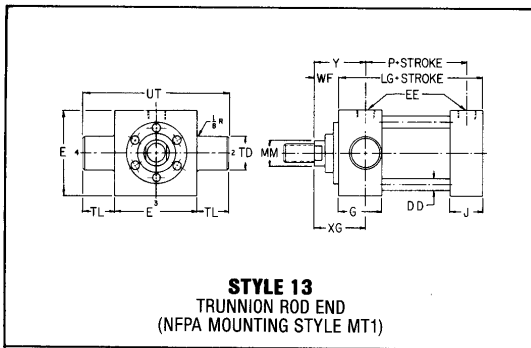


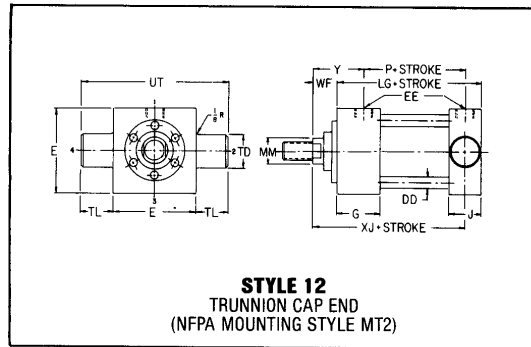


TRUNNION MOUNTED CYLINDERS 10" AND 12" BORE SERIES HP HIGH PRESSURE HYDRAULIC CYLINDERS



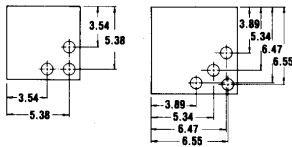
STYLE 13
TRUNNION ROD END
(NFA MOUNTING STYLE MT1)

*Standard Port location is Position 1.
Standard Cushion location is Position 3 Rod End
and Position 2 Cap End.*

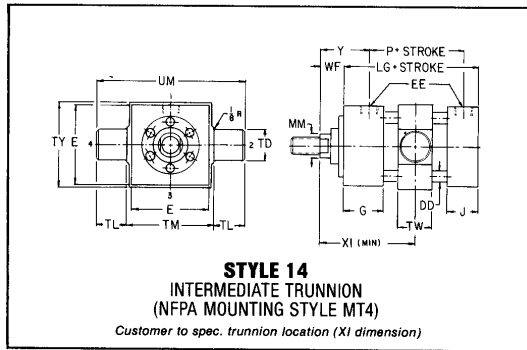


STYLE 12
TRUNNION CAP END
(NFA MOUNTING STYLE MT2)

*Standard Port location is Position 1.
Standard Cushion location is Position 2 Rod End
and Position 3 Cap End.*



10" BORE 12" BORE
TIE ROD SPACING



STYLE 14
INTERMEDIATE TRUNNION
(NFA MOUNTING STYLE MT4)

Customer to spec. trunnion location (XI dimension)

*Standard Port location is Position 1.
Standard Cushion location is Position 2.*

The trunnion pintles are not removable. For information on removable pintles, please consult the engineering department.

The position of the intermediate trunnion mount is not adjustable.

NOTE: Cylinders with 12, 13 and 14 in. bores 10.0" thru 12" should not be used for pressures in excess of 2000 psi.

Pintles on trunnion mounted cylinders are designed to withstand shear loads, but not high bending loads. Pillow blocks must be rigidly mounted to provide full support with minimum clearances.

ENVELOPE & MOUNTING DIMENSIONS NOT AFFECTED BY ROD DIAMETER

BORE	DD DIA.	E	EE		G	J	TD +0.000 -0.001	TL	TM	TW	TY	UM	UT	UW	ADD STROKE	
			NPTF	SAE											LG	P
10	1	12 5/8	2-11 1/2	32	3 11/16	3 11/16	3.500	3 1/2	14	4 1/2	13	21	19 5/8	17 1/2	12 1/8	8 1/2
12	1	14 7/8	2 1/2-8	32	4 7/16	4 7/16	4.000	4	16 1/2	5 1/2	15 1/2	24 1/2	22 7/8	20 3/4	14 1/2	10 1/8

