

B3.0 WATER HAMMER CALCULATIONS

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Pipe Inside Diameter: **24** inches
 Pipe Wall Thickness: **0.4** inches
 Static Pipe Pressure: **500** psi

Length of Pipeline in feet: **25,000**
 Pipe Material Modulus of Elasticity (psi): **Steel**
 Custom Modulus of Elasticity (if Selected):

Modulus = **30,000,000**
 Custom Material:

#	Velocity when Flow is Stopped (fps)	Equilibrant Flow Rates when Total Flow is Suddenly Stopped			Surge Wave Velocity (in Feet per Second - fps)	Critical Time (Valves MUST Close Slower than this Time in Seconds)	Calculated Water Hammer Pressure (psi)	Calculated Water Hammer Pressure (feet)	Maximum Pressure Plus Static (psi)	Maximum Pressure Plus Static (feet)
		gpm	cfs	mgd						
1	0.0	0	0.00	0.0000	3,732.7	13.40	0.0	0.0	500.0	1,155.0
2	0.2	282	0.63	0.4061	3,732.7	13.40	10.0	23.2	510.0	1,178.2
3	0.4	564	1.26	0.8122	3,732.7	13.40	20.1	46.4	520.1	1,201.4
4	0.6	846	1.88	1.2183	3,732.7	13.40	30.1	69.6	530.1	1,224.6
5	0.8	1,128	2.51	1.6244	3,732.7	13.40	40.2	92.8	540.2	1,247.8
6	1.0	1,410	3.14	2.0305	3,732.7	13.40	50.2	115.9	550.2	1,270.9
7	1.2	1,692	3.77	2.4366	3,732.7	13.40	60.2	139.1	560.2	1,294.1
8	1.4	1,974	4.40	2.8426	3,732.7	13.40	70.3	162.3	570.3	1,317.3
9	1.6	2,256	5.03	3.2487	3,732.7	13.40	80.3	185.5	580.3	1,340.5
10	1.8	2,538	5.65	3.6548	3,732.7	13.40	90.3	208.7	590.3	1,363.7
11	2.0	2,820	6.28	4.0609	3,732.7	13.40	100.4	231.9	600.4	1,386.9
12	2.2	3,102	6.91	4.4670	3,732.7	13.40	110.4	255.1	610.4	1,410.1
13	2.4	3,384	7.54	4.8731	3,732.7	13.40	120.5	278.3	620.5	1,433.3
14	2.6	3,666	8.17	5.2792	3,732.7	13.40	130.5	301.5	630.5	1,456.5
15	2.8	3,948	8.80	5.6853	3,732.7	13.40	140.5	324.7	640.5	1,479.7
16	3.0	4,230	9.42	6.0914	3,732.7	13.40	150.6	347.8	650.6	1,502.8
17	3.2	4,512	10.05	6.4975	3,732.7	13.40	160.6	371.0	660.6	1,526.0
18	3.4	4,794	10.68	6.9036	3,732.7	13.40	170.7	394.2	670.7	1,549.2
19	3.6	5,076	11.31	7.3097	3,732.7	13.40	180.7	417.4	680.7	1,572.4
20	3.8	5,358	11.94	7.7157	3,732.7	13.40	190.7	440.6	690.7	1,595.6
21	4.0	5,640	12.57	8.1218	3,732.7	13.40	200.8	463.8	700.8	1,618.8
22	4.2	5,922	13.19	8.5279	3,732.7	13.40	210.8	487.0	710.8	1,642.0
23	4.4	6,204	13.82	8.9340	3,732.7	13.40	220.9	510.2	720.9	1,665.2
24	4.6	6,486	14.45	9.3401	3,732.7	13.40	230.9	533.4	730.9	1,688.4
25	4.8	6,768	15.08	9.7462	3,732.7	13.40	240.9	556.5	740.9	1,711.5
26	5.0	7,050	15.71	10.1523	3,732.7	13.40	251.0	579.7	751.0	1,734.7
27	5.2	7,332	16.34	10.5584	3,732.7	13.40	261.0	602.9	761.0	1,757.9
28	5.4	7,614	16.96	10.9645	3,732.7	13.40	271.0	626.1	771.0	1,781.1