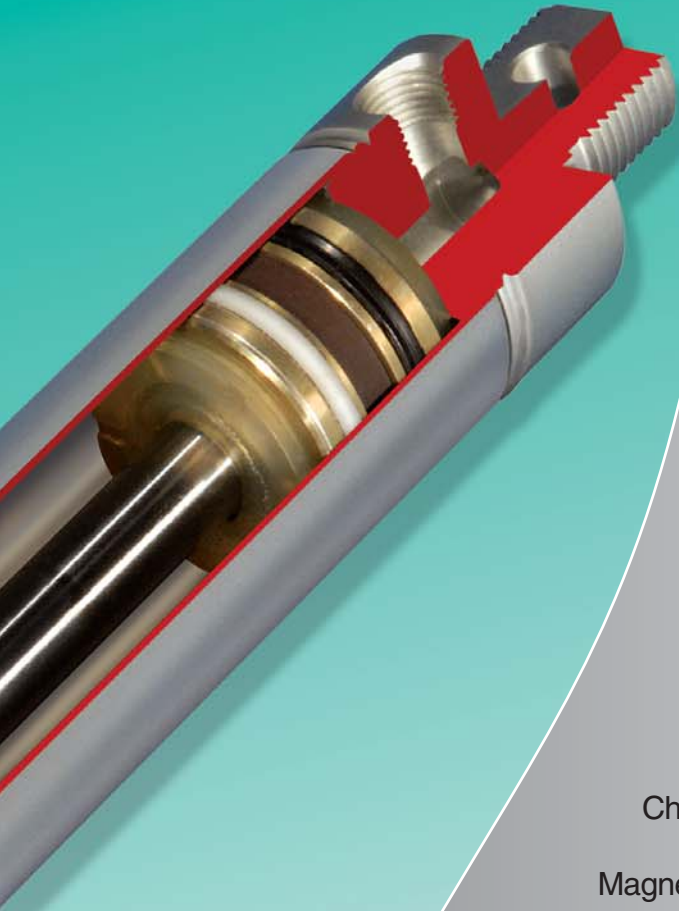




Air Cylinder

# Series NCM



Now available in 8 different bore sizes, 7/16" to 2".

5 Actuation options available:

- Double Acting, Single Rod
- Double Acting, Double Rod
- Non-rotating Rod
- Single Acting, Spring Return
- Single Acting, Spring Extend

A wide variety of mounting configurations:

- Front Nose Mount
- Rear Pivot Mount
- Double End Mount
- Block Mount
- Foot Mount (optional brackets)

Chrome plated carbon steel piston rod improves corrosion resistance. Stainless steel 304 is available for further protection.

Available bumper for increased kinetic energy absorption, increased life cycles, and decreased noise.

Piston is crimped to rod to achieve tighter clearances and reduce piston rod deflection.

Chromated aluminum piston improves corrosion resistance.

Magnetic actuated limit switches are available as a standard option.

Seal, wear ring, and polished stainless steel tube work together to absorb side load and decrease overall friction, ensuring long lasting service life. (Wear ring used on 3/4" bore and larger.)



Rolled threads for increased strength.

