

Electric Motor Horsepower Required to Drive a Hydraulic Pump

This chart is based on the formula: $hp = \frac{GPM \times psi}{1714 \times Efficiency}$

For the purposes of this chart, pump efficiency was assumed to be 85%.

As horsepower varies directly with flow or pressure, multiply proportionately to determine values not shown. For instance, at 4000 psi, multiply 2000 psi values by 2.

GPM	Pump Pressure psi										
	100	200	250	300	400	500	750	1000	1250	1500	2000
1/2	0.04	0.07	0.09	0.10	0.14	0.17	0.26	0.34	0.43	0.52	0.69
1	0.07	0.14	0.17	0.21	0.28	0.34	0.52	0.69	0.86	1.03	1.37
1 1/2	0.10	0.21	0.26	0.31	0.41	0.52	0.77	1.03	1.29	1.54	2.06
2	0.14	0.28	0.34	0.41	0.55	0.69	1.03	1.37	1.72	2.06	2.75
2 1/2	0.17	0.34	0.43	0.52	0.69	0.86	1.29	1.72	2.15	2.58	3.43
3	0.21	0.41	0.52	0.62	0.83	1.03	1.54	2.06	2.57	3.09	4.12
3 1/2	0.24	0.48	0.60	0.72	0.96	1.20	1.80	2.40	3.00	3.60	4.81
4	0.28	0.55	0.69	0.82	1.10	1.37	2.06	2.75	3.43	4.12	5.49
5	0.34	0.69	0.86	1.03	1.32	1.72	2.57	3.43	4.29	5.15	6.86
6	0.41	0.82	1.03	1.24	1.65	2.06	3.09	4.12	5.15	6.18	8.24
7	0.48	0.96	1.20	1.44	1.92	2.40	3.60	4.81	6.01	7.21	9.61
8	0.55	1.10	1.37	1.65	2.20	2.75	4.12	5.49	6.86	8.24	11.00
9	0.62	1.24	1.55	1.85	2.47	3.09	4.63	6.18	7.72	9.27	12.40
10	0.69	1.37	1.62	2.06	2.75	3.43	5.15	6.86	8.58	10.30	13.80
11	0.76	1.51	1.89	2.27	3.02	3.78	5.66	7.55	9.44	11.30	15.10
12	0.83	1.65	2.06	2.47	3.30	4.12	6.18	8.24	10.30	12.40	16.50
13	0.89	1.79	2.23	2.68	3.57	4.46	6.69	8.92	11.20	13.40	17.80
14	0.96	1.92	2.40	2.88	3.84	4.81	7.21	9.61	12.00	14.40	19.20
15	1.03	2.06	2.57	3.09	4.12	5.15	7.72	10.30	12.90	15.40	20.60
16	1.10	2.20	2.75	3.30	4.39	5.49	8.24	11.00	13.70	16.50	22.00
17	1.17	2.33	2.92	3.50	4.68	5.83	8.75	11.70	14.60	17.50	23.30
18	1.24	2.47	3.09	3.71	4.94	6.18	9.27	12.40	15.40	18.50	24.70
19	1.30	2.61	3.26	3.91	5.22	6.52	9.78	13.00	16.30	19.60	26.10
20	1.37	2.75	3.43	4.12	5.49	6.86	10.30	13.70	17.20	21.60	27.50
25	1.72	3.43	4.29	5.15	6.86	8.58	12.90	17.20	21.50	25.80	34.30
30	2.06	4.12	5.15	6.18	8.24	10.30	15.40	20.6	25.70	30.90	41.20
35	2.40	4.81	6.01	7.21	9.61	12.00	18.00	24.00	30.00	36.00	48.00
40	2.75	5.49	6.86	8.24	11.00	13.70	20.60	27.50	34.30	41.20	54.90
45	3.09	6.18	7.72	9.27	12.40	15.40	23.20	31.00	38.60	46.30	61.80
50	3.43	6.86	8.58	10.30	13.70	17.20	25.70	34.30	42.90	51.50	68.60
55	3.78	7.55	9.44	11.30	15.10	18.90	28.30	37.80	47.20	56.60	75.50
60	4.12	8.24	10.30	12.40	16.50	20.60	30.90	41.20	51.50	61.80	83.40
65	4.46	8.92	11.20	13.40	17.80	22.30	33.50	44.60	55.80	66.90	89.20
70	4.81	9.61	12.00	14.40	19.20	24.00	36.00	48.00	60.10	72.10	96.10
75	5.15	10.30	12.90	15.40	2.60	25.70	38.60	51.40	64.30	77.20	103.00
80	5.49	11.00	13.70	16.50	22.00	27.50	41.20	54.90	68.60	82.40	109.80
90	6.18	12.40	15.40	18.50	24.70	30.90	46.30	61.80	77.20	92.70	123.60
100	6.86	13.70	17.20	20.60	27.50	34.40	51.50	68.60	85.80	103.00	137.30