



Technical

Estimates of Wattage Required

Kilowatt Hours to Heat Steel

Lbs. of Steel	Temperature Rise F°						
	50°	100°	200°	300°	400°	500°	600°
Kilowatts to heat in one hour							
25	.06	.12	.25	.37	.50	.65	.75
50	.12	.25	.50	.75	1.00	1.25	1.50
100	.25	.50	1.00	1.50	2.00	2.50	3.00
150	.37	.75	1.50	2.25	3.00	3.75	4.50
200	.50	1.00	2.00	3.00	4.00	5.00	6.00
250	.65	1.25	2.50	3.75	5.00	6.25	7.50
300	.75	1.50	3.00	4.50	6.00	7.50	9.00
400	1.00	2.00	4.00	6.00	8.00	10.00	12.00
500	1.25	2.50	5.00	7.50	10.00	12.50	15.00
600	1.50	3.00	6.00	9.00	12.00	15.00	18.00
700	1.75	3.50	7.00	10.50	14.00	17.50	21.00
800	2.00	4.00	8.00	12.00	16.00	20.00	24.00
900	2.25	4.50	9.00	13.50	18.00	22.50	27.00
1000	2.50	5.00	10.00	15.00	20.00	25.00	30.00

A 20% Safety Factor is included to compensate for high heat losses and/or low voltage.

Kilowatt Hours to Heat Water

Amount of Liquid		Temperature Rise F°						
Cubic Ft.	Gallons	20°	40°	60°	80°	100°	120°	140°
		Kilowatts to heat in one hour						
.66	5	0.3	0.5	0.8	1.1	1.3	1.6	1.9
1.3	10	0.5	1.1	1.6	2.1	2.7	3.2	3.7
2.0	13	0.8	1.6	2.4	3.2	4	4.8	5.6
2.7	20	1.1	2.2	3.2	4.3	5.3	6.4	7.5
3.3	25	1.3	2.7	4	5.3	6.7	8	9.3
4.0	30	1.6	3.2	4.8	6.4	8	9.6	12
5.3	40	2.1	4	6.4	8.5	11	13	15
6.7	50	2.7	5.4	8	10.7	13	16	19
8.0	60	3.3	6.4	9.6	12.8	16	19	22
9.4	70	3.7	7.5	11.2	15	19	22	26
10.7	80	4.3	8.5	13	17	21	26	30
12.0	90	5	10	14.5	19	24	29	34
13.4	100	5.5	11	16	21	27	32	37
16.7	125	7	13	20	27	33	40	47
20.0	150	8	16	24	32	40	48	56
23.4	175	9	18	28	37	47	56	65
26.7	200	11	21	32	43	53	64	75
33.7	250	13	27	40	53	67	80	93
40	300	16	32	47	64	80	96	112
53.4	400	21	43	64	85	107	128	149
66.8	500	27	53	80	107	133	160	187

Kilowatt Hours to Heat Oil

Amount of Oil		Temperature Rise F°					
Cubic Ft.	Gallons	50	100	200	300	400	500
		.5	3.74	.3	.5	1	2
1	7.48	.5	1	2	3	4	6
2	14.96	1	1	2	4	6	11
3	22.25	2	3	6	9	12	16
4	29.9	2	4	8	12	16	22
5	37.4	3	4	9	15	20	25
10	74.8	5	9	18	29	40	52
15	112.5	7	14	28	44	60	77
20	149.6	9	18	37	58	80	102
25	187	11	22	46	72	100	127
30	222.5	13	27	56	86	120	151
35	252	16	31	65	100	139	176
40	299	18	36	74	115	158	201
45	336.5	20	40	84	129	178	226
50	374	22	45	93	144	197	252
55	412	25	49	102	158	217	276
60	449	27	54	112	172	236	302
65	486	29	58	121	186	255	326
70	524	32	62	130	200	275	350
75	562	34	67	140	215	294	375

Add 5% for uninsulated tanks.

A 20% Safety Factor is included to compensate for high heat losses and/or low voltage.