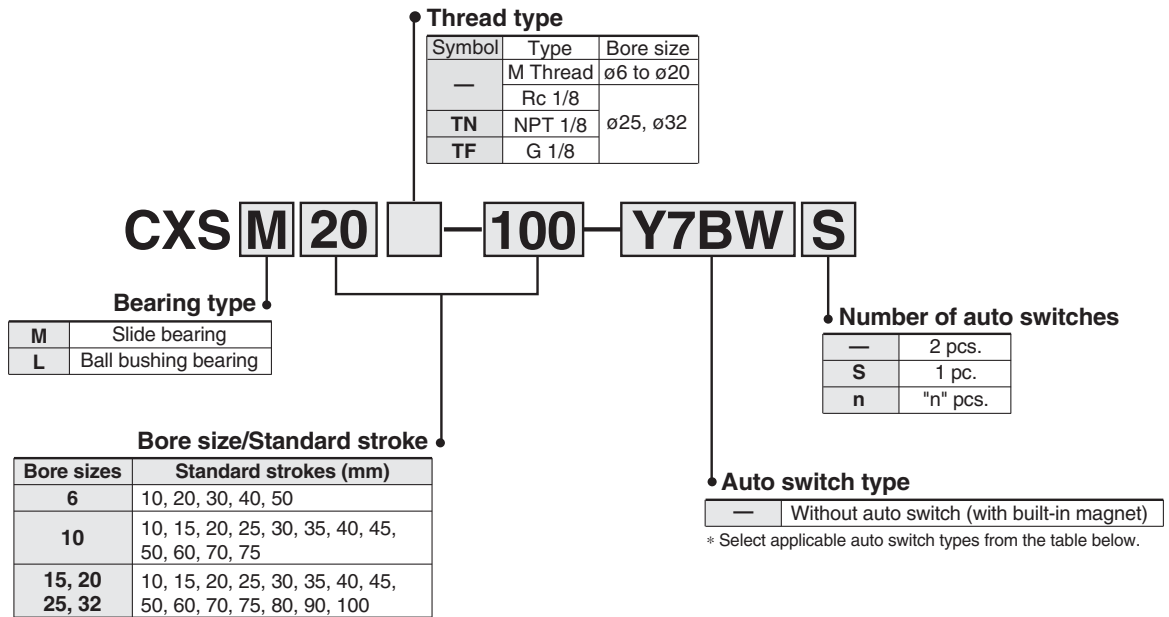


Standard Type Dual-Rod Cylinder

Series CXS

ø6, ø10, ø15, ø20, ø25, ø32

How to Order



Applicable auto switches: Refer to pages 40 through 48 for detailed auto switch specifications.

Type	Special function	Electrical entry	Indicator light	Wiring (output)	Load voltage		Auto switch type		Lead wire length (m)*			Applicable loads		
					DC	AC	Electrical entry direction		0.5 (-)	3 (L)	5 (Z)			
							Perpendicular	In-line						
Reed switch	—	Grommet	Yes	3-wire	—	5V	—	—	Z76	●	●	—	IC circuit	—
				2-wire	24V	12V	100V	—	Z73	●	●	●	—	Relay PLC
			No	5V, 12V	100V or less	—	Z80	●	●	—	IC circuit	—		
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24V	5V, 12V	—	Y69A	Y59A	●	●	○	IC circuit	Relay PLC
				3-wire (PNP)				Y7PV	Y7P	●	●	○	IC circuit	
				2-wire				Y69B	Y59B	●	●	○	—	
	3-wire (NPN)			Y7N WV				Y7N W	●	●	○	IC circuit		
	3-wire (PNP)			Y7P WV				Y7P W	●	●	○	IC circuit		
	2-wire			Y7B WV				Y7B W	●	●	○	—		
	2-wire			—				Y7B A	—	●	○	—		
Diagnostic indication (2-colour display)	Water-resistant (2-colour display)	2-wire	12V	—	—	—	—	—	—	—	—	—		

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

Note) Solid state switches marked "○" are produced upon receipt of order.

Series CXS



Specifications

Bore size (mm)	6	10	15	20	25	32
Fluid	Air (non-lube)					
Proof pressure	1.05MPa					
Maximum operating pressure	0.7MPa					
Minimum operating pressure	0.15MPa	0.1MPa		0.05MPa		
Ambient and fluid temperature	-10° to 60°C (with no freezing)					
Piston speed ^{Note)}	30 to 300mm/s	30 to 800mm/s	30 to 700mm/s		30 to 600mm/s	
Cushion	Rubber bumper					
Stroke adjustable range	0 to -5mm compared to the standard stroke					
Port size	M5				1/8	
Bearing type	Slide bearing, Ball bushing bearing (Same dimensions for both)					

Note) 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 Strokes

Model	Standard strokes	Manufacturable stroke range
CXS□6	10, 20, 30, 40, 50	60 to 100
CXS□10	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75	80 to 150
CXS□15	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 75, 80, 90, 100	110 to 150
CXS□20		110 to 200
CXS□25		
CXS□32		

* Refer to "Made to Order" on page 50 for long strokes (i.e., strokes beyond the standard stroke range).
Non-standard strokes for a size ø6 cylinder 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)

Weights

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

Clean Room 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

- Ball bushing bearing
- Clean room specification

11	Vacuum type
12	Relieving type (with specially treated sliding parts)

Specifications

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

* Refer to the separate clean room series catalog for dimensions.

Copper-Free Air Cylinder Series (for cathode ray tube manufacturing process)

Copper and fluorine-free air cylinders help prevent the adverse effects of copper ions and halogen ions produced during CRT manufacturing.

Note) Standard cylinders are essentially copper and fluorine-free. However, to emphasize and ensure proper ordering (i.e., copper and fluorine-free specification) when combining with other specifications, add the code 20- in front of the the series as shown below.

How to Order

20 – CXS L Bore size – Stroke – Auto switch

- Ball bushing bearing
- Copper-free series

* Specifications and dimensions are the same as for standard products.

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)

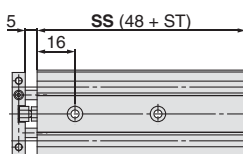
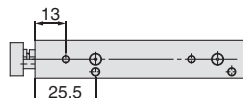
Specifications

Bore size (mm)	6	10	15	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					

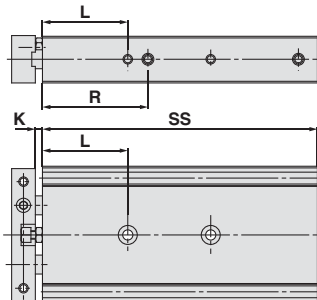
* Specifications other than the above are the same as the standard model.

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

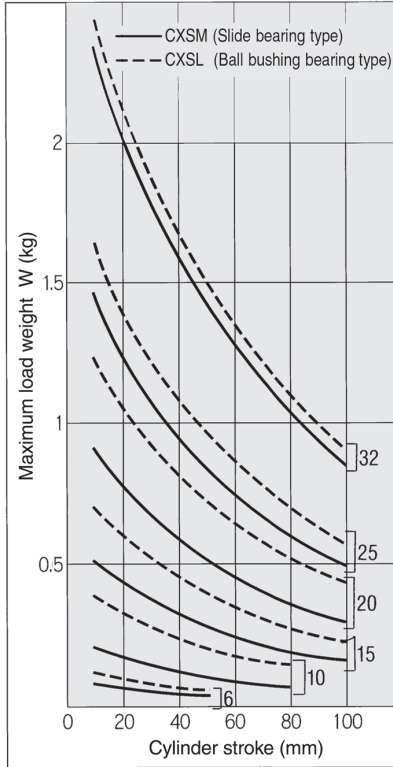
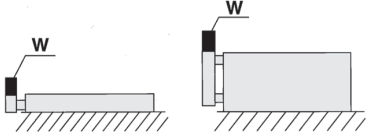
Symbol	SS														
Model	10	15	20	25	30	35	40	45	50	60	70	75	80	90	100
CXS□10	70	75	80	85	90	95	100	105	110	120	130	135	—	—	—
CXS□15	76	81	86	91	96	101	106	111	116	126	136	141	146	156	166
CXS□20	86	91	96	101	106	111	116	121	126	136	146	151	156	166	176
CXS□25	88	93	98	103	108	113	118	123	128	138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

Series CXS

Operating Conditions

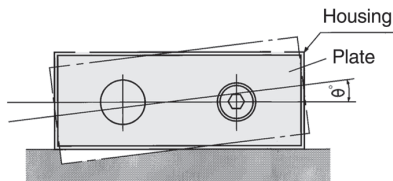
Maximum load weight

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.



Non-rotating accuracy

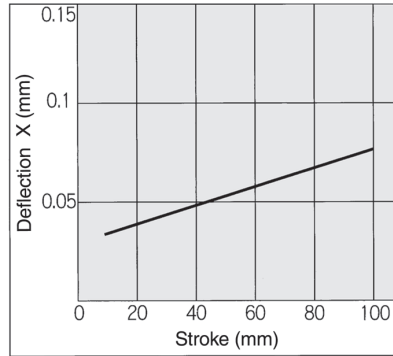
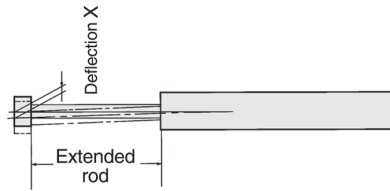
Non-rotating accuracy θ without a load should be less than or equal to the value provided in the table below as a guide.



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

Deflection at the plate end

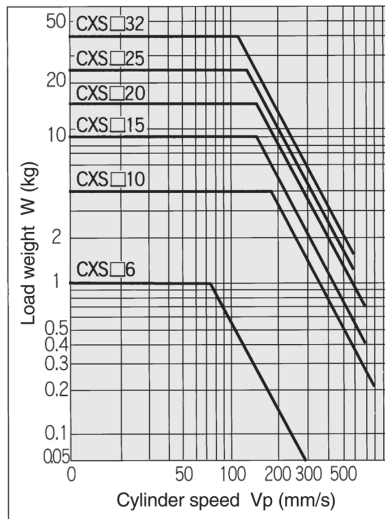
An approximate plate-end deflection X without a load is shown in the graph below.



