

 **American**[®]

TR Series:
NFPA Interchange



NFPA Tie Rod Cylinders
1-1/2" through 8" Bore

NFPA MOUNTING STYLES:


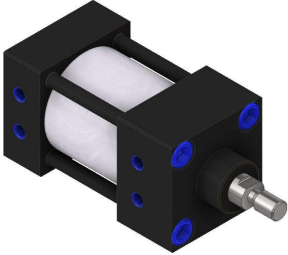
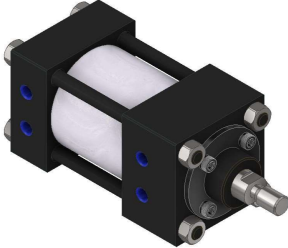
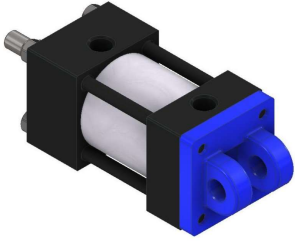
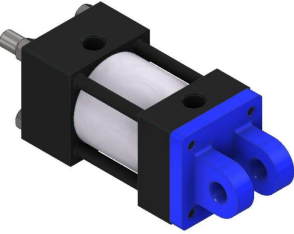
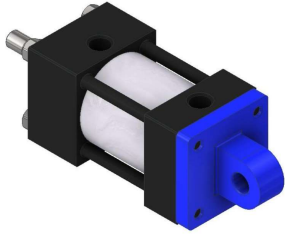
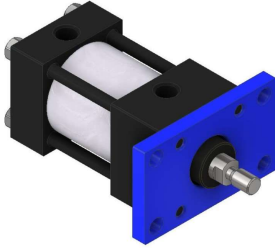
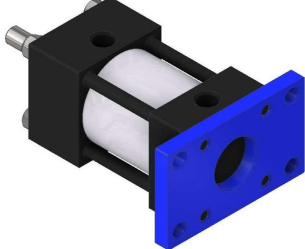

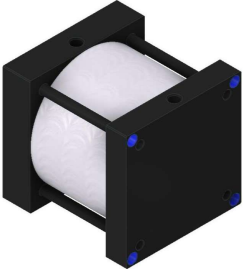
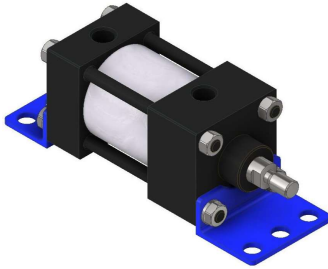
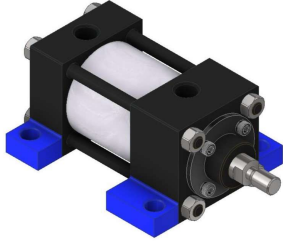
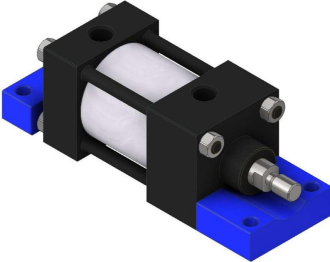
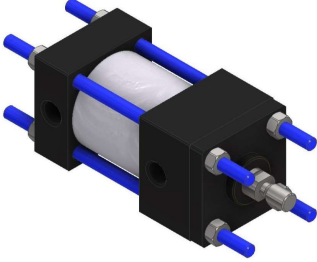
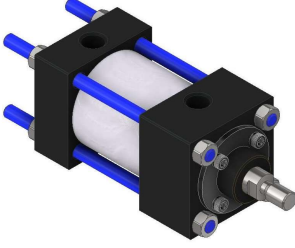
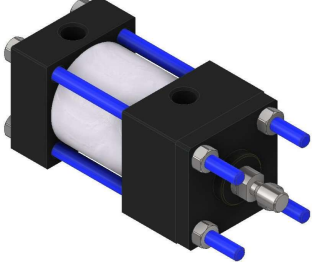
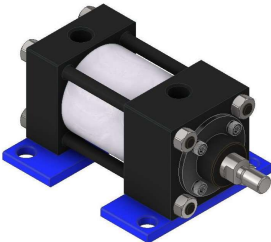
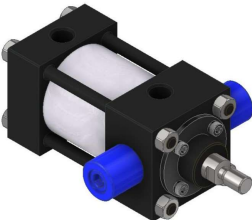
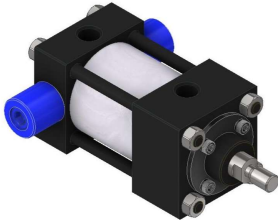
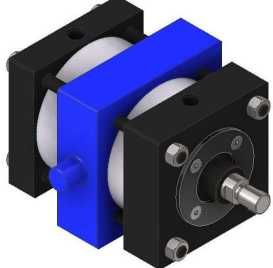
<p>MX0</p> 	<p>SN</p> 	<p>MS4</p> 	<p>MP1</p> 
<p>MP2</p> 	<p>MP4</p> 	<p>MF1</p> 	<p>MF2</p> 
<p>ME3</p> 	<p>ME4</p> 	<p>MS1</p> 	<p>MS2</p> 
<p>MS7</p> 	<p>MX1</p> 	<p>MX2</p> 	<p>MX3</p> 
<p>BB</p> 	<p>MT1</p> 	<p>MT2</p> 	<p>MT4</p> 

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II. SEAL KITS

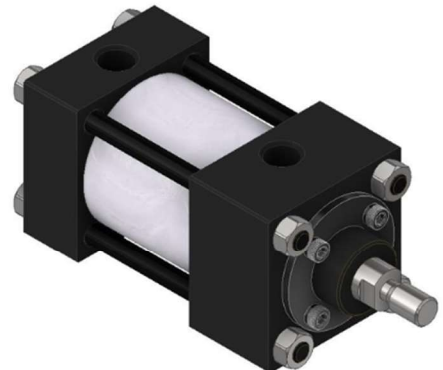
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III. OPTIONAL SENSING SWITCHES

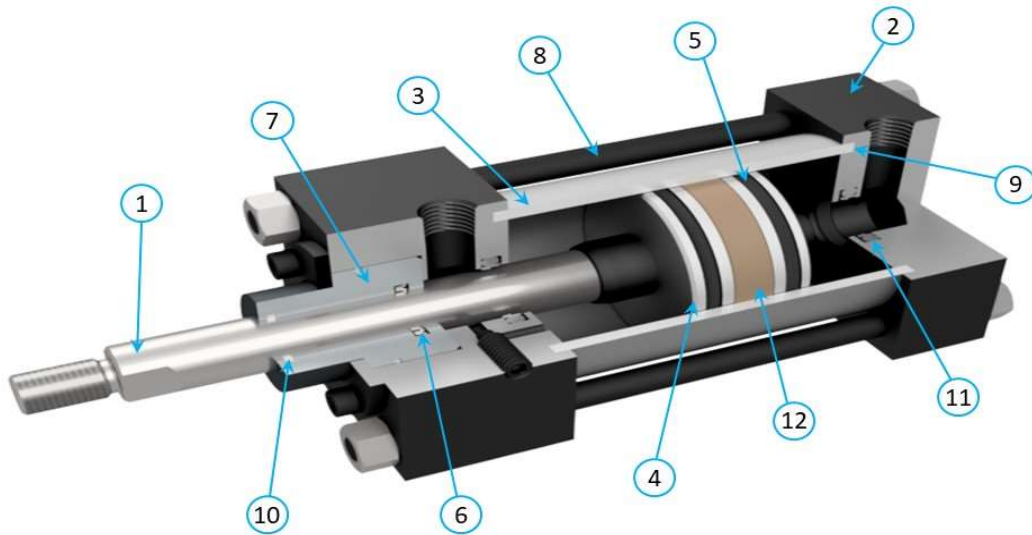
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STANDARD FEATURES & BENEFITS:



RATED 250 PSI AIR

NFPA MOUNTING STYLES

1-½ Inch Through 8 Inch Bore

1) Piston Rod: 100,000 PSI yield hard chrome-plated steel provides reliable performance and longer rod seal life.

2) Head & Cap: Designed for corrosion resistance and extra strength.

3) Cylinder Tube: 6063-T6 aluminum alloy with hard coated I.D. resists scoring and wear. Durable to 35,000 PSI.

4) Piston: Machined from solid aluminum to provide excellent characteristics against the hard coated I.D. cylinder body.

5) Piston Seals: Piston seals are of a U-Cup design for low friction with standard and magnetic field piston options.

6) Rod Seal: The rod seal is made from a urethane material with a rounded dynamic sealing lip to reduce friction and maximize seal life.

7) Rod Bushing: Compatible with the hard chrome plated rod. Close grain cast iron bearing provides maximum wear resistance for long life. Teflon coating to reduce friction.

8) Tie Rods: High strength steel with black oxide finish to maintain compression on tube end seals.

9) Tube End Seals: Fiber and nitrile base elastomer acting as a binder for positive sealing.

10) Rod Wiper: Made from a tough urethane material. Wipes the rod clean and keeps out contamination to maximize rod seal & rod bushing life.

11) Cushions: Floating cushion seals with captured adjustment needle incorporate extra fine thread metering.

12) Wear Band: Standard with all TR series cylinders to maximize cylinder life.

Product enhancements resulting from our quality improvement program may necessitate changes in specifications without notice. For special requirements, consult the factory or your nearest local American Cylinder Distributor.

TECHNICAL DATA:

OPERATING PRESSURE: 250 PSI Air

OPERATING TEMPERATURE: Buna-N seals are supplied as standard in all American Cylinder models and are recommended for operating temperatures in the -40°F (-40°C) to 200°F (95°C) range. Fluoroelastomer (FKM) seals are recommended for high temperature cylinder applications having operating temperatures in the -20°F (-29°C) to 400°F (204°C) range.

LUBRICATION: American cylinders are pre-lubricated at the factory prior to shipment to provide millions of trouble-free cycles. Most applications do not require additional lubrication. Magnalube-G is used to lubricate the cylinders from the factory. Consult your American Cylinder distributor or the factory for special lubrication requirements.

PRETESTED: The quality of each cylinder is assured by testing each unit for leakage prior to shipment. Quality control provides added value to American Cylinders.

CYLINDER WEIGHTS (lbs.)

