

# Series MA

## The No-Compromise Design

## N.F.P.A. Air Cylinder from Parker

Proven Parker reliability at a cost that makes it right for your air cylinder application.

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**Exclusive  
with the New Parker  
Check Seal Cushions:**

- Faster Cycle Time
- Easy Precision Adjustment
- Minimum Wear
- Low Pressure Drop

**Factory Prelubricated**

200 psi nominal air pressure

Standard bore sizes: 1½", 2", 2½", 3¼", 4", 5" and 6"

12 Standard mounting styles

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For additional information – call your local Parker Cylinder Distributor.

**800.696-6165**

**[www.comoso.com](http://www.comoso.com)**

# Parker Series MA

## N.F.P.A. Industrial Air Cylinders

Parker Series MA air cylinders meet or exceed N.F.P.A. Pneumatic Standards and except for Tie Rod Mount Styles conform to ANSI Standard B93.15-1981 for mounting dimensions of Square Head Industrial Fluid Power Cylinders.

For heavy-duty applications see Parker Series 2A cylinder page 17.

### Standard Specifications

- Seven bore sizes – 1½" through 6"
- Three rod diameters – 5/8", 1" and 1¾"
- Twelve mounting styles
- Choice of three rod end styles
- Cushions at head, cap or both ends

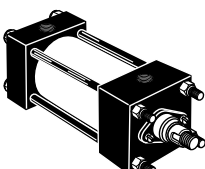
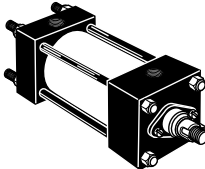
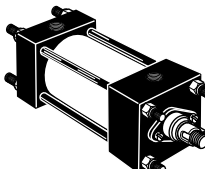
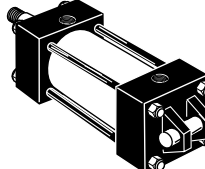
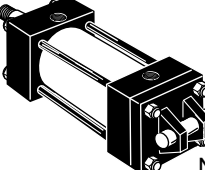
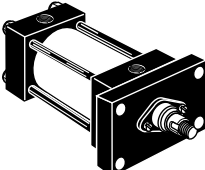
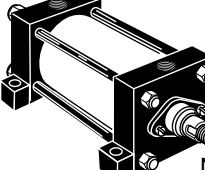
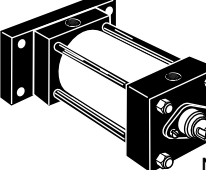
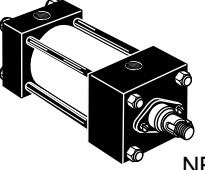
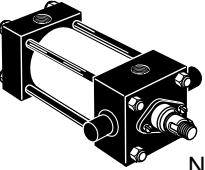
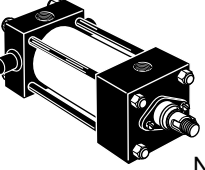
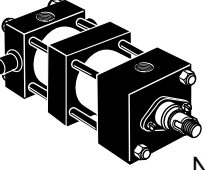
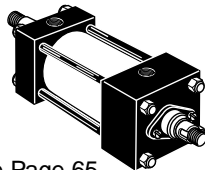
- Double rod models in six mounting styles
- JIC interchangeable
- Temperature Range – 10° F. to 165° F.\*

\*See Section C for higher temperature service, operating fluids, and temperature range.

For complete ordering information, see Page 69.

### AVAILABLE MOUNTINGS

For Single Rod Styles, see Pages 60 through 63.

<p>Tie Rods Extended Head End</p>  <p><b>Style TB</b></p>	<p>Tie Rods Extended Cap End</p>  <p><b>Style TC</b> NFFA MX2</p>	<p>Tie Rods Extended Both Ends</p>  <p><b>Style TD</b></p>	<p>Cap Fixed Clevis</p>  <p><b>Style BB</b> NFFA MP1</p>
<p>Cap Detachable Clevis</p>  <p><b>Style BC</b> NFFA MP2</p>	<p>Head Rectangular Flange</p>  <p><b>Style J</b> NFFA MF1</p>	<p>Side Lugs</p>  <p><b>Style C</b> NFFA MS2</p>	<p>Cap Rectangular Flange</p>  <p><b>Style H</b> NFFA MF2</p>
<p>Side Tapped</p>  <p><b>Style F</b> NFFA MS4</p>	<p>Head Trunnion</p>  <p><b>Style D</b> NFFA MT1</p>	<p>Cap Trunnion</p>  <p><b>Style DB</b> NFFA MT2</p>	<p>Intermediate Trunnion</p>  <p><b>Style DD</b> NFFA MT4</p>
<p>Double Rod Cylinders</p>  <p><b>Style KTB</b></p> <p>For Double Rod Styles, see Page 65.</p>			

For Cylinder Division Plant Locations – See Page II.

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# Parker Series MA

## N.F.P.A. Industrial Air Cylinders

### The inside story on the no-compromise design

Here's an inside look at the solid design and construction that makes Parker Series MA the high performing, longer-lasting, economical choice for your air cylinder applications.

**Rugged square steel heads and caps** resist shock and provide maximum strength within minimum space. Factory-treated to resist corrosion.

**Piston rod lipseal/wiper** combination is completely self-compensating for zero leakage at all pressures. Keeps pressure in, contamination out.

**High strength piston rod end stud** (125,000 psi minimum yield steel) with rolled threads for 52% greater strength at this critical fatigue point. Choice of male or female thread at no extra cost. Anaerobic adhesive is used to permanently lock the stud to the rod.

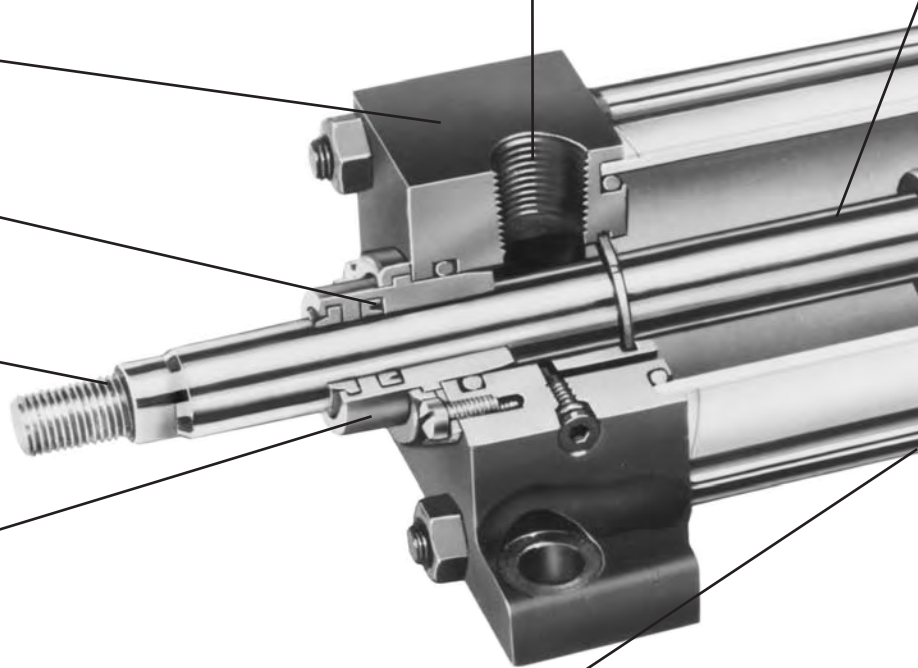
**Bolt-on, high strength, rod gland** removes screwdriver-easy on all mounting styles and bore sizes for fast, on-the-job rod seal replacement if needed.

**Extra long inboard bearing surface** insures lubrication from within the cylinder for longer life.

**Factory prelubrication of rod and piston seal surfaces** (rod bearing and cylinder bore surfaces).

**Tie rods are 100,000 psi minimum yield steel** with rolled threads for added strength. High strength nuts provide extra margin of safety.

**Ports**  
N.P.T.F. ports are standard.



### Parker's New Exclusive Check Seal Cushions For Increased Productivity and Maximum Performance

The Parker check seal cushion is new and different from ordinary cushion designs. It combines the sealing capabilities of a lipseal for efficient capture of air for effective cushioning with check valve action for quick stroke reversal.

The lipseal design also provides "floating cushions" to assure cushion repeatability and long life. At the start of the stroke in each direction, the check valve design allows full fluid flow to piston face with a minimum pressure drop for maximum power stroke.

Additional benefits of the new check seal cushions are increased productivity and top performance for faster cycle time, minimum wear, easy adjustment and low pressure drop.

The basic cushion design is optional and available on either the head end, cap end or both ends without change in envelope or mounting dimensions. A cushion adjusting needle is supplied for easy, precise adjustment on all bore sizes.

At the **head end** of the cylinder, the check seal is assembled into a groove in the central bore of the head, with the groove being slightly wider and larger in diameter than the check seal, so that it floats laterally and radially within predetermined limits. The check seal has four grooves molded into the face to provide flow passages; the assembly is put together with the lip of the seal facing toward the inside of the cylinder.

A cushion sleeve is mounted on the piston rod, so that as the rod extends, air ahead of the piston flows freely out the head-end port. When the end of the cushion sleeve reaches the lip of the check seal, it seals on the wall of the groove, trapping air for cushioning.

As pressure is applied to the head-end port on retraction, the air forces the seal towards the inside of the cylinder. The air

**For additional information – call your local Parker Cylinder Distributor.**

**Hard chrome-plated and polished piston rod** of 100,000 psi yield, high tensile strength steel for reliable performance and long rod seal life, less friction.

**Cylinder body O-ring seals** are pressure-actuated for positive sealing. Commercially available and easily replaced, if necessary.

**Unique "check seal" cushions** with molded flow passages combine the benefits of floating cushions with check valve action, provides effective cushioning and quick stroke reversal for more cycles per hour and higher production rates. Cushion needle valves make precise adjustment quick and easy.

**Longest standard cushions in the industry** for maximum cushioning capability.

**Fully dynamic, self-compensating Lipseal™ piston seals** designed for no-leak service at all operating pressures; easily replaced, if needed, without removing piston from rod.

**One-piece, nodular iron piston**, positively locked to rod – retains lubrication and provides a wide bearing surface. An anaerobic adhesive is used to permanently lock and seal the piston to the rod.

**Piston-to-rod thread diameter** increases with rod diameter for added strength and is equal to outer end Style 4 thread on all rod sizes.

