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Question:

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Answer:

i) Types of gear trains 1) Simple gear train 2) Compound gear train 2) Epicyclic gear train 4) Inverted gear train Simple gear train. When there is only one gear on each shaft, it is known as simple gear train. The gears are represented by their pitch circles. When the distance between the two shafts is small, the two gears are made to mesh with each other to transmit motion from one shaft to the other Epicyclic gear train: A simple epicyclic gear train is shown in Fig. where a gear A and the arm C have a common axis at O₁ about which they can rotate. The gear B meshes with gear A and has its axis on the arm at O₂, about which the gear B can rotate. If the arm is fixed, the gear train is simple and gear A can drive gear B or vice-versa, but if gear A is fixed and the arm is rotated about the

axis of gear A (i.e. O₁), then the gear B is forced to rotate upon and around gear A. Such a motion is called epicyclic and the gear trains arranged in such a manner that one or more of their members move upon and around another member are known as epicyclic gear trains.

Compound Gear Train When there are more than one gear on a shaft, it is called a compound train of gear. Whenever the distance between the driver and the driven or follower has to be bridged over by intermediate gears and at the same time a great (or much less) speed ratio is required, then the advantage of intermediate gears is intensified by providing compound gears on intermediate shafts

Reverted Gear Train When the axes of the first gear (i.e. first driver) and the last gear (i.e. last driven or follower) are co-axial, then the gear train is known as reverted gear train. We see that gear 1 (i.e. first driver) drives the gear 2 (i.e. first driven or follower) in the opposite direction.