Allowable kinetic energy

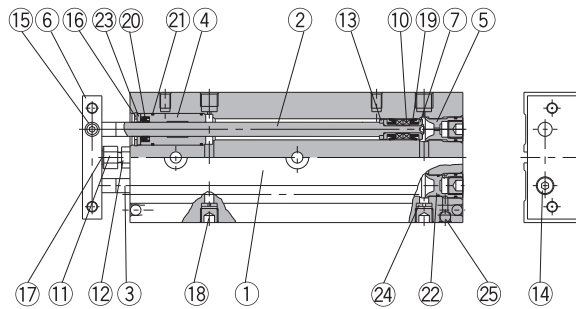
Operate a vertically mounted cylinder with a load weight and cylinder speed not exceeding the ranges shown in the graph below. A horizontally mounted cylinder should also be operated with a load weight less than the ranges given in the graph at left.

Cylinder speed should be adjusted using a speed controller.

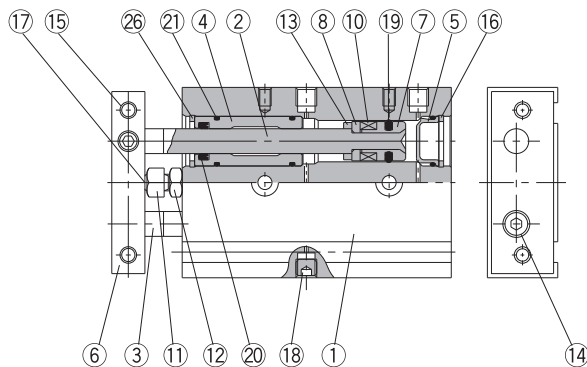


Construction: Slide Bearing

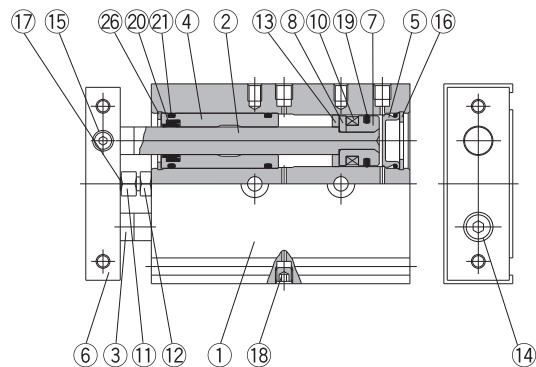
CXSM6



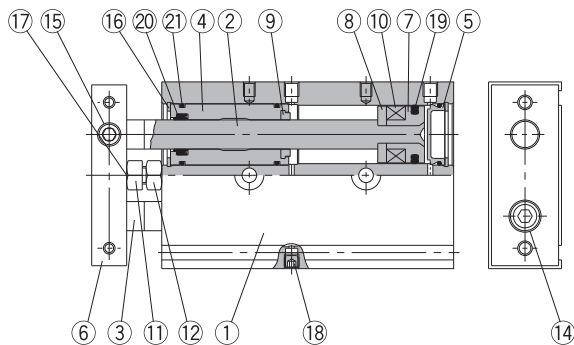
CXSM10



CXSM15



CXSM20 to 32



Parts list

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

Note 1) Stainless steel for CXSM6.
 Note 2) Anodized aluminum alloy for CXSM6.

Parts list

No.	Description	Material	Note
17	Bumper	Polyurethane	
18	Plug	Chromium steel	Nickel plated
19	Piston seal	NBR	
20	Rod seal	NBR	
21	O-ring	NBR	
22	Head cover B	Aluminum alloy	Nickel plated
23	Seal retainer	Aluminum alloy	
24	Port spacer	Aluminum alloy	
25	Steel ball	Special steel	Hard chrome plated
26	Snap ring B	Special steel	Nickel plated

Replacement parts: Seal Kits

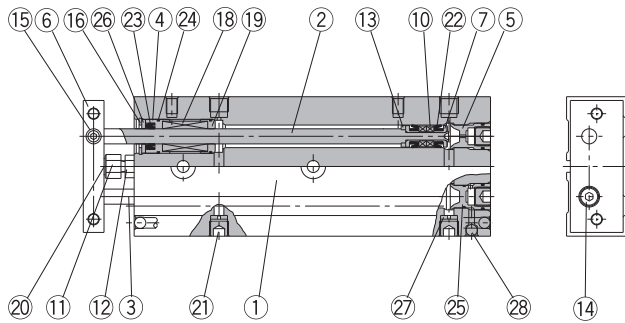
Bore size (mm)	Seal kit no.	Kit components
6	CXSM6-PS	Items 19 through 21 from the above chart
10	CXSM10APS	
15	CXSM15-PS	
20	CXSM20-PS	
25	CXSM25-PS	
32	CXSM32-PS	

* Seal kits consist of items 19 through 21, and can be ordered by using the seal kit number corresponding to each bore size.

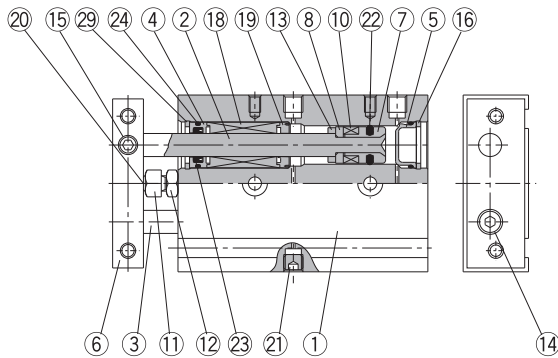
Series CXS

Construction: Ball Bushing Bearing

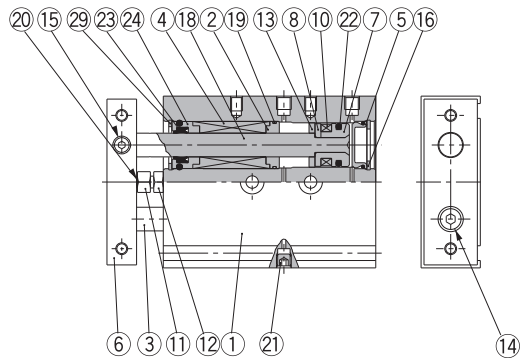
CXSL6



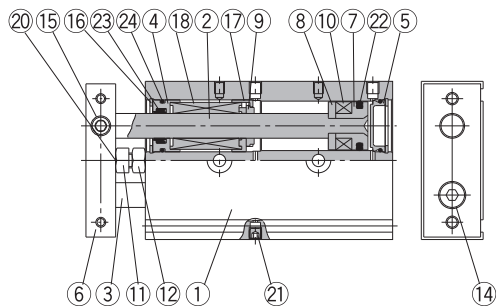
CXSL10



CXSL15




CXSL20 to 32



Parts list: 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/Bearing	Aluminum alloy	
5	Head cover	Special steel ^{Note 1)}	
6	Plate	Aluminum alloy	Hard anodized
7	Piston A	Aluminum alloy	Chromated
8	Piston B	Aluminum alloy	Chromated
9	Bumper A	Polyurethane	
10	Magnet	Magnetic material	
11	Bumper bolt	Carbon steel	Nickel plated
12	Hexagon nut	Carbon steel	Nickel plated
13	Bumper B	Polyurethane	
14	Hexagon socket head cap screw	Chromium steel	Nickel plated
15	Hexagon socket head set screw	Chromium steel	Nickel plated
16	Snap ring	Special steel	Nickel plated
17	Bumper holder	Synthetic resin	

 Note 1) Anodized aluminum alloy for CXSL6.

Parts list

No.	Description	Material	Note
18	Ball bushing	—	
19	Bearing spacer	Synthetic resin ^{Note 2)}	
20	Bumper	Polyurethane	
21	Plug	Chromium steel	Nickel plated
22	Piston seal	NBR	
23	Rod seal	NBR	
24	O-ring	NBR	
25	Head cover B	Aluminum alloy	Nickel plated
26	Seal retainer	Aluminum alloy	
27	Port spacer	Aluminum alloy	
28	Steel ball	Special steel	Hard chrome plated
29	Snap ring B	Special steel	Nickel plated

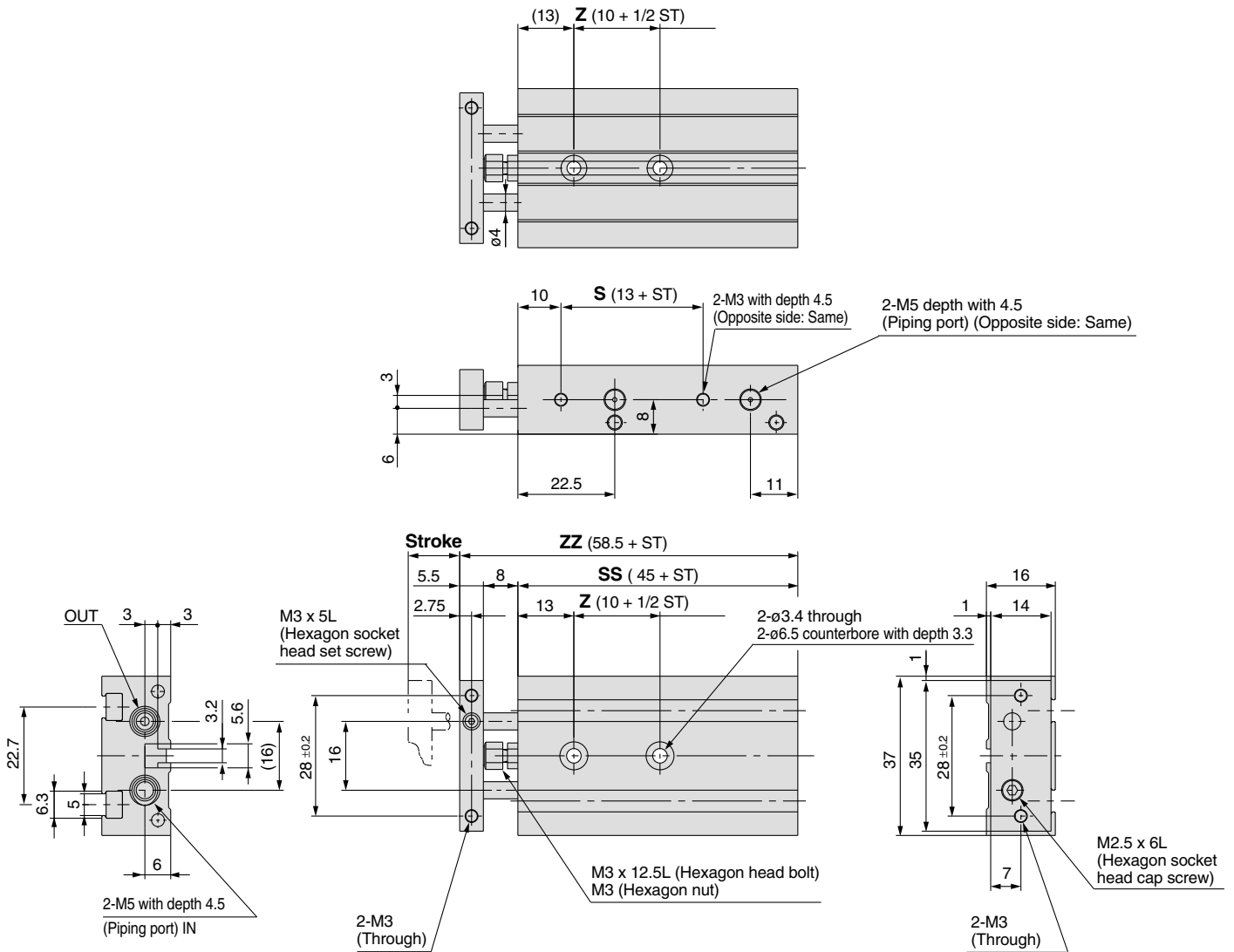
Note 2) Aluminum alloy for CXSL6.

