



Deaerator vs Feed Tank Return on Investment

Average Load (HP)	50	100	150	200	250	300	400	500	750	
Average Load (lbs/hr)	1,725	3,450	5,175	6,900	8,625	10,350	13,800	17,250	25,875	
Feed Tank Model	G100	G180	G350	G350	G500	G500	G750	G1000	G1500	
Deaerator Model	5SS	10SS	10SS	15SS	15SS	20SS	30SS	30SS	45SS	
Initial Cost Difference	19,300	22,800	21,300	23,500	20,300	22,800	22,200	12,600	10,670	
Operating Hours per Year	8760	8.4	5.0	3.1	2.6	1.8	1.7	1.2	0.5	0.3
	8000	9.2	5.4	3.4	2.8	1.9	1.8	1.3	0.6	0.3
	7000	10.5	6.2	3.9	3.2	2.2	2.1	1.5	0.7	0.4
	6000	12.2	7.2	4.5	3.7	2.6	2.4	1.8	0.8	0.5
	5000	14.7	8.7	5.4	4.5	3.1	2.9	2.1	1.0	0.5
	4000	18.4	10.8	6.8	5.6	3.9	3.6	2.6	1.2	0.7
	3000	24.5	14.5	9.0	7.5	5.2	4.8	3.5	1.6	0.9
	2000	36.7	21.7	13.5	11.2	7.7	7.2	5.3	2.4	1.4
	1000	73.5	43.4	27.0	22.4	15.5	14.5	10.6	4.8	2.7

Surge Tank & Deaerator System vs Feed Tank Return on Investment

Average Load (HP)	50	100	150	200	250	300	400	500	750	
Average Load (lbs/hr)	1,725	3,450	5,175	6,900	8,625	10,350	13,800	17,250	25,875	
Feed Tank Model	G100	G180	G350	G350	G500	G500	G750	G1000	G1500	
Surge Model	SRG180	SRG250	SRG250	SRG350	SRG350	SRG500	SRG750	SRG750	SRG1000	
Deaerator Model	5SS	10SS	10SS	15SS	15SS	20SS	30SS	30SS	45SS	
Initial Cost Difference	41,600	46,600	45,100	50,000	46,800	55,700	60,900	51,300	76,770	
Operating Hours per Year	8760	18.1	10.1	6.5	5.4	4.1	4.0	3.3	2.2	2.2
	8000	19.8	11.1	7.2	5.9	4.5	4.4	3.6	2.4	2.4
	7000	22.6	12.7	8.2	6.8	5.1	5.0	4.1	2.8	2.8
	6000	26.4	14.8	9.5	7.9	5.9	5.9	4.8	3.3	3.2
	5000	31.7	17.7	11.4	9.5	7.1	7.1	5.8	3.9	3.9
	4000	39.6	22.2	14.3	11.9	8.9	8.8	7.2	4.9	4.9
	3000	52.8	29.6	19.1	15.9	11.9	11.8	9.7	6.5	6.5
	2000	79.2	44.3	28.6	23.8	17.8	17.7	14.5	9.8	9.7
	1000	158.4	88.7	57.2	47.6	35.6	35.3	29.0	19.5	19.5

Assumptions

The average load is assumed to be 50% of the maximum system capacity

The initial cost of the feed tank is based on a standard stainless steel tank with typical controls, trim, and stand

The initial cost of the deaerator is based on a standard spray scrubber deaerator with typical controls, trim, and stand

The initial cost of the surge tank is based on a standard stainless steel tank with two transfer pumps, typical controls, trim, and stand

The initial cost and return on investment calculation does not include the cost of installation

Feed tank operating temperature = 190°F (O₂ = 2,000 PPB)

Deaerator operating at 5PSI @ 225°F (O₂ = 7 PPB)

Liquid sodium sulfite water treatment at \$3.5/lb

Cycles of Concentration = 20

Accounts for 0.5% efficiency change due to loss of economizer efficiency

Natural gas at \$4.50/MMBTU with 84% boiler efficiency

DA vents 1/10 of 1% of rated capacity

This chart does not account for maintenance cost/inspection costs as inspection requirements vary by jurisdiction