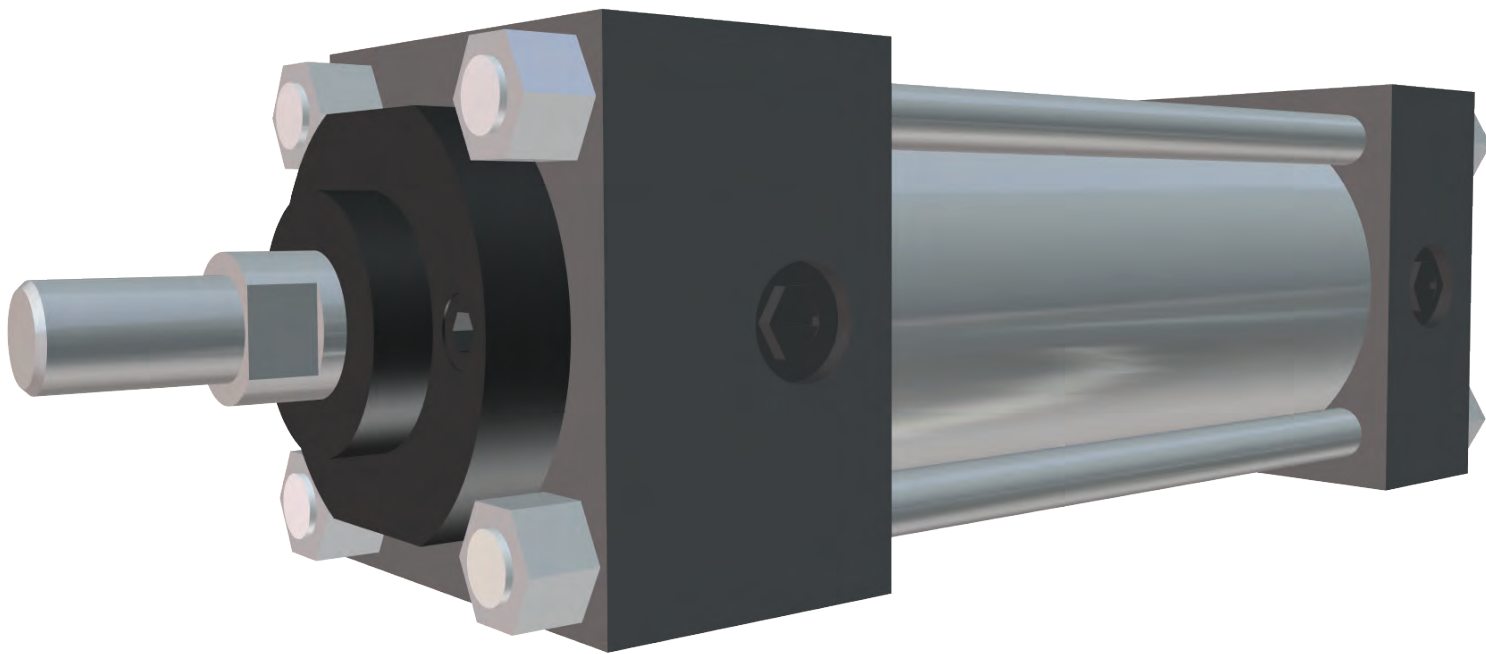


Class 5A

Low Pressure NFPA Aluminum Cylinders



NOPAK

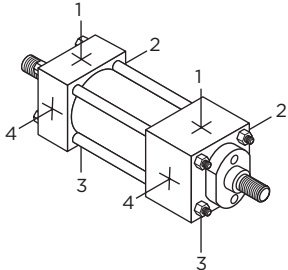
First in Manufacturing. Engineered to Last.

