

Air Cylinder: Standard Double Acting, Single/Double Rod Series *NCM*

How to Order

NC **M** **B** **056** **01** **00** **M9BW**

Built-in magnet

Nil	None
D	Built-in magnet with auto switch

Mounting

B	Front nose mount
C	Rear pivot mount
E	Double end mount
R	Block mount Note 2, 10, 11
W	Double rod Note 3, 10

Bore size

044	7/16"
056	9/16"
075	3/4"
088	7/8"
106	1-1/16"
125	1-1/4"
150	1-1/2"
200	2" Note 3, 4

Standard stroke
Inches Note 5

Stroke
Hundredths of an inch
(i.e. 06 = 0.06")

Bumper

Nil	Without bumper
C Note 6	Bumper

Rod boot Note 10, 11

Nil	None
J	Nylon tarpaulin
K	Heat resistant tarpaulin

Option Note 10
When ordering multiple options, refer to options compatibility page to ensure options availability.

Nil	None
XB6	High temperature Note 10, 11
XB7	Low temperature Note 10, 11
XB9	Low speed Note 10, 11
XC4	Heavy duty wiper Note 10
XC6	Stainless steel rod Note 9
X103US	Rotated ports Note 7, 10
X114US	Rear clevis mount without pin and with rear clevis bronze bushing. Note 10, 11
X142US	Long stroke Note 10, 11
X155US	Rear pivot mount (C) without clevis pin Note 10, 11
X163US	Heavy duty spring Note 12
X169US	Dimensional interchange to other manufacturer's magnetic reed switch cylinders Note 1, 8, 10
X6002	Air tank Note 10
X6005	Spring assist Note 12

Number of auto switches

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

Auto switch

Nil	Without auto switch
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* For applicable auto switch models, refer to the table on page 2.

- Note 1) $\phi 3/4"$, $\phi 1-1/16"$, $\phi 1-1/2"$ and $\phi 2"$ only.
 Note 2) Not offered in $\phi 7/8"$, $\phi 1-1/4"$, or with rod boot.
 Note 3) Double acting only.
 Note 4) Not available as standard with C, R mount, with rod boot.
 Note 5) See specifications for standard and maximum stroke lengths.
 Note 6) Bumper is offered at no additional cost on $\phi 7/8"$ and $\phi 1-1/4"$. They are options on the other bore sizes. The "C" after the bore size must be included in either case. Bumper affects cylinder overall length of some models. Refer to the dimensional data.
 Note 7) Available only with B or C mounting. Not available on 2" bore.
 Note 8) Not available with $\phi 7/8"$ bore, or with C, R mount, or non-rotating rod (K).
 Note 9) Stainless steel rod standard on $\phi 7/16"$, $\phi 9/16"$, $\phi 3/4"$ and $\phi 7/8"$.
 Note 10) Exclude $\phi 7/16"$ and $\phi 9/16"$.
 Note 11) Exclude $\phi 2"$.
 Note 12) $\phi 3/4"$, $\phi 1-1/16"$ and $\phi 1-1/2"$ only.

Specifications: Double Acting, Single/Double Rod

Specifications

Bore size (inch)	044 (7/16")	056 (9/16")	075 (3/4")	088 (7/8")	106 (1-1/16")	125 (1-1/4")	150 (1-1/2")	200 (2")
Fluid	Air							
Maximum operating pressure	250 PSI / 1.7 MPa							
Minimum operating pressure	8 PSI / 0.06 MPa							
Ambient and fluid temperature	40 to 140°F / 5 to 60 °C							
Piston speed	No bumper: 2 to 20 in/sec (50 to 500 mm/sec) Bumper: 2 to 30 in/sec (50 to 750 mm/sec)							
Bumper	Optional (No additional charge on 7/8" and 1-1/4" bore)							
Lubrication	Not required (Pre-lubricated at factory)							
Mounting	B, C, E, R (see Note)							

Note) R mount available on ø3/4", ø1-1/16", and ø1-1/2" only.