Replacement parts: Seal kits

Bore size (mm)	Seal kit no.	Kit components
6	CXSL6-PS	Items 22 through 24 from the chart above
10	CXSL10BPS	
15	CXSL15APS	
20	CXSL20APS	
25	CXSL25APS	
32	CXSL32APS	

* Seal kits consist of items 22 through 24, and can be ordered by using the seal kit number corresponding to each bore size.

Dimensions: $\phi 6$

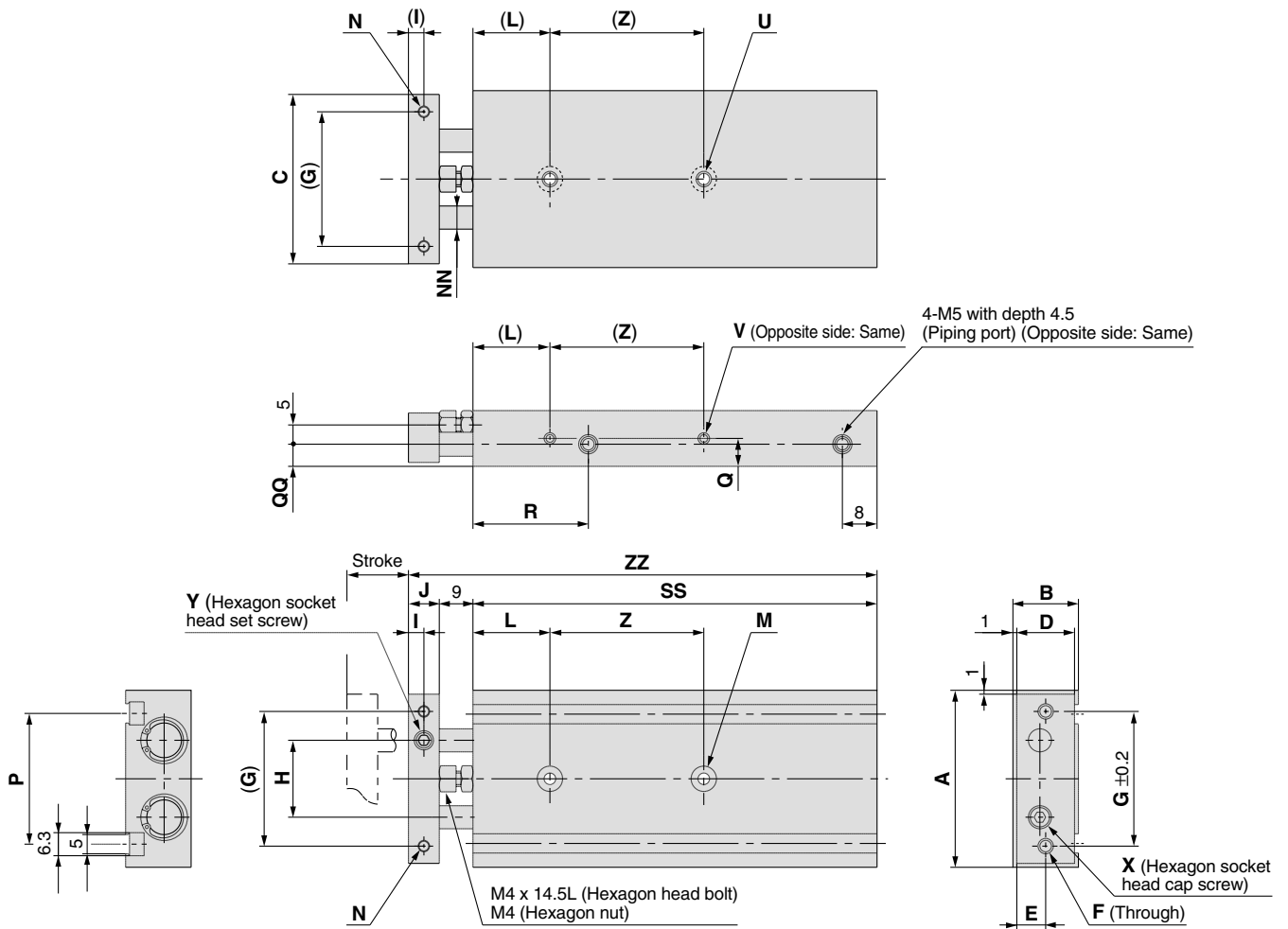


(mm)

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

Series CXS

Dimensions: $\varnothing 10$, $\varnothing 15$



(mm)

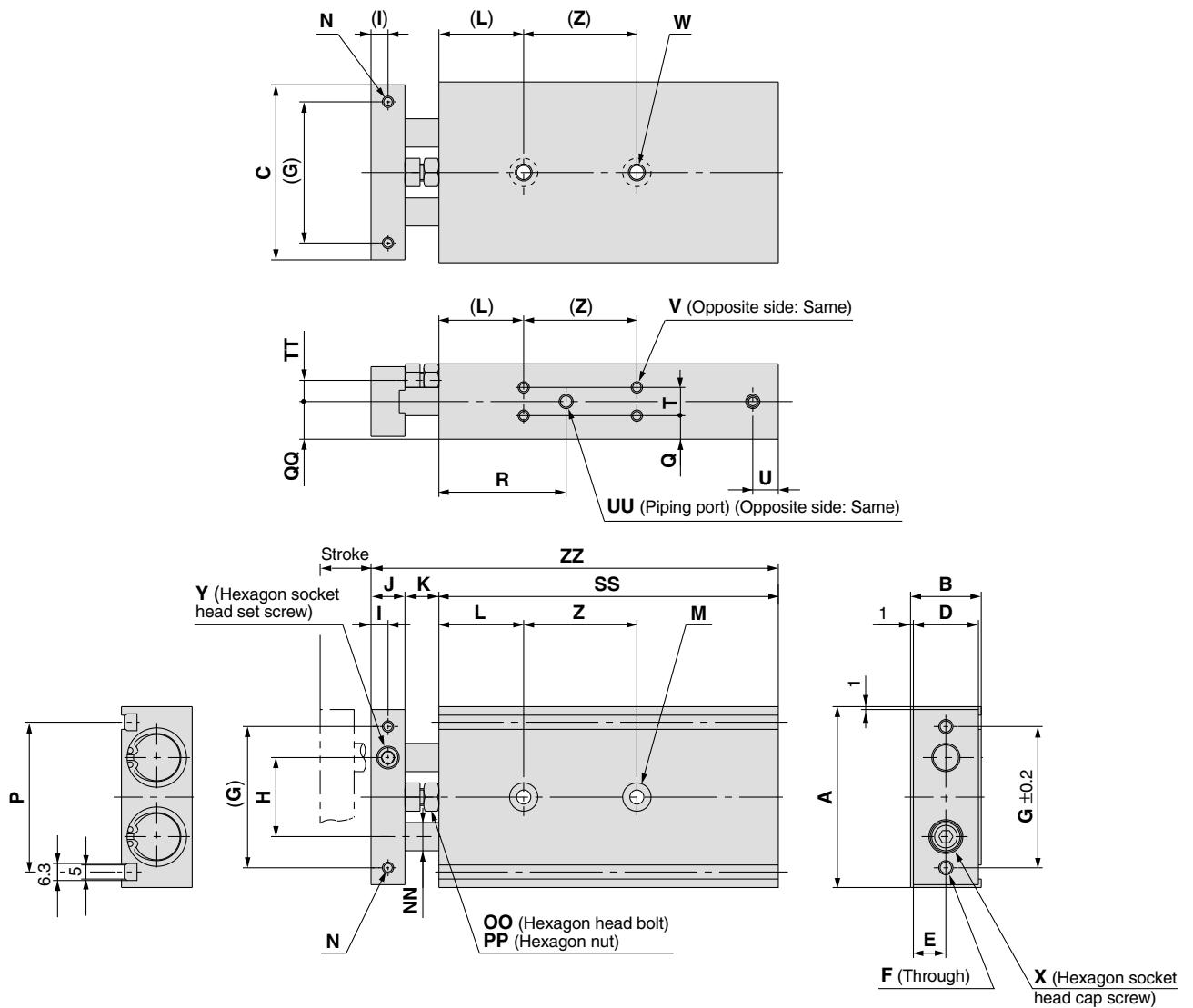
Model	A	B	C	D	E	F	G	H	I	J	L	M	N	NN	P	Q	QQ	R	U	V	X	Y
CXS□10	46	17	44	15	7.5	2-M4	35	20	4	8	20	2- $\varnothing 3.4$ through 2- $\varnothing 6.5$ counterbore with depth 3.3	2-M3 with depth 5	$\varnothing 6$	33.6	8.5	7	30	2-M4 with depth 7	4-M3 with depth 4.5	M3 x 10	M5 x 5L
CXS□15	58	20	56	18	9	2-M5	45	25	5	10	30	2- $\varnothing 4.3$ through 2- $\varnothing 8$ counterbore with depth 4.4	2-M4 with depth 6	$\varnothing 8$	48	10	10	38.5	2-M5 with depth 8	4-M4 with depth 5	M5 x 10	M6 x 5L