**Aluminum Alloy** cylinder body with corrosion resistant smooth hard coated bore on 1½" and 2" bores.

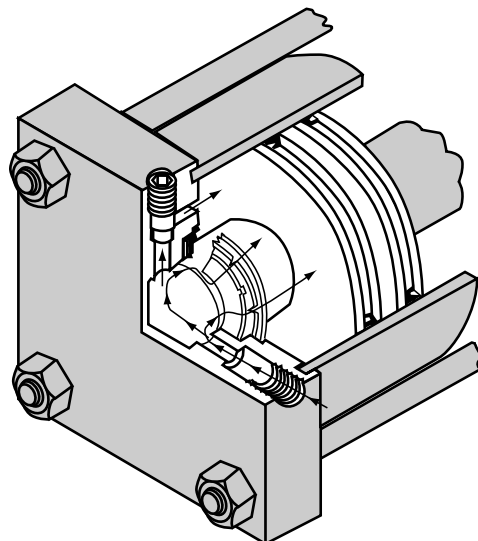
**Chrome Plated Steel Tubing** honed to a 15 micro inch finish on 2½", 3¼", 4", 5" and 6" bores (cylinders supplied with reed switches are equipped with aluminum barrels).

then flows around the OD of the seal and through the flutes of the seal washer. Full-flow, quick starts with little or no pressure drop is just one of the major benefits of the design.

At the **cap end** of the cylinder, the check seal is assembled into a cavity in the face of the cap with four beads molded on the OD to provide a flow passage. A fluted washer and retaining ring, rather than a groove, and a cushion spear which extends from the rear face of the piston complete the cap end assembly. When the rounded, tapered portion of the cushion spear reaches the lip of the seal, the seal seats against the rear wall of the cavity, trapping air for cushioning.

The configuration of the check-seal lip, and the controlled shape of the cushion sleeve together prevent the lip from rolling over or extruding. A check seal used at both ends provides the benefits of floating cushions with check valve action for maximum cushion effectiveness and quick stroke reversal. This new check-seal design has been tested in millions of cycles, in the lab and in the field.

Series MA cushions are the longest in the industry and are designed for maximum customer benefit.



**For Cylinder Division Plant Locations – See Page II.**

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A

# Series MA NFFPA Industrial Air Cylinders

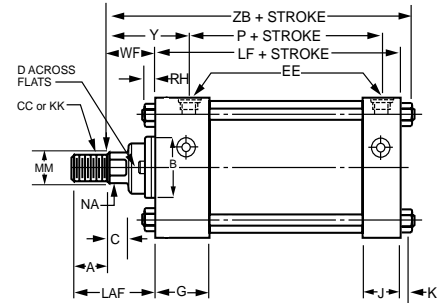
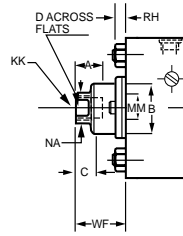
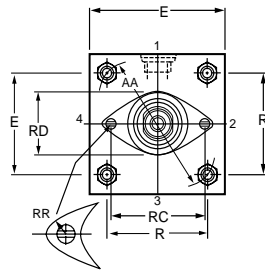
## Tie Rod Mountings Single Rod

### Basic Cylinder Style T (NFFPA Style MX0)

Rod end Style 4 is standard per dimension KK. Styles 8 or 9 are optional at no extra charge. A high strength rod end stud is standard on Styles 4 and 8 for all rod sizes.

For special rod ends such as nonstandard threads, rod extensions, blanks, etc., specify Style 3 and furnish desired dimensions for CC, KK, A, WF, LA and LAF.

If rod end is not specified, Style 4 will be supplied.



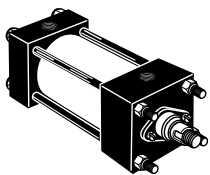
Style 9 Rod End  
NFFPA SF

Style 4 & 8 Rod End  
NFFPA SM & IM

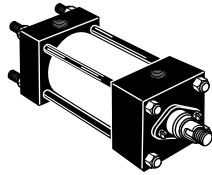
Rod End Dimensions – Styles 9 (NFFPA SF), 4 (NFFPA SM) and 8 (NFFPA IM)																	Basic Envelope and Mounting Dimensions											
Bore	Rod No.	Rod Dia. MM	Thread		A	+.000 -.002 B	C	D	LA	LAF	NA	RC	RD	RH	RR	V	W	WF	Y	AA	E	(NPTF) EE	G	J	K	Add Stroke		
			Style 8 CC	Style 4 & 9 KK																						LF	P	ZB
1 1/2	1	5/8	1/2-20	7/16-20	3/4	.999	3/8	1/2	13/8	13/4	9/16	11 1/16	15 1/16	3/16	11 1/4	1/4	5/8	1	115 1/16	2.02	2	3/8	1 1/2	1	1/4	35 1/8	2 1/4	47 1/8
2	1	5/8	1/2-20	7/16-20	3/4	.999	3/8	1/2	13/8	13/4	9/16	11 1/16	15 1/16	3/16	11 1/4	1/4	5/8	1	115 1/16	2.6	2 1/2	3/8	1 1/2	1	5/16	35 1/8	2 1/4	41 5/16
2	3	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	2 1/2	15 1/16	23 1/16	113 1/16	3/16	11 1/4	1/2	1	13 1/8	25 1/16	2.6	2 1/2	3/8	1 1/2	1	5/16	35 1/8	2 1/4	59 1/16
2 1/2	1	5/8	1/2-20	7/16-20	3/4	.999	3/8	1/2	13/8	13/4	9/16	11 1/16	15 1/16	3/16	11 1/4	1/4	5/8	1	115 1/16	3.1	3	3/8	1 1/2	1	5/16	33 1/4	2 3/8	51 1/16
2 1/2	3	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	2 1/2	15 1/16	23 1/16	113 1/16	3/16	11 1/4	1/2	1	13 1/8	25 1/16	3.1	3	3/8	1 1/2	1	5/16	33 1/4	2 3/8	57 1/16
3 1/4	1	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	17/8	2 1/2	15 1/16	23 1/16	113 1/16	3/16	11 1/4	1/4	3/4	13 1/8	27 1/16	3.9	3 3/4	1/2	1 3/4	1 1/4	3/8	4 1/4	2 5/8	6
3 1/4	3	1 3/8	1 1/4-12	1-14	1 5/8	1.874	5/8	1 1/8	2 5/8	3 1/4	15 1/16	21 1/16	215 1/16	7/32	13 1/4	3/8	1	15 1/8	21 1/16	3.9	3 3/4	1/2	1 3/4	1 1/4	3/8	4 1/4	2 5/8	6 1/4
4	1	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	17/8	2 1/2	15 1/16	23 1/16	113 1/16	3/16	11 1/4	1/4	3/4	13 1/8	27 1/16	4.7	4 1/2	1/2	1 3/4	1 1/4	3/8	4 1/4	2 5/8	6
4	3	1 3/8	1 1/4-12	1-14	1 5/8	1.874	5/8	1 1/8	2 5/8	3 1/4	15 1/16	21 1/16	215 1/16	7/32	13 1/4	3/8	1	15 1/8	21 1/16	4.7	4 1/2	1/2	1 3/4	1 1/4	3/8	4 1/4	2 5/8	6 1/4
5	1	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	17/8	2 1/2	15 1/16	23 1/16	113 1/16	3/16	11 1/4	1/4	3/4	13 1/8	27 1/16	5.8	5 1/2	1/2	1 3/4	1 1/4	7/16	4 1/2	2 7/8	6 5/16
5	3	1 3/8	1 1/4-12	1-14	1 5/8	1.874	5/8	1 1/8	2 5/8	3 1/4	15 1/16	21 1/16	215 1/16	7/32	13 1/4	3/8	1	15 1/8	21 1/16	5.8	5 1/2	1/2	1 3/4	1 1/4	7/16	4 1/2	2 7/8	6 9/16

### Tie Rod Mounted Styles TB, TC, TD

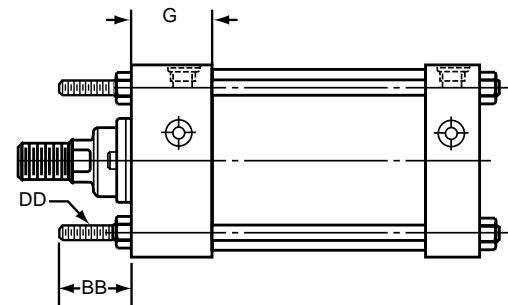
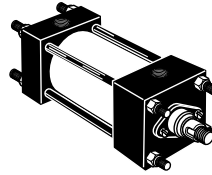
Style TB



Style TC  
NFFPA  
(MX2)



Style TD



Style TB, Tie Rods Extended, is illustrated at right. Style TC, Cap Tie Rods Extended, and Style TD, Both Ends Tie Rods Extended, can be dimensioned from Style TB drawing.

### Dimensions for Specific Series MA Mounting Styles H, J, C, F, BB and BC

Bore	Rod No.	Rod Dia. MM	BB	CB	+.000 -.002 CD	CW	DD	F	FB	L	LR	M	MR	ND	NT	R	SB*
1 1/2	1	5/8	1	3/4	.501	1/2	1/4-28	3/8	5/16	3/4	3/4	1/2	5/8	5/16	1/4-20	1.43	7/16
2	1	5/8	1 1/8	3/4	.501	1/2	5/16-24	3/8	3/8	3/4	3/4	1/2	5/8	11/32	5/16-18	1.84	7/16
2	3	1	1 1/8	3/4	.501	1/2	5/16-24	3/8	3/8	3/4	3/4	1/2	5/8	7/16	3/8-16	2.19	7/16
2 1/2	1	5/8	1 1/8	3/4	.501	1/2	5/16-24	3/8	3/8	3/4	3/4	1/2	5/8	7/16	3/8-16	2.19	7/16
2 1/2	3	1	1 1/8	3/4	.501	1/2	5/16-24	3/8	3/8	3/4	3/4	1/2	5/8	7/16	3/8-16	2.19	7/16
3 1/4	1	1	1 3/8	1 1/4	.751	5/8	3/8-24	5/8	7/16	1 1/4	1	3/4	15 1/16	1/2	1/2-13	2.76	9/16
3 1/4	3	1 3/8	1 3/8	1 1/4	.751	5/8	3/8-24	5/8	7/16	1 1/4	1	3/4	15 1/16	5/8	1/2-13	3.32	9/16
4	1	1	1 3/8	1 1/4	.751	5/8	3/8-24	5/8	7/16	1 1/4	1	3/4	15 1/16	5/8	1/2-13	3.32	9/16
4	3	1 3/8	1 3/8	1 1/4	.751	5/8	3/8-24	5/8	7/16	1 1/4	1	3/4	15 1/16	5/8	1/2-13	3.32	9/16
5	1	1	1 13/16	1 1/4	.751	5/8	1/2-20	5/8	9/16	1 1/4	1	3/4	15 1/16	3/4	5/8-11	4.10	13/16
5	3	1 3/8	1 13/16	1 1/4	.751	5/8	1/2-20	5/8	9/16	1 1/4	1	3/4	15 1/16	3/4	5/8-11	4.10	13/16

\*Upper surface spotfaced for socket head screws.

