

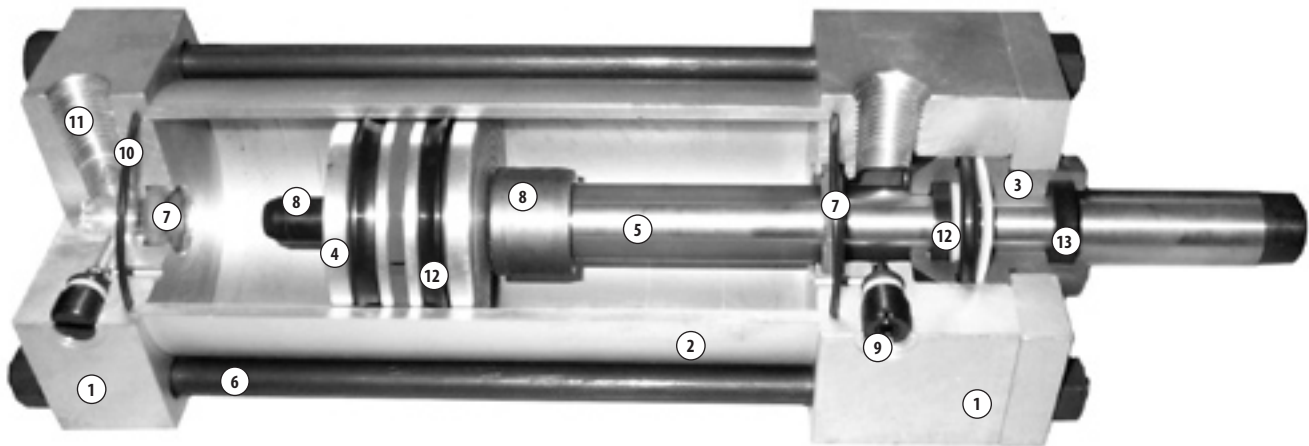
# ALUMINUM

## Series A2/H2

AIR SERVICE/ LIGHT DUTY HYDRAULIC



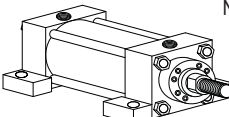
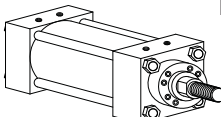
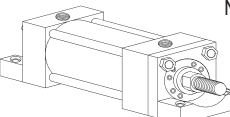
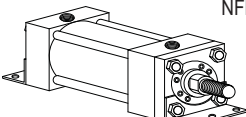
## A2 FEATURES



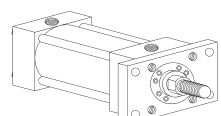
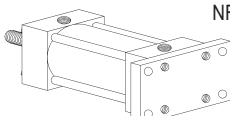
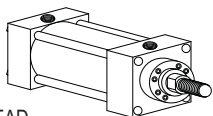
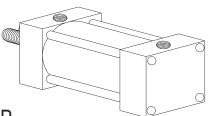
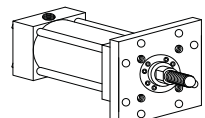
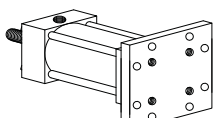
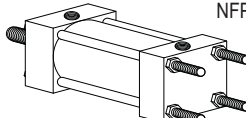
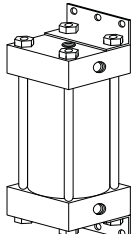
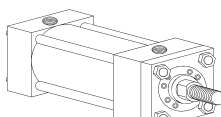
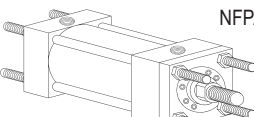
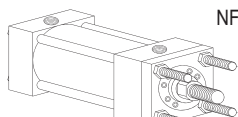
- 1. HEAD/CAP-** Precision machined from solid aluminum alloy bar stock (6061-T6).
- 2. CYLINDER BARREL-** Clear anodized aluminum alloy tubing with file hard coat I.D. provides superior seal life and excellent abrasion resistance. Tube ends are piloted into head and cap for positive cylinder alignment and concentricity.
- 3. ROD CARTRIDGE-** Extra long high strength bronze gland provides maximum bearing support and wear resistance. With certain exceptions, a removable retainer allows for gland removal without cylinder disassembly.
- 4. PISTON-** Lightweight, high strength, precision machined from solid aluminum alloy (6061-T6). Magnetic ring for switch actuation is optional.
- 5. PISTON ROD-** High strength steel piston rod has a ground, polished and hard chrome plated surface for extended bearing and seal life.
- 6. TIE RODS-** High strength steel, roll threaded for added strength and engagement.
- 7. CUSHION SEALS-** State of the art self-aligning, self-checking elastomeric cushion seals ensure quick break-away. Eliminates the need for ball checks and provides optimum cushioning.
- 8. CUSHIONS-** Cap cushion spear and floating head cushion bushing provide consistent cushioning performance.
- 9. CUSHION ADJUSTMENTS-** Flush mounted captive cushion adjustment allows safe cushion adjustment under pressure. Cushion needle design provides a wide range of cushion adjustment.
- 10. TUBE END SEALS-** (O-ring) compression type seals available in many different compounds. Seals are re-usable if performing maintenance or repair.
- 11. PORTS-** NPT ports are standard. SAE ports are optional.
- 12. PISTON AND ROD SEALS-** The Carboxylated nitrile "U" cups with Teflon<sup>®</sup> compound ensures long seal life and low friction in lubricated and non-lubricated applications.
- 13. ROD WIPER-** Double lip Carboxylated nitrile with Teflon<sup>®</sup> compound acts as secondary seal while keeping dirt, dust and other contaminants out.

# A2 MOUNTING STYLES

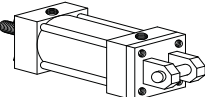
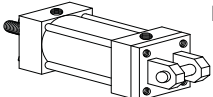
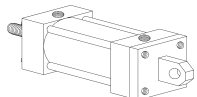
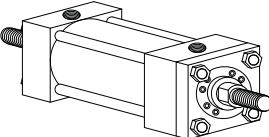
## SIDE MOUNTS

<p><b>STYLE A</b> PAGE <b>84-85</b> NFPA-MS2</p>  <p>SIDE LUGS 1 1/2-8" BORE</p>	<p><b>STYLE B</b> PAGE <b>84-85</b> NFPA-MS4</p>  <p>SIDE TAPPED 1 1/2-8" BORE</p>	<p><b>STYLE E</b> PAGE <b>86-87</b> NFPA-MS7</p>  <p>SIDE END LUGS 1 1/2-8" BORE</p>	<p><b>STYLE Y</b> PAGE <b>88-89</b> NFPA-MS1</p>  <p>SIDE ANGLE MOUNT 1 1/2-8" BORE</p>
---	---	--	--

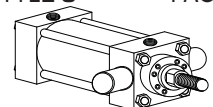
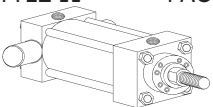
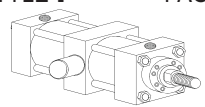
## END MOUNTS

<p><b>STYLE F</b> PAGE <b>94-95</b> NFPA-MF1</p>  <p>HEAD RECTANGULAR FLANGE 1 1/2-6" BORE</p>	<p><b>STYLE R</b> PAGE <b>94-95</b> NFPA-MF2</p>  <p>CAP RECTANGULAR FLANGE 1 1/2-6" BORE</p>	<p><b>STYLE X</b> PAGE <b>96-97</b> NFPA-ME3</p>  <p>HEAD SQUARE INTEGRAL FLANGE 8" BORE</p>	<p><b>STYLE Z</b> PAGE <b>96-97</b> NFPA-ME4</p>  <p>CAP SQUARE INTEGRAL FLANGE 8" BORE</p>
<p><b>STYLE J</b> PAGE <b>94-95</b> NFPA-MF5</p>  <p>HEAD SQUARE FLANGE 1 1/2-6" BORE</p>	<p><b>STYLE S</b> PAGE <b>94-95</b> NFPA-MF6</p>  <p>CAP SQUARE FLANGE 1 1/2-6" BORE</p>	<p><b>STYLE N</b> PAGE <b>98-99</b> NFPA-MX2</p>  <p>CAP TIE RODS EXTENDED 1 1/2-8" BORE</p>	<p><b>STYLE YAT</b> PAGE <b>116-117</b> AIR/OIL TANKS</p>  <p>3 1/4-8" BORES YATES "Y" MOUNT STD. (OTHER MOUNTINGS AVAILABLE UPON REQUEST)</p>
<p><b>STYLE K</b> PAGE <b>98-99</b> NFPA-MX0</p>  <p>NO TIE RODS EXTENDED 1 1/2-8" BORE</p>	<p><b>STYLE L</b> PAGE <b>98-99</b> NFPA-MX1</p>  <p>BOTH ENDS TIE RODS EXTENDED 1 1/2-8" BORE</p>	<p><b>STYLE M</b> PAGE <b>98-99</b> NFPA-MX3</p>  <p>HEAD TIE RODS EXTENDED 1 1/2-8" BORE</p>	

## PIVOT MOUNTS – CLEVIS AND EYE

<p><b>STYLE C</b> PAGE <b>90-91</b> NFPA-MP1</p>  <p>CAP CLEVIS (DETACHABLE) 1 1/2-6" BORE</p>	<p><b>STYLE DC</b> PAGE <b>90-91</b> NFPA-MP2</p>  <p>CAP DETACHABLE CLEVIS 1 1/2-6" BORE</p>	<p><b>STYLE DV</b> PAGE <b>90-91</b> NFPA-MP4</p>  <p>CAP DETACHABLE EYE 1 1/2-6" BORE</p>	<p>PAGE <b>100</b></p> <p>DOUBLE ROD END (ADD "D" AFTER STYLE)</p>  <p>AVAILABLE IN MOUNTING STYLES A, B, E, F, J, K, L, M, T, U, X, AND Y</p> <p>1 1/2-8" BORE</p>
---	--	--	--

## PIVOT MOUNTS – TRUNNION

<p><b>STYLE U</b> PAGE <b>92-93</b> NFPA-MT1</p>  <p>HEAD TRUNNION 1 1/2-8" BORE</p>	<p><b>STYLE W</b> PAGE <b>92-93</b> NFPA-MT2</p>  <p>CAP TRUNNION 1 1/2-8" BORE</p>	<p><b>STYLE T</b> PAGE <b>92-93</b> NFPA-MT4</p>  <p>INTERMEDIATE FIXED TRUNNION 1 1/2-8" BORE</p>
---	--	--

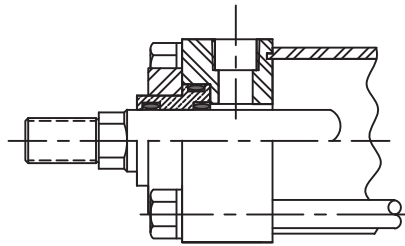
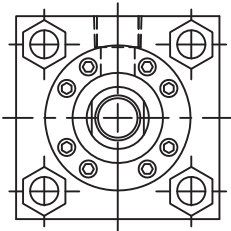
**YATES AIR AND HYDRAULIC CYLINDERS ARE DESIGNED TO ACCEPT YATES STANDARD MOUNTING ACCESSORIES. SEE PAGE 102 FOR ACCESSORY INFORMATION.**



## YATES A2/H2 SPECIFICATIONS

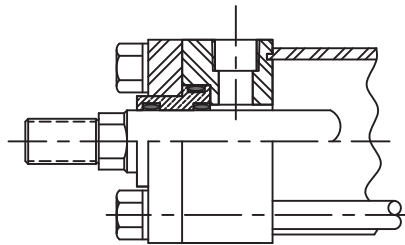
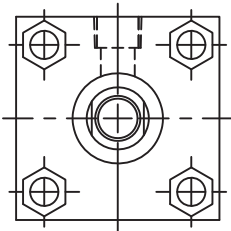
<b>PRESSURE RATING:</b>	A2 – Air Service to 250 PSI H2 – Non-cushioned, 400 PSI Hydraulic H2 – Cushioned, 250 PSI Hydraulic (non-stock)
<b>BORE SIZES:</b>	1 1/2" bore through 8" bore
<b>MOUNTING STYLES:</b>	20 different styles All N.F.P.A interchangeable
<b>TEMPERATURE:</b>	-40°F to 200°F standard

## RETAINER INFORMATION



Cylinders with the following bore and rod combinations use circular retainers which permit removal of rod cartridge without disassembling cylinder.

- 2 1/2 bore with 5/8 and 1" rods
- 3 1/4 bore with 1" and 1 3/8 rods
- 4 bore with 1, 1 3/8 rods
- 5 bore with 1, 1 3/8 rods
- 6 bore with 1 3/8, 1 3/4 rods
- 8 bore with 1 3/8 and 1 3/4 rods



Cylinders with the following bore and rod combinations use full plate retainer construction.