Strokes

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																
CXS□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□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

Standard Type Dual-Rod Cylinder *Series CXS*

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



(mm)

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	NN	OO	P
CXS\square20	64	25	62	23	11.5	2-M5	50	28	6	12	12	30	2- $\varnothing 5.5$ through 2- $\varnothing 9.5$ counterbore with depth 5.3	2-M4 with depth 6	$\varnothing 10$	M6 x 18.5L	53
CXS\square25	80	30	78	28	14	2-M6	60	35	6	12	12	30	2- $\varnothing 6.9$ through 2- $\varnothing 11$ counterbore with depth 6.3	2-M5 with depth 7.5	$\varnothing 12$	M6 x 18.5L	64
CXS\square32	98	38	96	36	18	2-M6	75	44	8	16	14	30	2- $\varnothing 6.9$ through 2- $\varnothing 11$ counterbore with depth 6.3	2-M5 with depth 8	$\varnothing 16$	M8 x 23L	76

Model	PP	Q	QQ	R	T	TT	U	UU	V	W	X	Y
CXS\square20	M6	7.75	12.5	45	9.5	6.5	8	4-M5 with depth 4.5	8-M4 with depth 5.5	2-M6 with depth 10	M6 x 12	M8 x 6L
CXS\square25	M6	8.5	15	46	13	9	9	4- 1/8 with depth 6.5	8-M5 with depth 7.5	2-M8 with depth 12	M6 x 14	M8 x 6L
CXS\square32	M8	9	19	56	20	11.5	10	4- 1/8 with depth 6.5	8-M5 with depth 7.5	2-M8 with depth 12	M8 x 16	M10 x 8L

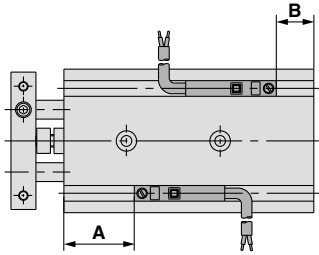
Strokes

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\square20	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\square25	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\square32	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

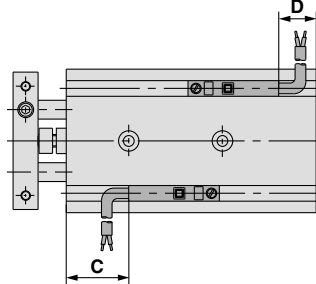
Series CXS

Auto Switch Proper Mounting Positions for Stroke End Detection

Electrical entry direction: Inward



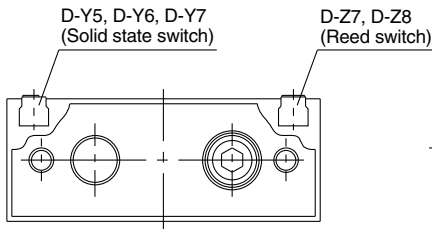
Electrical entry direction: Outward



Bore size (mm)	A	B	D-Z7, D-Z8, D-Y7□W D-Y5□, D-Y7□		D-Y6□, D-Y7□V D-Y7□WV		D-Y7BAL	
			C	D	C	D	C	D
6	15.5	4.5	11.5 (10)	0.5 (-1)	13	2	5.5	-5.5
10	22.5	7.5	18.5 (17)	3.5 (2)	20	5	12.5	-2.5
15	30.5	4.5	26.5 (25)	0.5 (-1)	28	2	20.5	-5.5
20	38	7	34 (32.5)	3 (1.5)	36	4.5	28	-3
25	38	9	34 (32.5)	5 (3.5)	36	6.5	28	-1
32	48	9	44 (42.5)	5 (3.5)	46	6.5	38	-1

Lead wire entry is inward prior to shipment.
 Notes) • Negative values for dimension D indicate how much the lead wires protrude from the cylinder body.
 • Dimensions inside () are for D-Z73.

Auto Switch Mounting Dimensions



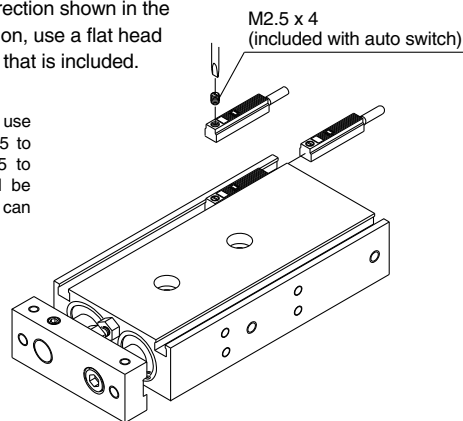
Dimension A

Switch types	Bore size					
	6	10	15	20	25	32
D-Y59A, D-Y7P, D-Y59B	0.7				0.2	
D-Y69A, D-Y7PV, D-Y69B						
D-Y7NWV, D-Y7PWV, D-Y7BWV						
D-Y7NW, D-Y7PW, D-Y7BW						
D-Y7BAL	6.5				6.0	
D-Z7, D-Z8	1.2				0.7	

Auto Switch Mounting

When mounting and securing auto switches, they should be inserted into the cylinder's switch mounting rail from the direction shown in the drawing below. After setting in the mounting position, use a flat head watchmakers screwdriver to tighten the set screw that is included.

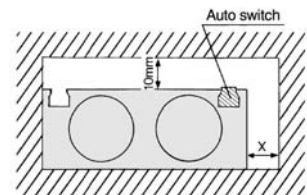
Note) When tightening the auto switch mounting screw, use a watchmakers screwdriver with a handle about 5 to 6mm in diameter. Tighten with a torque of 0.05 to 0.1N·m. As a rule, the mounting screw should be turned about 90° past the point at which tightening can first be felt.



Caution

1. Take precautions when magnetic substances come in close proximity of the cylinder with auto switches.

When magnetic substances such as iron (including flanges) 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 the values noted in the table below, the auto switch may not function properly.



Bore size	X (mm)
ø6	0
ø10	0
ø15	10
ø20	10
ø25	0
ø32	0

Series CXS Model Selection

⚠ Caution Theoretical output must be confirmed separately, referring to the table on page 2.

Compact Type: CXSJ

Vertical mounting

Mounting orientation					
Maximum speed (mm/s)	up to 200	up to 400	up to 600	up to 800	
Stroke (mm)	All strokes				
Selection graph	ø6	1	2	3	4
	ø10				

Horizontal mounting

Mounting orientation								
Stroke (mm)	up to 10		up to 30		up to 50		up to 75	
Maximum speed (mm/s)	up to 400	up to 800	up to 400	up to 800	up to 400	up to 800	up to 400	up to 800
Selection graph	ø6	5	6	7	8			
	ø10							

* Refer to the caution notes below.

⚠ Caution

If the cylinder is horizontally mounted and the plate end does not reach the load's centre of gravity, use the formula below to calculate the imaginary stroke L' that includes the distance between the load's centre of gravity and the plate end. Select the graph that corresponds to the imaginary stroke L' .

$$\text{Imaginary stroke } L' = (\text{Stroke}) + k + L$$

k: Distance between the centre and end of the plate

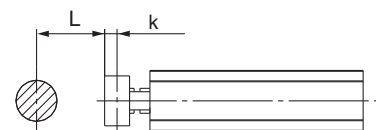
ø6	2.75mm
ø10	4mm

(Example)

When using CXSJM6-10 and $L = 15\text{mm}$:

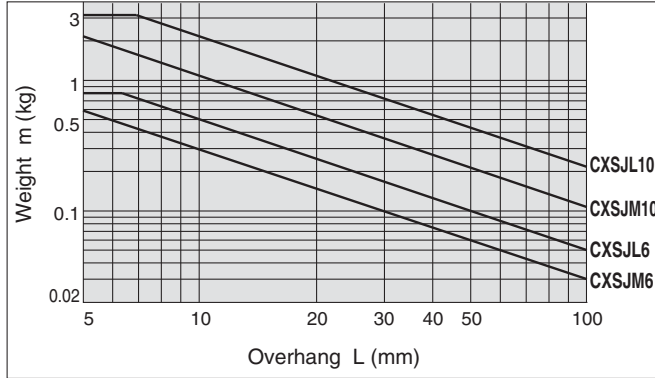
$$\text{Imaginary stroke } L' = 10 + 2.75 + 15 = 27.75$$

Therefore, the graph used for your model selection should be the one for CXSJM6-30 (**6**).

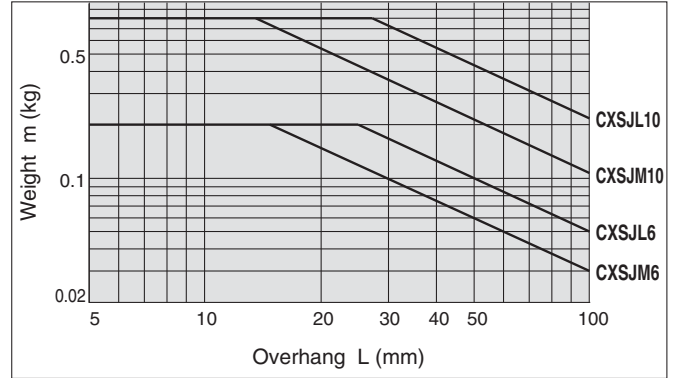


Vertical Mounting [based on maximum speed (v)]

