

# Roundline Stainless Steel Actuators

Single and Double acting actuators



Standard stroke length cylinders are available from shelf stock

Custom stroke lengths manufactured in minimal time

### Technical data

Medium:

Filtered, lubricated or non-lubricated, compressed air

Maximum Operating Pressure:

250 psig (17.2 bar)

Temperature Range\*:

Standard Nitrile Seals: -20° to 200°F (-29° to 93°C)

Viton Seals: -20° to 400°F (-29° to 205°C)

\*With dew point of supply air less than air temperature below 35°F (2°C)

Lubrication:

All Series S stainless steel body air cylinders are pre-lubricated.

Materials

Cylinder Body: Type 304 Stainless Steel

Head Cap: Aluminum Alloy

Piston Rod: Type 303 Stainless Steel

Rod Bearing: Oil Impregnated Sintered Bronze

Piston: Aluminum Alloy

Rod & Piston Seals: Nitrile

Pivot Bracket, Rod Clevis, Foot Bracket, Mounting Nut: Zinc Plated Carbon Steel

### Options selector

RL ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Bore Size	
7/16"	A
9/16"	B
3/4"	C
1-1/16"	D
1-1/4"	E
1-1/2"	F
1-3/4"	O
2"	G
2-1/2"	H
3"	J
Special	X

Full Inches of Stroke			
0" Stroke	00	13" Stroke	13
1" Stroke	01	14" Stroke	14
2" Stroke	02	15" Stroke	15
3" Stroke	03	16" Stroke	16
4" Stroke	04	17" Stroke	17
5" Stroke	05	18" Stroke	18
6" Stroke	06	19" Stroke	19
7" Stroke	07	20" Stroke	20
8" Stroke	08	21" Stroke	21
9" Stroke	09	22" Stroke	22
10" Stroke	10	23" Stroke	23
11" Stroke	11	24" Stroke	24
12" Stroke	12	Special	XX

Fractional Inches of Stroke					
0"	A	3/8"	G	3/4"	P
1/16"	B	7/16"	H	13/16"	R
1/8"	C	1/2"	J	7/8"	S
3/16"	D	9/16"	K	15/16"	T
1/4"	E	5/8"	M	Special	X
5/16"	F	11/16"	N		

Options	
No Options	00
Standard Magnetic Piston Only <sup>1</sup>	90

<sup>1</sup>Magnetic pistons will change overall cylinder length. See table on preceding page.

Special Designation	
Standard	A
Special	X

Options	
No Options	A
Viton Seals	B
Bumpers (Head & Cap) <sup>2</sup>	C
Viton Seals and Bumpers	D
Ecology Piston Seals <sup>3</sup>	E*
Special	X

<sup>2</sup>Bumpers on air side only with spring version, add .13" per bumper.

<sup>3</sup>DAD and DAP models only

Mounting Style	
Nose Mount <sup>4</sup>	N
Pivot Mount	P
Double End Mount <sup>4</sup>	D
Front Block Mount	B

<sup>4</sup>Includes Mounting Nut

Model	
Single Acting Spring Return	SA
Reverse Acting Spring Extend	RA
Non-Rotating Rod	NR
Double Acting	DA
Double Acting Double Rod End <sup>5</sup>	DR

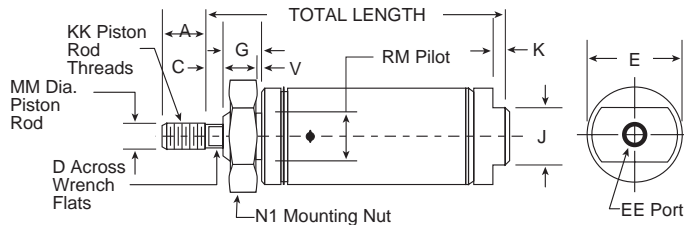
<sup>5</sup>Double End Mount Only

\* Ecology seals are not available in 1-3/4"-7/16 and 9/16 bore.

# Stainless Steel Body Air Actuator

Dimensions in inches

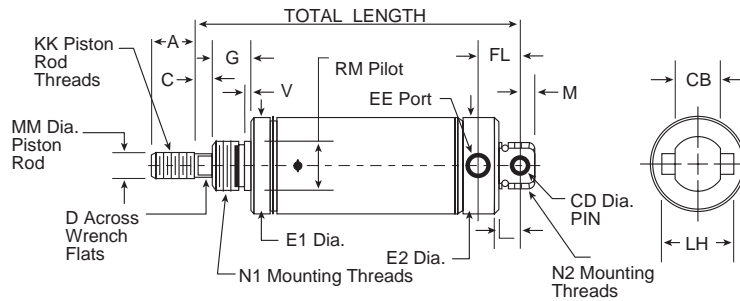
## Single Acting Spring Return — Nose Mount



Total length for stroke longer than 4" standard	
7/16"	1.31 + (.94 per 1/2" of stroke)
9/16"	1.53 + (1.62 per 1" of stroke)
3/4"	1.50 + (1.69 per 1" of stroke)
1-1/16"	1.94 + (1.56 per 1" of stroke)
1-1/4"	2.66 + (1.81 per 1" of stroke)
1-1/2"	2.44 + (1.69 per 1" of stroke)
2"	Consult Factory

Bore	A	C	D	E	EE	G	J	K	KK	MM	N1	RM	V
7/16"	0.50	NA	NA	0.50	10-32	0.31	0.38	0.19	10-32	0.18	3/8-24	.369/.373	0.05
9/16"	0.50	NA	NA	0.62	10-32	0.38	0.50	0.19	10-32	0.18	7/16-20	.434/.437	0.06
3/4"	0.50	NA	NA	0.81	1/8 NPT	0.44	0.62	0.19	1/4-28	0.25	1/2-20	.494/.498	0.08
1-1/16"	0.50	NA	NA	1.12	1/8 NPT	0.50	0.88	0.19	5/16-24	0.31	5/8-18	.621/.624	0.07
1-1/4"	0.75	0.25	0.38	1.34	1/8 NPT	0.63	0.88	0.25	7/16-20	0.43	3/4-16	.746/.749	0.09
1-1/2"	0.75	0.25	0.38	1.56	1/8 NPT	0.63	0.88	0.25	7/16-20	0.43	3/4-16	.746/.749	0.09
2"	0.88	0.38	0.50	2.08	1/4 NPT	0.81	1.25	0.31	1/2-20	0.62	1-1/4-12	1.372/1.375	0.12

