CROSS

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.

KILOWATTS

$$kW = \frac{BAR \times L/M}{600}$$

$$kW = \frac{BAR \times CC/REV \times RPM}{600 \times 1000}$$

$$kW = \frac{Nm \times RPM}{9550}$$

PRESSURE

$$BAR = \frac{kW \times 600}{L/M}$$

$$BAR = \frac{kW \times 600 \times 1000}{CC/REV \times RPM}$$

PUMP DISPLACEMENT

$$CC/REV = \frac{kW \times 600 \times 1000}{REV \times RPM}$$

FLOW RATE

$$L/M = \frac{kW \times 600}{BAR}$$

TORQUE

$$Nm = \frac{kW \times 9550}{RPM}$$

$$Nm = \frac{BAR \times CC/REV}{62.8}$$

SPEED

$$RPM = \frac{kW \times 9550}{RPM}$$

MOTOR DISPLACEMENT

$$CC/REV = \frac{Nm \times 20 \times \pi}{BAR}$$

AREA OF A CIRCLE $= \dfrac{\pi D^2}{4}$

WHERE $\pi = 3.1416$

$D = $ **DIAMETER**

CYLINDER DISPLACEMENT
(PUSH AND PULL) = **(PISTON AREA x STROKE x 2) - (ROD AREA x STROKE)**