ORDERING CODE EXAMPLE

CL5A - 4.00 x 12.00 - E* - AA - 1.00 - 4 - OPT

| CLASS | | STROKE | | ROD DIAMETER | | ROD END THREAD | | CUSHIONS | | OPTIONS | |
|-------------|---------------------------------------|--------------|------------------------|---|---|--------------------|--|-------------|--|--|--|
| 5A | 250 PSI AIR ALUMINUM | UP TO 120" | | SEE CHART AT RESPECTIVE BORE SIZE FOR ROD SIZES AVAILABLE | | SEE CHART PAGE 75) | | NO CUSHIONS | | (CALL OUT BELOW CYLINDER DESCRIPTION) | |
| Bore | | MODEL | | ROD END THREAD | | CUSHIONS | | | | | |
| 1.50 | D MF1 - FRONT FLANGE | 1 | FULL MALE THREAD | NN | NO CUSHIONS | | | | | TYPE B SEALS - FLUOROCARBON | |
| 2.00 | C MF2 - REAR FLANGE | 3 | INTERMEDIATE MALE | AA | CUSHIONED BOTH ENDS | | | | | DIM. WF - ROD EXTENSION | |
| 2.50 | DG ME3 - FRONT MOUNTING HOLES | 4 | SMALL MALE (STANDARD) | NA | NO CUSHION ROD END CUSHIONED BLIND END | | | | | DIM. A - EXTENDED ROD THREAD | |
| 3.25 | CJ ME4 - REAR MOUNTING HOLES | 5 | FEMALE THREAD | AN | CUSHIONED ROD END NO CUSHION BLIND END | | | | | EMS-201: ELECTROLESS NICKEL PLATING (SEE PAGE 92) | |
| 4.00 | E MP1 - FIXED REAR CLEVIS | 6 | PLAIN END (NO THREADS) | | | | | | | MAGNETIC PISTON | |
| 5.00 | HE MP2 - DETACHABLE REAR CLEVIS | 7 | ROD COUPLER END | | | | | | | METALLIC ROD SCRAPER | |
| 6.00 | E4 MP4 - DETACHABLE REAR EYE | 9 | STUDDED | | | | | | | OPTIONAL PORT LOCATIONS | |
| 8.00 | AP MS1 - ANGLE PLATE | | | | | | | | | STAINLESS STEEL PISTON ROD | |
| 10.00 | A MS2 - FOOT MOUNT | | | | | | | | | STAINLESS STEEL TIE RODS | |
| 12.00 | S MS4 - SIDE TAPPED HOLES | | | | | | | | | STAINLESS STEEL TIE ROD NUTS | |
| | FR MT1 - FRONT TRUNNION | | | | | | | | | STAINLESS STEEL FASTENERS | |
| | FB MT2 - REAR TRUNNION | | | | | | | | | STAINLESS STEEL ALL: INCLUDES PISTON ROD, TIE RODS, TIE ROD NUTS AND FASTENERS | |
| | F MT4 - INTERMEDIATE TRUNNION | | | | | | | | | STAINLESS STEEL CUSHION NEEDLES | |
| | H MX0 - NO MOUNT | | | | | | | | | STOP TUBE - SPECIFY STOP TUBE LENGTH, EFFECTIVE STROKE AND TOTAL STROKE | |
| | T MX1 - EXTENDED TIE RODS (BOTH ENDS) | | | | | | | | | | |
| | TB MX2 - EXTENDED TIE RODS (CAP END) | | | | | | | | | | |
| | TR MX3 - EXTENDED TIE RODS (ROD END) | | | | | | | | | | |

* FOR DOUBLE ROD END CYLINDERS, ADD AN "X" BEFORE THE MODEL IDENTIFICATION (EXAMPLE: XA, XD, XFR).

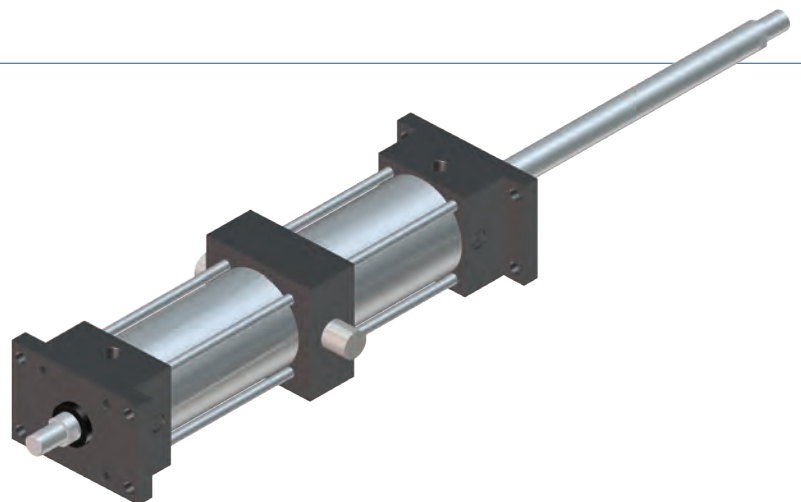
| STANDARD PORT AND CUSHION ADJUSTMENT POSITIONS | |
|--|---|
| • PORTS - POSITION 1 |  |
| • CUSHION ADJUSTMENT - POSITION 2 | |
| <p>NOTE: When optional port locations are ordered, specify both port locations, even if one port is in the standard location.</p> | |