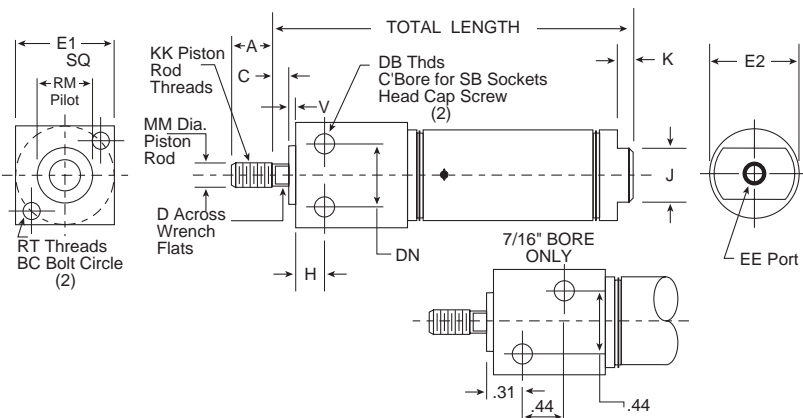
## Single Acting Spring Return — Pivot Mount



Total length for stroke longer than 4" standard	
7/16"	1.75 + (.94 per 1/2" of stroke)
9/16"	1.81 + (1.62 per 1" of stroke)
3/4"	2.28 + (1.69 per 1" of stroke)
1-1/16"	2.66 + (1.56 per 1" of stroke)
1-1/4"	3.38 + (1.81 per 1" of stroke)
1-1/2"	3.12 + (1.69 per 1" of stroke)
2"	Consult Factory

Bore	A	CB	C	CD	D	E1	E2	EE	FL	G	KK	L	LH	M	MM	N1	N2	V	RM
7/16"	0.50	0.31	NA	0.156	NA	0.50	0.74	10-32	0.44	0.31	10-32	0.25	0.50	0.25	0.18	3/8-24	7/16-20	0.05	.369/.373
9/16"	0.50	0.31	NA	0.156	NA	0.62	0.62	10-32	0.38	0.38	10-32	0.25	0.50	0.19	0.18	7/16-20	7/16-20	0.06	.434/.437
3/4"	0.50	0.38	NA	0.250	NA	0.81	0.86	1/8 NPT	0.62	0.44	1/4-28	0.34	0.75	0.28	0.25	1/2-20	5/8-18	0.08	.494/.498
1-1/16"	0.50	0.38	0.12	0.250	.25	1.12	1.12	1/8 NPT	0.62	0.50	5/16-24	0.34	0.75	0.28	0.31	5/8-18	5/8-18	0.07	.621/.624
1-1/4"	0.75	0.50	0.25	0.250	.38	1.34	1.34	1/8 NPT	0.78	0.63	7/16-20	0.41	0.88	0.40	0.43	3/4-16	3/4-16	0.09	.746/.749
1-1/2"	0.75	0.62	0.25	0.375	.38	1.56	1.56	1/8 NPT	0.81	0.63	7/16-20	0.50	1.00	0.38	0.43	3/4-16	NA	0.09	.746/.749
2"	0.88	0.75	0.38	0.375	.50	2.08	2.08	1/4 NPT	1.03	0.81	1/2-20	0.56	1.63	0.44	0.62	1-1/4-12	1-1/4-12	0.12	1.372/1.375

## Single Acting Spring Return — Front Block Mount



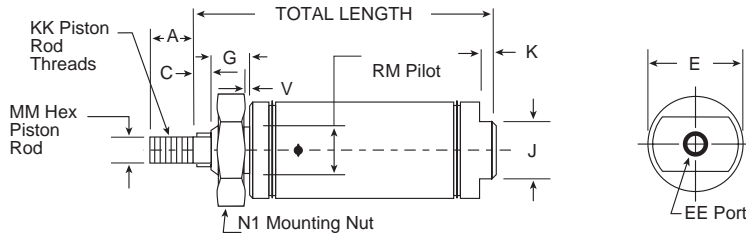
Total length for stroke longer than 4" standard	
7/16"	1.94 + (.94 per 1/2" of stroke)
3/4"	2.66 + (1.69 per 1" of stroke)
1-1/16"	3.38 + (1.81 per 1" of stroke)
1-1/2"	3.69 + (2.00 per 1" of stroke)

Bore	A	BC	C	D	DB	DN	E1	E2	EE	H	J	K	KK	MM	RM	RT	SB	V
7/16"	0.50	0.75	NA	NA	8-32	NA	0.75	0.50	10-32	NA	0.38	0.19	10-32	0.18	.437	8-32	NA	0.06
3/4"	0.75	1.00	0.25	0.22	1/4-20	0.62	1.00	0.81	1/8 NPT	0.38	0.62	0.19	1/4-28	0.25	.625	10-32	#10	0.09
1-1/16"	0.75	1.25	0.38	0.25	1/4-20	0.81	1.25	1.12	1/8 NPT	0.62	0.88	0.19	5/16-24	0.31	.750	10-32	#10	0.09
1-1/2"	1.25	1.75	0.25	0.38	5/16-18	1.12	1.75	1.56	1/4 NPT	0.88	0.88	0.25	7/16-20	0.43	1.00	1/4-20	1/4	0.13

# Stainless Steel Body Air Actuator

Dimensions in inches

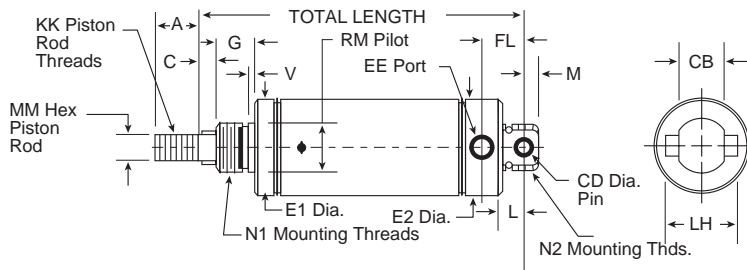
## Single Acting Non-Rotating — Nose Mount



Total length for stroke longer than 4" standard	
7/16"	1.56 + (.94 per 1/2" of stroke)
9/16"	1.78 + (1.62 per 1" of stroke)
3/4"	1.75 + (1.69 per 1" of stroke)
1-1/16"	2.19 + (1.56 per 1" of stroke)
1-1/4"	2.66 + (1.81 per 1" of stroke)
1-1/2"	2.44 + (1.69 per 1" of stroke)

