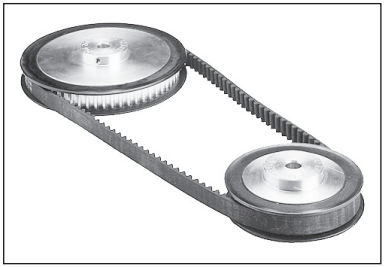
Belt calculation



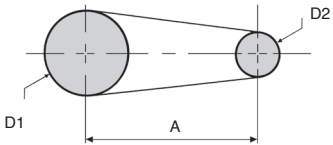
*Each belt has a fixed length, therefore when designing your system include a mechanism for altering the distance between the pulleys so that the belt or chain can be tensioned correctly. Please see our ranges of belt idlers (**BTE, BTE/SS, TMR** or **TFR**) and rollers (**GTC** or **GTC/SS**). Please feel free to contact us if you need assistance when dimensioning your system.*

Determination of belt length

D1 = Pitch diameter of large pulley
D2 = Pitch diameter of small pulley
A = Center distance
L = Total belt length
Z1 & **Z2** = No of teeth
P = Pitch

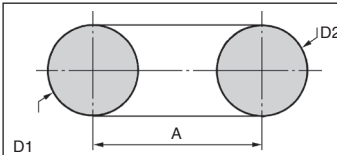
$$D1 = \frac{Z_1 \cdot P}{\pi} \qquad D2 = \frac{Z_2 \cdot P}{\pi}$$

$$\text{No. of teeth} = \frac{L}{P}$$



• *For a simple transmission two pulleys (reducer or multiplier):*

$$L\ (mm) = \frac{\pi}{2} \cdot (D2 + D1) + 2 \cdot A + \frac{(D2 - D1)^2}{4 \cdot A}$$



• *For a simple transmission two pulleys with a ratio of 1/1:*

$$L\ (mm) = 2 \cdot A + Z_1 \cdot P$$