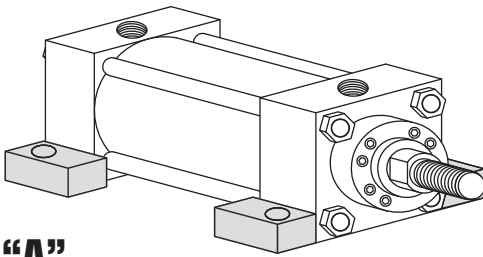
- 1 1/2 bore with 5/8 and 1 rods
- 2 bore with 5/8, and 1 rods

# HOW TO ORDER A2/H2 CYLINDERS

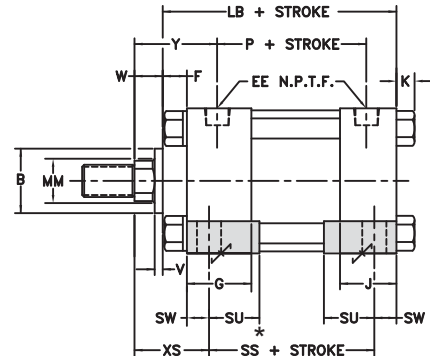
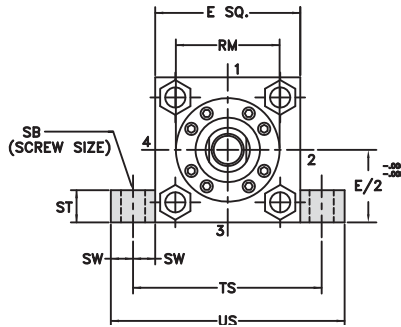
Feature	Description	Page #	Symbol	A	2	-	A	D	B	3	.	2	B	3	5	.	2	5	N	1	.	3	8	B	2	S	1	1
<b>Series</b>	Aluminum air service	82	A2	←																								
	Aluminum Hydraulic service		H2																									
<b>Mounting Style</b>	Side lugs (MS2)	81	A																									
	Side tapped (MS4)		B																									
	Side end lugs (MS7)		E																									
	Side Angle Mount (MS1)		Y																									
	Head rectangular flange (MF1)		F																									
	Cap rectangular flange (MF2)		R																									
	Head square flange (MF5)		J																									
	Cap square flange (MF6)		S																									
	Head square integral flange (ME3)		X																									
	Cap square integral flange (ME4)		Z																									
	No tie rods extended (MX0)		K																									
	Both ends tie rods extended (MX1)		L																									
	Head tie rods extended (MX3)		M																									
	Cap tie rods extended (MX2)		N																									
	Cap clevis (MP1)		C																									
	Cap detachable clevis (MP2)		DC																									
	Cap detachable eye (MP4)		DV																									
	Head trunnion (MT1)		U																									
	Cap trunnion (MT2)		W																									
	Intermediate fixed trunnion (MT4)		T																									
<b>Double Rod</b>	Double rod design if needed	100	D																									
<b>Cushions</b>	No cushions		N																									
	Cushion head end only		R																									
	Cushion cap end only		C																									
	Cushioned both ends		B																									
<b>Bore size</b>	Specify in inches	106-107																										
<b>Piston seals</b>	Carboxilated Nitrile- Standard	120	B																									
	Nitrile U-cups		N																									
	Poly seals		P																									
	Viton® seals		V																									
	Fluorocarbon poly seals		F																									
	Other (Specify)		X																									
<b>Stroke</b>	Specify in inches with 2 place decimal	107																										
<b>Ports</b>	NPTF		N																									
	SAE		S																									
	Other (Specify)		X																									
<b>Rod dia.</b>	Specify in inches	106-107																										
<b>Rod Seals</b>	Carboxilated Nitrile- Standard	120	B																									
	Nitrile		N																									
	Poly seals		P																									
	Viton® seals		V																									
	Fluorocarbon poly seals		F																									
<b>Rod End</b>	Standard male	101	2																									
	Standard female		4																									
	Intermediate male		1																									
	Long female		3																									
	Extended standard male		5																									
	Extended intermediate male		6																									
	Plain rod end		7																									
	Male full thread		8																									
	Male rod coupling		9																									
	Special male (specify)		M																									
	Special female (specify)		F																									
	Special stud (specify)		S																									
	Special other (specify)																											
<b>Specials Specify</b>	Magnetic Piston	120	S																									
	Stop tube																											
	Reed/ Hall Effect Switches																											
	Non-standard mount																											
	Stainless steel rod																											
	Extra rod extension																											
	Many more options available																											
<b>Head port</b>	specify location 1-4		1-4																									
<b>Cap port</b>	specify location 1-5		1-5																									



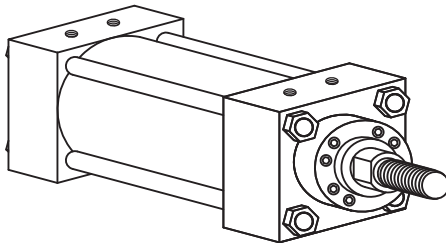
### SIDE LUGS MOUNT



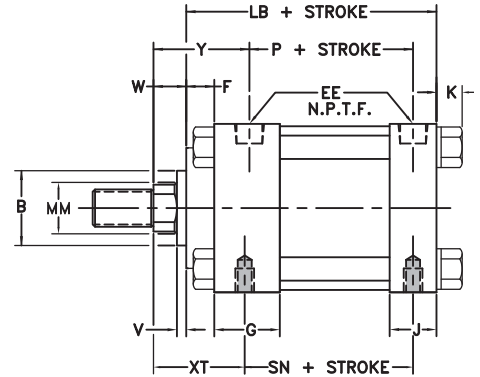
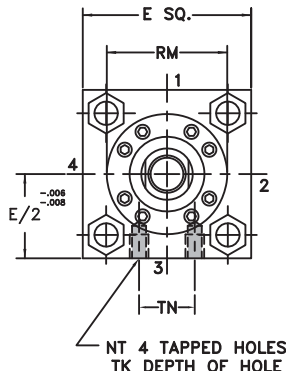
**"A"**  
YATES STYLE A  
NFPA-MS2



### SIDE TAPPED MOUNT

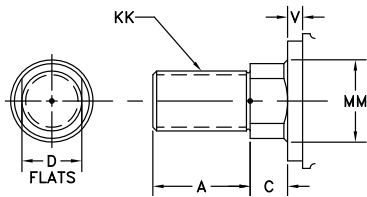


**"B"**  
YATES STYLE B  
NFPA-MS4

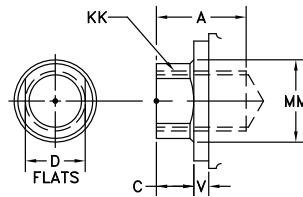


# STANDARD ROD ENDS

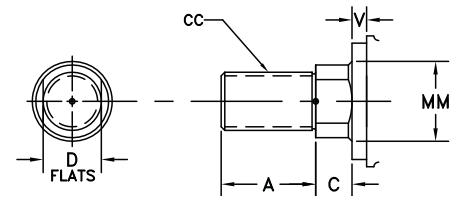
## #2 STD MALE NFPA-SM



## #4 STD FEMALE NFPA-SF



## #1 MALE NFPA-IM



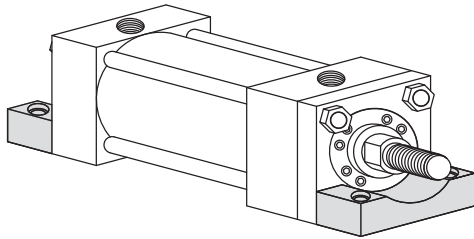
BORE																ADD STROKE			
	E	EE	F	G	J	K	SB	ST	SU	SW	TS	US	NT	TK	TN	LB	P	SS *	SN
1 1/2	2	3/8	3/8	1 1/2	1	1/4	3/8	1/2	15/16	3/8	2 3/4	3 1/2	1/4-20	3/8	5/8	4	2 1/4	2 7/8	2 1/4
2	2 1/2	3/8	3/8	1 1/2	1	5/16	3/8	1/2	15/16	3/8	3 1/4	4	5/16-18	1/2	7/8	4	2 1/4	2 7/8	2 1/4
2 1/2	3	3/8	3/8	1 1/2	1	5/16	3/8	1/2	15/16	3/8	3 3/4	4 1/2	3/8-16	5/8	1 1/4	4 1/8	2 3/8	3	2 3/8
3 1/4	3 3/4	1/2	5/8	1 3/4	1 1/4	3/8	1/2	3/4	1 1/4	1/2	4 3/4	5 3/4	1/2-13	3/4	1 1/2	4 7/8	2 5/8	3 1/4	2 5/8
4	4 1/2	1/2	5/8	1 3/4	1 1/4	3/8	1/2	3/4	1 1/4	1/2	5 1/2	6 1/2	1/2-13	3/4	2 1/16	4 7/8	2 5/8	3 1/4	2 5/8
5	5 1/2	1/2	5/8	1 3/4	1 1/4	7/16	3/4	1	1 9/16	11/16	6 7/8	8 1/4	5/8-11	1	2 11/16	5 1/8	2 7/8	3 1/8	2 7/8
6	6 1/2	3/4	3/4	2	1 1/2	7/16	3/4	1	1 9/16	11/16	7 7/8	9 1/4	3/4-10	1 1/8	3 1/4	5 3/4	3 1/8	3 5/8	3 1/8
8	8 1/2	3/4	3/4	2	1 1/2	9/16	3/4	1	1 9/16	11/16	9 7/8	11 1/4	3/4-10	1 1/8	4 1/2	5 7/8	3 1/4	3 3/4	3 1/4

BORE	ROD DIA. MM	THREAD		ROD EXTENSIONS AND PILOT DIMENSIONS								ENVELOPE AND MOUNTING DIMENSIONS		
		KK	CC	A	B †	C	D	V	W	RM	XS	XT	Y	
1 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	§	1 3/8	1 15/16	1 29/32	
	1†•Φ	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	§	1 3/4	2 5/16	2 9/32	
2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	§	1 3/8	1 15/16	1 29/32	
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	§	1 3/4	2 5/16	2 9/32	
2 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	2 3/8	1 3/8	1 15/16	1 29/32	
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 1/2	1 3/4	2 5/16	2 9/32	
3 1/4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	1 7/8	2 7/16	2 7/16	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 1/8	2 11/16	2 11/16	
4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	1 7/8	2 7/16	2 7/16	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 1/8	2 11/16	2 11/16	
5	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	2 1/16	2 7/16	2 7/16	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 5/16	2 11/16	2 11/16	
6	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	3 7/32	2 5/16	2 13/16	2 13/16	
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 7/8	2 9/16	3 1/16	3 1/16	
8	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	3 7/32	2 5/16	2 13/16	2 13/16	
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 7/8	2 9/16	3 1/16	3 1/16	

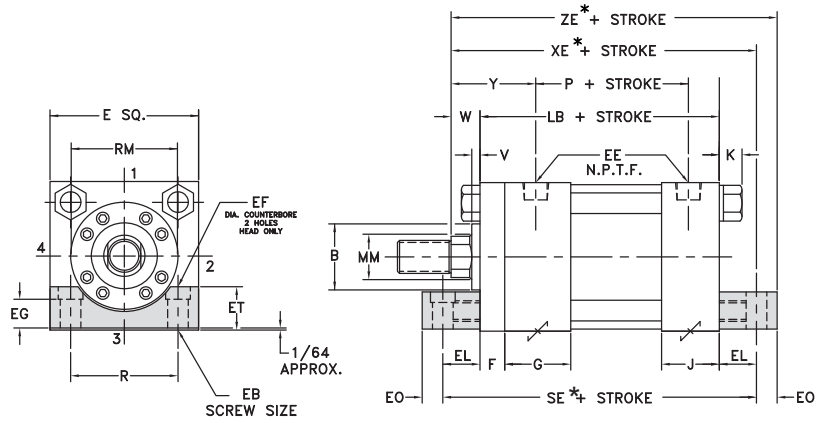
† HEAD END PORT SHALLOW TAPPED  
 • CUSHION NOT AVAILABLE ON HEAD END  
 ‡ B DIMENSION TOLERANCE -.001/-.003  
 § THESE CYLINDERS HAVE FULL PLATE RETAINERS. USE "E" DIMENSION INSTEAD OF "RM" - SEE PAGE 82  
 \* ON DOUBLE ROD CYLINDERS "SS" DIMENSION CHANGES, SEE PAGE 100  
 Φ "B" MOUNT NOT AVAILABLE WITH STANDARD MOUNTING DIMENSIONS, CONSULT FACTORY  
**NOTE:** SUGGESTED THAT THESE MOUNTS BE KEYPED OR PINNED TO PREVENT SHIFTING - SEE PAGE 73