Bore		1.5"		2"		2.5"		3.25"		4"		5"		6"		8"	
Rod Diameter		0.62	1	0.62	1	0.62	1	1	1.37	1	1.37	1	1.37	1.37	1.75	1.37	1.75
M O U N T	MX0, MX2, MS2, MS4, BB, SN	1.60	1.76	2.65	3.36	3.50	4.26	7.00	8.40	9.40	10.80	12.90	14.30	21.70	22.50	35.20	37.00
	MF1, MF2, ME3, ME4	2.70	3.46	3.60	4.36	4.90	5.66	10.30	11.70	13.90	15.30	19.60	21.00	32.20	34.00	35.00	36.80
	MP1, MP2, MP4	2.10	2.31	3.70	4.46	5.00	5.76	10.50	11.90	14.00	15.40	18.40	19.80	31.90	32.80	43.50	44.30
	MT1, MT2	2.00	2.20	3.10	3.86	4.00	4.76	7.50	8.90	9.90	11.30	13.40	14.80	22.90	24.70	36.40	38.20
	MX1, MX3	2.25	3.01	2.78	3.50	3.68	4.44	7.50	8.90	9.90	11.30	13.40	14.80	22.70	24.50	36.20	38.00
Per Inch of Stroke		0.18	0.40	0.21	0.35	0.23	0.38	0.42	0.63	0.45	0.66	0.51	0.73	0.77	1.03	1.06	1.32

APPROXIMATE PUSH FORCES (lbs.) (non-rod side)

Bore	Piston Area (in. ²)	PSI										Cubic FT. Displacement Per in. of Push Stroke
		40	50	60	80	100	125	150	200	250		
		APPROXIMATE PUSH FORCES (lbs.)										
1.5"	1.77	71	88	106	142	177	221	266	353	442	0.00102	
2"	3.14	126	157	189	251	314	392	471	628	785	0.00182	
2.5"	4.91	196	246	295	393	491	614	737	982	1227	0.00284	
3.25"	8.30	332	415	498	664	830	1037	1245	1659	2075	0.00480	
4"	12.57	503	629	754	1005	1257	1571	1886	2513	3142	0.00727	
5"	19.64	785	982	1178	1571	1964	2455	2946	3928	4910	0.01137	
6"	28.27	1130	1414	1696	2262	2827	3534	4240	5654	7068	0.01637	
8"	50.26	2010	2513	3015	4020	5026	6280	7539	10052	12565	0.02227	

APPROXIMATE PULL FORCES (lbs.) (rod side)

Bore	Rod Diameter	Effective Piston Area (in. ²)	PSI										Cubic FT. Displacement Per in. of Pull Stroke
			40	50	60	80	100	125	150	200	250		
			APPROXIMATE PULL FORCES (lbs.)										
1.5"	0.62	1.46	59	73	88	117	146	183	220	292	365	0.00084	
	1.00	0.98	40	49	59	79	98	123	148	196	245	0.00057	
2.00"	0.62	2.84	114	142	170	227	284	355	426	568	710	0.00164	
	1.00	2.36	94	118	141	188	236	294	353	472	590	0.00137	
2.50"	0.62	4.60	184	230	276	368	460	576	691	920	1150	0.00266	
	1.00	4.12	165	206	247	330	412	515	618	824	1030	0.00239	
3.25"	1.00	7.51	300	375	450	601	751	938	1126	1502	1878	0.00435	
	1.37	6.82	273	341	409	545	682	852	1023	1364	1705	0.00394	
4.00"	1.00	11.78	471	589	707	942	1178	1472	1766	2356	2945	0.00682	
	1.37	11.09	443	554	665	887	1109	1386	1663	2218	2773	0.00641	
5.00"	1.00	18.84	754	942	1130	1507	1884	2355	2826	3768	4710	0.01092	
	1.37	18.15	726	908	1089	1452	1815	2269	2723	3630	4538	0.01051	
6.00"	1.37	26.79	1071	1339	1607	2143	2679	3348	4018	5358	6698	0.01551	
	1.75	25.86	1034	1293	1551	2068	2586	3232	3878	5172	6465	0.01498	
8.00"	1.37	48.77	1951	2438	2926	3901	4877	6096	7315	9754	12193	0.02823	
	1.75	47.84	1913	2392	2870	3827	4784	5979	7175	9568	11960	0.02770	

For Un-tabulated Air Pressures:

Push Force (lbs.) = Pressure (PSI) x Piston Area (in²)

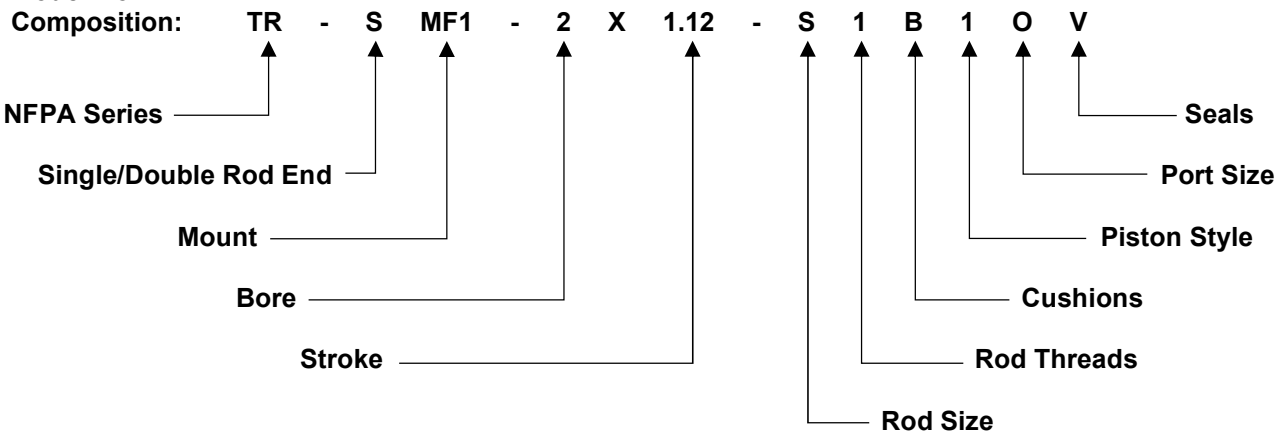
Pull Force (lbs.) = Pressure (PSI) x Effective Piston Area (in²)

HOW TO ORDER:

Example: NFPA, Single Rod End, Head Flange Mount, 2" Bore, 1-1/8" Stroke, Standard Rod Size, Small Male Thread, Cushions - Both Ends, Standard Piston, Oversized Ports, and Fluoroelastomer Seals

Model No.: TR-SMF1-2X1.12-S1B1O V

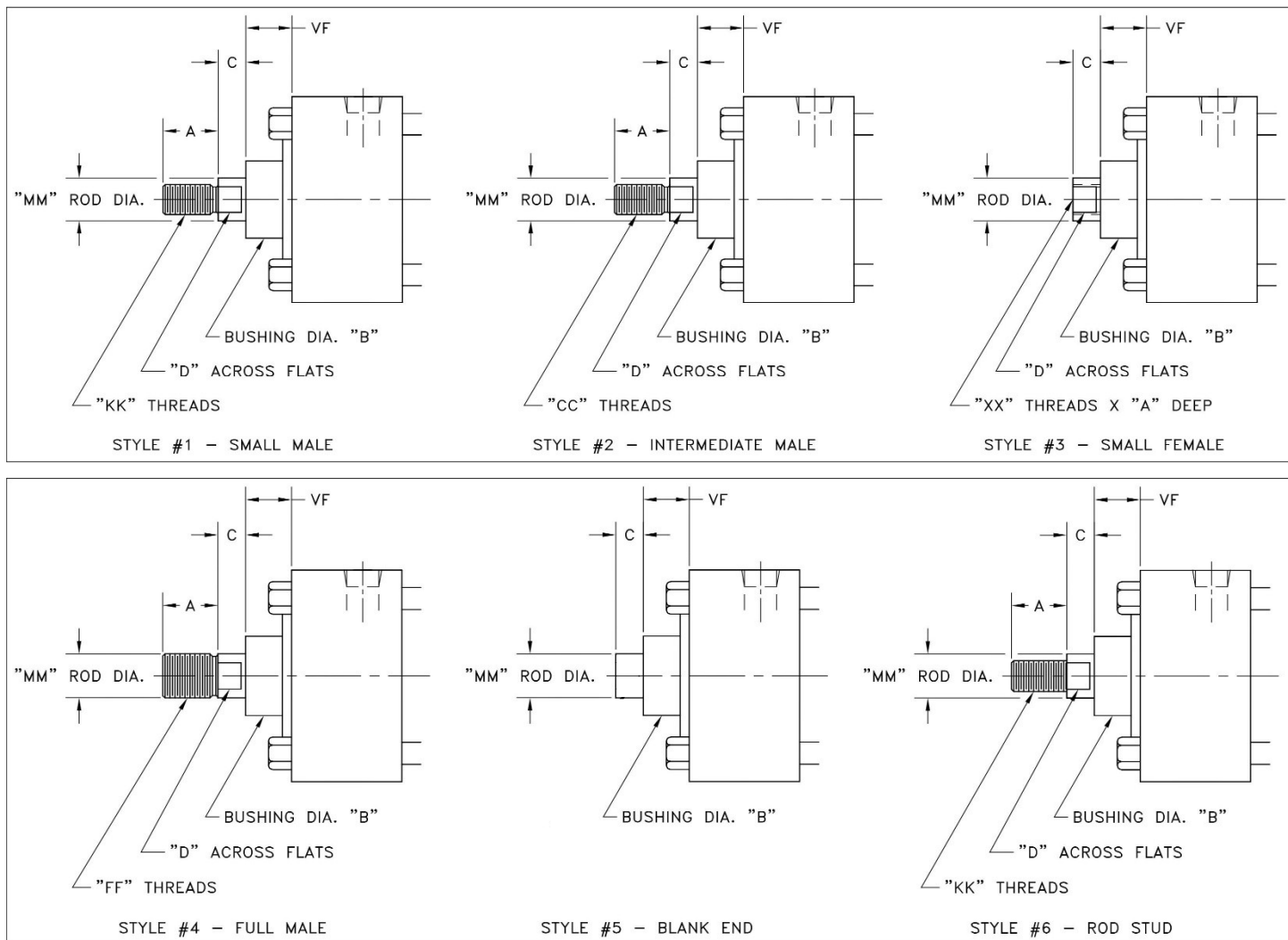
Model No.



