AA TANKS

BLADDER STYLE ·HYDRO-PNEUMATI C TANKS
Sizing for Hydro-Pneumatic Tanks

Job Name: _____ Date: _____

Job Location: _____ Salesman: _____

Contact Name: _____ Model #: _____

Information Required:

1. Drawdown (Water tank must supply) _____ gallons
2. Minimum Pressure (Pump tum on Pressure) _____ PSI
3. Maximum Pressure (Pump shut off Pressure) _____ PSI

Model Selection: for BLADDER style tanks

4. Enter Required Drawdown. (from line 1. above) _____ gallons
5. Using acceptance factor table, find and enter the acceptance factor. _____
6. Divide line 4 by line 5, enter total tank vol ume. _____ gallons

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Example: from Example page 3

1. Drawdown	50 gallons
2. Minimum Pressure	30 PSI
3. Maximum Pressure	45 PSI
4. Drawdown from line 1	50 gallons
5. Acceptance Factor: from chart	.251
6. Divide line 4 by line 5, Enter Total Tank Volume	199.20 gallons

ACCEPTANCE FACTOR CHART

This table incorporates atmospheric pressure (14.7 psi at sea level)

USE GAGE PRESSURE. Example: A system operating between a minimum operating pressure of 20 psig (fill pressure) and a maximum operating (usually 10% below the relief valve setting) of 40 psig has an acceptance factor of 0.366. To find the acceptance factor, start at the top of the table and locate the minimum operating pressure. Next, locate the minimum operating pressure on the left index. Where the two lines intersect is the acceptance factor.

(Use GaugePressure)

P_0 MAXIMUM OPERATING PRESSURE PSIG	P_f = MINIMUM OPERATING PRESSURE AT TANK (PSIG)											
	5	10	12	15	20	25	30	35	40	45	50	55
10	0.202											
12	0.262	0.075										
15	0.337	0.168	0.101									
20	0.432	0.288	0.231	0.144								
25	0.504	0.378	0.328	0.252	0.126	–						
27	0.527	0.408	0.360	0.288	0.168	–						
30	0.560	0.447	0.403	0.336	0.224	0.112						
35	0.604	0.503	0.463	0.403	0.302	0.202	0.101					
40	0.640	0.548	0.512	0.457	0.366	0.274	0.183	0.091				
45	0.670	0.586	0.553	0.503	0.419	0.335	0.251	0.168	0.084	–		
50	0.696	0.618	0.587	0.541	0.464	0.386	0.309	0.232	0.155	0.078		
55	0.717	0.646	0.617	0.574	0.502	0.430	0.359	0.287	0.215	0.144	0.072	
60	0.736	0.669	0.643	0.602	0.536	0.469	0.402	0.335	0.268	0.201	0.134	0.067
65	0.753	0.690	0.665	0.627	0.565	0.502	0.439	0.376	0.314	0.251	0.188	0.125
70	0.767	0.708	0.685	0.649	0.590	0.531	0.472	0.413	0.354	0.295	0.236	0.177
75	0.780	0.725	0.702	0.669	0.613	0.558	0.502	0.446	0.390	0.333	0.279	0.223
80	0.792	0.739	0.718	0.686	0.634	0.581	0.528	0.475	0.422	0.370	0.317	0.264
85	0.802	0.752	0.732	0.702	0.652	0.602	0.552	0.502	0.451	0.401	0.351	0.301
90	0.812	0.764	0.745	0.716	0.669	0.621	0.573	0.525	0.478	0.430	0.382	0.335
95	0.820	0.775	0.757	0.729	0.684	0.638	0.593	0.547	0.501	0.456	0.410	0.365
100	0.828	0.785	0.767	0.741	0.698	0.654	0.610	0.567	0.523	0.479	0.436	0.392
105	0.835	0.794	0.777	0.752	0.710	0.668	0.626	0.585	0.543	0.501	0.459	0.418
110	0.842	0.802	0.786	0.762	0.723	0.682	0.642	0.601	0.561	0.521	0.481	0.441
115	0.848	0.810	0.794	0.771	0.734	0.694	0.655	0.617	0.578	0.540	0.501	0.463
120	0.854	0.817	0.802	0.780	0.742	0.705	0.668	0.631	0.594	0.557	0.520	0.483
125	0.859	0.823	0.809	0.787	0.752	0.716	0.680	0.644	0.608	0.573	0.537	0.501
130	0.864	0.829	0.815	0.795	0.760	0.726	0.691	0.657	0.622	0.586	0.553	0.519
135	0.868	0.835	0.822	0.802	0.768	0.735	0.701	0.668	0.635	0.601	0.563	0.534
140	0.873	0.840	0.827	0.808	0.776	0.743	0.711	0.679	0.847	0.614	0.582	0.550
145	0.877	0.845	0.833	0.814	0.783	0.751	0.720	0.689	0.858	0.828	0.595	0.564
150	0.880	0.850	0.838	0.820	0.789	0.759	0.729	0.699	0.668	0.638	0.608	0.577
155	0.884	0.854	0.843	0.825	0.795	0.766	0.736	0.707	0.677	0.648	0.618	0.589
160	0.887	0.859	0.847	0.830	0.801	0.773	0.744	0.716	0.687	0.658	0.830	0.601
165	0.890	0.863	0.851	0.835	0.807	0.779	0.751	0.124	0.696	0.668	0.640	0.612
170	0.893	0.866	0.855	0.839	0.812	0.785	0.758	0.731	0.704	0.677	0.649	0.622

NOTE: For pressures not shown above, use 1 - (P_f + atmospheric ÷ P_0 + atmospheric)