

Dultmeier Sales

Electric Motor Horsepower Required to Drive Pressure Pumps

A gasoline engine should be sized approximately two times the electric horsepower requirement

G.P.M.	100 PSI	200 PSI	250 PSI	300 PSI	400 PSI	500 PSI	700 PSI	1000 PSI	1250 PSI	1500 PSI	2000 PSI	2500 PSI	3000 PSI	4000 PSI
.5	.04	.07	.09	.11	.14	.18	.26	.36	.44	.53	.70	.88	1.10	1.40
1.0	.07	.14	.18	.21	.28	.35	.52	.70	.88	1.05	1.40	1.76	1.92	2.80
1.5	.10	.21	.26	.31	.41	.52	.77	1.03	1.29	1.55	2.06	2.58	3.09	4.12
2.0	.14	.28	.35	.42	.56	.70	1.04	1.40	1.76	2.10	2.80	3.53	4.20	5.60
2.5	.17	.34	.43	.51	.69	.86	1.29	1.72	2.15	2.58	3.44	4.30	5.14	6.88
3.0	.21	.42	.53	.63	.84	1.05	1.56	2.10	2.64	3.15	4.20	5.28	6.30	8.40
3.5	.24	.48	.60	.72	.96	1.20	1.80	2.40	3.00	3.60	4.80	6.00	7.20	9.60
4.0	.28	.56	.70	.84	1.12	1.40	2.08	2.80	3.52	4.20	5.60	7.04	8.40	11.20
5.0	.35	.70	.88	1.05	1.40	1.75	2.60	3.50	4.40	5.25	7.00	8.80	10.50	14.00
6.0	.42	.84	1.05	1.26	1.68	2.10	3.12	4.20	5.28	6.30	8.40	10.56	12.60	16.50
7.0	.49	.98	1.23	1.47	1.96	2.45	3.64	4.90	6.16	7.35	9.80	12.32	14.70	19.60
8.0	.56	1.12	1.40	1.68	2.24	2.80	4.16	5.60	7.04	8.40	11.20	14.08	16.80	22.40
9.0	.62	1.24	1.55	1.86	2.48	3.10	4.65	6.18	7.73	9.28	12.40	15.56	18.58	24.80
10.0	.70	1.40	1.75	2.10	2.80	3.50	5.20	7.00	8.80	10.50	14.00	17.60	21.00	28.00

Horsepower Req'd to Drive Pressure Pumps

$\frac{\text{GPM} \times \text{PSI}}{1460} = \text{Electric Brake HP}$
$\frac{\text{GPM} \times \text{PSI}}{1714} = \text{Hydraulic HP}$
$\frac{\text{GPM} \times \text{PSI}}{1100} = \text{Gasoline HP (Industrial Engine)}$
$\frac{\text{GPM} \times \text{PSI}}{900} = \text{Gasoline HP (Standard Engine)}$

$\text{GPM} = \frac{\text{HP} \times 1460}{\text{PSI}}$	$\frac{\text{Rated GPM}}{\text{Rated RPM}} = \frac{\text{Desired GPM}}{\text{Desired RPM}}$
$\text{PSI} = \frac{\text{HP} \times 1460}{\text{GPM}}$	$\frac{\text{Motor Pulley OD}}{\text{Pump RPM}} = \frac{\text{Pump Pulley OD}}{\text{Motor RPM}}$
$\text{Torque} = \frac{\text{HP} \times 5252}{\text{RPM}}$	$\text{Drive Ratio} = \frac{D}{d}$