Rod Style	Mount	Bore Size (in.)	Rod Size	Rod Thread	Cushions	Piston Style	Port Size	Seals
S - Single	MX0 – Basic Mount	1.5	S - Standard	1 – Small Male	N – None	1 - Standard	S – Standard	B – Buna
D - Double	SN – Sleeve Nut Construction	2	L - Oversized	2 – Intermediate Male	H – Head	2 - Magnetic	O - Oversized	V – FKM
	MS4 – Bottom Tapped Mount	2.5		3 – Small Female	C – Cap			P – Poly-Pak
	MP1 – Fixed Clevis Mount	3.25		4 – Full Male	B – Both Ends			E – Bumper
	MP2 – Detachable Clevis Mount	4		5 – Blank End	U – Urethane Bumpers			
	MP4 – Detachable Eye Mount	5		6 – Rod Stud				
	MF1 – Head Flange Mount	6						
	MF2 – Cap Flange Mount	8						
	ME3 – Square Flange Head Mount							
	ME4 – Square Flange Cap Mount							
	MS1 – Side End Angle Mount							
	MS2 – Side End Lug Mount							
	MS7 – End Lug Mount							
	MX1 – Extended Tie Rod – Both Ends							
	MX2 – Extended Tie Rod – Cap End							
	MX3 – Extended Tie Rod – Head End							
	BB – Base Bar Mount							
	MT1 – Head End Trunnion Mount							
	MT2 – Cap End Trunnion Mount							
	MT4 – Intermediate Trunnion Mount							

NOTES	* Strokes available in 1/8" increments. Non-Standard strokes potentially carry more lead time. Strokes are truncated in call outs Ex: 1.125" stroke = 1.12
	* Please see mount specific pages for more information on any incompatible options and bore sizes.
	* Standard Stroke Lengths = 1", 2", 3", 4", 5", 6", 7", 8", 10", 12", 14", 16", 18", 20", 22", & 24"

ROD THREAD OPTIONS:

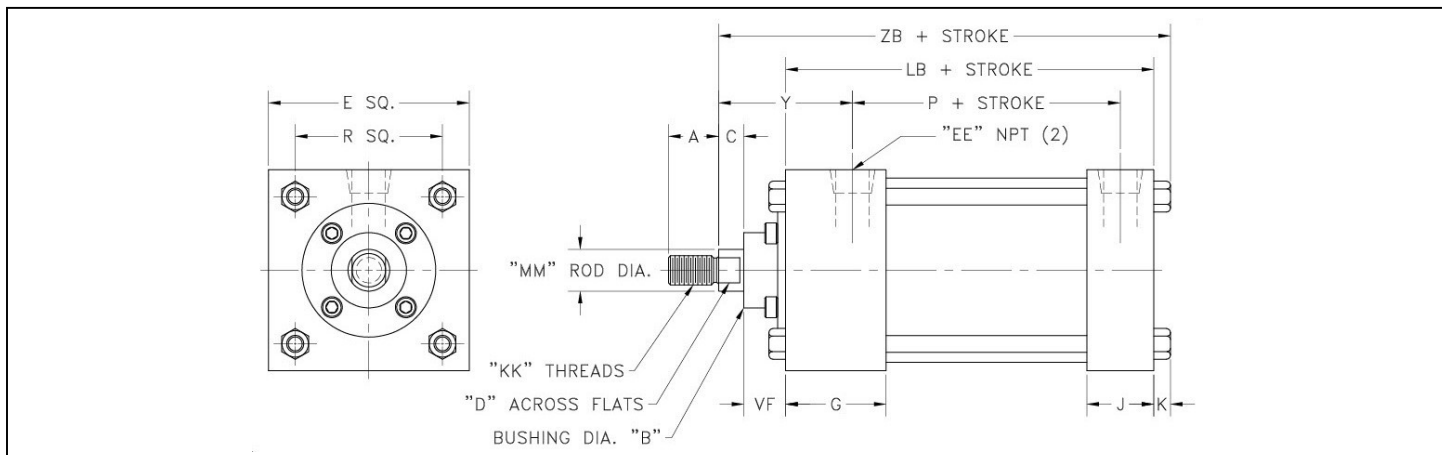


DIMENSIONS FOR ROD END THREADS

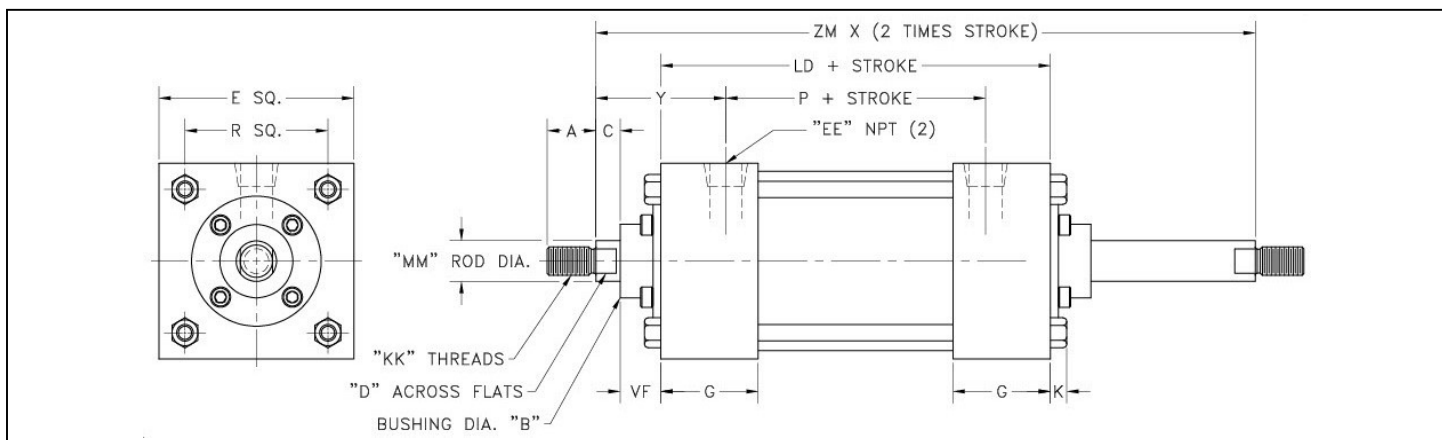
Bore	MM	A	B	C	D	VF	KK	CC	XX	FF
1.5", 2", 2.5"	0.62	0.75	1.12	0.37	0.50	0.62	7/16-20	1/2-20	7/16-20	5/8-18
	1.00	1.12	1.50	0.50	0.81	0.87	3/4-16	7/8-14	3/4-16	1-14
3.25", 4", 5"	1.00	1.12	1.50	0.50	0.81	0.87	3/4-16	7/8-14	3/4-16	1-14
	1.37	1.62	2.00	0.62	1.12	1.00	1-14	1-1/4-12	1-14	1-3/8-12
6", 8"	1.37	1.62	2.00	0.62	1.12	1.00	1-14	1-1/4-12	1-14	1-3/8-12
	1.75	2.00	2.37	0.75	1.50	1.12	1-1/4-12	1-1/2-12	1-1/4-12	1-3/4-12

* Note that throughout catalog the "KK" thread option is default for all rod end dimensions

MXO: BASIC MOUNT



MXO: DOUBLE ROD BASIC MOUNT

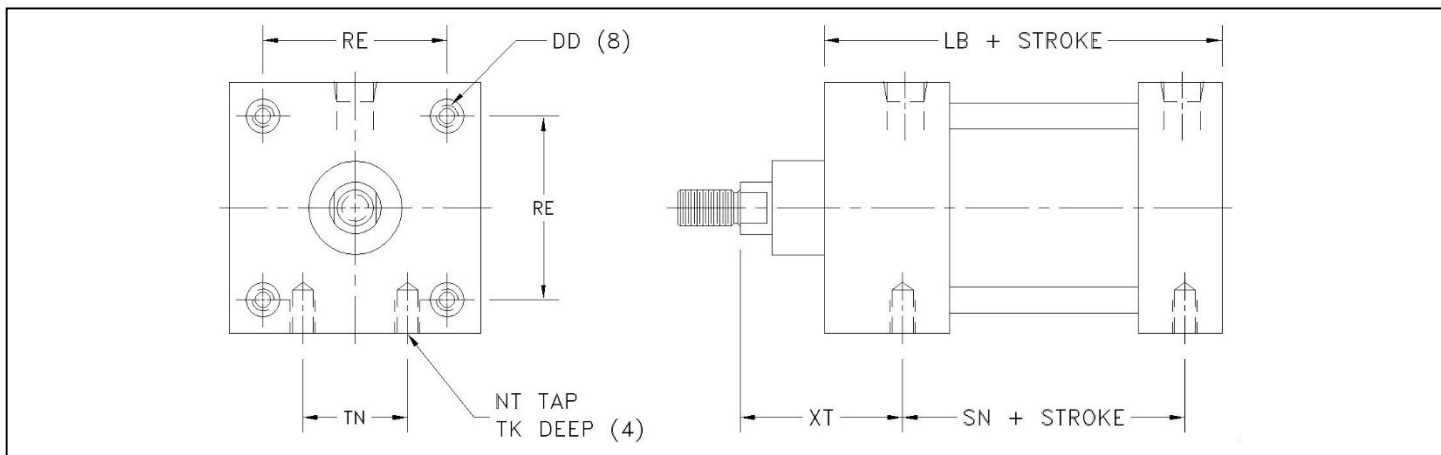


DIMENSIONS FOR MXO MOUNTS

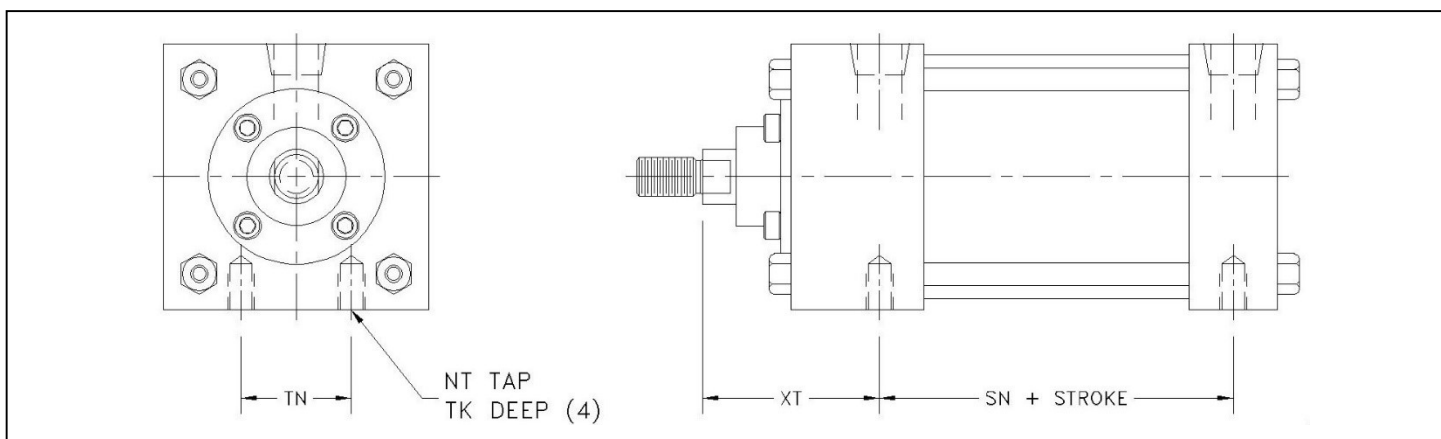
Bore	MM	A	B	C	D	E	EE	EE*	G	J	K	KK	LB	LD	P	R	VF	Y	ZB	ZM
1.5"	0.62	0.75	1.12	0.37	0.50	2.00	1/4	3/8	1.50	1.00	0.25	7/16-20	3.62	4.12	2.12	1.43	0.62	2.00	4.87	6.12
	1.00	1.12	1.50	0.50	0.81							3/4-16								
2"	0.62	0.75	1.12	0.37	0.50	2.50	1/4	3/8	1.50	1.00	0.31	7/16-20	3.62	4.12	2.12	1.84	0.62	2.00	4.93	6.12
	1.00	1.12	1.50	0.50	0.81							3/4-16								
2.5"	0.62	0.75	1.12	0.37	0.50	3.00	1/4	3/8	1.50	1.00	0.31	7/16-20	3.75	4.25	2.25	2.19	0.62	2.00	5.31	6.25
	1.00	1.12	1.50	0.50	0.81							3/4-16								
3.25"	1.00	1.12	1.50	0.50	0.81	3.75	3/8	1/2	1.75	1.25	0.37	3/4-16	4.25	4.75	2.50	2.76	0.87	2.50	6.00	7.50
	1.37	1.62	2.00	0.62	1.12							1 - 14								
4"	1.00	1.12	1.50	0.50	0.81	4.50	3/8	1/2	1.75	1.25	0.37	3/4-16	4.25	4.75	2.50	3.32	0.87	2.50	6.00	7.50
	1.37	1.62	2.00	0.62	1.12							1 - 14								
5"	1.00	1.12	1.50	0.50	0.81	5.50	3/8	1/2	1.75	1.25	0.50	3/4-16	4.50	5.00	2.75	4.10	0.87	2.50	6.37	7.75
	1.37	1.62	2.00	0.62	1.12							1 - 14								
6"	1.37	1.62	2.00	0.62	1.12	6.50	1/2	3/4	2.00	1.50	0.50	1 - 14	5.00	5.50	3.12	4.87	1.00	2.81	7.12	8.75
	1.75	2.00	2.37	0.75	1.50							1-1/4 - 12								
8"	1.37	1.62	2.00	0.62	1.12	8.50	1/2	3/4	2.00	1.50	0.62	1 - 14	5.12	5.62	3.25	6.44	1.00	2.81	7.37	8.87
	1.75	2.00	2.37	0.75	1.50							1-1/4 - 12								

