

Gear

- Used for transmission of power through direct contact of the tooth.
- Gear is a positive drive as there is no slip occurs during the transmission of motion from one shaft to other one
- The smaller one is termed as the pinion which drives the larger one
- Gear ratio (G) = $\frac{\text{Number of teeth on the gear (N2)}}{\text{Number of teeth on pinion (N1)}}$
- Module of pinion (m_1) = $\frac{d_1}{N_1}$
- Velocity ratio (VR) = $\frac{\omega_1}{\omega_2} = \frac{N_2}{N_1}$
- Torque ratio $\frac{\omega_2}{\omega_1} = \frac{T_1}{T_2}$

