

Square Tube Type Air Cylinder: Standard Type

Double Acting, Single Rod

Series MB1

ø32, ø40, ø50, ø63, ø80, ø100

How to Order

Without auto switch MB1 L 32 50

With auto switch MDB1 L 32 50 Y7BW

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

Stroke (mm)
Refer to "Standard Stroke" on page 6-7-5.

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 model, refer to the table below.
* Auto switches are shipped together, (but not assembled).

Suffix for cylinder

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

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.

Applicable Auto Switch/Refer to page 6-16-1 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-wire connector	Applicable load		
					DC		AC	Perpendicular	In-line	0.5 (Nil)	3 (L)		5 (Z)		
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—					—			
				2-wire	24 V	12 V	100 V	—	Z73	●	●	●	—	—	Relay, PLC
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	Y69A	Y59A	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				Y7PV	Y7P	●	●	○	○	IC circuit	
				2-wire				Y69B	Y59B	●	●	○	○	—	
				3-wire (NPN)	Y7NWV	Y7NW		●	●	○	○	IC circuit			
	Diagnostic indication (2-color indication)			3-wire (PNP)	5 V, 12 V	Y7PWV		Y7PW	●	●	○	○	IC circuit		
						Y7BWV		Y7BW	●	●	○	○	—		
	Water resistant (2-color indication)			2-wire	12 V	—		Y7BA	—	●	○	○	—		

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

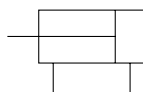
* Solid state switches marked with "○" are produced upon receipt of order.

- Since there are other applicable auto switches than listed, refer to page 6-7-12 for details.
- For details about auto switches with pre-wire connector, refer to page 6-16-60.

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 page 6-17-1.)

Symbol	Specifications
-XA□	Change of rod end shape
-XB5	Oversized rod cylinder
-XB6	Heat resistant cylinder (150 °C)
-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
-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
-XC14	Change of trunnion bracket mounting position
-XC18	NPT finish piping port
-XC22	Fluoro rubber seals
-XC27	Double clevis pin and double knuckle pin made of stainless steel
-XC29	Double knuckle joint with spring pin
-XC30	Front trunnion
-XC35	With coil scraper
-X846	Fastener strips mounted on switch mounting grooves

Specifications

Bore size (mm)	32	40	50	63	80	100
Type	Non-lube					
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					
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)}					
Thread tolerance	JIS Class 2					
Port size	Rc 1/8	Rc 1/4	Rc 1/4	Rc 3/8	Rc 3/8	Rc 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	1200
63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600	1200
80	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1400
100	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800	1500

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
Foot ⁽¹⁾	MB-L03	MB-L04	MB-L05	MB-L06	MB-L08	MB-L10
Flange	MB-F03	MB-F04	MB-F05	MB-F06	MB-F08	MB-F10
Single clevis	MB-C03	MB-C04	MB-C05	MB-C06	MB-C08	MB-C10
Double clevis	MB-D03	MB-D04	MB-D05	MB-D06	MB-D08	MB-D10

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: Clevis pin, Cotter pin → For details, refer to page 6-7-11.

Switch Spacer Part No.

Applicable bore size (mm)	32, 40	50, 63	80, 100
Part no.	BMP1-032		

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.