### SIDE END LUGS MOUNT



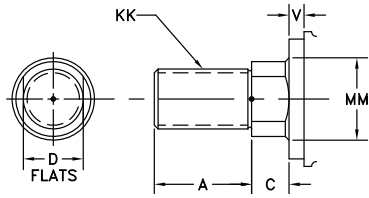
**“E”**  
YATES STYLE **E**  
NFPA-MS7



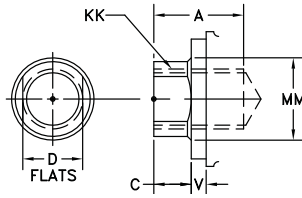


# STANDARD ROD ENDS

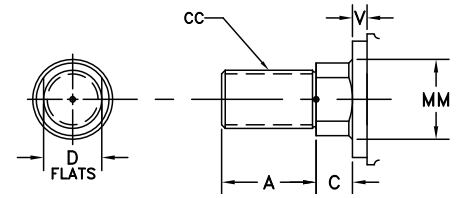
## #2 STD MALE NFPA-SM



## #4 STD FEMALE NFPA-SF



## #1 MALE NFPA-IM



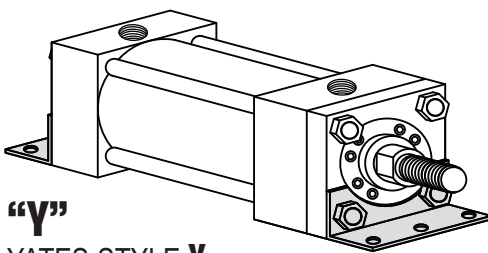
BORE	E	EE	F	G	J	K	EB	EF	EG	EL	EO	ET	R	LB	ADD STROKE	
															SE*	P
1 1/2	2	3/8	3/8	1 1/2	1	1/4	1/4	1/2	7/16	3/4	1/4	9/16	1.43	4	5 1/2	2 1/4
2	2 1/2	3/8	3/8	1 1/2	1	5/16	5/16	1/2	15/32	15/16	5/16	3/4	1.84	4	5 7/8	2 1/4
2 1/2	3	3/8	3/8	1 1/2	1	5/16	5/16	1/2	5/8	1 1/16	5/16	7/8	2.19	4 1/8	6 1/4	2 3/8
3 1/4	3 3/4	1/2	5/8	1 3/4	1 1/4	3/8	3/8	NA	NA	7/8	3/8	1	2.76	4 7/8	6 5/8	2 5/8
4	4 1/2	1/2	5/8	1 3/4	1 1/4	3/8	3/8	NA	NA	1	3/8	1 1/4	3.32	4 7/8	6 7/8	2 5/8
5	5 1/2	1/2	5/8	1 3/4	1 1/4	7/16	1/2	7/8	1 1/4	1 1/16	1/2	1 1/2	4.10	5 1/8	7 1/4	2 7/8
6	6 1/2	3/4	3/4	2	1 1/2	7/16	1/2	7/8	1 1/4	1	1/2	1 5/8	4.88	5 3/4	7 3/4	3 1/8
8	8 1/2	3/4	3/4	2	1 1/2	9/16	5/8	NA	NA	1 1/8	5/8	2	6.44	5 7/8	7 3/8	3 1/4

BORE	ROD DIA. MM	ROD EXTENSIONS AND PILOT DIMENSIONS											ADD STROKE	
		KK	CC	A	B	C	D	V	W	RM	Y	XE*	ZE*	
1 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	§	1 29/32	5 3/8	5 5/8	
	1 †Ω	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	§	2 9/32	5 3/4	6	
2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	§	1 29/32	5 9/16	5 7/8	
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	§	2 9/32	5 15/16	6 1/4	
2 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	2 3/8	1 29/32	5 13/16	6 1/8	
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 1/2	2 9/32	6 3/16	6 1/2	
3 1/4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	2 7/16	6 1/2	6 7/8	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 11/16	6 3/4	7 1/8	
4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	2 7/16	6 5/8	7	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 11/16	6 7/8	7 1/4	
5	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	2 7/16	6 15/16	7 7/16	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 11/16	7 3/16	7 11/16	
6	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	3 7/32	2 13/16	7 5/8	8 1/8	
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 7/8	3 1/16	7 7/8	8 3/8	
8	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	3 7/32	2 13/16	7 7/8	8 1/2	
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 7/8	3 1/16	8 1/8	8 3/4	

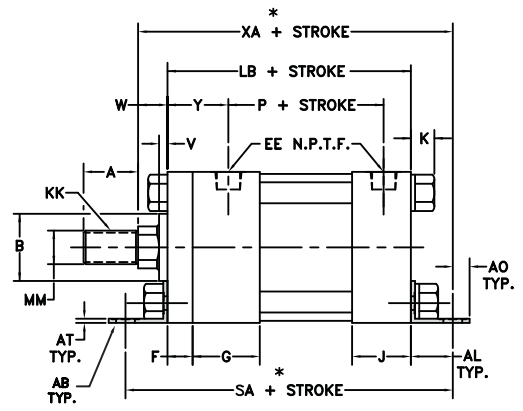
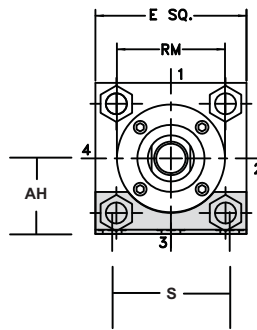
† HEAD END PORTS SHALLOW TAPPED  
 Ω CUSHION NOT AVAILABLE ON HEAD END  
 § THESE CYLINDERS HAVE FULL PLATE RETAINERS. USE "E" DIMENSION INSTEAD OF "RM" - SEE PAGE 82  
 ‡ B DIMENSION TOLERANCE -.001/ -.003  
 \* SE, XE & ZE DIMENSION CHANGES ON DOUBLE ROD CYLINDERS, SEE PAGE 100 FOR DETAILS  
**NOTE:** SUGGESTED THAT THESE MOUNTS BE KEYED OR PINNED TO PREVENT SHIFTING - SEE PAGE 73



### SIDE END ANGLE MOUNT

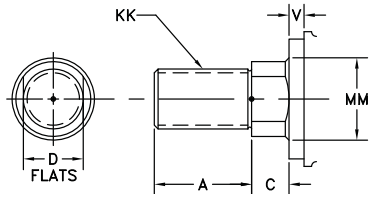


**“V”**  
YATES STYLE V  
NFPA-MS1

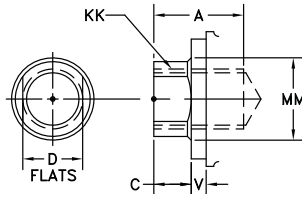


# STANDARD ROD ENDS

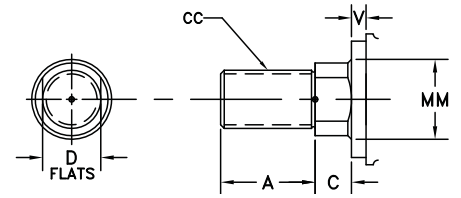
## #2 STD MALE NFPA-SM



## #4 STD FEMALE NFPA-SF



## #1 MALE NFPA-IM



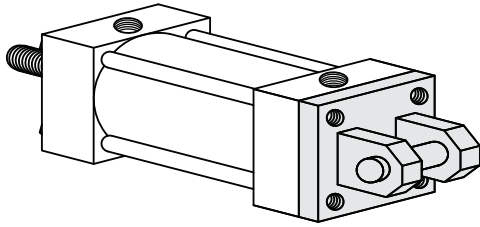
BORE													ADD STROKE		
	E	EE	F	G	J	K	S	AB	AH	AL	AO	AT	LB	SA	P
1 1/2	2	3/8	3/8	1 1/2	1	1/4	1 1/4	3/8	1 3/16	1	3/8	1/8	4	6	2 1/4
2	2 1/2	3/8	3/8	1 1/2	1	5/16	1 3/4	3/8	1 7/16	1	3/8	1/8	4	6	2 1/4
2 1/2	3	3/8	3/8	1 1/2	1	5/16	2 1/4	3/8	1 5/8	1	3/8	1/8	4 1/8	6 1/8	2 3/8
3 1/4	3 3/4	1/2	5/8	1 3/4	1 1/4	3/8	2 3/4	1/2	1 15/16	1 1/4	1/2	1/8	4 7/8	7 3/8	2 3/8
4	4 1/2	1/2	5/8	1 3/4	1 1/4	3/8	3 1/2	1/2	2 1/4	1 1/4	1/2	1/8	4 7/8	7 3/8	2 5/8
5	5 1/2	1/2	5/8	1 3/4	1 1/4	7/16	4 1/4	5/8	2 3/4	1 3/8	5/8	3/16	5 1/8	7 7/8	2 7/8
6	6 1/2	3/4	3/4	2	1 1/2	7/16	5 1/4	3/4	3 1/4	1 3/8	5/8	1/4	5 3/4	8 1/2	3 1/8
8	8 1/2	3/4	3/4	2	1 1/2	9/16	7 1/8	3/4	4 1/4	1 13/16	11/16	1/4	5 7/8	8 3/4	3 1/4

BORE	ROD DIA.	ROD EXTENSIONS AND PILOT DIMENSIONS										ADD STROKE
	MM	KK	CC	A	B †	C	D	V	W	RM	Y	XA
1 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	§	1 29/32	5 5/8
	1 †Ω	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	§	2 9/32	6
2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	§	1 29/32	5 5/8
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	§	2 9/32	6
2 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	2 3/8	1 29/32	5 3/4
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 1/2	2 9/32	6 1/8
3 1/4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 3/8	2 7/16	6 7/8
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 1/2	2 11/16	7 1/8
4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	2 7/16	6 7/8
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 11/16	7 1/8
5	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 1/2	2 7/16	7 1/4
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	3 7/32	2 11/16	7 1/2
6	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	3 7/32	2 13/16	8
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 7/8	3 1/16	8 1/4
8	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	3 7/32	2 13/16	8 9/16
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 7/8	3 1/16	8 13/16

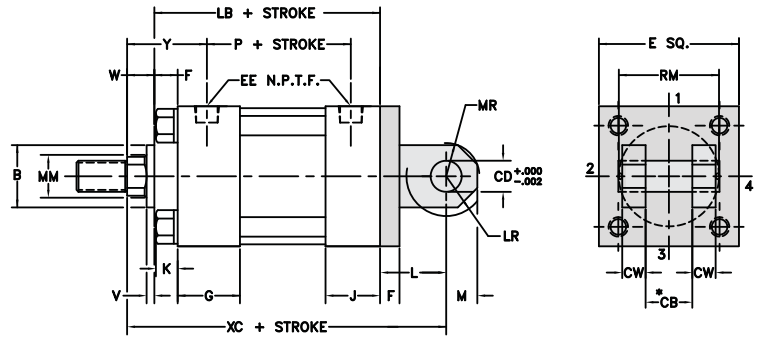
† HEAD END PORTS SHALLOW TAPPED  
 Ω CUSHION NOT AVAILABLE ON HEAD END  
 § THESE CYLINDERS HAVE FULL PLATE RETAINERS. USE "E" DIMENSION INSTEAD OF "RM" - SEE PAGE 82  
 ‡ B DIMENSION TOLERANCE -.001/ -.003  
 \* SA, XA, DIMENSION CHANGES ON DOUBLE ROD CYLINDERS, SEE PAGE 100 FOR DETAILS  
**NOTE:** SUGGESTED THAT THESE MOUNTS BE KEYPED OR PINNED TO PREVENT SHIFTING - SEE PAGE 73



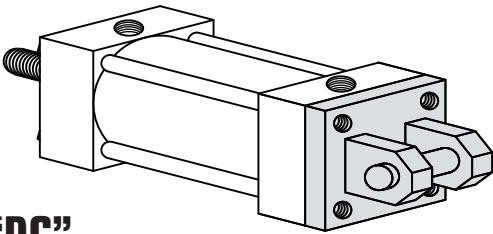
### CAP CLEVIS MOUNT (DETACHABLE)