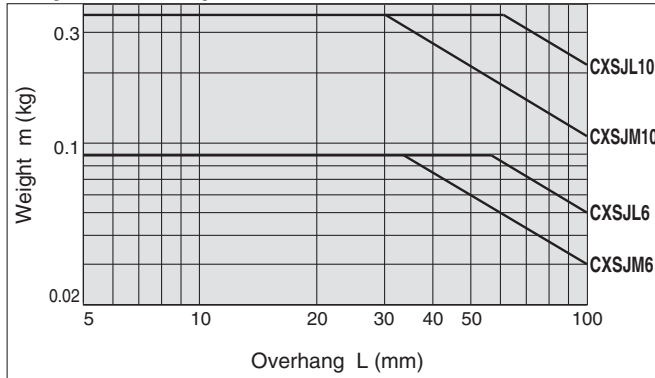
Graph 1 V = up to 200mm/s



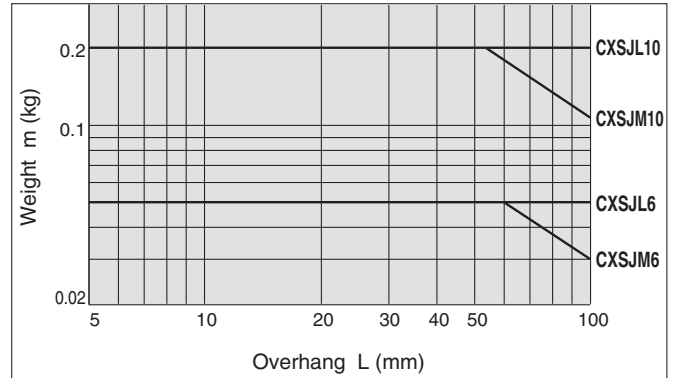
Graph 2 V = up to 400mm/s



Graph 3 V = up to 600mm/s

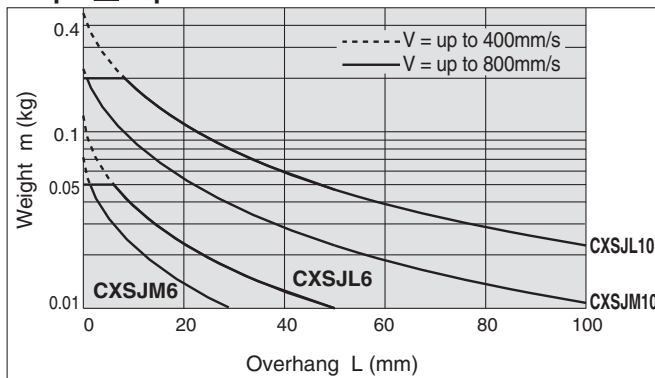


Graph 4 V = up to 800mm/s

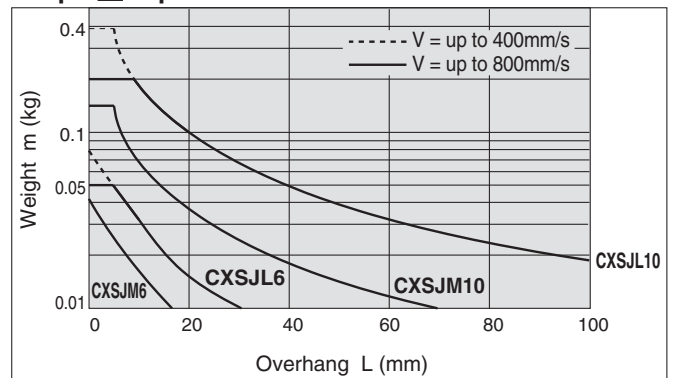


Horizontal Mounting [based on stroke length]

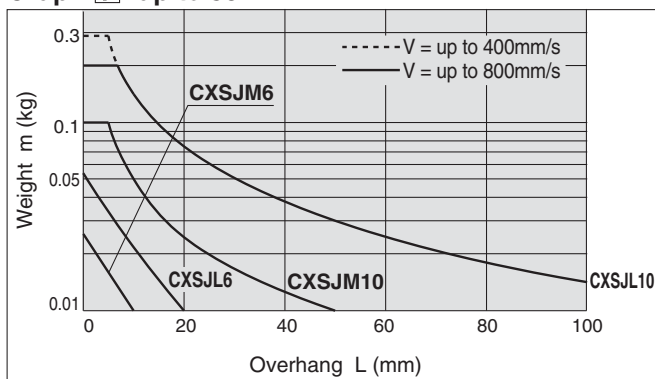
Graph 5 up to 10mm



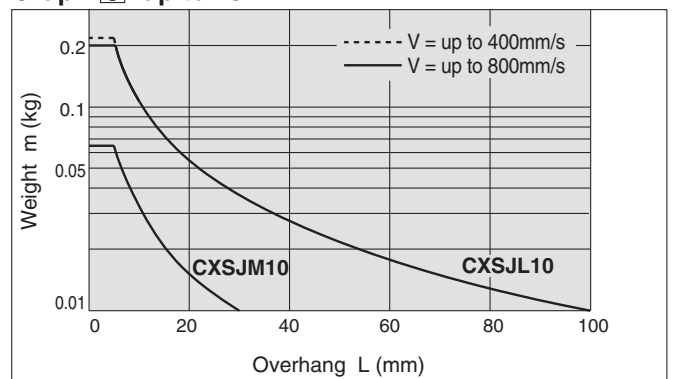
Graph 6 up to 30mm



Graph 7 up to 50mm



Graph 8 up to 75mm



Series CXS

Model Selection

⚠ Caution Theoretical output must be confirmed separately, referring to the table on page 10.

Standard Type: CXS

Vertical mounting

Mounting orientation							
Max. speed (mm/s)		up to 100	up to 200	up to 300	up to 400	up to 600	up to 700 (up to 800)
Stroke (mm)		All strokes					
Selection graph	ø6	1		2			
	ø10						
	ø15						
	ø20		3		4	5	6
	ø25						
	ø32						

Horizontal mounting

Mounting orientation																					
Stroke (mm)		up to 10				up to 30				up to 50				up to 75				up to 100			
Max. speed (mm/s)		up to 100	up to 300	up to 400	More than 400	up to 100	up to 300	up to 400	More than 400	up to 100	up to 300	up to 400	More than 400	up to 100	up to 300	up to 400	More than 400	up to 100	up to 300	up to 400	More than 400
Selection graph	ø6	7				8				9											
	ø10																				
	ø15																				
	ø20			10	11			12	13			14	15			16				17	
	ø25																				
	ø32																				

* The maximum speeds for ø10 to ø32 are:
 ø10: up to 800mm/s; ø15, 20: up to 700mm/s; ø25, 32: up to 600mm/s

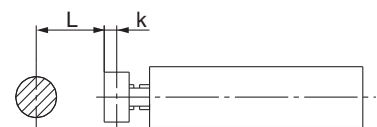
⚠ Caution

If the cylinder is horizontally mounted and the plate end does not reach the load's centre of gravity, use the formula below to calculate the imaginary stroke L' that includes the distance between the load's centre of gravity and the plate end. Select the graph that corresponds to the imaginary stroke L' .

Imaginary stroke $L' = (\text{Stroke}) + k + L$

k: Distance between the centre and end of the plate

ø6	2.75mm
ø10	4mm
ø15	5mm
ø20	6mm
ø25	
ø32	8mm



(Example)

When using CXSM6-10 and $L = 15\text{mm}$:

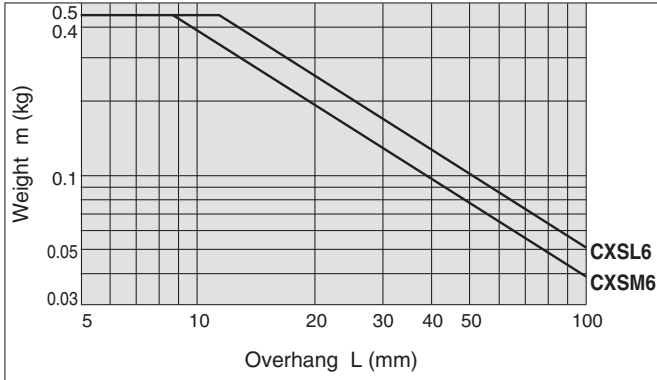
Imaginary stroke $L' = 10 + 2.75 + 15 = 27.75$

Therefore, the graph used for your model selection should be the one for CXSM6-30 (**8**).

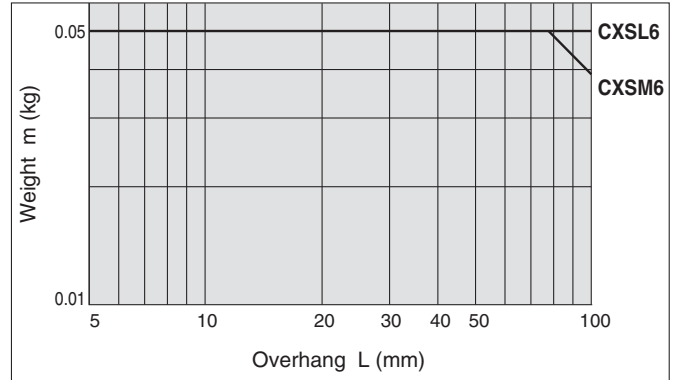
Vertical Mounting [based on maximum speed (V)]

