

# Expansion Tank Sizing

Job:

1. Enter Total System Water Content \_\_\_\_\_ gal.
2. a. Enter Minimum System Temperature \_\_\_\_\_ °F  
 b. Enter Maximum System Temperature \_\_\_\_\_ °F  
 c. Enter Expansion Factor From Table 1 \_\_\_\_\_
3. Calculate Expanded Water Volume (Multiply line 1 by line 2c) \_\_\_\_\_
4. a. Enter Minimum System Pressure (P1) \_\_\_\_\_ psig  
 b. Enter maximum System Pressure (Po) \_\_\_\_\_ psig  
 c. Enter acceptance Factor From Table 2 \_\_\_\_\_
5. Calculate Total Tank Volume Required (Divide line 3 by line 4c) \_\_\_\_\_ gal.
6. Select Tank from Product Data Table--Side 1 Model \_\_\_\_\_

Note: When using WPA Tanks, amount of expanded water generated (Line 3) must not exceed acceptance volume of tank.

Maximum Temp °f	Initial Temperature °F												
	40	45	50	55	60	65	70	75	80	85	90	95	100
50°	0.00006	0.00008											
55°	0.00025	0.00027											
60°	0.00055	0.00057		0.0003									
65°	0.00093	0.00095		0.00068	0.00033								
70°	0.00149	0.00151		0.00143	0.00124	0.00056							
75°	0.00194	0.00196		0.00186	0.00169	0.00139	0.00045						
80°	0.00256	0.00262		0.00254	0.00235	0.00205	0.00111	0.00066					
85°	0.00326	0.00328		0.0035	0.00301	0.00271	0.00177	0.00132	0.00066				
90°	0.00405	0.00407		0.00399	0.00338	0.00305	0.00312	0.00256	0.00211	0.00145			
95°	0.00485	0.00487		0.00479	0.00406	0.00443	0.00392	0.00336	0.00291	0.00225	0.00159	0.0008	
100°	0.00575	0.00577		0.00569	0.0055	0.0052	0.00482	0.00426	0.00381	0.00315	0.00249	0.0017	0.0009
105°	0.00671	0.0067		0.00665	0.00646	0.00616	0.00578	0.00522	0.00477	0.00411	0.00345	0.00266	0.00186
110°	0.00771	0.00773		0.00765	0.00746	0.00715	0.00678	0.00622	0.00577	0.00511	0.00445	0.00366	0.00286
115°	0.00879	0.00881		0.00873	0.00854	0.00824	0.00786	0.0073	0.00685	0.00619	0.00553	0.00474	0.00394
120°	0.00994	0.00996		0.00988	0.00969	0.00939	0.00901	0.00855	0.00804	0.00738	0.00672	0.00593	0.00513
125°	0.0111	0.01113		0.01105	0.01086	0.01056	0.01018	0.00972	0.00921	0.00855	0.00789	0.0071	0.0063
130°	0.01236	0.01238		0.0123	0.01211	0.01181	0.01143	0.01087	0.01042	0.00976	0.0091	0.00831	0.00751
135°	0.01368	0.0137		0.01362	0.01342	0.01313	0.01275	0.01219	0.01174	0.01108	0.01042	0.00963	0.00883
140°	0.01501	0.01503		0.01495	0.01476	0.01446	0.01408	0.01352	0.01307	0.01241	0.01175	0.01096	0.01016
145°	0.01643	0.01645		0.01637	0.01618	0.01588	0.0155	0.01494	0.01449	0.01383	0.01317	0.01238	0.01158
150°	0.01787	0.01787		0.01779	0.0176	0.0173	0.01692	0.01636	0.01591	0.01525	0.01459	0.01383	0.01303
155°	0.01937	0.01939		0.01931	0.01912	0.01882	0.01844	0.01788	0.01743	0.01677	0.01611	0.01532	0.01452
160°	0.02092	0.02094		0.02086	0.02067	0.02037	0.01999	0.01943	0.01898	0.01832	0.01766	0.01687	0.01607
165°	0.02252	0.02254		0.02246	0.02227	0.02197	0.02159	0.02103	0.02058	0.01992	0.01926	0.01847	0.01767
170°	0.02418	0.0242		0.02412	0.02393	0.02363	0.02325	0.02269	0.02224	0.02158	0.02092	0.02013	0.01933
175°	0.02588	0.0259		0.02582	0.02563	0.02533	0.02495	0.02439	0.02394	0.02328	0.02262	0.02183	0.02103
180°	0.02763	0.02765		0.02757	0.02738	0.02708	0.0267	0.02614	0.02569	0.02503	0.02437	0.02358	0.02278
185°	0.02941	0.02943		0.02935	0.02916	0.02886	0.02848	0.02792	0.02747	0.02681	0.02615	0.02536	0.02456
190°	0.03127	0.03129		0.03121	0.03102	0.03072	0.03034	0.02978	0.02933	0.02867	0.02801	0.02722	0.02642
195°	0.03314	0.03316		0.03308	0.03289	0.03259	0.03221	0.03165	0.0312	0.03054	0.02988	0.02909	0.02829
200°	0.0351	0.03512		0.03504	0.03485	0.03455	0.03417	0.03361	0.03316	0.0325	0.03184	0.03105	0.03025
205°	0.03707	0.03709		0.03701	0.03682	0.03652	0.03614	0.03558	0.03513	0.03447	0.03381	0.03302	0.03222
210°	0.03911	0.03913		0.03905	0.03885	0.03855	0.03817	0.03761	0.03716	0.0365	0.03585	0.03506	0.03426
215°	0.0412	0.04122		0.04114	0.04095	0.04065	0.04027	0.03971	0.03926	0.0386	0.03794	0.03715	0.03635
220°	0.04335	0.04337		0.04329	0.0431	0.0428	0.04242	0.04186	0.04141	0.04075	0.04009	0.0393	0.0385
225°	0.04519	0.04521		0.04513	0.04494	0.04464	0.04426	0.0437	0.04325	0.04259	0.04193	0.04114	0.04034
230°	0.04762	0.04764		0.04756	0.04737	0.04707	0.04669	0.04613	0.04568	0.04502	0.04436	0.04357	0.04277
235°	0.04991	0.04993		0.04985	0.04966	0.04936	0.04898	0.04842	0.04797	0.04731	0.04665	0.04586	0.04506
240°	0.0522	0.05222		0.05214	0.05195	0.05165	0.05127	0.05071	0.05026	0.0496	0.04894	0.04815	0.04735

