

# Air Cylinder: Single Rod

# Series MB

ø32, ø40, ø50, ø63, ø80, ø100, ø125

## How to Order

**MB L 32 [ ] - 50 [ ] - [ ]**

**With auto switch** **MDB L 32 [ ] - 50 [ ] - M9BW [ ] - [ ]**

**Mounting**

B	Basic/Without bracket
L	Axial foot
F	Rod side flange
G	Head side flange
C	Single clevis
D	Double clevis
T	Center trunnion

**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 291 for standard strokes.

**With auto switch (Built-in magnet)**

**Made to Order**  
For details, refer to page 291.

**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
S	1
3	3
n	n

**Rod boot/Cushion**

Rod boot	Nil	None
	J	Nylon tarpaulin
	K	Heat resistant tarpaulin
Cushion	Nil	Both ends
	N*	None

\* Model without air cushion is designed to include rubber bumpers. The overall length is longer than the cylinder with air cushions because the bumpers are attached to the both sides of the piston as follows.  
ø32, ø40: +6 mm, ø50, ø63: +8 mm, ø80, ø100: +10 mm, ø125: +12 mm

### 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) MDBB40-100

### 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	Tie-rod mounting	Band mounting	0.5 (Nil)	1 (M)	3 (L)	5 (Z)						
Solid state switch	—	Grommet	—	3-wire (NPN)	24 V	5 V, 12 V	—	M9N	●	●	●	○	—	IC circuit				
				3-wire (PNP)				M9P	●	●	●	○						
				2-wire	J51	●	—	●	○	—								
		Terminal conduit		3-wire (NPN)	24 V	5 V, 12 V	—	G39	—	—	—	—			—	—		
				2-wire				K39	—	—	—	—			—			
				3-wire (NPN)				M9NW	●	●	●	○			○	IC circuit		
	3-wire (PNP)	M9PW	●	●	●	○	○	—										
	2-wire	M9BW	●	●	●	○	○											
	Water resistant (2-color indication)	Grommet	24 V	5 V, 12 V	—	M9NA	○		○	●	○	○	IC circuit					
						3-wire (PNP)	M9PA	○	○	●	○	○						
	Diagnostic output (2-color indication)	Grommet	24 V	5 V, 12 V	—	M9BA	○	○	●	○	○	—						
	2-wire					F59F	—	—	●	○	○		○	IC circuit				
Magnetic field resistant (2-color indication)	Grommet	24 V	5 V, 12 V	—	P4DW	—	—	—	●	●	—							
2-wire (Non-polar)					—	—	—	—	—	—		—	—					
Reed switch	—	Grommet	Yes	3-wire (Equiv. to NPN)	24 V	12 V	—	A96	●	—	●	—	—	IC circuit				
				No				100 V	A93	—	●	—			●	—	—	
								100 V or less	A90	—	●	—			●	—		IC circuit
								100 V, 200 V	A54	—	●	—			●	—		
								200 V or less	A64	—	●	—			●	—		
		Terminal conduit		24 V	—	—	—	A33	—	—	—	—	—					
								A34	—	—	—	—		—				
		DIN terminal		100 V, 200 V	—	—	—	A44	—	—	—	—	—					
								—	—	—	—	—						
		Diagnostic indication (2-color indication)		Grommet	—	—	—	A59W	—	●	—	●	—	—	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

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

\* Besides the above models, there are some other auto switches that are applicable. For detailed information, please refer to page 327.

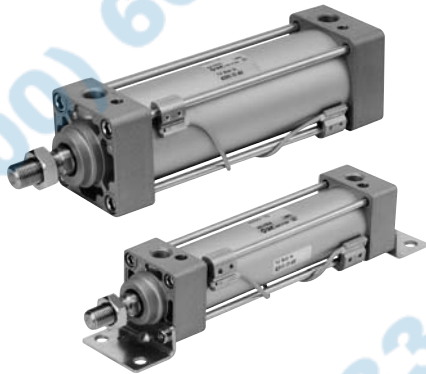
\* Solid state auto switches are also available with a pre-wired connector. Refer to pages 1328 and 1329 for details.

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

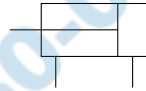
## Specifications

Bore size (mm)	32	40	50	63	80	100	125
<b>Action</b>	Double acting, Single rod						
<b>Fluid</b>	Air						
<b>Proof pressure</b>	1.5 MPa						
<b>Max. operating pressure</b>	1.0 MPa						
<b>Min. operating pressure</b>	0.05 MPa						
<b>Ambient and fluid temperature</b>	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)						
<b>Lubrication</b>	Not required (Non-lube)						
<b>Operating piston speed</b>	50 to 1000 mm/s <span style="float: right;">50 to 700 mm/s</span>						
<b>Allowable stroke tolerance</b>	up to 250: $+1.0_0$ , 251 to 1000: $+1.4_0$ , 1001 to 1500: $+1.8_0$						
<b>Cushion</b> <small>Note 1)</small>	Both ends (Air cushion)						
<b>Port size (Rc, NPT, G)</b>	1/8	1/4	3/8		1/2		
<b>Mounting</b>	Basic, Foot, Rod side flange, Head side flange, Single clevis, Double clevis, Center trunnion						

Note 1) When requesting a cylinder without air cushion, cylinder utilizes rubber bumpers which increases cylinders overall length.



**JIS Symbol**  
Double acting



**Made to Order Specifications**  
(For details, refer to pages 1373 to 1498 and 1515.)

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 position
-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 extend stroke
-XC9	Adjustable stroke cylinder/Adjustable retract stroke
-XC10	Dual stroke cylinder/Double rod
-XC11	Dual stroke cylinder/Single rod
-XC12	Tandem cylinder
-XC14	Change of trunnion bracket mounting position
-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 seal, Built-in hard plastic magnet
-XC65	XC6 + XC7 specifications
-X1184	Cylinder with reed, heat-resistant switch

Refer to pages 322 and 327 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.

## Standard Stroke

Bore (mm)	Standard stroke (mm)	Max. 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

Intermediate strokes are available. (No spacer is used.)

## Accessory

Mounting		Basic	Foot	Rod side flange	Head side flange	Single clevis	Double clevis	Center trunnion
Standard	Rod end nut	●	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	●	—
Option	Single knuckle joint	●	●	●	●	●	●	●
	Double knuckle joint (with pin)	●	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●	●

## Material of Rod Boot

Symbol	Material	Max. ambient temp.
J	Nylon tarpaulin	70°C
K	Heat resistant tarpaulin	110°C*

\* Max. ambient temperature for rod boot itself.

## Mounting Bracket Part No.

Bore size (mm)	32	40	50	63	80	100	125
Foot <small>Note 1)</small>	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) Two foot brackets required for one 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, flat washer and cotter pins. → Refer to page 298 for details.