Bore	A	C	E	EE	G	J	K	KK	MM	N1	RM	V
7/16"	0.50	0.25	0.50	10-32	0.31	0.38	0.19	10-32	0.18	3/8-24	.369/.373	0.05
9/16"	0.50	0.25	0.62	10-32	0.38	0.50	0.19	10-32	0.18	7/16-20	.434/.437	0.06
3/4"	0.50	0.25	0.81	1/8 NPT	0.44	0.62	0.19	1/4-28	0.25	1/2-20	.494/.498	0.08
1-1/16"	0.50	0.25	1.12	1/8 NPT	0.50	0.88	0.19	5/16-24	0.38	5/8-18	.621/.624	0.07
1-1/4"	0.88	0.25	1.34	1/8 NPT	0.63	0.88	0.25	7/16-20	0.43	3/4-16	.746/.749	0.09
1-1/2"	0.88	0.25	1.56	1/8 NPT	0.63	0.88	0.25	7/16-20	0.43	3/4-16	.746/.749	0.09

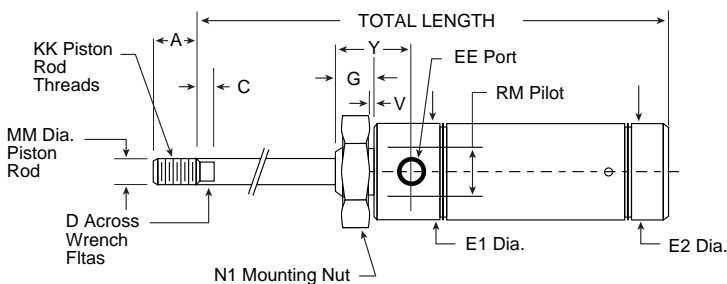
## Single Acting Non-Rotating — Pivot Mount



Total length for stroke longer than 4" standard	
7/16"	2.25 + (.94 per 1/2" of stroke)
9/16"	2.06 + (1.62 per 1" of stroke)
3/4"	2.53 + (1.69 per 1" of stroke)
1-1/16"	2.78 + (1.56 per 1" of stroke)
1-1/4"	3.38 + (1.81 per 1" of stroke)
1-1/2"	3.25 + (1.69 per 1" of stroke)

Bore	A	C	CB	CD	E1	E2	EE	FL	G	KK	L	LH	M	MM	N1	N2	RM	V
7/16"	0.50	0.25	0.31	0.156	0.50	0.74	10-32	0.44	0.31	10-32	0.25	0.50	0.25	0.19	3/8-24	7/16-20	.369/.373	0.05
9/16"	0.50	0.25	0.31	0.156	0.62	0.62	10-32	0.38	0.38	10-32	0.25	NA	0.19	0.19	7/16-20	7/16-20	.434/.437	0.06
3/4"	0.50	0.25	0.38	0.250	0.81	0.86	1/8 NPT	0.62	0.44	1/4-28	0.34	0.75	0.28	0.25	1/2-20	5/8-18	.494/.498	0.08
1-1/16"	0.50	0.25	0.38	0.250	1.12	1.12	1/8 NPT	0.62	0.50	5/16-24	0.34	0.75	0.28	0.38	5/8-18	5/8-18	.621/.624	0.07
1-1/4"	0.88	0.25	0.50	0.250	1.34	1.34	1/8 NPT	0.78	0.63	7/16-20	0.41	0.88	0.40	0.43	3/4-16	3/4-16	.746/.749	0.09
1-1/2"	0.88	0.38	0.62	0.375	1.56	1.56	1/8 NPT	0.81	0.63	7/16-20	0.50	1.00	0.37	0.43	3/4-16	NA	.746/.749	0.09

## Reverse Acting Spring Extend — Nose Mount



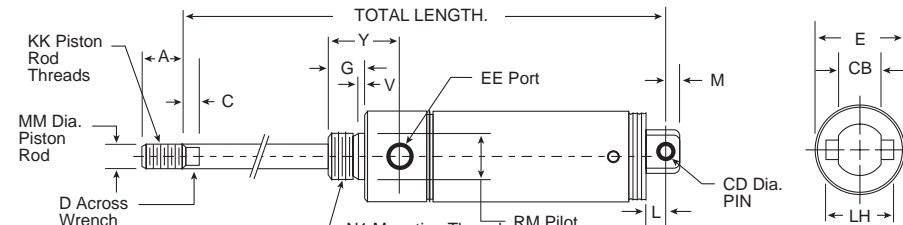
Total length for stroke longer than 4" standard	
7/16"	1.94 + (1.44 per 1/2" of stroke)
9/16"	2.00 + (2.62 per 1" of stroke)
3/4"	2.31 + (2.69 per 1" of stroke)
1-1/16"	2.62 + (2.81 per 1" of stroke)
1-1/4"	3.47 + (2.81 per 1" of stroke)
1-1/2"	3.19 + (3.00 per 1" of stroke)
2"	Consult Factory

Bore	A	C	D	E1	E2	EE	G	KK	MM	N1	RM	V	Y
7/16"	0.50	NA	NA	0.74	0.50	10-32	0.38	10-32	0.19	7/16-20	.434/.437	0.05	0.72
9/16"	0.50	NA	NA	0.62	0.62	10-32	0.38	10-32	0.19	7/16-20	.434/.437	0.06	0.75
3/4"	0.50	NA	NA	0.86	0.81	1/8 NPT	0.50	1/4-28	0.25	5/8-18	.621/.624	0.09	0.97
1-1/16"	0.50	0.12	0.25	1.12	1.12	1/8 NPT	0.50	5/16-24	0.31	5/8-18	.621/.624	0.09	1.06
1-1/4"	0.75	0.25	0.38	1.34	1.34	1/8 NPT	0.63	7/16-20	0.44	3/4-16	.746/.749	0.09	1.37
1-1/2"	1.25	0.25	0.38	1.56	1.56	1/8 NPT	0.63	7/16-20	0.44	3/4-16	.746/.749	0.09	1.25
2"	0.88	0.38	0.50	2.08	2.08	1/4 NPT	0.81	1/2-20	0.62	1-1/4-12	1.372/1.375	0.12	1.46