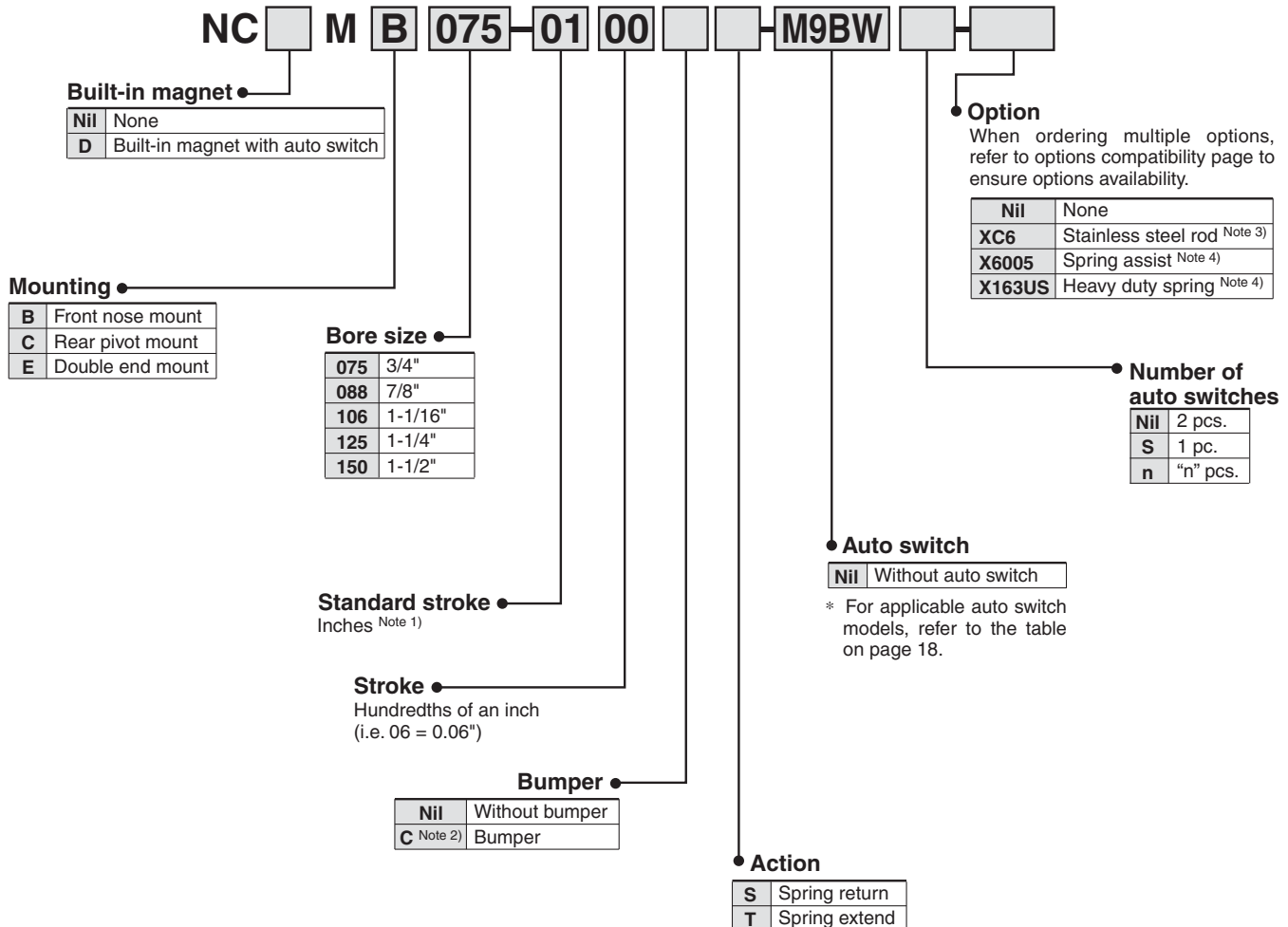
Clear anodized end covers provide long lasting protection against corrosion.

Full port design increases cylinder response.

Pre-lubricated at the factory means that the NCM does not require a lubricated air system.

# Air Cylinder: Standard Single Acting, Spring Return/Extend Series *NCM*

## How to Order



Note 1) See specifications for standard and maximum stroke lengths.

Note 2) Bumper is offered at no additional cost on  $\varnothing 7/8"$  and  $\varnothing 1-1/4"$ . 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 3) Stainless steel rod standard on  $\varnothing 3/4"$  and  $\varnothing 7/8"$ .

Note 4)  $\varnothing 3/4"$ ,  $\varnothing 1-1/16"$  and  $\varnothing 1-1/2"$  only.