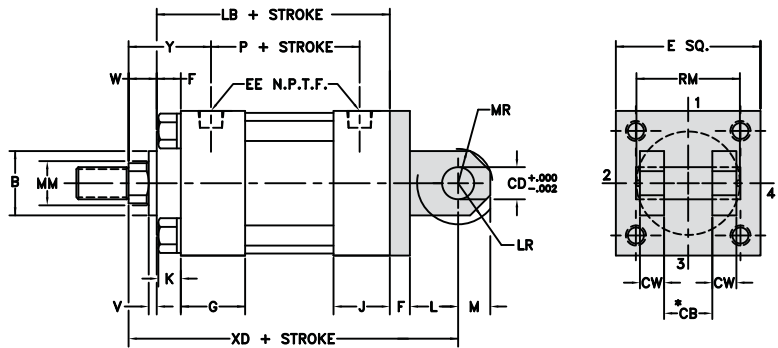
**“C”**  
YATES STYLE C  
NFPA-MP1



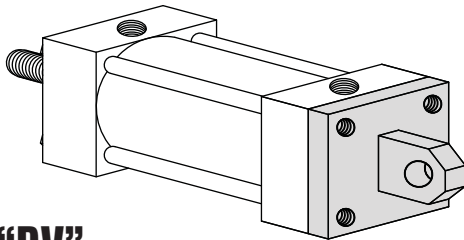
### CAP DETACHABLE CLEVIS MOUNT



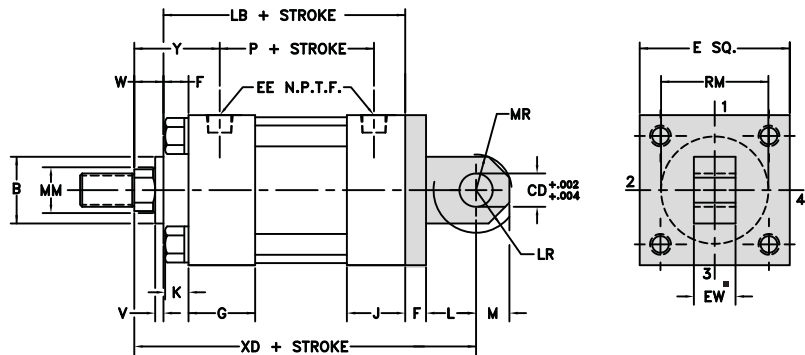
**“DC”**  
YATES STYLE DC  
NFPA-MP2



### CAP DETACHABLE EYE MOUNT

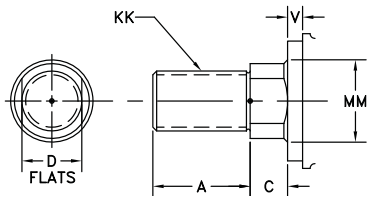


**“DV”**  
YATES STYLE DV  
NFPA-MP4

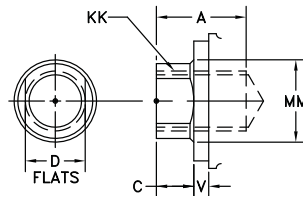


# STANDARD ROD ENDS

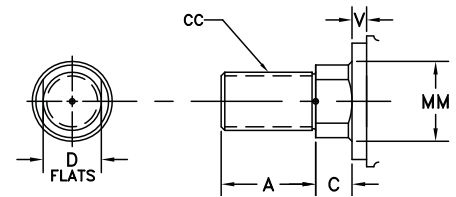
**#2 STD MALE**  
NFPA-SM



**#4 STD FEMALE**  
NFPA-SF



**#1 MALE**  
NFPA-IM



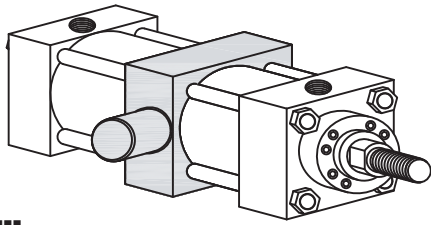
BORE	E	EE	F	G	J	K	CB*	CD	CW	EW	L	LR	MR	ADD STROKE	
														LB	P
1 1/2	2	3/8	3/8	1 1/2	1	1/4	3/4	1/2	1/2	3/4	3/4	9/16	5/8	4	2 1/4
2	2 1/2	3/8	3/8	1 1/2	1	5/16	3/4	1/2	1/2	3/4	3/4	9/16	5/8	4	2 1/4
2 1/2	3	3/8	3/8	1 1/2	1	5/16	3/4	1/2	1/2	3/4	3/4	9/16	5/8	4 1/8	2 3/8
3 1/4	3 3/4	1/2	5/8	1 3/4	1 1/4	3/8	1 1/4	3/4	5/8	1 1/4	1 1/4	1 1/16	7/8	4 7/8	2 5/8
4	4 1/2	1/2	5/8	1 3/4	1 1/4	3/8	1 1/4	3/4	5/8	1 1/4	1 1/4	1 1/16	7/8	4 7/8	2 5/8
5	5 1/2	1/2	5/8	1 3/4	1 1/4	7/16	1 1/4	3/4	5/8	1 1/4	1 1/4	1 1/16	7/8	5 1/8	2 7/8
6	6 1/2	3/4	3/4	2	1 1/2	7/16	1 1/2	1	3/4	1 1/2	1 1/2	1 5/16	1 1/4	5 3/4	3 1/8

BORE	ROD DIA.	THREAD		ROD EXTENSIONS AND PILOT DIMENSIONS									ADD STROKE	
		MM	KK	CC	A	B †	C	D	V	W	Y	RM	XD	XC
1 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	§	5 3/4	5 3/8	
	1†	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	§	6 1/8	5 3/4	
2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	§	5 3/4	5 3/8	
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	§	6 1/8	5 3/4	
2 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	2 3/8	5 7/8	5 1/2	
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	2 1/2	6 1/4	5 7/8	
3 1/4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	7 1/2	6 7/8	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	7 3/4	7 1/8	
4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	7 1/2	6 7/8	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	7 3/4	7 1/8	
5	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	7 3/4	7 1/8	
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	8	7 3/8	
6	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	2 13/16	3 7/32	8 7/8	8 1/8	
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 1/16	3 7/8	9 1/8	8 3/8	

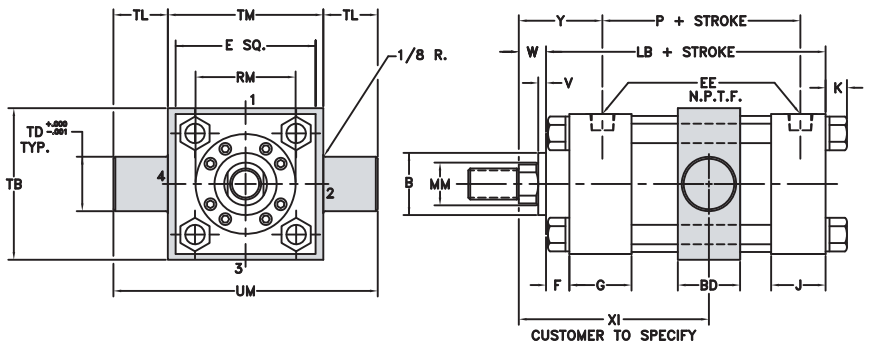
† HEAD END PORTS SHALLOW TAPPED  
 • CUSHION NOT AVAILABLE ON HEAD END  
 § THESE CYLINDERS HAVE FULL PLATE RETAINERS. USE "E" DIMENSION INSTEAD OF "RM" - SEE PAGE 82  
 ‡ B DIMENSION TOLERANCE -.001/ -.003  
 \* CLEVIS DESIGNED TO FIT YATES STD EYE BRACKET - SEE PAGE 103  
 ■ EYE DESIGNED TO FIT YATES STD CLEVIS BRACKET - SEE PAGE 102  
**NOTE:** MP4 MOUNT DOES NOT INCLUDE PIVOT PIN



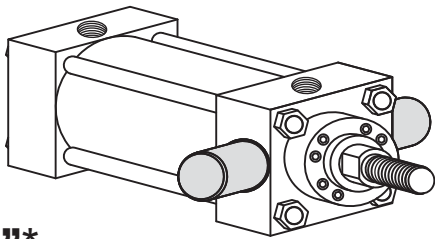
### INTERMEDIATE FIXED TRUNNION MOUNT



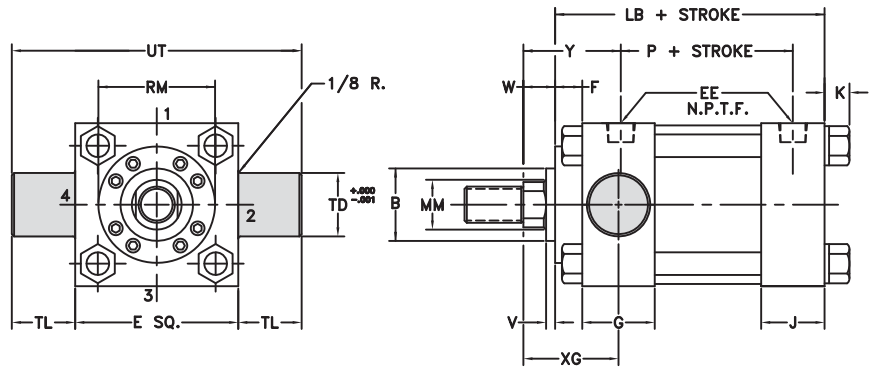
**“T”**  
YATES STYLE T  
NFPA-MT4



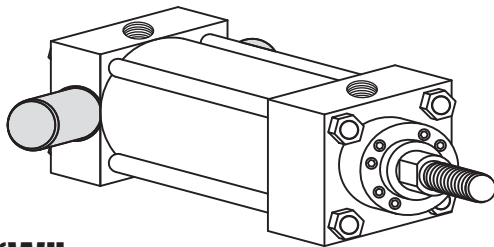
### HEAD TRUNNION MOUNT



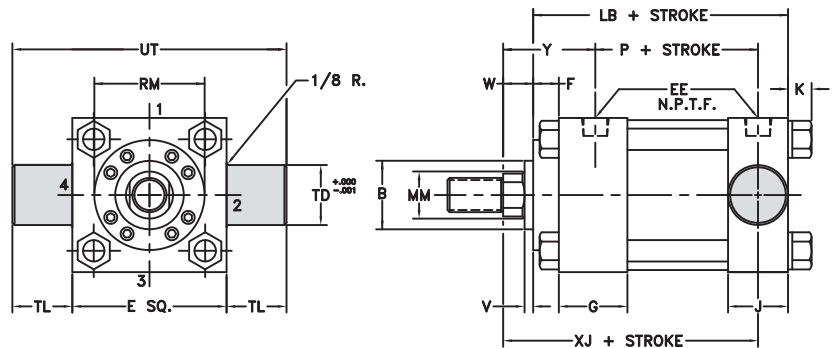
**“U”\***  
YATES STYLE U  
NFPA-MT1



### CAP TRUNNION MOUNT

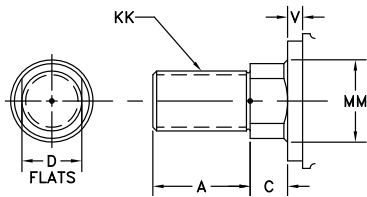


**“W”**  
YATES STYLE W  
NFPA-MT2

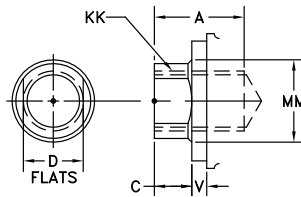


# STANDARD ROD ENDS

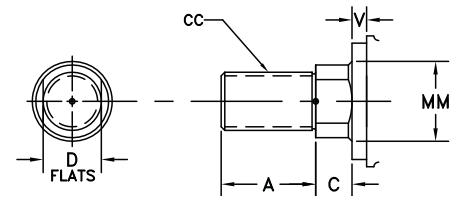
**#2 STD MALE**  
NFPA-SM



**#4 STD FEMALE**  
NFPA-SF



**#1 MALE**  
NFPA-IM



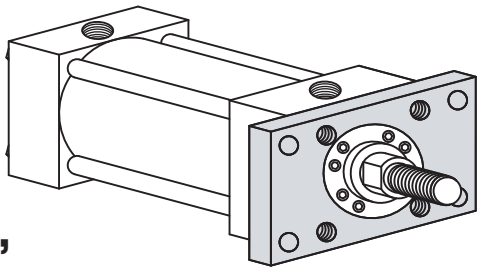
BORE	E	EE	F	G	J	K	TD	TL	UT	TB	BD	TM	UM	XI	ADD STROKE	
															LB	P
1 1/2	2	3/8	3/8	1 1/2	1	1/4	1	1	4	2 1/2	1 1/4	2 1/2	4 1/2	SPECIFY	4	2 1/4
2	2 1/2	3/8	3/8	1 1/2	1	5/16	1	1	4 1/2	3	1 1/2	3	5		4	2 1/4
2 1/2	3	3/8	3/8	1 1/2	1	5/16	1	1	5	3 1/2	1 1/2	3 1/2	5 1/2		4 1/8	2 3/8
3 1/4	3 3/4	1/2	5/8	1 3/4	1 1/4	3/8	1	1	5 3/4	4 1/4	2	4 1/2	6 1/2		4 7/8	2 5/8
4	4 1/2	1/2	5/8	1 3/4	1 1/4	3/8	1	1	6 1/2	5	2	5 1/4	7 1/4		4 7/8	2 5/8
5	5 1/2	1/2	5/8	1 3/4	1 1/4	7/16	1	1	7 1/2	6	2	6 1/4	8 1/4		5 1/8	2 7/8
6	6 1/2	3/4	3/4	2	1 1/2	7/16	1 3/8	1 3/8	9 1/4	7	2 1/2	7 5/8	10 3/8		5 3/4	3 1/8
8	8 1/2	3/4	3/4	2	1 1/2	9/16	1 3/8	1 3/8	11 1/4	9 1/2	2 1/2	9 3/4	12 1/2		5 7/8	3 1/4