* When equipped with oversized port option

SN: SLEEVE NUT CONSTRUCTION



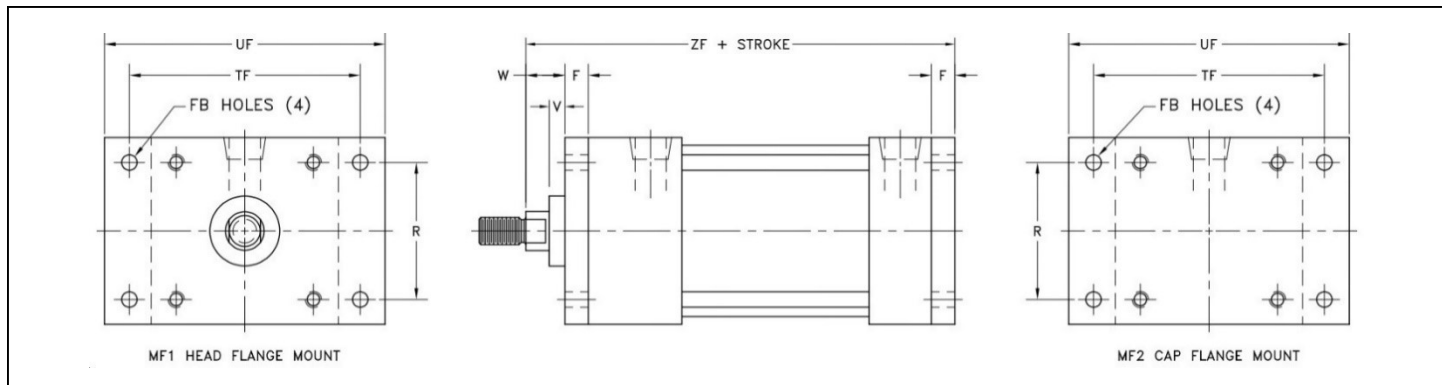
MS4: BOTTOM TAPPED MOUNT



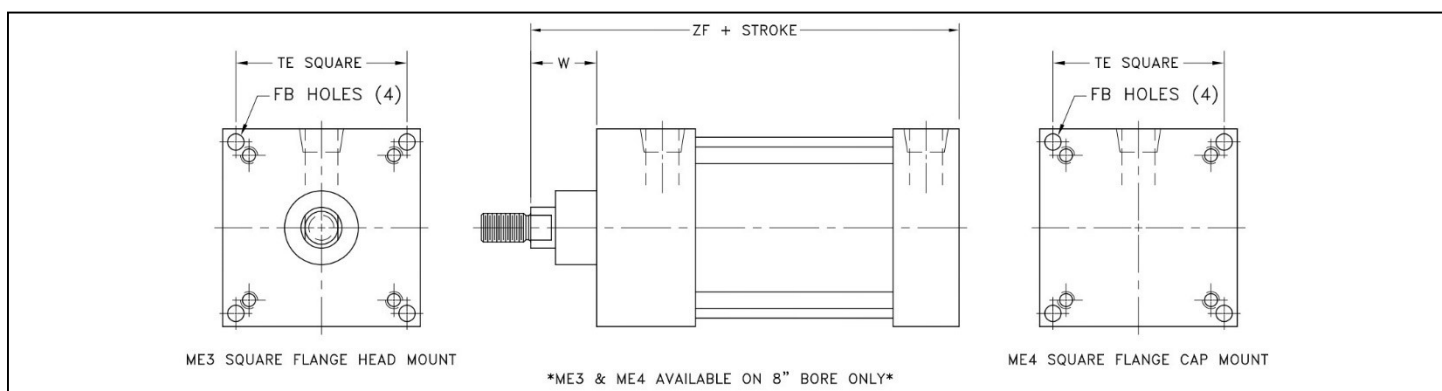
DIMENSIONS FOR MS4 & SN MOUNTS

Bore	Rod Ø	DD	LB	NT	RE	SN	TK	TN	XT
1.5"	0.62	1/4-28	3.62	1/4-20	1.42	2.25	0.37	0.62	1.93
	1.00								2.31
2"	0.62	5/16-24	3.62	5/16-18	1.84	2.25	0.37	0.87	1.93
	1.00								2.31
2.5"	0.62	5/16-24	3.75	3/8-16	2.18	2.37	0.50	1.25	1.93
	1.00								2.31
3.25"	1.00	3/8-24	4.25	1/2-13	2.76	2.62	0.75	1.50	2.43
	1.37								2.68
4"	1.00	3/8-24	4.25	1/2-13	3.32	2.62	0.75	2.06	2.43
	1.37								2.68
5"	1.00	1/2-20	4.50	5/8-11	4.10	2.87	0.93	2.68	2.43
	1.37								2.68
6"	1.37	1/2-20	5.00	3/4-10	4.87	3.12	1.12	3.25	2.81
	1.75								3.06
8"	1.37	5/8-18	5.12	3/4-10	6.43	3.25	1.12	4.50	2.81
	1.75								3.06

MF1 & MF2: FLANGE MOUNTS



ME3 & ME4: SQUARE FLANGE MOUNTS

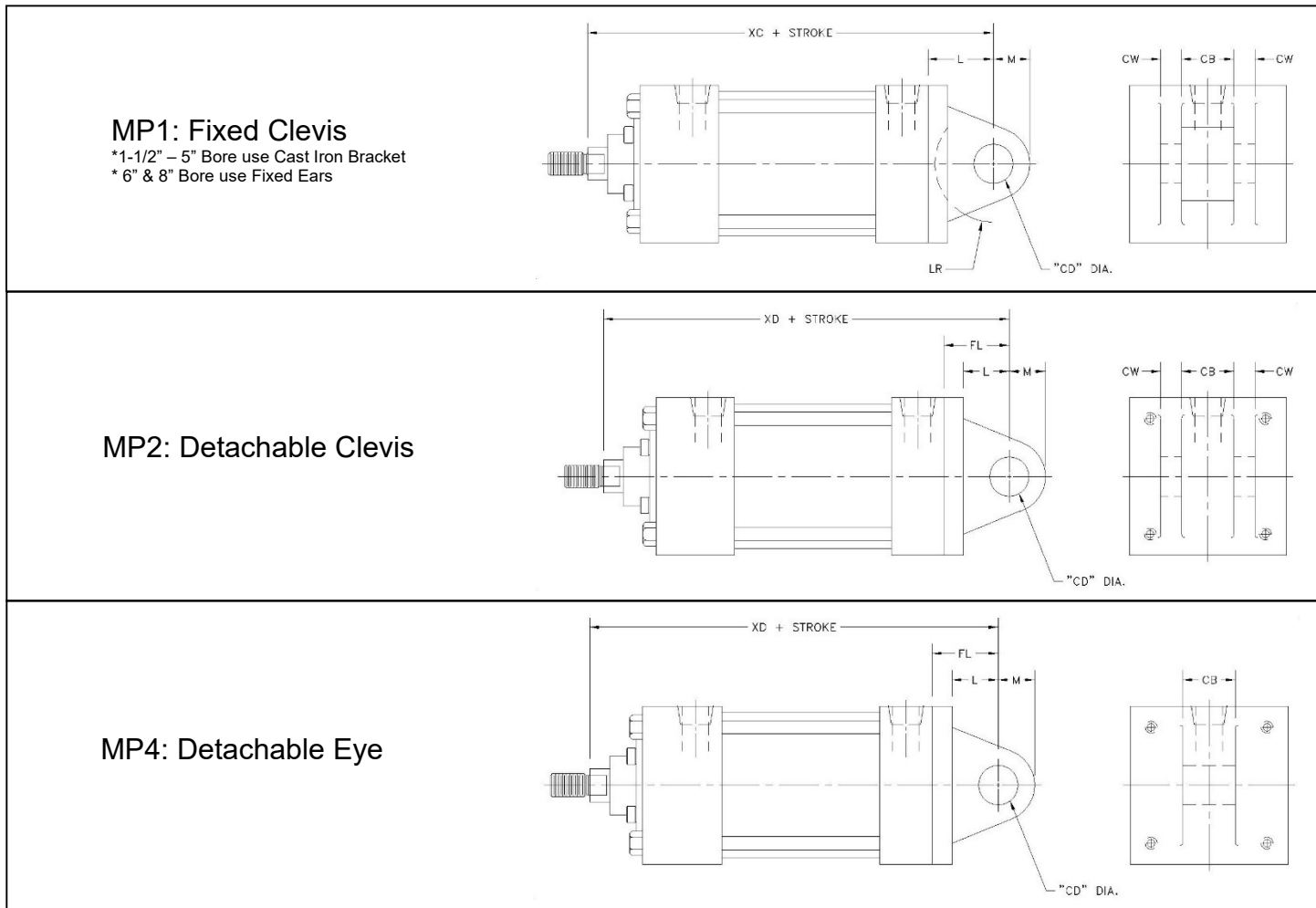


DIMENSIONS FOR FLANGE MOUNTS MF1, MF2, ME3, & ME4

Bore	Rod Ø	F	FB	R	TE	TF	UF	V	W	ZF
1.5"	0.62	0.37	0.31	1.43	--	2.75	3.37	0.25	0.62	5.00
	1.00							0.50	1.00	5.37
2"	0.62	0.37	0.37	1.84	--	3.37	4.12	0.25	0.62	5.00
	1.00							0.50	1.00	5.37
2.5"	0.62	0.37	0.37	2.18	--	3.87	4.62	0.25	0.62	5.12
	1.00							0.50	1.00	5.50
3.25"	1.00	0.62	0.43	2.76	--	4.68	5.50	0.25	0.75	6.25
	1.37							0.37	1.00	6.50
4"	1.00	0.62	0.43	3.32	--	5.43	6.25	0.25	0.75	6.25
	1.37							0.37	1.00	6.50
5"	1.00	0.62	0.56	4.10	--	6.62	7.62	0.25	0.75	6.50
	1.37							0.37	1.00	6.75
6"	1.37	0.75	0.56	4.88	--	7.62	8.62	0.25	0.87	7.37
	1.75							0.37	1.12	7.62
8"	1.37	--	0.69	--	7.57	--	--	--	1.62	6.75
	1.75								1.87	7.00