Po Maximum Operating Press. PSIG	P1 - Minimum Operating Pressure at Tank (PSIG)										
	5	10	12	15	20	25	30	35	40	45	50
30	0.56	0.477	0.403	0.336	0.224	0.112					
40	0.64	0.548	0.512	0.457	0.366	0.274	0.183	0.091			
50	0.696	0.618	0.587	0.541	0.464	0.386	0.309	0.232	0.155	0.078	
60	0.736	0.669	0.643	0.602	0.536	0.469	0.402	0.335	0.268	0.201	0.134
70	0.767	0.708	0.685	0.649	0.59	0.531	0.472	0.413	0.354	0.295	0.236
80	0.792	0.739	0.718	0.686	0.634	0.581	0.528	0.475	0.422	0.37	0.317
90	0.812	0.764	0.745	0.716	0.669	0.621	0.573	0.525	0.478	0.43	0.382
100	0.828	0.785	0.767	0.741	0.698	0.654	0.61	0.567	0.523	0.479	0.436
110	0.842	0.802	0.786	0.762	0.723	0.682	0.642	0.601	0.561	0.521	0.481
120	0.854	0.817	0.802	0.78	0.742	0.705	0.668	0.631	0.594	0.557	0.52
125	0.859	0.823	0.809	0.787	0.752	0.716	0.68	0.644	0.608	0.573	0.537

Note: If pressures exceeds tables use formula:

$$1 - \frac{P1 + 14.7}{Po - 14.7} \text{ to obtain factor}$$

JOB NAME \_\_\_\_\_  
 LOCATION \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 CONTRACTOR \_\_\_\_\_  
 CONTRACTOR P.O. NO. \_\_\_\_\_

ITEMS	QUANTITY
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

**A GFP COMPANY**  
 1005 E. Houston  
 Broken Arrow, OK 74012  
 Toll Free: 866-204-5229  
 PH: 918-317-0401  
 FAX: 918-317-0407  
 www.wheatleyhvac.com  
 e-mail: sales@globalflowproducts.com