BORE	ROD DIA.	THREAD		ROD EXTENSIONS AND PILOT DIMENSIONS										ADD STROKE	
	MM	KK	CC	A	B †	C	D	V	W	Y	RM	XG	XJ		
1 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	§	1 3/4	4 1/8		
	1 1/4	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	§	*	4 1/2		
2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	§	1 3/4	4 1/8		
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	§	2 1/8	4 1/2		
2 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	2 3/8	1 3/4	4 1/4		
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	2 1/2	2 1/8	4 5/8		
3 1/4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	2 1/4	5		
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	2 1/2	5 1/4		
4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	2 1/4	5		
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	2 1/2	5 1/4		
5	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	2 1/4	5 1/4		
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	2 1/2	5 1/2		
6	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	2 13/16	3 7/32	2 5/8	5 7/8		
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 1/16	3 7/8	2 7/8	6 1/8		
8	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	2 13/16	3 7/32	2 5/8	6		
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 1/16	3 7/8	2 7/8	6 1/4		

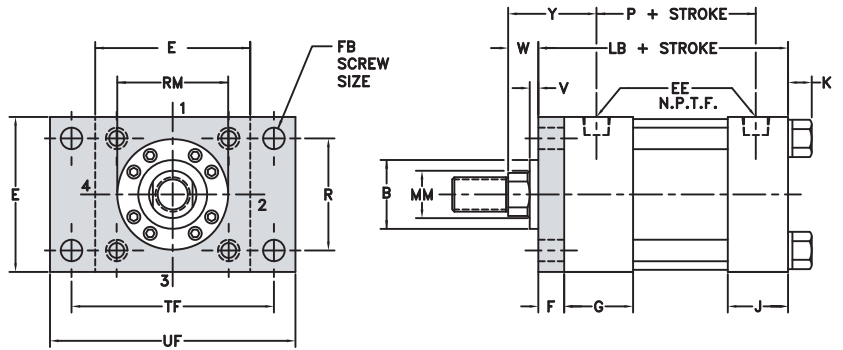
† HEAD END PORTS SHALLOW TAPPED  
 Ω CUSHION NOT AVAILABLE ON HEAD END  
 § THESE CYLINDERS HAVE FULL PLATE RETAINERS. USE "E" DIMENSION INSTEAD OF "RM" - SEE PAGE 82  
 ‡ B DIMENSION TOLERANCE -.001/ -.003  
 \* THIS MOUNT NOT AVAILABLE 1 1/2" BORE WITH 1" ROD



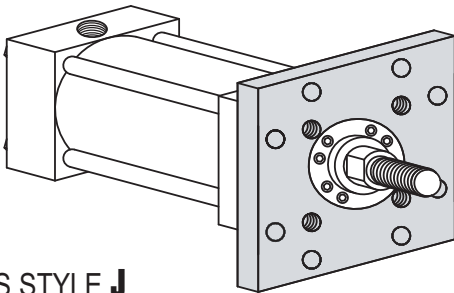
### HEAD RECTANGULAR FLANGE MOUNT



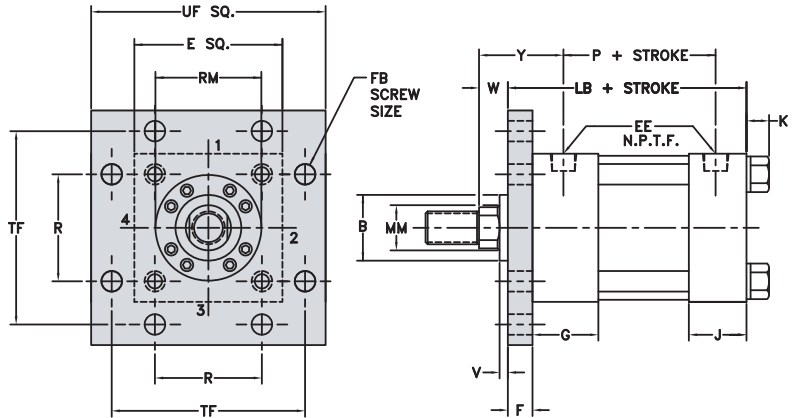
**"F"**  
YATES STYLE F  
NFPA-MF1



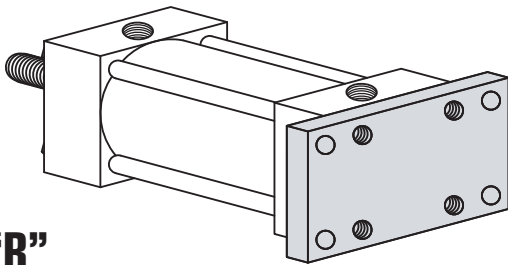
### HEAD SQUARE FLANGE MOUNT



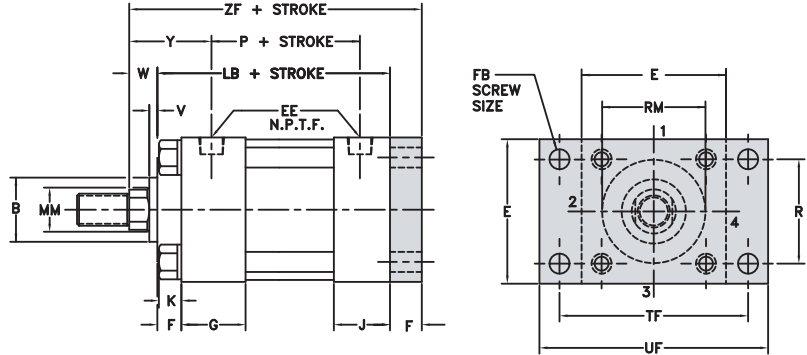
**"J"**  
YATES STYLE J  
NFPA-MF5



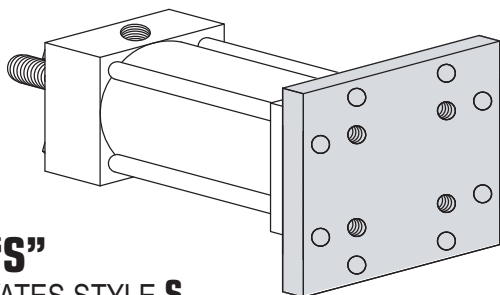
### CAP RECTANGULAR FLANGE MOUNT



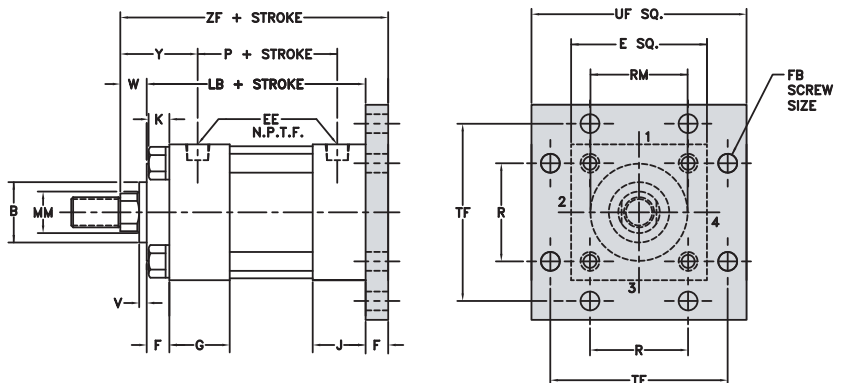
**"R"**  
YATES STYLE R  
NFPA-MF2



### CAP SQUARE FLANGE MOUNT



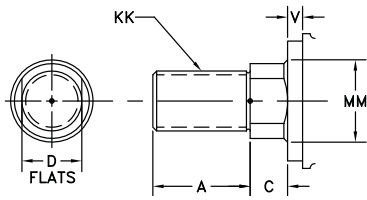
**"S"**  
YATES STYLE S  
NFPA-MF6



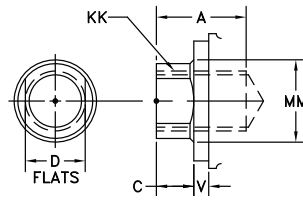


# STANDARD ROD ENDS

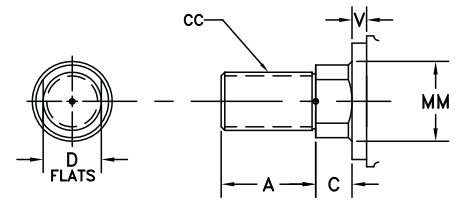
**#2 STD MALE**  
NFPA-SM



**#4 STD FEMALE**  
NFPA-SF



**#1 MALE**  
NFPA-IM



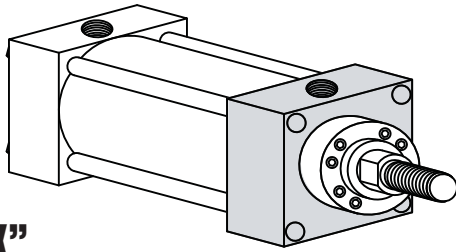
BORE	E	EE	F	G	J	K	FB	R	TF	UF	ADD STROKE	
											LB	P
1 1/2	2	3/8	3/8	1 1/2	1	1/4	1/4	1.43	2 3/4	3 3/8	4	2 1/4
2	2 1/2	3/8	3/8	1 1/2	1	5/16	5/16	1.84	3 3/8	4 1/8	4	2 1/4
2 1/2	3	3/8	3/8	1 1/2	1	5/16	5/16	2.19	3 7/8	4 5/8	4 1/8	2 3/8
3 1/4	3 3/4	1/2	5/8	1 3/4	1 1/4	3/8	3/8	2.76	4 11/16	5 1/2	4 7/8	2 5/8
4	4 1/2	1/2	5/8	1 3/4	1 1/4	3/8	3/8	3.32	5 7/16	6 1/4	4 7/8	2 5/8
5	5 1/2	1/2	5/8	1 3/4	1 1/4	7/16	1/2	4.10	6 5/8	7 5/8	5 1/8	2 7/8
6	6 1/2	3/4	3/4	2	1 1/2	7/16	1/2	4.88	7 5/8	8 5/8	5 3/4	3 1/8

BORE	ROD DIA.	THREAD		ROD EXTENSIONS AND PILOT DIMENSIONS								ADD STROKE
	MM	KK	CC	A	B ‡	C	D	V	Y	W	RM	ZF
1 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	1 29/32	5/8	§	5
	1 †Ω	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	2 9/32	1	§	5 3/8
2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	1 29/32	5/8	§	5
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	2 9/32	1	§	5 3/8
2 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	1 29/32	5/8	2 3/8	5 1/8
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	2 9/32	1	2 1/2	5 1/2
3 1/4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	2 7/16	3/4	2 1/2	6 1/4
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	2 11/16	1	3 7/32	6 1/2
4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	2 7/16	3/4	2 1/2	6 1/4
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	2 11/16	1	3 7/32	6 1/2
5	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	2 7/16	3/4	2 1/2	6 1/2
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	2 11/16	1	3 7/32	6 3/4
6	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	2 13/16	7/8	3 7/32	7 3/8
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	3 1/16	1 1/8	3 7/8	7 5/8

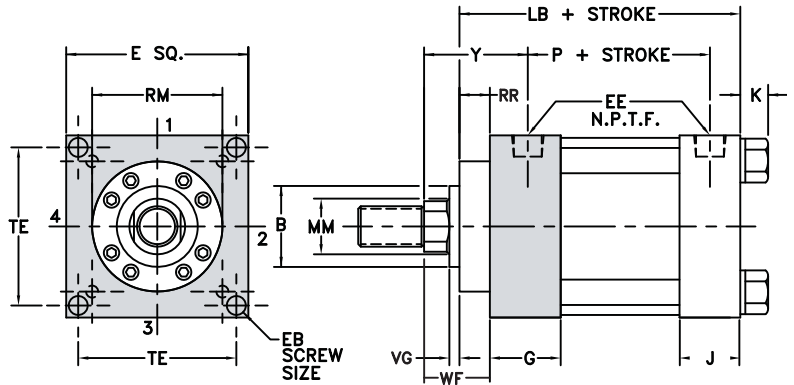
† HEAD END PORTS SHALLOW TAPPED  
 Ω CUSHION NOT AVAILABLE ON HEAD END  
 § THESE CYLINDERS HAVE FULL PLATE RETAINERS. USE "E" DIMENSION INSTEAD OF "RM" - SEE PAGE 82  
 ‡ B DIMENSION TOLERANCE -.001/-.003