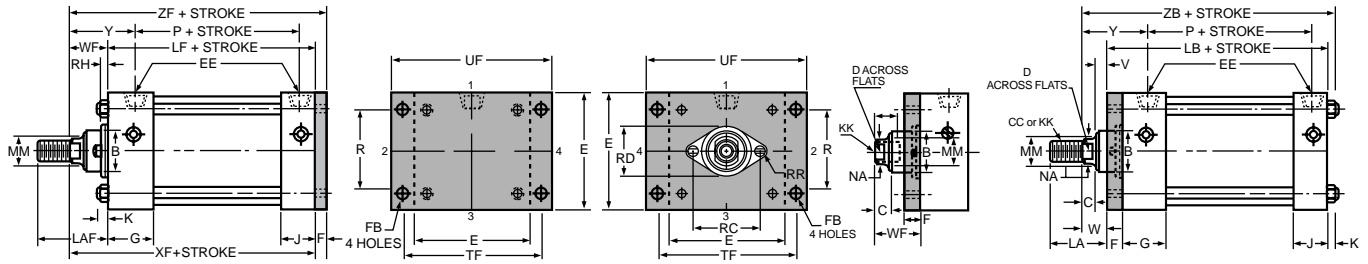
For additional information – call your local Parker Cylinder Distributor.



# Series MA NFFA Industrial Air Cylinders

## Tie Rod Mountings Single Rod

### Flange Mountings Styles H, J

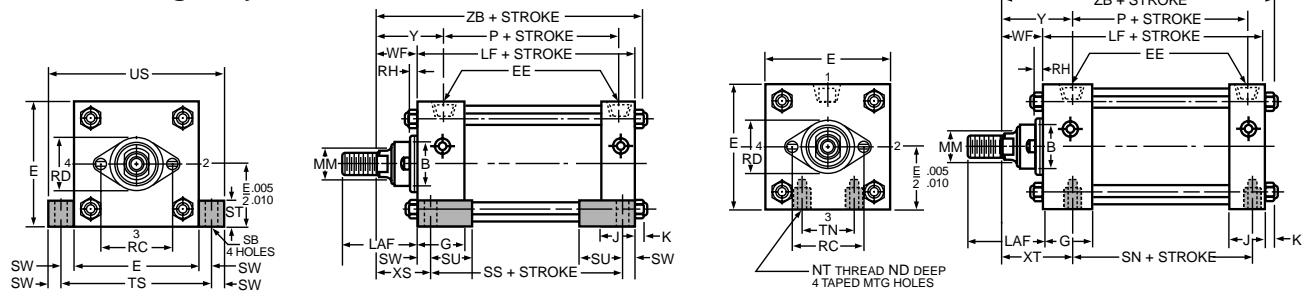


Style H (NFFA MF2)

Style 9 Rod End J Mount Only

Style J (NFFA MF1)

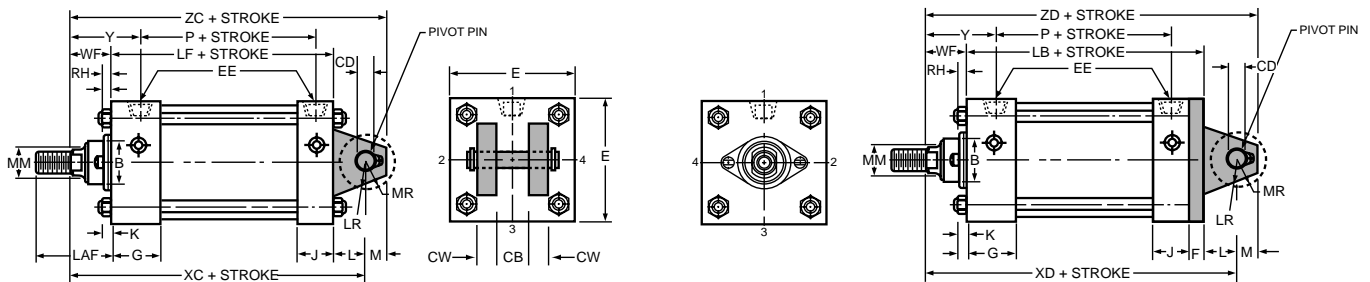
### Side Mountings Styles C, F



Style C (NFFA MS2)

Style F (NFFA MS4)

### Pivot Mountings Styles BB, BC



Style BB (NFFA MP1)

Style BC (NFFA MP2)

Tie Rods thread into Cap on 1/2", 2", 2 1/2" & 3 1/4" bore sizes as shown. Larger sizes have Tie Rod Nuts at both ends.

ST	SU	SW	TF	TN	TS	UF	US	LB	Add Stroke									
									SN	SS	XC	XD	XF	XS	XT	ZC	ZF	ZD
1/2	15/16	3/8	23/4	5/8	23/4	33/8	3 1/2	4	2 1/4	27/8	53/8	53/4	45/8	13/8	115/16	57/8	5	6 1/4
1/2	15/16	3/8	33/8	7/8	3 1/4	4 1/8	4	4	2 1/4	27/8	53/8	53/4	45/8	13/8	115/16	57/8	5	6 1/4
1/2	15/16	3/8	37/8	1 1/4	3 3/4	45/8	4 1/2	4 1/8	2 3/8	3	5 1/2	57/8	43/4	13/8	115/16	6	5 1/8	6 3/8
3/4	1 1/4	1/2	4 11/16	1 1/2	4 3/4	5 1/2	5 3/4	47/8	25/8	3 1/4	67/8	7 1/2	55/8	17/8	27/16	75/8	6 1/4	8 1/4
3/4	1 1/4	1/2	57/16	2 1/16	5 1/2	6 1/4	6 1/2	47/8	25/8	3 1/4	67/8	7 1/2	55/8	17/8	27/16	75/8	6 1/4	8 1/4
1	19/16	11/16	65/8	2 11/16	67/8	75/8	8 1/4	5 1/8	27/8	3 1/8	7 1/8	7 3/4	57/8	2 1/16	27/16	77/8	6 1/2	8 1/2

For Cylinder Division Plant Locations – See Page II.

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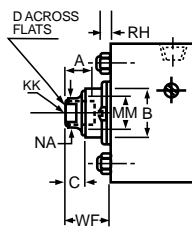
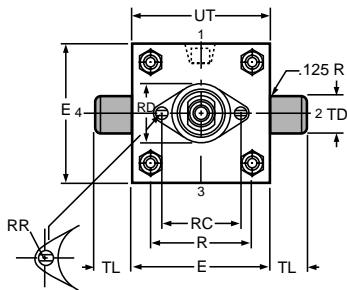


A

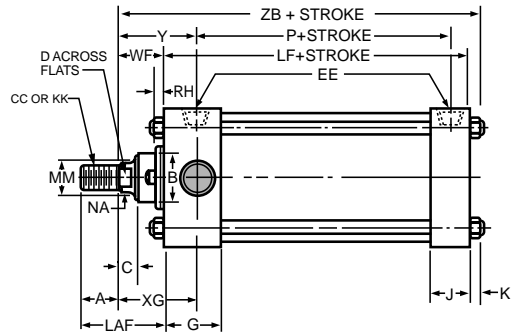
# Series MA NFFPA Industrial Air Cylinders

## Trunnion Mountings

### Head Trunnion Mounting Style D (NFFPA Style MT1)

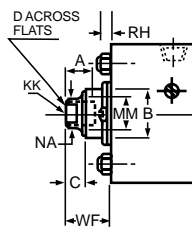
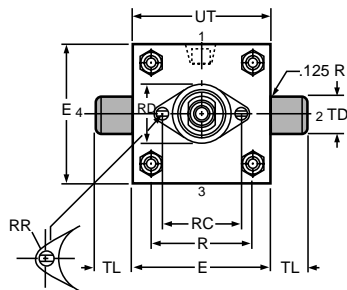


**Style 9 Rod End**  
(NFFPA SF)

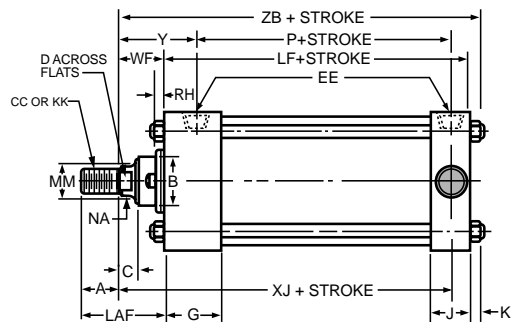


**Style 4 & 8 Rod End**  
(NFFPA SM & IM)

### Cap Trunnion Mounting Style DB (NFFPA Style MT2)



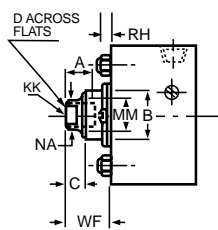
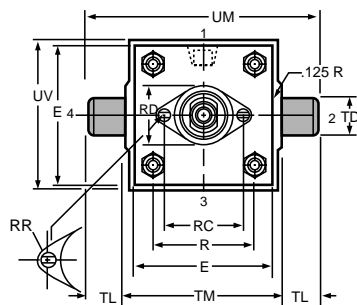
**Style 9 Rod End**  
(NFFPA SF)



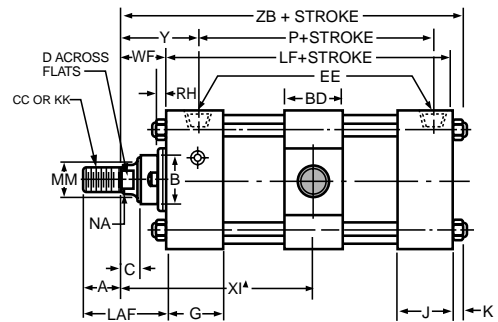
**Style 4 & 8 Rod End**  
(NFFPA SM & IM)