# Stainless Steel Body Air Actuator

Dimensions in inches

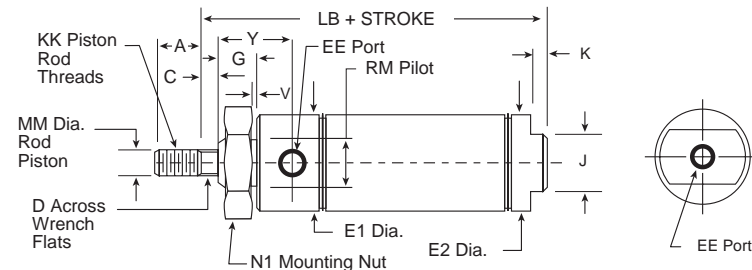
## Reverse Acting Spring Extend — Pivot Mount



Total length for stroke longer than 4" standard	
7/16"	2.38 + (1.44 per 1/2" of stroke)
9/16"	2.28 + (2.62 per 1" of stroke)
3/4"	2.44 + (2.69 per 1" of stroke)
1-1/16"	2.78 + (2.81 per 1" of stroke)
1-1/4"	3.78 + (2.81 per 1" of stroke)
1-1/2"	3.88 + (3.00 per 1" of stroke)
2"	Consult Factory

Bore	A	C	CB	CD	EE	E	G	KK	L	LH	MM	M	N1	RM	V	Y
7/16"	0.50	NA	0.31	0.156	10-32	0.74	0.38	10-32	0.25	0.50	0.19	0.25	7/16-20	.434/.437	0.05	0.72
9/16"	0.50	NA	0.31	0.156	10-32	0.62	0.38	10-32	0.25	0.50	0.19	0.19	7/16-20	.434/.437	0.06	0.75
3/4"	0.50	NA	0.38	0.250	1/8 NPT	0.86	0.50	1/4-28	0.34	0.75	0.25	0.28	5/8-18	.621/.624	0.09	0.97
1-1/16"	0.50	0.12	0.38	0.250	1/8 NPT	1.12	0.50	5/16-24	0.34	0.75	0.31	0.28	5/8-18	.621/.624	0.09	1.06
1-1/4"	0.75	0.25	0.50	0.250	1/8 NPT	1.34	0.63	7/16-20	0.34	0.88	0.44	0.38	3/4-16	.746/.749	0.09	1.37
1-1/2"	1.25	0.25	0.62	0.375	1/8 NPT	1.56	0.63	7/16-20	0.50	1.00	0.44	0.38	3/4-16	.746/.749	0.09	1.25
2"	0.88	0.38	0.75	0.375	1/4 NPT	2.08	0.81	1/2-20	0.56	1.63	0.62	0.44	1-1/4-12	1.372/1.375	0.12	1.46

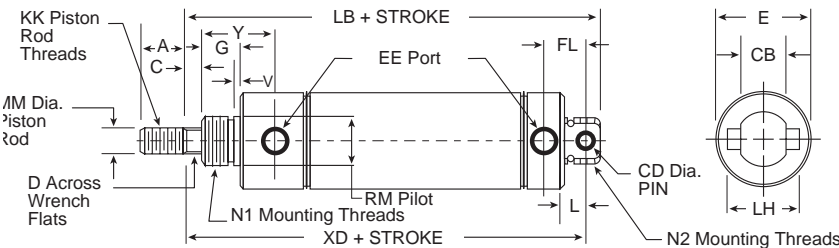
## Double Acting — Nose Mount



Stock Stroke Lengths (in)	
Bore Sizes	Standard Stroke Lengths
7/16, 9/16	1/2, 1, 1-1/2, or 2
3/4	1, 2, 3, 4, 5, or 6
1-1/16	1, 1-1/2, 2, 3, 4, 5, or 6
1-1/4, 1-1/2, 2, 2-1/2	1, 2, 3, 4, 5, or 6

Bore	A	C	D	EE	E1	E2	G	J	K	KK	LB	MM	N1	RM	Y	V
7/16"	0.50	NA	NA	10-32	0.74	0.50	0.38	0.38	0.19	10-32	2.12	0.18	7/16-20	.434/.437	0.72	0.05
9/16"	0.50	NA	NA	10-32	0.62	0.62	0.38	0.50	0.19	10-32	2.28	0.18	7/16-20	.434/.437	0.75	0.06
3/4"	0.50	NA	NA	1/8 NPT	0.86	0.81	0.50	0.62	0.19	1/4-28	2.97	0.25	5/8-18	.621/.624	0.97	0.09
1-1/16"	0.50	NA	NA	1/8 NPT	1.12	1.12	0.50	0.88	0.19	5/16-24	3.12	0.31	5/8-18	.621/.624	1.06	0.09
1-1/4"	0.75	0.25	0.38	1/8 NPT	1.34	1.34	0.63	0.88	0.25	7/16-20	4.00	0.43	3/4-16	.746/.749	1.37	0.09
1-1/2"	0.75	0.25	0.38	1/8 NPT	1.56	1.56	0.63	0.88	0.25	7/16-20	3.69	0.43	3/4-16	.746/.749	1.25	0.09
1-3/4"	0.88	0.31	0.44	1/4 NPT	1.84	1.84	0.75	1.25	0.25	1/2-20	4.69	0.50	1-14	1.029/1.032	1.94	0.09
2"	0.88	0.38	0.50	1/4 NPT	2.08	2.08	0.81	1.25	0.31	1/2-20	4.69	0.62	1-1/4-12	1.372/1.375	1.46	0.12
2-1/2"	0.88	0.38	0.50	1/4 NPT	2.62	2.62	0.81	1.75	0.31	1/2-20	4.69	0.62	1-3/8-12	1.497/1.500	1.46	0.12
3"	1.25	0.38	0.63	3/8 NPT	3.12	3.12	1.00	2.00	0.31	5/8-18	5.25	0.75	1-1/2-12	1.622/1.625	2.09	0.19

## Double Acting — Pivot Mount



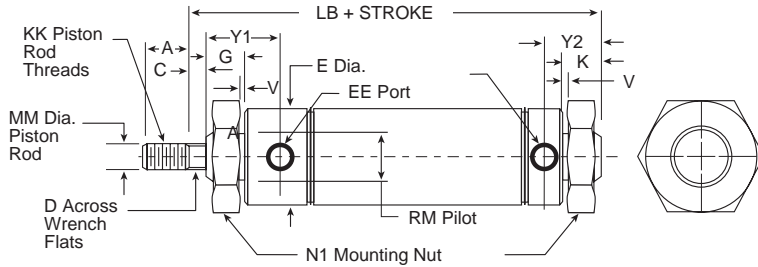
Stock Stroke Lengths (in)	
Bore Sizes	Standard Stroke Lengths
7/16, 9/16	1/2, 1, 1-1/2, or 2
3/4, 1-1/16, 1-1/4,	1, 2, 3, 4, 5, or 6
1-1/2, 2, 2-1/2	

