CONVERSION CHART

HYDRAULIC AND ENGINEERING DATA

FORMULAE

Torque (Nm) = $\frac{\text{kW} \times 9550}{\text{RPM}}$

Torque (kgf.m) = $\frac{\text{kW} \times 974}{\text{RPM}}$

Torque (lbf.ft) = $\frac{\text{HP} \times 5252}{\text{RPM}}$

THEORETICAL TORQUE PRODUCED BY HYDRAULIC MOTOR

Metric $T = \frac{D \times P}{20\pi}$

Where T = Torque (Nm)
D = Displacement (cc/rev)
P = Pressure difference across motor (Bar)

Imperial $T = \frac{D \times P}{20\pi}$

Where T = Torque (lbf.ft)
D = Displacement (in3/rev)
P = Pressure difference across motor (psi)

POWER OUTPUT OF A HYDRAULIC MOTOR

$W = T \times RPM \times 0.1047$

Where W = Power output (watt)
T = Torque (Nm)

FORMULAE

Power (kW) = $\frac{\text{Nm} \times \text{RPM}}{9550}$

Power (kW) = $\frac{\text{kgf.m} \times \text{RPM}}{974}$

Power (HP) = $\frac{\text{lbf.ft} \times \text{RPM}}{5252}$

POWER

Unit		Kilowatt (kW)
1 kW	=	1.341 hp
1 kW	=	1.360 PS
1 kW	=	1.360 CV
1 hp	=	0.746 kW
1 W	=	0.7377 lbf.ft/sec

TORQUE

Unit	Newton metre (Nm)
1 Nm	= 0.7376 lbf.ft
1 Nm	= 8.851 lbf.in
1 lbf.ft	= 1.3558 Nm
1 lbf.in	= 0.113 Nm
1 kgf.m	= 9.807 Nm
1 kgf.m	= 7.233 lbf.ft
1 kgf.m	= 86.796 lbf.in

MASS

Unit	Kilogram (kg)

1 kg = 2.2046 lb | 1000 kg = 1T (tonne) | 1 lb = 0.4536 kg

PRESSURE

Unit		Pascal (PA)
1 kPa	=	0.145 lbf/in2 (psi)
1 MPa	=	145.037 lbf/in2 (psi)
1 MPa	=	10 Bar
1 atmosphere	=	101.3 kPa
1 psi	=	6.895 kPa
1 Bar	=	100 kPa
1 Bar	=	14.5 psi
1 MPa	=	10.19 kgf/cm2
1 kgf/cm2	=	98.07 kPa
1 kgf/cm2	=	14.22 psi

VOLUME AND CAPACITY

Unit	Solids / Liquids	Cubic metre (m3) / Litre (l)
1 l	=	0.2199 imp. gal.
1 l	=	0.2642 US gal.
1 l	=	61.02 in3
1 ml	=	1cm3 (1cc)
1 US gal.	=	3.785 l
1 US gal.	=	231 in3
1 imp. gal.	=	4.546 l
1 imp. gal.	=	277.4 in3
1 cm3	=	0.061 in3
1 in3	=	16.39 cm3
1 m3	=	1000 l
1 m3	=	264.2 US gal.

FORCE

Unit	Newton (N)
1 N	= 0.102 kgf
1 N	= 0.225 lbf
1 kgf	= 9.806 N
1 lbf	= 4.448 N

LENGTH

Unit	Meter (m)
1 m	= 3.2808 ft
1 m	= 39.3700 in
1 mm	= 0.0394 in
1 in	= 25.400 m