



# METRIC FORMULAE

## HYDRAULIC AND ENGINEERING DATA

NOTE: These formulae are theoretical and an allowance for inefficiency in practice should be made. For example, for a 10% margin, multiply results by 1.1.

<b>KILOWATTS</b>	<b>kW</b>	=	$\frac{\text{BAR} \times \text{L} / \text{M}}{600}$
	<b>kW</b>	=	$\frac{\text{BAR} \times \text{CC} / \text{REV} \times \text{RPM}}{600 \times 1000}$
	<b>kW</b>	=	$\frac{\text{Nm} \times \text{RPM}}{9550}$
<b>PRESSURE</b>	<b>BAR</b>	=	$\frac{\text{kW} \times 600}{\text{L} / \text{M}}$
	<b>BAR</b>	=	$\frac{\text{kW} \times 600 \times 1000}{\text{CC} / \text{REV} \times \text{RPM}}$
<b>PUMP DISPLACEMENT</b>	<b>CC/REV</b>	=	$\frac{\text{kW} \times 600 \times 1000}{\text{REV} \times \text{RPM}}$
<b>FLOW RATE</b>	<b>L/M</b>	=	$\frac{\text{kW} \times 600}{\text{BAR}}$
<b>TORQUE</b>	<b>Nm</b>	=	$\frac{\text{kW} \times 9550}{\text{RPM}}$
	<b>Nm</b>	=	$\frac{\text{BAR} \times \text{CC} / \text{REV}}{62.8}$
<b>SPEED</b>	<b>RPM</b>	=	$\frac{\text{kW} \times 9550}{\text{RPM}}$
<b>MOTOR DISPLACEMENT</b>	<b>CC/REV</b>	=	$\frac{\text{Nm} \times 20 \times \pi}{\text{BAR}}$

<b>AREA OF A CIRCLE</b>		=	$\frac{\pi D^2}{4}$
<b>WHERE</b>	<b>π</b>	=	<b>3.1416</b>
	<b>D</b>	=	<b>DIAMETER</b>
<b>CYLINDER DISPLACEMENT</b> (PUSH AND PULL)		=	<b>(PISTON AREA x STROKE x 2)</b> <b>- (ROD AREA x STROKE)</b>