Conversion Tables

Volume

1 U.S. Gallon	231.0 in^3 0.137 ft^3 3.785 liters .00379 $meters^3$ 0.833 Imp gal 0.238 42-gal barrel
1 Imperial Gallon	1.2 U.S. gal
1 Cubic Foot	7.48 U.S. gal 0.0283 $meter^3$
1 Liter	0.2642 U.S. gal
1 Cubic Meter	35.314 ft^3 264.2 U.S. gal
1 Acre Foot	43,560 ft^3 325,829 U.S. gal
1 Acre Inch	3,630 ft^3 27,100 U.S. gal

Length

1 Inch	2.54 centimeters
1 Meter	3.28 feet 39.37 inches
1 Rod	16.5 feet
1 Mile	5280 Feet (1.61 Kilometers)

Weight

1 U.S. Gallon of Water	8.33 lb
1 Cubic foot of Water	62.35 lb
1 Kilogram or Litre	2.2 lb
1 Imperial Gallon	10.0 lb

Horsepower

1 H.P. Equals ...
.746 kilowatts of 746 watts
33,000 ft lbs per minute
550 ft lbs per second

H.P. Input Equals ...
Horsepower input to motor 1.34 x kilowatts input to motor

Water H.P. Equals ...
Horsepower required to lift water at a definite rate to a given distance assuming 100% efficiency

$$\frac{\text{G.P.M. x total head (in ft.)}}{3960}$$

Brake H.P. Equals ...
H.P. delivered by motor
H.P. required by pump
H.P. input x motor efficiency
1.34 x KW input x motor efficiency

$$\text{Pump efficiency} = \frac{\text{Water horsepower}}{\text{G.P.M. x total head (ft.) 3960}}$$

$$\text{pump efficiency} = \frac{\text{G.P.M. x total head (lbs/in}^2\text{)}}{\text{103,000 x pump efficiency}}$$

Capacity

1 Cubic Foot Per Second (2nd foot) (C.F.S.)	449 gpm
1 Acre Foot Per Day	227 gpm
1 Acre Inch Per Hour	454 gpm
1 Cubic Meter Per Minute	264.2 gpm
1,000,000 Gal. Per Day	595 gpm

Head

1 Pound Per Square Inch (p.s.i.)	2.31 ft. head of water 2.04 in. mercury 0.07 kg/cm^2
1 Foot of Water	0.433 lb/in^2 .885 in. mercury
1 Inch of Mercury (or vacuum)	1.132 ft of water
1 Kilogram Per Square Cm	14.22 lb/in^2
1 Atmosphere (at sea level)	14.7 lb/in^2 34.0 ft of water 10.35 meters of water
1 Meter of Water	3.28 feet of water

To Find Capacity of a Tank or Cisten

Diameter of Tank In Feet Squared	x .7854 x	Height of Tank In Feet	x 7.48 =	Capacity U.S. Gallons

Efficiency

Efficiency Equals	$\frac{\text{Power Output}}{\text{Power Input}}$
Motor Efficiency Equals	$\frac{\text{H.P. Output}}{\text{K.W. input x 1.34}}$
Pump Efficiency Equals	$\frac{\text{G.P.M. x total head (ft.)}}{\text{103,000 x B.H.P.}}$

Electric Power

AC	= Alternating Current Power
DC	= Direct Current
E	= Volts
I	= Amperes
W	= Watts
KW	= Kilowatts
Apparent Power	= Volts x amperes = Voltamperes
Apparent Power	= E I
Useful Power W	= E I x P.F.
Power Factor	= ratio of useful power to apparent power
Power Factor	= W = PF E I
KW Hr.	= Kilowatt Hour
Single Phase Power W	= E x I x PF
3 Phase Power W	= 1.73 x E x I x PF
Where E	= Average voltage between phases
I	= Average current in each phase