

Air Cylinder: Standard Type

Double Acting, Double Rod

CM2W Series

ø20, ø25, ø32, ø40

RoHS

How to Order

Cushion

Nil	Rubber bumper
A	Air cushion

* Air-hydro cylinder: Rubber bumper only

Cylinder stroke (mm)

Refer to "Standard Strokes" on page 194.

Bore size

20	20 mm
25	25 mm
32	32 mm
40	40 mm

Type

Nil	Pneumatic
H	Air-hydro

Rod end thread

Nil	Male rod end
F	Female rod end

Rod boot

Nil	None
J	Nylon tarpaulin (One side)
JJ	Nylon tarpaulin (Both sides)
K	Heat resistant tarpaulin (One side)
KK	Heat resistant tarpaulin (Both sides)

* For female rod end, no rod boot is provided.

CM2W **L** **40** **-150** **A** **Z**

With auto switch **CDM2W** **L** **40** **-150** **A** **Z** **M9BW**

With auto switch
(Built-in magnet)

Mounting

B	Basic (Double-side bossed)
L	Axial foot
F	Flange
U	Trunnion

Port thread type

Nil	Rc
TN	NPT
TF	G

* Air-hydro type: Rc only

Auto switch

Nil	Without auto switch
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* For applicable auto switches, refer to the table below.

Number of auto switches

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

Made to Order

Refer to page 194 for details.
(Refer to "Air-hydro type" on page 196.)

Applicable Auto Switches/Refer to pages 1575 to 1701 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)	1 (M)	3 (L)	5 (Z)	None (N)					
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	●	○	—	○	IC circuit	Relay, PLC		
		3-wire (PNP)		12 V			M9PV	M9P	●	●	●	○	—	○				
		Connector		2-wire	12 V		M9BV	M9B	●	●	●	○	—	○	—			
		Terminal conduit		3-wire (NPN)	5 V, 12 V		—	H7C	●	—	●	●	—	—				
	Diagnostic indication (2-color indicator)	Grommet		2-wire	12 V		—	G39A	—	—	—	●	—	—	IC circuit			
				3-wire (NPN)	5 V, 12 V		—	K39A	—	—	—	—	●	—	—			
				3-wire (PNP)	12 V		M9NVV	M9NV	●	●	●	○	—	○	IC circuit			
				2-wire	12 V		M9PWW	M9PW	●	●	●	○	—	○	—			
				3-wire (NPN)	5 V, 12 V		M9BWW	M9BW	●	●	●	○	—	○	—			
				3-wire (PNP)	12 V		M9NAV ^{*1}	M9NA ^{*1}	○	○	●	○	—	○	IC circuit			
Water resistant (2-color indicator)	Grommet	2-wire	12 V	—	M9PAV ^{*1}	M9PA ^{*1}	○	○	●	○	—	○	—					
		4-wire (NPN)	5 V, 12 V	—	M9BAV ^{*1}	M9BA ^{*1}	○	○	●	○	—	○	—					
With diagnostic output (2-color indicator)				—	—	—	H7NF	●	—	●	○	—	○	IC circuit				
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	—	●	—	—	—	IC circuit	—	
				Connector	2-wire	24 V	12 V	100 V	A93V ^{*2}	A93	●	●	●	●	—	—	—	—
								100 V or less	A90V	A90	●	—	●	—	—	—	—	IC circuit
								100 V, 200 V	—	B54	●	—	●	●	—	—	—	—
		200 V or less						—	B64	●	—	●	—	—	—	—	—	
		Terminal conduit		Grommet	2-wire	24 V	12 V	—	C73C	●	—	●	●	●	—	—	—	—
								24 V or less	—	C80C	●	—	●	●	●	—	—	IC circuit
		DIN terminal		Grommet	2-wire	24 V	12 V	100 V	—	A33A	—	—	—	—	●	—	—	—
								100 V, 200 V	—	A34A	—	—	—	—	●	—	—	—
								—	—	A44A	—	—	—	—	●	—	—	—
—	—		B59W					—	—	●	●	—	—	—	—			

*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.

*2 Please contact SMC regarding water resistant types with the above model numbers.

*2 1 m type lead wire is only applicable to D-A93.

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NLW
5 m Z (Example) M9NZW
None N (Example) H7CN

* Solid state auto switches marked with "○" are produced upon receipt of order.
* Do not indicate suffix "N" for no lead wire on D-A3□A/A44A/G39A/K39A models.

* Since there are other applicable auto switches than listed above, refer to page 266 for details.