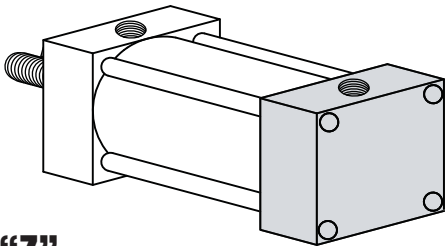
### HEAD SQUARE INTEGRAL FLANGE MOUNT



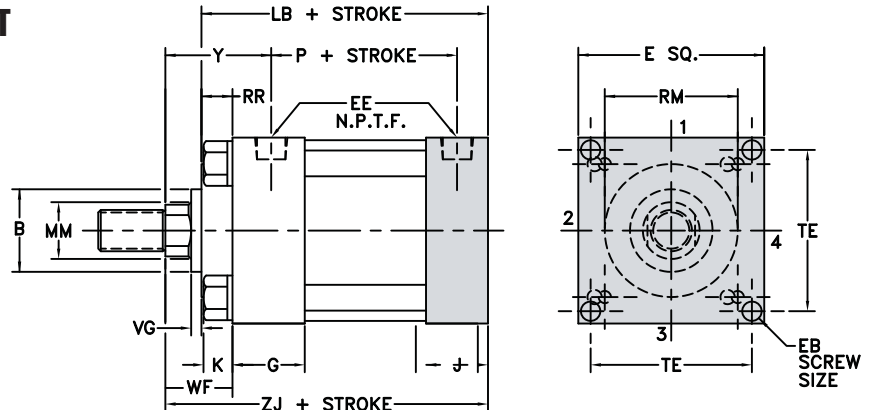
**“X”**  
YATES STYLE X  
NFPA-ME3



### CAP SQUARE INTEGRAL FLANGE MOUNT

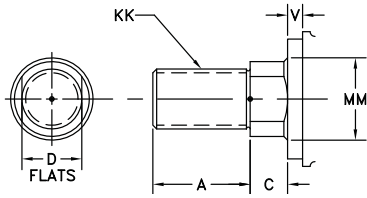


**“Z”**  
YATES STYLE Z  
NFPA-ME4

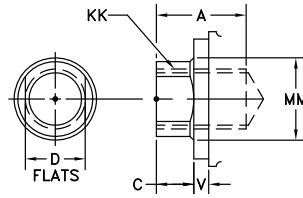


# STANDARD ROD ENDS

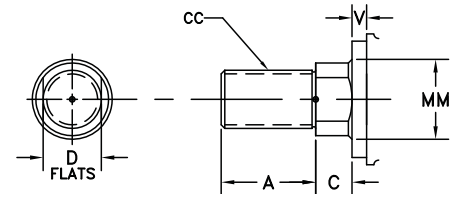
**#2** STD MALE  
NFPA-SM



**#4** STD FEMALE  
NFPA-SF



**#1** MALE  
NFPA-IM

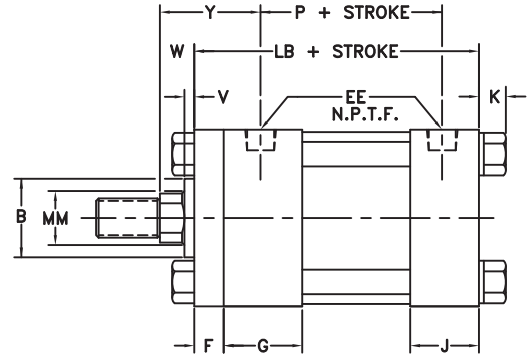
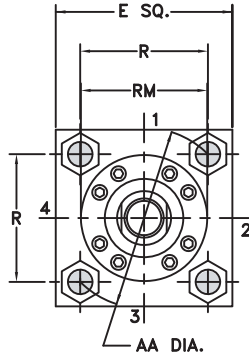
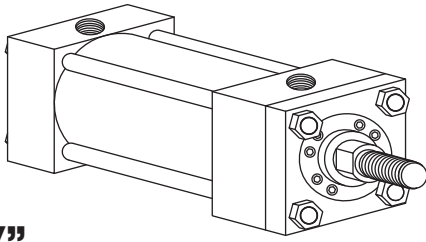


BORE	E	EE	F	G	J	K	EB	TE	ADD STROKE	
									LB	P
8	8 1/2	3/4	3/4	2	1 1/2	9/16	5/8	7.57	5 7/8	3 1/4

BORE	ROD DIA.	THREAD		ROD EXTENSIONS AND PILOT DIMENSIONS										ADD STROKE
	MM	KK	CC	A	B ‡	C	D	V	VG	WF	Y	RR	RM	ZJ
8	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	3/8	1 5/8	2 13/16	5/8	3 7/32	6 3/4
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1/2	1 7/8	3 1/16	5/8	3 7/8	7

‡ B DIMENSION TOLERANCE -.001/ -.003

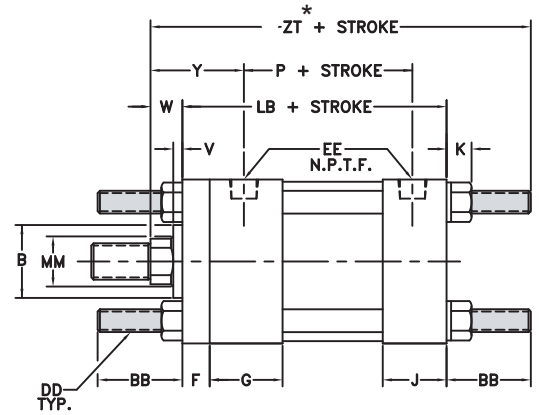
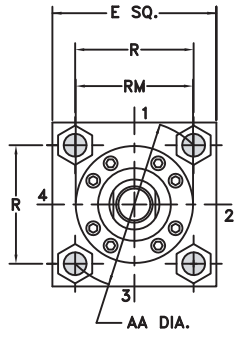
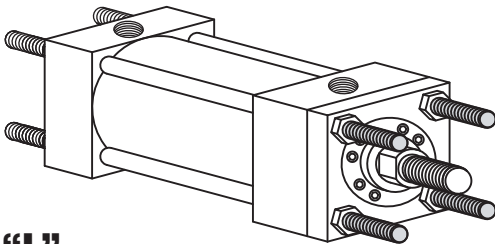
### NO TIE RODS EXTENDED MOUNT



**“K”**

YATES STYLE **K**  
NFPA-MX0

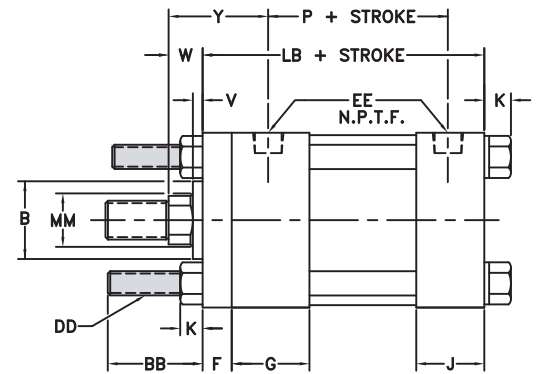
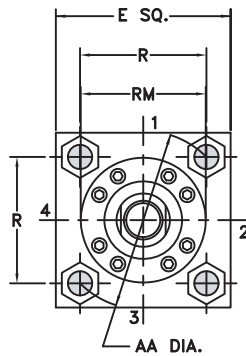
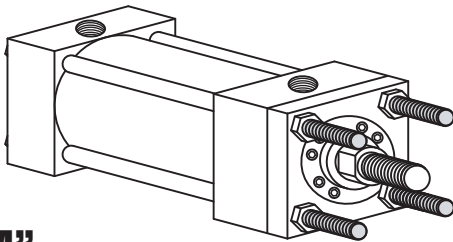
### BOTH ENDS TIE RODS EXTENDED MOUNT



**“L”**

YATES STYLE **L**  
NFPA-MX1

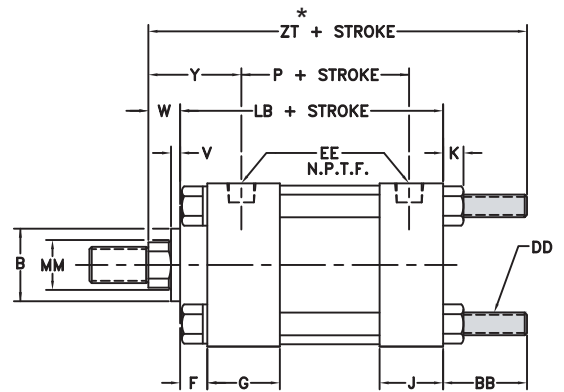
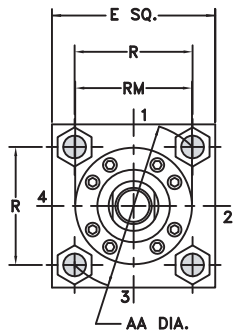
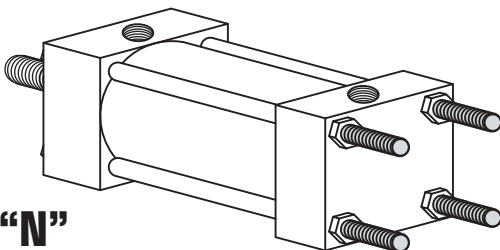
### HEAD TIE RODS EXTENDED MOUNT



**“M”**

YATES STYLE **M**  
NFPA-MX3

### CAP TIE RODS EXTENDED MOUNT

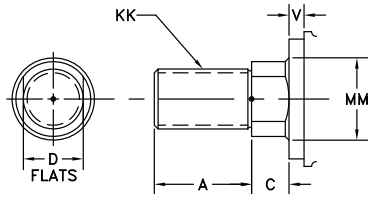


**“N”**

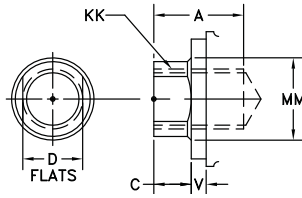
YATES STYLE **N**  
NFPA-MX2

# STANDARD ROD ENDS

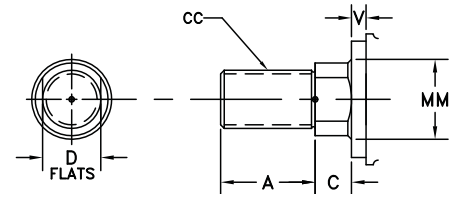
## #2 STD MALE NFPA-SM



## #4 STD FEMALE NFPA-SF



## #1 MALE NFPA-IM



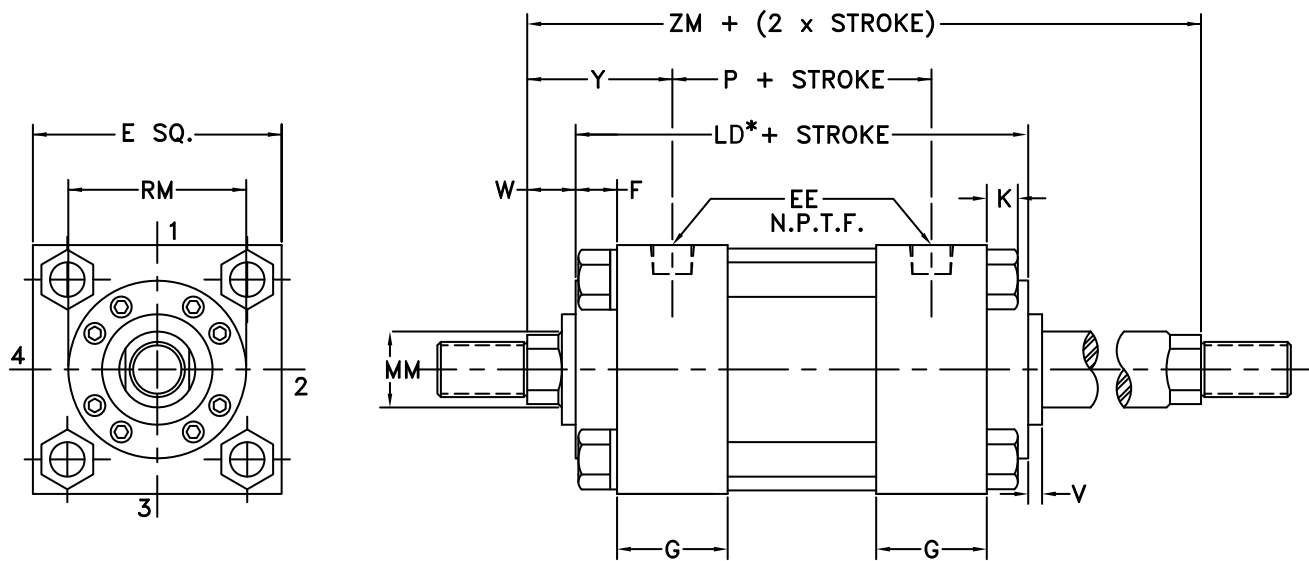
BORE	E	EE	F	G	J	K	AA	BB	DD	R	ADD STROKE	
											LB	P
1 1/2	2	3/8	3/8	1 1/2	1	1/4	2.02	1	1/4-28	1.43	4	2 3/16
2	2 1/2	3/8	3/8	1 1/2	1	5/16	2.60	1 1/8	5/16-24	1.84	4	2 3/16
2 1/2	3	3/8	3/8	1 1/2	1	5/16	3.10	1 1/8	5/16-24	2.19	4 1/8	2 5/16
3 1/4	3 3/4	1/2	5/8	1 3/4	1 1/4	3/8	3.90	1 3/8	3/8-24	2.76	4 7/8	2 5/8
4	4 1/2	1/2	5/8	1 3/4	1 1/4	3/8	4.70	1 3/8	3/8-24	3.32	4 7/8	2 5/8
5	5 1/2	1/2	5/8	1 3/4	1 1/4	7/16	5.80	1 13/16	1/2-20	4.10	5 1/8	2 7/8
6	6 1/2	3/4	3/4	2	1 1/2	7/16	6.90	1 13/16	1/2-20	4.88	5 3/4	3 1/8
8	8 1/2	3/4	3/4	2	1 1/2	9/16	9.11	2 5/16	5/8-18	6.44	5 7/8	3 1/4

