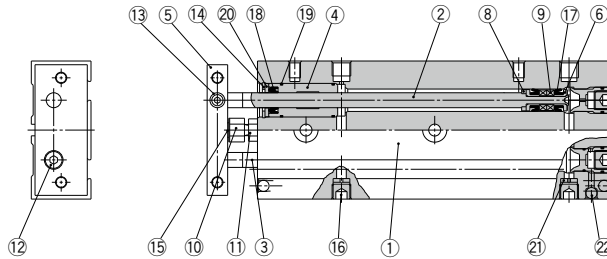


Model	K	L	R
CXS□10	4	25	35
CXS□15	3	36	44.5
CXS□20	6	36	50.5
CXS□25	6	36	52
CXS□32	4	40	66

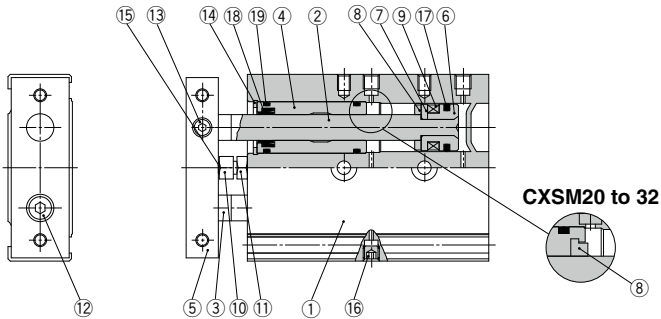
Symbol	SS															
Model	Stroke	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
CXS□10	70	75	80	85	90	95	100	105	110	120	130	135	—	—	—	—
CXS□15	76	81	86	91	96	101	106	111	116	126	136	141	146	156	166	—
CXS□20	86	91	96	101	106	111	116	121	126	136	146	151	156	166	176	—
CXS□25	88	93	98	103	108	113	118	123	128	138	148	153	158	168	178	—
CXS□32	102	107	112	117	122	127	132	137	142	152	162	167	172	182	192	—

Construction: Slide Bearing

CXSM6



CXSM10 to 32



Component Parts

No.	Description	Material	Note
1	Housing	Aluminum alloy	Hard anodized
2	Piston rod A	Carbon steel ⁽¹⁾	Hard chrome plated
3	Piston rod B	Carbon steel ⁽¹⁾	Hard chrome plated
4	Rod cover	Aluminum bearing alloy	
5	Plate	Aluminum alloy	Anodized
6	Piston A	Aluminum alloy	Chromated
7	Piston B	Aluminum alloy	Chromated
8	Bumper	Urethane	
9	Magnet	—	
10	Bumper bolt	Carbon steel	Nickel plated
11	Hexagon nut	Carbon steel	Zinc chromated
12	Hexagon socket head cap screw	Chromium steel	Zinc chromated
13	Hexagon socket head set screw	Chromium steel	Zinc chromated
14	Retaining ring	Special steel	Phosphate coating

Note 1) Stainless steel for CXSM6.

Component Parts

No.	Description	Material	Note
15	Bumper	Urethane	
16	Plug	Chromium steel	Nickel plated
17	Piston seal	NBR	
18	Rod seal	NBR	
19	O-ring	NBR	
20	Seal retainer	Aluminum alloy	
21	Port spacer	Aluminum alloy	
22	Steel ball	Special steel	Hard chrome plated

Replacement Parts/Seal Kit

Bore size (mm)	Kit no.	Contents
6	CXSM6-PS	
10	CXSM10APS	
15	CXSM15-PS	Set of nos. above 17, 18 and 19
20	CXSM20-PS	
25	CXSM25-PS	
32	CXSM32-PS	

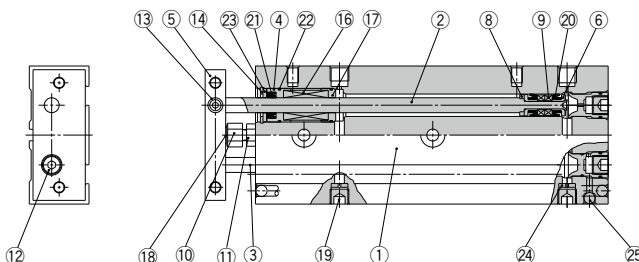
* Seal kit includes 17, 18 and 19. Order the seal kit, based on each bore size.