# Series NCM

## Specifications: Single Acting, Spring Return / Spring Extend

### Specifications

Bore size (inch)	075 (3/4")	088 (7/8")	106 (1-1/16")	125 (1-1/4")	150 (1-1/2")
Fluid	Air				
Maximum operating pressure	250 PSI / 1.7 MPa				
Minimum operating pressure	25 PSI / 0.18 MPa				
Ambient and fluid temperature	40 to 140°F / 5 to 60 °C				
Piston speed	2 to 20 in/sec / 50 to 500 mm/s				
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				

Note) R mount available on 3/4", 1-1/16", and 1-1/2" bore only.

### Standard Stroke (inch)

Mounting	Standard stroke	Max. stroke
Front nose mount (B)	1/2, 1, 1-1/2, 2, 3, 4	6
Rear pivot mount (C)		
Double end mount (E)		
Block mount (R)		

Note) Up to 18" available as special request.

### Theoretical Output: Spring Return (S) with Standard Rod (lbf)

Bore size (inch)	Rod diameter (inch)	Operating direction	Effective area (sq.inch)	Operating pressure (PSI)					
				25	50	75	100	125	150
075 (3/4")	0.250	OUT	0.442	8.0	19.1	30.1	41.2	52.2	63.3
		IN	-	3.0					
088 (7/8")	0.250	OUT	0.608	12.2	27.4	42.6	57.8	73.0	88.2
		IN	-	3.0					
106 (1-1/16")	0.312	OUT	0.882	19.1	41.1	63.2	85.2	107.3	129.4
		IN	-	3.0					
125 (1-1/4")	0.437	OUT	1.227	23.7	54.4	85.0	115.7	146.4	177.1
		IN	-	7.0					
150 (1-1/2")	0.437	OUT	1.767	37.2	81.4	125.5	169.7	213.9	258.1
		IN	-	7.0					

Note1) Force on extension (OUT) is shown as the theoretical force of a double acting cylinder on extension less the compressed force of the return spring.

Note 2) Force on retraction (IN) is the resting force of spring when fully retracted.

### Theoretical Output: Spring Extend (T) with Standard Rod (lbf)

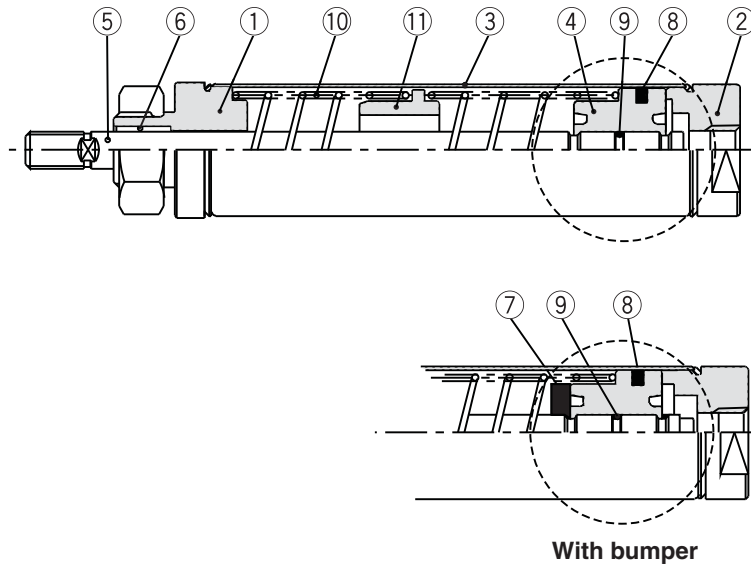
Bore size (inch)	Rod diameter (inch)	Operating direction	Effective area (sq.inch)	Operating pressure (PSI)					
				25	50	75	100	125	150
075 (3/4")	0.25	OUT	-	3.0					
		IN	0.393	6.8	16.6	26.5	36.3	46.1	55.9
088 (7/8")	0.25	OUT	-	3.0					
		IN	0.559	11.0	25.0	38.9	52.9	66.9	80.9
106 (1-1/16")	0.312	OUT	-	3.0					
		IN	0.806	17.2	37.3	57.5	77.6	97.8	117.9
125 (1-1/4")	0.437	OUT	-	7.0					
		IN	1.077	19.9	46.9	73.8	100.7	127.6	154.6
150 (1-1/2")	0.437	OUT	-	7.0					
		IN	1.617	33.4	73.9	114.3	154.7	195.1	235.6