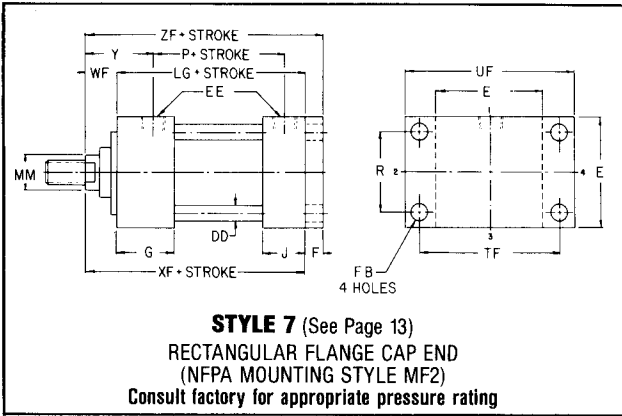
DIMENSIONS AFFECTED BY ROD DIAMETER

BORE	ROD DIA. MM	THREAD SIZE		A	B +0.000 -0.005	C	D	LAH	NA	VH	WF	RD MAX.	XG	XI MIN.	Y	ADD STROKE
		KK	CC													XJ
10	5	3 1/2-12	4 3/4-12	5	5.749	1	4 1/4	7 15/16	4 7/8	1	2 15/16	9 1/2	4 3/4	8 7/8	4 3/4	13 1/4
	7	4/12	4 3/4-12	5	7.749	1	6	8 3/16	6 7/8	1 1/8	3 3/16	10 3/4	5	9 1/8	5	13 1/2
12	5 1/2	4/12	5 1/4-12	5 1/2	6.249	1	4 5/8	8 11/16	5 3/8	1 5/16	3 3/16	10 1/8	5 3/8	10 3/8	5 3/8	15 1/2
	8 1/2	4 1/2-12	5 1/4-12	5 1/2	9.249	1	7 1/4	8 15/16	8 3/8	1 1/8	3 7/16	13 1/4	5 3/8	10 5/8	5 3/8	15 3/4

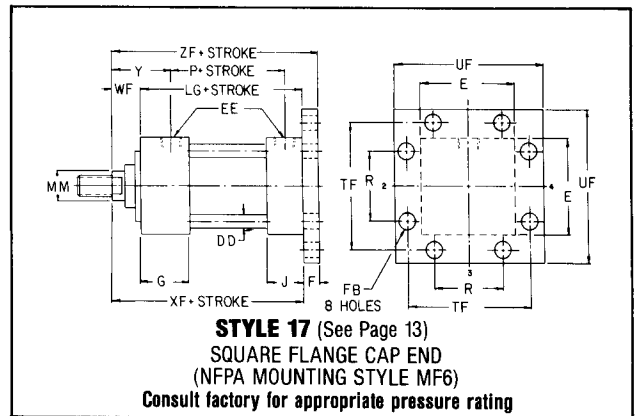
See Page 14 for Rod End Dimensions



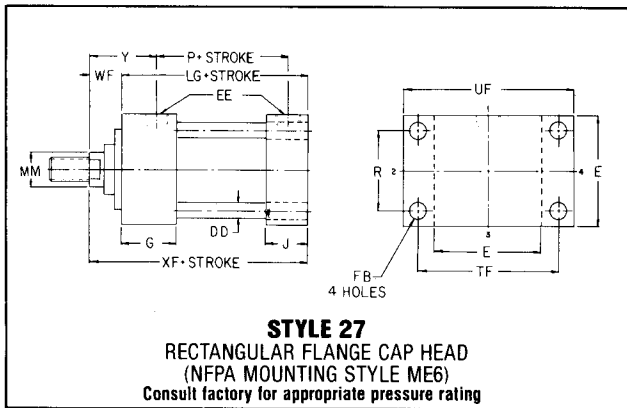
**CAP END FLANGE MOUNTED CYLINDERS
10" AND 12" BORE SERIES HP HIGH PRESSURE HYDRAULIC CYLINDERS**



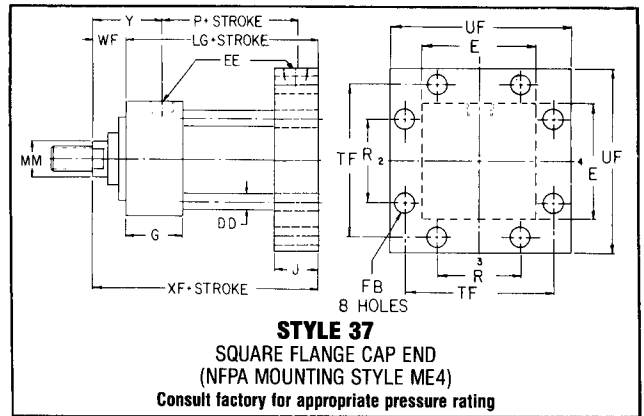
Standard Port location is Position 1.
Standard Cushion location is Position 2.



