CONVERSION CONSTANTS

The units and symbols used in this catalogue comply with the requirements of the Measuring Units and National Measuring Standards Act.

LENGTHS
Inches x 25.4 = millimetres
Inches x 0.0254 = metres
Feet x 0.030480 = metres
Yards x 0.91440 = kilometres
Statute \miles x 1.60935 = kilometres

TORQUE
Kilogramforce Metre (kgf.m) x 9.81 = newton metre (N.m)
Pound Feet x 1.36 = newton metre (N.m)
Pound Inches x 0.113 = newton metre (N.m)

FORCE
Kilogramforce x 9.81 = newtons (N)
Pound Feet x 1.36 = newton metre (N.m)
Pound Inches x 0.113 = newton metre (N.m)

POWER
Horse Power (hp) x 0.746 = kilowatt (kW)

ELECTRICAL POWER
3 Phase AC Power = $\sqrt{3}$ V x I x cos∂ Assume power factor (cos∂) = 0.8
Absorbed Power = P x $\dot{\eta}$ $\dot{\eta}$ is efficiency of motor
DC Power = V x I x cos∂ = I^2 x R

ADDITIONAL SYMBOLS USED
r/min = revolutions per minute
m/s = metres per second
To convert foot per minute to m/s multiply by 5.08 x 10^3

TORQUE AND POWER EQUIVALENTS
The kilowatt (kW) is the common unit of mechanical power, i.e. the rate of doing work.
Torque is a turning moment or twisting effort and is expressed in newton metre (N.m).

$$N.m = \frac{Kw \times 9\,550}{r/min} \qquad \frac{N.m \times r/min}{9\,550}$$

INERTIA
Pound feet squared ($lbf.ft^2$) x 0.41339 = newton metres squared ($N.m^2$)

POLAR MOMENT OF INERTIA
The polar moment of inertia. I or flywheel effect of a sold cylinder, disc or hollow cylinder can be derived from the following formula:
For a disc or cylinder. $I = 0.5\ m.r^2$
Where *m* is the mass of the disc or cylinder and *R* and *r* are the outside and inside radii respectively.

PERIPHERAL SPEED

$$s = \frac{d \times n}{19\,100}$$

Where s = belt speed …m/s
d = pulley pitch diameter …mm
n = notational speed … r/min

TEMPERATURE

$$°C = \frac{(F - 32)\ 5}{9} \qquad °F = \frac{(°C \times 9)}{5} + 32$$

Where °F = degrees Fahrenheit
°C = degrees Centigrade