Standard Stroke

(inch)

Mounting	Standard stroke	Max. stroke as standard ^{Note 2)}	Long stroke -X142US ^{Note 3)}
Front nose mount (B)	1/2, 1, 2, 3, 4, 5, 6	12	40
Rear pivot mount (C)	1/2, 1, 2, 3, 4, 5, 6	32	40
Double end mount (E)	1/2, 1, 2, 3, 4, 5, 6	32	
Block mount (R) ^{Note 3)}	1/2, 1, 2, 3, 4, 5, 6	12	40
Double rod (W) ^{Note 3)}	1/2, 1, 2, 3, 4, 5, 6	12	20

Note 1) Minimum stroke for mounting auto switches: 0.6 inch for 2 switches, 0.4 inch for one switch.

Note 2) The production maximum stroke of ø7/16" and ø9/16" are up to 12 inches.

Note 3) Exclude ø7/16" and ø9/16".

Weight (Except Non-rotating Rod)

(lbs)

Bore size (inch)	Base weight by mounting style					Add'l weight per inch stroke		Add'l weight for magnet	Add'l weight for bumper
	B	C	E	R	W	B, C, E, R	W		
044 (7/16")	0.059	0.076	0.076	N/A	N/A	0.019	N/A	0.008	0.002
056 (9/16")	0.080	0.091	0.091	N/A	N/A	0.026	N/A	0.008	0.004
075 (3/4")	0.200	0.200	0.280	0.210	0.300	0.034	0.048	0.008	0.012
088 (7/8")	0.218	0.198	0.288	N/A	0.308	0.037	0.051	0.010	0.012
106 (1-1/16")	0.330	0.320	0.410	0.430	0.400	0.050	0.071	0.012	0.011
125 (1-1/4")	0.531	0.581	0.681	N/A	0.781	0.079	0.121	0.020	0.029
150 (1-1/2")	0.680	0.710	0.820	1.020	0.930	0.087	0.128	0.024	0.020
200 (2")	1.345	N/A	1.493	N/A	1.812	0.151	0.151	0.030	0.065

Theoretical Output: Double Acting Cylinder (Extend)

(lbf)

Bore size (in)	Rod size (in)	Operating direction	Piston area (in ²)	Operating pressure (PSI)					
				25	50	75	100	125	150
044 (7/16")	0.197	OUT	0.152	3.8	7.6	11.4	15.2	19	22.8
		IN	0.122	3.0	6.1	9.1	12.2	15.2	18.2
056 (9/16")	0.197	OUT	0.246	6.2	12.3	18.5	24.6	30.8	36.9
		IN	0.216	5.4	10.8	16.2	21.6	27	32.4
075 (3/4")	0.250	OUT	0.442	11.1	22.1	33.2	44.2	55.3	66.3
		IN	0.393	9.8	19.7	29.5	39.3	49.1	59
088 (7/8")	0.250	OUT	0.601	15	30.1	45.1	60.1	75.1	90.2
		IN	0.552	13.8	27.6	41.4	55.2	69	82.8
106 (1-1/16")	0.312	OUT	0.887	22.2	44.4	66.5	88.7	110.9	133.1
		IN	0.811	20.3	40.6	60.8	81.1	101.4	121.7
125 (1-1/4")	0.437	OUT	1.227	30.7	61.4	92	122.7	153.4	184.1
		IN	1.077	26.9	53.9	80.8	107.7	134.6	161.6
150 (1-1/2")	0.437	OUT	1.767	44.2	88.4	132.5	176.7	220.9	265.1
		IN	1.617	40.4	80.9	121.3	161.7	202.1	242.6
200 (2")	0.625	OUT	3.14	78.5	157	235.6	314	392.5	471
		IN	2.83	70.8	141.5	212.3	283	353.8	424.5