PIVOT MOUNTS:

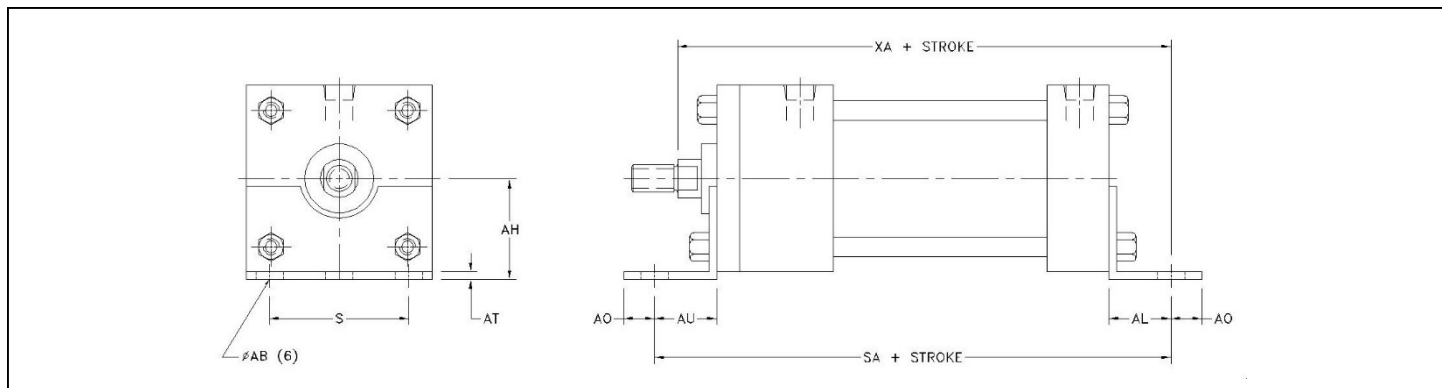
HEADED PIVOT PIN SUPPLIED WITH ALL PIVOT MOUNT CYLINDERS



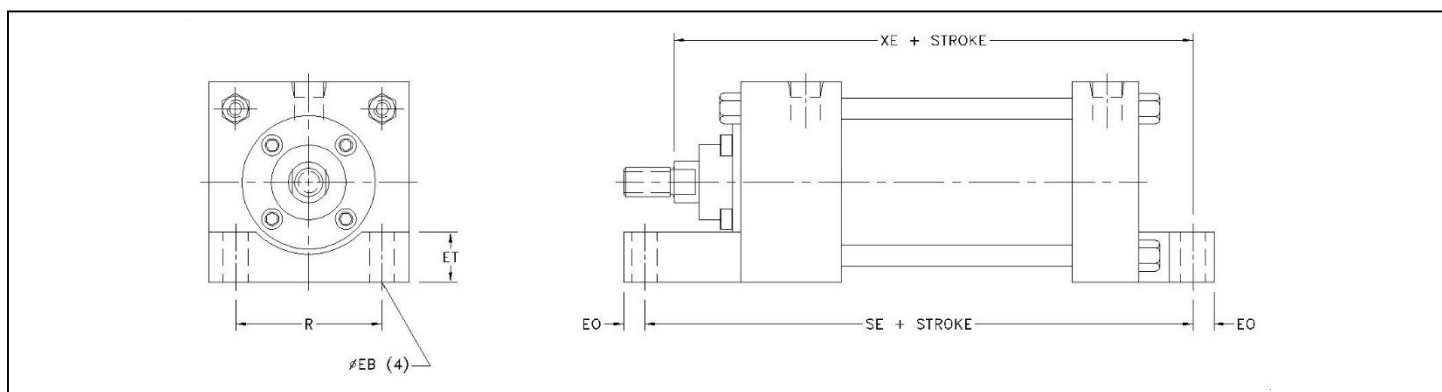
DIMENSIONS FOR PIVOT MOUNTS MP1, MP2, & MP4

Bore	Rod Ø	CB	CD	CW	FL	L	LR*	M	XC	XD
1.5"	0.62	0.75	0.50	0.50	1.12	0.75	0.62	0.62	5.37	5.75
	1.00								5.75	6.12
2"	0.62	0.75	0.50	0.50	1.12	0.75	0.62	0.62	5.37	5.75
	1.00								5.75	6.12
2.5"	0.62	0.75	0.50	0.50	1.12	0.75	0.62	0.62	5.50	5.87
	1.00								5.87	6.25
3.25"	1.00	1.25	0.75	0.62	1.87	1.25	0.87	0.87	6.87	7.50
	1.37								7.12	7.75
4"	1.00	1.25	0.75	0.62	1.87	1.25	0.87	0.87	6.87	7.50
	1.37								7.12	7.75
5"	1.00	1.25	0.75	0.62	1.87	1.25	0.87	0.87	7.12	7.75
	1.37								7.37	8.00
6"	1.37	1.50	1.00	0.75	2.25	1.50	--	1.00	8.12	8.87
	1.75								8.37	9.12
8"	1.37	1.50	1.00	0.75	2.25	1.50	--	1.00	8.25	9.00
	1.75								8.50	9.25

MS1: SIDE END ANGLE MOUNT



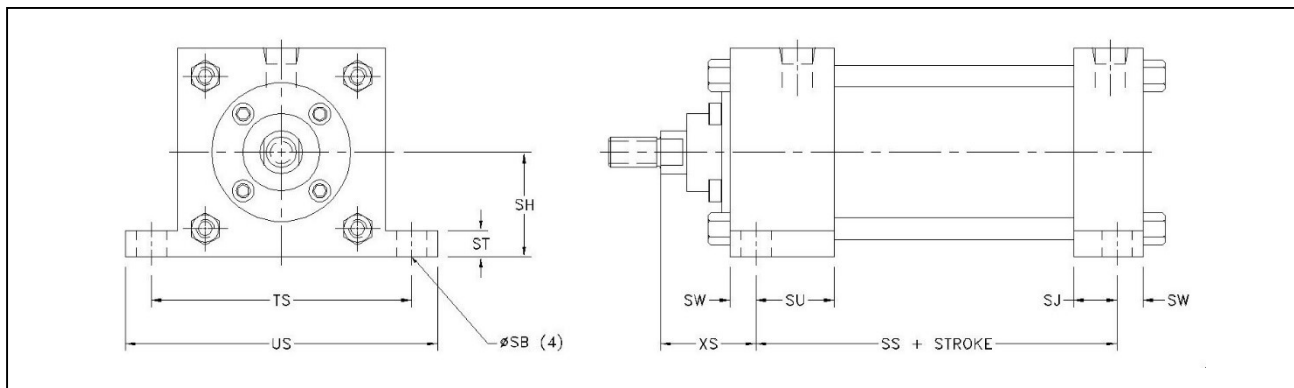
MS7: END LUG MOUNT



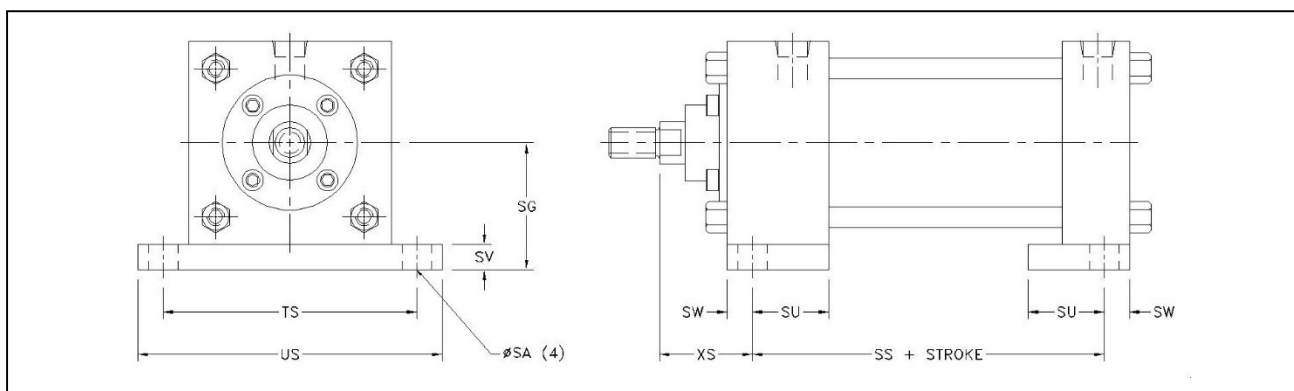
DIMENSIONS FOR END MOUNTS MS1 & MS7

Bore	Rod Ø	ABØ	EBØ	AH	AL	AO	AT	AU	EO	ET	S	R	SA	SE	XA	XE
1.5"	0.62	0.43	0.31	1.18	1.00	0.50	0.12	1.37	0.25	0.50	1.25	1.43	6.00	5.50	5.62	5.37
	1.00														6.00	5.75
2"	0.62	0.43	0.37	1.43	1.00	0.50	0.12	1.37	0.31	0.75	1.75	1.84	6.00	5.87	5.62	5.56
	1.00														6.00	5.93
2.5"	0.62	0.43	0.37	1.62	1.00	0.50	0.12	1.37	0.31	0.75	2.25	2.18	6.12	6.25	5.75	5.81
	1.00														6.12	6.18
3.25"	1.00	0.56	0.43	1.93	1.25	0.50	0.12	1.87	0.37	1.00	2.75	2.76	7.37	6.62	6.87	6.50
	1.37														7.12	6.75
4"	1.00	0.56	0.43	2.25	1.25	0.50	0.12	1.87	0.37	1.25	3.50	3.32	7.37	6.87	6.87	6.62
	1.37														7.12	6.87
5"	1.00	0.68	0.56	2.75	1.37	0.62	0.18	2.00	0.50	1.50	4.25	4.10	7.87	7.25	7.25	6.93
	1.37														7.50	7.18
6"	1.37	0.81	0.56	3.25	1.37	0.62	0.18	2.13	0.50	1.50	5.25	4.87	8.50	7.75	8.00	7.62
	1.75														8.25	7.87
8"	1.37	0.81	0.68	4.25	1.81	0.68	0.25	1.81	0.62	2.06	7.12	6.43	8.75	8.00	8.56	7.87
	1.75														8.81	8.12

