

Square Tube Type Air Cylinder: Standard Type Double Acting, Single Rod

Series MB1

ø32, ø40, ø50, ø63, ø80, ø100, ø125

How to Order

MB1 **L** **32** **50** **M9BW**

With auto switch **MDB1** **L** **32** **50** **M9BW**

With auto switch
(Built-in magnet)

Mounting style

B	Basic style
L	Axial foot style
F	Rod side flange style
G	Head side flange style
C	Single clevis style
D	Double clevis style

Bore size

32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm
125	125 mm

Port thread type

Nil	Rc
TN	NPT
TF	G

Cylinder stroke (mm)
(Refer to page 333 for standard strokes.)

Number of auto switches

Nil	2 pcs.
S	1 pc.
3	3 pcs.
n	"n" pcs.

Auto switch

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

Suffix for cylinder

Rod boot	Nil	None
	J	Nylon tarpaulin
	K	Heat resistant tarpaulin
Cushion	Nil	Air cushion at both ends
	N (Note)	Without air cushion

Made to Order
(Refer to page 333 for details.)

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) MDB1F40-100

Note) In the case of w/o air cushion, it comes with rubber bumper.

Besides, the overall length is longer than the cylinder with air cushion as follows, because the bumpers are attached to the both sides of the piston: ø32, ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm, ø125: +12 mm.

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	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)				
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24V	5V, 12V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC
	Diagnostic indication (2-color indication)			3-wire (PNP)		5V, 12V		M9PV	M9P	●	●	●	○	○		
				2-wire				12V	M9BV	M9B	●	●	●	○		
				3-wire (NPN)	5V, 12V			M9NWV	M9NW	●	●	●	○	○	IC circuit	
				3-wire (PNP)		M9PWV		M9PW	●	●	●	○	○			
				2-wire		12V		M9BWV	M9BW	●	●	●	○	○		
				Water resistant (2-color indication)	3-wire (NPN)	5V, 12V		M9NAV	M9NA	○	○	●	○	○	IC circuit	
	3-wire (PNP)				M9PAV			M9PA	○	○	●	○	○			
	2-wire				12V			M9BAV	M9BA	○	○	●	○	○		
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5V	—	A96V	A96	●	—	●	—	—	IC circuit	—
					No	2-wire	24V	12V	100V	A93V	A93	●	—	●	—	—
100V or less	A90V	A90	●	—					●	—	—	—				

* Lead wire length symbols: 0.5 m Nil (Example) M9NV
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWX

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

* Since there are other applicable auto switches than listed above, refer to page 350 for details.

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

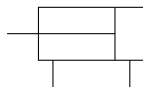
* Auto switches are shipped together (not assembled).

Square Tube Type Air Cylinder: Standard Type Double Acting, Single Rod *Series MB1*



JIS Symbol

Double acting



Made to Order Specifications

(For details, refer to pages 1373 to 1498 and 1514.)

Symbol	Specifications
—XA□	Change of rod end shape
—XB5	Oversized rod cylinder
—XB6	Heat resistant cylinder (150°C)
—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
—XC7	Tie-rod, cushion valve, tie rod nut, etc. 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 type cylinder
—XC22	Fluororubber seals
—XC27	Double clevis pin and double knuckle pin made of stainless steel
—XC29	Double knuckle joint with spring pin
—XC30	Rod side trunnion
—XC35	With coil scraper
—XC59	Fluororubber seals Built-in hard plastic magnet
—XC65	XC6 + XC7 specifications
—X846	Fastener strips mounted on switch mounting grooves

Refer to pages 349 and 350 for cylinders with auto switches.

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

Specifications

Bore size (mm)	32	40	50	63	80	100	125
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)						
Piston speed	50 to 1000 mm/s						50 to 700 mm/s
Stroke length tolerance	Up to 250: $^{+1.0}_0$, 251 to 1000: $^{+1.4}_0$, 1001 to 1500: $^{+1.8}_0$						
Cushion	Both ends (Air cushion) ^{Note)}						
Port size (Rc, NPT, G)	1/8	1/4	3/8	1/2			
Mounting	Basic style, Foot style, Rod side flange style, Head side flange style Single clevis style, Double clevis style						

Note) In the case of w/o air cushion, it comes with rubber bumper.

Standard Stroke

Bore size (mm)	Standard stroke (mm)	Maximum manufacturable stroke
32	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500	700
40	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500	800
50	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600	1000
63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600	1000
80	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1000
100	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1000
125	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 1000	1400

Note) Intermediate strokes are available, too. (Spacer is not used.)

Accessory

Mounting		Basic style	Foot style	Rod side flange style	Head side flange style	Single clevis style	Double clevis style
Standard equipment	Rod end nut	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	●
Option	Single knuckle joint	●	●	●	●	●	●
	Double knuckle joint (With pin)	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●

Mounting Bracket Part No.

Bore size (mm)	32	40	50	63	80	100	125
Foot ⁽¹⁾	MB-L03	MB-L04	MB-L05	MB-L06	MB-L08	MB-L10	MB-L12
Flange	MB-F03	MB-F04	MB-F05	MB-F06	MB-F08	MB-F10	MB-F12
Single clevis	MB-C03	MB-C04	MB-C05	MB-C06	MB-C08	MB-C10	MB-C12
Double clevis	MB-D03	MB-D04	MB-D05	MB-D06	MB-D08	MB-D10	MB-D12

Note 1) Order two foot brackets per cylinder.

Note 2) Accessories for each mounting bracket are as follows. Foot, flange, single clevis/body mounting bolt, double clevis/body mounting bolt, clevis pins, cotter pins and flat washer. Refer to page 339 for details.

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.

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

CS2

D-□

-X□

Individual

-X□

Technical data