Standard Port location is Position 1.
Standard Cushion location is Position 2.



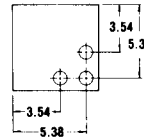
Standard Port location is Position 1.
Standard Cushion location is Position 2 Rod End and Position 3 Cap End.



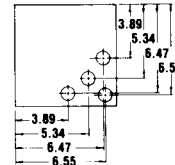
Standard Port location is Position 1.
Standard Cushion location is Position 2 Rod End and Position 3 Cap End.

TIE ROD SPACING—

10" BORE



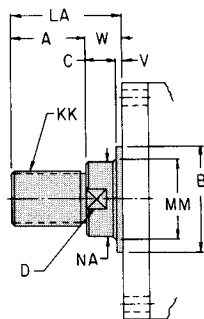
12" BORE



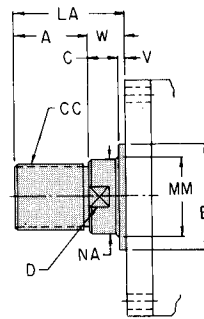
ROD END DIMENSIONS—

FOR MOUNTING STYLES 6, 16

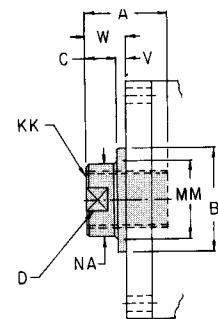
**TYPE A
STANDARD
MALE**



**TYPE D
INTERMEDIATE
MALE**

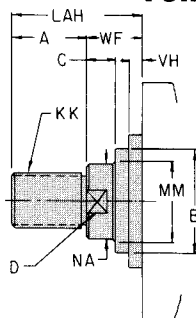


**TYPE B
FEMALE**

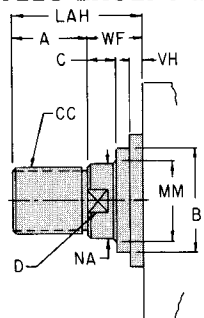


FOR ALL MOUNTING STYLES EXCEPT #6 & #16

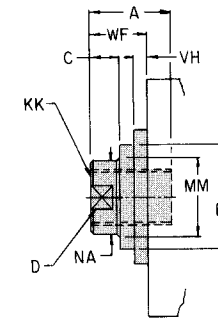
**TYPE A
STANDARD
MALE**



**TYPE D
INTERMEDIATE
MALE**



**TYPE B
FEMALE**

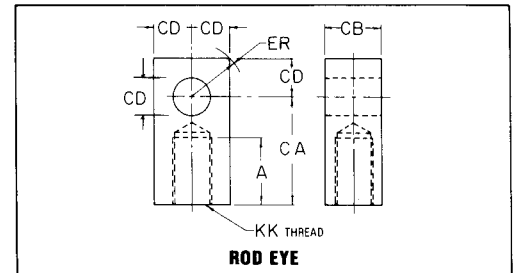
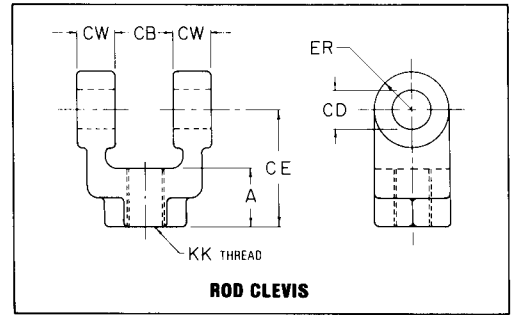