MS2: SIDE END LUG MOUNT



BB: BASE BAR MOUNT

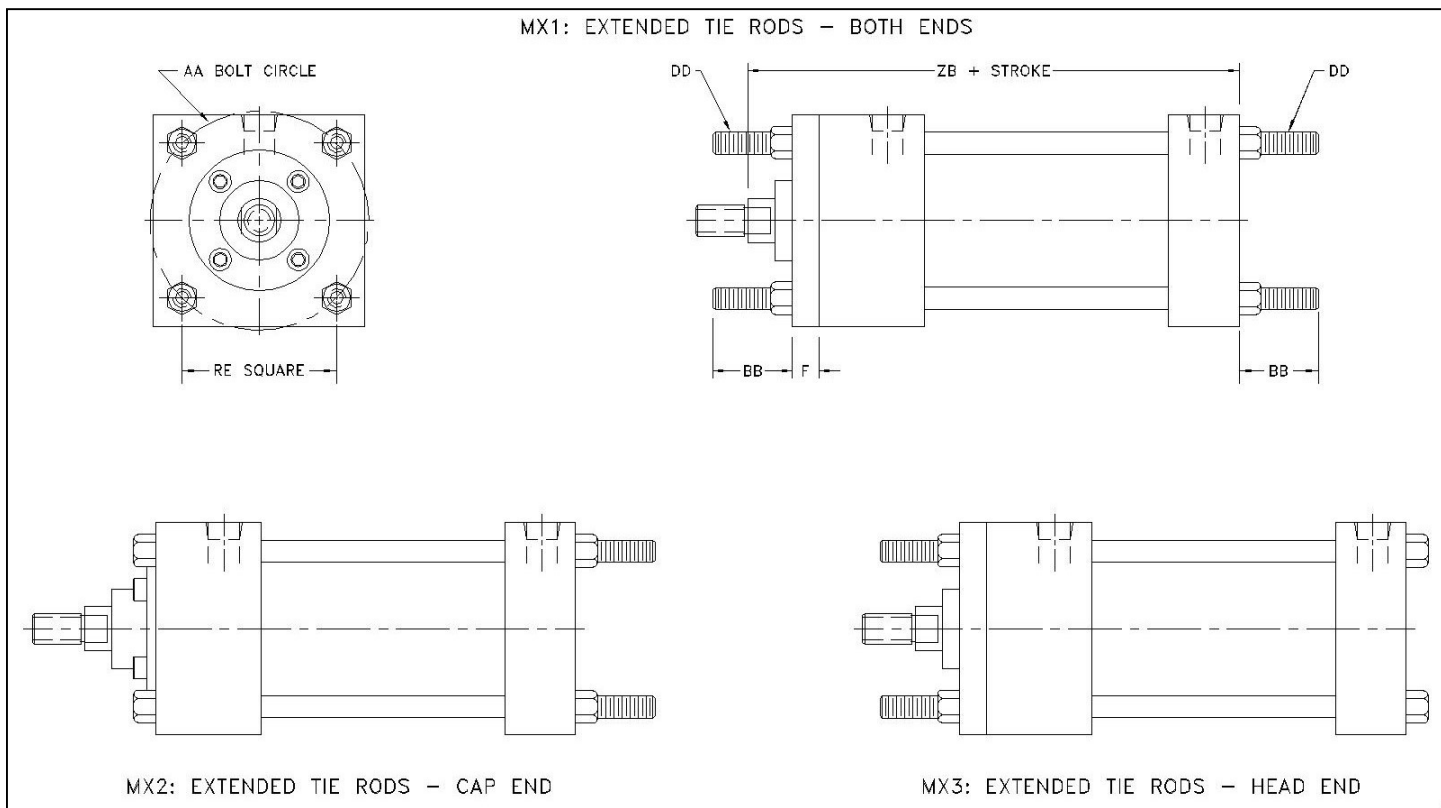


DIMENSIONS FOR SIDE MOUNTS MS2 & BB

Bore	Rod ϕ	SA ϕ	SB ϕ	SG	SH	SJ	SS	ST	SU	SV	SW	TS	US	XS
1.5"	0.62	0.43	0.48	1.25	1.00	0.62	2.87	0.50	1.12	0.25	0.37	2.75	3.50	1.37
	1.00													1.75
2"	0.62	0.43	0.48	1.50	1.25	0.62	2.87	0.50	1.12	0.25	0.37	3.25	4.00	1.37
	1.00													1.75
2.5"	0.62	0.43	0.48	1.87	1.50	0.62	3.00	0.50	1.12	0.37	0.37	3.75	4.50	1.37
	1.00													1.75
3.25"	1.00	0.56	0.56	2.37	1.87	0.75	3.25	0.75	1.25	0.50	0.50	4.75	5.75	1.87
	1.37													2.12
4"	1.00	0.56	0.56	2.75	2.25	0.75	3.25	0.75	1.25	0.50	0.50	5.50	6.50	1.87
	1.37													2.12
5"	1.00	0.81	0.81	3.50	2.75	0.56	3.12	1.00	1.06	0.75	0.68	6.87	8.25	2.06
	1.37													2.31
6"	1.37	0.81	0.81	4.00	3.25	0.81	3.62	1.00	1.31	0.75	0.68	7.87	9.25	2.31
	1.75													2.56
8"	1.37	--	0.81	--	4.25	0.81	3.75	1.00	1.31	--	0.68	9.87	11.25	2.31
	1.75													2.56

Note - BB: Base Bar Mount NOT Available on 8" Bore

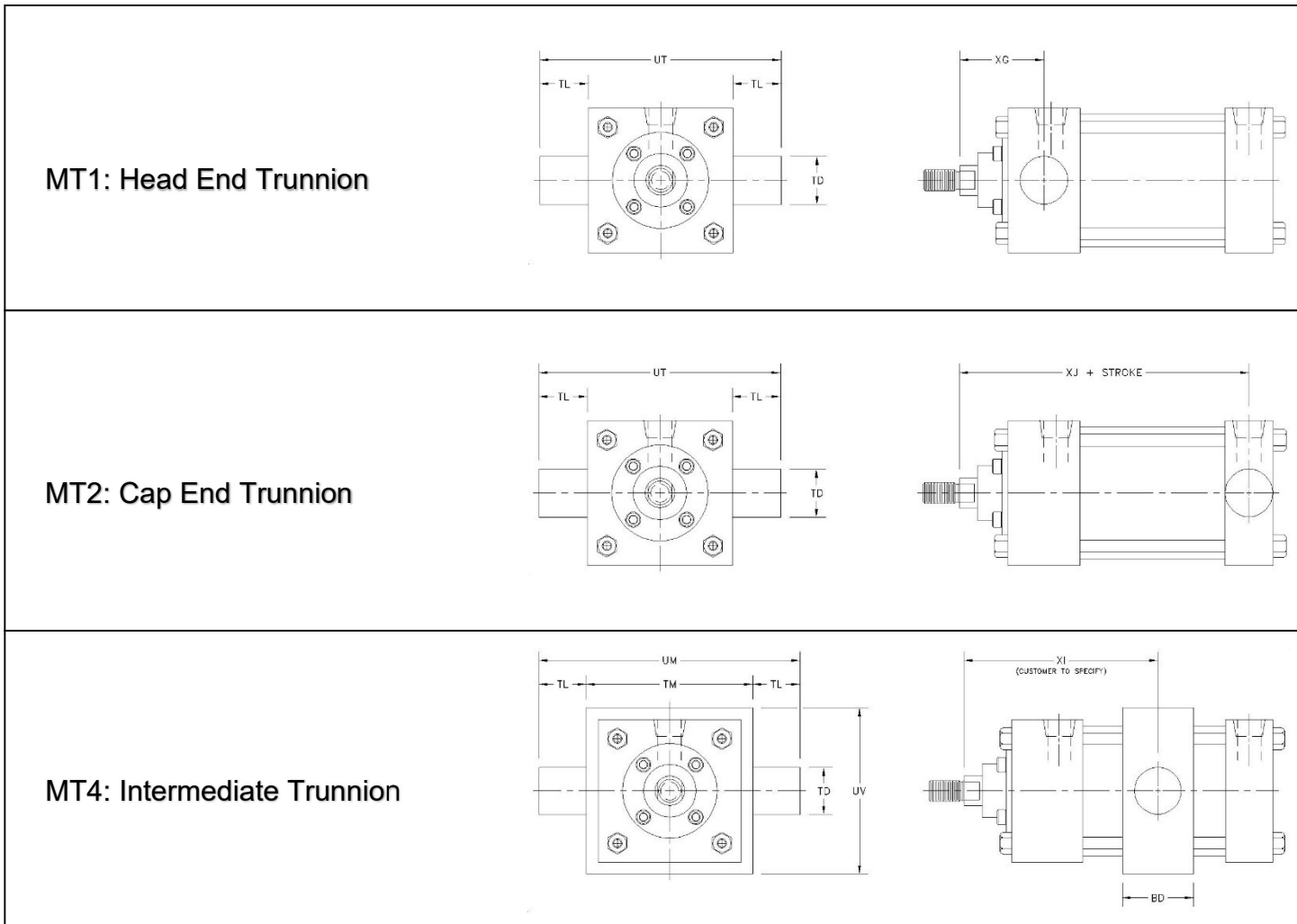
EXTENDED TIE ROD MOUNTS:



DIMENSIONS FOR EXTENDED TIE ROD MOUNTS MX1, MX2, & MX3

Bore	Rod Ø	AA	BB	DD	F	RE	ZB
1.5"	0.62	2.02	1.00	1/4-28	0.37	1.43	4.62
	1.00						5.00
2"	0.62	2.60	1.12	5/16-24	0.37	1.84	4.62
	1.00						5.00
2.5"	0.62	3.10	1.12	5/16-24	0.37	2.18	4.75
	1.00						5.12
3.25"	1.00	3.90	1.37	3/8-24	0.62	2.76	5.62
	1.37						5.87
4"	1.00	4.70	1.37	3/8-24	0.62	3.32	5.62
	1.37						5.87
5"	1.00	5.80	1.81	1/2-20	0.62	4.10	5.87
	1.37						6.12
6"	1.37	6.90	1.81	1/2-20	0.75	4.87	6.62
	1.75						6.87
8"	1.37	9.10	2.31	5/8-18	--	6.43	6.75
	1.75						7.00

TRUNNION MOUNTS:

