

Air Cylinder: Standard Type Double Acting, Single Rod Series CM2

ø20, ø25, ø32, ø40

How to Order

Mounting style		Bore size		Cylinder stroke (mm)		Cushion	
B	Basic style	T	Head side trunnion style	20	20 mm	Nil	Rubber bumper
L	Axial foot style	E	Clevis integrated style	25	25 mm	A	Air cushion
F	Rod side flange style	BZ	Boss-cut basic style	32	32 mm	* Air-hydro cylinder: Rubber bumper only	
G	Head side flange style	FZ	Boss-cut rod side flange style	40	40 mm		
C	Single clevis style	UZ	Boss-cut rod side trunnion style				
D	Double clevis style						
U	Rod side trunnion style						

Type		Port thread type		Rod boot		Number of auto switches	
Nil	Pneumatic	Nil	Rc	Nil	None	Nil	2 pcs.
H	Air-hydro	TN	NPT	J	Nylon tarpaulin	S	1 pc.
		TF	G	K	Heat resistant tarpaulin	n	"n" pcs.
		F	Built-in one-touch fitting				

Made to Order
(Refer to page 129 for details.)

Auto switch
Nil Without auto switch

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

Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.

(Example) CDM2F32-100

Applicable Auto Switch/Refer to pages 1263 to 1371 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		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)							
Solid state switch		Grommet	Yes	3-wire (NPN)	5V, 12V		M9N	●	●	●	○	—	○	IC circuit					
				3-wire (PNP)			M9P	●	●	●	○	—	○						
		2-wire		12V		M9B	●	●	●	○	—	○	—						
		2-wire				H7C	—	—	●	●	—	—							
	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	5V, 12V		G39A **	—	—	—	—	—	—	○	IC circuit				
				3-wire (PNP)			K39A **	—	—	—	—	●	—	—					
	Water resistant (2-color indication) With diagnostic output (2-color indication)	Grommet	Yes	2-wire	12V		M9NW	●	●	●	○	—	○	IC circuit					
				3-wire (PNP)			M9PW	●	●	●	○	—	○						
	Reed switch		Grommet	Yes/No/Yes/No	3-wire (NPN equivalent)	5V		A96	●	—	●	—	—	—	○	IC circuit			
								Connector	100V	A93	●	—	●	—	—		—	—	—
100V or less									A90	●	—	●	—	—	—		—		
100V, 200V									B54 **	●	—	●	—	—	—		—	—	
200V or less									B64 **	●	—	●	—	—	—		—		
Terminal conduit			24V		12V	24V or less	C73C	●	—	●	●	●	—	—	IC circuit				
						—	C80C	●	—	●	●	●	—	—					
DIN terminal			24V		100V, 200V	—	A33A **	—	—	—	—	●	—	—	—				
						—	A34A **	—	—	—	—	●	—						
						—	A44A **	—	—	—	—	●	—						
Diagnostic indication (2-color indication)	Grommet	Yes	—	—	B59W	●	—	●	—	—	—	—	—	Relay, PLC					

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWZ
None N (Example) H7CN

* Solid state auto switches marked with "○" are produced upon receipt of order.
* D-A9□V/M9□V/M9□WV and D-M9□A(V)L cannot be mounted.
* Do not indicate suffix "N" for no lead wire on D-A3□A/A44A/G39A/K39A models.
** D-A3□A/A44A/G39A/K39A/B54/B64 cannot be mounted on bore sizes ø20 and ø25 cylinder with air cushion.

* Since there are other applicable auto switches than listed above, refer to page 218 for details.

* For details about auto switches with pre-wired connector, refer to pages 1328 and 1329.

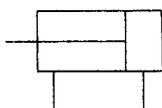
* D-A9□/M9□/M9□W auto switches are shipped together (not assembled). (However, auto switch mounting brackets are assembled when being shipped.)

Air Cylinder: Standard Type Double Acting, Single Rod **Series CM2**



Clevis integrated

JIS Symbol
Double acting,
Single rod



With air cushion



Made to Order Specifications (For details, refer to pages 1373 to 1498.)

