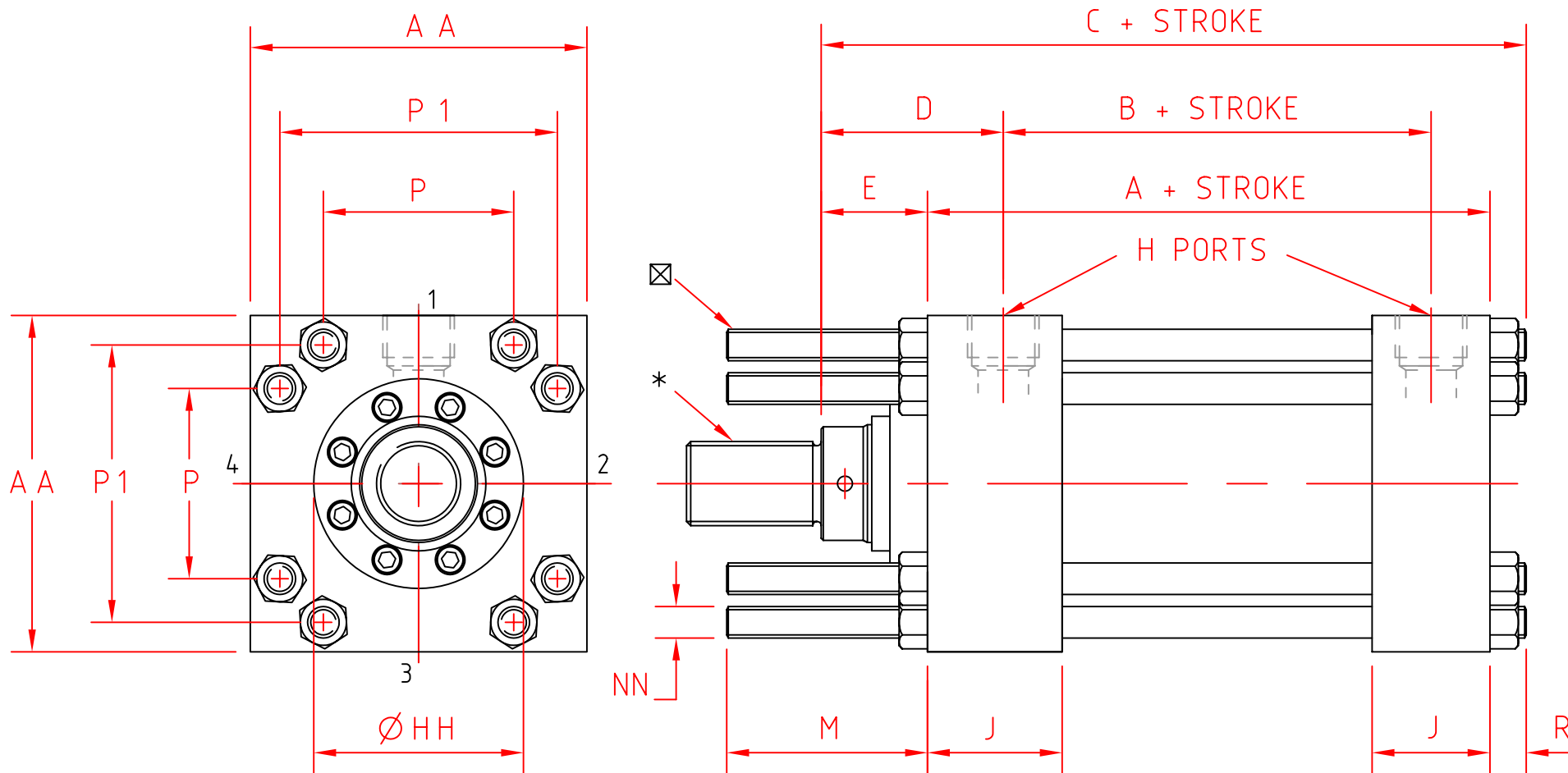


- ⊗ Single Slotted CUSH. ADJ.
- ⊗ Cross Slotted CUSH. Relief (Fixed)
- * MALE ROD END SHOWN See sheet 4 for male & female variations and dimensions
- ⊗ Variation of TIE ROD mounting on application