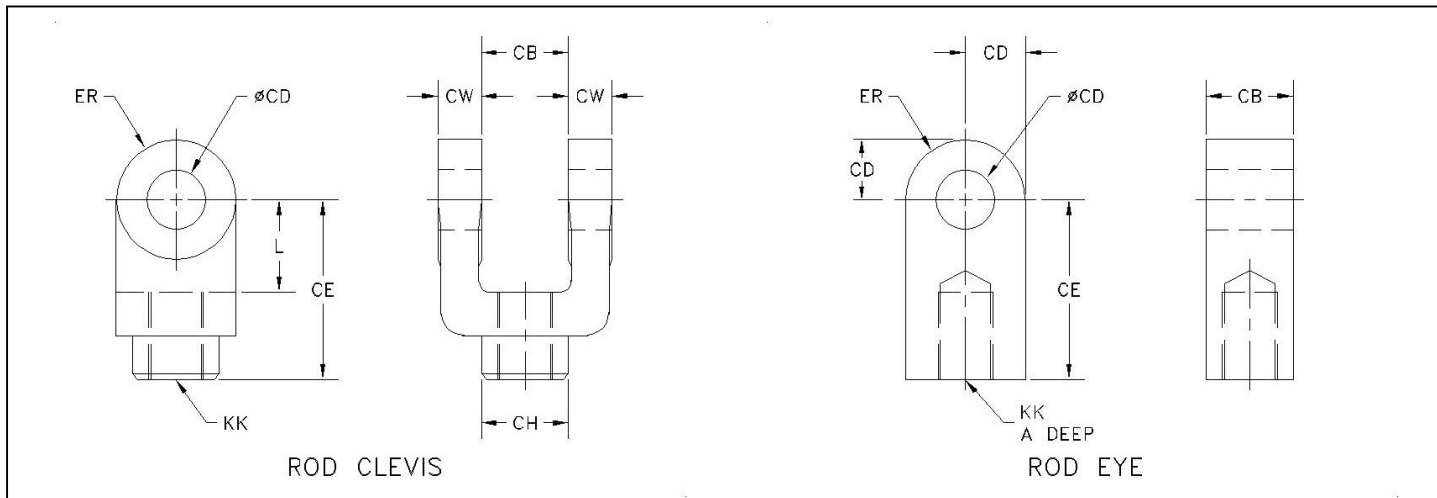


DIMENSIONS FOR TRUNNION MOUNTS MT1, MT2, & MT4

Bore	Rod Ø	BD	TD	TL	TM	UM	UT	UV	XG	XI (min.)	XJ
1.5"	0.62	1.25	1.00	1.00	2.50	4.50	4.00	2.50	1.75	3.12	4.12
	1.00								2.12	3.50	4.50
2"	0.62	1.50	1.00	1.00	3.00	5.00	4.50	3.00	1.75	3.25	4.12
	1.00								2.12	3.62	4.50
2.5"	0.62	1.50	1.00	1.00	3.50	5.50	5.00	3.50	1.75	3.25	4.25
	1.00								2.12	3.62	4.62
3.25"	1.00	2.00	1.00	1.00	4.50	6.50	5.75	4.25	2.25	4.12	5.00
	1.37								2.50	4.37	5.25
4"	1.00	2.00	1.00	1.00	5.25	7.25	6.50	5.00	2.25	4.12	5.00
	1.37								2.50	4.37	5.25
5"	1.00	2.00	1.00	1.00	6.25	8.25	7.50	6.00	2.25	4.12	5.25
	1.37								2.50	4.37	5.50
6"	1.37	2.50	1.37	1.37	7.62	10.37	9.25	7.00	2.62	4.62	5.87
	1.75								2.87	4.87	6.12
8"	1.37	2.50	1.37	1.37	9.75	12.50	11.25	9.50	2.62	4.87	6.00
	1.75								2.87	5.12	6.25

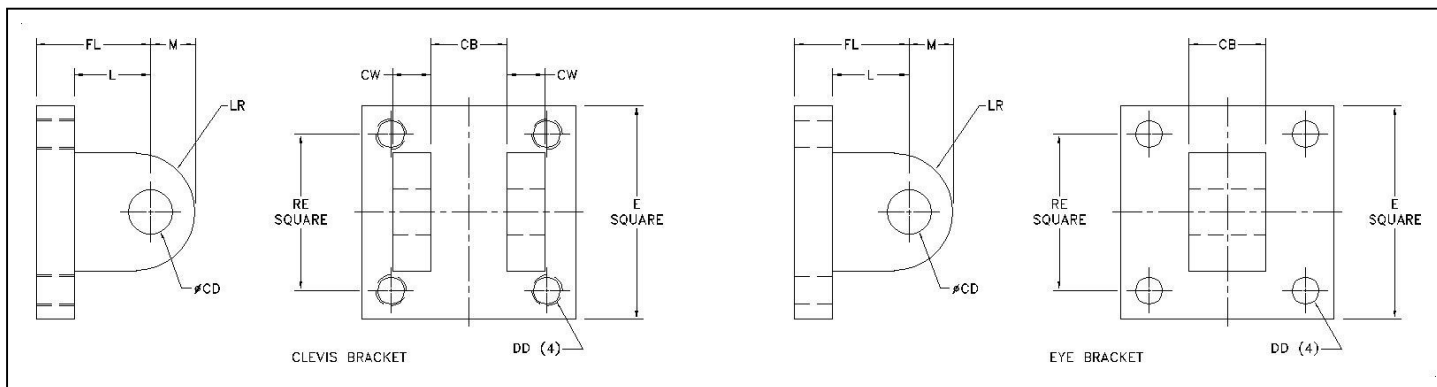
ACCESSORIES:

ACCESSORIES ARE ASSEMBLED ONTO CYLINDERS PRIOR TO SHIPMENT



	P/N:	DIMENSIONS FOR ROD ENDS								
		A	CB	CD	CE	CH	CW	ER	KK	L
ROD CLEVIS	RC-1	--	0.75	0.50	1.50	1.00	0.50	0.50	7/16-20	0.75
	RC-5	--	0.75	0.50	1.50	1.00	0.50	0.50	1/2-20	0.75
	RC-2	--	1.25	0.75	2.37	1.25	0.62	0.75	3/4-16	1.25
	RC-3	--	1.50	1.00	3.12	1.50	0.75	1.00	1 - 14	1.50
	RC-4	--	2.00	1.37	4.12	2.00	1.00	1.37	1-1/4-12	2.12
ROD EYE	FRE-1	0.75	0.75	0.50	1.50	--	--	0.56	7/16-20	0.75
	FRE-5	0.75	0.75	0.50	1.50	--	--	0.56	1/2-20	0.75
	FRE-2	1.12	1.25	0.75	2.06	--	--	0.93	3/4-16	1.25
	FRE-3	1.62	1.50	1.00	2.81	--	--	1.12	1 - 14	1.50
	FRE-4	2.00	2.00	1.37	3.48	--	--	1.56	1-1/4-12	2.12

* MATERIAL: BLACK OXIDE COATED STEEL



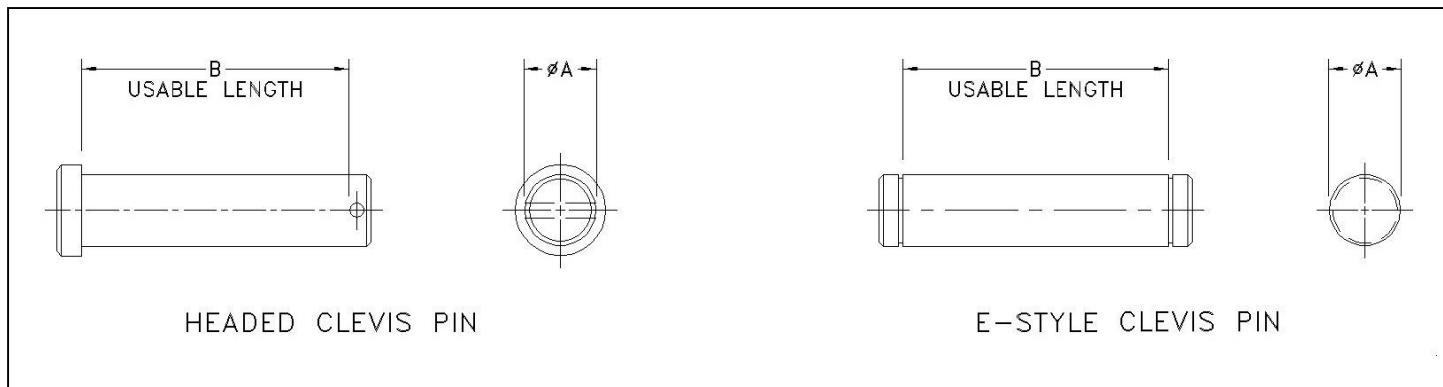
	P/N:	DIMENSIONS FOR MOUNTING BRACKETS									
		CB	CD	CW	DD	E	F	FL	LR	M	RE
CLEVIS BRACKET	CB-4	0.75	0.50	0.50	3/8-24	2.50	0.37	1.12	0.50	0.50	1.62
	CB-5	1.25	0.75	0.62	1/2-20	3.50	0.62	1.87	1.06	0.75	2.56
	CB-3	1.50	1.00	0.75	5/8-18	4.50	0.75	2.25	1.25	1.00	3.25
EYE BRACKET	EB-4	0.75	0.50	--	0.40	2.50	0.37	1.12	0.75	0.50	1.62
	EB-5	1.25	0.75	--	0.53	3.50	0.62	1.87	1.25	0.75	2.56
	EB-3	1.50	1.00	--	0.65	4.50	0.75	2.25	1.50	1.00	3.25

* MATERIAL: PAINTED CAST IRON

* CLEVIS BRACKET TO BE USED WITH MP4 MOUNT OR ROD EYE ACCESSORY

* EYE BRACKET TO BE USED WITH MP1 OR MP2 MOUNTS OR ROD CLEVIS ACCESSORY

ACCESSORIES: (CONTINUED)