COMBINATION MOUNTS

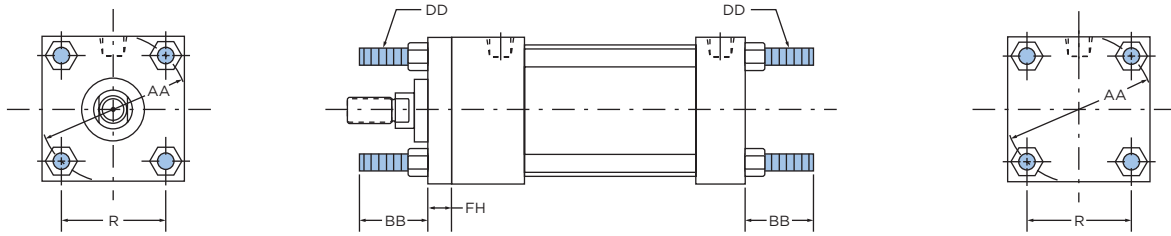
Cylinders can be ordered with a combination of mounts for added design flexibility.

HOW TO ORDER:

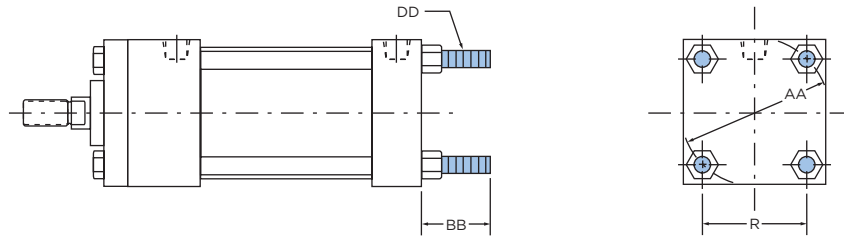
Combination mount part numbers can be constructed by adding a dash (-) in between the desired mounts in the part number. Consult factory for more information.



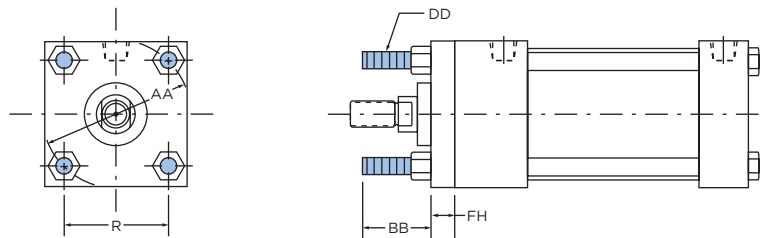
MODEL T (NFPA MX1)



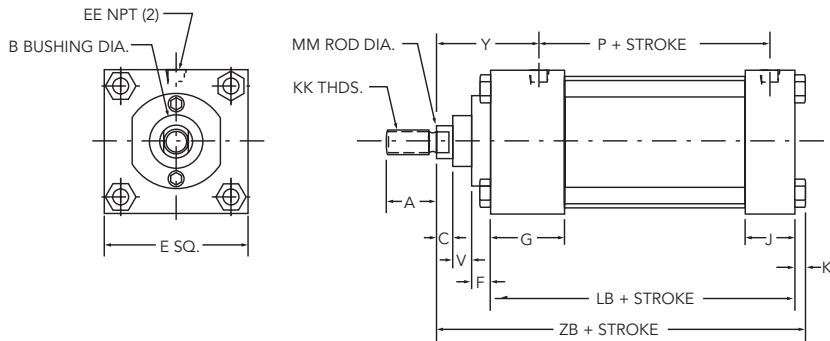
MODEL TB (NFPA MX2)



MODEL TR (NFPA MX3)