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

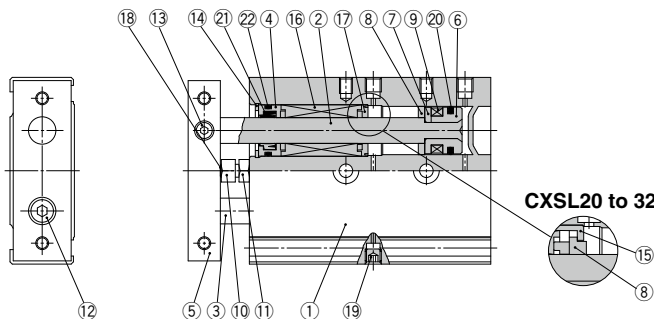
Grease pack part no.: GR-S-010 (10 g)

Construction: Ball Bushing Bearing

CXSL6



CXSL10 to 32



Component Parts: Standard Piping

No.	Description	Material	Note
1	Housing	Aluminum alloy	Hard anodized
2	Piston rod A	Special steel	Hard chrome plated
3	Piston rod B	Special steel	Hard chrome plated
4	Rod cover	Aluminum bearing alloy	
5	Plate	Aluminum alloy	Anodized
6	Piston A	Aluminum alloy	Chromated
7	Piston B	Aluminum alloy	Chromated
8	Bumper	Urethane	
9	Magnet	—	
10	Bumper bolt	Carbon steel	Nickel plated
11	Hexagon nut	Carbon steel	Zinc chromated
12	Hexagon socket head cap screw	Chromium steel	Zinc chromated
13	Hexagon socket head set screw	Chromium steel	Zinc chromated
14	Retaining ring	Special steel	Phosphate coating
15	Bumper holder	Synthetic resin	

Component Parts

No.	Description	Material	Note
16	Ball bushing	—	
17	Bearing spacer	Synthetic resin ⁽¹⁾	
18	Bumper	Urethane	
19	Plug	Chromium steel	Nickel plated
20	Piston seal	NBR	
21	Rod seal	NBR	
22	O-ring	NBR	
23	Seal retainer	Aluminum alloy	
24	Port spacer	Aluminum alloy	
25	Steel ball	Special steel	Hard chrome plated

Note 1) Aluminum bearing alloy for CXSL6.

Replacement Parts/Seal Kit

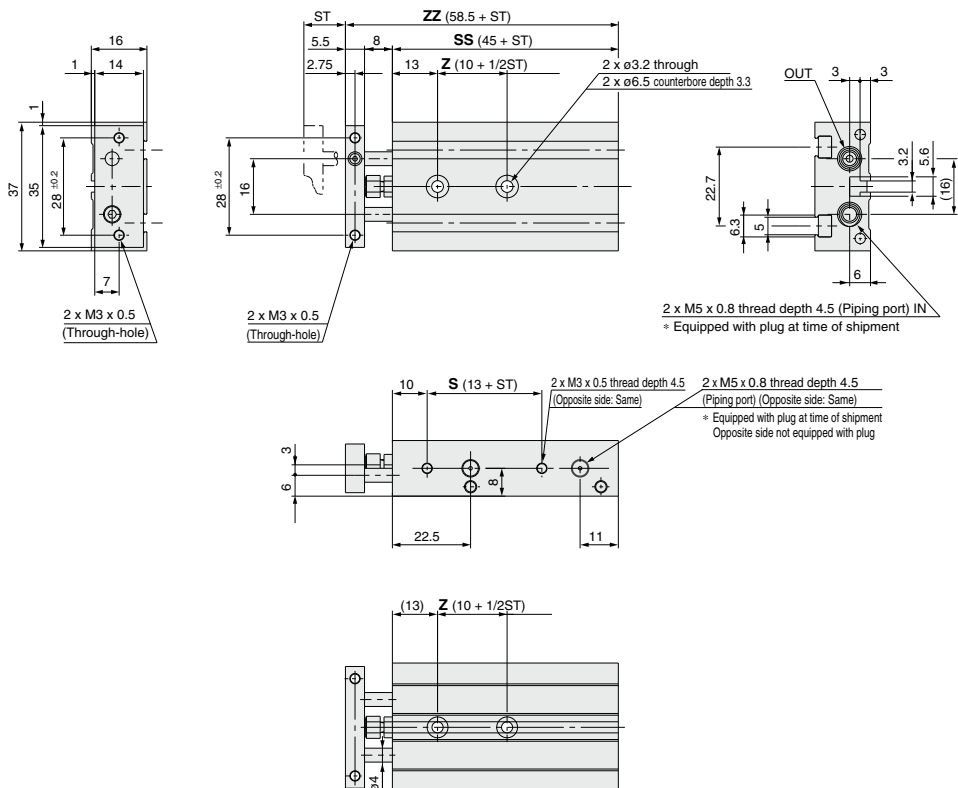
Bore size (mm)	Kit no.	Contents
6	CXSL6-PS	Set of nos. above 20, 21 and 22
10	CXSL10BPS	
15	CXSL15APS	
20	CXSL20APS	
25	CXSL25APS	
32	CXSL32APS	