ø6

Graph 1 V = up to 100mm/s

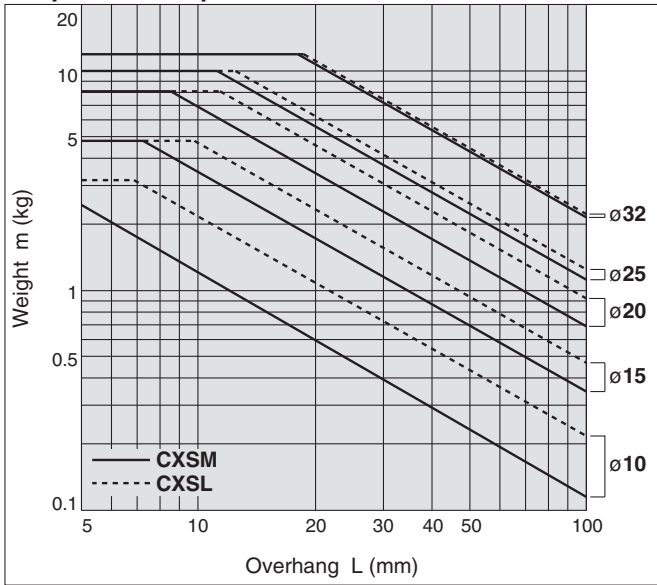


Graph 2 V = up to 300mm/s

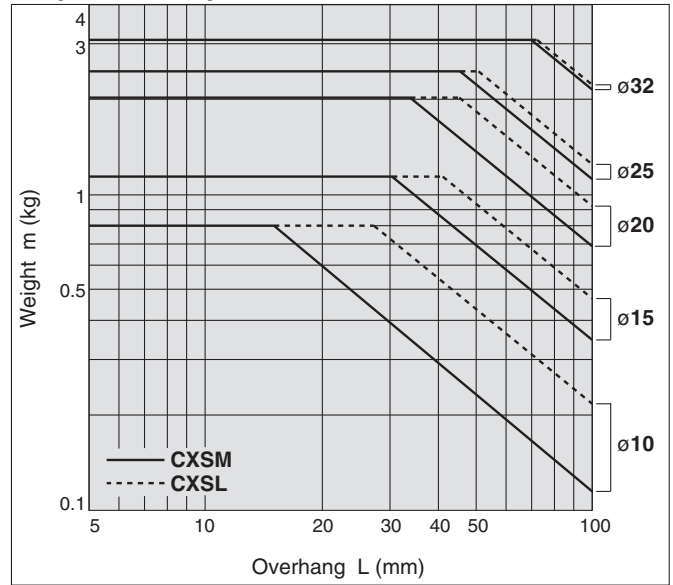


ø10 to ø32

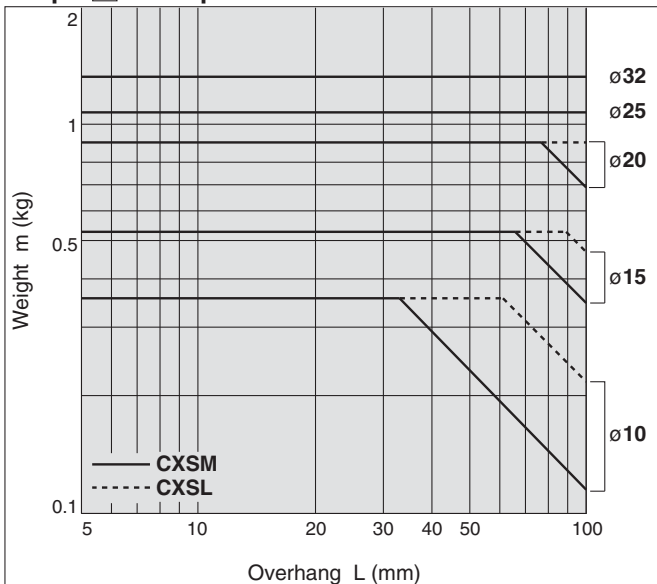
Graph 3 V = up to 200mm/s



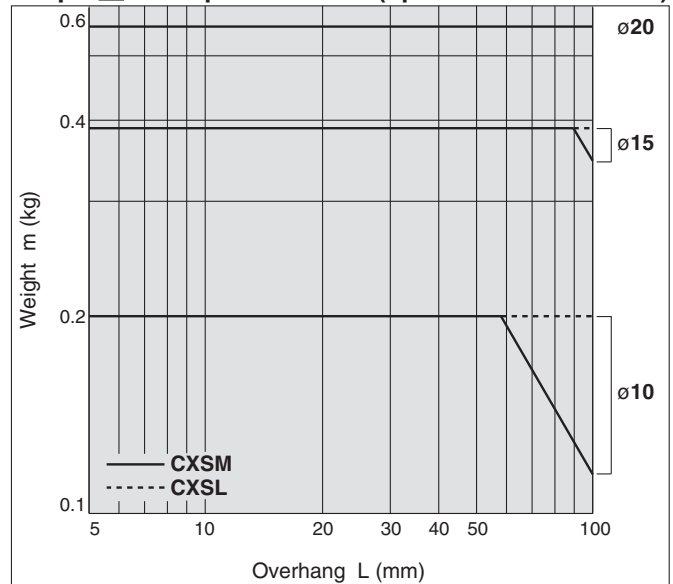
Graph 4 V = up to 400mm/s



Graph 5 V = up to 600mm/s



Graph 6 V = up to 700mm/s (up to 800mm/s for ø10)

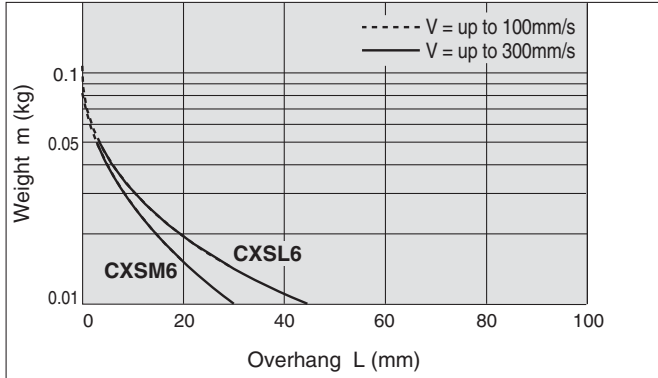


Series CXS

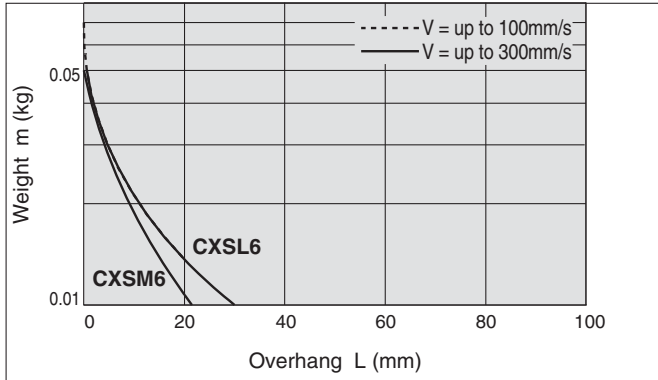
Horizontal Mounting [based on stroke length]

∅6

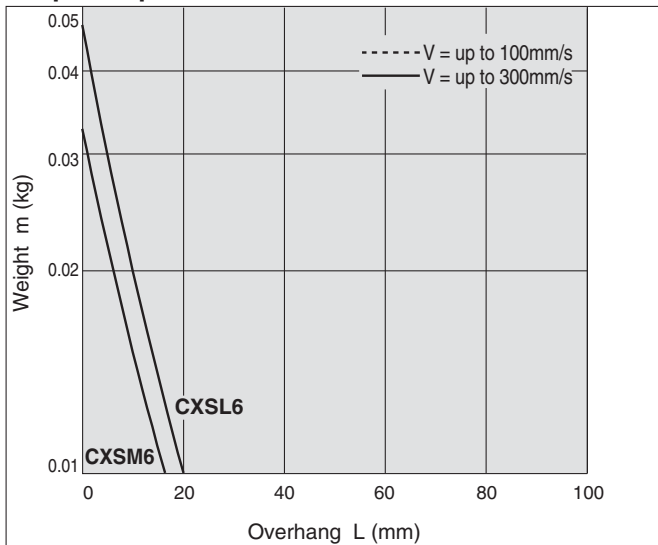
Graph 7 up to 10mm



Graph 8 up to 30mm



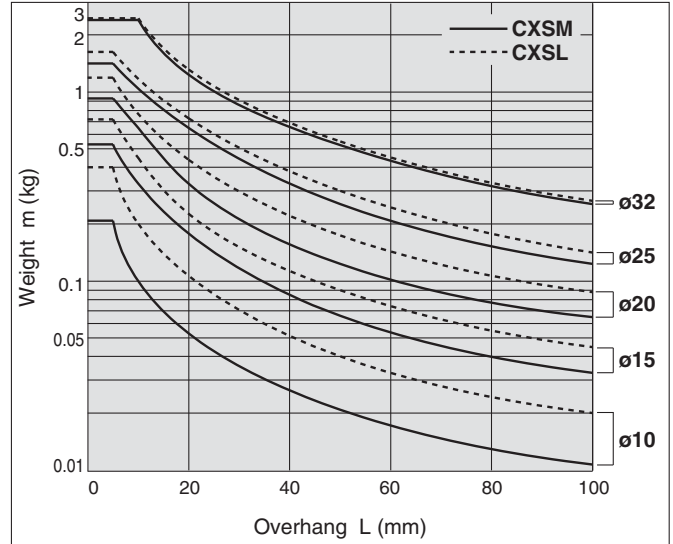
Graph 9 up to 50mm



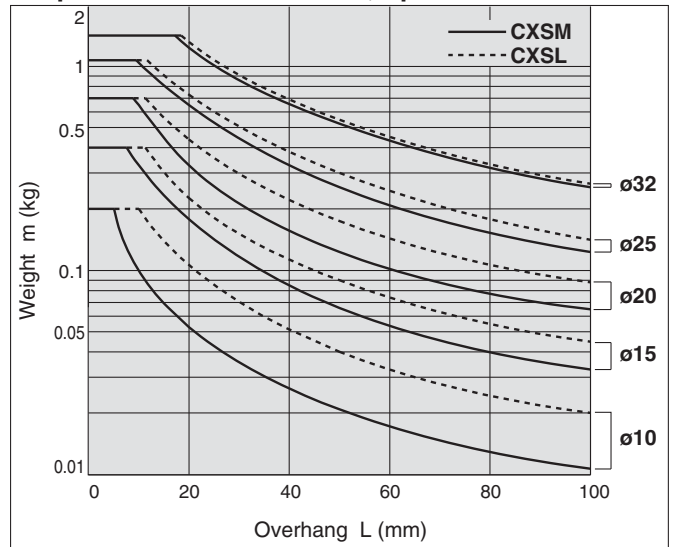
[based on maximum speed (V) and stroke length]