Bore	A	C	CB	CD	D	E	EE	FL	G	KK	L	LB	LH	MM	N1	N2	RM	V	XD	Y
7/16"	0.50	NA	0.31	0.156	NA	0.74	10-32	0.44	0.38	10-32	0.25	2.81	0.50	0.18	7/16-20	7/16-20	.434/.437	0.05	2.56	0.72
9/16"	0.50	NA	0.31	0.156	NA	0.62	10-32	0.38	0.38	10-32	0.25	2.75	0.50	0.18	7/16-20	7/16-20	.434/.437	0.06	2.56	0.75
3/4"	0.50	NA	0.38	0.250	NA	0.86	1/8 NPT	0.62	0.50	1/4-28	0.34	4.03	0.75	0.25	5/8-18	5/8-18	.621/.624	0.09	3.75	0.97
1-1/16"	0.50	0.12	0.38	0.250	0.25	1.12	1/8 NPT	0.62	0.50	5/16-24	0.34	4.12	0.75	0.31	5/8-18	5/8-18	.621/.624	0.09	3.84	1.07
1-1/4"	0.75	0.25	0.50	0.250	0.38	1.34	1/8 NPT	0.78	0.63	7/16-20	0.41	5.12	0.88	0.43	3/4-16	3/4-16	.746/.749	0.09	4.72	1.37
1-1/2"	0.75	0.25	0.62	0.375	0.38	1.56	1/8 NPT	0.81	0.63	7/16-20	0.50	4.76	1.00	0.43	3/4-16	NA	.746/.749	0.09	4.38	1.25
2"	0.88	0.38	0.75	0.375	0.50	2.08	1/4 NPT	1.03	0.81	1/2-20	0.56	6.06	1.63	0.62	1 1/4-12	1-1/4-12	1.372/1.375	0.12	5.62	1.46
2-1/2"	0.88	0.38	0.75	0.375	0.50	2.62	1/4 NPT	1.03	0.81	1/2-20	0.56	6.06	1.63	0.62	1 3/8-12	1-3/8-12	1.497/1.500	0.12	5.62	1.46

# Stainless Steel Body Air Actuator

Dimensions in inches

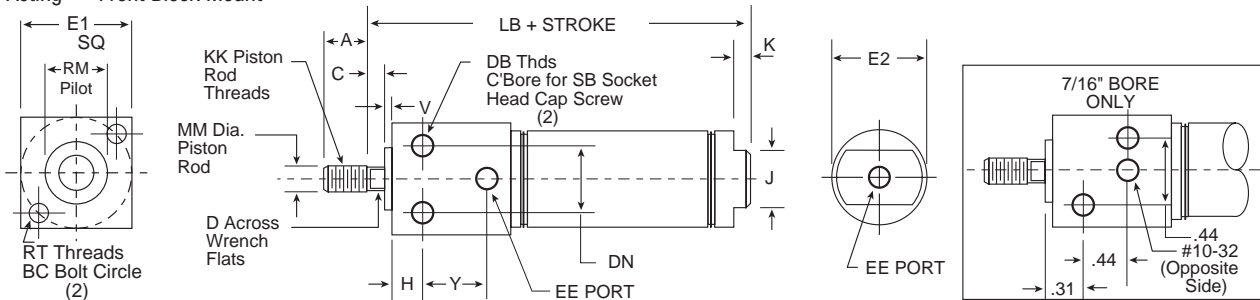
## Double Acting — Double End Mount



Stock Stroke Lengths (in)	
Bore Sizes	Standard Stroke Lengths
3/4, 1-1/16, 1-1/4,	1, 2, 3, 4, 5, or 6
1-1/2, 2, 2-1/2	

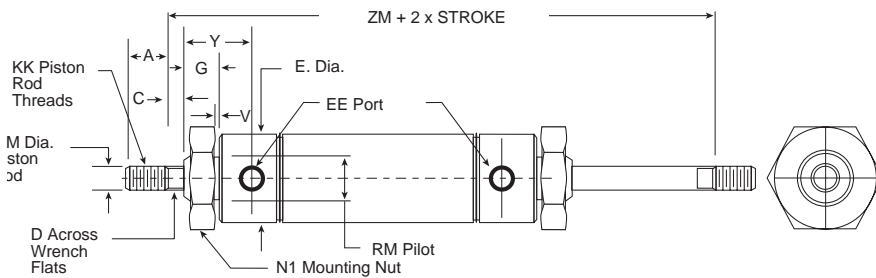
Bore	A	C	D	E	EE	G	K	KK	LB	MM	N1	RM	V	Y1	Y2
7/16"	0.50	NA	NA	0.74	10-32	0.38	0.50	10-32	2.81	0.18	7/16-20	.434/.437	0.05	0.73	0.69
9/16"	0.50	NA	NA	0.62	10-32	0.38	0.44	10-32	2.75	0.18	7/16-20	.434/.437	0.06	0.75	0.57
3/4"	0.50	NA	NA	0.86	1/8 NPT	0.50	0.62	1/4-28	4.03	0.25	5/8-18	.621/.624	0.09	0.97	0.90
1-1/16"	0.50	0.12	0.25	1.12	1/8 NPT	0.50	0.62	5/16-24	4.12	0.31	5/8-18	.624/.624	0.09	1.07	0.90
1-1/4"	0.75	0.25	0.38	1.34	1/8 NPT	0.63	0.81	7/16-20	5.12	0.43	3/4-16	.746/.749	0.09	1.37	1.18
1-1/2"	0.75	0.25	0.38	1.56	1/8 NPT	0.63	0.62	7/16-20	4.50	0.43	3/4-16	.746/.749	0.09	1.25	0.94
1-3/4"	0.88	0.31	0.44	1.84	1/4 NPT	0.75	1.00	1/2-20	6.25	0.50	1-14	1.029/1.032	0.09	1.94	1.12
2"	0.88	0.38	0.50	2.08	1/4 NPT	0.81	1.00	1/2-20	6.06	0.62	1-1/4-12	1.372/1.375	0.12	1.46	1.47
2-1/2"	0.88	0.38	0.50	2.62	1/4 NPT	0.81	1.00	1/2-20	6.06	0.62	1-3/8-12	1.497/1.500	0.12	1.46	1.47
3"	1.25	0.38	0.63	3.12	3/8 NPT	1.00	1.43	5/8-18	7.12	0.75	1-1/2-12	1.622/1.625	0.19	2.09	1.34