* Seal kit includes 20, 21 and 22. Order the seal kit, based on each bore size.

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

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

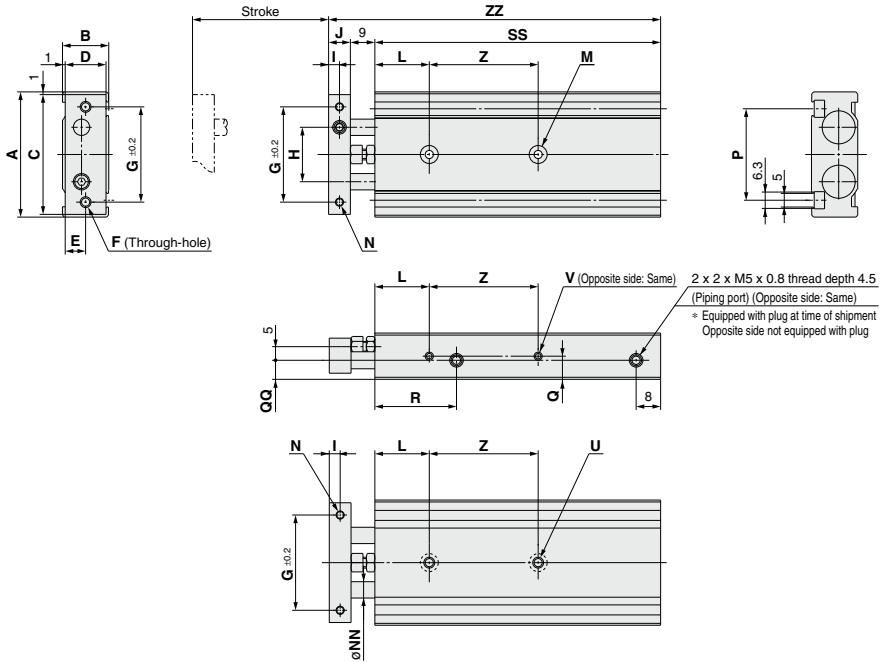
Dimensions: $\phi 6$



Model	Stroke	Z	S	SS	ZZ
CXS□6-10	10	15	23	55	68.5
CXS□6-20	20	20	33	65	78.5
CXS□6-30	30	25	43	75	88.5
CXS□6-40	40	30	53	85	98.5
CXS□6-50	50	35	63	95	108.5

(mm)

