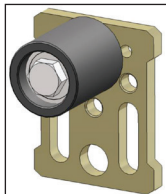
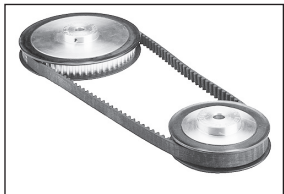


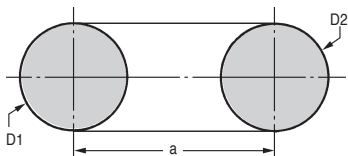
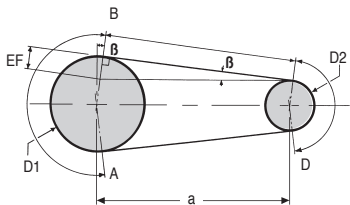
# Timing belt length



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 can be tensioned correctly. Please see our ranges of belt idlers (**TRE, TPX, MIX or AH**) and rollers (**RE or XRP**).

Please feel free to contact us if you need assistance when dimensioning your system.

- $\beta$  = Contact angle
- $D1$  = Pitch diameter of large pulley
- $D2$  = Pitch diameter of small pulley
- $a$  = Axle distance
- $BC$  = Length of unattached belt
- $CD$  = Length of contact with small pulley
- $AB$  = Length of contact with large pulley
- $L$  = Total belt length
- $EF$  = Elevation



If the difference in the number of teeth for the two pulleys is not greater than 5, the belt length can be calculated as shown:

$$L = \frac{D1 + D2}{0,6366} + (2 \times a)$$

$EF = \frac{D1 - D2}{2}$
$\sin \beta = \frac{EF}{a}$
$BC = \frac{EF}{\tan \beta}$
$AB = \pi \times D1 \frac{[(2 \times \beta) + 180]}{360}$
$CD = \pi \times D2 \frac{(90 - \beta)}{180}$
$L = (2 \times BC) + AB + CD$
No. of teeth = $\frac{L}{p}$