BORE	ROD DIA. MM	THREAD		ROD EXTENSIONS AND PILOT DIMENSION								ADD STROKE ZT*
		KK	CC	A	B ‡	C	D	V	W	Y	RM	
1 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	§	5 5/8
	1 †	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	§	6
2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	§	5 3/4
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	§	6 1/8
2 1/2	5/8	7/16-20	1/2-20	3/4	1 1/8	3/8	1/2	1/4	5/8	1 29/32	2 3/8	5 7/8
	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/2	1	2 9/32	2 1/2	6 1/4
3 1/4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	7
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	7 1/4
4	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	7
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	7 1/4
5	1	3/4-16	7/8-14	1 1/8	1 1/2	1/2	7/8	1/4	3/4	2 7/16	2 1/2	7 11/16
	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	3/8	1	2 11/16	3 7/32	7 15/16
6	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	2 13/16	3 7/32	8 7/16
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 1/16	3 7/8	8 11/16
8	1 3/8	1-14	1 1/4-12	1 5/8	2	5/8	1 1/8	1/4	7/8	2 13/16	3 7/32	9 1/16
	1 3/4	1 1/4-12	1 1/2-12	2	2 3/8	3/4	1 1/2	3/8	1 1/8	3 1/16	3 7/32	9 5/16

† HEAD END PORTS SHALLOW TAPPED  
 ‡ CUSHION NOT AVAILABLE ON HEAD END  
 § THESE CYLINDERS HAVE FULL PLATE RETAINERS. USE "E" DIMENSION INSTEAD OF "RM" - SEE PAGE 82  
 † B DIMENSION TOLERANCE -.001/ -.003  
 \* ZT CHANGES ON DOUBLE ROD CYLINDERS. SEE PAGE 100 FOR DETAILS  
**NOTE:** 1 1/2 AND 2" BORE CYLINDERS ON "K" AND "N" MOUNTS AND 1 1/2" THRU 6" BORE CYLINDERS ON "L" AND "M" MOUNTS HAVE FULL PLATE RETAINERS. USE "E" SQ DIMENSION INSTEAD OF "RM"



# DOUBLE ROD CYLINDERS



**AVAILABLE IN MOUNTING STYLES A, B, E, F, J, K, L, M, T, U, X AND Y**

"U" mount not available 1 1/2" bore with 1" rod

"B" mount not available with standard dimensions 1 1/2" bore with 1" rod

\* "LD" replaces "LB" dimensions on all styles with double rod ends.

**FOR ORDERING DOUBLE ROD END CYLINDERS ADD "D" AFTER MOUNTING STYLE**

(Example: Style "A" side lug' mount with double rod end is style "A2-AD")

If the two rod ends are different, state which rod end is to go at which end of the cylinder.

If only one end of the cylinder is to be cushioned, specify clearly which end.

BORE	ROD DIA.	ADD STROKE							ADD 2X STROKE
	MM	LD*	SA	SE	SS	XE	ZE	ZT	ZM
1 1/2	5/8	4 7/8	6 7/8	6 3/8	3 3/8	6 1/4	6 1/2	6 1/2	6 1/8
	1	4 7/8	6 7/8	6 3/8	3 3/8	6 5/8	6 7/8	6 7/8	6 7/8
2	5/8	4 7/8	6 7/8	6 3/4	3 3/8	6 7/16	6 3/4	6 5/8	6 1/8
	1	4 7/8	6 7/8	6 3/4	3 3/8	6 13/16	7 1/8	7	6 7/8
2 1/2	5/8	5	7	7 1/8	3 1/2	6 11/16	7	6 3/4	6 1/4
	1	5	7	7 1/8	3 1/2	7 1/16	7 3/8	7 1/8	7
3 1/4	1	6	8 1/2	7 3/4	3 3/4	7 5/8	8	8 1/8	7 1/2
	1 3/8	6	8 1/2	7 3/4	3 3/4	7 7/8	8 1/4	8 3/8	8
4	1	6	8 1/2	8	3 3/4	7 3/4	8 1/8	8 1/8	7 1/2
	1 3/8	6	8 1/2	8	3 3/4	8	8 3/8	8 3/8	8
5	1	6 1/4	9	8 3/8	3 5/8	8 1/16	8 9/16	8 13/16	7 3/4
	1 3/8	6 1/4	9	8 3/8	3 5/8	8 5/16	8 13/16	9 1/16	8 1/4
6	1 3/8	7	9 3/4	9	4 1/8	8 7/8	9 3/8	9 11/16	8 3/4
	1 3/4	7	9 3/4	9	4 1/8	9 1/8	9 5/8	9 15/16	9 1/4
8	1 3/8	7 1/8	9 1/4	7 7/8	4 1/4	8 3/8	9	9 9/16	8 7/8
	1 3/4	7 1/8	9 1/4	7 7/8	4 1/4	8 5/8	9 1/4	9 13/16	9 3/8

# STANDARD ROD END STYLES

ROD END STYLE #	DIMENSIONS	ROD END STYLE #	DIMENSIONS																																								
<b>#2**</b> STANDARD MALE (NFPA-SM)		<b>#4</b> STANDARD FEMALE (NFPA-SF)																																									
<b>#1</b> STANDARD MALE (NFPA-IM)		<table border="1"> <thead> <tr> <th rowspan="2">ROD</th> <th colspan="4">ADDITIONAL DIMENSIONS</th> <th rowspan="2">STYLE 8</th> </tr> <tr> <th colspan="4">STYLE 9</th> </tr> <tr> <th>MM</th> <th>AC +/- .030</th> <th>AD +/- .010</th> <th>AE +/- .000/- .010</th> <th>AF +/- .010</th> <th>FT</th> </tr> </thead> <tbody> <tr> <td>5/8</td> <td>1 1/8</td> <td>5/8</td> <td>1/4</td> <td>3/8</td> <td>5/8-18</td> </tr> <tr> <td>1</td> <td>1 5/8</td> <td>15/16</td> <td>3/8</td> <td>11/16</td> <td>1-14</td> </tr> <tr> <td>1 3/8</td> <td>1 3/4</td> <td>1 1/16</td> <td>3/8</td> <td>7/8</td> <td>1 3/8-12</td> </tr> <tr> <td>1 3/4</td> <td>2</td> <td>1 5/16</td> <td>1/2</td> <td>1 1/8</td> <td>1 3/4-12</td> </tr> </tbody> </table>		ROD	ADDITIONAL DIMENSIONS				STYLE 8	STYLE 9				MM	AC +/- .030	AD +/- .010	AE +/- .000/- .010	AF +/- .010	FT	5/8	1 1/8	5/8	1/4	3/8	5/8-18	1	1 5/8	15/16	3/8	11/16	1-14	1 3/8	1 3/4	1 1/16	3/8	7/8	1 3/8-12	1 3/4	2	1 5/16	1/2	1 1/8	1 3/4-12
ROD	ADDITIONAL DIMENSIONS				STYLE 8																																						
	STYLE 9																																										
MM	AC +/- .030	AD +/- .010	AE +/- .000/- .010	AF +/- .010	FT																																						
5/8	1 1/8	5/8	1/4	3/8	5/8-18																																						
1	1 5/8	15/16	3/8	11/16	1-14																																						
1 3/8	1 3/4	1 1/16	3/8	7/8	1 3/8-12																																						
1 3/4	2	1 5/16	1/2	1 1/8	1 3/4-12																																						

ROD END STYLE #	DIMENSIONS	ROD END STYLE #	DIMENSIONS
<b>#5</b>		<b>#3</b> (NFPA-LF)	
<b>#6</b>		<b>#7</b> (NFPA-PL)	
<b>#9</b>		<b>#8</b> (NFPA-FM)	

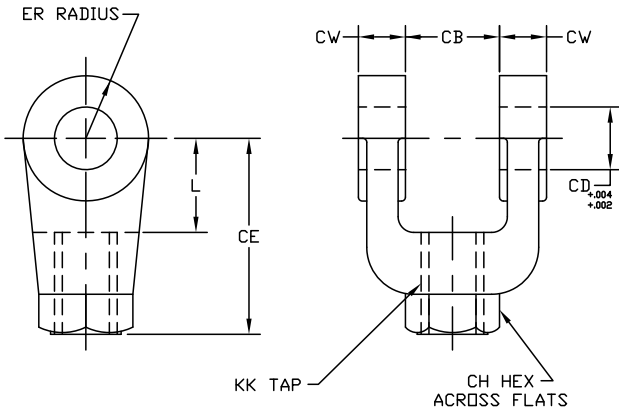
**\*\* MALE ROD END STYLE #2 WILL BE FURNISHED UNLESS OTHERWISE SPECIFIED**

NOTE: CONSULT FACTORY FOR ROD END CONFIGURATIONS OTHER THAN THOSE SHOWN.

NOTE: ALL YATES MOUNTING ACCESSORIES ARE DESIGNED TO FIT #2 ROD END STYLES

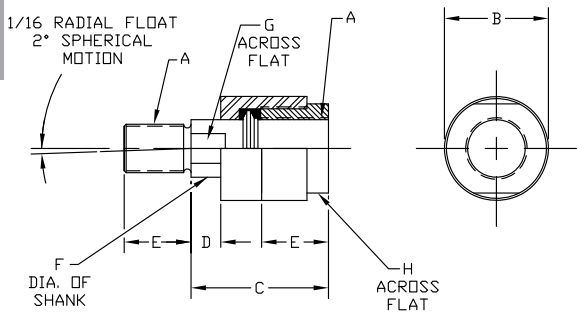


# FEMALE CLEVIS



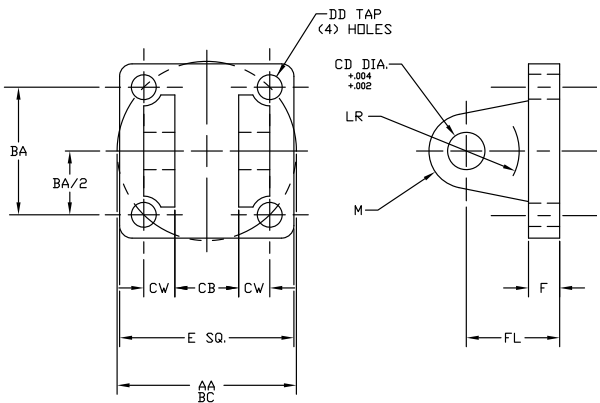
PART NO.	CB	CD	CE	CH	CW	ER	KK	L
10-YFC-134-05-A	3/4	1/2	1 1/2	1	1/2	1/2	7/16-20	3/4
10-YFC-134-08-A	1 1/4	3/4	2 3/8	1 1/4	5/8	3/4	3/4-16	1 1/4
10-YFC-134-08-M	1 1/4	3/4	2 1/8	1 3/8	5/8	3/4	3/4-16	1
10-YFC-134-11-A	1 1/2	1	3 1/8	1 1/2	3/4	1	1-14	1 1/2
10-YFC-134-11-M	1 1/2	1	2 15/16	1 1/2	3/4	1	1-14	1 5/16
10-YFC-134-14-A	2	1 3/8	4 1/8	2	1	1 3/8	1 1/4-12	2 1/8
10-YFC-134-14-M	2	1 3/8	3 3/4	2	1	1 3/8	1 1/4-12	1 3/4
10-YFC-134-16-A	2 1/2	1 3/4	4 1/2	2 3/8	1 1/4	1 3/4	1 1/2-12	2 1/4

# ROD COUPLERS



PART NUMBER	ROD DIA.	A	B	C	D	E	F	G	H	MAX PULL
11-YAC-2-05	5/8	7/16-20	1 1/4	2	1/2	3/4	5/8	1/2	1	10,000
11-YAC-2-06	5/8	1/2-20	1 1/4	2	1/2	3/4	5/8	1/2	1	14,000
11-YAC-2-07	5/8	5/8-18	1 1/4	2	1/2	3/4	5/8	1/2	1	19,000
11-YAC-2-08	1	3/4-16	1 3/4	2 5/16	1/2	1 1/8	31/32	13/16	1 1/2	34,000
11-YAC-2-09	1	7/8-14	1 3/4	2 5/16	1/2	1 1/8	31/32	13/16	1 1/2	39,000
11-YAC-2-11	1 3/8	1-14	2 1/2	2 15/16	1/2	1 5/8	1 3/8	1 5/32	2 1/4	64,000
11-YAC-2-14	1 3/8	1 1/4-12	2 1/2	2 15/16	1/2	1 5/8	1 3/8	1 5/32	2 1/4	78,000
11-YAC-2-15	1 3/8	1 3/8-12	2 1/2	2 15/16	1/2	1 5/8	1 3/8	1 5/32	2 1/4	78,000
11-YAC-2-16	2	1 1/2-12	3 1/4	4 3/8	13/16	2 1/4	1 3/4	1 1/2	3	134,000