### Intermediate Fixed Trunnion Mounting

#### Style DD (NFFPA Style MT4)



**Style 9 Rod End**  
(NFFPA SF)



**Style 4 & 8 Rod End**  
(NFFPA SM & IM)

Note: For Rod End Dimensions See Page 60.				Basic Envelope and Mounting Dimensions																		
Bore	Rod No.	Rod Dia. MM	Thread		BD	E	(NPTF) EE	G	J	K	+0.00 TD -0.001	TL	TM	UM	UT	UV	XG	Min. XI▲	Add Stroke			
			Style 8 CC	Style 4 & 9 KK															LF	P	XJ	ZB
1 1/2	1	5/8	1/2-20	7/16-20	1 1/4	2	3/8	1 1/2	1	1/4	1.000	1	2 1/2	4 1/2	4	2 1/2	13/4	33/16	35/8	2 1/4	4 1/8	47/8
2	1 3	5/8 1	1/2-20 7/8-14	7/16-20 3/4-16	1 1/2	2 1/2	3/8	1 1/2	1	5/16	1.000	1	3	5	4 1/2	3	13/4 2 1/8	35/16 3 1/16	35/8	2 1/4	4 1/8 4 1/2	4 15/16 5 5/16
2 1/2	1 3	5/8 1	1/2-20 7/8-14	7/16-20 3/4-16	1 1/2	3	3/8	1 1/2	1	5/16	1.000	1	3 1/2	5 1/2	5	3 1/2	13/4 2 1/8	35/16 3 1/16	33/4	2 3/8	4 1/4 4 5/8	5 1/16 5 7/16
3 1/4	1 3	1 13/8	7/8-14 1 1/4-12	3/4-16 1-14	2	3 3/4	1/2	13/4	1 1/4	3/8	1.000	1	4 1/2	6 1/2	5 3/4	4 1/4	2 1/4 2 1/2	43/16 47/16	4 1/4	2 5/8	5 5 1/4	6 6 1/4
4	1 3	1 13/8	7/8-14 1 1/4-12	3/4-16 1-14	2	4 1/2	1/2	13/4	1 1/4	3/8	1.000	1	5 1/4	7 1/4	6 1/2	5	2 1/4 2 1/2	43/16 47/16	4 1/4	2 5/8	5 5 1/4	6 6 1/4
5	1 3	1 13/8	7/8-14 1 1/4-12	3/4-16 1-14	2	5 1/2	1/2	13/4	1 1/4	7/16	1.000	1	6 1/4	8 1/4	7 1/2	6	2 1/4 2 1/2	43/16 47/16	4 1/2	2 7/8	5 1/4 5 1/2	6 5/16 6 9/16

▲ Dimension XI to be specified by customer

**For additional information – call your local Parker Cylinder Distributor.**

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# Series MA, 6" Bore NFFPA Industrial Air Cylinders

Tie Rod and Flange Mountings  
6" Bore Size

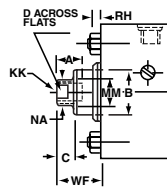
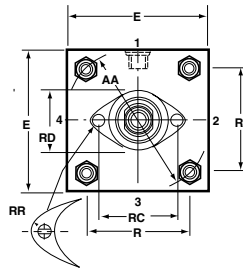
## Basic Cylinder Style T (NFFPA Style MX0)

Rod end Style 4 is standard per dimension KK. Styles 8 or 9 are optional at no extra charge. A high strength rod end stud is standard on Styles 4 and 8 for all rod sizes.

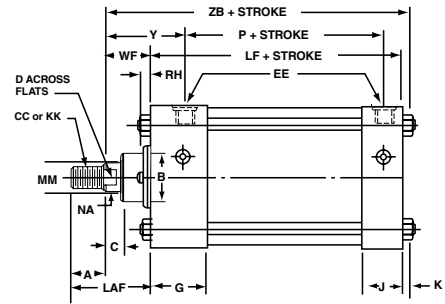
For special rod ends such as nonstandard threads, rod extensions, blanks, etc., specify Style 3 and furnish desired dimensions for CC, KK, A, WF, LA and LAF.

If rod end is not specified, Style 4 will be supplied.

See Table 3 for rod end dimensions.

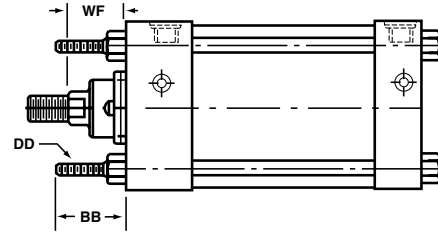
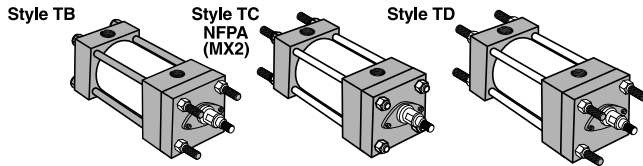


Parker Style 9 Rod End  
NFFPA SF



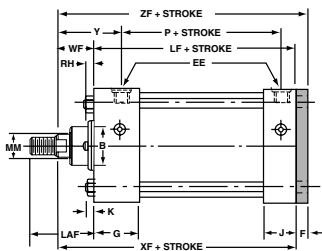
Parker Style 4 & 8 Rod End  
NFFPA SM & IM

## Tie Rod Mounted Styles, TB, TC, TD

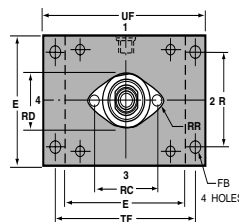
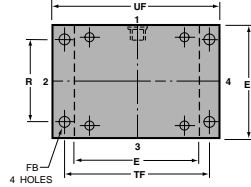


Style TB, Tie Rods Extended, is illustrated at right. Style TC, Cap Tie Rods Extended, and Style TD, Both Ends Tie Rods Extended, can be dimensioned from Style TB drawing.

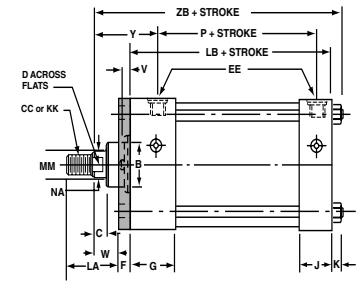
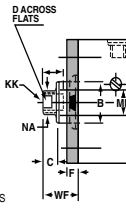
## Flange Mountings Styles H, J



Style H (NFFPA MF2)

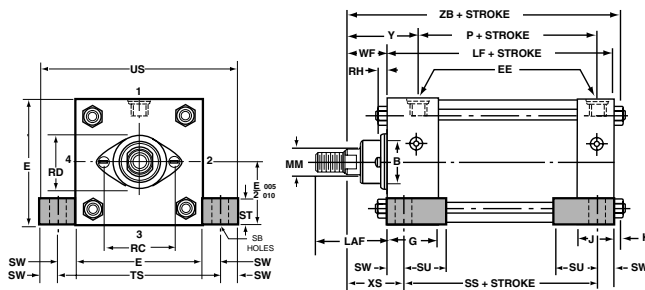


Style 9 Rod End (NFFPA SF)

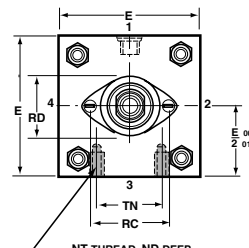
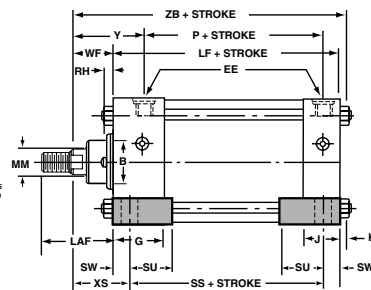


Style J (NFFPA MF1)

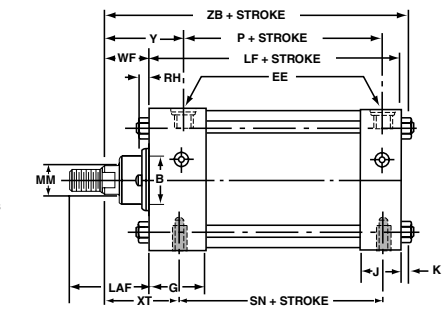
## Side Mountings Styles C, F



Style C (NFFPA MS2)



NT THREAD, ND DEEP  
4 TAPED MTG. HOLES



Style F (NFFPA MS4)

For Cylinder Division Plant Locations – See Page II.

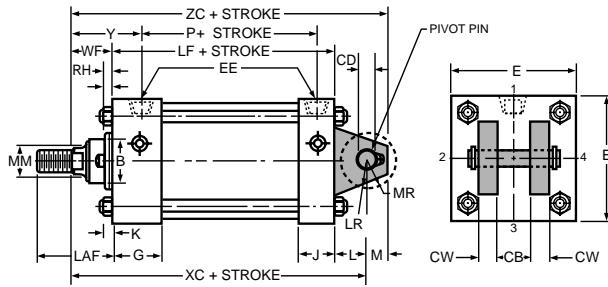
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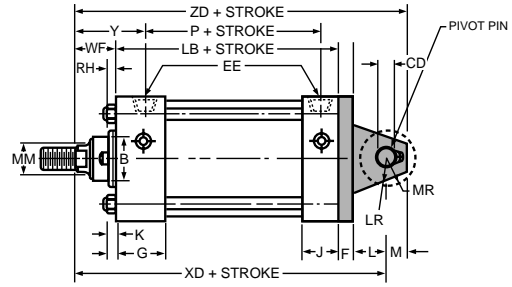




## Pivot Mountings Styles BB, BC

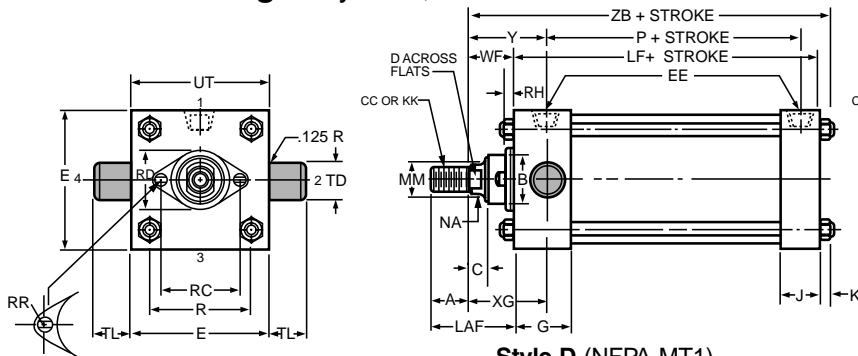


Style BB (NFFPA MP1)

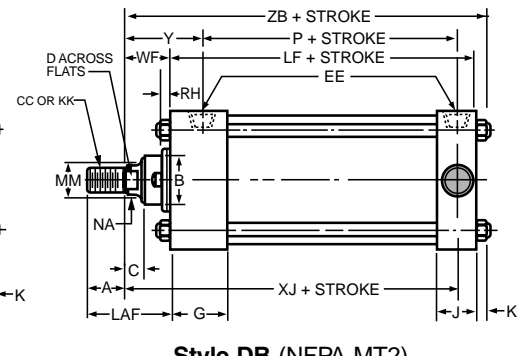


Style BC (NFFPA MP2)

## Trunnion Mountings Styles D, DB

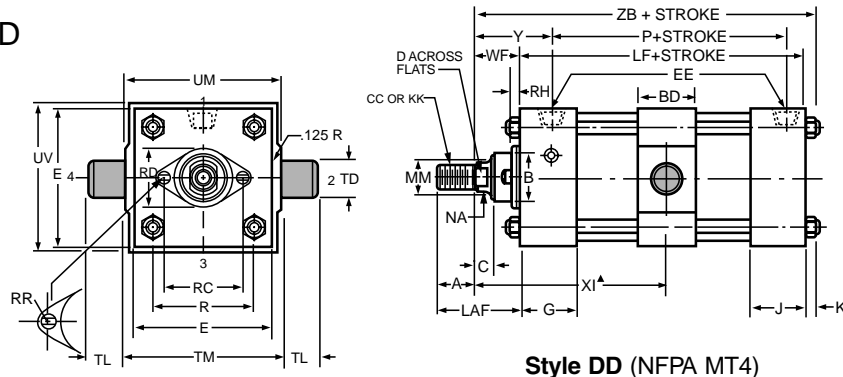


Style D (NFFPA MT1)