CYLINDER CAP AND ROD END MOUNTING ACCESSORIES 1½" to 12" BORE SERIES HP HIGH PRESSURE HYDRAULIC CYLINDERS

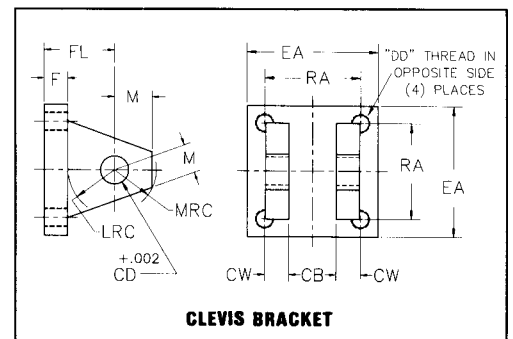
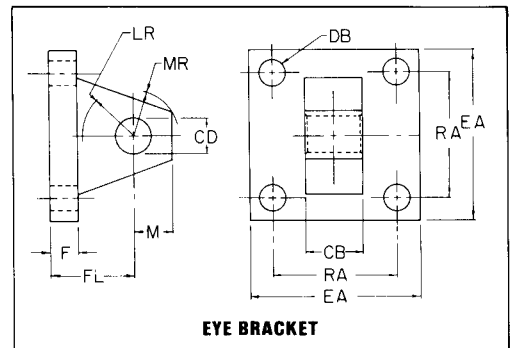
ROD END ACCESSORIES

ROD THREAD SIZE (KK)	ROD CLEVIS	ROD EYE	EYE BRACKET	PIVOT PIN	CLEVIS BRACKET
7/16"—20	MACCL01	MACRE01	MACEB01	MACPN01	MACCB01
3/4"—16	MACCL02	MACRE02	MACEB02	MACPN02	MACCB02
1"—14	MACCL03	MACRE03	MACEB03	MACPN03	MACCB03
1¼"—12	MACCL04	MACRE04	MACEB04	MACPN04	MACCB04
1½"—12	MACCL05	MACRE05	MACEB05	MACPN05	MACCB05
1¾"—12	MACCL06	MACRE06	MACEB06	MACPN06	MACCB06
2¼"—12	MACCL07	MACRE07	MACEB07	MACPN07	MACCB07
2½"—12	MACCL08	MACRE08	MACEB08	MACPN08	MACCB08
3¼"—12	MACCL09	MACRE09	MACEB09	MACPN09	MACCB09
4"—12	MACCL010	MACRE010	MACEB010	MACPN010	MACCB010



CAP END ACCESSORIES

CYLINDER BORE	EYE BRACKET	PIVOT PIN	CLEVIS BRACKET
1½"	MACEB01	MACPN01	MACCB01
2" & 2½"	MACEB02	MACPN02	MACCB02
3¼"	MACEB03	MACPN03	MACCB03
4"	MACEB04	MACPN04	MACCB04
5"	MACEB05	MACPN05	MACCB05
6"	MACEB06	MACPN06	MACCB06
7"	MACEB07	MACPN07	MACCB07
8"	MACEB08	MACPN08	MACCB08
10"	MACEB09	MACPN09	MACCB09
12"	MACEB010	MACPN010	MACCB010



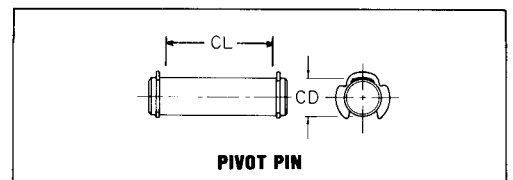
NOTES

ROD END ACCESSORIES

1. Rod Clevises and Rod Eyes are stocked to fit the standard KK thread (Small Male). The CC thread (Intermediate Male) can be supplied on special order, but should be avoided if possible.
2. Rod Clevises are supplied with Pivot Pin as standard. Pivot Pins are not supplied with Rod Eyes or Eye Brackets. They must be ordered as a separate item if desired.

CAP END ACCESSORIES

1. Pivot Pins are not supplied with Eye Brackets. They must be ordered as a separate item if desired.
2. Eye Brackets are designed to match with cylinder mounting Style 8F (NFPA MP1).
3. Clevis Brackets are designed to match with cylinder Rod Eyes.