Note1) Force on retraction (IN) is shown as the theoretical force of a double acting cylinder on retraction less the compressed force of the extend spring.

Note 2) Force on extension (OUT) is the resting force of spring when fully extended.

# Series NCM

## Construction: Single Acting, Spring Return



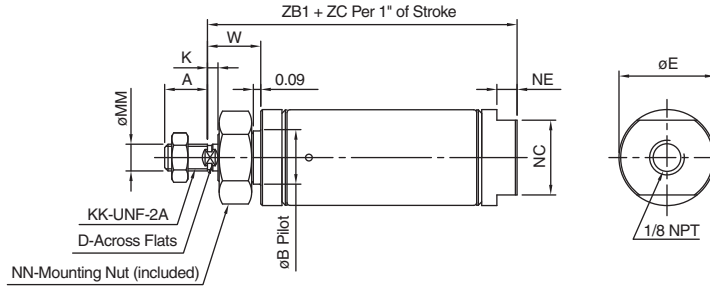
### Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Clear anodized
2	Head cover	Aluminum alloy	Clear anodized
3	Cylinder tube	Stainless steel	Stainless steel 304
4	Piston	Aluminum alloy	Chromated
5	Piston rod	3/4", 7/8"	Stainless steel
		1-1/16", 1-1/4", 1-1/2"	Carbon steel
6	Bushing	Sintered Bronze	
7	Bumper	Urethane	
8	Piston seal	NBR	
9	Piston gasket	NBR	
10	Spring	Music wire	Chromated
11	Spring guide	Aluminum alloy	Chromated

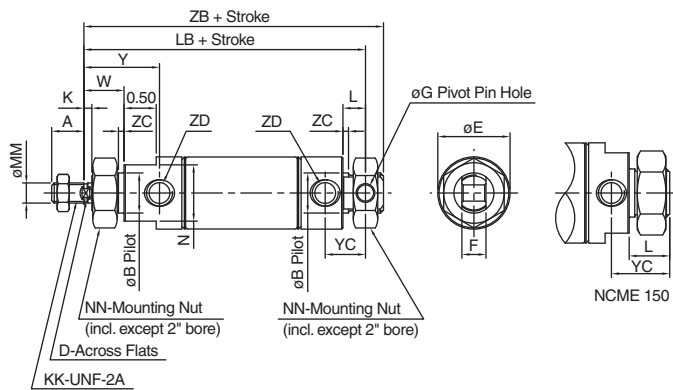
# Series NCM

## Dimensions: Single Acting, Spring Return

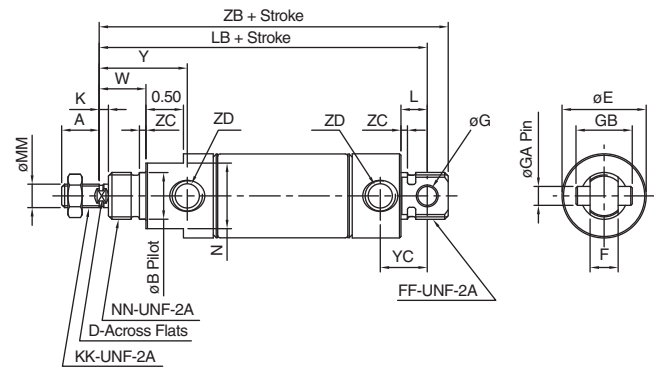
### Front nose mount / Spring return NCMB \_ \_ S