Style DB (NFFPA MT2)

## Trunnion Mounting Style DD



Style DD (NFFPA MT4)

Table 3 Rod End Dimensions—Styles 9 (NFFPA SF), 4 (NFFPA SM) and 8 (NFFPA IM)

Bore	Rod No.	Rod Dia. MM	Thread		A	+.000 -.002 B	MIN. C	D	LA	LAF	NA	RC	RD	RH	RR	V	W	WF	Y
			Style 8 CC	Style 4 & 9 KK															
6	1	1 3/8	1 1/4-12	1-14	15/8	1.874	5/8	1 1/8	2 1/2	3 1/4	15/16	2 11/16	2 15/64	7/32	13/64	1/4	7/8	15/8	2 13/16

Table 4 Basic Envelope and Mounting Dimensions

Bore	Rod No.	Rod Dia. MM	AA	BB	BD	CB	+.000 -.002 CD	CW	DD	E	(NPTF) EE	F	FB	G	J	K	L	LR	M	MR	ND	NT	R	SB*	ST	SU	SW
6	1	1 3/8	6.9	1 13/16	2 1/2	1 1/2	1.001	3/4	1/2-20	6 1/2	3/4	3/4	9/16	2	1 1/2	7/16	1 1/2	1 1/4	1	13/16	7/8	3/4-10	4.88	13/16	1	19/16	11/16

Basic Envelope and Mounting Dimensions (cont.)

Bore	Rod No.	Rod Dia. MM	+.000 TD -.002	ADD STROKE																									
				TF	TL	TM	TN	TS	UF	UM	US	UT	UV	XG	MIN. XI ▲	LB	LF	P	SN	SS	XC	XD	XF	XJ	XS	XT	ZB	ZC	ZF
6	1	1 3/8	1.375	7/8	1 3/8	7 5/8	3 1/4	7 7/8	8 5/8	10 3/8	9 1/4	9 1/4	7	2 5/8	4 15/16	5 3/4	5	3 1/8	3 1/8	3 5/8	8 1/8	8 7/8	6 5/8	5 7/8	2 5/16	2 13/16	7 1/16	9 1/8	7 3/8

\* Upper surface spotfaced for socket head screws. ▲ Dimension XI to be specified by customer.

For additional information – call your local Parker Cylinder Distributor.

# Series MA NFPA Industrial Air Cylinders

Double Rod Models  
1" to 6" bore sizes

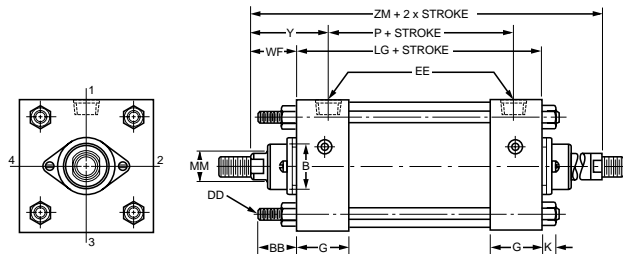
To dimension double rod cylinders, select the desired mounting style and refer to corresponding single rod model on pages 60-

64. After obtaining necessary dimensions from that drawing, supplement those with the drawings and tables below.

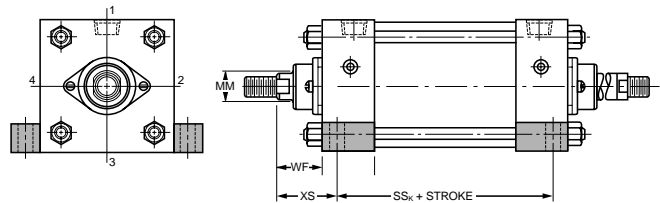
## Tie Rods Extended Parker Style KT

Tie Rods Extended Head End, Style **KTB**.

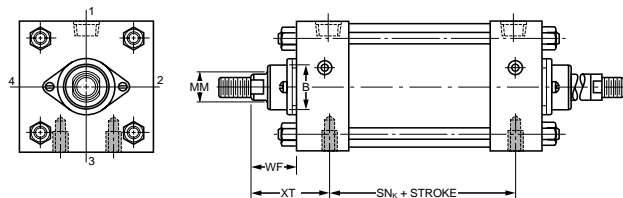
Tie Rods Extended Both Ends, Style **KTD**.



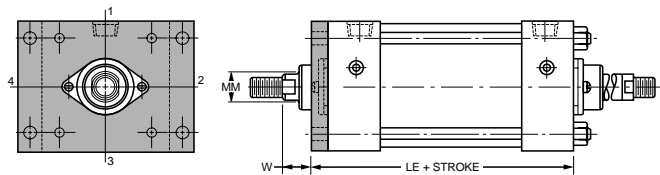
## Side Lug Mounting Parker Style KC



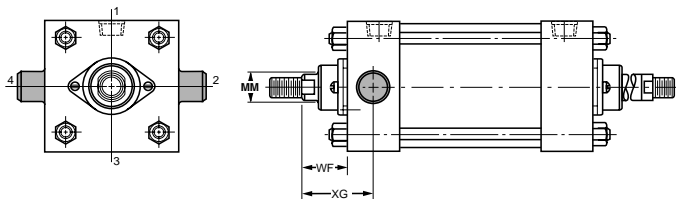
## Side Tapped Mounting Parker Style KF



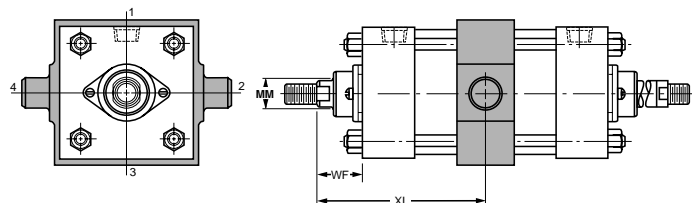
## Rectangular Flange Mounting Parker Style KJ



## Head Trunnion Mounting Parker Style KD



## Intermediate Fixed Trunnion Mounting Parker Style KDD



### Double Rod Cylinder Dimensions

Bore	Rod Dia.	Rod No.	Add Stroke				Add 2x Stroke ZM
			LG	LE	SS <sub>k</sub>	SN <sub>k</sub>	
1 1/2	5/8	1	4 1/8	4 1/2	3 3/8	2 1/4	6 1/8
2	5/8	1	4 1/8	4 1/2	3 3/8	2 1/4	6 1/8
		3					6 7/8
2 1/2	5/8	1	4 1/4	4 5/8	3 1/2	2 3/8	6 1/4
		3					7
3 1/4	1	1	4 3/4	5 3/8	3 3/4	2 5/8	7 1/2
		3					8
4	1	1	4 3/4	5 3/8	3 3/4	2 5/8	7 1/2
		3					8
5	1	1	5	5 5/8	3 5/8	2 7/8	7 3/4
		3					8 1/4
6	1 3/8	1	5 1/2	6 1/4	4 1/8	3 1/8	8 3/4
REPLACES DIMENSION			LF	LB	SS	SN	-
ON SINGLE ROD MOUNTING STYLES			T, TB, TC, C, F, D & DD	J	C	F	ALL

On a double rod cylinder where the two rod ends will be different, be sure to state very clearly which rod end is to go at which end of the cylinder.

NOTE: For Rod End Dimensions, see pages 60 and 64.

For Cylinder Division Plant Locations – See Page II.

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A

# Series MA NFFPA Industrial Air Cylinders

## Accessories

### Cylinder Accessories

Parker offers a range of heavy-duty cylinder accessories for convenient mounting of pivot mount cylinders or for use at rod end of fixed mount types. All are load capacity rated for use at 4:1 design factor in tension or compression (pivot pin is rated in shear)

when used on bore sizes recommended in tables below. Select rod clevises or knuckles by bore and thread size along with mating parts shown. Pivot pin must be ordered as separate item, if needed.

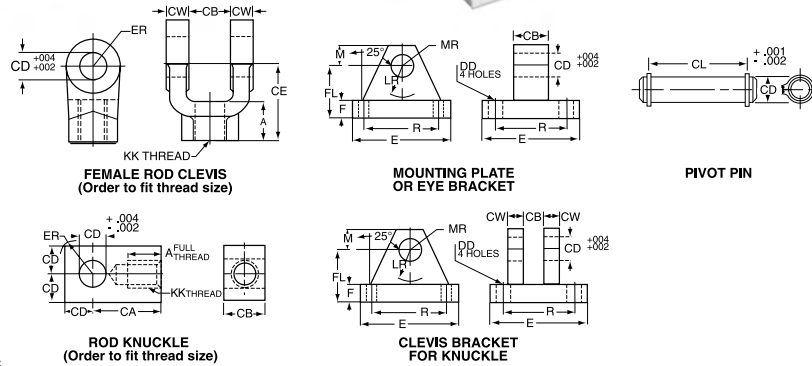
#### Mounting Plate



#### Mounting Plates

Mounting plates for Style BB and Style BC (clevis mounted) cylinders are offered. To select proper part number for your application, refer to Chart below.