**CYLINDER CAP AND ROD END MOUNTING ACCESSORIES
1-1/2" TO 12" BORE SERIES HP HIGH PRESSURE HYDRAULIC
CYLINDERS**

ROD CLEVIS PART NUMBER

	MACCL01	MACCL02	MACCL03	MACCL04	MACCL05	MACCL06	MACCL07	MACCL08	MACCL09	MACCL010
A	3/4	1 1/8	1 5/8	2	2 1/4	3	3 1/2	3 1/2	4 1/2	5 1/2
CB	3/4	1 1/4	1 1/2	2	2 1/2	2 1/2	3	3	4	4 1/2
CD	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3 1/2	4
CE	1 1/2	2 3/8	3 1/8	4 1/8	4 1/2	5 1/2	6 1/2	6 3/4	8 1/2	10
CW	1/2	5/8	3/4	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2 1/4
ER	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3 1/2	4
K	7/16-20	3/4-16	1-14	1 1/4-12	1 1/2-12	1 7/8-12	2 1/4-12	2 1/2-12	3 1/4-12	4-12

ROD EYE PART NUMBER

	MACRE01	MACRE02	MACRE03	MACRE04	MACRE05	MACRE06	MACRE07	MACRE08	MACRE09	MACRE010
A	3/4	1 1/8	1 5/8	2	2 1/4	3	3 1/2	3 1/2	4 1/2	5 1/2
CA	1 1/2	2 1/16	2 13/16	3 7/16	4	5	5 13/16	6 1/8	7 5/8	9 1/8
CB	3/4	1 1/4	1 1/2	2	2 1/2	2 1/2	3	3	4	4 1/2
CD	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3 1/2	4
ER	23/32	1 1/16	1 7/16	1 31/32	2 1/2	2 27/32	3 9/16	3 1/4	3 3/4	4 1/4
KK	7/16-20	3/4-16	1-14	1 1/4-12	1 1/2-12	1 7/8-12	2 1/4-12	2 1/2-12	3 1/4-12	4-12

EYE BRACKET PART NUMBER (MACEB) OR CLEVIS BRACKET PART NUMBER (MACCB)

	MACCB01	MACCB02	MACCB03	MACCB04	MACCB05	MACCB06	MACCB07	MACCB08	MACCB09	MACCB010
	MACEB01	MACEB02	MACEB03	MACEB04	MACEB05	MACEB06	MACEB07	MACEB08	MACEB09	MACEB010
CB	3/4	1 1/4	1 1/2	2	2 1/2	2 1/2	3	3	4	4 1/2
CD	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3 1/2	4
CW	1/2	5/8	3/4	1	1 1/4	1 1/4	1 1/2	1 1/2	2	2 1/4
DB	13/32	17/32	21/32	21/32	29/32	1 1/16	1 3/16	1 5/16	1 13/16	2 1/16
DD	3/8-24	1/2-20	5/8-18	5/8-18	7/8-14	1-14	1 1/8-12	1 1/4-12	1 3/4-12	2-12
EA	2 1/2	3 1/2	4 1/2	5	6 1/2	7 1/2	8 1/2	9 1/2	12 5/8	14 7/8
F	3/8	5/8	3/4	7/8	7/8	1	1	1	1 11/16	1 15/16
FL	1 1/8	1 7/8	2 1/4	3	3 1/8	3 1/2	4	4 1/4	5 11/16	6 7/16
LR	3/4	1 1/4	1 1/2	2 1/8	2 1/4	2 1/2	3	3 1/4	4	4 1/2
LRC	1/2	1 1/16	1 1/4	1 7/8	2	2 1/8	2 5/8	2 7/8	3 5/8	4
M	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3 1/2	4
MR	9/16	7/8	1 1/4	1 5/8	2 1/8	2 7/16	3	3 1/4	3 7/8	5 1/4
MRC	9/16	1 1/16	1 1/8	1 3/4	1 7/8	2 1/8	2 1/2	2 3/4	3 1/2	4
RA	1.63	2.55	3.25	3.82	4.95	5.73	6.58	7.50	9.62	11.45

PIVOT PIN PART NUMBER

	MACPN01	MACPN02	MACPN03	MACPN04	MACPN05	MACPN06	MACPN07	MACPN08	MACPN09	MACPN010
CD	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3 1/2	4
CL	1 3/4	2 1/2	3	4	5	5	6	6	8	9