∅10 to ∅32

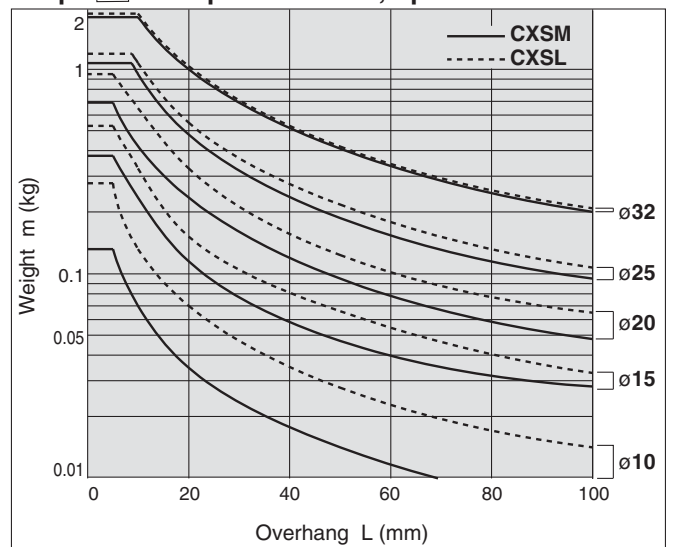
Graph 10 V = up to 400mm/s; up to 10mm



Graph 11 V = over 400mm/s; up to 10mm



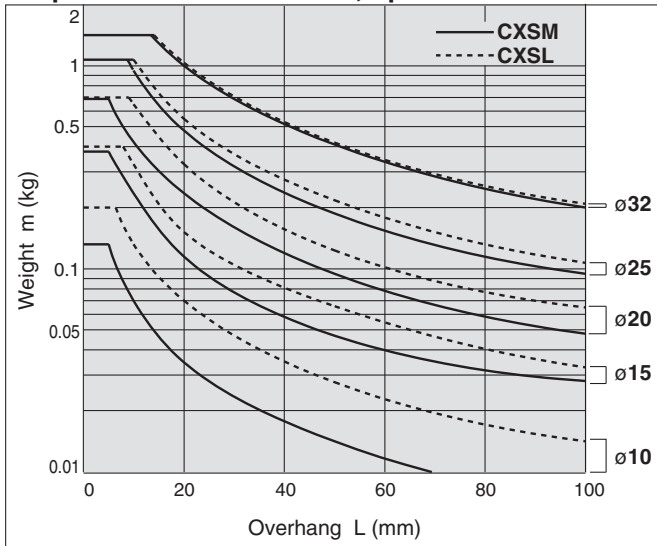
Graph 12 V = up to 400mm/s; up to 30mm



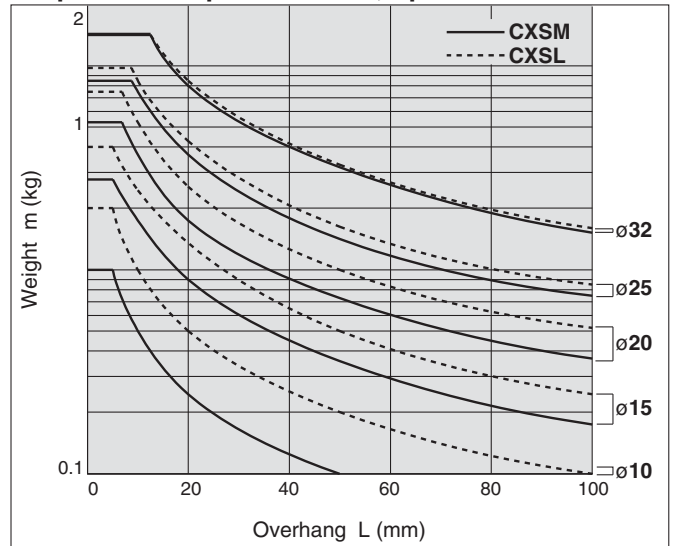
Horizontal Mounting [based on maximum speed and stroke length]

ø10 to ø32

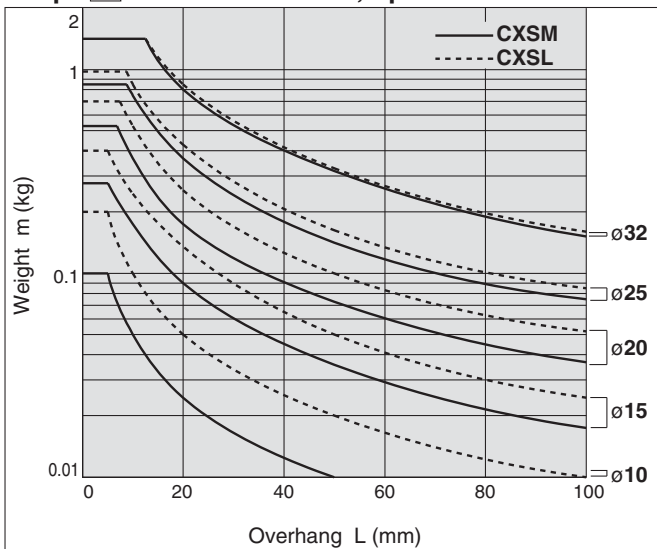
Graph 13 V = over 400mm/s; up to 30mm



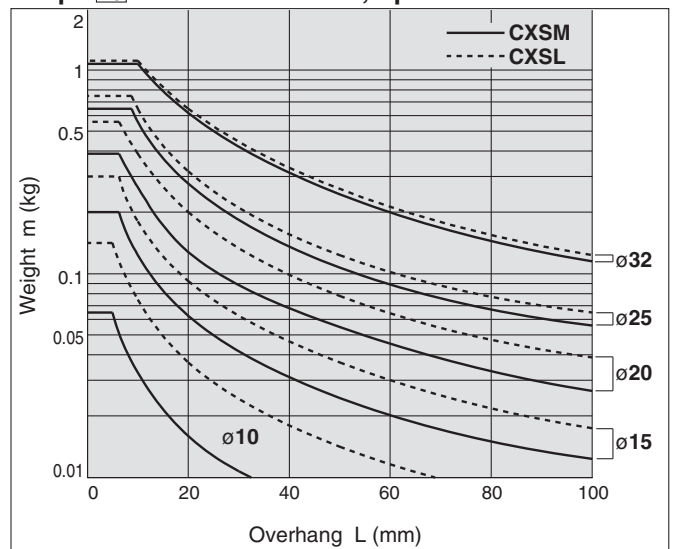
Graph 14 V = up to 400mm/s; up to 50mm



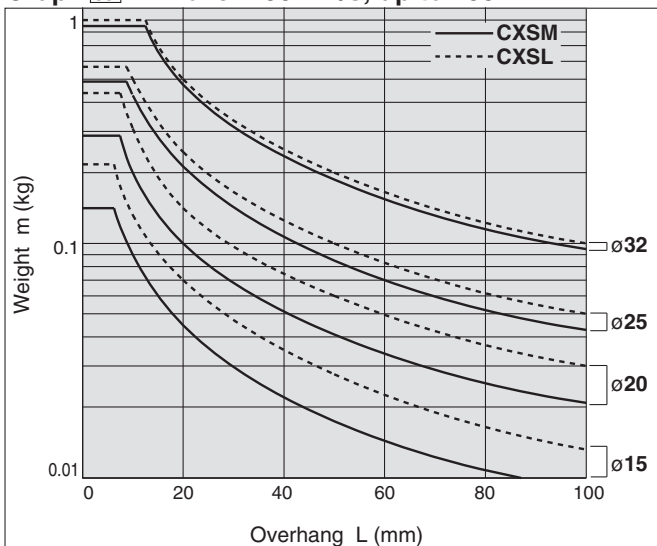
Graph 15 V = over 400mm/s; up to 50mm



Graph 16 V = over 400mm/s; up to 75mm



Graph 17 V = over 400mm/s; up to 100mm



Series CXS

Model Selection

⚠ Caution Theoretical output must be confirmed separately, referring to the table on page 20.

With Air Cushion: CXS

Vertical mounting

Mounting orientation						
Maximum speed (mm/s)	up to 200	up to 400	up to 600	up to 800	up to 1000	
Stroke (mm)	All strokes					
Selection graph	ø20	1	2	3	4	5
	ø25					
	ø32					

Horizontal mounting

Mounting orientation					* Refer to the caution notes below.			
Stroke (mm)	up to 10		up to 30		up to 50	up to 75	up to 100	
Maximum speed (mm/s)	up to 800	up to 1000	up to 800	up to 1000	up to 1000	up to 1000	up to 1000	
Selection graph	ø20	6	7	8	9	10	11	12
	ø25							
	ø32							

⚠ Caution

If the cylinder is horizontally mounted and the plate end does not reach the load's centre of gravity, use the formula below to calculate the imaginary stroke L' that includes the distance between the load's centre of gravity and the plate end. Select the graph that corresponds to the imaginary stroke L' .

$$\text{Imaginary stroke } L' = (\text{Stroke}) + k + L$$

k: Distance between the centre and the end of the plate

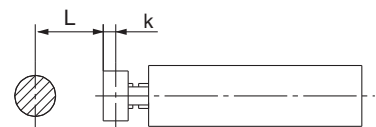
ø20	6mm
ø25	
ø32	

(Example)

When using CXSM20-10 and $L = 10\text{mm}$:

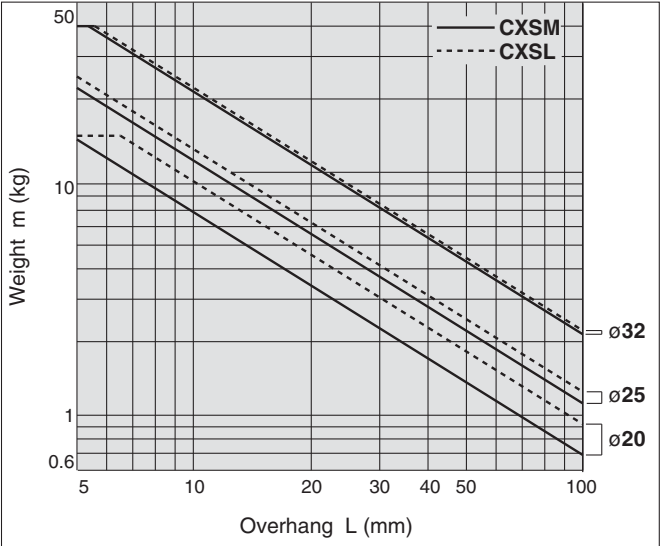
Imaginary stroke $L' = 10 + 6 + 10 = 26$

Therefore, the graph used for your model selection should be the one for CXSM20-30 (8, 9).