Mounting Plate	Series "MA"
Part No.	Bore Size
69195	1 1/2", 2", 2 1/2"
69196	3 1/4", 4", 5"
▲85361	6"



#### Dimensions for Rod Clevis and Mating Parts

Bore Size	Rod Dia.	KK Thread Size	Rod Clevis	Eye Brkt.	Pivot Pin	A	CB	CD	CE	CL	CW	DD	E	ER	F	FL	LR	M	MR	R
1 1/2	5/8	7/16-20	50940	69195	68368	3/4	3/4	1/2	1 1/2	17/8	1/2	13/32	2 1/2	1/2	3/8	1 1/8	3/4	1/2	9/16	1.63
2	5/8	7/16-20	50940	69195	68368	3/4	3/4	1/2	1 1/2	17/8	1/2	13/32	2 1/2	1/2	3/8	1 1/8	3/4	1/2	9/16	1.63
	1	3/4-16	50942 133284	69196	68369	1 1/8	1 1/4	3/4	2 1/8 2 3/8	2 5/8	5/8	17/32	3 1/2	3/4	5/8	1 7/8	1 1/4	3/4	7/8	2.55
2 1/2	5/8	7/16-20	50940	69195	68368	3/4	3/4	1/2	1 1/2	17/8	1/2	13/32	2 1/2	1/2	3/8	1 1/8	3/4	1/2	9/16	1.63
	1	3/4-16	50942 133284	69196	68369	1 1/8	1 1/4	3/4	2 1/8 2 3/8	2 5/8	5/8	17/32	3 1/2	3/4	5/8	1 7/8	1 1/4	3/4	7/8	2.55
3 1/4	1	3/4-16	50942 133284	69196	68369	1 1/8	1 1/4	3/4	2 1/8 2 3/8	2 5/8	5/8	17/32	3 1/2	3/4	5/8	1 7/8	1 1/4	3/4	7/8	2.55
	1 3/8	1-14	50944 133285	85361▲	68370	1 5/8	1 1/2	1	2 5/16 3 1/8	3 1/8	3/4	2 1/32	4 1/2	1	7/8	2 3/8	1 1/2	1	1 1/4	3.25
4 & 5	1	3/4-16	50942 133284	69196	68369	1 1/8	1 1/4	3/4	2 1/8 2 3/8	2 5/8	5/8	17/32	3 1/2	3/4	5/8	1 7/8	1 1/4	3/4	7/8	2.55
	1 3/8	1-14	50944 133285	85361▲	68370	1 5/8	1 1/2	1	2 5/16 3 1/8	3 1/8	3/4	2 1/32	4 1/2	1	7/8	2 3/8	1 1/2	1	1 1/4	3.25
-	1 3/8	1-14	50944 133285	85361▲	68370	1 5/8	1 1/2	1	2 5/16 3 1/8	3 1/8	3/4	2 1/32	4 1/2	1	7/8	2 3/8	1 1/2	1	1 1/4	3.25

#### Dimensions for Rod Knuckle and Mating Parts

Bore Size	Rod Dia.	KK Thread Size	Knuckle	Clevis Brkt.	Pivot Pin	A	CA	CB	CD	CL	CW	DD	E	ER	F	FL	LR	M	MR	R
1 1/2	5/8	7/16-20	69089	69205	68368	3/4	1 1/2	3/4	1/2	17/8	1/2	13/32	3 1/2	23/32	1/2	1 1/2	3/4	1/2	5/8	2.55
2	5/8	7/16-20	69089	69205	68368	3/4	1 1/2	3/4	1/2	17/8	1/2	13/32	3 1/2	23/32	1/2	1 1/2	3/4	1/2	5/8	2.55
	1	3/4-16	69091	69206	68369	1 1/8	2 1/16	1 1/4	3/4	2 5/8	5/8	17/32	5	1 1/16	5/8	1 7/8	13/16	3/4	29/32	3.82
2 1/2	5/8	7/16-20	69089	69205	68368	3/4	1 1/2	3/4	1/2	17/8	1/2	13/32	3 1/2	23/32	1/2	1 1/2	3/4	1/2	5/8	2.55
	1	3/4-16	69091	69206	68369	1 1/8	2 1/16	1 1/4	3/4	2 5/8	5/8	17/32	5	1 1/16	5/8	1 7/8	13/16	3/4	29/32	3.82
3 1/4	1	3/4-16	69091	69206	68369	1 1/8	2 1/16	1 1/4	3/4	2 5/8	5/8	17/32	5	1 1/16	5/8	1 7/8	13/16	3/4	29/32	3.82
	1 3/8	1-14	69093	69207	68370	1 5/8	2 3/16	1 1/2	1	3 1/8	3/4	2 1/32	6 1/2	17/16	3/4	2 1/4	1 1/2	1	1 1/4	4.95
4 & 5	1	3/4-16	69091	69206	68369	1 1/8	2 1/16	1 1/4	3/4	2 5/8	5/8	17/32	5	1 1/16	5/8	1 7/8	13/16	3/4	29/32	3.82
	1 3/8	1-14	69093	69207	68370	1 5/8	2 3/16	1 1/2	1	3 1/8	3/4	2 1/32	6 1/2	17/16	3/4	2 1/4	1 1/2	1	1 1/4	4.95
6	1 3/8	1-14	69093	69207	68370	1 5/8	2 3/16	1 1/2	1	3 1/8	3/4	2 1/32	6 1/2	17/16	3/4	2 1/4	1 1/2	1	1 1/4	4.95

▲Cylinder accessory dimensions conform to NFFPA recommended standard NFFPA/T3.6.8 R1-1984, NFFPA recommended standard fluid power systems – cylinder – dimensions for accessories for cataloged square head industrial types. Parker adopted his standard in April, 1985. Eye brackets or mounting plates shipped before this date may have different dimensions and will not necessarily interchange with the NFFPA standard. For dimensional information on older style eye brackets or mounting plates consult Drawing #144805.

**For additional information – call your local Parker Cylinder Distributor.**

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# NOTES

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For Cylinder Division Plant Locations – See Page II.

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# Series MA NFA Industrial Air Cylinders

## How to Order

### How to Order Series “MA” Cylinders

When ordering Series MA cylinders, please review the following:

**Note:** Duplicate cylinders can be ordered by giving the SERIAL NUMBER from the nameplate of the original cylinder. Factory records supply a quick positive identification.

**Piston Rods:** Specify rod code number based on diameter. Give thread style number for a standard thread or specify dimensions. See “Style 3 Rod End” below.

**Cushions:** If cushions are required specify according to the model number on the next page. If the cylinder is to have a double rod and only one cushion is required, be sure to specify clearly which end of the cylinder is to be cushioned.

**Special Modifications:** Additional information is required on orders for cylinders with special modifications. This is best handled with descriptive notes. For further information, consult factory.

**Fluid Medium:** Series MA hydraulic cylinders are equipped with seals for use with lubricated air.

### Class 1 Seals

Class 1 seals are the seals provided as standard in a cylinder assembly unless otherwise specified. For further information on fluid compatibility or operating limitations of all components, see section C.

For the MA series cylinders the following make-up Class 1 Seals:  
Primary Piston Rod Seal – Nitrile with PTFE back-up washers

Piston Rod Wiper – Nitrile

Piston Seals – Nitrile with polymyte back-up washers

O-Rings – Nitrile

### Combination Mountings

**Single Rod End** The first mounting is the one called out on the head end of the cylinder. The second or subsequent mountings are called out as they appear in the assembly moving away from the rod end. Exception: When tie rod mountings are part of a combination, the model number should contain an “S” (Special) in the model code and a note in the body of the order clarifying the mounting arrangement. The “P” is used to define a thrust key and is not considered to be a mounting. However, it is located at the primary end.

Example: 4.00 CCBMALTS14AC x 10.000

Combination “C” mounting head only. “BB” mounting cap end  
This cylinder is also cushioned at both ends.

**Double Rod End** In general, the model number is read left to right corresponding to the cylinder as viewed from left to right with the primary end at rod end #1. See Double Rod Models information page

in this section. For this option the piston rod number, piston rod end, and piston rod threads are to be specified for both ends. The simplest are for symmetric cylinders such as: TD, C, E, F, G, and CB mounts. All other mounting styles, the description of the first rod end will be at the mounting end. In the case of multiple mounts, the description of the first rod end will be at the primary mounting end. For “DD” mounts, the description of the first rod end will be the same location as the “XI” dimension.

Example: 4.00 KDDMALT24A/18A x 10.000 XI=8

This is a center trunnion mounting cylinder with the XI dimension measured from the code 2 rod side of the cylinder which has the style 4 thread. The opposite end code 1 rod with the style 8 thread.

### Style 3 Rod End

A style 3 rod end indicates a special rod end configuration. All special piston rod dimensions must have **all three:** KK; A; W/WF or LA/LAF specified with the rod fully retracted. A sketch or drawing should be submitted for rod ends requiring special machining such as snap ring grooves, keyways, tapers, multiple diameters, etc. It is good design practice to have this machining done on a diameter at least 0.065 inches smaller than the piston rod diameter. This allows the piston rod to have a chamfer preventing rod seal damage during assembly or maintenance. Standard style 55 rod ends with a longer than standard

WG dimension should call out a style 3 rod end and the note: **same as 55 except WG=\_\_\_\_\_**. A drawing should be submitted for special 55 rod ends that have specific tolerances or special radii. Special rod ends that have smaller than standard male threads, larger than standard female threads, or style 55 rod ends with smaller than standard AF or AE dimensions are to be reviewed by Engineering for proper strength at operating pressure.

### Service Policy

On cylinders returned to the factory for repairs, it is standard policy for the Cylinder Division to make such part replacements as will put the cylinder in as good as new condition. Should the condition of the returned cylinder be such that expenses for repair would exceed the costs of a new one, you will be notified.

Address all correspondence and make shipments to, Service Department at your nearest regional plant listed in the pages of this catalog.

### Certified Dimensions

Parker Cylinder Division guarantees that all cylinders ordered from this catalog will be built to dimensions shown. All dimensions are certified to be correct, and thus it is not necessary to request certified drawings.

**For additional information – call your local Parker Cylinder Distributor.**

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# Series MA NFPA Industrial Air Cylinders

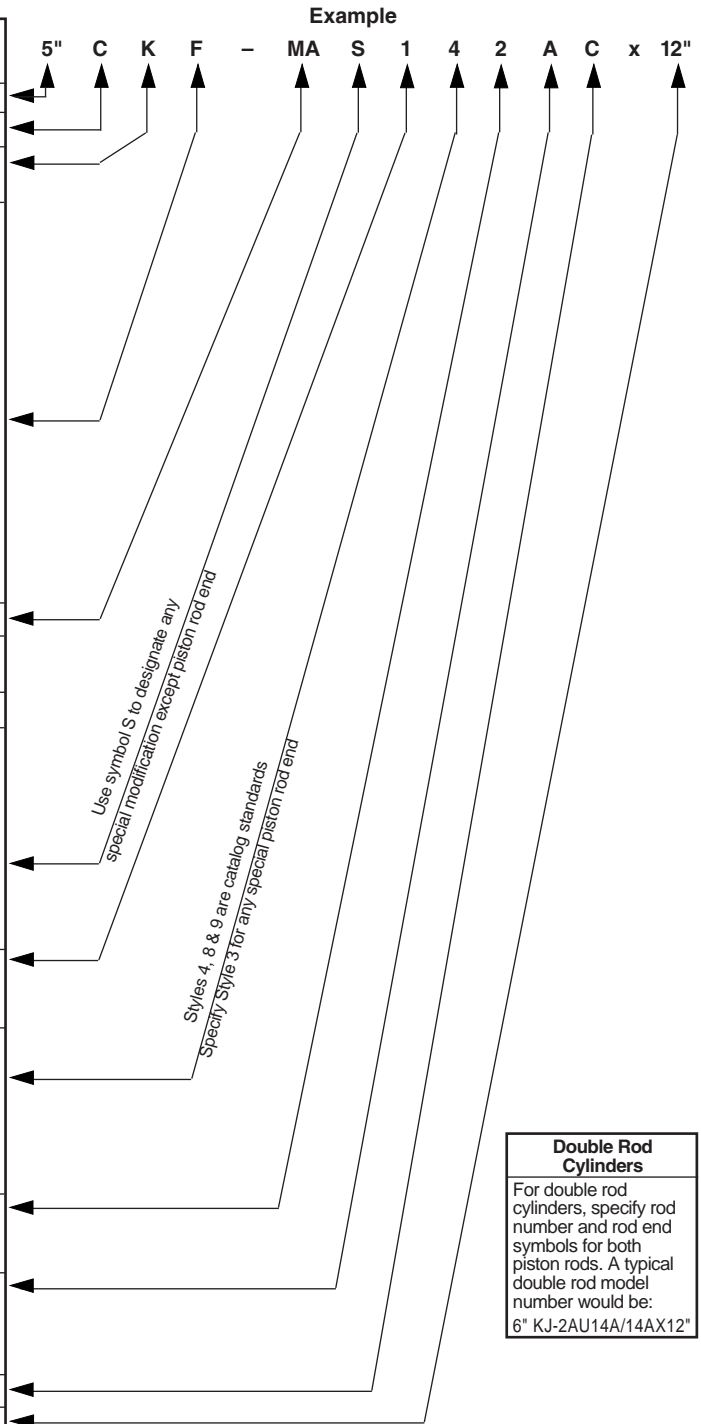
Model Numbers

## Series MA Model Numbers – How to Develop Them – How to “Decode” Them

Parker Series MA cylinders can be completely and accurately described by a model number consisting of coded symbols. To develop a model number, select only those symbols that represent the cylinder required, and place them in the sequence indicated below.