BASIC DIMENSIONS



TIE ROD MOUNT CYLINDERS

1.50" THROUGH 12.00" BORE

Table 1 BASIC DIMENSIONS STANDARD & OVERSIZE RODS

| BORE | ROD DIAMETER | A | B | C | E | EE | F | G | J | K | KK | LB | MM | P | RM | V | Y | ZB |
|-------|--------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|----------|-------|-------|-------|------|-------|-------|-------|
| 1.50 | 0.63 | 0.750 | 1.125 | 0.375 | 2.000 | 0.375 | 0.375 | 1.500 | 1.000 | 0.250 | 7/16-20 | 3.625 | 0.625 | 2.375 | 2.00 | 0.250 | 1.875 | 4.875 |
| | 1.00 | 1.125 | 1.500 | 0.500 | 2.000 | 0.375 | 0.375 | 1.500 | 1.000 | 0.250 | 3/4-16 | 3.625 | 1.000 | 2.375 | 2.00 | 0.500 | 2.250 | 5.250 |
| 2.00 | 0.63 | 0.750 | 1.125 | 0.375 | 2.500 | 0.375 | 0.375 | 1.500 | 1.000 | 0.313 | 7/16-20 | 3.625 | 0.625 | 2.375 | 2.00 | 0.250 | 1.875 | 4.938 |
| | 1.00 | 1.125 | 1.500 | 0.500 | 2.500 | 0.375 | 0.375 | 1.500 | 1.000 | 0.313 | 3/4-16 | 3.625 | 1.000 | 2.375 | 2.50 | 0.500 | 2.250 | 5.313 |
| 2.50 | 0.63 | 0.750 | 1.125 | 0.375 | 3.000 | 0.375 | 0.375 | 1.500 | 1.000 | 0.313 | 7/16-20 | 3.750 | 0.625 | 2.500 | 2.00 | 0.250 | 1.875 | 5.063 |
| | 1.00 | 1.125 | 1.500 | 0.500 | 3.000 | 0.375 | 0.375 | 1.500 | 1.000 | 0.313 | 3/4-16 | 3.750 | 1.000 | 2.500 | 3.00 | 0.500 | 2.250 | 5.438 |
| 3.25 | 1.00 | 1.125 | 1.500 | 0.500 | 3.750 | 0.500 | 0.625 | 1.750 | 1.250 | 0.375 | 3/4-16 | 4.250 | 1.000 | 2.750 | 2.75 | 0.250 | 2.375 | 6.000 |
| | 1.38 | 1.625 | 2.000 | 0.625 | 3.750 | 0.500 | 0.625 | 1.750 | 1.250 | 0.375 | 1-14 | 4.250 | 1.000 | 1.375 | 3.75 | 0.375 | 2.625 | 6.250 |
| 4.00 | 1.00 | 1.125 | 1.500 | 0.500 | 4.500 | 0.500 | 0.625 | 1.750 | 1.250 | 0.375 | 3/4-16 | 4.250 | 1.000 | 2.750 | 2.75 | 0.250 | 2.375 | 6.000 |
| | 1.38 | 1.625 | 2.000 | 0.625 | 4.500 | 0.500 | 0.625 | 1.750 | 1.250 | 0.375 | 1-14 | 4.250 | 1.000 | 1.375 | 3.50 | 0.375 | 2.625 | 6.250 |
| 5.00 | 1.00 | 1.125 | 1.500 | 0.500 | 5.500 | 0.500 | 0.625 | 1.750 | 1.250 | 0.438 | 3/4-16 | 4.500 | 1.000 | 3.000 | 2.75 | 0.250 | 2.375 | 6.313 |
| | 1.38 | 1.625 | 2.000 | 0.625 | 5.500 | 0.500 | 0.625 | 1.750 | 1.250 | 0.438 | 1-14 | 4.500 | 1.000 | 1.375 | 3.50 | 0.375 | 2.625 | 6.563 |
| 6.00 | 1.38 | 1.625 | 2.000 | 0.625 | 6.500 | 0.750 | 0.625 | 2.000 | 1.500 | 0.438 | 1-14 | 5.000 | 1.375 | 3.250 | 3.50 | 0.375 | 2.750 | 7.063 |
| | 1.75 | 2.000 | 2.375 | 0.750 | 6.500 | 0.750 | 0.625 | 2.000 | 1.500 | 0.438 | 1-1/4-12 | 5.000 | 1.750 | 3.250 | 3.50 | 0.500 | 3.000 | 7.313 |
| 8.00 | 1.38 | 1.625 | 2.000 | 0.625 | 8.500 | 0.750 | 0.625 | 2.000 | 1.500 | 0.563 | 1-14 | 5.125 | 1.375 | 3.375 | 3.50 | 0.375 | 2.750 | 7.313 |
| | 1.75 | 2.000 | 2.375 | 0.750 | 8.500 | 0.750 | 0.625 | 2.000 | 1.500 | 0.563 | 1-1/4-12 | 5.125 | 1.750 | 3.375 | 3.50 | 0.500 | 3.000 | 7.563 |
| 10.00 | 1.75 | 2.000 | 2.375 | 0.750 | 10.625 | 1.000 | 0.625 | 2.250 | 2.000 | 0.688 | 1-1/4-12 | 6.375 | 1.750 | 4.313 | 3.50 | 0.500 | 3.063 | 8.938 |
| | 2.00 | 2.250 | 2.625 | 0.875 | 10.625 | 1.000 | 0.750 | 2.250 | 2.000 | 0.688 | 1-1/2-12 | 6.375 | 2.000 | 4.313 | 5.00 | 0.375 | 3.188 | 9.063 |
| 12.00 | 2.00 | 2.250 | 2.625 | 0.875 | 12.750 | 1.000 | 0.750 | 2.250 | 2.000 | 0.688 | 1-1/2-12 | 6.875 | 2.000 | 4.813 | 5.00 | 0.375 | 3.188 | 9.563 |
| | 2.50 | 3.000 | 3.125 | 1.000 | 12.750 | 1.000 | 0.750 | 2.250 | 2.000 | 0.688 | 1-7/8-12 | 6.875 | 2.500 | 4.813 | 5.00 | 0.500 | 3.438 | 9.813 |