STYLE	NFPA	TIE ROD EXTENDED
1	MX3	HEAD END ONLY
1A	MX2	CAP END ONLY
1B	MX1	BOTH ENDS

CYLINDER SIZE	ROD DIA. E E	E	C	D	A	AA	B	F	H BSPP.	J	K	R	M	NN UNF.	P	CC
HB 15 1.50" BORE	0.625" STD. 15.87	0.63" 15.87	6.13" 155.57	2.00" 50.8	5.00" 127.0	2.50" 63.5	2.88" 73.02	0.38" 9.52	1/2"	1.75" 44.45	1.50" 38.1	0.50" 12.7	1.38" 34.92	3/8"-24	1.63" 41.4	2.30" 58.4
	1.000" 25.4	1.00" 25.4	6.50" 165.1	2.38" 60.32												
HB 20 2.00" BORE	1.000" STD. 25.4	0.75" 19.05	6.63" 168.27	2.38" 60.32	5.25" 133.35	3.00" 76.2	2.88" 73.02	0.62" 15.87	1/2"	1.75" 44.45	1.50" 38.1	0.63" 15.87	1.81" 46.03	1/2"-20	2.05" 52.07	2.90" 73.6
	1.375" 34.92	1.00" 25.4	6.88" 174.63	2.63" 66.68												
HB 25 2.50" BORE	1.000" STD. 25.4	0.75" 19.05	6.75" 171.45	2.38" 60.32	5.38" 136.52	3.50" 88.9	3.00" 76.2	0.62" 15.87	1/2"	1.75" 44.45	1.50" 38.1	0.63" 15.87	1.81" 46.03	1/2"-20	2.55" 64.7	3.60" 91.5
	1.375" 34.92	1.00" 25.4	7.00" 177.8	2.63" 66.68												
	1.750" 44.45	1.25" 31.75	7.25" 184.15	2.88" 73.02												
HB 32 3.25" BORE	1.375" STD. 34.92	0.88" 22.22	7.88" 200.02	2.75" 69.85	6.25" 158.75	4.50" 114.3	3.50" 88.9	0.75" 19.05	3/4"	2.00" 50.8	1.75" 44.45	0.75" 19.05	2.31" 58.73	5/8"-18	3.25" 82.55	4.6" 116.8
	1.750" 44.45	1.13" 28.57	8.13" 206.5	3.00" 76.2												
	2.000" 50.8	1.25" 31.75	8.25" 209.5	3.13" 79.38												
HB 40 4.00" BORE	1.750" STD. 44.45	1.00" 25.4	8.38" 212.72	3.00" 76.2	6.63" 168.27	5.00" 127.0	3.75" 95.25	0.88" 22.22	3/4"	2.00" 50.8	1.75" 44.45	0.75" 19.05	2.31" 58.73	5/8"-18	3.82" 97.0	5.4" 137.2
	2.000" 50.8	1.13" 28.57	8.50" 215.9	3.13" 79.37												
	2.500" 63.5	1.38" 34.92	8.75" 222.25	3.38" 85.73												
HB 50 5.00" BORE	2.000" STD. 50.8	1.13" 28.57	9.31" 236.53	3.13" 79.37	7.13" 180.97	6.50" 165.1	4.25" 107.95	0.88" 22.22	3/4"	2.00" 50.8	1.75" 44.45	1.06" 26.98	3.19" 80.96	7/8"-14	4.95" 125.7	7.0" 177.8
	2.500" 63.5	1.38" 34.92	9.56" 242.88	3.38" 85.73												
	3.000" 76.2	1.38" 34.92	9.56" 242.88	3.38" 85.73												
	3.500" 88.9	1.38" 34.92	9.56" 242.88	3.38" 85.73												
HB 60 6.00" BORE	2.500" STD. 63.5	1.25" 31.75	10.75" 273.05	3.50" 88.9	8.38" 212.72	7.50" 190.50	4.88" 132.82	1.00" 25.4	1.00"	2.25" 57.15	2.25" 57.15	1.12" 28.57	3.63" 92.07	1.00"-14	5.73" 145.5	8.1" 205.75
	3.000" 76.2	1.25" 31.75														
	3.500" 88.9	1.25" 31.75														
	4.000" 101.6	1.25" 31.75														
HB 70 7.00" BORE	3.000" STD. 76.2	1.25" 31.75	12.00" 304.8	3.81" 96.83	9.50" 241.3	8.50" 215.9	5.38" 136.52	1.00" 25.4	1,1/4"	2.75" 69.85	2.75" 69.85	1.25" 31.75	4.13" 104.77	1,1/8"-12	6.58" 167.1	9.3" 236.22
	3.500" 88.9	1.25" 31.75														
	4.000" 101.6	1.25" 31.75														
	5.000" 127.0	1.25" 31.75														
HB 80 8.00" BORE	3.500" STD. 88.9	1.25" 31.75	13.12" 333.37	3.94" 100.0	10.50" 266.7	9.50" 241.3	6.13" 155.57	1.00" 25.4	1,1/2"	3.00" 76.2	3.00" 76.2	1.38" 34.92	4.50" 114.3	1,1/4"-12	7.50" 190.5	10.6" 269.2
	4.000" 101.6	1.25" 31.75														
	5.000" 127.0	1.25" 31.75														
	5.500" 139.7	1.25" 31.75														



STYLE	NFPA	TIE ROD EXTENDED
1	MX3	HEAD END ONLY
1A	MX2	CAP END ONLY
1B	MX1	BOTH ENDS

* MALE ROD END SHOWN See sheet 4A for male & female variations and dimensions

☒ Variation of TIE ROD mounting on application

⊗ Single Slotted CUSH. ADJ.

⊗ Cross Slotted CUSH. Relief (Fixed)

CYLINDER SIZE	ROD DIA. E E	E	C	D	HH Ø	A	AA	B	H	J	R	M	NN UNF.	P	P 1
HB 100 10.00" BORE	4.50" 114.3	2.94" 74.6	16.63" 422.27	4.75" 120.65	8.25" 209.55	12.13" 307.97	12.63" 320.67	8.50" 215.90	2.00" BSPP.	3.69" 93.65	1.56" 39.68	4.13" 104.77	1,1/8"-12	7.50" 190.50	10.625" 269.87
	5.00" STD. 127.0	3.19" 80.95	16.88" 428.63	5.00" 127.0	8.75" 222.25										
	5.50" 139.7	3.19" 80.95	16.88" 428.63	5.00" 127.0	9.38" 238.13										
	7.00" 177.8	3.50" 88.9	17.19" 436.56	5.31" 134.93	10.5" 266.7										
HB 120 12.00" BORE	5.50" 139.7	3.19" 80.95	19.78" 502.4	5.44" 138.09	9.38" 238.13	14.5" 368.30	14.88" 377.82	10.00" 254.00	2.50" SAE.	4.44" 112.71	2.09" 53.08	4.50" 114.30	1,1/4"-12	9.125" 231.77	12.562" 319.08
	7.00" STD. 177.8	3.50" 88.9	20.09" 510.28	5.75" 146.05	10.5" 266.7										
	8.00" 203.2	4.00" 101.6	20.59" 522.98	6.25" 158.75	12.5" 317.5										