**Note:** Page numbers with a letter prefix, ie: C77, are located in section C of this catalog.

Feature	Description	Page No.	Symbol
<b>Bore</b>	Specify in inches	—	—
<b>Cushion Head</b>	Used <b>only</b> if cushion head is required	58	C
<b>Double Rod</b>	Used <b>only</b> if double rod cylinder is required	65	K
<b>Mounting Style</b>	Head Tie Rods Extended		TB
	Cap Tie Rods Extended		TC
	Both End Tie Rods Extended		TD
	Head Rectangular Flange		J
	Cap Rectangular Flange	60, 61	H
	Side Lug	62, 63,	C
	Side Tapped	64 & 65	F
	Cap Fixed Clevis		BB
	Cap Detachable Clevis		BC
	Head Trunnion		D
	Cap Trunnion		DB
	Intermediate Fixed Trunnion		DD
<b>Series</b>	Used in all MA Model Numbers	—	MA
<b>Piston</b>	Lipseal™ Piston standard. No need for symbol in model number.	—	—
<b>Ports</b>	NPTF (Dry Seal) Ports are standard.	C89-91	—
<b>Special Modifications</b>	Used <b>only</b> if special modifications are required:		
	Oversize Ports	C89-91	
	Port Position Change	C89-91	
	Stop Tube•	C95	S
	Stroke Adjuster	C93	
Fluorocarbon Seals	C83		
<b>Piston Rod Number</b>	For Single Rod Cylinders, Select only one. Check chart on Page C96 for minimum piston rod diameter.	60 & 65	1 3
	Select:		
<b>Piston Rod End</b>	Style 4 Small Male		4
	Style 8 Intermediate Male	60, 62, 64, 65	8
	Style 9 Short Female		9
	Style 3 Special (Specify)		3
<b>Piston Rod Alternate Threads</b>	Used <b>only</b> for two times longer than standard.	C92	2
<b>Piston Rod Threads</b>	UNF Standard		A
	BSF (British Fine)	C92	W
	Metric		M
<b>Cushion Cap</b>	Used <b>only</b> if cushion cap is required	58	C
<b>Stroke•</b>	Specify in inches	C93	—



**Double Rod Cylinders**

For double rod cylinders, specify rod number and rod end symbols for both piston rods. A typical double rod model number would be: 6" KJ-2AU14A/14AX12"

\*Required for Basic Cylinder Model Number •In case of stop tube, call out gross stroke length.  
Dark Arrows Indicate Basic Minimum Model Number.

Cylinder serial numbers are factory production record numbers and are assigned to each cylinder, in addition to the model number.

For Cylinder Division Plant Locations – See Page II.

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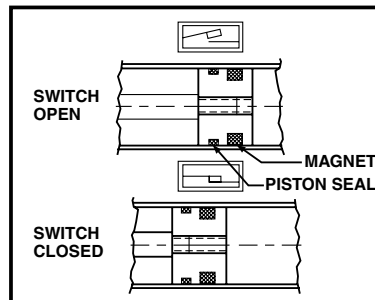
# Series MA NFA Industrial Air Cylinders

## Switches

### Magnetically Actuated Switches

The MA adjustable switch has been designed for use on Series MA Pneumatic Cylinders. It is a normally open switch. The compact design of the switch causes a minimum interference with cylinder envelope dimensions. The MA switch will sense the magnetic piston through a non-ferrous cylinder barrel. Several MA switches may be mounted on a single cylinder to control or sequence several functions.

The MA switch is mounted on a single tie rod with an aluminum extrusion for easy adjustment. Its rugged construction will provide millions of trouble free cycles. It is ideally suited as an input to programmable controllers or to activate an industrial relay.



### Switch Specifications

	Reed Switch Assembly MAR-2 L074480000	Solid State Switch Assembly MAS-3 PNP Sourcing L074490000 MAS-4 NPN Sinking L074500000	Reed Switch Assembly MAR-2 L074480000	Solid State Switch Assembly MAS-3 PNP Sourcing L074490000 MAS-4 NPN Sinking L074500000
Switching Logic	Normally Open, SPST	NPN or PNP		
Supply Voltage Range	5 to 125 V AC/DC	5 TO 30 VDC	14° to 140°F (-10° to 60°C)	14° to 158°F (-10° to 70°C)
Max. Switching Power	10 Watts (Resistive) 5 Watts (Inductive)	6 Watts	-4° to 158°F (-20° to 70°C)	-4° to 176°F (-20° to 80°C)
Max. Switching Current	300 mA (Resistive) 150 mA (Inductive)	200 mA at 24 VDC	Red, Target Present When On	Red, Target Present When On
Circuit Current Consumption	—	Max 14 mA at 24 VDC	Minimum Current To Light LED	18 mA
Short Circuit Interruption Current	—	370 mA	Lead Wire Lengths	39 Inches, 1 Meter
Leakage Current	—	10 µA Maximum		
Residual Voltage	Maximum 3 V	1.5 V Maximum		
*On* State Voltage Drop	1.7V Maximum	See Below		
Response	1000 Hz Maximum	1000 Hz Maximum		
Shock Resistance	30G Non-Repeated Shock	30G Non-Repeated Shock		
Degree Of Protection	IEC IP 67	IEC IP 67		

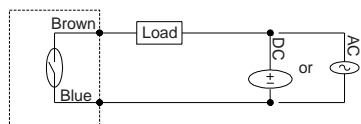
\*Polarity is restricted to DC operation: (+) to Brown (-) to Blue  
If these connections are reversed the contacts will close, but the LED will not light.  
Note: For switches with connectors and cordsets, see Section C.

### Circuits

#### Reed Switch (MAS-2)

Part No. .... L074480000

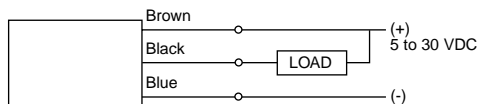
NOTE: Polarity must be observed for DC operation only.



#### NPN Sinking Output (MAS-4)

Part No. .... L074500000

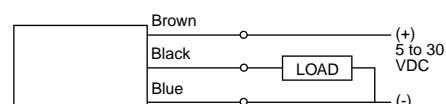
Color of Cable ..... Black  
"On" State Voltage Drop ..... 0.7V Maximum



#### PNP Sourcing Output (MAS-3)

Part No. .... L074490000

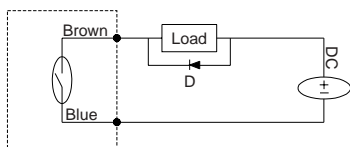
Color of Cable ..... Gray  
"On" State Voltage Drop ..... 0.2V Maximum



### Circuit for Switching Contact Protection (Inductive Loads)

#### (Required for proper operation 24V DC)

Put Diode parallel to loads following polarity as shown below.



D: Diode: select a Diode with the breakdown voltage and current rating according to the load.

Typical Example—100 Volt, 1 Amp Diode

Load: Relay coil (under 0.5W coil rating) (Recommended for longer life 125 VAC)

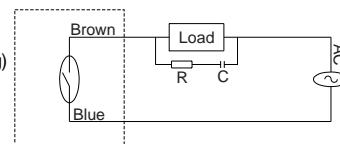
Put a resistor and capacitor in parallel with the load. Select the resistor and capacitor according to the load.

#### Typical Example:

Load: Relay coil (under 2W coil rating)

R: Resistor 1 KΩ - 5 KΩ, 1/4 W

C: Capacitor 0.1 µF, 600 V



### ⚠ Caution

- Use an ammeter to test reed switch current. Testing devices such as incandescent light bulbs may subject the reed switch to high in-rush loads.
- **NOTE:** When checking an unpowered reed switch for continuity with a digital ohmmeter the resistance reading will change from infinity to a very large resistance (2 M ohm) when the switch is activated. This is due to the presence of a diode in the reed switch.
- Anti-magnetic shielding is recommended for reed switches exposed to high external RF or magnetic fields.
- The magnetic field strength of the piston magnet is designed to operate with our switches. Other manufacturers' switches or sensors may not operate correctly in conjunction with these magnets.

- Current capabilities are relative to operational temperatures.
- Use relay coils for reed switch contact protection.
- The operation of some 120 VAC PLC's (especially some older Allen-Bradley PLC's) can overload the reed switch. The switch may fail to release after the piston magnet has passed. This problem may be corrected by the placement of a 700 to 1K OHM resistor between the switch and the PLC input terminal. Consult the manufacturer of the PLC for appropriate circuit.
- Switches with long wire leads (greater than 15 feet) can cause capacitance build-up and sticking will result. Attach a resistor in series with the reed switch (the resistor should be installed as close as possible to the switch). The resistor should be selected such that R (ohms) >E/0.3.

For additional information – call your local Parker Cylinder Distributor.