## Double Acting — Front Block Mount



Bore	A	BC	C	D	DB	DN	EE	E1	E2	H	J	KK	LB	MM	RM	RT	SB	V	Y	
7/16"	0.50	0.75	NA	NA	8-32	NA	NA	0.75	0.50	NA	0.38	0.19	10-32	2.12	0.18	0.437	8-32	NA	0.06	NA
3/4"	0.75	1.00	0.25	0.22	1/4-20	0.62	1/8 NPT	1.00	0.81	0.38	0.62	0.19	1/4-28	3.22	0.25	0.625	10-32	#10	0.09	0.50
1-1/16"	0.75	1.25	0.38	0.25	1/4-20	0.81	1/8 NPT	1.25	1.12	0.62	0.88	0.19	5/16-24	3.75	0.31	0.750	10-32	#10	0.09	0.54
1-1/2"	1.25	1.75	0.25	0.38	5/16-18	1.12	1/4 NPT	1.75	1.56	0.88	0.88	0.25	7/16-20	4.19	0.43	1.000	1/4-20	1/4	0.13	0.65

## Double Acting Double Rod End — Double End Mount



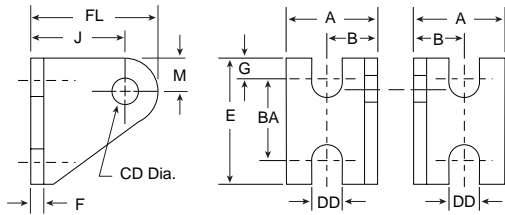
Bore	A	C	D	E	EE	G	KK	MM	N1	RM	V	Y	ZM
7/16"	0.50	NA	NA	0.74	10-32	0.38	10-32	0.19	7/16-20	.434/.437	0.05	0.72	2.81
9/16"	0.50	NA	NA	0.62	10-32	0.38	10-32	0.19	7/16-20	.434/.437	0.06	0.75	2.94
3/4"	0.50	NA	NA	0.86	1/8 NPT	0.50	1/4-28	0.25	5/8-18	.621/.624	0.09	0.97	4.00
1-1/16"	0.50	0.12	0.25	1.12	1/8 NPT	0.50	5/16-24	0.31	5/8-18	.621/.624	0.09	1.06	4.00
1-1/4"	0.75	0.25	0.38	1.34	1/8 NPT	0.63	7/16-20	0.43	3/4-16	.746/.749	0.09	1.37	5.56
1-1/2"	0.75	0.25	0.38	1.56	1/8 NPT	0.63	7/16-20	0.43	3/4-16	.746/.749	0.09	1.25	5.12
2"	0.88	0.38	0.50	2.08	1/4 NPT	0.81	1/2-20	0.62	1-1/4-12	1.372/1.375	0.12	1.46	6.56
2-1/2"	0.88	0.38	0.50	2.62	1/4 NPT	0.81	1/2-20	0.62	1-3/8-12	1.497/1.500	0.12	1.46	6.56

# Stainless Steel Body Air Actuator

Dimensions in inches

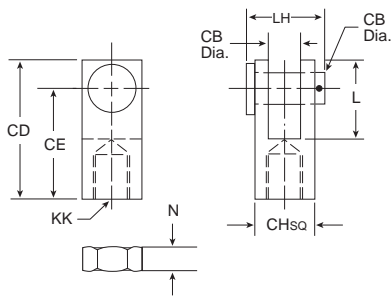
• All accessories are clear zinc plated carbon steel

## Pivot Bracket



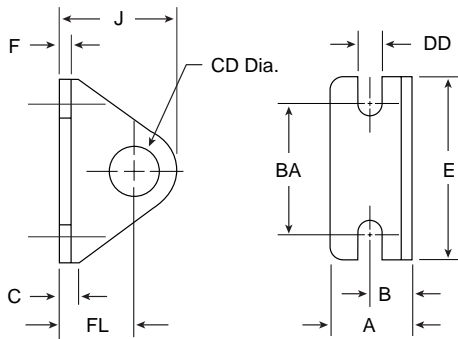
Bore	Part Number	A	B	BA	CD	DD	E	F	FL	G	J	M
7/16", 9/16"	PB-1	0.50	0.28	0.50	0.156	0.19	0.75	0.06	0.77	0.12	0.56	0.20
3/4", 1-1/16", 1-1/4"	PB-2	0.81	0.44	0.75	0.250	0.27	1.12	0.12	1.19	0.19	0.88	0.31
1-1/2"	PB-3	1.00	0.62	1.00	0.375	0.27	1.50	0.12	1.75	0.25	1.38	0.38
2", 2-1/2"	PB-4	1.125	0.68	1.00	0.375	0.26	1.50	0.25	1.75	0.25	1.38	0.38

## Rod Clevis (Includes Pin & Jam Nut)



Bore	Part Number	CB	CD	CE	CH	KK	L	LH	N
7/16", 9/16"	RC-1	0.19	0.94	0.75	0.38	10-32	0.56	0.66	0.12
3/4"	RC-2	0.25	1.19	0.94	0.50	1/4-28	0.68	0.85	0.16
1-1/16"	RC-3	0.25	1.19	0.94	0.50	5/16-24	0.69	0.85	0.19
1-1/4", 1-1/2"	RC-4	0.38	1.69	1.31	0.75	7/16-20	0.94	1.12	0.25
2", 2-1/2"	RC-5	0.38	1.69	1.31	0.75	1/2-20	0.94	1.12	0.31