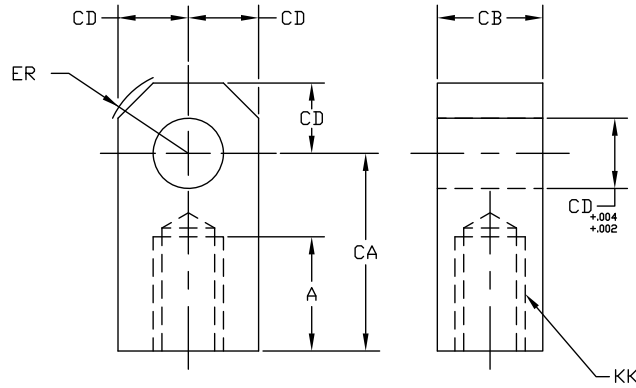
# CLEVIS BRACKET



PART NUMBER	AA	BA	CB	CD	CW	DD	E	F	FL	LR	M
14-YCB-133-03	2.3	1 5/8	25/32	1/2	1/2	5/8-24	2 1/2	3/8	1 1/8	1/2	1/2
14-YCB-133-04	2.9	2 1/16	1 9/32	3/4	5/8	1/2-20	3	5/8	1 7/8	1	3/4
14-YCB-133-05	3.6	2 9/16	1 9/32	3/4	5/8	1/2-20	3 1/2	5/8	1 7/8	1 1/16	3/4
14-YCB-133-06	4.6	3 1/4	1 17/32	1	3/4	5/8-18	4 1/2	3/4	2 1/4	1 1/4	1
14-YCB-133-08	5.4	3 13/16	2 1/32	1 3/8	1	5/8-18	5	7/8	3	1 7/8	1 3/8
14-YCB-133-10	7.0	4 15/16	2 17/32	1 3/4	1 1/4	7/8-14	6 1/2	7/8	3 1/8	2	1 3/4

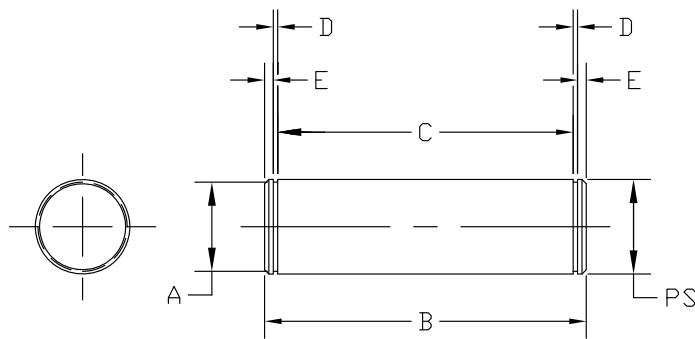


# FEMALE EYE



PART NUMBER	A	CA	CB	CD	ER	KK
13-YE-9303	3/4	1 1/2	3/4	1/2	5/8	7/16-20
13-YE-9304	1 1/8	2 1/16	1 1/4	3/4	7/8	3/4-16
13-YE-9306	1 5/8	2 13/16	1 1/2	1	1 3/16	1-14
13-YE-9306-M	1 1/8	2 3/8	1 1/2	1	1 7/16	7/8-14
13-YE-9308	2	3 7/16	2	1 3/8	1 9/16	1 1/4-12
13-YE-9310	2 1/4	4	2 1/2	1 3/4	2	1 1/2-12

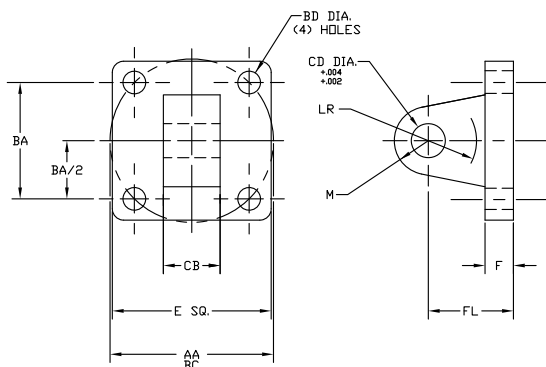
# PIVOT PIN



PART NUMBER	PIN SIZE	A	B	C	D	E
12-YP-9003-3-G-A	.500	.470	2.109	1.875	.039	.078
12-YP-9004-3-G-A	.750	.707	2.901	2.625	.046	.092
12-YP-9006-3-G-A	1.000	.943	3.401	3.125	.046	.092
12-YP-9008-3-G-A	1.375	1.295	4.461	4.125	.056	.122
12-YP-9010-3-G-A	1.750	1.655	5.545	5.125	.070	.140

# EYE BRACKET

PART NUMBER	AA	BA	BD	CB	CD	E	F	FL	LR	M
15-YEB-8903	2.3	1 5/8	13/32	3/4	1/2	2 1/2	3/8	1 1/8	1/2	1/2
15-YEB-8904	3.6	2 9/16	17/32	1 1/4	3/4	3 1/2	5/8	1 7/8	1	3/4
15-YEB-8906	4.6	3 1/4	21/32	1 1/2	1	4 1/2	3/4	2 1/4	1	1
15-YEB-8908	5.4	3 13/16	21/32	2	1 3/8	5	7/8	3	1 1/8	1 3/8
15-YEB-8910	7.0	4 15/16	29/32	2 1/2	1 3/4	6 1/2	7/8	3 1/8	1 3/4	1 3/4
15-YEB-8910H	7.0	4 15/16	29/32	2 1/2	1 3/4	6 1/2	1 1/8	3 3/8	1 3/4	1 3/4



# SWIVEL EYE BRACKET

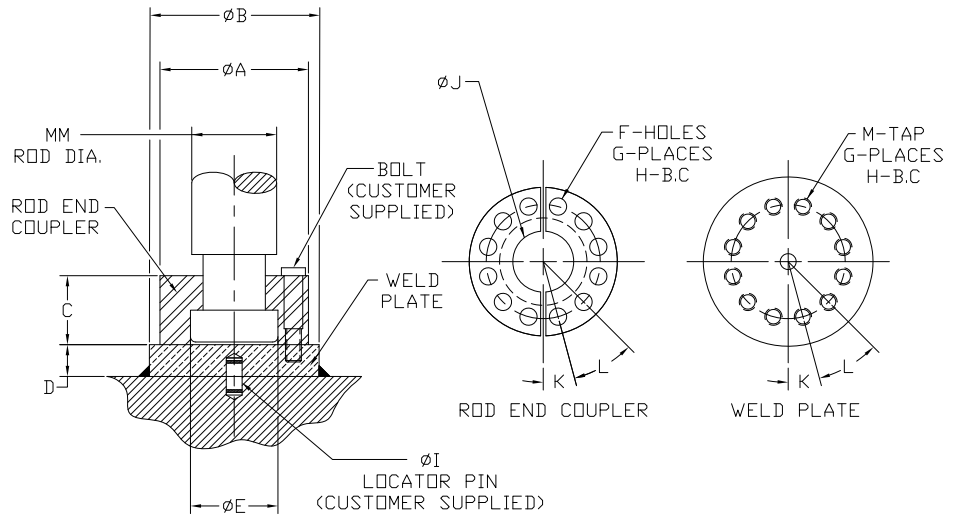
PART NUMBER	AA	BA	BD	CB	CD	E	F	FL	LR	M	DYNAMIC	STATIC
15-YSB-219-3-1	2.3	1 5/8	13/32	3/4	1/2	2 1/2	3/8	1 1/8	1/2	11/16	3,150	9,338
15-YSB-219-3-2	3.6	2 9/16	17/32	1 1/4	3/4	3 1/2	5/8	1 7/8	1	1 3/16	7,088	20,925
15-YSB-219-3-3	4.6	3 1/4	21/32	1 1/2	1	4 1/2	3/4	2 1/4	1	1 3/8	12,600	37,350
15-YSB-219-3-4	5.4	3 13/16	21/32	2	1 3/8	5	7/8	3	1 1/8	2	23,400	69,750
15-YSB-219-3-5	7.0	4 15/16	29/32	2 1/2	1 3/4	6 1/2	7/8	3 1/8	1 3/4	2 1/8	38,250	114,750

(Includes spacers to allow swivel action up to 7° and to make dimensions interchangeable with standard eye bracket.)

**NOTE:** To assure precision fit-up, pivot pins machined to special tolerances are furnished with all swivel eye brackets unless otherwise specified.

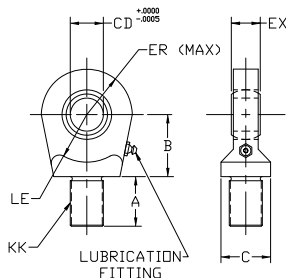


# ROD END COUPLER AND WELD PLATE



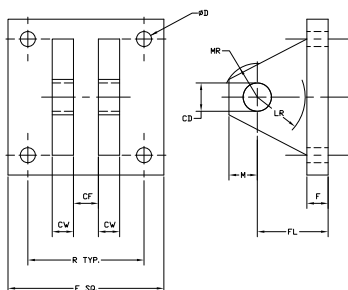
ROD END COUPLER PART#	WELD PLATE PART#	WELD PLATE MATERIAL	MM	A	B	C	D	E	F	G	H	I	J	K	L	M
18-FEC-062	18-FEC-062-WP	CD 1018	5/8	1.500	2.000	.562	.500	.656	.218	4	1.125	250	406	45°	90°	10-24
18-FEC-100	18-FEC-100-WP	CD 1018	1	2.000	2.500	.875	.500	1.063	.281	6	1.500	250	.750	30°	60°	1/4-20
18-FEC-137	18-FEC-137-WP	CD 1018	1 3/8	2.500	3.000	1.000	.625	1.438	.343	6	2.000	250	.938	30°	60°	5/16-18
18-FEC-175	18-FEC-175-WP	CD 1018	1 3/4	3.000	4.000	1.250	.625	1.813	.343	8	2.375	250	1.187	22.5°	45°	5/16-18

## MALE SPHERICAL ROD EYE



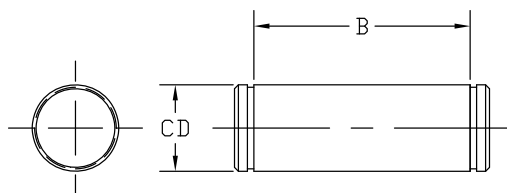
PART NUMBER	CD	KK	A	B	C	ER	EX	LE	MAX LOAD
13-MSRE-0500	.5000	7/16-20	11/16	7/8	7/8	7/8	7/16	3/4	2,600
13-MSRE-0750	.7500	3/4-16	1	1 1/4	1 5/16	1 1/4	21/32	1 1/16	7,080
13-MSRE-1000	1.000	1-14	1 1/2	1 7/8	1 1/2	1 3/8	7/8	1 7/16	12,590
13-MSRE-1375	1.3750	1 1/4-12	2	2 1/8	2	1 13/16	1 3/16	1 7/8	22,930
13-MSRE-1750	1.7500	1 1/2-12	2 1/8	2 1/2	2 1/4	2 3/16	1 17/32	2 1/8	38,220

## SPHERICAL CLEVIS BRACKET



PART NUMBER	CD	CF	CW	D	E	F	FL	M	MR	LR	R
14-YCB-133-03-CBS	.500	.44	.50	.41	3.00	.50	150	.50	.62	.94	205
14-YCB-133-05-CBS	.750	.66	.62	.53	3.75	.62	200	.88	1.00	1.38	276
14-YCB-133-06-CBS	1.000	.88	.75	.53	5.50	.75	250	1.00	1.19	1.69	4.10
14-YCB-133-08-CBS	1.375	1.19	1.00	.66	6.50	.88	350	1.38	1.62	2.44	4.95
14-YCB-133-10-CBS	1.750	1.53	1.25	.91	8.50	1.25	450	1.75	2.06	2.88	6.58

## SPHERICAL PINS



PART NUMBER	CD	B
12-YP-9003-3-G-CBS	.4997	+0.000 -0.004 1 9/16
12-YP-9004-3-G-CBS	.7497	+0.000 -0.005 2 1/32
12-YP-9006-3-G-CBS	.9997	+0.000 -0.005 2 1/2
12-YP-9008-3-G-CBS	1.3746	+0.000 -0.006 3 5/16
12-YP-9010-3-G-CBS	1.7496	+0.000 -0.006 4 7/32