* For details about auto switches with pre-wired connector, refer to pages 1648 and 1649.

* The D-A9□□/M9□□□ auto switches are shipped together, (but not assembled). (However, only the auto switch mounting brackets are assembled before shipment.)



CJ1

CJP

CJ2

JCM

CM2

CM3

CG1

CG3

JMB

MB

MB1

CA2

CS1

CS2

D-□

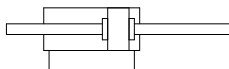
-X□

Technical Data

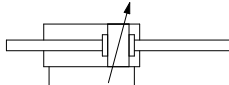


Symbol

Rubber bumper



Air cushion



Made to Order: Individual Specifications
(For details, refer to page 267.)

Symbol	Specifications
-X446	PTFE grease

Made to Order

[Click here for details](#)

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat resistant cylinder (-10 to 150°C)
-XB7	Cold resistant cylinder (-40 to 70°C)*1
-XB12	External stainless steel cylinder*2
-XC3	Special port location
-XC4	With heavy duty scraper
-XC5	Heat resistant cylinder (-10 to 110°C)
-XC6	Made of stainless steel
-XC13	Auto switch rail mounting
-XC22	Fluororubber seal
-XC25	No fixed throttle of connection port*1
-XC29	Double knuckle joint with spring pin
-XC35	With coil scraper*1
-XC38	Vacuum (Rod through-hole)
-XC52	Mounting nut with set screw
-XC85	Grease for food processing equipment

*1 Rubber bumper only.

*2 The shape is the same as the current product.

Specifications

Bore size (mm)			20	25	32	40
Action			Double acting, Double rod			
Fluid			Air			
Proof pressure			1.5 MPa			
Maximum operating pressure			1.0 MPa			
Minimum operating pressure			0.08 MPa			
Ambient and fluid temperature			Without auto switch: -10°C to 70°C With auto switch: -10°C to 60°C (No freezing)			
Lubrication			Not required (Non-lube)			
Stroke length tolerance			+1.4 0 mm			
Piston speed			Rubber bumper: 50 to 750 mm/s, Air cushion: 50 to 1000 mm/s			
Cushion			Rubber bumper, Air cushion			
Allowable kinetic energy	Rubber bumper	Male thread	0.27 J	0.4 J	0.65 J	1.2 J
		Female thread	0.11 J	0.18 J	0.29 J	0.52 J
	Air cushion (Effective cushion length (mm))	Male thread	0.54 J (11.0)	0.78 J (11.0)	1.27 J (11.0)	2.35 J (11.8)
		Female thread	0.11 J	0.18 J	0.29 J	0.52 J

Standard Strokes

Bore size (mm)	Standard stroke ^{Note 1)} (mm)	Maximum manufacturable stroke (mm)
20	25, 50, 75, 100, 125, 150, 200, 250, 300	500
25		
32		
40		

Note 1) Other intermediate strokes can be manufactured upon receipt of order.

Manufacture of intermediate strokes at 1 mm intervals is possible.

(Spacers are not used.)

Note 2) Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on front matter pages. In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc.

Accessories

Refer to pages 189 and 190 for accessories, since it is the same as standard type, double acting, single rod.

* Stainless steel mounting brackets and accessories are also available.
Refer to page 190 for details.

Rod Boot Material

Symbol	One side	Both sides	Rod boot material	Maximum ambient temperature
J	JJ		Nylon tarpaulin	70°C
K	KK		Heat resistant tarpaulin	110°C*

* Maximum ambient temperature for the rod boot itself.

Mounting Brackets/Part No.

Mounting bracket	Min. order q'ty	Bore size (mm)				Contents (for minimum order quantity)
		20	25	32	40	
Axial foot*	2	CM-L020B	CM-L032B	CM-L040B	CM-L040B	2 feet, 1 mounting nut
Flange	1	CM-F020B	CM-F032B	CM-F040B	CM-F040B	1 flange
Trunnion (with nut)	1	CM-T020B	CM-T032B	CM-T040B	CM-T040B	1 trunnion, 1 trunnion nut

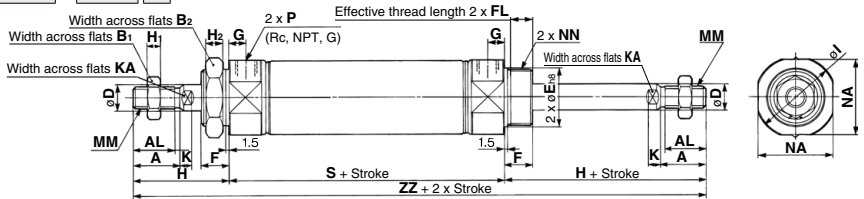
* Order 2 feet per cylinder.

