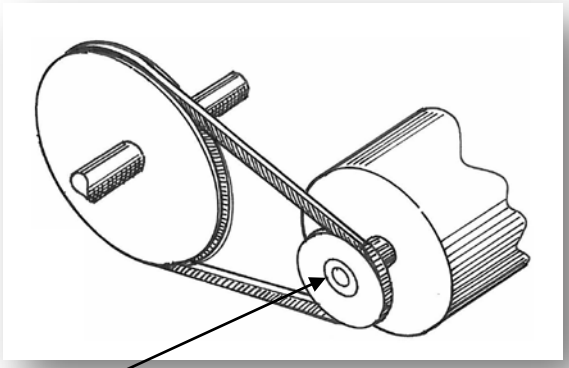
Velocity Ratio VR

In pulley systems speed changes are made using different sized pulleys on the driver and driven shafts. By comparing the size of the two pulleys you can calculate the Velocity ratio of the system.

For example:

The diagram below shows a water pump driven by an electric motor. Calculate the Velocity ratio of the system.



Driver pulley = 140mm

Driven pulley = 35mm

VR = Driven diameter ÷ Driver diameter

VR = 35 / 140

= $^{1}/_{4}$

= 1:4 ratio