Symbol	Specifications
—XA□	Change of rod end shape
—XB6	Heat resistant cylinder (150°C)
—XB7	Cold resistant cylinder
—XB9	Low speed cylinder (10 to 50 mm/s)
—XB12	External stainless steel cylinder
—XB13	Low speed cylinder (5 to 50 mm/s)
—XC3	Special port location
—XC4	With heavy duty scraper
—XC5	Heat resistant cylinder (110°C)
—XC6	Piston rod and rod end nut made of stainless steel
—XC8	Adjustable stroke cylinder/Adjustable extension type
—XC9	Adjustable stroke cylinder/Adjustable retraction type
—XC10	Dual stroke cylinder/Double rod type
—XC11	Dual stroke cylinder/Single rod type
—XC12	Tandem cylinder
—XC13	Auto switch mounting rail style
—XC20	Head cover axial port
—XC22	Fluororubber seals
—XC25	No fixed orifice of connecting port
—XC27	Double clevis pin and double knuckle pin made of stainless steel
—XC29	Double knuckle joint with spring pin
—XC35	With coil scraper
—XC52	Mounting nut with set screw

Rod Boot Material

Symbol	Rod boot material	Maximum ambient temperature
J	Nylon tarpaulin	70°C
K	Heat resistant tarpaulin	110°C *

* Maximum ambient temperature for the rod boot itself.

Refer to pages 214 to 218 for cylinders with auto switches.

- Minimum stroke for auto switch mounting
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Switch mounting bracket: Part no.

Specifications

Bore size (mm)		20	25	32	40
Type	Pneumatic				
Action	Double acting, Single rod				
Fluid	Air				
Proof pressure	1.5 MPa				
Maximum operating pressure	1.0 MPa				
Minimum operating pressure	0.05 MPa				
Ambient and fluid temperature	Without auto switch: -10 to +70°C (No freezing) With auto switch: -10 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	0.27 J	0.4 J	0.65 J	1.2 J
	Air cushion (Effective cushion length (mm))	0.54 J (11.0)	0.78 J (11.0)	1.27 J (11.0)	2.35 J (11.8)

Standard Stroke

Bore size (mm)	Standard stroke ⁽¹⁾ (mm)	Maximum stroke (mm)
20	25, 50, 75, 100, 125, 150 200, 250, 300	1000
25		1500
32		2000
40		2000



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) When exceeding 300 strokes, the allowable maximum stroke length is determined by the stroke selection table (front matter 28).

Boss-cut style

Boss for the head side cover bracket is eliminated and the total length of cylinder is shortened.



Comparison of the Full Length Dimension (Versus standard type)

		(mm)			
		ø20	ø25	ø32	ø40
		▲13	▲13	▲13	▲16

Mounting style

- Boss-cut basic style (BZ)
- Boss-cut flange style (FZ)
- Boss-cut trunnion style (UZ)

Mounting Bracket/Part No.

Mounting bracket	Min. order	Bore size (mm)				Description (for min. order)
		20	25	32	40	
Axial foot *	2	CM-L020B	CM-L032B	CM-L040B		2 foot, 1 mounting nut
Flange	1	CM-F020B	CM-F032B	CM-F040B		1 flange
Single clevis**	1	CM-C020B	CM-C032B	CM-C040B		1 single clevis, 3 liners
Double clevis*** (with pins)	1	CM-D020B	CM-D032B	CM-D040B		1 double clevis, 3 liners, 1 clevis pins, 2 retaining rings
Trunnion (with nuts)	1	CM-T020B	CM-T032B	CM-T040B		1 trunnion, 1 trunnion nut

* Order 2 foot brackets for each cylinder unit.

** 3 Liners are attached with a clevis bracket for adjusting the mounting angle.

*** Clevis pins and retaining rings (cotter pins for ø40) are attached.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

CS2

D-□

-X□

Individual
-X□

Technical
data