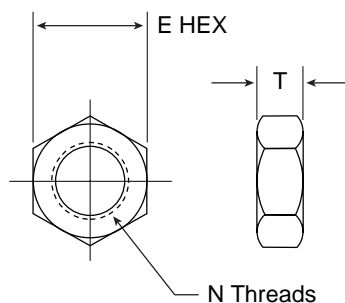
## Foot Bracket



Bore	Part Number	A	B	BA	C	CD	DD	E	F	FL	J
7/16" (S)	FB-1	0.62	0.31	1.00	0.12	0.38	0.19	1.38	0.07	0.56	0.88
7/16" (D), 9/16" (S/D)	FB-2	0.69	0.38	1.00	0.12	0.44	0.19	1.38	0.09	0.56	0.83
3/4" (S)	FB-3	0.75	0.44	1.25	0.19	0.50	0.19	1.62	0.10	0.69	1.09
3/4" (D), 1-1/16" (S/D)	FB-4	1.00	0.56	1.50	0.25	0.62	0.27	1.88	0.12	0.81	1.38
1-1/4" (S/D), 1-1/2" (S/D)	FB-5	1.50	0.75	1.88	0.62	0.75	0.28	2.50	0.12	1.00	1.75
2" (S/D)	FB-6	1.62	1.00	2.25	0.62	1.38	0.34	3.12	0.25	1.50	2.50
2-1/2" (S/D)	FB-7	1.62	1.00	2.88	0.75	1.50	0.34	3.75	0.25	1.75	3.00

S = Single Acting Models    D = Double Acting Models    S/D = Single & Double Acting Models

## Mounting Nut



Single Acting Spring Return Models				
Bore	Part Number	N	E	T
7/16"	MN-1	3/8-24	0.56	0.22
9/16"	MN-2	7/16-20	0.69	0.25
3/4"	MN-3	1/2-20	0.75	0.31
1-1/16"	MN-4	5/8-18	0.94	0.38
1-1/4", 1-1/2"	MN-5	3/4-16	1.12	0.42
2"	MN-6	1-1/4-12	1.88	0.50

Single Acting Spring Extend & Double Acting Models				
Bore	Part Number	N	E	T
7/16", 9/16"	MN-2	7/16-20	0.69	0.25
3/4", 1-1/16"	MN-4	5/8-18	0.94	0.38
1-1/4", 1-1/2"	MN-5	3/4-16	1.12	0.42
2"	MN-6	1-1/4-12	1.88	0.50
2-1/2"	MN-7	1-3/8-12	2.00	0.50

# Actuators

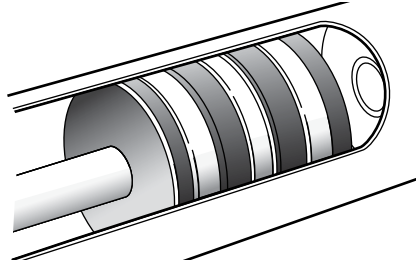
## Options

The following options can be requested at the time of cylinder order.

### Noise Dampening Bumpers

Nitrile bumpers are installed in each end of the cylinder preventing metal-to-metal contact to provide extremely quiet cylinder operation.

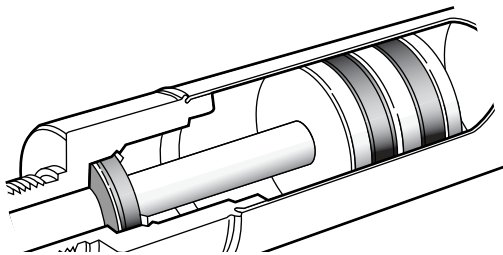
Note: Overall cylinder length increases by .125 per bumper.



**To Order:** Enter "C" in the 10th position of the Product Number

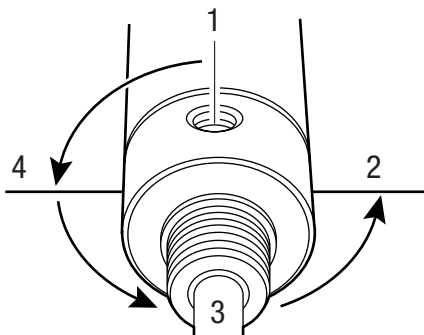
### Viton Rod & Piston Seals

For higher temperature applications use Viton Seals (-20° to 400°F).



**To Order:** Enter "B" in the 10th position of the Product Number

### Ports Rotated 90°



Viewing cylinder from the rod end, specify port relocation in 90° increments moving counterclockwise from the standard port location.

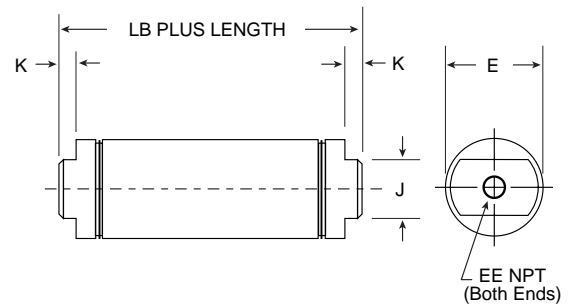
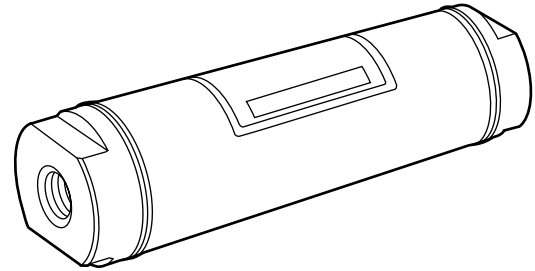
**To Order:** To specify port location other than 1, indicate "L" (\*) \* position. Product Number and specify new port location at 90°, 180°, or 270° from origin.

## Accessories

The following accessories are ordered separately from the cylinder, use the order number included with the product description.

### Air Reservoir

Air Reservoirs are made of the same high-quality stainless steel as the Series RL Cylinders.



Dimensions — All Dimensions in Inches						
Bore	E	EE	J	K	LB	Standard Internal Lengths
3/4"	0.813	1/8"	0.625	0.187	1.938	1" increments thru 4"
1-1/16"	1.125	1/8"	0.875	0.187	2.375	1" increments thru 8"
1-1/2"	1.562	1/8"	0.875	0.250	2.250	1" increments thru 16"
2"	2.080	1/4"	1.250	0.312	2.875	1" increments thru 16"
2-1/2"	2.610	1/4"	1.750	0.312	2.875	1" increments thru 24"

### How to Order

Example:

1-1/16" bore air reservoir with a 3" internal length would be ordered as follows: AR-1-1/16 x 3

Flow Controls		
Part No	Tube Size	Port Size
12 VAO 0210	5/32" O.D.	X10-32UNF
12 VAO 0218	5/32" O.D.	1/8" NPT
12 VAO 0418	1/4" O.D.	1/8" NPT
12 VAO 0428	1/4" O.D.	1/4" NPT
12 VAO 0628	3/8" O.D.	1/4" NPT



# Stainless Steel Body Air Actuator

Dimensions in inches

## Roundline Ecology Piston Seal Option (E)

The Ecology (Impact Dampening) Piston Seal option is available on 3/4 to 2-1/2 inch bore size Roundline cylinders in DAP and DAD configurations. This option includes non-adjustable air cushions on both the extend and retract stroke of the cylinder. By including the Ecology Piston Seal option, cylinders can be specified based on weights of load being carried and speed of load. This is shown in the top table below.

