



*Mixing Solutions
As Unique As Your Needs*

VESSEL AND HEAD VOLUMES

Depth and Volume of Flanged and Dished Tank Heads

Note: Values are approximate, varying with thickness and manufacturer.

Outside	ASME 2:1 ELLIPTICAL		HEMISPHERICAL	
Head Dia. (Inches)	Depth (Inches)	Volume (Gallons)	Depth (Inches)	Volume (Gallons)
12	3	1.0	6	2.0
14	3.5	1.5	7	3.1
16	4	2.3	8	4.6
18	4.5	3.3	9	6.6
20	5	4.5	10	9.1
22	5.5	6.0	11	12
24	6	7.8	12	16
26	6.5	9.9	13	20
28	7	12	14	25
30	7.5	15	15	31
32	8	18	16	37
34	8.5	22	17	45
36	9	26	18	53
38	9.5	31	19	62
40	10	36	20	73
42	10.5	42	21	84
48	12	63	24	125
54	13.5	89	27	178
60	15	122	30	245

Outside	ASME 2:1 ELLIPTICAL		HEMISPHERICAL	
Head Dia. (Inches)	Depth (Inches)	Volume (Gallons)	Depth (Inches)	Volume (Gallons)
66	16.5	162	33	326
72	18	211	36	423
78	19.5	268	39	538
84	21	335	42	672
90	22.5	413	45	826
96	24	501	48	1000
102	25.5	601	51	1190
108	27	713	54	1410
114	28.5	839	57	1670
120	30	979	60	1950
126	31.5	1130	63	2250
132	33	1300	66	2590
144	36	1690	72	3270
156	39	2150	78	4300
168	42	2690	84	5380
180	45	3310	90	6610
192	48	4020	96	8020
204	51	4820	102	9620
216	54	5710	108	11400

GUARANTEE

ProQuip, Inc. accepts full responsibility for furnishing suitable equipment which shall be fit for the purpose which it is required, and for its successful operation under the conditions for which it was specified

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VESSEL AND HEAD VOLUMES

Depth and Volume of Flanged and Dished Tank Heads

Note: Values are approximate, varying with thickness and manufacturer.

Outside	Std. F & D		ASME F & D	
Head Dia. (Inches)	Depth (Inches)	Volume (Gallons)	Depth (Inches)	Volume (Gallons)
12	2.5	0.72	2.5	0.72
14	3	1.2	3	1.2
16	3	1.7	3	1.7
18	3.5	2.2	3.5	2.2
20	4	2.8	4	2.8
22	4	3.4	4	3.4
24	4	4.5	4	4.5
26	4.5	5.8	4.5	5.8
28	5	6.9	5	6.9
30	5	8.2	5	8.2
32	5	10	5.5	11
34	5.5	12	6	13
36	5.5	13	6	15
38	6	17	6	18
40	6.5	20	7	22
42	6.5	21	7	24
48	7	31	8.5	38
54	8	44	10	54
60	9	58	11	75
66	9.5	78	12	101

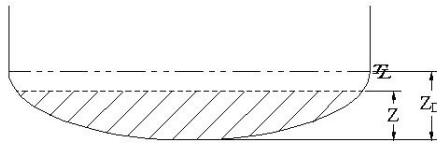
Outside	Std. F & D		ASME F & D	
Head Dia. (Inches)	Depth (Inches)	Volume (Gallons)	Depth (Inches)	Volume (Gallons)
72	10	99	12	123
78	11	126	14	166
84	12	158	14	196
90	14	203	16	256
96	14	228	17	307
102	15	287	18	367
108	15	323	19	437
114	16	381	20	516
120	17	443	21	604
126	18	501	22	696
132	19	589	22	783
138	20	689	24	919
144	20	746	26	1070
156	24	1040	28	1360
168	23	1180	32	1780
180	26	1530	32	2070
192	31	2040	35	2570
204	35	2610	39	3240
216	39	3300	44	4020
228	41	3870	46	4707

VESSEL AND HEAD VOLUMES

Depth and Volume of Flanged and Dished Tank Heads

Standard and ASME F & D Heads

Fraction of Head Depth vs. Fractional Volume

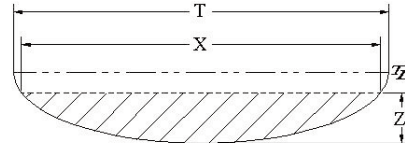


$$V_{\text{frac}} = Z_{\text{frac}}^2 \cdot (15 - Z_{\text{frac}}) / 14$$

$$\text{where: } Z_{\text{frac}} = Z / Z_D$$

NOTE: Based on tank O.D. allow for head thickness when calculating impeller off-bottom clearance.

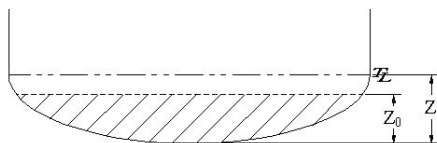
Chord Length vs. Liquid Depth



$$X / T = 2.63 \cdot (Z / T)^{1/2}$$

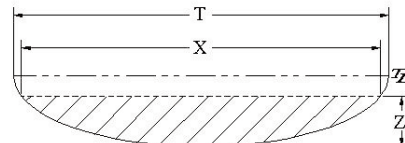
2:1 Ellipsoidal Heads

Fraction of Head Depth vs. Fractional Volume



$$V / V_{\text{frac}} = (Z / Z_0)^{(\pi / 2)}$$

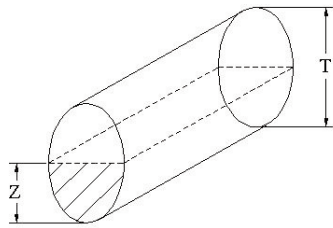
Chord Length vs. Liquid Depth



$$T / X = 0.854 + 0.0385 \cdot (T / Z)$$

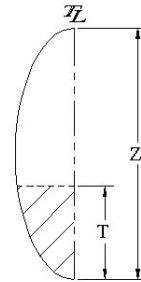
Horizontal Tanks

Cylindrical Tank
Fraction of Tank Volume vs. Liquid Depth



$$V / V_{\text{FRAC}} = 0.381 \cdot (Z / T) + 1.851 \cdot (Z / T)^2 - 1.23 \cdot (Z / T)^3$$

Dished Ends
Fraction of Head Volume vs. Liquid Depth



$$V / V_{\text{FRAC}} = -0.307 \cdot (Z / T) + 3.885 \cdot (Z / T)^2 - 2.858 \cdot (Z / T)^3$$

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