Refer to pages 262 to 266 for cylinders with auto switches.

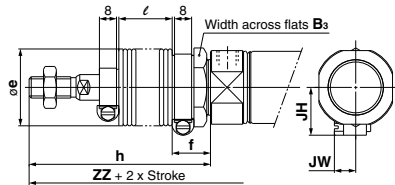
- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Minimum stroke for auto switch mounting
- Operating range
- Auto switch mounting brackets/Part no.

Basic (Double-side Bossed) (B)

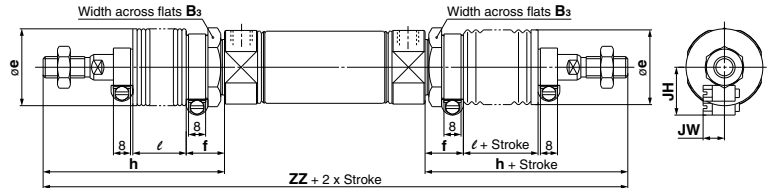
CM2WB Bore size Stroke Z



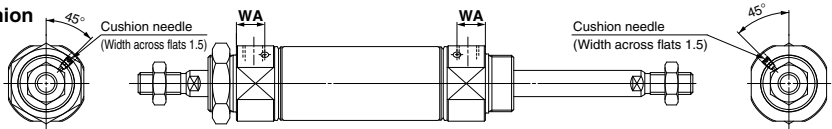
With rod boot
(One side)



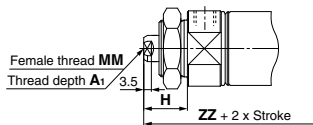
With rod boot
(Both sides)



With air cushion



Female rod end



Bore size	A	AL	B ₁	B ₂	D	E	F	FL	G	H	H ₁	H ₂	I	K	KA	MM	NA	NN	P	S	ZZ
20	18	15.5	13	26	8	20 ^{±0.033}	13	10.5	8	41	5	8	28	5	6	M8 x 1.25	24	M20 x 1.5	1/8	62	144
25	22	19.5	17	32	10	26 ^{±0.033}	13	10.5	8	45	6	8	33.5	5.5	8	M10 x 1.25	30	M26 x 1.5	1/8	62	152
32	22	19.5	17	32	12	26 ^{±0.033}	13	10.5	8	45	6	8	37.5	5.5	10	M10 x 1.25	34.5	M26 x 1.5	1/8	64	154
40	24	21	22	41	14	32 ^{±0.039}	16	13.5	11	50	8	10	46.5	7	12	M14 x 1.5	42.5	M32 x 2	1/4	88	188

With Rod Boot

Bore size	B ₃	e	f	h				l				ZZ (Both sides)							
				1 to 50	51 to 100	101 to 150	151 to 200	1 to 50	51 to 100	101 to 150	151 to 200	1 to 50	51 to 100	101 to 150	151 to 200	1 to 50	51 to 100	101 to 150	151 to 200
20	30	36	18	68	81	93	106	131	12.5	25	37.5	50	75	198	224	248	274	324	
25	32	36	18	72	85	97	110	135	12.5	25	37.5	50	75	206	232	256	282	332	
32	32	36	18	72	85	97	110	135	12.5	25	37.5	50	75	208	234	258	284	334	
40	41	46	20	77	90	102	115	140	12.5	25	37.5	50	75	242	268	292	318	368	

With Rod Boot

Bore size	ZZ (One side)				JH	JW
	1 to 50	51 to 100	101 to 150	151 to 200	1 to 50	151 to 200
20	171	184	196	209	234	23.5
25	179	192	204	217	242	23.5
32	181	194	206	219	244	23.5
40	215	228	240	253	278	27

With Air Cushion (mm)

Bore size	WA
20	12
25	12
32	11
40	16

Female Rod End

Bore size	A ₁	H	MM	ZZ
20	8	20	M4 x 0.7	102
25	8	20	M5 x 0.8	102
32	12	20	M6 x 1	104
40	13	21	M8 x 1.25	130

* When female thread is used, use a thin wrench when tightening the piston rod.
* When female thread is used, use a washer etc. to prevent the contact part at the rod end from being deformed depending on the material of the workpiece.

CJ1

CJP

CJ2

JCM

CM2

CM3

CG1

CG3

JMB

MB

MB1

CA2

CS1

CS2

D-□

-X□

Technical Data