Dimensions: $\phi 10, \phi 15$

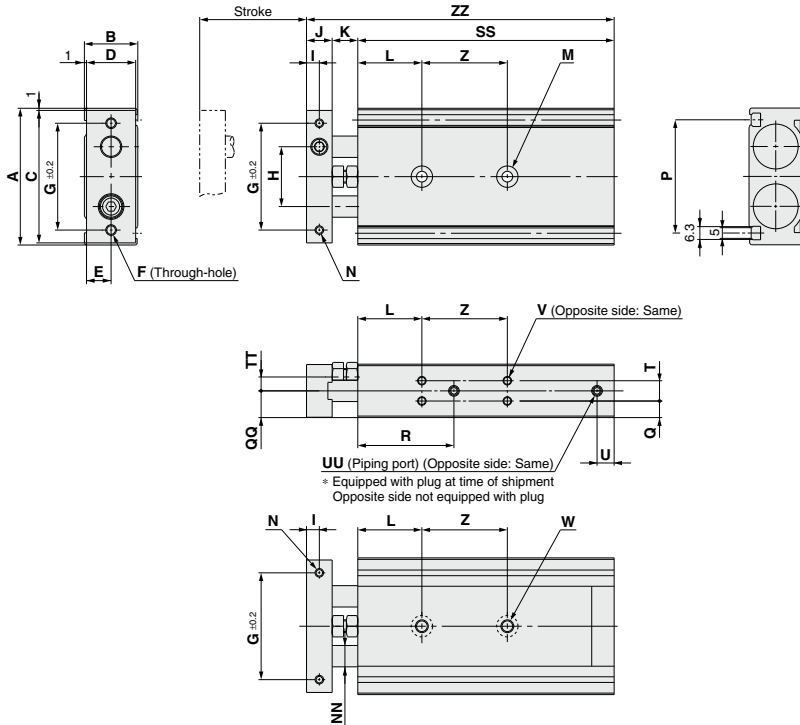


Model	A	B	C	D	E	F	G	H	I	J	L	M	N	NN	P	Q	QQ	R	U	V
CXS $\square 10$	46	17	44	15	7.5	2 x M4 x 0.7	35	20	4	8	20	2 x $\phi 3.4$ through 2 x $\phi 6.5$ counter- bore depth 3.3	2 x M3 x 0.5 thread depth 5	$\phi 6$	33.6	8.5	7	30	2 x M4 x 0.7 thread depth 7	4 x M3 x 0.5 thread depth 4.5
CXS $\square 15$	58	20	56	18	9	2 x M5 x 0.8	45	25	5	10	30	2 x $\phi 4.3$ through 2 x $\phi 8$ counter- bore depth 4.4	2 x M4 x 0.7 thread depth 6	$\phi 8$	48	10	10	38.5	2 x M5 x 0.8 thread depth 8	4 x M4 x 0.7 thread depth 5

Dimensions by Stroke

Model	SS										Z					ZZ																			
	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100	10, 15, 20, 25	30, 35, 40, 45, 50	60, 70, 75	80	90, 100	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
CXS $\square 10$	65	70	75	80	85	90	95	100	105	115	125	130	-	-	-	30	40	50	-	-	82	87	92	97	102	107	112	117	122	132	142	147	-	-	-
CXS $\square 15$	70	75	80	85	90	95	100	105	110	120	130	135	140	150	160	25	35	45	45	55	89	94	99	104	109	114	119	124	129	139	149	154	159	169	179

Dimensions: $\varnothing 20$, $\varnothing 25$, $\varnothing 32$



(mm)

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	NN	P
CXS \square 20	64	25	62	23	11.5	2 x M5 x 0.8	50	28	6	12	12	30	2 x $\varnothing 5.5$ through 2 x $\varnothing 9.5$ counterbore depth 5.3	2 x M4 x 0.7 thread depth 6	$\varnothing 10$	53
CXS \square 25	80	30	78	28	14	2 x M6 x 1.0	60	35	6	12	12	30	2 x $\varnothing 6.9$ through 2 x $\varnothing 11$ counterbore depth 6.3	2 x M5 x 0.8 thread depth 7.5	$\varnothing 12$	64
CXS \square 32	98	38	96	36	18	2 x M6 x 1.0	75	44	8	16	14	30	2 x $\varnothing 6.9$ through 2 x $\varnothing 11$ counterbore depth 6.3	2 x M5 x 0.8 thread depth 8	$\varnothing 16$	76

Model	Q	QQ	R	T	TT	U	UU	V	W
CXS \square 20	7.75	12.5	45	9.5	6.5	8	4 x M5 x 0.8 thread depth 4.5	8 x M4 x 0.7 thread depth 5.5	2 x M6 x 1.0 thread depth 10
CXS \square 25	8.5	15	46	13	9	9	4 x Rc 1/8 thread depth 6.5	8 x M5 x 0.8 thread depth 7.5	2 x M8 x 1.25 thread depth 12
CXS \square 32	9	19	56	20	11.5	10	4 x Rc 1/8 thread depth 6.5	8 x M5 x 0.8 thread depth 7.5	2 x M8 x 1.25 thread depth 12

Dimensions by Stroke

Model	SS										Z			ZZ																			
	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100	10, 15, 20, 25	30, 35, 40, 45, 50	60, 70, 75, 80, 90, 100	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
CXS \square 20	80	85	90	95	100	105	110	115	120	130	140	145	150	160	170	30	40	60	104	109	114	119	124	129	134	139	144	154	164	169	174	184	194
CXS \square 25	82	87	92	97	102	107	112	117	122	132	142	147	152	162	172	30	40	60	106	111	116	121	126	131	136	141	146	156	166	171	176	186	196
CXS \square 32	92	97	102	107	112	117	122	127	132	142	152	157	162	172	182	40	50	70	122	127	132	137	142	147	152	157	162	172	182	187	192	202	212