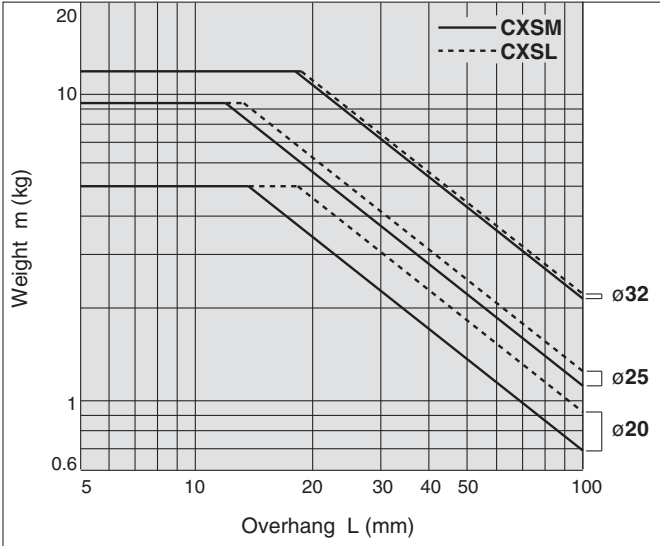


Vertical Mounting [based on maximum speed (V)]

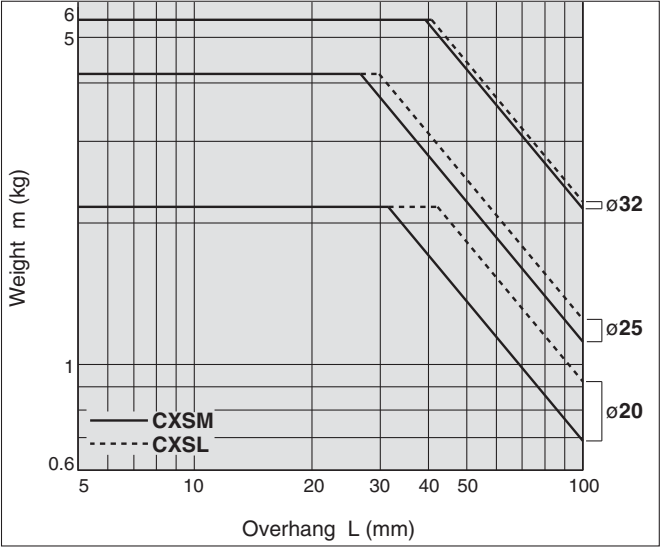
Graph 1 V = up to 200mm/s



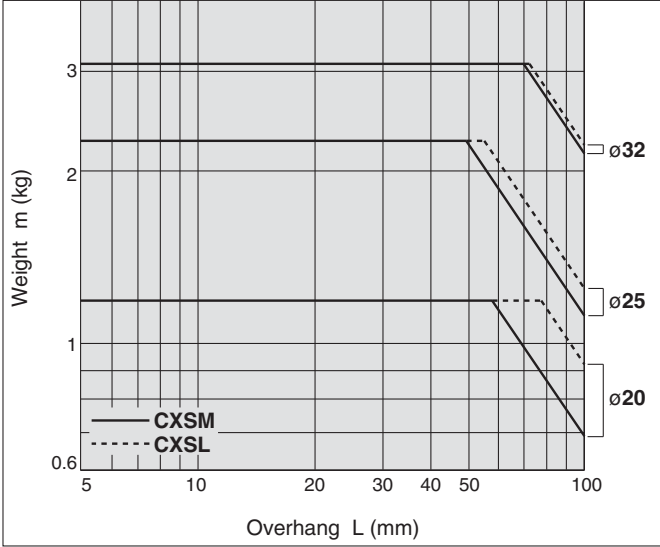
Graph 2 V = up to 400mm/s



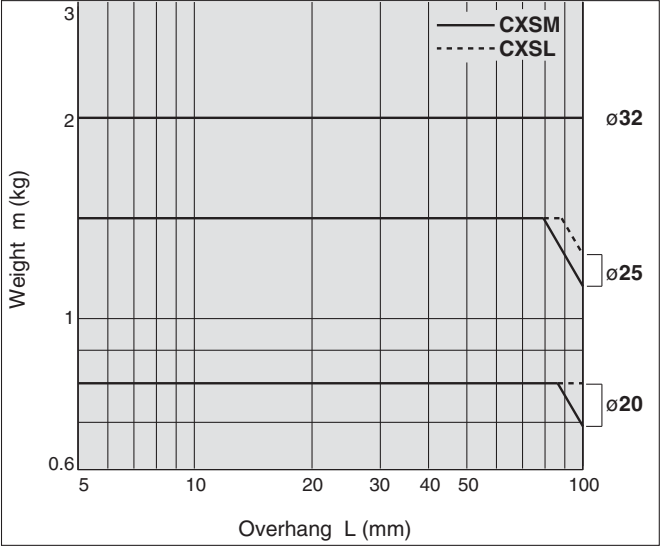
Graph 3 V = up to 600mm/s



Graph 4 V = up to 800mm/s



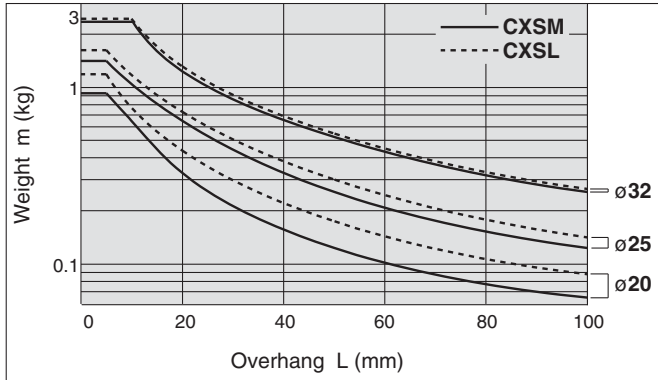
Graph 5 V = up to 1000mm/s



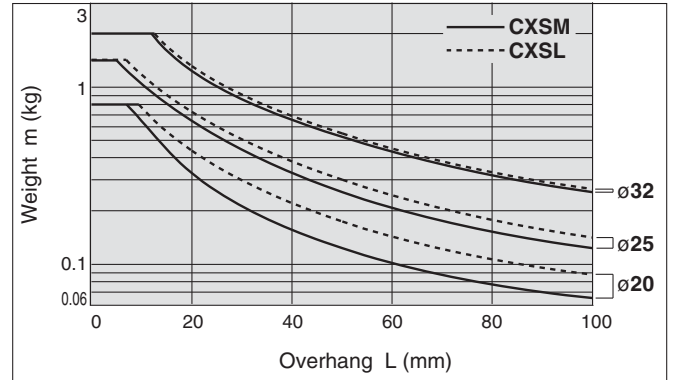
Series CXS

Horizontal Mounting [based on maximum speed and stroke length]

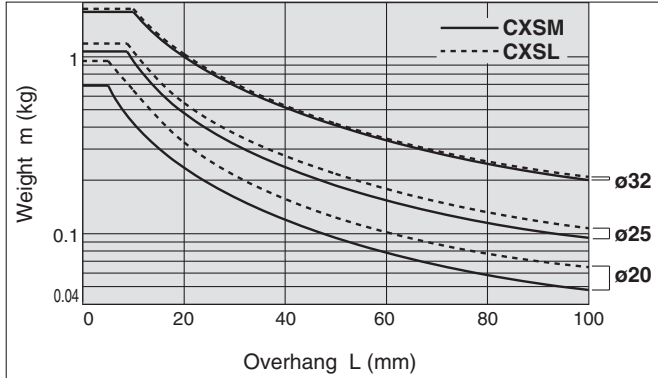
Graph 6 V = up to 800mm/s; up to 10mm



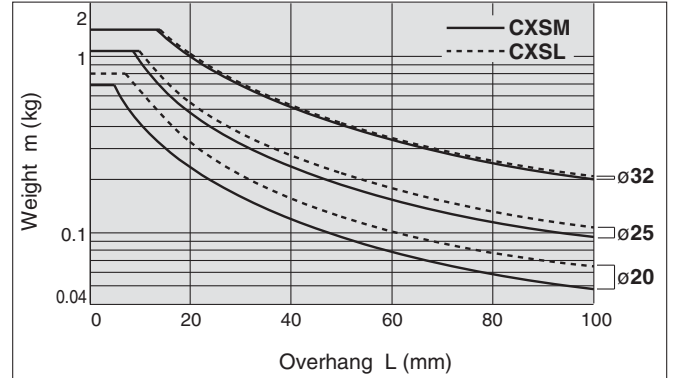
Graph 7 V = up to 1000mm/s; up to 10mm



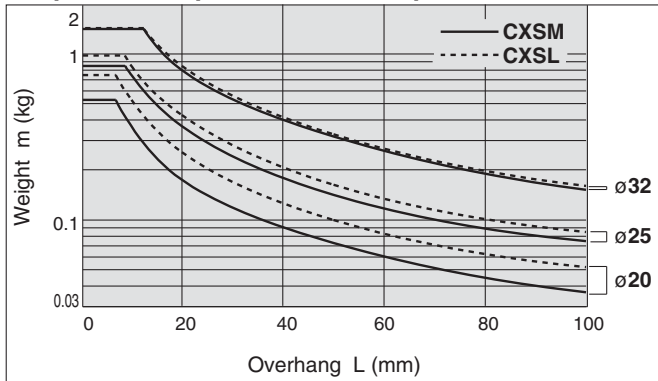
Graph 8 V = up to 800mm/s; up to 30mm



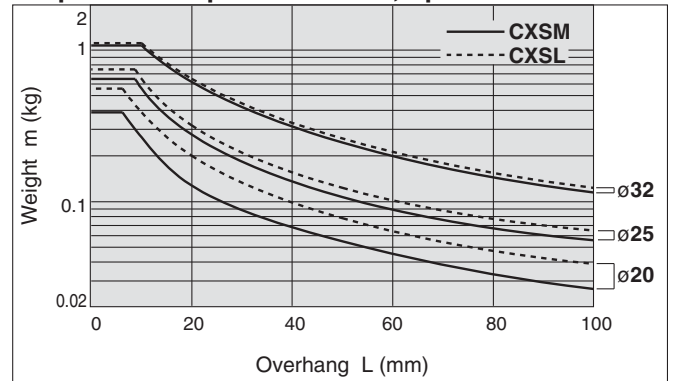
Graph 9 V = up to 1000mm/s; up to 30mm



Graph 10 V = up to 1000mm/s; up to 50mm



Graph 11 V = up to 1000mm/s; up to 75mm



Graph 12 V = up to 1000mm/s; up to 100mm