## Energy Absorption Capacity of the Impact Dampening Piston Seal

This chart represents the energy absorption capacity of the Impact Dampening piston seals with standard Non-Adjustable air cushions. The values given are usable pounds stoppable at stated piston speeds.

In/Sec	Cylinder Bore					
	3/4	1-1/16	1-1/4	1-1/2	2	2-1/2
6	36.6	62.3	74.5	115.5	258.9	421.1
12	5.6	15.6	18.6	28.9	64.7	105.3
18	2.5	6.9	8.3	12.8	28.8	46.8
24	1.4	3.9	4.7	7.2	16.2	26.3
30	0.9	2.5	3.0	4.6	10.4	16.8
36	0.6	1.7	2.1	3.2	7.2	11.7
42	0.5	1.3	1.5	2.4	5.3	8.6
48	0.3	1.0	1.2	1.8	4.0	6.6
54	0.3	0.8	0.9	1.4	3.2	5.2
60	0.2	0.6	0.7	1.2	2.6	4.2

The figures below represent total stroke loss (both ends) for the pressure indicated for new cylinders. The impact dampening seals will take some compression set during operation of the cylinder and the stroke loss will decrease. To determine stroke loss for either the head or cap, divide the value shown by 2

PSI	Effect of Impact Dampening Seals on Total Stroke of Cylinders					
	Cylinder Bore					
	3/4	1-1/16	1-1/4	1-1/2	2	2-1/2
0	.11	.12	.12	.14	.15	.17
20	.08	.09	.09	.10	.10	.12
40	.05	.06	.06	.07	.07	.08
60	.03	.04	.04	.04	.04	.05
80	.01	.02	.02	.02	.02	.02
100	0	0	0	0	0	0



The face of the Impact Dampening (Ecology) Piston Seal extends beyond the face of the machined aluminum piston. This allows for energy absorption when the Impact Dampening Piston Seal contacts the head or cap and compresses. In conjunction with the non-adjustable air cushions, the load is effectively stopped with minimal shock or vibration.

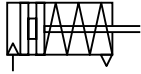


# RM/59100/C

## Miniature Roundline cylinders

Single acting, spring return

Ø 2.5 & 4 mm



Ideal for very light load applications such as function testing mobile phones and keyboards

Low friction characteristics mean high speeds

No fittings required - all types feature one integral push on barbed connector

Long service life and corrosion resistant materials mean low cost of ownership

### Technical data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operating pressure:

50.75 to 101.5 psig  
(3.5 to 7 bar)

Operating temperature:

32°F to 140°F (0°C to 60°C)

\* Air supply must be dry enough to avoid ice formation at temperatures below 35°F (2°C)

Cylinder diameters:

2.5 and 4 mm

Strokes:

5, 10 mm - Ø 2.5 mm

5, 10, 15, 20 mm - Ø 4 mm

Materials

Barrel: stainless steel

End caps: aluminum alloy

Piston rod: stainless steel

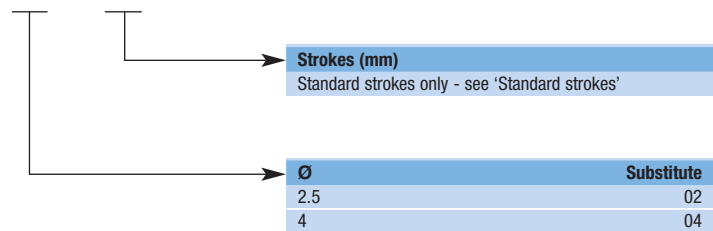
Elastomers: nitrile

### Standard strokes

Cylinder Ø mm	Strokes (mm)			
	5	10	15	20
2.5	●	●		
4	●	●	●	●

### Options selector

RM/591\*\*/C/\*\*



### Actuator selection

To order a basic 2.5 mm diameter cylinder, sprung in with a 10mm stroke quote: **RM/59102/C/10**

# RM/59100/C

## Miniature Roundline cylinders

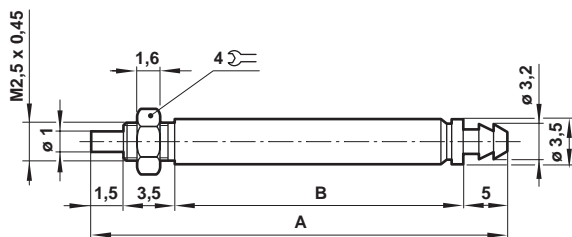
Single acting  
 Ø 2.5 & 4 mm

### Theoretical forces / Air consumption / Weight of cylinders

Ø mm	Theoretical forces N at 6 bar		Air consumption l/cm at 6 bar		Weight kg by stroke length			
	Outstroke	F1	Instroke	Outstroke	5 mm	10 mm	15 mm	20 mm
2.5	2.9	0.7	0.001	0.001	0.002	0.002	–	–
4	7.6	1.2	0.003	0.003	0.003	0.004	0.005	0.006

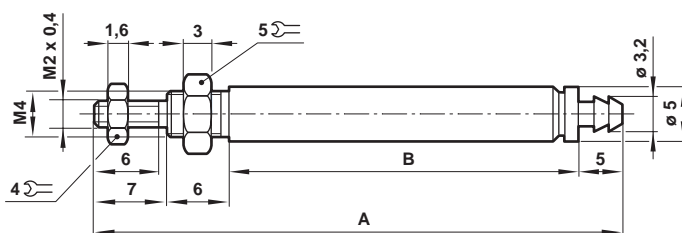
F1 = Return force

### Basic dimensions in mm RM/59102/C



	Ø	A	B
RM/59102/C/5	2.5	26.5	16.5
RM/59102/C/10	2.5	35.5	25.5
RM/59104/C/5	4	37	19
RM/59104/C/10	4	46	28
RM/59104/C/15	4	55	37
RM/59104/C/20	4	64	46

### RM/59104/C



Note: push-on connector is suitable for 4mm O/D, 2.5 mm I/D polyurethane tubing