

# Engineering Formulas

## Belt Length Formula

$$\text{Length} = \text{Dia} + \text{Dia} \times 1.65 + 2(\text{CD})$$

$$\text{CD} = \frac{\text{Length} - D + d (1.65)}{2}$$

FPM, VELOCITY = .262 X DIA X RPM	FPM/VELOCITY
$\text{RPM} = \frac{\text{FPM (Velocity)}}{.262 \times \text{Dia.}}$	RPM
$\text{Dia.} = \frac{\text{FPM (Velocity)}}{.262 \times \text{RPM}}$	DIAMETER
$\text{Hp} = \frac{\text{Force} \times \text{Velocity}}{33,000}$	HORSEPOWER
$\text{Hp} = \frac{\text{Torque} \times \text{RPM}}{63,025}$	HORSEPOWER
Force, } Torque = Pull, } X Radius Tension }	TORQUE
$\text{Torque} = \frac{\text{Hp} \times 63,025}{\text{RPM}}$	TORQUE
$\text{EF} = \frac{\text{Hp} \times 33,000}{\text{Velocity (FPM)}}$	EFFECTIVE FORCE
$\text{Te} = \frac{\text{Hp} \times 63,025}{\text{RPM} \times \text{Radius}}$	EFFECTIVE TENSION (Te)
$\text{Te} = \frac{\text{Torque}}{\text{Radius}}$ $\text{Te} = \frac{\text{Hp} \times 33,000}{\text{Velocity}}$	EFFECTIVE TENSION (Te)

Please Note: Torque is in INCH LBS