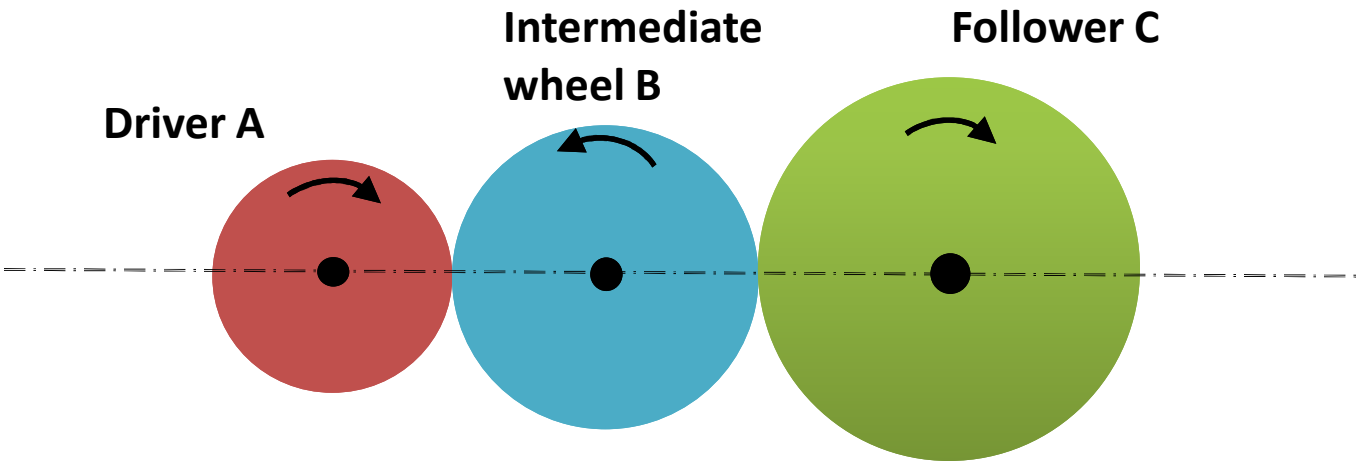
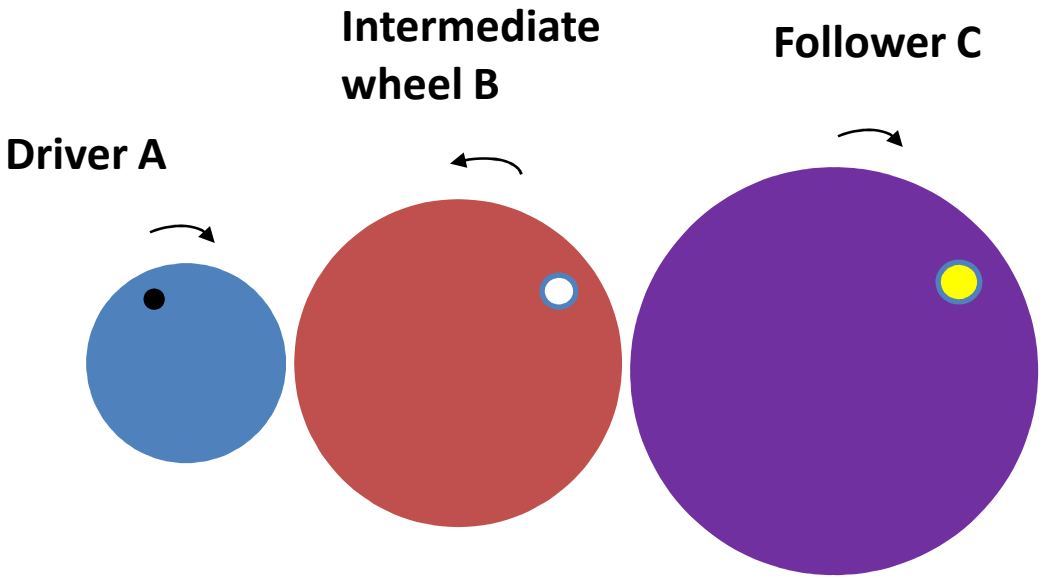
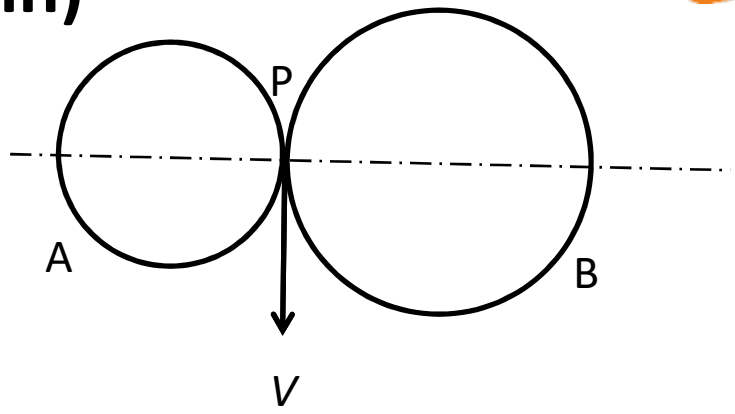
Simple gear train



Simple gear train



Train Value (Simple gear train)



V= Pitch line velocity of the gears A and B at the contact point P

$$V = \pi D_A N_A = \pi D_B N_B$$

$$\frac{N_B}{N_A} = \frac{D_A}{D_B}$$

But $\frac{D_A}{D_B} = \frac{T_A}{T_B}$

Therefore $\frac{N_B}{N_A} = \frac{T_A}{T_B} \ldots\ldots\ldots (1)$

Similarly, for gears B and C $\frac{N_C}{N_B} = \frac{T_B}{T_C} \ldots\ldots\ldots (2)$

From (1) and (2), Train value is $\frac{N_C}{N_A} = \frac{T_A}{T_C}$

Thus the train value of the simple gear train does not depend on the intermediate wheel. But, direction of rotation of the follower will be influenced by the intermediate wheel in the simple gear train.