### Double end mount / Spring return NCME \_ \_ S



### Rear pivot mount / Spring return NCMC \_ \_ S



(inch)

Bore size (inch)	MM	KK	A	B	D	E	F	FF	G	GA	GB	K	L	NC	NE	NN	W	YC	ZC
075 (3/4")	0.250	1/4-28	0.50	0.496 <sup>0</sup> <sub>-0.003</sub>	—	0.86	0.38	5/8-18	0.251	0.250	0.75	—	0.34	0.62	0.12	1/2-20	0.44	0.62	1.69
088 (7/8")	0.250	1/4-28	0.50	0.624 <sup>0</sup> <sub>-0.003</sub>	—	0.93	0.38	5/8-18	0.251	0.250	0.75	—	0.34	0.75	0.18	5/8-18	0.50	0.62	1.56
106 (1-1/16")	0.312	5/16-24	0.50	0.624 <sup>0</sup> <sub>-0.003</sub>	0.25	1.12	0.38	5/8-18	0.251	0.250	0.75	0.12	0.34	0.88	0.24	5/8-18	0.62	0.62	1.56
125 (1-1/4")	0.437	7/16-20	0.75	0.749 <sup>0</sup> <sub>-0.003</sub>	0.38	1.32	0.50	3/4-16	0.251	0.250	0.75	0.25	0.41	1.06	0.25	3/4-16	0.88	0.78	1.81
150 (1-1/2")	0.437	7/16-20	0.75	0.749 <sup>0</sup> <sub>-0.003</sub>	0.38	1.56	0.62	3/4-16	—	0.375	1.00	0.25	0.50	1.25	0.25	3/4-16	0.88	0.78	1.69

Note 1) F dimension for NCME150 not applicable. There are no flats on the E type 150 bore rear tang.  
 Note 2) FF dimension for NCMC 150 is not applicable. There are no threads on the C type 150 bore rear tang.

### Single Acting, Spring Return (B/C/E) Mount without Magnet

Bore size (inch)	LB		ZB1		ZB2	
	No bumper	With bumper	No bumper	With bumper	No bumper	With bumper
075 (3/4")	2.28	2.41	1.50	1.63	2.56	2.69
088 (7/8")	2.35	2.47	1.72	1.84	2.63	2.75
106 (1-1/16")	2.66	2.79	2.06	2.19	2.94	3.07
125 (1-1/4")	3.25	3.38	2.53	2.66	3.66	3.78
150 (1-1/2")	3.12	3.25	2.44	2.57	3.50	3.63

Note) LB dimension for NCME150 not applicable.

### X155US (without clevis pin)

Bore size (inch)	$\phi G$
075 (3/4")	0.251
088 (7/8")	0.251
106 (1-1/16")	0.251
125 (1-1/4")	0.251
150 (1-1/2")	0.378

### Single Acting, Spring Return (B/C) Mount with Magnet

Bore size (inch)	LB		ZB1		ZB2	
	No bumper	With bumper	No bumper	With bumper	No bumper	With bumper
075 (3/4")	2.41	2.53	1.63	1.75	2.69	2.81
088 (7/8")	2.47	2.59	1.84	1.97	2.75	2.88
106 (1-1/16")	2.79	2.91	2.19	2.32	3.06	3.19
125 (1-1/4")	3.38	3.50	2.66	2.78	3.79	3.91
150 (1-1/2")	3.25	3.38	2.56	2.68	3.63	3.75

### Single Acting, Spring Return (E) Mount with Magnet

Bore size (inch)	LB		ZB2	
	No bumper	With bumper	No bumper	With bumper
075 (3/4")	2.41	2.53	2.69	2.81
088 (7/8")	2.47	2.59	2.75	2.88
106 (1-1/16")	2.79	2.91	3.06	3.19
125 (1-1/4")	3.38	3.50	3.79	3.91
150 (1-1/2")	—	—	3.38	3.50