

HOW TO DETERMINE SIZE & SPEED OF PULLEYS OR GEARS & BELT LENGTHS

The driving pulley is called the Driver and the driven pulley the Driven

To determine the diameter of Driver, the diameter of the Driven and its revolutions, and also revolutions of the Driver being given:

$$\frac{\text{Diam. of Driven} \times \text{revolutions of Driven}}{\text{Revolutions of Driver}} = \text{Diam. of Driver}$$

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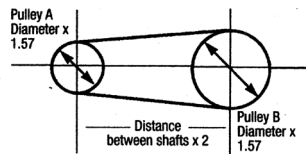
To determine the revolutions of Driver, the diameter and revolutions of the Driven, and diameter of the Driver being given:

$$\frac{\text{Diam. of Driven} \times \text{revolutions of Driven}}{\text{Diameter of Driver}} = \text{Rev. of Driver}$$

To determine the revolutions of Driven, the diameter and revolutions of the Driver, and diameter of the Driven being given:

$$\frac{\text{Diam. of Driver} \times \text{revolutions of Driver}}{\text{Diameter of Driven}} = \text{Rev. of Driven}$$

To find OD belt length:



BELT LENGTH FORMULA

$$\begin{aligned} &\text{Pulley A} \times 1.57 \\ &+ \text{Pulley B} \times 1.57 \\ &+ \text{Distance between shafts} \times 2 \\ &= \text{Belt Length} \end{aligned}$$

$$\text{OD of small pulley} + \text{OD of large pulley} \times 1.57 + \text{twice the distance between shaft centers} = \text{OD belt length}$$

BLOWER TIPS

- Formula for determining blower speed:

$$\text{Blower RPM} = \frac{\text{Motor Pulley P.D.}}{\text{Blower Pulley P.D.}} \times \text{Motor RPM}$$

- You cannot bench test a blower at free air as it will probably overload motor
- If you double the RPM of a fan or blower you would:
 - Get **twice** the CFM
 - Get **four** times the SP
 - Require **eight** times the HP
- When giving the dimensions of a wheel:
 - First** dimension should be diameter
 - Second** dimension stated should be width
- Specifying Rotation:**
 - Double Inlet Wheel = Viewing Hub Side
 - Single Inlet Wheel = Viewing Back Plate