Table 2 MODELS T, TB AND TR TIE ROD EXTENDED MOUNT DIMENSIONS

| BORE | ROD DIAMETER | AA | BB | DD | FH | R |
|-------|--------------|--------|---------|---------|--------|-------|
| 1.50 | 0.63 | 2.020 | 1.000 | 1/4-28 | 0.375 | 1.430 |
| | 1.00 | 2.020 | 1.000 | 1/4-28 | 0.375 | 1.430 |
| 2.00 | 0.63 | 2.600 | 1.125 | 5/16-24 | 0.375 | 1.840 |
| | 1.00 | 2.600 | 1.125 | 5/16-24 | 0.375 | 1.840 |
| 2.50 | 0.63 | 3.100 | 1.125 | 5/16-24 | 0.375 | 2.190 |
| | 1.00 | 3.100 | 1.125 | 5/16-24 | 0.375 | 2.190 |
| 3.25 | 1.00 | 3.900 | 1.375 | 3/8-24 | 0.625 | 2.760 |
| | 1.38 | 3.900 | 1.375 | 3/8-24 | 0.625 | 2.760 |
| 4.00 | 1.00 | 4.700 | 1.375 | 3/8-24 | 0.625 | 3.320 |
| | 1.38 | 4.700 | 1.375 | 3/8-24 | 0.625 | 3.320 |
| 5.00 | 1.00 | 5.800 | 1.813 | 1/2-20 | 0.625 | 4.100 |
| | 1.38 | 5.800 | 1.813 | 1/2-20 | 0.625 | 4.100 |
| 6.00 | 1.38 | 6.900 | 1.813 | 1/2-20 | 0.750 | 4.880 |
| | 1.75 | 6.900 | 1.813 | 1/2-20 | 0.750 | 4.880 |
| 8.00 | 1.38 | 9.100 | **2.313 | 5/8-18 | *0.625 | 6.440 |
| | 1.75 | 9.100 | **2.313 | 5/8-18 | *0.625 | 6.440 |
| 10.00 | 1.75 | 11.200 | **2.688 | 3/4-16 | *0.625 | 7.920 |
| | 2.00 | 11.200 | **2.688 | 3/4-16 | *0.750 | 7.920 |
| 12.00 | 2.00 | 13.300 | **2.688 | 3/4-16 | *0.750 | 9.400 |
| | 2.50 | 13.300 | **2.688 | 3/4-16 | *0.750 | 9.400 |

* T & TR have full square bushing retainer on 1.50"- 6.00" bores, round retainers on 8.00"-12.00" bores.

** BB dimension from face of head.