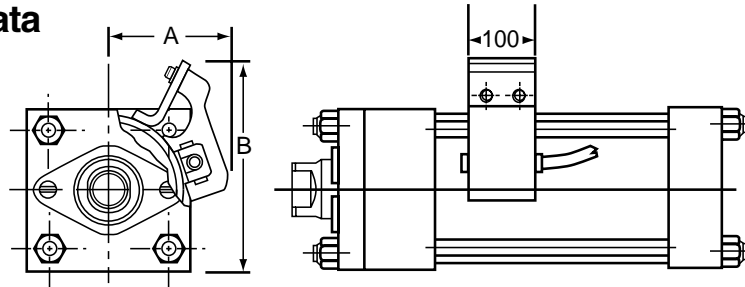
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# Series MA NFPA Industrial Air Cylinders

## Switch Mounting Data

### MA Switch Mounting Data



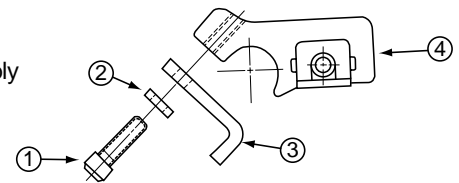
Bore	A	B	PISTON TRAVEL AT MIDSTROKE (SWITCH ON) (±.01)	MINIMUM ACTIVATION DISTANCE FROM END OF STROKE	
				Head	Cap
1½	1.90	2.71	.37	.20	.20
2	2.10	3.25	.37	.20	.20
2½*	2.20	3.60	.37	.13	.13
3¼*	2.70	4.25	.37	.13	.13
4*	2.90	4.90	.37	.13	.13
5*†	3.20	5.85	.37	0	0
6*†	3.82	6.70	.37	0	0

**NOTE:**  
\* To maintain minimum activation distance switch can only be mounted with "LED" against end plate because of cable interference on 'End of Stroke' applications.  
† On 5.0" and 6.0" bore cylinders, end of stroke activation will occur without the switch physically touching the head or cap.

### Standard MA Switch Assembly

Consists of:

- 0106280032 (2) #8-32 Sh. Cap Screw
- 0108850008 (2) Lockwasher
- 0854530000 (1) Bracket Clamp
- (1) Switch & Bracket Sub-Assembly  
MAR-2 – 0862580000  
MAS-3 – 0862590000  
MAS-4 – 0862600000



### How to Order:

MA switches are not mounted to the cylinder prior to shipment. When ordering a cylinder to accommodate a MA switch:

- Derive a proper model number as shown in the table below.
- Place an "S" in the special features column.
- Underneath the model number specify:  
1) Cylinder prepared for MA switch.
- As a separate item specify the number of switch assemblies required.

	BORE SIZE	CUSHION HEAD END	DOUBLE ROD	MOUNTING STYLE	SERIES	SPECIAL FEATURES	PISTON ROD NO.	PISTON ROD END	PISTON ROD ALTERNATE THREADS	THREAD TYPE	CUSHION CAP END	STROKE
	6	C	K	J	MA	S	1	4	2	A	C	X12
<b>E X A M P L E</b>	Specify 1½" thru 6"	Specify only if cushion head end is required	Use only if Double Rod Cylinder is required	Specify Mounting Style: T, TB, TC, TD, J, H, C, F, BB, BC, D, DB or DD	Specify Series MA	Specify for cylinder prepared for switches and/or other modifications	Specify Rod Code No.	Specify Style 4 Small Male Style 8 Intermediate Male Style 9 Short Female Style 3 Special Specify KK, A, LA, LAF, W, WF Dim.	Use only for 2x longer than standard rod end thread	Specify: A = UNF W = BSF M = METRIC	Specify only if Cushion Cap End is required	Specify in inches. Show Symbol "X" just ahead of stroke length

**Example:** To order a 2½" x 10" MA cylinder with MA switches to sense the end of stroke at both the head and cap end specify:

Item	Qty.	Description	
A	(1)	2.50 C J MAS 14A C x 10.000 (1) Cylinder prepared for MA Switch	* #L074480000 – MAR-2 #L074490000 – MAS-3 #L074500000 – MAS-4
B	(2)	(*) Switch Assemblies	

For Cylinder Division Plant Locations – See Page II.

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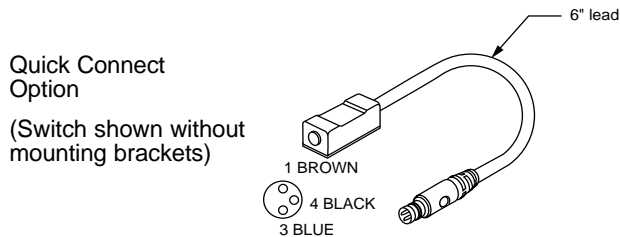


A

**Magnet Actuated Switches with Quick Connect**

Magnet Actuated Switches are available for Series SRM, P, 2MA, MP, and RC cylinders. Refer to the appropriate Catalog information for electrical specifications on each switch. The standard lead wire length is 39" (1 meter).

Switches for the above cylinders are also offered with a 6 (six) inch lead with a male quick connect option.



Switches are supplied with the bracket to mount the switch to the cylinder. Refer to the switch information for each series for bracket dimensions.

**Switches with 6" Lead and Quick Connect Male End**

Series	Reed	NPN Sinking	PNP Sourcing
SR, P	145903000C	146714000C	146715000C
MA	L07448000C	L07450000C	L07449000C
2MA (1 1/2"-2 1/2", 5", 6") (3 1/4", 4", 8")	L07486000C L07487000C	L07488000C L07490000C	L07491000C L07492000C
MP 32mm, 40mm 50mm, 63mm 80mm, 100mm	L07525000C L07526000C L07527000C	L07528000C L07529000C L07530000C	L07531000C L07532000C L07533000C
RC	L07480000C	L07481000C	L07482000C

**Cordset with Female Quick Connect (Order Separately)**

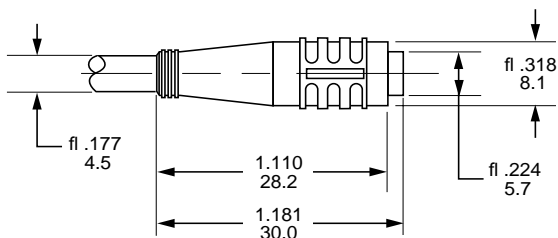
A female connector is available for all switches with the male quick connect option. The male plug will accept a snap-on or threaded connector. Cylinder Division cordset part numbers and other manufacturer's part numbers are listed below:

Manufacturer	Snap-On Version	Threaded Version
Parker	086620S005	086620T005

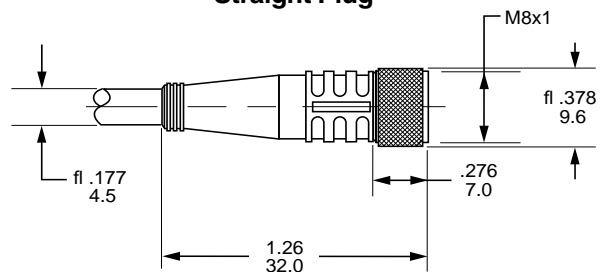
**Cordset Specifications:**

- Connector: Oil resistant polyurethane body material, PA 6 (Nylon) contact carrier, spacings to VDE 0110 Group C, (150 VAC / DC)
- Contacts: Gold plated beryllium copper, machined from solid stock
- Coupling Method: Snap-Lock or chrome plated brass nut
- Cord Construction: Oil resistant black PUR jacket, non-wicking, non-hygroscopic, 300V. Cable end is stripped and tinned.
- Conductors: Extra high flex stranding, PVC insulation
- Temperature: -40° to 185°F (-40° to 85°C)
- Protection: NEMA 1, 3, 4, 6P and IEC IP67
- Cable Length: 6.56 ft (2m) or 16.4 ft (5m)

**Snap-On Straight Plug**



**Threaded Straight Plug**



**For additional information – call your local Parker Cylinder Distributor.**



# Parker *inPHorm*<sup>TM</sup>

## Cylinder Sizing, Selection, and Parametric CAD Software

Parker is pleased to introduce Version 1.5 of *inPHorm*<sup>TM</sup> for **Cylinders**. This program allows you to select the proper Parker cylinder for your application. *inPHorm* for **Cylinders** will increase your efficiency and minimize the engineering time required to design in cylinders. This new release, *inPHorm* **0860 CD/USA Version 1.5** has been updated with new product lines and seal kit information.

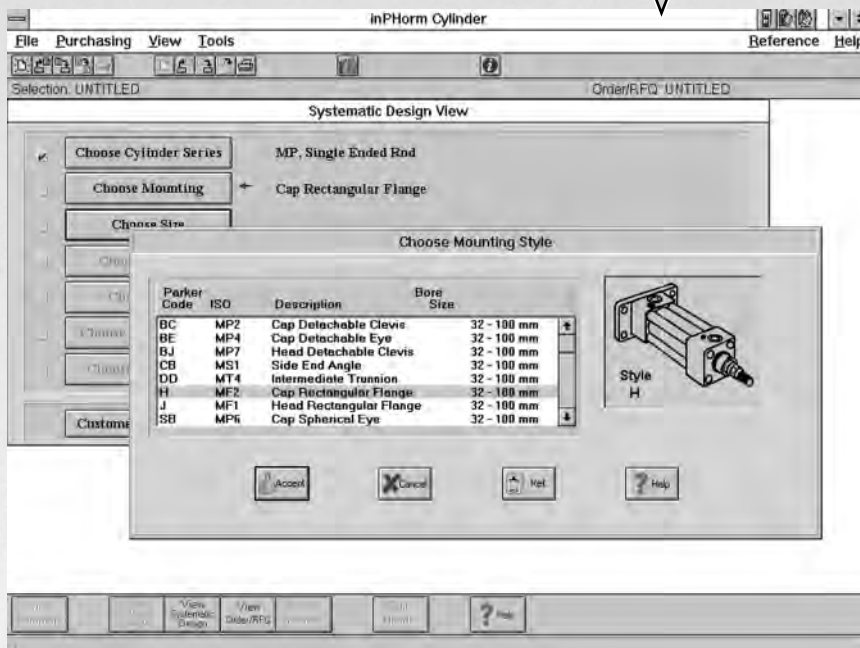
*inPHorm* for **Cylinders** is written for use with Windows, which makes it extremely user friendly. You can use the program to develop a model number. *inPHorm* for **Cylinders** guides you through the selection process, performs the calculations, and eases the process of sorting through catalog drawings, charts and tables. You can also employ the "Direct Part Number Entry" module to input a known model number. In either case, you can view a dimensioned

drawing, generate a print or DXF file and even create a quote request or order form.

"Advisor" options within the program offer additional assistance with special modifications and design considerations.



THE UPDATED  
VERSION 1.5  
NOW ON  
CD



During any portion of the program, reference material can be accessed or printed for future use.

The *inPHorm* cylinders sizing, selection and parametric CAD software is designed around the user to assist in the design process and minimize the time required to specify, draw and file your favorite Parker Cylinder product. By working with the Parker *inPHorm* for **Cylinders** software, the design, selection and specification of Parker cylinders becomes easier and faster for the most effective use of your valuable time.

### System Highlights

- Cylinder Sizing and Selection
- Parametric Drawing Creation
- Windows-based
- Input Formats:
  - Direct Part Number Entry
  - Systematic Design
- Available Information Outputs:
  - HPGL CAD Drawing
  - CAD File (\*.dxf)
  - Selection Summary
  - Printout
  - RFQ/Order Sheet Printout

For further details, or to purchase your copy of *inPHorm* for **Cylinders**, call your local Parker distributor or 1-800-C-Parker (272-7537). To try *inPHorm* visit our web site at [www.Parker.com/cylinder](http://www.Parker.com/cylinder).

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