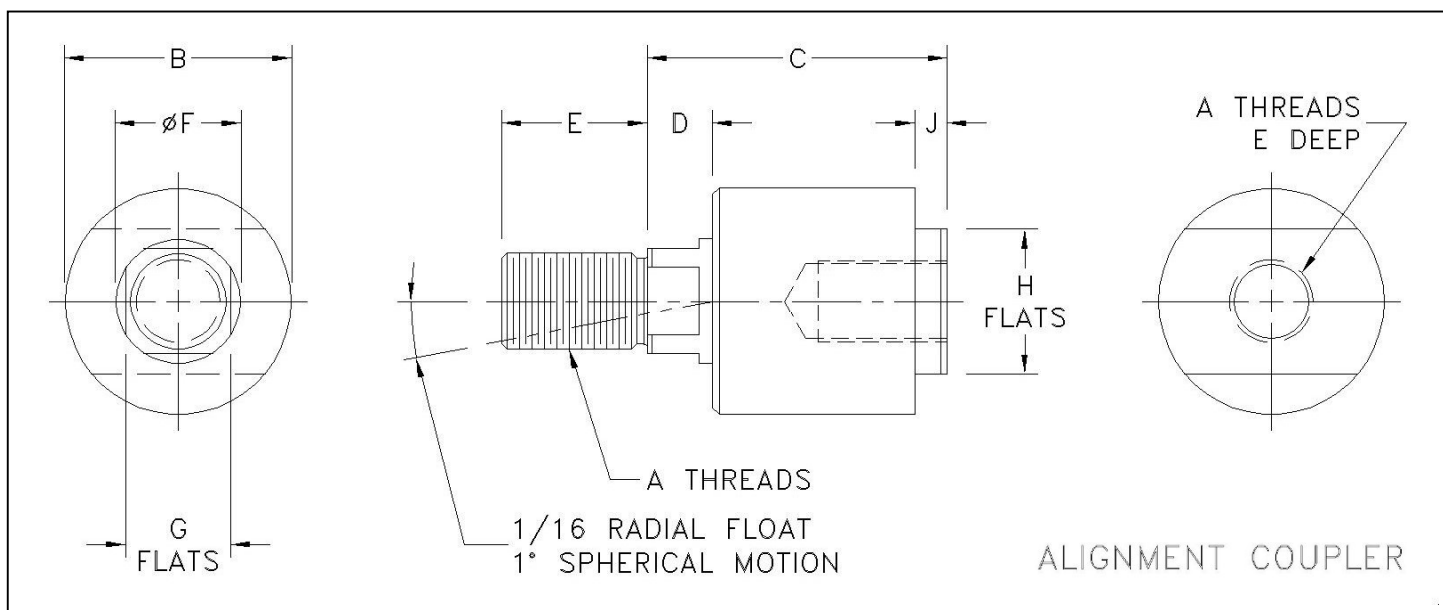


P/N:	DIMENSIONS FOR HEADED CLEVIS PIN	
	ϕA	B
HCP-1	0.50	2.02
HCP-2	0.75	2.77
HCP-3	1.00	3.20
HCP-4	1.37	4.37

*MATERIAL: CHROME PLATED STEEL
*COTTER PIN INCLUDED

P/N:	DIMENSIONS FOR E-STYLE CLEVIS PIN	
	ϕA	B
CP-1	0.50	1.87
CP-2	0.75	2.75
CP-3	1.00	3.25
CP-4	1.37	4.25

*MATERIAL: CHROME PLATED STEEL
*(2) E-STYLE CLIPS INCLUDED



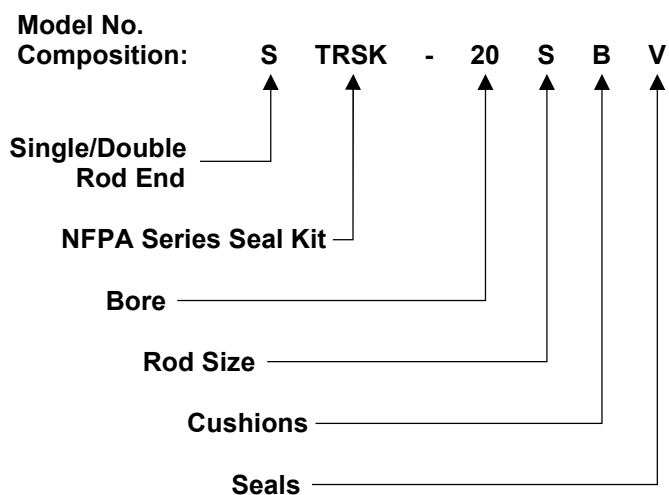
DIMENSIONS FOR ALIGNMENT COUPLERS										
P/N:	A	B	C	D	E	F	G	H	J	MAX. PULL
AC-437	7/16-20	1.25	2.00	0.50	0.75	0.62	0.50	0.81	0.25	10,000
AC-500	1/2-20	1.25	2.00	0.50	0.75	0.62	0.50	0.81	0.25	14,000
AC-750	3/4-16	1.75	2.31	0.50	1.12	0.96	0.81	1.12	0.25	34,000
AC-1000	1-14	2.50	2.93	0.50	1.62	1.34	1.15	1.62	0.12	64,000
AC-1250	1-1/4-12	2.50	2.93	0.50	1.62	1.34	1.15	1.62	0.25	78,000

SEAL KITS:

HOW TO ORDER:

Example: Single Rod End, NFPA Seal Kit, 2" Bore, Standard Rod Size, Cushions - Both Ends, & Fluoroelastomer Seals

Model No.: STRSK-20SBV



Rod Style	Bore Size (in.)	Rod Size	Cushions	Seals
S – Single	15 (1.50)	S – Standard	N – None	B – Buna
D – Double	20 (2.00)	L – Oversized	B – Both Ends* U – Urethane Bumpers	V – FKM (Viton)
	25 (2.50)			P – Poly-Pak
	32 (3.25)			E – Bumper
	40 (4.00)			
	50 (5.00)			
	60 (6.00)			
	80 (8.00)			

NOTES

- *Use even if cushions are required for one end only.
- Contact factory or authorized distributor for pricing and availability.

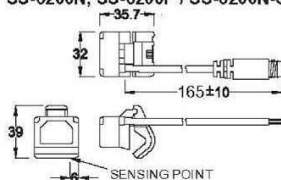
SWITCHES:

CLAMPS ARE INCLUDED WITH ALL SWITCHES

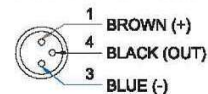


DIMENSION

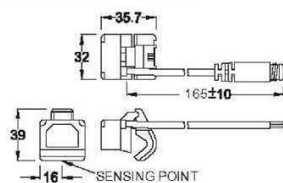
SS-6200N, SS-6200P / SS-6200N-QD, SS-6200P-QD



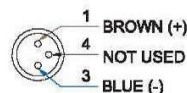
Solid State QD Pinout



RS-6200 / RS-6200-QD



Reed QD Pinout



Unit:mm

SPECIFICATION

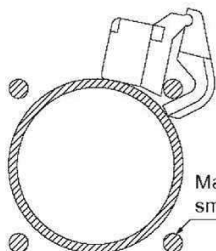
TYPE	RS-6200	SS-6200N	SS-6200P
CONNECT DIAGRAM			
CHARACTERISTICS			
WIRING METHOD	2-Wire Type	3-Wire Type	
SWITCHING LOGIC	SPST, Normally Open	Solid State Output, Normally Open	
SENSOR TYPE	Reed Switch	NPN Current Sinking	PNP Current Sourcing
OPERATING VOLTAGE	5-240V DC/AC	5-30V DC	
SWITCHING CURRENT		1 Amp. max.	
CONTACT RATING (NOTE 1)		30 W max.	
CURRENT CONSUMPTION	--	42 mA @ 24V DC max.	30 mA @ 24V DC max.
VOLTAGE DROP	3.5 V max.	1.5 V @ 0.5A max.	
LEAKAGE CURRENT	--	0.01 mA max.	
INDICATOR	Red LED	Power : Green LED , Output : Red LED	
CABLE	ø4.5, 2C, PVC	ø4.5, 3C, PVC	
OPERATING FREQUENCY	200 Hz	1000 Hz	
MAGNET REQUIREMENT (NOTE 2)	80 Gauss	40 Gauss	
TEMPERATURE RANGE		-10~70°C (+14~158°F)	
SHOCK (NOTE 3)	30 G		50 G
VIBRATION (NOTE 4)		9 G	
ENCLOSURE CLASSIFICATION		IEC 60529 IP67 (NEMA 6)	
PROTECTION CIRCUIT (NOTE 5)	4		3,4

NOTE:

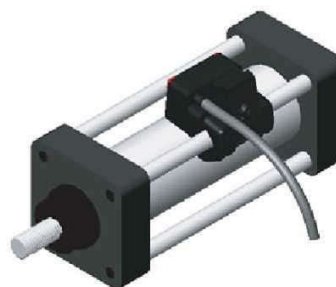
1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.
2. Measuring standard target: ø15.5xø8X5t (Anisotropy rubber magnet)
3. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.
4. Double amplitude 1.5 mm / 10Hz-55Hz-10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.
5. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression



SELF MOUNTING CLAMPS

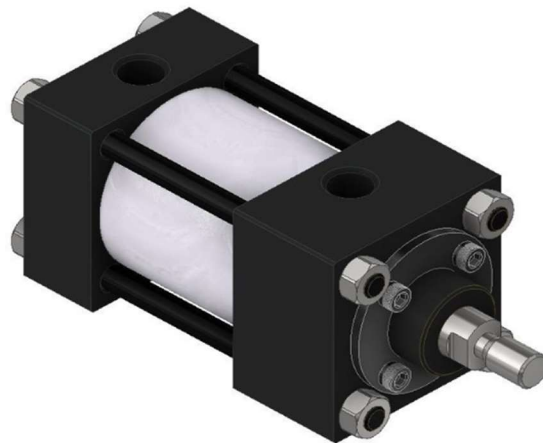


Max. tie-rod diameter ø 17.5
small tie-rod diameter ø 6



Unit:mm

WARRANTY:



WARRANTY

American Cylinder Co., Inc. warrants its products to be free from defects in material and workmanship under normal wear and service for a period of 1 year from date of shipment of the order. American Cylinder Company shall have no liability under this warranty if: 1) The product is used other than in accordance with specifications. 2) The product is subjected to abuse, negligence, accident, misapplication, or unintended use. 3) The product is manufactured to buyer's specifications.

Manufacturer's liability shall be limited to allowance of credit or replacement of defective product. American Cylinder Company shall not be liable or responsible for injuries or damages to persons or property arising out of the use or operation of American Cylinder products.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, LIABILITY FOR LOST PROFIT OR FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR COMMERCIAL LOSSES, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES.

THESE CONDITIONS SUBJECT TO CHANGE WITHOUT NOTICE.

Special Design Air Cylinders

For those design projects where a standard cylinder product cannot provide a solution, American Cylinder engineers can work along with you to design a custom pneumatic cylinder to satisfy the needs and challenges of your application.

After finalizing your design, prototypes can be economically manufactured by our ISO 9001 Certified Special Cylinder Department for your test and evaluation.

A significant portion of our business involves special modifications and as a special design air cylinder manufacturer, American Cylinder Co., continues to provide unique solutions to a wide variety of industries.

Examples of the most requested modifications include:

- Custom Rod Thread Lengths
- Coarse Threads
- Non-Standard Rod Extensions
- Special Seal Types, Compounds and Lubrication
- Customer Logos and Part Numbers
- Special Spring Forces and Materials
- Additional and Oversize Ports
- Special Head and Piston Materials
- Specific Dimensions for Interchangeability
- Value Added Sub-Assembly Services

American Cylinder is dedicated to filling your Special Cylinder requirements and welcomes your challenge to show you our problem solving capabilities.



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